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MEMO

To: Barry Gartner, MN Power

From: Jay Haley, P.E.

Date: September 23, 2020

Subject: Updated Bison 4 Sound and Shadow Flicker Studies

EAPC was asked to update the sound and shadow flicker studies for the Bison 4 wind farm located in central North Dakota.

Purpose
The sound and shadow flicker studies that were performed in 2012 have been updated to include a structure not included as a receptor in the original studies. The structure is number #039 which is located at E295,506 N5,212,525, UTM NAD83 (meters).

Methodology - General
The software used to perform the analyses was windPRO, which can be used to perform both sound and shadow flicker studies. The original models were updated with one new noise receptor and one new shadow flicker receptor. All other modeling parameters were left as originally modeled in 2012, including receptor locations, wind data, turbine models, topography, sound data and operational data.

SOUND STUDY

Methodology
This sound analysis was performed using windPRO, which calculates detailed sound maps across an entire area of interest or at site-specific locations for specified receptors.

The analysis used the ISO 9613-2 "Attenuation of sound during propagation outdoors, Part 2" sound calculation model. Because there was no octave data available, the "Alternative" attenuation method was used, where the mean height between the source and receiver is used

to determine the Attenuation factor, rather than "General" attenuation method with an attenuation factor of 0.5. Realistic sound pressure levels were calculated at 1.5 m AGL at the existing occupied structures. The term "realistic" in this case, means that some amount of ground attenuation is accounted for.

Model Inputs and Assumptions
The inputs and assumptions for the windPRO sound calculation include the following:

- Turbine Coordinates
- Turbine Specifications
- Turbine Sound Emission Data
- Sound Receptor Coordinates
- USGS Digital Elevation Model (DEM) (height contour data)
- Meteorological Conditions
- Ground Attenuation

A description of each input variable and how they affect the sound calculation are included below.

Turbine Coordinates: The location of a wind turbine in relation to a sound receptor is one of the most important factors in determining sound impacts. Sound pressure levels drop as they travel farther from the source of emission. The attenuation comes from atmospheric absorption as well as from absorption by the ground cover between the turbine and the receptor. The sound pressure waves can also be reflected by hard or smooth surfaces such as ice or water. Sound is also absorbed by trees and reflected by structures such as buildings or walls, although these effects (trees and buildings) are ignored in the model.

Turbine Specifications: The Bison 4 (as well as Bison 1, 2, and 3) wind turbine specifications from the manufacturer were supplied to EAPC by MN Power. Wind turbine specifications included in the model were the power curves, blade type, hub heights and operational rotational speed of the rotor.

Turbine Sound Emission Data: Sound emission data (not including octave data) supplied by the manufacture was used assuming the loudest sound pressure levels are being emitted at the hub height of the turbine.

Sound Receptor Coordinates: As with the wind turbine coordinates, the elevation, and distance

of a sound receptor in relation to the wind turbines are the main factors in determining the sound impacts. EAPC was provided with coordinates for all sound receptors located within the vicinity of the 64 proposed wind turbine locations by MN Power.

USGS Digital Elevation Model (DEM) (height contour data): For this study, 3-meter resolution USGS National Elevation Database (NED) DEM's were used to construct 10-foot interval height contour lines for the windPRO sound model. The height contour information is important to the sound calculation since it allows the model to place the wind turbines and the sound receptors at the correct elevations.

Meteorological Conditions: A temperature of 10° C (50° F) and a relative humidity of 70% were assumed for the analysis. These conditions represent an atmospheric "worst case" scenario where sound waves will travel farther with less atmospheric absorption. This will lead to more conservative (higher predicted sound levels) results.

All wind turbines are assumed to be operating simultaneously at maximum sound output levels. All turbines are assumed to be downwind of all receptors, which is another conservative (higher predicted sound pressure levels) assumption.

Ground Attenuation: Because there was no octave data available, the ground factor (usually 0.5) cannot be used to determine the Attenuation factor. Instead, the mean height between the source and receiver is used to determine the Attenuation factor (Alternative method). No other sources of sound attenuation such as trees, air turbulence or wind shadow effects were assumed in the analysis.

Wind Turbines from Adjacent Projects: The Bison 1, 2, and 3 projects are adjacent to the Bison 4 project. Because sound impacts are cumulative, there will be impacts from the Bison 1, 2, and 3 wind farms, which were included in the model to capture the full sound impacts on the receptors.

Results of Sound Study

The results of the updated study show that the impacts on the new occupied structure #039 are as follows:

- Sound pressure level – 47.9 dBA

SHADOW FLICKER STUDY

Methodology

The actual calculation of potential shadow flicker at a given shadow receptor is carried out by simulating the environment near the wind turbines and the shadow receptors. The position of the sun relative to the turbine rotor disk and the resulting shadow is calculated in time steps of one minute throughout an entire year. If the shadow of the rotor disk (which in the calculation is assumed solid) at any time casts a shadow on a receptor window, then this step will be registered as one minute of shadow flicker. The calculation also requires that the sun must be at least 3.0° above the horizon in order to register shadow flicker. When the sun angle is less than 3.0°, the shadow quickly becomes too diffuse to be distinguishable since the amount of atmosphere that the light must pass through is 15 times greater than when the sun is directly overhead.

The sun's path with respect to each wind turbine location is calculated by the software to determine the paths of cast shadows for every minute of every day over a full year. The turbine runtime and direction are calculated from the site's long-term wind speed and direction distribution. Finally, the effects of cloud cover are calculated using long-term reference data (monthly average daily sunshine hours) to arrive at the projected annual flicker time at each receptor.

Model Inputs and Assumptions

The inputs for the windPRO shadow flicker calculation include the following:

- Turbine Coordinates
- Turbine Specifications
- Shadow Receptor Coordinates
- Monthly Average Daily Sunshine Hours
- Joint Wind Speed and Direction Frequency Distribution
- USGS Digital Elevation Model (DEM) (height contour data)

A description of each input variable and how they affect the shadow flicker calculation are included below.

Turbine Coordinates: The location of a wind turbine in relation to a shadow receptor is one of the most important factors in determining shadow flicker impacts. A line-of-site is required for shadow flicker to occur. The intensity of the shadow flicker is dependent upon the distance

from the wind turbine and weather conditions.

Turbine Specifications: A wind turbine's total height and rotor diameter will be included in the windPRO shadow flicker model. The taller the wind turbine, the more likely shadow flicker could have an impact on local shadow receptors as the ability to clear obstacles (such as hills or trees) is greater, although in this analysis, no credit is taken for any such blockage from trees. The larger the rotor diameter is, the wider the area where shadows will be cast. Also included with the turbine specifications are the cut-in and cut-out wind speeds within which the wind turbine is operational. If the wind speed is below the cut-in threshold or above the cut-out threshold, the turbine rotor will not be spinning and thus shadow flicker will not occur.

Shadow Receptor Coordinates: As with the wind turbine coordinates, the elevation, distance and orientation of a shadow receptor in relation to the wind turbines and the sun are the main factors in determining the impact of shadow flicker. EAPC was provided with coordinates for all shadow receptors located within the vicinity of the 64 proposed wind turbine locations by MN Power.

Monthly Average Daily Sunshine Hours: windPRO calculates sunrise and sunset times to determine the total annual hours of daylight for the modeled area. To further refine the shadow flicker calculations, the monthly probability of sunshine is included to account for cloud cover. The greater the probability of cloud cover, the less of an impact from shadow flicker. The monthly sunshine probabilities for many of the larger cities across the United States are available from the National Climatic Data Center (NCDC). For this study, 11 years' worth of monthly average daily sunshine hours data were retrieved for Bismarck, ND, which was the closest, most representative station, to create the long-term representative monthly average daily sunshine hours. The long-term representative monthly average daily sunshine hours are presented below.

Bismarck, ND - Monthly Avg. Daily Sunshine Hours (1969-1980)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	6.69	4.02	3.69

Joint Wind Speed and Direction Frequency Distribution: A set of long-term corrected wind distributions was provided by MN Power to represent the annual wind speed and direction distribution for the project site. This data was used to estimate the probable number of operational hours for the wind turbines from each of the 12 wind direction sectors. During

operation, the wind turbine rotors will always be assumed to face into the wind and automatically orient themselves as the wind direction changes. Shadow flicker can only occur when the blades are turning and the wind turbine rotor is between the sun and the receptor. Shadow flicker is most significant when the rotor is facing the sun.

USGS Digital Elevation Model (DEM) (height contour data): For this study, 3-meter resolution USGS National Elevation Database (NED) DEM's were used to construct 10-foot interval height contour lines for the windPRO shadow flicker model. The height contour information is important to the shadow flicker calculation since it allows the model to place the wind turbines and the shadow receptors at the correct elevations. The height contour lines also allow the model to include the topography of the site when calculating the zones of visual influence surrounding the wind turbine and shadow receptor locations.

Wind Turbines from Adjacent Projects: The Bison 1, 2, and 3 projects are adjacent to the Bison 4 project. Because shadow flicker impacts are cumulative, there will be impacts from the Bison 1, 2, and 3 wind farms, which were included in the model to capture the full shadow flicker impacts on the receptors.

Results of Shadow Flicker Study
The results of the updated study show that the impacts on the new occupied structure #039 are as follows:

- Realistic shadow flicker of 66.02 hr/yr

Respectfully Submitted,

Jay Haley

Jay Haley, P.E., Partner
For EAPC Wind Energy
Licensed in ND

Project:

MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:

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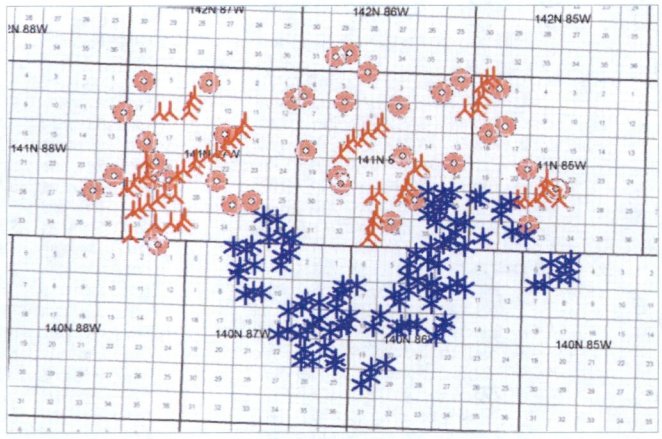
Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 6:07 PM/3.1.633

DECIBEL - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

Noise calculation model:
ISO 9613-2 General
Wind speed:
8.0 m/s
Ground attenuation:
Alternative
Meteorological coefficient, C0:
0.0 dB
Type of demand in calculation:
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
Noise values in calculation:
All noise values are mean values (Lwa) (Normal)
Pure tones:
Fixed penalty added to source noise of WTGs with pure tones: 0.0 dB(A)
Height above ground level, when no value in NSA object:
1.5 m Don't allow override of model height with height from NSA object
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:
0.0 dB(A)



Scale 1:400,000

New WTG
Existing WTG
Noise sensitive area

WTGs

	Easting	Northing	Z [m]	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Noise data Creator	Name	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones
401	311,803	5,208,863	697.7	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
402	312,196	5,208,968	705.3	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
403	312,835	5,208,946	698.6	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
404	313,234	5,209,151	707.2	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
405	313,444	5,209,501	683.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
406	313,442	5,210,023	681.3	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
407	314,149	5,208,925	685.8	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
408	308,871	5,213,905	702.8	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
409	309,604	5,213,896	694.0	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
410	309,680	5,214,358	705.4	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
411	309,924	5,214,667	708.0	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
412	309,820	5,215,206	707.4	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
413	310,125	5,215,528	707.1	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
414	310,492	5,215,673	708.0	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
415	303,494	5,206,779	701.6	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
416	303,769	5,207,089	710.2	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
417	303,787	5,207,674	705.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
418	303,978	5,208,106	696.3	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
419	303,683	5,209,118	701.0	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
420	304,133	5,209,302	701.2	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
421	305,370	5,209,098	734.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
422	305,583	5,209,498	706.3	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
423	305,715	5,209,850	708.4	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
424	306,078	5,210,612	696.0	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
425	306,461	5,210,825	694.3	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
426	301,974	5,211,410	724.8	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
427	302,368	5,211,896	725.2	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
428	302,679	5,212,272	721.7	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
429	303,212	5,212,276	705.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
430	303,477	5,212,677	705.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
431	304,075	5,212,809	706.6	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
432	304,253	5,213,153	694.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
433	290,278	5,206,964	709.0	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
434	291,632	5,207,603	722.6	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
435	292,514	5,207,648	718.1	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
436	293,093	5,207,566	719.9	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
437	293,280	5,207,903	710.6	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
438	292,750	5,209,149	706.6	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
439	295,072	5,211,483	725.8	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
440	295,493	5,211,752	718.1	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
441	295,703	5,212,234	715.1	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No

To be continued on next page...

DECIBEL - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

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					WTG type						Noise data				
	Easting	Northing	Z	Row data/Description	Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Creator	Name	Wind speed	LwA,ref	Pure tones
			[m]					[kW]	[m]	[m]			[m/s]	[dB(A)]	
442	296,135	5,212,388	723.0	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
443	296,463	5,212,779	714.3	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
444	296,617	5,213,182	714.5	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
445	291,724	5,208,893	720.3	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
446	292,154	5,209,244	714.5	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
447	292,851	5,210,284	710.2	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
448	293,200	5,210,574	714.5	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
449	293,804	5,210,781	724.9	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
450	293,911	5,211,152	725.4	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
451	294,559	5,211,374	735.2	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
452	291,242	5,208,729	716.4	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
453	291,871	5,213,721	690.7	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
454	292,435	5,213,798	699.2	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
455	293,522	5,213,807	705.9	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
456	293,601	5,214,304	707.7	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
457	293,841	5,214,643	696.4	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
458	290,406	5,208,279	710.6	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
459	290,780	5,208,428	713.2	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
460	290,059	5,209,590	709.6	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
461	290,492	5,209,798	715.1	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
462	290,714	5,210,168	730.9	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
463	291,164	5,210,295	715.0	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
464	291,124	5,211,031	706.7	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	USER	SWT-3.2-113 Sound Data	8.0	107.5	No
T001	308,045	5,206,621	707.1	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T002	308,398	5,207,681	711.6	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T003	305,708	5,204,697	694.9	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	
T004	306,742	5,204,066	682.8	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	
T005	306,144	5,205,889	682.8	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	
T006	307,814	5,208,723	694.9	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T007	306,789	5,208,091	696.2	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T008	305,723	5,203,854	694.2	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T009	308,835	5,206,312	688.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T010	308,356	5,207,066	702.3	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T011	309,883	5,206,747	664.5	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T012	308,458	5,204,347	658.4	8642	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T013	307,026	5,204,302	676.7	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T014	306,821	5,205,492	670.6	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T015	307,258	5,207,647	694.9	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T016	306,222	5,204,408	682.8	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T017	307,611	5,209,252	689.2	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T018	306,948	5,206,325	660.8	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T019	307,408	5,205,372	664.5	8642	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T020	307,108	5,208,697	694.9	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T022	307,008	5,203,168	665.2	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T023	305,241	5,203,255	707.1	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T025	308,117	5,209,319	676.7	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T026	306,823	5,209,364	688.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T027	307,666	5,206,450	683.1	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T028	307,454	5,208,223	698.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T029	308,855	5,203,961	658.4	8642	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T030	308,850	5,207,651	680.7	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T031	308,007	5,204,045	658.4	8642	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T032	305,787	5,205,371	676.7	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T033	307,319	5,203,760	670.6	8642	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	USER	SWT-2.3-101 Standard	8.0	107.0	No
T201	309,464	5,208,918	676.7	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T202	309,685	5,209,120	674.5	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T203	310,887	5,208,104	661.4	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T204	310,897	5,208,576	676.7	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T205	311,399	5,208,734	688.8	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T206	311,493	5,207,129	664.2	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T207	312,259	5,206,895	682.8	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T208	307,794	5,202,144	664.5	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T209	307,622	5,201,766	676.7	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T210	307,287	5,201,341	676.7	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T211	306,204	5,201,988	688.7	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	
T212	305,792	5,201,997	688.3	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	

To be continued on next page...

DECIBEL - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

...continued from previous page

					WTG type						Noise data				
	Easting	Northing	Z	Row data/Description	Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Creator	Name	Wind speed	LwA,ref	Pure tones
			[m]					[kW]	[m]	[m]			[m/s]	[dB(A)]	
T213	305,343	5,201,946	685.0	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T214	305,086	5,201,688	682.8	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T215	304,921	5,203,659	698.5	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T216	304,151	5,202,483	676.7	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T217	303,760	5,201,883	670.6	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T218	304,453	5,199,790	682.8	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T219	303,654	5,199,579	676.7	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T220	303,574	5,199,109	668.9	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T221	303,104	5,198,656	658.4	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T222	299,716	5,199,978	658.4	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T223	299,930	5,200,609	664.5	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T224	301,600	5,199,737	676.7	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T225	301,676	5,200,064	676.7	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T226	301,044	5,200,758	682.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T227	301,339	5,201,562	679.3	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T228	300,385	5,199,954	652.3	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T229	301,958	5,201,876	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T230	302,272	5,202,012	694.9	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T231	302,500	5,202,464	682.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T232	301,742	5,203,479	690.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T233	302,013	5,203,777	695.3	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T234	302,093	5,204,102	701.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T235	302,838	5,204,194	680.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T301	312,774	5,204,170	646.1	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T302	313,282	5,204,157	646.2	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T303	314,088	5,204,579	658.4	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T304	314,697	5,204,634	658.4	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T305	314,736	5,205,482	658.4	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T306	314,446	5,205,246	670.6	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T307	313,645	5,205,400	664.5	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T308	298,480	5,201,477	664.5	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T309	298,972	5,201,680	670.6	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T310	299,665	5,201,434	670.6	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T311	300,072	5,201,700	676.7	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T312	300,370	5,201,989	677.4	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T313	300,736	5,202,308	701.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T314	301,696	5,202,922	682.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T315	300,740	5,203,215	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T316	299,975	5,203,346	694.9	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T317	299,780	5,202,993	707.1	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T318	298,996	5,202,746	676.7	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T319	297,558	5,203,763	687.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T320	297,064	5,203,816	701.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T321	296,612	5,203,683	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T322	296,227	5,204,772	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T323	296,321	5,205,129	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T324	297,120	5,205,284	689.7	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T325	295,979	5,206,293	692.1	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T326	296,688	5,206,154	701.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T327	297,008	5,206,367	691.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T328	297,927	5,206,824	694.9	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T329	297,639	5,207,972	701.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T330	298,396	5,207,813	694.9	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T331	298,772	5,206,941	701.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T332	299,272	5,206,774	694.9	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T333	299,137	5,205,950	701.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T334	298,647	5,205,816	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No
T335	298,632	5,205,272	682.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	USER	SWT-3.0-101 Standard	8.0	108.0	No

Calculation Results

DECIBEL - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

Sound level

Noise sensitive area						Demands		Sound level		Demands fulfilled ?		
No.	Name	Easting	Northing	Z [m]	Imission height [m]	Noise [dB(A)]	Distance [m]	From WTGs [dB(A)]	Distance to noise demand [m]	Noise	Distance	All
SSA001	SSA001	314,129	5,209,397	677.7	1.5	50.0	404	44.8	213	Yes	Yes	Yes
SSA002	SSA002	312,386	5,207,439	674.8	1.5	50.0	404	44.0	273	Yes	Yes	Yes
SSA003	SSA003	312,331	5,210,518	667.6	1.5	50.0	404	37.7	961	Yes	Yes	Yes
SSA004	SSA004	311,139	5,212,939	671.3	1.5	50.0	404	33.4	1,557	Yes	Yes	Yes
SSA005	SSA005	310,829	5,215,026	696.7	1.5	50.0	404	41.4	464	Yes	Yes	Yes
SSA006	SSA006	310,235	5,212,508	670.2	1.5	50.0	404	34.5	1,281	Yes	Yes	Yes
SSA007	SSA007	308,667	5,215,538	688.8	1.5	50.0	404	36.7	928	Yes	Yes	Yes
SSA008	SSA008	308,281	5,210,878	684.8	1.5	50.0	404	37.3	1,262	Yes	Yes	Yes
SSA009	SSA009	307,632	5,214,815	672.9	1.5	50.0	404	33.6	1,291	Yes	Yes	Yes
SSA010	SSA010	306,077	5,208,878	691.4	1.5	50.0	404	44.2	457	Yes	Yes	Yes
SSA011	SSA011	305,412	5,211,313	656.2	1.5	50.0	404	38.8	710	Yes	Yes	Yes
SSA012	SSA012	305,231	5,214,037	658.4	1.5	50.0	404	34.1	1,074	Yes	Yes	Yes
SSA014	SSA014	304,789	5,207,620	678.4	1.5	50.0	404	40.7	681	Yes	Yes	Yes
SSA015	SSA015	303,474	5,215,947	644.3	1.5	50.0	404	28.5	2,661	Yes	Yes	Yes
SSA016	SSA016	302,478	5,216,991	660.6	1.5	50.0	404	26.1	3,979	Yes	Yes	Yes
SSA017	SSA017	302,233	5,214,327	664.8	1.5	50.0	404	32.3	1,804	Yes	Yes	Yes
SSA018	SSA018	301,964	5,209,779	698.0	1.5	50.0	404	35.1	1,393	Yes	Yes	Yes
SSA019	SSA019	301,811	5,210,196	696.5	1.5	50.0	404	35.8	992	Yes	Yes	Yes
SSA020	SSA020	301,736	5,216,790	669.5	1.5	50.0	404	26.2	4,169	Yes	Yes	Yes
SSA021	SSA021	300,019	5,211,631	705.6	1.5	50.0	404	32.3	1,722	Yes	Yes	Yes
SSA022	SSA022	299,927	5,214,621	666.9	1.5	50.0	404	28.8	3,365	Yes	Yes	Yes
SSA023	SSA023	299,363	5,214,462	673.6	1.5	50.0	404	29.1	2,797	Yes	Yes	Yes
SSA024	SSA024	296,963	5,208,823	695.6	1.5	50.0	404	37.5	814	Yes	Yes	Yes
SSA025	SSA025	295,930	5,208,602	689.9	1.5	50.0	404	35.6	1,536	Yes	Yes	Yes
SSA026	SSA026	295,067	5,209,911	704.3	1.5	50.0	404	37.0	1,260	Yes	Yes	Yes
SSA027	SSA027	294,635	5,215,387	678.2	1.5	50.0	404	35.5	849	Yes	Yes	Yes
SSA028	SSA028	292,401	5,209,978	683.1	1.5	50.0	404	44.2	295	Yes	Yes	Yes
SSA029	SSA029	291,781	5,206,427	713.4	1.5	50.0	404	36.9	940	Yes	Yes	Yes
SSA030	SSA030	291,712	5,210,997	682.8	1.5	50.0	404	42.4	345	Yes	Yes	Yes
SSA031	SSA031	291,595	5,206,797	714.8	1.5	50.0	404	39.4	565	Yes	Yes	Yes
SSA032	SSA032	291,527	5,210,070	711.2	1.5	50.0	404	46.1	172	Yes	Yes	Yes
SSA033	SSA033	291,170	5,212,125	690.5	1.5	50.0	404	36.7	856	Yes	Yes	Yes
SSA034	SSA034	291,012	5,215,488	664.0	1.5	50.0	404	30.7	1,723	Yes	Yes	Yes
SSA035	SSA035	289,907	5,213,747	679.7	1.5	50.0	404	30.9	1,711	Yes	Yes	Yes
SSA036	SSA036	289,374	5,210,250	696.3	1.5	50.0	404	38.1	695	Yes	Yes	Yes
SSA037	SSA037	288,176	5,209,442	676.6	1.5	50.0	404	32.0	1,634	Yes	Yes	Yes
SSA038	SSA038	313,938	5,209,488	669.3	1.5	50.0	404	45.5	222	Yes	Yes	Yes
SSA039	SSA039	295,506	5,212,525	704.1	1.5	50.0	404	47.9	95	Yes	**No**	**No**

Distances (m)

WTG	SSA001	SSA002	SSA003	SSA004	SSA005	SSA006	SSA007	SSA008	SSA009	SSA010	SSA011	SSA012	SSA014	SSA015	SSA016	SSA017	SSA018	SSA019	SSA020	SSA021	SSA022	SSA023
401	2386	1539	1737	4129	6239	3968	7375	4058	7268	5726	6844	8364	7123	10934	12370	11020	9882	10081	12813	12105	13198	13642
402	1980	1541	1556	4109	6210	4047	7458	4356	7417	6120	7178	8614	7529	11170	12602	11313	10264	10457	13061	12465	13509	13960
403	1370	1572	1651	4338	6402	4410	7799	4947	7843	6758	7791	9151	8154	11689	13114	11889	10903	11095	13591	13094	14100	14557
404	929	1910	1638	4329	6348	4501	7852	5245	7966	7162	8115	9376	8582	11893	13310	12158	11287	11470	13804	13445	14387	14853
405	693	2318	1508	4139	6113	4398	7698	5343	7875	7393	8234	9382	8857	11872	13280	12206	11483	11654	13792	13593	14454	14929
406	929	2792	1216	3716	5644	4057	7295	5231	7531	7454	8133	9140	8981	11596	12991	12007	11481	11632	13521	13519	14276	14762
407	472	2306	2417	5017	6946	5306	8590	6184	8784	8072	9057	10279	9451	12777	14187	13083	12215	12403	14695	14387	15320	15789
408	6926	7360	4842	2465	2256	1953	1646	3084	1537	5751	4322	3642	7494	5770	7099	6651	8045	7975	7696	9139	8973	9524
409	6381	7031	4342	1809	1666	1525	1890	3296	2175	6134	4924	4375	7911	6464	7769	7383	8679	8627	8383	9849	9704	10257
410	6664	7429	4666	2035	1329	1931	1555	3751	2098	6558	5243	4461	8326	6406	7668	7447	8972	8902	8308	10038	9757	10317
411	6742	7636	4797	2112	974	2181	1529	4130	2297	6951	5622	4735	8719	6576	7800	7699	9341	9263	8459	10360	9997	10563
412	7233	8180	5318	2623	1025	2730	1200	4593	2223	7352	5881	4736	9103	6389	7556	7638	9548	9447	8238	10433	9910	10483
413	7323	8399	5474	2781	865	3022	1458	5002	2593	7785	6323	5116	9540	6664	7786	7983	9983	9877	8483	10831	10238	10815
414	7254	8449	5473	2809	729	3175	1830	5280	2986	8103	6694	5509	9868	7023	8122	8368	10366	10264	8827	11226	10617	11195
415	10952	8916	9595	9818	11037	8847	10173	6302	9039	3328	4923	7463	1544	9168	10263	7653	3368	3809	10164	5968	8615	8723
416	10614	8624	9223	9410	10623	8436	9766	5892	8638	2920	4532	7100	1150	8863	9986	7399	3239	3673	9912	5890	8455	8589
417	10485	8602	9005	9043	10180	8059	9255	5519	8110	2587	3985	6525	1003	8279	9409	6832	2785	3204	9344	5464	7947	8102
418	10233	8434	8694	8639	9738	7650	8788	5119	7639	2236	3513	6062	946	7857	9011	6461	2618	3011	8969	5301	7672	7855
419	10450	8863	8761	8378	9272	7377	8128	4923	6932	2406	2794	5157	1862	6832	7965	5407	1842	2160	7915	4443	6663	6872
420	9996	8461	8288	7894	8809	6893	7710	4437	6530	1990	2383	4861	1805	6678	7865	5372	2221	2488	7862	4728	6781	7027
421	8764	7209	7104	6931	8059	5941	7235	3412	6148	740	2215	4941	1588	7107	8406	6098	3473	3725	8507	5920	7754	8053
422	8547	7108	6825	6535	7621	5541	6782	3030	5698	793	1823	4553	2039	6785	8111	5877	3630	3836	8244	5959	7631	7958
423	8426	7093	6650	6242	7276	5244	6408	2764	5322	1037	1494	4215	2415	6496	7840	5672	3752	3919	8000	5968	7501	7850
424	8142	7061	6254	5570	6485	4569	5565	2219	4481	1734	967	3528	3258	5937	7325	5347	4198	4287	7551	6144	7342	7740
425	7800	6824	5878	5133	6060	4132	5204	1821	4158	1984	1157	3440	3615	5929	7341	5490	4617	4692	7610	6492	7557	
426	12321	11144	10395	9292	9565	8334	7864	6329	6604	4821	3439	4185	4721	4779	5604	2929	1631	1225	5385	1967	3808	

To be continued on next page...

DECIBEL - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

...continued from previous page

WTG	SSA001	SSA002	SSA003	SSA004	SSA005	SSA006	SSA007	SSA008	SSA009	SSA010	SSA011	SSA012	SSA014	SSA015	SSA016	SSA017	SSA018	SSA019	SSA020	SSA021	SSA022	SSA023
427	12024	10965	10058	8833	9021	7891	7276	6000	6019	4782	3099	3575	4914	4199	5096	2435	2155	1789	4935	2364	3658	3951
428	11805	10844	9810	8486	8603	7560	6821	5773	5568	4803	2896	3103	5108	3760	4723	2103	2593	2250	4616	2736	3618	3974
429	11290	10371	9287	7955	8098	7027	6356	5258	5097	4445	2402	2679	4916	3680	4772	2273	2791	2508	4749	3257	4036	4426
430	11146	10335	9113	7667	7718	6760	5926	5130	4673	4604	2367	2220	5224	3270	4428	2066	3269	2988	4466	3613	4047	4485
431	10617	9895	8568	7066	7109	6168	5342	4628	4084	4411	2006	1687	5237	3195	4477	2387	3692	3457	4617	4223	4526	4993
432	10566	9940	8497	6889	6838	6017	5017	4626	3766	4648	2175	1318	5559	2901	4229	2336	4077	3835	4423	4499	4568	5062
433	23975	22113	22338	21700	22076	20713	20290	18424	19047	15914	15746	16541	14526	15963	15792	14040	12020	11977	15094	10801	12318	11779
434	22569	20755	20904	20224	20582	19239	18793	16968	17551	14502	14271	15045	13157	14487	14345	12554	10559	10504	13656	9304	10866	10335
435	21686	19873	20024	19362	19746	18376	17977	16095	16731	13619	13409	14232	12275	13748	13659	11793	9688	9640	12986	8497	10177	9661
436	21116	19293	19463	18829	19241	17840	17496	15545	16246	13050	12876	13755	11696	13342	13301	11369	9143	9106	12641	8031	9822	9320
437	20903	19112	19230	18555	18940	17569	17177	15293	15930	12834	12602	13433	11513	12986	12930	11019	8884	8834	12267	7701	9451	8946
438	21380	19710	19629	18775	19010	17804	17151	15627	15924	13330	12845	13404	12136	12697	12495	10804	9235	9121	11795	7681	9025	8482
439	19171	17780	17286	16133	16150	15198	14187	13223	12995	11309	10341	10475	10457	9514	9230	7705	7100	6861	8519	4949	5781	5224
440	18784	17435	16883	15691	15682	14761	13707	12818	12519	10967	9929	10002	10173	9016	8731	7215	6765	6507	8022	4528	5281	4724
441	18643	17358	16716	15452	15381	14535	13378	12651	12205	10903	9753	9697	10190	8612	8278	6857	6725	6439	7560	4358	4852	4285
442	18241	16988	16304	15014	14929	14101	12922	12240	11750	10543	9339	9244	9881	8156	7837	6399	6386	6085	7124	3957	4401	3837
443	17987	16795	16029	14677	14541	13775	12512	11970	11353	10375	9069	8858	9795	7694	7343	5974	6266	5939	6625	3737	3924	3353
444	17916	16782	15938	14524	14331	13634	12278	11889	11135	10393	8991	8656	9885	7393	6990	5731	6338	5991	6262	3738	3609	3029
445	22411	20713	20671	19832	20065	18861	18199	16675	16974	14353	13900	14453	13127	13705	13462	11831	10278	10171	12751	8735	10005	9453
446	21976	20312	20217	19341	19550	18373	17672	16210	16450	13928	13419	13928	12739	13156	12907	11288	9825	9704	12197	8219	9452	8899
447	21296	19741	19481	18480	18593	17526	16666	15441	15460	13301	12603	12936	12232	12038	11733	10216	9127	8960	11012	7293	8299	7737
448	20962	19440	19131	18094	18182	17144	16244	15084	15042	12988	12234	12519	11960	11594	11281	9782	8800	8619	10559	6900	7851	7287
449	20372	18880	18528	17468	17546	16521	15605	14477	14404	12419	11620	11881	11430	10963	10667	9144	8221	8028	9951	6272	7227	6667
450	20294	18844	18431	17320	17356	16380	15394	14373	14201	12377	11502	11682	11437	10698	10368	8907	8169	7958	9644	6127	6944	6378
451	19670	18256	17793	16654	16675	15717	14710	13731	13518	11785	10853	10999	10897	10019	9709	8223	7575	7347	8991	5466	6274	5711
452	22897	21183	21165	20338	20574	19365	18708	17174	17483	14836	14404	14962	13592	14203	13947	12334	10773	10670	13233	9244	10495	9941
453	22674	21455	20709	19284	19003	18404	16894	16654	15799	15009	13753	13364	14286	11815	11100	10380	10835	10546	10331	8412	8106	7529
454	22136	20940	20165	18724	18435	17847	16325	16113	15231	14502	13213	12798	13813	11246	10538	9812	10342	10044	9770	7888	7537	6960
455	21074	19910	19094	17638	17350	16763	15244	15047	14146	13488	12149	11711	12854	10179	9505	8726	9354	9041	8739	6852	6457	5878
456	21106	20000	19109	17591	17243	16731	15116	15074	14040	13605	12184	11633	13033	10009	9275	8632	9509	9180	8506	6952	6334	5764
457	20955	19895	18944	17382	16992	16532	14853	14923	13792	13526	12041	11406	13007	9721	8950	8398	9468	9127	8182	6873	6086	5525
458	23749	21996	22039	21250	21509	20275	19651	18063	18424	15682	15310	15904	14398	15152	14887	13284	11655	11565	14171	10181	11440	10884
459	23369	21629	21652	20853	21107	19878	19248	17672	18022	15304	14914	15501	14032	14754	14497	12883	11265	11172	13782	9778	11046	10492
460	24071	22430	22291	21344	21470	20386	19535	18267	18333	16034	15449	15810	14861	14845	14457	13063	11906	11768	13718	10167	11076	10502
461	23640	22021	21851	20885	20998	19928	19060	17822	17859	15612	14997	15336	14462	14365	13979	12584	11472	11326	13241	9702	10596	10022
462	23428	21843	21620	20612	20693	19661	18739	17581	17545	15417	14743	15024	14304	14008	13599	12247	11257	11097	12858	9419	10233	9656
463	22983	21413	21168	20149	20226	19199	18271	17127	17077	14980	14284	14556	13885	13546	13147	11780	10812	10647	12408	8955	9773	9197
464	23063	21563	21213	20106	20106	19168	18113	17158	16936	15107	14291	14424	14084	13292	12823	11588	10912	10720	12074	8915	9507	8925
T001	6687	4417	5793	7035	8854	6281	8939	4264	8204	2995	5380	7932	3406	10386	11770	9652	6852	7186	11967	9461	11397	11699
T002	5982	3995	4849	5930	7737	5165	7862	3199	7175	2611	4702	7101	3610	9621	11033	9065	6767	7051	11285	9263	10951	11297
T003	9644	7219	8817	9870	11529	9028	11238	6695	10299	4197	6623	9352	3064	11470	12711	10238	6312	6740	12729	8969	11485	11645
T004	9110	6575	8536	9903	11697	9136	11632	6984	10786	4858	7368	10085	4055	12322	13610	11208	7448	7867	13673	10121	12564	12749
T005	8722	6432	7727	8640	10268	7781	9973	5427	9049	2990	5473	8199	2198	10406	11692	9300	5710	6109	11758	8396	10719	10931
T006	6351	4749	4861	5369	6987	4493	6868	2205	6095	1744	3532	5909	3220	8427	9840	7909	5945	6181	10100	8320	9848	10215
T007	7455	5635	6050	6513	8026	5602	7680	3161	6777	1061	3504	6147	2055	8527	9889	7723	5112	5405	10060	7640	9472	9784
T008	10069	7566	9385	10577	12284	9760	12049	7475	11126	5036	7465	10195	3880	12300	13532	11039	7017	7451	13536	9645	12228	12368
T009	6127	3726	5469	7016	8939	6352	9228	4599	8588	3767	6060	8524	4252	11026	12428	10384	7696	8026	12656	10296	12182	12496
T010	6226	4047	5265	6499	8335	5757	8478	3813	7783	2912	5168	7639	3610	10134	11535	9498	6944	7255	11764	9505	11319	11644
T011	5005	2597	4496	6318	8333	5772	8875	4431	8376	4362	6390	8648	5168	11212	12640	10769	8480	8778	12932	11007	12693	13046
T012	7594	4999	7286	9001	10939	8352	11193	6533	10501	5119	7603	10213	4917	12625	13987	11762	8466	8854	14143	11148	13354	13603
T013	8741	6211	8172	9566	11378	8811	11355	6695	10530	4673	7194	9899	4002	12175	13479	11112	7458	7870	13562	10140	12525	12726
T014	8286	5896	7458	8608	10342	7803	10214	5580	9358	3467	5989	8692	2942	10978	12292	9955	6478	6872	12390	9163	11440	11665
T015	7090	5132	5829	6563	8198	5700	8016	3389	7178	1706	4105	6704	2469	9122	10496	8359	5707	6014	10681	8263	10118	10430
T016	9349	6869	8640	9847	11574	9040	11395	6790	10502	4472	6952	9680	3517	11862	13128	10691	6854	7277	13170	9521	11997	12171
T017	6520	5108	4887	5103	6610	4182	6374	1759	5563	1579	3014	5344	3260	7870	9287	7394	5672	5876	9557	7956	9374	9756
T018	7811	5551	6823	7830	9527	7002	9372	4744	8518	2697	5219	7901	2518	10230	11565	9288	6064	6432	11691	8727	10868	11124
T019	7834	5390	7122	8437	10242	7676	10244	5575	9446	3750	6267	8934	3451	11283	12622	10343	7004	7389	12749	9684	11896	12139
T020	7056	5426	5531	5852	7342	4930	7016	2476	6140	1047	3118	5660	2557	8110	9499	7447	5257	5505	9714	7672	9309	9655
T022	9461	6868	9075	10608	12458	9882	12481	7814	11664	5785	8300	11013	4974	13259	14546	12138	8315	8741	14607	10976	13465	13638
T023	10804	8280	10150	11339	13030	10515	12752	8207	11805	5685	8060	10782	4388	12814	14011	11473	7301	7742	13981	9870	12547	12655
T025	6013	4665	4381	4716	6319	3828	6243	1568	5517	2087	3361	5531	3737	8092	9521	7727	6170	6367	9825	8422	9756	10153
T026	7306	5887	5628	5604	6936	4640	6443	2102	5511	890	2406	4937	2679	7386	8778	6760	4877	5081	9001	7172	8671	9036
T027	7103	4823	6190	7360	9141	6580	9143	4471	8365	2902	5360	7968	3106	10381	11749	9569	6603	6951	11920	9237	11254	11538
T028	6777	4994	5390	5985	7594	5108	7415	2781	6594	1525	3704	6224	2732	8689	10082	8032	5706	5978	10300	8179	9879	10217
T029	7574	4956	7421	9264	11240	8658	11579	6941	10923	5647	8118	10708	5470	13138	14507	12301	9019	9407	14672	11701	13905	14155
T030	5560	3542	4510	5762	7636	5051	7889	3277	7267	3032	5023	7340	4061	9886	11307	9400	7207	7485	11581	9686	11323	11679
T031	8132	5540	7784	9429	11338	8751	11512	6838	10777	5204	7717	10370	4810	12736	14077	11792	8330	8731	14204	11016	13309	13536
T032	9263	6915	8326	9269	10892	8410	10567	6045	9623	3519	5954	8684	2460	10826	12082	9635	5835	6252	12116	8512	10950	11132
T033	8840	6262	8414	9942	11800	9221	11855	7183	11059	5267	7790	10487	4615	12779	14089	11727	8056	8471	14176	10735	13138	13335
T201	4690	3275	3283	4356	6259	3672	6668	2289	6175	3387	4707	6642	4852	9235	10676	9030	7549	7759	11031	9827	11112	11522
T202	4453	3181	2993	4086	6016	3432	6498	2250	6054	3616	4803	6634	5121	9230	10672	9091	7749	7947	11046	9987	11202	11622
T203	3490	1640	2813	4842	6922	4452	7758	3806	7459	4872	6346	8197	6117	10792	12235	10659	9079	9314	12617	11426	12751	13162
T204	3335	1873	2414	4370	6450	3987	7310	3485	7042	4829	6130	7869	6182	10461	11903	10399	9014	9229	12304	11299	12525	12949
T205	2809	1628	2013	4213	6318	3949	7332	3784	7153	5324	6519	8134	6703	10716	12156	10738	9493	9699	12581	11743	12894	13329
T206	3477	945	3491	5821	7925	5524	8871	4937	8601	5691	7381	9324	6722	11919	13361	11729	9891	10156	13731	12326	13781	14174
T207	3124	559	3624	6147	8256	5967	9360	5629	9173	6492	8149	10020	7505	12614	14057	12480	10691	10957	14445	13124	14552	14952
T208	9630	7009	9524	11301	13235	10648	13422	8748	12672	6949	9473	12166	6246	14463	15770	13392	9606	10032	15849	12266	14750	14927
T209	10029	7408	9938	11713	13642	11055	13812	9136	13049	7278	9799	12502	6503	14775	16071	13668	9809	10239	16136	12455	14982	15146
T210	10569	7949	10472	12221	14136	11550	14264	9589	13478	7634	10147	12861	6758	15096	16372	13935	9977	10411	16416	12598	15183	15328
T211	10849	8242	10502	12012	13834	11266	13772	9129	12906	6891	9359	12088	5807	14223	15459	12962	8870	9310	15462	11456	14107	14227
T212	11147	8550	10741	12179	13969	11411	13843	9223	12949	6887	9324	12053	5712	14141	15356	12833	8673	9114	15339	11231	13920	14025

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DECIBEL - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

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WTG	SSA001	SSA002	SSA003	SSA004	SSA005	SSA006	SSA007	SSA008	SSA009	SSA010	SSA011	SSA012	SSA014	SSA015	SSA016	SSA017	SSA018	SSA019	SSA020	SSA021	SSA022	SSA023
T213	11520	8932	11059	12427	14184	11640	13993	9403	13071	6971	9367	12092	5701	14125	15315	12766	8531	8974	15276	11052	13784	13871
T214	11883	9293	11422	12776	14522	11983	14305	9730	13372	7258	9631	12350	5939	14350	15524	12957	8672	9117	15469	11160	13924	13997
T215	10850	8367	10097	11171	12811	10322	12456	7963	11481	5345	7670	10383	3963	12373	13554	11001	6797	7239	13512	9359	12046	12149
T216	12139	9611	11466	12576	14210	11727	13814	9356	12814	6679	8920	11604	5176	13481	14604	11998	7617	8060	14509	10038	12852	12900
T217	12805	10260	12167	13292	14923	12443	14510	10067	13499	7369	9574	12243	5829	14067	15162	12537	8098	8538	15044	10441	13302	13325
T218	13635	11020	13310	14751	16516	13971	16302	11730	15358	9232	11563	14268	7837	16187	17314	14706	10294	10736	17216	12644	15506	15530
T219	14357	11749	13963	15314	17032	14508	16728	12210	15747	9609	11865	14544	8121	16369	17452	14816	10339	10776	17318	12588	15497	15489
T220	14739	12126	14382	15764	17492	14963	17200	12675	16222	10085	12342	15020	8597	16838	17916	15277	10791	11226	17776	13017	15935	15920
T221	15392	12779	15028	16388	18101	15580	17775	13273	16781	10646	12866	15527	9121	17295	18346	15695	11181	11612	18186	13337	16278	16243
T222	17218	14704	16439	17276	18707	16360	17951	13863	16817	10939	12686	15102	9173	16405	17236	14568	10056	10431	16933	11657	14645	14488
T223	16699	14206	15874	16663	18073	15741	17298	13236	16160	10303	12026	14436	8530	15742	16579	13910	9393	9770	16281	11022	14012	13865
T224	15821	13254	15211	16288	17859	15416	17309	12991	16240	10178	12187	14754	8504	16318	17276	14604	10049	10461	17054	11999	14978	14894
T225	15562	13004	14927	15979	17540	15103	16980	12672	15908	9852	11853	14418	8172	15984	16946	14274	9719	10133	16726	11685	14662	14583
T226	15680	13163	14922	15820	17301	14918	16630	12441	15524	9553	11423	13923	7817	15382	16296	13621	9068	9469	16047	10921	13908	13807
T227	14999	12513	14179	15016	16472	14105	15781	11618	14671	8716	10567	13068	6972	14543	15471	12796	8241	8647	15233	10155	13135	13050
T228	16675	14144	15947	16860	18337	15957	17648	13479	16534	10585	12422	14893	8841	16289	17165	14491	9951	10341	16890	11683	14674	14544
T229	14307	11819	13501	14376	15862	13474	15220	11001	14128	8124	10049	12594	6404	14152	15124	12454	7903	8321	14916	9946	12906	12851
T230	13969	11478	13173	14072	15575	13175	14962	10710	13880	7850	9817	12384	6147	13987	14980	12315	7773	8197	14788	9879	12825	12785
T231	13539	11067	12709	13578	15072	12677	14455	10209	13375	7344	9316	11891	5641	13518	14527	11866	7335	7763	14346	9497	12426	12401
T232	13728	11357	12715	13334	14694	12396	13906	9874	12775	6924	8651	11120	5141	12588	13532	10859	6304	6717	13311	8332	11289	11238
T233	13356	11000	12325	12932	14292	11993	13513	9472	12386	6522	8267	10753	4741	12257	13222	10552	6002	6422	13016	8103	11043	11009
T234	13149	10820	12082	12646	13988	11703	13191	9176	12060	6220	7938	10419	4432	11925	12895	10226	5678	6101	12693	7809	10740	10714
T235	12432	10084	11407	12057	13461	11128	12754	8620	11653	5695	7570	10130	3943	11770	12802	10151	5653	6089	12644	7953	10826	10840
T301	5400	3292	6363	8920	11029	8716	12087	8074	11822	8186	10258	12420	8698	15006	16443	14638	12179	12510	16766	14777	16561	16905
T302	5308	3402	6432	9040	11142	8890	12281	8377	12063	8614	10637	12745	9172	15336	16776	15017	12637	12964	17114	15224	16966	17319
T303	4818	3328	6193	8865	10944	8816	12226	8567	12102	9092	10983	12958	9784	15553	16996	15348	13192	13501	17369	15737	17360	17734
T304	4797	3634	6342	9035	11089	9050	12460	8953	12392	9608	11438	13342	10348	15935	17378	15789	13733	14035	17770	16260	17830	18213
T305	3962	3058	5581	8279	10313	8344	11745	8413	11729	9301	10997	12788	10174	15374	16814	15315	13475	13758	17230	15950	17402	17804
T306	4163	3009	5680	8374	10427	8395	11803	8350	11747	9123	10882	12736	9945	15326	16768	15219	13280	13570	17170	15777	17283	17676
T307	4026	2396	5284	7945	10029	7884	11294	7667	11171	8329	10136	12058	9130	14652	16095	14489	12475	12769	16479	14983	16529	16914
T308	17539	15130	16541	17077	18332	16120	17363	13581	16176	10606	12033	14259	8806	15308	16021	13387	9003	9334	15655	10270	13223	13015
T309	17008	14598	16018	16577	17852	15624	16913	13087	15733	10114	11587	13852	8314	14960	15707	13061	8634	8977	15361	10006	12976	12788
T310	16511	14067	15587	16249	17589	15309	16732	12784	15573	9825	11429	13777	8033	15005	15809	13146	8656	9021	15495	10203	13190	13032
T311	16026	13586	15101	15773	17126	14836	16290	12314	15138	9359	10997	13372	7569	14648	15479	12811	8298	8672	15181	9931	12922	
T312	15627	13194	14690	15358	16714	14421	15888	11900	14739	8946	10600	12992	7158	14299	15149	12478	7951	8333	14864	9648	12640	
T313	15153	12730	14207	14874	16236	13938	15425	11418	14282	8467	10147	12561	6682	13911	14786	12112	7571	7961	14516	9351	12340	
T314	14018	11605	13069	13766	15163	12837	14414	10327	13292	7393	9177	11663	5624	13146	14091	11417	6862	7275	13868	8869	11832	
T315	14747	12388	13700	14237	15533	13286	14652	10751	13493	7782	9349	11717	5983	13022	13885	11212	6677	7063	13611	8447	11435	11331
T316	15393	13068	14287	14719	15945	13755	14973	11213	13790	8236	9645	11913	6438	13078	13873	11211	6733	7092	13559	8285	11275	11133
T317	15713	13367	14634	15098	16336	14137	15374	11595	14192	8619	10047	12316	6819	13470	14256	11596	7129	7484	13935	8641	11629	11477
T318	16530	14189	15435	15854	17053	14887	16036	12343	14841	9367	10703	12898	7571	13940	14664	12025	7634	7964	14309	8944	11911	11722
T319	17503	15277	16244	16390	17406	15401	16188	12869	14954	9937	10894	12823	8195	13544	14113	11552	7457	7712	13681	8244	11113	10850
T320	17954	15745	16673	16773	17752	15781	16493	13255	15253	10337	11220	13083	8611	13720	14244	11713	7718	7952	13790	8355	11178	10891
T321	18425	16215	17141	17225	18188	16232	16908	13709	15664	10797	11647	13472	9075	14053	14543	12037	8112	8334	14073	8647	11429	11125
T322	18490	16378	17098	17002	17843	16002	16452	13512	15197	10672	11276	12919	9023	13319	13725	11286	7615	7785	13220	7837	10521	10185
T323	18312	16230	16893	16750	17562	15750	16148	13270	14892	10452	10995	12599	8827	12969	13365	10934	7312	7471	12857	7480	10154	9816
T324	17499	15417	16086	15973	16818	14973	15443	12484	14190	9651	10252	11933	8017	12413	12875	10388	6608	6792	12397	6978	9750	9448
T325	18414	16447	16889	16553	17228	15552	15699	13129	14437	10424	10686	12065	8909	12222	12517	10181	6926	7018	11972	6694	9216	8842
T326	17740	15751	16240	15965	16694	14963	15217	12519	13957	9776	10135	11624	8233	11914	12287	9876	6401	6526	11773	6410	9065	8728
T327	17387	15415	15875	15584	16309	14583	14834	12142	13573	9410	9751	11245	7881	11558	11949	9522	6017	6142	11445	6064	8755	8431
T328	16405	14472	14870	14559	15288	13557	13830	11119	12572	8405	8728	10265	6908	10677	11139	8651	5003	5144	10669	5242	8049	7772
T329	16551	14757	14911	14385	14958	13388	13374	11032	12111	8487	8461	9717	7159	9882	10235	7842	4687	4728	9723	4365	7032	6715
T330	15813	13995	14195	13735	14374	12736	12852	10349	11590	7754	7841	9244	6396	9589	10045	7560	4074	4164	9578	4149	6978	6719
T331	15552	13623	14023	13745	14517	12743	13108	10292	11853	7557	7950	9595	6055	10160	10712	8157	4271	4453	10285	4853	7766	7544
T332	15087	13131	13585	13373	14201	12372	12848	9900	11599	7123	7636	9395	5581	10090	10708	8113	4034	4261	10315	4914	7874	7689
T333	15383	13332	13962	13889	14801	12891	13519	10387	12278	7532	8255	10126	5894	10897	11535	8931	4760	5018	11147	5749	8707	8515
T334	15891	13835	14469	14380	15272	13382	13961	10883	12717	8036	8717	10533	6401	11222	11813	9236	5168	5403	11400	5975	8898	8676
T335	16037	13924	14669	14670	15618	13674	14356	11159	13118	8272	9081	10971	6590	11722	12334	9745	5605	5861	11929	6509	9438	9219

WTG	SSA024	SSA025	SSA026	SSA027	SSA028	SSA029	SSA030	SSA031	SSA032	SSA033	SSA034	SSA035	SSA036	SSA037	SSA038	SSA039
401	14840	15875	16769	18366	19434	20170	20204	20313	20312	20889	21821	22434	22472	23634	2224	16703
402	15234	16270	17155	18697	19821	20573	20584	20715	20698	21262	22165	22796	22858	24025	1818	17065
403	15872	16908	17794	19306	20460	21204	21222	21348	21338	21897	22782	23425	23497	24664	1229	17695
404	16274	17312	18182	19616	20849	21625	21601	21766	21726	22263	23108	23775	23885	25059	781	18046
405	16495	17537	18382	19708	21048	21880	21783	22016	21924	22428	23217	23917	24082	25268	494	18191
406	16523	17570	18375	19557	21041	21958	21752	22084	21915	22371	23086	23828	24069	25273	730	18110
407	17186	18222	19107	20556	21773	22507	22532	22654	22651	23201	24050	24717	24810	25978	601	18987
408	12947	13985	14370	14313	16932	18654	17404	18681	17763	17790	17929	18965	19837	21171	6722	13436
409	13621	14663	15073	15043	17644	19325	18125	19358	18477	18519	18660	19697	20556	21886	6182	14164
410	13869	14906	15275	15080	17825	19577	18280	19602	18653	18644	18702	19782	20717	22059	6469	14292
411	14218	15252	15600	15306	18140	19926	18578	19947	18963	18925	18930	20038	21019	22367	6552	14576
412	14354	15380	15674	15186	18187	20062	18591	20071	19000	18903	18810	19966	21038	22398	7047	14563
413	14772	15795	16072	15491	18573	20478	18962	20484	19382	19258	19113	20296	21412	22777	7143	14924
414	15164	16188	16466	15860	18966	20871	19353	20878	19775	19645	19481	20675	21803	23169	7080	15313
415	6843	7781	8990	12352	11545	11718	12514	11899	12411	13434	15220	15270	14540	15548	10790	9840
416	7023	7984	9148	12340	11729	12006	12675	12178	12600	13568	15274	15378	14738	15770	10448	9891
417	6920	7912	9002	11969	11617	12071	12524	12224	12492	13379	14975	15150	14641	15711	10312	9597

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DECIBEL - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

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WTG	SSA024	SSA025	SSA026	SSA027	SSA028	SSA029	SSA030	SSA031	SSA032	SSA033	SSA034	SSA035	SSA036	SSA037	SSA038	SSA039
418	7052	8063	9092	11845	11727	12312	12602	12452	12605	13424	14920	15160	14761	15858	10055	9555
419	6726	7770	8652	11008	11315	12202	12118	12309	12193	12869	14182	14533	14354	15510	10262	8858
420	7186	8233	9086	11280	11751	12682	12536	12786	12629	13267	14506	14904	14789	15958	9807	9209
421	8412	9453	10335	12442	12999	13849	13789	13966	13877	14519	15716	16147	16037	17197	8577	10442
422	8646	9695	10524	12431	13191	14140	13952	14246	14068	14650	15754	16242	16226	17407	8355	10522
423	8812	9864	10648	12386	13315	14348	14050	14446	14190	14722	15747	16281	16346	17544	8231	10554
424	9289	10345	11033	12399	13692	14897	14371	14977	14561	14985	15835	16472	16708	17940	7940	10744
425	9707	10763	11431	12675	14086	15325	14750	15402	14953	15346	16137	16810	17097	18337	7596	11086
426	5639	6664	7068	8347	9679	11346	10270	11358	10532	10828	11696	12291	12653	13938	12117	6563
427	6217	7232	7566	8484	10150	11916	10694	11919	10994	11200	11911	12598	13098	14403	11818	6891
428	6676	7682	7970	8626	10531	12366	11041	12362	11367	11510	12102	12857	13458	14776	11598	7177
429	7139	8156	8481	9124	11052	12840	11571	12844	11891	12043	12616	13386	13985	15301	11083	7710
430	7569	8577	8853	9248	11400	13261	11884	13257	12231	12319	12778	13612	14310	15639	10936	7972
431	8152	9167	9462	9785	12012	13851	12495	13852	12843	12923	13335	14199	14922	16251	10407	8573
432	8479	9486	9741	9874	12270	14170	12725	14164	13094	13123	13445	14358	15160	16500	10355	8770
433	6939	5885	5623	9483	3687	1596	4280	1328	3348	5237	8555	6793	3408	3249	23794	7632
434	5469	4413	4139	8343	2496	1186	3395	807	2469	4545	7909	6381	3479	3914	22386	6264
435	4602	3547	3412	8024	2333	1424	3444	1252	2615	4674	7982	6633	4078	4694	21503	5722
436	4069	3020	3065	7972	2509	1737	3698	1684	2953	4948	8191	6954	4586	5263	20933	5515
437	3796	2741	2688	7606	2253	2104	3469	2016	2787	4720	7917	6747	4557	5331	20719	5130
438	4225	3227	2439	6516	899	2890	2119	2621	1531	3369	6573	5406	3551	4584	21190	4357
439	3264	3006	1572	3928	3066	6033	3395	5835	3816	3954	5703	5639	5830	7192	18971	1129
440	3277	3180	1890	3735	3565	6491	3856	6304	4308	4339	5834	5932	6301	7673	18583	773
441	3636	3639	2409	3329	3999	7007	4178	6814	4703	4534	5709	5990	6633	8028	18441	**351**
442	3660	3792	2697	3353	4444	7382	4637	7202	5158	4972	5988	6375	7091	8487	18038	644
443	3987	4211	3189	3185	4934	7891	5074	7712	5630	5333	6087	6627	7526	8933	17782	990
444	4373	4631	3620	2965	5296	8308	5370	8123	5966	5549	6061	6734	7814	9233	17710	1291
445	5239	4216	3494	7117	1279	2467	2104	2100	1193	3279	6633	5183	2714	3590	22222	5243
446	4827	3830	2988	6625	774	2842	1808	2510	1037	3044	6348	5032	2956	3983	21785	4690
447	4364	3508	2247	5406	544	4003	1344	3706	1341	2493	5519	4545	3477	4750	21102	3474
448	4150	3368	1981	5022	997	4383	1547	4104	1747	2555	5379	4573	3840	5150	20766	3021
449	3716	3044	1533	4680	1617	4801	2103	4556	2386	2957	5473	4898	4462	5785	20175	2436
450	3839	3253	1696	4296	1913	5183	2205	4933	2618	2909	5216	4771	4626	5985	20096	2104
451	3505	3093	1549	4014	2570	5674	2872	5453	3301	3471	5432	5222	5305	6669	19471	1490
452	5722	4690	4003	7473	1704	2364	2316	1964	1371	3397	6763	5193	2409	3148	22709	5709
453	7065	6533	4973	3227	3780	7295	2729	6930	3667	1743	1965	1964	4276	5654	22469	3827
454	6727	6262	4694	2714	3820	7400	2893	7051	3837	2097	2209	2528	4686	6092	21931	3324
455	6056	5735	4191	1933	3990	7583	3343	7270	4236	2892	3021	3616	5464	6902	20868	2362
456	6430	6159	4631	1497	4489	8085	3809	7770	4715	3265	2847	3736	5857	7285	20899	2607
457	6604	6392	4888	1088	4882	8470	4222	8161	5125	3671	2953	4035	6265	7690	20748	2694
458	6580	5533	4938	8271	2620	2307	3015	1900	2113	3921	7234	5491	2225	2515	23563	6636
459	6196	5153	4536	7955	2243	2237	2733	1823	1804	3717	7064	5390	2301	2794	23182	6254
460	6946	5954	5018	7385	2374	3601	2171	3188	1544	2768	5974	4160	951	1889	23879	6187
461	6544	5568	4576	6957	1917	3609	1710	3197	1070	2424	5714	3992	1206	2343	23448	5707
462	6392	5446	4361	6528	1698	3890	1297	3484	819	2009	5328	3669	1343	2640	23234	5340
463	5983	5058	3922	6162	1277	3917	891	3524	427	1830	5195	3674	1791	3107	22788	4881
464	6243	5385	4099	5595	1655	4651	589	4260	1042	1095	4458	2976	1916	3349	22866	4630
T001	11299	12276	13389	16021	16000	16265	16909	16451	16874	17750	19203	19488	19020	20068	6553	13859
T002	11492	12502	13516	15773	16161	16664	17012	16826	17039	17792	19058	19461	19197	20299	5827	13772
T003	9669	10529	11850	15391	14317	14034	15349	14268	15165	16326	18232	18209	17252	18163	9523	12859
T004	10875	11725	13056	16575	15512	15146	16551	15391	16357	17534	19440	19420	18436	19329	9010	14064
T005	9638	10568	11785	14922	14338	14373	15309	14577	15203	16221	17920	18039	17328	18316	8585	12538
T006	10851	11885	12802	14768	15464	16197	16262	16333	16343	16988	18113	18598	18503	19651	6172	12882
T007	9853	10871	11862	14176	14511	15100	15355	15249	15390	16132	17425	17804	17548	18662	7284	12123
T008	10071	10883	12257	15999	14662	14177	15727	14431	15497	16739	18755	18655	17556	18415	9961	13400
T009	12135	13107	14231	16852	16838	17054	17752	17247	17711	18597	20046	20336	19855	20895	6011	14706
T010	11528	12521	13590	16047	16219	16587	17102	16763	17095	17915	19281	19621	19247	20319	6085	13961
T011	13086	14076	15150	17526	17778	18105	18661	18288	18654	19470	20797	21167	20806	21874	4894	15495
T012	12336	13231	14501	17691	17016	16806	18018	17040	17872	18957	20700	20797	19976	20912	7514	15318
T013	11032	11900	13209	16626	15688	15392	16714	15631	16537	17681	19534	19552	18627	19538	8641	14154
T014	10406	11326	12557	15697	15102	15069	16081	15282	15964	16999	18704	18821	18084	19059	8162	13323
T015	10362	11368	12399	14807	15039	15525	15903	15686	15917	16700	18039	18392	18072	19166	6929	12724
T016	10258	11114	12439	15962	14901	14581	15936	14821	15748	16915	18818	18799	17832	18735	9238	13443
T017	10657	11699	12561	14353	15227	16080	15994	16203	16105	16690	17732	18266	18264	19436	6331	12540
T018	10293	11251	12410	15288	14999	15167	15936	15360	15869	16810	18383	18587	18007	19029	7672	13014

To be continued on next page...

DECIBEL - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

...continued from previous page

WTG	SSA024	SSA025	SSA026	SSA027	SSA028	SSA029	SSA030	SSA031	SSA032	SSA033	SSA034	SSA035	SSA036	SSA037	SSA038	SSA039
T019	11000	11924	13149	16231	15698	15663	16673	15877	16561	17586	19266	19402	18682	19658	7719	13886
T020	10146	11178	12102	14154	14763	15494	15567	15629	15641	16302	17470	17927	17802	18947	6876	12217
T022	11527	12339	13713	17390	16116	15572	17183	15834	16950	18195	20190	20109	19003	19850	9379	14827
T023	9976	10737	12158	16114	14494	13829	15588	14098	15314	16633	18765	18580	17340	18152	10700	13443
T025	11165	12208	13063	14785	15730	16590	16491	16713	16607	17178	18183	18741	18766	19941	5823	13012
T026	9875	10920	11769	13595	14435	15326	15199	15443	15312	15895	16956	17475	17471	18647	7116	11750
T027	10963	11932	13066	15801	15667	15885	16589	16075	16540	17445	18948	19200	18683	19718	6969	13593
T028	10508	11530	12501	14685	15155	15776	15985	15923	16034	16745	17976	18396	18193	19317	6606	12699
T029	12848	13733	15017	18242	17520	17251	18531	17491	18373	19478	21243	21326	20471	21393	7509	15860
T030	11945	12955	13967	16184	16613	17113	17462	17276	17491	18237	19484	19900	19649	20751	5409	14206
T031	12033	12908	14208	17534	16696	16400	17716	16641	17547	18675	20488	20536	19639	20552	8050	15106
T032	9475	10373	11642	14990	14157	14046	15158	14263	15014	16102	17907	17954	17123	18075	9132	12525
T033	11527	12376	13709	17207	16162	15765	17203	16015	17006	18187	20086	20073	19083	19968	8753	14710
T201	12501	13538	14431	16179	17096	17858	17873	17994	17974	18573	19587	20144	20134	21294	4510	14417
T202	12725	13765	14639	16303	17305	18105	18071	18239	18183	18757	19729	20312	20342	21511	4269	14582
T203	13943	14965	15923	17809	18581	19179	19392	19336	19460	20123	21202	21726	21620	22750	3350	16004
T204	13936	14967	15886	17631	18549	19236	19337	19384	19428	20044	21052	21618	21588	22737	3175	15890
T205	14436	15470	16374	18036	19039	19753	19817	19899	19917	20511	21477	22069	22077	23234	2649	16339
T206	14628	15633	16660	18772	19303	19724	20156	19901	20181	20928	22121	22578	22338	23431	3397	16873
T207	15417	16418	17455	19563	20096	20483	20952	20664	20974	21728	22919	23379	23130	24217	3089	17674
T208	12725	13508	14910	18669	17272	16576	18358	16854	18095	19390	21441	21321	20125	20931	9575	16086
T209	12783	13544	14966	18820	17295	16512	18394	16798	18111	19442	21545	21386	20124	20906	9976	16203
T210	12750	13480	14926	18904	17210	16319	18325	16613	18016	19392	21564	21354	20006	20757	10517	16244
T211	11494	12219	13668	17702	15949	15091	17064	15380	16755	18132	20324	20096	18749	19508	10773	15016
T212	11160	11870	13329	17429	15589	14695	16711	14986	16391	17787	20011	19758	18376	19125	11067	14719
T213	10841	11529	13001	17185	15232	14283	16362	14579	16028	17450	19717	19430	17999	18732	11435	14446
T214	10812	11473	12961	17230	15154	14124	16295	14426	15941	17395	19711	19386	17893	18603	11798	14464
T215	9487	10260	11670	15600	14024	13428	15110	13690	14849	16148	18259	18088	16886	17715	10737	12932
T216	9585	10248	11734	16033	13937	12984	15074	13276	14728	16170	18487	18160	16694	17425	12036	13250
T217	9714	10318	11833	16298	13948	12812	15107	13120	14720	16230	18644	18239	16642	17320	12705	13468
T218	11734	12259	13803	18430	15781	14305	16968	14643	16515	18127	20666	20159	18352	18924	13565	15564
T219	11411	11877	13435	18200	15322	13706	16522	14054	16035	17699	20320	19741	17827	18353	14281	15297
T220	11750	12188	13750	18571	15588	13879	16794	14234	16287	17980	20642	20026	18049	18544	14668	15655
T221	11878	12263	13830	18752	15580	13733	16795	14097	16258	17995	20725	20047	17970	18417	15320	15814
T222	9264	9418	10967	16225	12390	10225	13619	10604	12996	14852	17785	16906	14576	14924	17109	13234
T223	8733	8938	10496	15698	12019	10013	13246	10381	12654	14469	17347	16525	14296	14703	16585	12711
T224	10201	10523	12091	17130	13766	11881	14985	12245	14430	16194	18979	18248	16124	16565	15726	14166
T225	9946	10291	11859	16863	13576	11764	14792	12123	14252	15995	18752	18048	15972	16438	15465	13905
T226	9039	9364	10932	15971	12638	10860	13854	11214	13315	15057	17822	17110	15043	15524	15571	13005
T227	8478	8878	10442	15365	12277	10725	13480	11061	12987	14662	17337	16708	14787	15341	14885	12418
T228	9506	9728	11288	16469	12815	10767	14042	11140	13446	15266	18143	17322	15075	15462	16570	13485
T229	8556	9032	10585	15368	12529	11148	13718	11472	13265	14880	17467	16916	15116	15722	14194	12451
T230	8636	9146	10691	15402	12684	11382	13865	11700	13431	15018	17561	17047	15304	15934	13856	12502
T231	8432	8991	10522	15128	12588	11428	13755	11734	13351	14890	17367	16908	15262	15933	13423	12253
T232	7169	7748	9270	13868	11379	10388	12535	10676	12157	13657	16104	15668	14100	14819	13596	10987
T233	7139	7764	9267	13756	11439	10570	12579	10847	12229	13684	16068	15683	14200	14952	13222	10903
T234	6972	7631	9116	13527	11334	10571	12462	10838	12135	13553	15888	15541	14127	14906	13012	10693
T235	7480	8195	9647	13877	11933	11280	13041	11540	12746	14108	16353	16077	14763	15573	12298	11098
T301	16481	17417	18614	21327	21185	21114	22141	21341	22051	23022	24529	24792	24177	25157	5444	19183
T302	16973	17912	19102	21767	21677	21620	22629	21847	22544	23504	24987	25266	24672	25656	5371	19647
T303	17643	18598	19754	22254	22349	22383	23278	22602	23220	24128	25525	25861	25356	26364	4911	20210
T304	18222	19182	20327	22762	22927	22986	23849	23203	23799	24691	26054	26412	25938	26953	4913	20750
T305	18084	19063	20161	22409	22783	22974	23675	23178	23658	24484	25748	26168	25806	26854	4085	20479
T306	17845	18818	19933	22256	22547	22696	23450	22904	23421	24271	25574	25970	25566	26603	4272	20291
T307	17030	18002	19118	21474	21732	21888	22636	22094	22606	23460	24779	25163	24751	25788	4098	19488
T308	7501	7568	9098	14432	10451	8329	11681	8701	11054	12916	15877	14968	12645	13024	17411	11441
T309	7420	7561	9110	14377	10585	8617	11812	8978	11217	13037	15938	15093	12867	13297	16880	11385
T310	7868	8083	9644	14832	11215	9332	12438	9690	11866	13655	16504	15711	13551	14004	16389	11845
T311	7772	8049	9616	14727	11286	9544	12503	9891	11961	13709	16498	15763	13695	14193	15903	11748
T312	7636	7965	9533	14574	11284	9668	12494	10006	11979	13689	16425	15739	13753	14291	15502	11604
T313	7529	7919	9484	14432	11327	9857	12527	10184	12044	13707	16379	15752	13863	14445	15028	11478
T314	7565	8094	9633	14326	11670	10516	12841	10819	12430	13982	16494	16005	14336	15010	13891	11425
T315	6761	7222	8776	13617	10737	9517	11919	9821	11483	13076	15661	15109	13367	14022	14613	10680
T316	6251	6632	8197	13172	10067	8754	11261	9063	10797	12434	15092	14476	12651	13281	15254	10209
T317	6475	6803	8371	13419	10161	8705	11365	9026	10872	12551	15264	14599	12687	13276	15577	10446

To be continued on next page...

DECIBEL - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

...continued from previous page

WTG	SSA024	SSA025	SSA026	SSA027	SSA028	SSA029	SSA030	SSA031	SSA032	SSA033	SSA034	SSA035	SSA036	SSA037	SSA038	SSA039
T318	6408	6610	8172	13372	9788	8100	11006	8437	10461	12215	15037	14270	12202	12724	16393	10383
T319	5095	5106	6633	11986	8076	6362	9301	6690	8726	10523	13429	12578	10443	10967	17352	8999
T320	5008	4919	6414	11823	7727	5893	8956	6229	8353	10187	13148	12241	10027	10519	17802	8847
T321	5152	4966	6417	11870	7574	5556	8804	5905	8164	10044	13066	12093	9773	10214	18273	8911
T322	4117	3841	5268	10734	6461	4744	7690	5055	7082	8924	11918	10977	8773	9307	18328	7786
T323	3749	3495	4944	10396	6235	4722	7462	5012	6884	8688	11640	10743	8630	9216	18148	7441
T324	3542	3525	5062	10404	6656	5460	7867	5728	7361	9067	11892	11120	9201	9863	17335	7419
T325	2715	2310	3731	9193	5136	4200	6351	4413	5838	7559	10451	9614	7700	8414	18241	6250
T326	2683	2563	4092	9458	5745	4915	6944	5133	6479	8130	10924	10180	8383	9125	17569	6480
T327	2456	2481	4041	9327	5854	5227	7035	5430	6615	8200	10915	10242	8565	9352	17215	6338
T328	2219	2674	4208	9174	6363	6159	7486	6332	7176	8588	11085	10595	9214	10096	16231	6194
T329	1087	1821	3221	8000	5609	6058	6654	6157	6462	7687	10020	9651	8573	9576	16369	5028
T330	1753	2589	3935	8456	6374	6759	7404	6876	7230	8415	10650	10357	9345	10349	15632	5528
T331	2610	3292	4748	9405	7058	7010	8142	7178	7892	9201	11544	11176	9964	10887	15378	6469
T332	3087	3809	5246	9782	7581	7499	8660	7677	8417	9710	12007	11676	10491	11412	14915	6874
T333	3603	4161	5679	10456	7848	7371	8978	7589	8654	10080	12530	12082	10668	11504	15218	7511
T334	3446	3892	5439	10378	7506	6893	8657	7120	8294	9783	12322	11802	10279	11081	15726	7408
T335	3924	4288	5851	10876	7808	6948	8981	7200	8573	10131	12745	12164	10511	11257	15876	7898

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

Assumptions

Cmet: Meteorological correction

Calculation Results

Noise sensitive area: SSA001 SSA001

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	2,386	2,389	41.5	Yes	**22.27**	107.5	3.01	78.56	5.48	4.20	0.00	0.00	88.25
402	1,980	1,984	46.8	Yes	**24.65**	107.5	3.01	76.95	4.94	3.99	0.00	0.00	85.88
403	1,370	1,375	44.6	Yes	**29.09**	107.5	3.01	73.77	3.98	3.68	0.00	0.00	81.43
404	929	936	52.7	Yes	**34.10**	107.5	3.01	70.43	3.14	2.85	0.00	0.00	76.42
405	693	700	51.1	Yes	**37.77**	107.5	3.01	67.90	2.60	2.25	0.00	0.00	72.75
406	929	934	54.2	Yes	**34.19**	107.5	3.01	70.41	3.14	2.79	0.00	0.00	76.34
407	472	483	43.2	Yes	**42.17**	107.5	3.01	64.67	2.03	1.64	0.00	0.00	68.35
408	6,926	6,927	67.2	Yes	**8.95**	107.5	3.01	87.81	9.29	4.47	0.00	0.00	101.57
409	6,381	6,382	62.3	Yes	**9.99**	107.5	3.01	87.10	8.97	4.47	0.00	0.00	100.53
410	6,664	6,665	65.5	Yes	**9.45**	107.5	3.01	87.48	9.14	4.46	0.00	0.00	101.08
411	6,742	6,743	68.2	Yes	**9.31**	107.5	3.01	87.58	9.18	4.46	0.00	0.00	101.22
412	7,233	7,234	66.5	Yes	**8.39**	107.5	3.01	88.19	9.46	4.49	0.00	0.00	102.14
413	7,323	7,324	65.5	Yes	**8.22**	107.5	3.01	88.29	9.51	4.50	0.00	0.00	102.30
414	7,254	7,255	69.3	Yes	**8.36**	107.5	3.01	88.21	9.48	4.47	0.00	0.00	102.16
415	10,952	10,953	54.1	No	**2.77**	107.5	3.01	91.79	11.17	4.80	0.00	0.00	107.76
416	10,614	10,615	58.0	No	**3.17**	107.5	3.01	91.52	11.03	4.80	0.00	0.00	107.35
417	10,485	10,485	54.6	No	**3.33**	107.5	3.01	91.41	10.98	4.80	0.00	0.00	107.20
418	10,233	10,233	48.6	No	**3.64**	107.5	3.01	91.20	10.88	4.80	0.00	0.00	106.88
419	10,450	10,450	47.6	No	**3.37**	107.5	3.01	91.38	10.97	4.80	0.00	0.00	107.15
420	9,996	9,997	47.9	No	**3.94**	107.5	3.01	91.00	10.79	4.80	0.00	0.00	106.58
421	8,764	8,765	67.7	No	**5.63**	107.5	3.01	89.86	10.24	4.80	0.00	0.00	104.90
422	8,547	8,547	53.2	No	**5.95**	107.5	3.01	89.64	10.14	4.80	0.00	0.00	104.58
423	8,426	8,427	53.0	No	**6.13**	107.5	3.01	89.51	10.08	4.80	0.00	0.00	104.40
424	8,142	8,143	52.1	Yes	**6.78**	107.5	3.01	89.22	9.94	4.58	0.00	0.00	103.74
425	7,800	7,801	52.9	Yes	**7.34**	107.5	3.01	88.84	9.77	4.57	0.00	0.00	103.18
426	12,321	12,321	63.2	No	**1.26**	107.5	3.01	92.81	11.66	4.80	0.00	0.00	109.27
427	12,024	12,024	66.5	Yes	**1.76**	107.5	3.01	92.60	11.55	4.61	0.00	0.00	108.77
428	11,805	11,806	68.7	Yes	**2.00**	107.5	3.01	92.44	11.48	4.60	0.00	0.00	108.52
429	11,290	11,291	63.1	Yes	**2.57**	107.5	3.01	92.05	11.29	4.61	0.00	0.00	107.96
430	11,146	11,146	65.4	Yes	**2.74**	107.5	3.01	91.94	11.24	4.60	0.00	0.00	107.78
431	10,617	10,618	67.9	Yes	**3.39**	107.5	3.01	91.52	11.04	4.58	0.00	0.00	107.14
432	10,566	10,567	62.9	Yes	**3.43**	107.5	3.01	91.48	11.02	4.60	0.00	0.00	107.09
433	23,975	23,975	48.1	No	**-7.36**	107.5	3.01	98.60	14.49	4.80	0.00	0.00	117.89
434	22,569	22,569	54.1	No	**-6.57**	107.5	3.01	98.07	14.23	4.80	0.00	0.00	117.10
435	21,686	21,686	52.9	No	**-6.05**	107.5	3.01	97.72	14.05	4.80	0.00	0.00	116.58
436	21,116	21,116	54.9	No	**-5.70**	107.5	3.01	97.49	13.94	4.80	0.00	0.00	116.23
437	20,903	20,903	49.3	No	**-5.57**	107.5	3.01	97.40	13.89	4.80	0.00	0.00	116.10
438	21,380	21,381	45.3	No	**-5.87**	107.5	3.01	97.60	13.99	4.80	0.00	0.00	116.39
439	19,171	19,171	59.8	No	**-4.45**	107.5	3.01	96.65	13.52	4.80	0.00	0.00	114.97
440	18,784	18,785	56.6	No	**-4.19**	107.5	3.01	96.48	13.43	4.80	0.00	0.00	114.71
441	18,643	18,643	54.2	No	**-4.09**	107.5	3.01	96.41	13.40	4.80	0.00	0.00	114.61
442	18,241	18,241	58.7	No	**-3.81**	107.5	3.01	96.22	13.31	4.80	0.00	0.00	114.33
443	17,987	17,988	56.2	No	**-3.62**	107.5	3.01	96.10	13.25	4.80	0.00	0.00	114.15
444	17,916	17,916	58.9	No	**-3.57**	107.5	3.01	96.07	13.23	4.80	0.00	0.00	114.10
445	22,411	22,411	51.8	No	**-6.48**	107.5	3.01	98.01	14.20	4.80	0.00	0.00	117.00
446	21,976	21,976	48.7	No	**-6.22**	107.5	3.01	97.84	14.11	4.80	0.00	0.00	116.75
447	21,296	21,297	47.5	No	**-5.82**	107.5	3.01	97.57	13.97	4.80	0.00	0.00	116.34
448	20,962	20,962	49.3	No	**-5.61**	107.5	3.01	97.43	13.91	4.80	0.00	0.00	116.13
449	20,372	20,372	54.9	No	**-5.24**	107.5	3.01	97.18	13.78	4.80	0.00	0.00	115.76
450	20,294	20,294	56.8	No	**-5.19**	107.5	3.01	97.15	13.77	4.80	0.00	0.00	115.71
451	19,670	19,670	63.2	No	**-4.78**	107.5	3.01	96.88	13.63	4.80	0.00	0.00	115.31
452	22,897	22,897	49.3	No	**-6.76**	107.5	3.01	98.20	14.29	4.80	0.00	0.00	117.28
453	22,674	22,674	41.8	No	**-6.63**	107.5	3.01	98.11	14.25	4.80	0.00	0.00	117.16
454	22,136	22,136	47.1	No	**-6.32**	107.5	3.01	97.90	14.14	4.80	0.00	0.00	116.84
455	21,074	21,074	52.5	No	**-5.68**	107.5	3.01	97.47	13.93	4.80	0.00	0.00	116.20
456	21,106	21,107	55.8	No	**-5.70**	107.5	3.01	97.49	13.94	4.80	0.00	0.00	116.22
457	20,955	20,956	52.5	No	**-5.61**	107.5	3.01	97.43	13.90	4.80	0.00	0.00	116.13

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
458	23,749	23,750	46.7	No	**-7.24**	107.5	3.01	98.51	14.45	4.80	0.00	0.00	117.76
459	23,369	23,369	48.1	No	**-7.03**	107.5	3.01	98.37	14.38	4.80	0.00	0.00	117.55
460	24,071	24,071	45.9	No	**-7.41**	107.5	3.01	98.63	14.51	4.80	0.00	0.00	117.94
461	23,640	23,641	49.3	No	**-7.18**	107.5	3.01	98.47	14.43	4.80	0.00	0.00	117.70
462	23,428	23,428	57.3	No	**-7.06**	107.5	3.01	98.39	14.39	4.80	0.00	0.00	117.58
463	22,983	22,983	49.7	No	**-6.81**	107.5	3.01	98.23	14.31	4.80	0.00	0.00	117.33
464	23,063	23,063	45.4	No	**-6.85**	107.5	3.01	98.26	14.32	4.80	0.00	0.00	117.38
T001	6,687	6,688	55.6	No	**8.73**	108.0	3.01	87.51	9.95	4.80	0.00	0.00	102.26
T002	5,982	5,983	55.4	No	**10.47**	108.0	3.01	86.54	9.18	4.80	0.00	0.00	100.52
T003	9,644	9,644	57.1	No	**1.06**	107.0	3.01	90.69	13.51	4.80	0.00	0.00	109.00
T004	9,110	9,110	56.4	No	**1.95**	107.0	3.01	90.19	13.11	4.80	0.00	0.00	108.10
T005	8,722	8,722	44.7	No	**2.63**	107.0	3.01	89.81	12.81	4.80	0.00	0.00	107.42
T006	6,351	6,352	44.2	No	**9.54**	108.0	3.01	87.06	9.59	4.80	0.00	0.00	101.45
T007	7,455	7,456	44.0	No	**6.99**	108.0	3.01	88.45	10.75	4.80	0.00	0.00	104.00
T008	10,069	10,070	59.6	No	**0.38**	107.0	3.01	91.06	13.81	4.80	0.00	0.00	109.67
T009	6,127	6,128	50.0	No	**10.10**	108.0	3.01	86.75	9.34	4.80	0.00	0.00	100.89
T010	6,226	6,227	52.9	No	**9.85**	108.0	3.01	86.89	9.45	4.80	0.00	0.00	101.14
T011	5,005	5,006	37.1	No	**13.17**	108.0	3.01	84.99	8.03	4.80	0.00	0.00	97.82
T012	7,594	7,594	46.2	No	**4.77**	107.0	3.01	88.61	11.87	4.80	0.00	0.00	105.28
T013	8,741	8,742	53.7	No	**2.60**	107.0	3.01	89.83	12.83	4.80	0.00	0.00	107.46
T014	8,286	8,286	44.0	No	**3.43**	107.0	3.01	89.37	12.46	4.80	0.00	0.00	106.63
T015	7,090	7,091	44.3	No	**7.80**	108.0	3.01	88.01	10.38	4.80	0.00	0.00	103.19
T016	9,349	9,350	53.7	No	**1.54**	107.0	3.01	90.42	13.29	4.80	0.00	0.00	108.51
T017	6,520	6,520	41.1	No	**9.13**	108.0	3.01	87.29	9.77	4.80	0.00	0.00	101.86
T018	7,811	7,811	32.7	No	**4.34**	107.0	3.01	88.85	12.06	4.80	0.00	0.00	105.71
T019	7,834	7,834	42.5	No	**4.29**	107.0	3.01	88.88	12.08	4.80	0.00	0.00	105.76
T020	7,056	7,056	42.9	No	**7.87**	108.0	3.01	87.97	10.34	4.80	0.00	0.00	103.11
T022	9,461	9,461	50.1	No	**1.36**	107.0	3.01	90.52	13.38	4.80	0.00	0.00	108.70
T023	10,804	10,804	65.3	No	**-0.73**	107.0	3.01	91.67	14.32	4.80	0.00	0.00	110.79
T025	6,013	6,013	34.6	No	**10.39**	108.0	3.01	86.58	9.21	4.80	0.00	0.00	100.59
T026	7,306	7,307	40.7	No	**7.31**	108.0	3.01	88.27	10.60	4.80	0.00	0.00	103.67
T027	7,103	7,104	42.8	No	**7.77**	108.0	3.01	88.03	10.39	4.80	0.00	0.00	103.22
T028	6,777	6,778	46.4	No	**8.52**	108.0	3.01	87.62	10.05	4.80	0.00	0.00	102.47
T029	7,574	7,574	45.9	No	**4.81**	107.0	3.01	88.59	11.85	4.80	0.00	0.00	105.24
T030	5,560	5,561	42.1	No	**11.59**	108.0	3.01	85.90	8.69	4.80	0.00	0.00	99.39
T031	8,132	8,132	46.4	No	**3.72**	107.0	3.01	89.20	12.33	4.80	0.00	0.00	106.34
T032	9,263	9,263	44.9	No	**1.69**	107.0	3.01	90.34	13.23	4.80	0.00	0.00	108.36
T033	8,840	8,841	52.1	No	**2.42**	107.0	3.01	89.93	12.91	4.80	0.00	0.00	107.63
T201	4,690	4,690	32.2	No	**14.13**	108.0	3.01	84.42	7.63	4.80	0.00	0.00	96.86
T202	4,453	4,453	30.4	No	**14.88**	108.0	3.01	83.97	7.33	4.80	0.00	0.00	96.11
T203	3,490	3,491	25.2	No	**18.29**	108.0	3.01	81.86	6.04	4.80	0.00	0.00	92.70
T204	3,335	3,336	27.6	No	**18.90**	108.0	3.01	81.46	5.82	4.80	0.00	0.00	92.09
T205	2,809	2,811	31.8	No	**21.15**	108.0	3.01	79.98	5.06	4.80	0.00	0.00	89.84
T206	3,477	3,478	34.2	No	**18.34**	108.0	3.01	81.83	6.03	4.80	0.00	0.00	92.65
T207	3,124	3,125	39.8	No	**19.77**	108.0	3.01	80.90	5.52	4.80	0.00	0.00	91.22
T208	9,630	9,630	49.8	No	**2.74**	108.0	3.01	90.67	12.78	4.80	0.00	0.00	108.25
T209	10,029	10,029	55.6	No	**2.05**	108.0	3.01	91.03	13.11	4.80	0.00	0.00	108.94
T210	10,569	10,570	55.3	No	**1.15**	108.0	3.01	91.48	13.56	4.80	0.00	0.00	109.84
T211	10,849	10,849	61.9	No	**0.70**	108.0	3.01	91.71	13.78	4.80	0.00	0.00	110.29
T212	11,147	11,148	60.5	No	**0.23**	108.0	3.01	91.94	14.02	4.80	0.00	0.00	110.76
T213	11,520	11,520	57.9	No	**-0.34**	108.0	3.01	92.23	14.30	4.80	0.00	0.00	111.33
T214	11,883	11,883	56.5	No	**-0.88**	108.0	3.01	92.50	14.57	4.80	0.00	0.00	111.87
T215	10,850	10,850	58.8	No	**0.70**	108.0	3.01	91.71	13.78	4.80	0.00	0.00	110.29
T216	12,139	12,140	48.7	No	**-1.25**	108.0	3.01	92.68	14.76	4.80	0.00	0.00	112.24
T217	12,805	12,806	46.8	No	**-2.19**	108.0	3.01	93.15	15.23	4.80	0.00	0.00	113.18
T218	13,635	13,635	55.0	No	**-3.30**	108.0	3.01	93.69	15.79	4.80	0.00	0.00	114.29
T219	14,357	14,357	52.1	No	**-4.21**	108.0	3.01	94.14	16.26	4.80	0.00	0.00	115.20
T220	14,739	14,740	48.0	No	**-4.68**	108.0	3.01	94.37	16.50	4.80	0.00	0.00	115.67
T221	15,392	15,392	43.2	No	**-5.45**	108.0	3.01	94.75	16.90	4.80	0.00	0.00	116.44
T222	17,218	17,218	40.2	No	**-7.46**	108.0	3.01	95.72	17.93	4.80	0.00	0.00	118.45
T223	16,699	16,699	40.8	No	**-6.91**	108.0	3.01	95.45	17.65	4.80	0.00	0.00	117.90
T224	15,821	15,821	51.9	No	**-5.95**	108.0	3.01	94.98	17.15	4.80	0.00	0.00	116.93
T225	15,562	15,562	51.1	No	**-5.65**	108.0	3.01	94.84	17.00	4.80	0.00	0.00	116.64

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T226	15,680	15,680	51.2	No	**-5.79**	108.0	3.01	94.91	17.07	4.80	0.00	0.00	116.77
T227	14,999	14,999	47.6	No	**-4.99**	108.0	3.01	94.52	16.66	4.80	0.00	0.00	115.98
T228	16,675	16,675	37.5	No	**-6.89**	108.0	3.01	95.44	17.64	4.80	0.00	0.00	117.88
T229	14,307	14,308	52.6	No	**-4.15**	108.0	3.01	94.11	16.23	4.80	0.00	0.00	115.14
T230	13,969	13,969	56.3	No	**-3.73**	108.0	3.01	93.90	16.01	4.80	0.00	0.00	114.72
T231	13,539	13,539	50.1	No	**-3.17**	108.0	3.01	93.63	15.73	4.80	0.00	0.00	114.16
T232	13,728	13,728	49.5	No	**-3.42**	108.0	3.01	93.75	15.86	4.80	0.00	0.00	114.41
T233	13,356	13,356	51.0	No	**-2.93**	108.0	3.01	93.51	15.61	4.80	0.00	0.00	113.92
T234	13,149	13,150	51.9	No	**-2.66**	108.0	3.01	93.38	15.47	4.80	0.00	0.00	113.65
T235	12,432	12,432	43.8	No	**-1.67**	108.0	3.01	92.89	14.97	4.80	0.00	0.00	112.66
T301	5,400	5,400	41.0	No	**12.04**	108.0	3.01	85.65	8.50	4.80	0.00	0.00	98.95
T302	5,308	5,308	40.1	No	**12.30**	108.0	3.01	85.50	8.39	4.80	0.00	0.00	98.69
T303	4,818	4,819	45.1	No	**13.73**	108.0	3.01	84.66	7.80	4.80	0.00	0.00	97.25
T304	4,797	4,797	45.8	No	**13.80**	108.0	3.01	84.62	7.77	4.80	0.00	0.00	97.19
T305	3,962	3,962	45.2	No	**16.54**	108.0	3.01	82.96	6.69	4.80	0.00	0.00	94.45
T306	4,163	4,164	50.4	No	**15.84**	108.0	3.01	83.39	6.96	4.80	0.00	0.00	95.15
T307	4,026	4,027	45.7	No	**16.31**	108.0	3.01	83.10	6.78	4.80	0.00	0.00	94.67
T308	17,539	17,539	38.5	No	**-7.80**	108.0	3.01	95.88	18.11	4.80	0.00	0.00	118.79
T309	17,008	17,009	41.5	No	**-7.24**	108.0	3.01	95.61	17.82	4.80	0.00	0.00	118.23
T310	16,511	16,511	42.0	No	**-6.71**	108.0	3.01	95.36	17.54	4.80	0.00	0.00	117.70
T311	16,026	16,027	45.0	No	**-6.18**	108.0	3.01	95.10	17.27	4.80	0.00	0.00	117.16
T312	15,627	15,627	45.6	No	**-5.72**	108.0	3.01	94.88	17.04	4.80	0.00	0.00	116.71
T313	15,153	15,154	57.7	No	**-5.18**	108.0	3.01	94.61	16.75	4.80	0.00	0.00	116.16
T314	14,018	14,018	48.8	No	**-3.79**	108.0	3.01	93.93	16.04	4.80	0.00	0.00	114.78
T315	14,747	14,748	46.5	No	**-4.69**	108.0	3.01	94.37	16.50	4.80	0.00	0.00	115.68
T316	15,393	15,393	47.6	No	**-5.46**	108.0	3.01	94.75	16.90	4.80	0.00	0.00	116.44
T317	15,713	15,714	53.8	No	**-5.82**	108.0	3.01	94.93	17.09	4.80	0.00	0.00	116.81
T318	16,530	16,530	38.3	No	**-6.73**	108.0	3.01	95.37	17.55	4.80	0.00	0.00	117.72
T319	17,503	17,503	46.0	No	**-7.76**	108.0	3.01	95.86	18.09	4.80	0.00	0.00	118.75
T320	17,954	17,955	51.9	No	**-8.22**	108.0	3.01	96.08	18.32	4.80	0.00	0.00	119.21
T321	18,425	18,426	45.5	No	**-8.69**	108.0	3.01	96.31	18.57	4.80	0.00	0.00	119.68
T322	18,490	18,490	40.6	No	**-8.75**	108.0	3.01	96.34	18.60	4.80	0.00	0.00	119.74
T323	18,312	18,313	40.0	No	**-8.58**	108.0	3.01	96.25	18.51	4.80	0.00	0.00	119.56
T324	17,499	17,499	40.6	No	**-7.76**	108.0	3.01	95.86	18.08	4.80	0.00	0.00	118.74
T325	18,414	18,414	38.5	No	**-8.68**	108.0	3.01	96.30	18.56	4.80	0.00	0.00	119.66
T326	17,740	17,740	43.9	No	**-8.00**	108.0	3.01	95.98	18.21	4.80	0.00	0.00	118.99
T327	17,387	17,387	38.4	No	**-7.64**	108.0	3.01	95.80	18.02	4.80	0.00	0.00	118.63
T328	16,405	16,405	39.5	No	**-6.60**	108.0	3.01	95.30	17.48	4.80	0.00	0.00	117.58
T329	16,551	16,552	39.8	No	**-6.76**	108.0	3.01	95.38	17.57	4.80	0.00	0.00	117.74
T330	15,813	15,813	37.3	No	**-5.94**	108.0	3.01	94.98	17.14	4.80	0.00	0.00	116.92
T331	15,552	15,552	42.8	No	**-5.64**	108.0	3.01	94.84	16.99	4.80	0.00	0.00	116.63
T332	15,087	15,087	41.0	No	**-5.10**	108.0	3.01	94.57	16.71	4.80	0.00	0.00	116.08
T333	15,383	15,384	45.8	No	**-5.44**	108.0	3.01	94.74	16.89	4.80	0.00	0.00	116.43
T334	15,891	15,891	39.4	No	**-6.03**	108.0	3.01	95.02	17.19	4.80	0.00	0.00	117.01
T335	16,037	16,037	37.8	No	**-6.19**	108.0	3.01	95.10	17.27	4.80	0.00	0.00	117.18
Sum	44.76												

Noise sensitive area: SSA002 SSA002

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	1,539	1,543	52.5	Yes	**27.86**	107.5	3.01	74.77	4.27	3.63	0.00	0.00	82.67
402	1,541	1,546	59.3	Yes	**27.99**	107.5	3.01	74.78	4.27	3.48	0.00	0.00	82.53
403	1,572	1,577	51.4	Yes	**27.57**	107.5	3.01	74.95	4.32	3.68	0.00	0.00	82.95
404	1,910	1,914	53.0	Yes	**25.20**	107.5	3.01	76.64	4.84	3.85	0.00	0.00	85.33
405	2,318	2,320	39.8	Yes	**22.61**	107.5	3.01	78.31	5.39	4.21	0.00	0.00	87.91
406	2,792	2,793	40.4	Yes	**20.33**	107.5	3.01	79.92	5.97	4.31	0.00	0.00	90.20
407	2,306	2,308	47.5	Yes	**22.79**	107.5	3.01	78.26	5.38	4.09	0.00	0.00	87.74
408	7,360	7,361	61.0	Yes	**8.13**	107.5	3.01	88.34	9.53	4.52	0.00	0.00	102.39
409	7,031	7,032	55.8	No	**8.43**	107.5	3.01	87.94	9.35	4.80	0.00	0.00	102.09
410	7,429	7,430	58.4	Yes	**8.00**	107.5	3.01	88.42	9.57	4.53	0.00	0.00	102.52
411	7,636	7,637	57.6	Yes	**7.64**	107.5	3.01	88.66	9.68	4.54	0.00	0.00	102.88

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
412	8,180	8,181	55.5	Yes	**6.74**	107.5	3.01	89.26	9.96	4.57	0.00	0.00	103.79
413	8,399	8,400	55.5	No	**6.17**	107.5	3.01	89.49	10.07	4.80	0.00	0.00	104.36
414	8,449	8,450	58.0	No	**6.09**	107.5	3.01	89.54	10.09	4.80	0.00	0.00	104.43
415	8,916	8,917	62.8	Yes	**5.65**	107.5	3.01	90.00	10.31	4.56	0.00	0.00	104.88
416	8,624	8,625	66.9	Yes	**6.10**	107.5	3.01	89.72	10.18	4.54	0.00	0.00	104.43
417	8,602	8,603	62.4	Yes	**6.11**	107.5	3.01	89.69	10.17	4.55	0.00	0.00	104.41
418	8,434	8,435	55.8	Yes	**6.34**	107.5	3.01	89.52	10.09	4.57	0.00	0.00	104.18
419	8,863	8,864	54.9	Yes	**5.69**	107.5	3.01	89.95	10.29	4.59	0.00	0.00	104.83
420	8,461	8,461	55.1	Yes	**6.30**	107.5	3.01	89.55	10.10	4.58	0.00	0.00	104.23
421	7,209	7,211	75.9	Yes	**8.47**	107.5	3.01	88.16	9.45	4.44	0.00	0.00	102.05
422	7,108	7,109	62.2	Yes	**8.59**	107.5	3.01	88.04	9.39	4.50	0.00	0.00	101.93
423	7,093	7,094	62.8	Yes	**8.62**	107.5	3.01	88.02	9.39	4.50	0.00	0.00	101.90
424	7,061	7,062	58.0	Yes	**8.66**	107.5	3.01	87.98	9.37	4.52	0.00	0.00	101.87
425	6,824	6,825	55.5	Yes	**9.09**	107.5	3.01	87.68	9.23	4.52	0.00	0.00	101.44
426	11,144	11,144	65.1	Yes	**2.75**	107.5	3.01	91.94	11.24	4.60	0.00	0.00	107.78
427	10,965	10,966	67.0	Yes	**2.96**	107.5	3.01	91.80	11.17	4.59	0.00	0.00	107.56
428	10,844	10,844	65.4	Yes	**3.10**	107.5	3.01	91.70	11.12	4.59	0.00	0.00	107.42
429	10,371	10,372	59.4	Yes	**3.66**	107.5	3.01	91.32	10.94	4.61	0.00	0.00	106.86
430	10,335	10,335	60.2	Yes	**3.71**	107.5	3.01	91.29	10.92	4.60	0.00	0.00	106.81
431	9,895	9,896	60.6	Yes	**4.28**	107.5	3.01	90.91	10.74	4.59	0.00	0.00	106.24
432	9,940	9,940	56.1	Yes	**4.21**	107.5	3.01	90.95	10.76	4.61	0.00	0.00	106.32
433	22,113	22,113	53.7	No	**-6.31**	107.5	3.01	97.89	14.14	4.80	0.00	0.00	116.83
434	20,755	20,756	59.6	No	**-5.48**	107.5	3.01	97.34	13.86	4.80	0.00	0.00	116.01
435	19,873	19,874	58.6	No	**-4.92**	107.5	3.01	96.97	13.68	4.80	0.00	0.00	115.44
436	19,293	19,294	60.7	No	**-4.53**	107.5	3.01	96.71	13.55	4.80	0.00	0.00	115.06
437	19,112	19,112	54.2	No	**-4.41**	107.5	3.01	96.63	13.51	4.80	0.00	0.00	114.93
438	19,710	19,711	49.0	No	**-4.81**	107.5	3.01	96.89	13.64	4.80	0.00	0.00	115.33
439	17,780	17,781	58.8	No	**-3.48**	107.5	3.01	96.00	13.20	4.80	0.00	0.00	114.00
440	17,435	17,435	55.9	No	**-3.22**	107.5	3.01	95.83	13.12	4.80	0.00	0.00	113.75
441	17,358	17,359	54.9	Yes	**-3.06**	107.5	3.01	95.79	13.10	4.69	0.00	0.00	113.58
442	16,988	16,988	59.8	Yes	**-2.77**	107.5	3.01	95.60	13.01	4.68	0.00	0.00	113.29
443	16,795	16,795	55.9	Yes	**-2.62**	107.5	3.01	95.50	12.96	4.69	0.00	0.00	113.15
444	16,782	16,782	56.4	Yes	**-2.61**	107.5	3.01	95.50	12.96	4.69	0.00	0.00	113.14
445	20,713	20,713	55.8	No	**-5.45**	107.5	3.01	97.33	13.85	4.80	0.00	0.00	115.98
446	20,312	20,313	52.1	No	**-5.20**	107.5	3.01	97.16	13.77	4.80	0.00	0.00	115.73
447	19,741	19,741	48.4	Yes	**-4.75**	107.5	3.01	96.91	13.65	4.72	0.00	0.00	115.27
448	19,440	19,441	50.0	Yes	**-4.54**	107.5	3.01	96.77	13.58	4.71	0.00	0.00	115.07
449	18,880	18,880	55.5	Yes	**-4.15**	107.5	3.01	96.52	13.46	4.70	0.00	0.00	114.68
450	18,844	18,845	56.5	Yes	**-4.13**	107.5	3.01	96.50	13.45	4.70	0.00	0.00	114.65
451	18,256	18,257	62.4	Yes	**-3.70**	107.5	3.01	96.23	13.31	4.68	0.00	0.00	114.23
452	21,183	21,184	53.4	No	**-5.75**	107.5	3.01	97.52	13.95	4.80	0.00	0.00	116.27
453	21,455	21,456	40.3	Yes	**-5.85**	107.5	3.01	97.63	14.01	4.74	0.00	0.00	116.37
454	20,940	20,940	44.9	Yes	**-5.52**	107.5	3.01	97.42	13.90	4.73	0.00	0.00	116.05
455	19,910	19,910	49.8	Yes	**-4.86**	107.5	3.01	96.98	13.68	4.71	0.00	0.00	115.38
456	20,000	20,000	51.0	Yes	**-4.91**	107.5	3.01	97.02	13.70	4.71	0.00	0.00	115.44
457	19,895	19,895	47.9	Yes	**-4.85**	107.5	3.01	96.98	13.68	4.72	0.00	0.00	115.37
458	21,996	21,996	49.9	No	**-6.24**	107.5	3.01	97.85	14.11	4.80	0.00	0.00	116.76
459	21,629	21,629	51.7	No	**-6.02**	107.5	3.01	97.70	14.04	4.80	0.00	0.00	116.54
460	22,430	22,431	47.8	No	**-6.49**	107.5	3.01	98.02	14.20	4.80	0.00	0.00	117.02
461	22,021	22,021	50.8	No	**-6.25**	107.5	3.01	97.86	14.12	4.80	0.00	0.00	116.78
462	21,843	21,844	58.3	Yes	**-6.05**	107.5	3.01	97.79	14.08	4.71	0.00	0.00	116.58
463	21,413	21,414	50.5	Yes	**-5.81**	107.5	3.01	97.61	14.00	4.72	0.00	0.00	116.33
464	21,563	21,564	45.6	Yes	**-5.91**	107.5	3.01	97.67	14.03	4.73	0.00	0.00	116.43
T001	4,417	4,419	68.1	Yes	**15.52**	108.0	3.01	83.91	7.29	4.27	0.00	0.00	95.47
T002	3,995	3,997	67.4	Yes	**16.99**	108.0	3.01	83.03	6.74	4.22	0.00	0.00	93.99
T003	7,219	7,220	67.0	Yes	**5.86**	107.0	3.01	88.17	11.54	4.48	0.00	0.00	104.19
T004	6,575	6,576	65.0	Yes	**7.30**	107.0	3.01	87.36	10.93	4.46	0.00	0.00	102.75
T005	6,432	6,432	56.8	Yes	**7.60**	107.0	3.01	87.17	10.79	4.50	0.00	0.00	102.45
T006	4,749	4,750	59.6	Yes	**14.37**	108.0	3.01	84.53	7.71	4.37	0.00	0.00	96.61
T007	5,635	5,636	52.2	Yes	**11.71**	108.0	3.01	86.02	8.78	4.48	0.00	0.00	99.28
T008	7,566	7,567	67.8	Yes	**5.13**	107.0	3.01	88.58	11.85	4.49	0.00	0.00	104.92
T009	3,726	3,727	63.3	Yes	**17.97**	108.0	3.01	82.43	6.37	4.22	0.00	0.00	93.02
T010	4,047	4,049	65.5	Yes	**16.79**	108.0	3.01	83.15	6.80	4.25	0.00	0.00	94.20

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T011	2,597	2,598	52.9	Yes	**22.85**	108.0	3.01	79.29	4.74	4.10	0.00	0.00	88.13
T012	4,999	4,999	56.3	Yes	**11.42**	107.0	3.01	84.98	9.24	4.42	0.00	0.00	98.64
T013	6,211	6,211	63.2	Yes	**8.17**	107.0	3.01	86.86	10.56	4.45	0.00	0.00	101.88
T014	5,896	5,896	55.4	Yes	**8.93**	107.0	3.01	86.41	10.24	4.48	0.00	0.00	101.13
T015	5,132	5,133	53.6	Yes	**13.15**	108.0	3.01	85.21	8.18	4.44	0.00	0.00	97.83
T016	6,869	6,869	63.7	Yes	**6.62**	107.0	3.01	87.74	11.21	4.48	0.00	0.00	103.43
T017	5,108	5,108	55.0	Yes	**13.24**	108.0	3.01	85.17	8.15	4.43	0.00	0.00	97.75
T018	5,551	5,551	43.8	Yes	**9.77**	107.0	3.01	85.89	9.87	4.53	0.00	0.00	100.29
T019	5,390	5,391	54.5	Yes	**10.28**	107.0	3.01	85.63	9.69	4.46	0.00	0.00	99.78
T020	5,426	5,427	56.7	Yes	**12.32**	108.0	3.01	85.69	8.53	4.44	0.00	0.00	98.67
T022	6,868	6,868	57.6	Yes	**6.59**	107.0	3.01	87.74	11.21	4.51	0.00	0.00	103.46
T023	8,280	8,281	71.8	Yes	**3.73**	107.0	3.01	89.36	12.46	4.50	0.00	0.00	106.32
T025	4,665	4,665	48.6	Yes	**14.56**	108.0	3.01	84.38	7.60	4.44	0.00	0.00	96.43
T026	5,887	5,887	51.6	Yes	**11.02**	108.0	3.01	86.40	9.07	4.50	0.00	0.00	99.97
T027	4,823	4,823	54.9	Yes	**14.11**	108.0	3.01	84.67	7.80	4.41	0.00	0.00	96.88
T028	4,994	4,995	58.0	Yes	**13.60**	108.0	3.01	84.97	8.01	4.40	0.00	0.00	97.39
T029	4,956	4,957	54.6	Yes	**11.54**	107.0	3.01	84.90	9.19	4.42	0.00	0.00	98.52
T030	3,542	3,543	55.9	Yes	**18.62**	108.0	3.01	81.99	6.12	4.26	0.00	0.00	92.37
T031	5,540	5,541	55.6	Yes	**9.87**	107.0	3.01	85.87	9.86	4.46	0.00	0.00	100.18
T032	6,915	6,916	56.1	Yes	**6.48**	107.0	3.01	87.80	11.25	4.52	0.00	0.00	103.58
T033	6,262	6,262	60.6	Yes	**8.03**	107.0	3.01	86.93	10.62	4.47	0.00	0.00	102.02
T201	3,275	3,276	47.5	Yes	**19.64**	108.0	3.01	81.31	5.74	4.30	0.00	0.00	91.35
T202	3,181	3,182	43.4	Yes	**19.99**	108.0	3.01	81.05	5.61	4.33	0.00	0.00	90.99
T203	1,640	1,641	42.5	Yes	**28.57**	108.0	3.01	75.30	3.20	3.91	0.00	0.00	82.41
T204	1,873	1,875	44.5	Yes	**26.95**	108.0	3.01	76.46	3.59	3.99	0.00	0.00	84.04
T205	1,628	1,631	44.0	Yes	**28.68**	108.0	3.01	75.25	3.18	3.87	0.00	0.00	82.30
T206	945	948	47.8	Yes	**35.43**	108.0	3.01	70.53	1.97	3.05	0.00	0.00	75.55
T207	559	565	45.1	Yes	**41.71**	108.0	3.01	66.04	1.23	2.00	0.00	0.00	69.28
T208	7,009	7,009	56.4	Yes	**8.26**	108.0	3.01	87.91	10.29	4.53	0.00	0.00	102.73
T209	7,408	7,408	61.9	Yes	**7.37**	108.0	3.01	88.39	10.70	4.52	0.00	0.00	103.61
T210	7,949	7,949	60.9	Yes	**6.20**	108.0	3.01	89.01	11.24	4.54	0.00	0.00	104.79
T211	8,242	8,243	67.5	Yes	**5.62**	108.0	3.01	89.32	11.52	4.52	0.00	0.00	105.36
T212	8,550	8,550	66.0	Yes	**5.00**	108.0	3.01	89.64	11.81	4.54	0.00	0.00	105.99
T213	8,932	8,932	63.2	Yes	**4.25**	108.0	3.01	90.02	12.16	4.56	0.00	0.00	106.74
T214	9,293	9,294	61.3	Yes	**3.56**	108.0	3.01	90.36	12.48	4.58	0.00	0.00	107.42
T215	8,367	8,368	66.7	Yes	**5.37**	108.0	3.01	89.45	11.64	4.53	0.00	0.00	105.62
T216	9,611	9,612	54.0	Yes	**2.96**	108.0	3.01	90.66	12.76	4.61	0.00	0.00	108.03
T217	10,260	10,261	51.0	Yes	**1.83**	108.0	3.01	91.22	13.31	4.63	0.00	0.00	109.16
T218	11,020	11,020	57.3	Yes	**0.61**	108.0	3.01	91.84	13.92	4.62	0.00	0.00	110.38
T219	11,749	11,749	54.7	Yes	**-0.53**	108.0	3.01	92.40	14.47	4.64	0.00	0.00	111.51
T220	12,126	12,126	50.0	Yes	**-1.10**	108.0	3.01	92.67	14.75	4.66	0.00	0.00	112.08
T221	12,779	12,779	45.0	Yes	**-2.04**	108.0	3.01	93.13	15.21	4.68	0.00	0.00	113.02
T222	14,704	14,704	44.0	Yes	**-4.54**	108.0	3.01	94.35	16.48	4.70	0.00	0.00	115.52
T223	14,206	14,206	45.5	Yes	**-3.92**	108.0	3.01	94.05	16.16	4.69	0.00	0.00	114.90
T224	13,254	13,254	55.8	Yes	**-2.65**	108.0	3.01	93.45	15.54	4.66	0.00	0.00	113.64
T225	13,004	13,004	55.2	Yes	**-2.32**	108.0	3.01	93.28	15.37	4.66	0.00	0.00	113.31
T226	13,163	13,164	55.2	Yes	**-2.53**	108.0	3.01	93.39	15.48	4.66	0.00	0.00	113.52
T227	12,513	12,513	52.6	Yes	**-1.64**	108.0	3.01	92.95	15.03	4.66	0.00	0.00	112.63
T228	14,144	14,144	41.2	Yes	**-3.85**	108.0	3.01	94.01	16.12	4.70	0.00	0.00	114.84
T229	11,819	11,819	58.0	Yes	**-0.62**	108.0	3.01	92.45	14.52	4.63	0.00	0.00	111.61
T230	11,478	11,478	61.7	Yes	**-0.10**	108.0	3.01	92.20	14.27	4.62	0.00	0.00	111.08
T231	11,067	11,068	55.8	Yes	**0.53**	108.0	3.01	91.88	13.95	4.63	0.00	0.00	110.46
T232	11,357	11,357	56.8	Yes	**0.08**	108.0	3.01	92.11	14.18	4.63	0.00	0.00	110.91
T233	11,000	11,001	59.9	Yes	**0.64**	108.0	3.01	91.83	13.90	4.61	0.00	0.00	110.34
T234	10,820	10,821	61.6	Yes	**0.94**	108.0	3.01	91.69	13.76	4.61	0.00	0.00	110.05
T235	10,084	10,085	53.4	Yes	**2.13**	108.0	3.01	91.07	13.16	4.62	0.00	0.00	108.85
T301	3,292	3,292	49.2	Yes	**19.59**	108.0	3.01	81.35	5.76	4.29	0.00	0.00	91.40
T302	3,402	3,402	47.5	Yes	**19.11**	108.0	3.01	81.64	5.92	4.32	0.00	0.00	91.88
T303	3,328	3,329	47.5	Yes	**19.41**	108.0	3.01	81.45	5.81	4.31	0.00	0.00	91.57
T304	3,634	3,635	46.4	Yes	**18.17**	108.0	3.01	82.21	6.24	4.36	0.00	0.00	92.82
T305	3,058	3,059	52.0	Yes	**20.63**	108.0	3.01	80.71	5.43	4.22	0.00	0.00	90.36
T306	3,009	3,010	53.9	Yes	**20.87**	108.0	3.01	80.57	5.35	4.19	0.00	0.00	90.11
T307	2,396	2,397	47.6	Yes	**23.84**	108.0	3.01	78.59	4.43	4.12	0.00	0.00	87.14

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

...continued from previous page

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T308	15,130	15,130	43.6	Yes	**-5.05**	108.0	3.01	94.60	16.74	4.70	0.00	0.00	116.04
T309	14,598	14,598	46.7	Yes	**-4.40**	108.0	3.01	94.29	16.41	4.69	0.00	0.00	115.39
T310	14,067	14,067	46.3	Yes	**-3.74**	108.0	3.01	93.96	16.08	4.69	0.00	0.00	114.73
T311	13,586	13,586	49.2	Yes	**-3.11**	108.0	3.01	93.66	15.76	4.68	0.00	0.00	114.10
T312	13,194	13,194	49.9	Yes	**-2.59**	108.0	3.01	93.41	15.50	4.67	0.00	0.00	113.58
T313	12,730	12,730	62.5	Yes	**-1.92**	108.0	3.01	93.10	15.18	4.63	0.00	0.00	112.91
T314	11,605	11,605	54.7	Yes	**-0.31**	108.0	3.01	92.29	14.36	4.64	0.00	0.00	111.30
T315	12,388	12,389	54.6	Yes	**-1.46**	108.0	3.01	92.86	14.94	4.65	0.00	0.00	112.45
T316	13,068	13,069	55.7	Yes	**-2.40**	108.0	3.01	93.32	15.41	4.65	0.00	0.00	113.39
T317	13,367	13,368	62.1	Yes	**-2.79**	108.0	3.01	93.52	15.62	4.64	0.00	0.00	113.78
T318	14,189	14,189	46.2	Yes	**-3.89**	108.0	3.01	94.04	16.15	4.69	0.00	0.00	114.88
T319	15,277	15,277	50.9	Yes	**-5.21**	108.0	3.01	94.68	16.83	4.69	0.00	0.00	116.19
T320	15,745	15,745	57.1	Yes	**-5.74**	108.0	3.01	94.94	17.10	4.68	0.00	0.00	116.72
T321	16,215	16,215	50.5	Yes	**-6.28**	108.0	3.01	95.20	17.38	4.69	0.00	0.00	117.27
T322	16,378	16,378	46.9	Yes	**-6.47**	108.0	3.01	95.29	17.47	4.70	0.00	0.00	117.46
T323	16,230	16,230	46.4	Yes	**-6.31**	108.0	3.01	95.21	17.38	4.70	0.00	0.00	117.29
T324	15,417	15,418	47.2	Yes	**-5.38**	108.0	3.01	94.76	16.91	4.70	0.00	0.00	116.37
T325	16,447	16,447	44.1	No	**-6.64**	108.0	3.01	95.32	17.51	4.80	0.00	0.00	117.63
T326	15,751	15,751	49.7	No	**-5.87**	108.0	3.01	94.95	17.11	4.80	0.00	0.00	116.85
T327	15,415	15,416	44.3	No	**-5.48**	108.0	3.01	94.76	16.91	4.80	0.00	0.00	116.47
T328	14,472	14,472	45.5	No	**-4.36**	108.0	3.01	94.21	16.33	4.80	0.00	0.00	115.34
T329	14,757	14,757	44.4	No	**-4.70**	108.0	3.01	94.38	16.51	4.80	0.00	0.00	115.69
T330	13,995	13,995	42.8	No	**-3.76**	108.0	3.01	93.92	16.03	4.80	0.00	0.00	114.75
T331	13,623	13,624	49.1	No	**-3.28**	108.0	3.01	93.69	15.79	4.80	0.00	0.00	114.27
T332	13,131	13,131	47.1	No	**-2.63**	108.0	3.01	93.37	15.46	4.80	0.00	0.00	113.62
T333	13,332	13,333	53.0	Yes	**-2.77**	108.0	3.01	93.50	15.59	4.66	0.00	0.00	113.76
T334	13,835	13,835	46.4	No	**-3.56**	108.0	3.01	93.82	15.92	4.80	0.00	0.00	114.54
T335	13,924	13,924	44.7	Yes	**-3.56**	108.0	3.01	93.88	15.98	4.69	0.00	0.00	114.55
Sum	43.95												

Noise sensitive area: SSA003 SSA003

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	1,737	1,741	46.5	Yes	**26.24**	107.5	3.01	75.82	4.58	3.88	0.00	0.00	84.28
402	1,556	1,561	52.4	Yes	**27.71**	107.5	3.01	74.87	4.30	3.64	0.00	0.00	82.81
403	1,651	1,655	53.3	Yes	**27.01**	107.5	3.01	75.38	4.45	3.69	0.00	0.00	83.52
404	1,638	1,643	60.6	Yes	**27.25**	107.5	3.01	75.32	4.43	3.53	0.00	0.00	83.28
405	1,508	1,511	52.4	Yes	**28.11**	107.5	3.01	74.59	4.22	3.61	0.00	0.00	82.41
406	1,216	1,221	56.7	Yes	**30.89**	107.5	3.01	72.73	3.71	3.20	0.00	0.00	79.64
407	2,417	2,420	48.5	Yes	**22.22**	107.5	3.01	78.68	5.52	4.11	0.00	0.00	88.31
408	4,842	4,844	60.4	No	**13.12**	107.5	3.01	84.70	7.90	4.80	0.00	0.00	97.40
409	4,342	4,343	55.4	Yes	**14.91**	107.5	3.01	83.76	7.49	4.36	0.00	0.00	95.62
410	4,666	4,668	56.5	Yes	**13.99**	107.5	3.01	84.38	7.76	4.39	0.00	0.00	96.53
411	4,797	4,798	57.5	Yes	**13.65**	107.5	3.01	84.62	7.86	4.39	0.00	0.00	96.88
412	5,318	5,320	54.8	Yes	**12.30**	107.5	3.01	85.52	8.26	4.45	0.00	0.00	98.22
413	5,474	5,476	56.5	Yes	**11.94**	107.5	3.01	85.77	8.37	4.45	0.00	0.00	98.58
414	5,473	5,475	56.5	Yes	**11.94**	107.5	3.01	85.77	8.37	4.45	0.00	0.00	98.58
415	9,595	9,596	47.6	No	**4.47**	107.5	3.01	90.64	10.62	4.80	0.00	0.00	106.06
416	9,223	9,224	52.3	No	**4.97**	107.5	3.01	90.30	10.45	4.80	0.00	0.00	105.55
417	9,005	9,006	50.6	No	**5.28**	107.5	3.01	90.09	10.36	4.80	0.00	0.00	105.25
418	8,694	8,695	45.7	No	**5.73**	107.5	3.01	89.79	10.21	4.80	0.00	0.00	104.80
419	8,761	8,761	43.7	No	**5.63**	107.5	3.01	89.85	10.24	4.80	0.00	0.00	104.89
420	8,288	8,289	45.4	No	**6.34**	107.5	3.01	89.37	10.02	4.80	0.00	0.00	104.19
421	7,104	7,106	65.3	Yes	**8.61**	107.5	3.01	88.03	9.39	4.49	0.00	0.00	101.91
422	6,825	6,826	51.2	No	**8.81**	107.5	3.01	87.68	9.23	4.80	0.00	0.00	101.71
423	6,650	6,651	53.2	No	**9.14**	107.5	3.01	87.46	9.13	4.80	0.00	0.00	101.39
424	6,254	6,255	51.1	No	**9.91**	107.5	3.01	86.92	8.89	4.80	0.00	0.00	100.61
425	5,878	5,879	52.7	No	**10.70**	107.5	3.01	86.39	8.64	4.80	0.00	0.00	99.83
426	10,395	10,396	61.8	No	**3.44**	107.5	3.01	91.34	10.95	4.80	0.00	0.00	107.09
427	10,058	10,059	65.7	No	**3.86**	107.5	3.01	91.05	10.81	4.80	0.00	0.00	106.66
428	9,810	9,811	67.0	No	**4.18**	107.5	3.01	90.83	10.71	4.80	0.00	0.00	106.34

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
429	9,287	9,288	61.6	No	**4.88**	107.5	3.01	90.36	10.48	4.80	0.00	0.00	105.64
430	9,113	9,114	63.4	No	**5.13**	107.5	3.01	90.19	10.40	4.80	0.00	0.00	105.40
431	8,568	8,569	65.8	No	**5.91**	107.5	3.01	89.66	10.15	4.80	0.00	0.00	104.61
432	8,497	8,498	61.8	No	**6.02**	107.5	3.01	89.59	10.12	4.80	0.00	0.00	104.50
433	22,338	22,338	41.0	No	**-6.44**	107.5	3.01	97.98	14.18	4.80	0.00	0.00	116.96
434	20,904	20,904	48.7	No	**-5.57**	107.5	3.01	97.40	13.89	4.80	0.00	0.00	116.10
435	20,024	20,025	47.3	No	**-5.02**	107.5	3.01	97.03	13.71	4.80	0.00	0.00	115.54
436	19,463	19,464	48.8	No	**-4.65**	107.5	3.01	96.78	13.59	4.80	0.00	0.00	115.17
437	19,230	19,230	44.8	No	**-4.49**	107.5	3.01	96.68	13.53	4.80	0.00	0.00	115.01
438	19,629	19,629	43.6	No	**-4.76**	107.5	3.01	96.86	13.62	4.80	0.00	0.00	115.28
439	17,286	17,287	56.4	No	**-3.11**	107.5	3.01	95.75	13.08	4.80	0.00	0.00	113.64
440	16,883	16,884	53.0	No	**-2.81**	107.5	3.01	95.55	12.98	4.80	0.00	0.00	113.33
441	16,716	16,717	51.8	No	**-2.68**	107.5	3.01	95.46	12.94	4.80	0.00	0.00	113.20
442	16,304	16,304	57.2	No	**-2.35**	107.5	3.01	95.25	12.83	4.80	0.00	0.00	112.88
443	16,029	16,029	54.8	No	**-2.14**	107.5	3.01	95.10	12.76	4.80	0.00	0.00	112.66
444	15,938	15,938	57.2	No	**-2.06**	107.5	3.01	95.05	12.74	4.80	0.00	0.00	112.59
445	20,671	20,671	49.7	No	**-5.43**	107.5	3.01	97.31	13.85	4.80	0.00	0.00	115.95
446	20,217	20,218	46.9	No	**-5.14**	107.5	3.01	97.11	13.75	4.80	0.00	0.00	115.66
447	19,481	19,482	45.4	No	**-4.66**	107.5	3.01	96.79	13.59	4.80	0.00	0.00	115.18
448	19,131	19,132	47.3	No	**-4.42**	107.5	3.01	96.64	13.51	4.80	0.00	0.00	114.95
449	18,528	18,529	52.6	No	**-4.01**	107.5	3.01	96.36	13.38	4.80	0.00	0.00	114.53
450	18,431	18,431	53.9	No	**-3.94**	107.5	3.01	96.31	13.35	4.80	0.00	0.00	114.47
451	17,793	17,793	59.4	No	**-3.48**	107.5	3.01	96.01	13.20	4.80	0.00	0.00	114.01
452	21,165	21,165	47.3	No	**-5.73**	107.5	3.01	97.51	13.95	4.80	0.00	0.00	116.26
453	20,709	20,709	40.4	No	**-5.45**	107.5	3.01	97.32	13.85	4.80	0.00	0.00	115.98
454	20,165	20,165	46.1	No	**-5.11**	107.5	3.01	97.09	13.74	4.80	0.00	0.00	115.63
455	19,094	19,095	50.7	No	**-4.40**	107.5	3.01	96.62	13.50	4.80	0.00	0.00	114.92
456	19,109	19,109	54.6	No	**-4.41**	107.5	3.01	96.62	13.51	4.80	0.00	0.00	114.93
457	18,944	18,945	50.3	No	**-4.30**	107.5	3.01	96.55	13.47	4.80	0.00	0.00	114.82
458	22,039	22,039	43.0	No	**-6.26**	107.5	3.01	97.86	14.12	4.80	0.00	0.00	116.79
459	21,652	21,653	44.8	No	**-6.03**	107.5	3.01	97.71	14.05	4.80	0.00	0.00	116.56
460	22,291	22,292	43.9	No	**-6.41**	107.5	3.01	97.96	14.17	4.80	0.00	0.00	116.93
461	21,851	21,851	46.8	No	**-6.15**	107.5	3.01	97.79	14.09	4.80	0.00	0.00	116.67
462	21,620	21,620	54.5	No	**-6.01**	107.5	3.01	97.70	14.04	4.80	0.00	0.00	116.54
463	21,168	21,169	47.1	No	**-5.74**	107.5	3.01	97.51	13.95	4.80	0.00	0.00	116.26
464	21,213	21,214	43.0	No	**-5.76**	107.5	3.01	97.53	13.96	4.80	0.00	0.00	116.29
T001	5,793	5,794	50.9	No	**10.97**	108.0	3.01	86.26	8.96	4.80	0.00	0.00	100.02
T002	4,849	4,851	54.0	No	**13.64**	108.0	3.01	84.72	7.84	4.80	0.00	0.00	97.35
T003	8,817	8,818	47.0	No	**2.46**	107.0	3.01	89.91	12.89	4.80	0.00	0.00	107.60
T004	8,536	8,537	49.2	No	**2.96**	107.0	3.01	89.63	12.66	4.80	0.00	0.00	107.09
T005	7,727	7,728	41.5	No	**4.50**	107.0	3.01	88.76	11.99	4.80	0.00	0.00	105.55
T006	4,861	4,862	43.2	No	**13.60**	108.0	3.01	84.74	7.85	4.80	0.00	0.00	97.38
T007	6,050	6,051	40.7	No	**10.30**	108.0	3.01	86.64	9.25	4.80	0.00	0.00	100.69
T008	9,385	9,385	51.2	No	**1.49**	107.0	3.01	90.45	13.32	4.80	0.00	0.00	108.57
T009	5,469	5,470	48.0	No	**11.84**	108.0	3.01	85.76	8.58	4.80	0.00	0.00	99.14
T010	5,265	5,266	49.1	No	**12.42**	108.0	3.01	85.43	8.34	4.80	0.00	0.00	98.57
T011	4,496	4,497	35.1	No	**14.74**	108.0	3.01	84.06	7.39	4.80	0.00	0.00	96.25
T012	7,286	7,286	39.9	No	**5.41**	107.0	3.01	88.25	11.60	4.80	0.00	0.00	104.65
T013	8,172	8,172	46.8	No	**3.64**	107.0	3.01	89.25	12.37	4.80	0.00	0.00	106.41
T014	7,458	7,458	35.5	No	**5.05**	107.0	3.01	88.45	11.75	4.80	0.00	0.00	105.00
T015	5,829	5,830	43.6	No	**10.87**	108.0	3.01	86.31	9.00	4.80	0.00	0.00	100.12
T016	8,640	8,641	45.6	No	**2.78**	107.0	3.01	89.73	12.75	4.80	0.00	0.00	107.28
T017	4,887	4,888	40.5	No	**13.52**	108.0	3.01	84.78	7.88	4.80	0.00	0.00	97.46
T018	6,823	6,824	28.2	No	**6.41**	107.0	3.01	87.68	11.17	4.80	0.00	0.00	103.65
T019	7,122	7,122	37.0	No	**5.76**	107.0	3.01	88.05	11.45	4.80	0.00	0.00	104.30
T020	5,531	5,532	41.6	No	**11.67**	108.0	3.01	85.86	8.66	4.80	0.00	0.00	99.32
T022	9,075	9,075	43.4	No	**2.01**	107.0	3.01	90.16	13.09	4.80	0.00	0.00	108.04
T023	10,150	10,151	56.4	No	**0.25**	107.0	3.01	91.13	13.87	4.80	0.00	0.00	109.80
T025	4,381	4,382	34.5	No	**15.11**	108.0	3.01	83.83	7.24	4.80	0.00	0.00	95.88
T026	5,628	5,628	40.4	No	**11.41**	108.0	3.01	86.01	8.77	4.80	0.00	0.00	99.58
T027	6,190	6,190	37.0	No	**9.94**	108.0	3.01	86.83	9.41	4.80	0.00	0.00	101.04
T028	5,390	5,391	44.2	No	**12.06**	108.0	3.01	85.63	8.49	4.80	0.00	0.00	98.92
T029	7,421	7,422	40.6	No	**5.13**	107.0	3.01	88.41	11.72	4.80	0.00	0.00	104.93

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T030	4,510	4,511	40.0	No	**14.70**	108.0	3.01	84.08	7.41	4.80	0.00	0.00	96.29
T031	7,784	7,785	39.8	No	**4.39**	107.0	3.01	88.82	12.04	4.80	0.00	0.00	105.66
T032	8,326	8,326	37.6	No	**3.35**	107.0	3.01	89.41	12.49	4.80	0.00	0.00	106.70
T033	8,414	8,414	46.1	No	**3.19**	107.0	3.01	89.50	12.57	4.80	0.00	0.00	106.87
T201	3,283	3,284	34.0	No	**19.11**	108.0	3.01	81.33	5.75	4.80	0.00	0.00	91.88
T202	2,993	2,994	32.4	No	**20.33**	108.0	3.01	80.52	5.33	4.80	0.00	0.00	90.66
T203	2,813	2,814	25.9	No	**21.14**	108.0	3.01	79.99	5.06	4.80	0.00	0.00	89.85
T204	2,414	2,416	33.0	Yes	**23.54**	108.0	3.01	78.66	4.46	4.33	0.00	0.00	87.45
T205	2,013	2,015	36.9	Yes	**25.91**	108.0	3.01	77.09	3.82	4.17	0.00	0.00	85.08
T206	3,491	3,492	27.4	No	**18.28**	108.0	3.01	81.86	6.05	4.80	0.00	0.00	92.71
T207	3,624	3,625	38.3	Yes	**18.13**	108.0	3.01	82.19	6.23	4.44	0.00	0.00	92.86
T208	9,524	9,524	45.2	No	**2.93**	108.0	3.01	90.58	12.69	4.80	0.00	0.00	108.06
T209	9,938	9,939	51.1	No	**2.20**	108.0	3.01	90.95	13.04	4.80	0.00	0.00	108.79
T210	10,472	10,472	51.1	No	**1.31**	108.0	3.01	91.40	13.48	4.80	0.00	0.00	109.68
T211	10,502	10,503	54.4	No	**1.26**	108.0	3.01	91.43	13.50	4.80	0.00	0.00	109.73
T212	10,741	10,741	53.6	No	**0.87**	108.0	3.01	91.62	13.70	4.80	0.00	0.00	110.12
T213	11,059	11,060	49.7	No	**0.37**	108.0	3.01	91.87	13.95	4.80	0.00	0.00	110.62
T214	11,422	11,422	48.1	No	**-0.19**	108.0	3.01	92.16	14.23	4.80	0.00	0.00	111.18
T215	10,097	10,098	49.1	No	**1.93**	108.0	3.01	91.08	13.17	4.80	0.00	0.00	109.06
T216	11,466	11,467	39.0	No	**-0.26**	108.0	3.01	92.19	14.26	4.80	0.00	0.00	111.25
T217	12,167	12,167	36.8	No	**-1.29**	108.0	3.01	92.70	14.78	4.80	0.00	0.00	112.28
T218	13,310	13,310	48.1	No	**-2.87**	108.0	3.01	93.48	15.58	4.80	0.00	0.00	113.86
T219	13,963	13,963	44.6	No	**-3.72**	108.0	3.01	93.90	16.01	4.80	0.00	0.00	114.71
T220	14,382	14,383	41.0	No	**-4.25**	108.0	3.01	94.16	16.28	4.80	0.00	0.00	115.23
T221	15,028	15,028	36.1	No	**-5.03**	108.0	3.01	94.54	16.68	4.80	0.00	0.00	116.02
T222	16,439	16,439	30.8	No	**-6.63**	108.0	3.01	95.32	17.50	4.80	0.00	0.00	117.62
T223	15,874	15,874	33.2	No	**-6.01**	108.0	3.01	95.01	17.18	4.80	0.00	0.00	116.99
T224	15,211	15,212	41.4	No	**-5.24**	108.0	3.01	94.64	16.79	4.80	0.00	0.00	116.23
T225	14,927	14,927	40.9	No	**-4.91**	108.0	3.01	94.48	16.62	4.80	0.00	0.00	115.89
T226	14,922	14,922	41.3	No	**-4.90**	108.0	3.01	94.48	16.61	4.80	0.00	0.00	115.89
T227	14,179	14,179	39.6	No	**-3.99**	108.0	3.01	94.03	16.15	4.80	0.00	0.00	114.98
T228	15,947	15,947	27.4	No	**-6.09**	108.0	3.01	95.05	17.22	4.80	0.00	0.00	117.08
T229	13,501	13,502	44.2	No	**-3.13**	108.0	3.01	93.61	15.71	4.80	0.00	0.00	114.11
T230	13,173	13,174	47.3	No	**-2.69**	108.0	3.01	93.39	15.48	4.80	0.00	0.00	113.68
T231	12,709	12,709	41.7	No	**-2.06**	108.0	3.01	93.08	15.16	4.80	0.00	0.00	113.05
T232	12,715	12,716	41.2	No	**-2.07**	108.0	3.01	93.09	15.17	4.80	0.00	0.00	113.06
T233	12,325	12,325	44.1	No	**-1.52**	108.0	3.01	92.82	14.89	4.80	0.00	0.00	112.51
T234	12,082	12,083	46.5	No	**-1.17**	108.0	3.01	92.64	14.72	4.80	0.00	0.00	112.16
T235	11,407	11,407	37.2	No	**-0.17**	108.0	3.01	92.14	14.21	4.80	0.00	0.00	111.16
T301	6,363	6,364	32.5	No	**9.51**	108.0	3.01	87.07	9.60	4.80	0.00	0.00	101.48
T302	6,432	6,432	31.1	No	**9.34**	108.0	3.01	87.17	9.68	4.80	0.00	0.00	101.64
T303	6,193	6,194	36.0	No	**9.93**	108.0	3.01	86.84	9.41	4.80	0.00	0.00	101.05
T304	6,342	6,342	36.5	No	**9.56**	108.0	3.01	87.04	9.58	4.80	0.00	0.00	101.42
T305	5,581	5,581	37.4	No	**11.54**	108.0	3.01	85.93	8.72	4.80	0.00	0.00	99.45
T306	5,680	5,681	41.7	No	**11.27**	108.0	3.01	86.09	8.83	4.80	0.00	0.00	99.72
T307	5,284	5,285	35.3	No	**12.36**	108.0	3.01	85.46	8.36	4.80	0.00	0.00	98.62
T308	16,541	16,541	28.9	No	**-6.74**	108.0	3.01	95.37	17.56	4.80	0.00	0.00	117.73
T309	16,018	16,018	31.9	No	**-6.17**	108.0	3.01	95.09	17.26	4.80	0.00	0.00	117.16
T310	15,587	15,587	33.7	No	**-5.68**	108.0	3.01	94.86	17.01	4.80	0.00	0.00	116.67
T311	15,101	15,101	36.6	No	**-5.11**	108.0	3.01	94.58	16.72	4.80	0.00	0.00	116.10
T312	14,690	14,691	36.8	No	**-4.62**	108.0	3.01	94.34	16.47	4.80	0.00	0.00	115.61
T313	14,207	14,208	48.6	No	**-4.03**	108.0	3.01	94.05	16.17	4.80	0.00	0.00	115.02
T314	13,069	13,069	40.2	No	**-2.55**	108.0	3.01	93.32	15.41	4.80	0.00	0.00	113.54
T315	13,700	13,700	39.4	No	**-3.38**	108.0	3.01	93.73	15.84	4.80	0.00	0.00	114.37
T316	14,287	14,287	42.4	No	**-4.13**	108.0	3.01	94.10	16.22	4.80	0.00	0.00	115.11
T317	14,634	14,634	48.2	No	**-4.55**	108.0	3.01	94.31	16.43	4.80	0.00	0.00	115.54
T318	15,435	15,435	32.9	No	**-5.50**	108.0	3.01	94.77	16.92	4.80	0.00	0.00	116.49
T319	16,244	16,244	37.5	No	**-6.42**	108.0	3.01	95.21	17.39	4.80	0.00	0.00	117.41
T320	16,673	16,674	43.0	No	**-6.89**	108.0	3.01	95.44	17.63	4.80	0.00	0.00	117.87
T321	17,141	17,141	36.5	No	**-7.38**	108.0	3.01	95.68	17.89	4.80	0.00	0.00	118.37
T322	17,098	17,099	34.1	No	**-7.34**	108.0	3.01	95.66	17.87	4.80	0.00	0.00	118.33
T323	16,893	16,893	33.8	No	**-7.12**	108.0	3.01	95.55	17.76	4.80	0.00	0.00	118.11
T324	16,086	16,087	34.3	No	**-6.24**	108.0	3.01	95.13	17.30	4.80	0.00	0.00	117.23

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T325	16,889	16,889	32.8	No	**-7.12**	108.0	3.01	95.55	17.75	4.80	0.00	0.00	118.11
T326	16,240	16,241	37.8	No	**-6.42**	108.0	3.01	95.21	17.39	4.80	0.00	0.00	117.40
T327	15,875	15,876	32.5	No	**-6.01**	108.0	3.01	95.01	17.18	4.80	0.00	0.00	117.00
T328	14,870	14,871	34.5	No	**-4.84**	108.0	3.01	94.45	16.58	4.80	0.00	0.00	115.83
T329	14,911	14,911	33.5	No	**-4.89**	108.0	3.01	94.47	16.61	4.80	0.00	0.00	115.88
T330	14,195	14,196	31.2	No	**-4.01**	108.0	3.01	94.04	16.16	4.80	0.00	0.00	115.00
T331	14,023	14,023	37.8	No	**-3.80**	108.0	3.01	93.94	16.05	4.80	0.00	0.00	114.78
T332	13,585	13,586	35.6	No	**-3.23**	108.0	3.01	93.66	15.76	4.80	0.00	0.00	114.22
T333	13,962	13,963	39.9	No	**-3.72**	108.0	3.01	93.90	16.01	4.80	0.00	0.00	114.71
T334	14,469	14,470	33.5	No	**-4.35**	108.0	3.01	94.21	16.33	4.80	0.00	0.00	115.34
T335	14,669	14,669	31.2	No	**-4.60**	108.0	3.01	94.33	16.46	4.80	0.00	0.00	115.58
Sum	37.66												

Noise sensitive area: SSA004 SSA004

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	4,129	4,131	58.2	Yes	**15.57**	107.5	3.01	83.32	7.31	4.32	0.00	0.00	94.95
402	4,109	4,111	60.6	Yes	**15.65**	107.5	3.01	83.28	7.29	4.30	0.00	0.00	94.87
403	4,338	4,340	62.8	Yes	**14.98**	107.5	3.01	83.75	7.49	4.31	0.00	0.00	95.55
404	4,329	4,331	69.7	Yes	**15.06**	107.5	3.01	83.73	7.48	4.25	0.00	0.00	95.47
405	4,139	4,140	62.0	Yes	**15.57**	107.5	3.01	83.34	7.32	4.29	0.00	0.00	94.95
406	3,716	3,717	61.6	Yes	**16.95**	107.5	3.01	82.40	6.93	4.23	0.00	0.00	93.57
407	5,017	5,018	59.4	Yes	**13.08**	107.5	3.01	85.01	8.03	4.40	0.00	0.00	97.44
408	2,465	2,468	46.3	Yes	**21.94**	107.5	3.01	78.85	5.58	4.16	0.00	0.00	88.59
409	1,809	1,813	42.5	Yes	**25.67**	107.5	3.01	76.17	4.69	3.99	0.00	0.00	84.85
410	2,035	2,039	41.3	Yes	**24.21**	107.5	3.01	77.19	5.02	4.11	0.00	0.00	86.31
411	2,112	2,116	44.0	Yes	**23.80**	107.5	3.01	77.51	5.12	4.09	0.00	0.00	86.72
412	2,623	2,626	41.5	Yes	**21.11**	107.5	3.01	79.39	5.77	4.26	0.00	0.00	89.42
413	2,781	2,783	43.1	Yes	**20.40**	107.5	3.01	79.89	5.96	4.27	0.00	0.00	90.12
414	2,809	2,812	46.8	Yes	**20.32**	107.5	3.01	79.98	5.99	4.23	0.00	0.00	90.20
415	9,818	9,819	51.1	No	**4.17**	107.5	3.01	90.84	10.71	4.80	0.00	0.00	106.35
416	9,410	9,410	55.9	No	**4.72**	107.5	3.01	90.47	10.54	4.80	0.00	0.00	105.81
417	9,043	9,044	51.4	No	**5.23**	107.5	3.01	90.13	10.37	4.80	0.00	0.00	105.30
418	8,639	8,640	45.8	No	**5.81**	107.5	3.01	89.73	10.19	4.80	0.00	0.00	104.72
419	8,378	8,379	54.6	No	**6.20**	107.5	3.01	89.46	10.06	4.80	0.00	0.00	104.32
420	7,894	7,895	55.0	No	**6.96**	107.5	3.01	88.95	9.82	4.80	0.00	0.00	103.56
421	6,931	6,932	67.6	No	**8.61**	107.5	3.01	87.82	9.29	4.80	0.00	0.00	101.91
422	6,535	6,536	56.7	No	**9.36**	107.5	3.01	87.31	9.06	4.80	0.00	0.00	101.17
423	6,242	6,243	60.1	No	**9.94**	107.5	3.01	86.91	8.88	4.80	0.00	0.00	100.59
424	5,570	5,572	57.9	No	**11.37**	107.5	3.01	85.92	8.43	4.80	0.00	0.00	99.15
425	5,133	5,135	58.9	Yes	**12.78**	107.5	3.01	85.21	8.12	4.41	0.00	0.00	97.74
426	9,292	9,293	66.3	No	**4.88**	107.5	3.01	90.36	10.48	4.80	0.00	0.00	105.65
427	8,833	8,834	67.5	No	**5.53**	107.5	3.01	89.92	10.28	4.80	0.00	0.00	105.00
428	8,486	8,487	68.2	No	**6.04**	107.5	3.01	89.58	10.11	4.80	0.00	0.00	104.49
429	7,955	7,956	62.5	No	**6.86**	107.5	3.01	89.01	9.85	4.80	0.00	0.00	103.66
430	7,667	7,668	62.4	No	**7.33**	107.5	3.01	88.69	9.70	4.80	0.00	0.00	103.19
431	7,066	7,067	65.7	No	**8.37**	107.5	3.01	87.98	9.37	4.80	0.00	0.00	102.15
432	6,889	6,890	58.8	No	**8.69**	107.5	3.01	87.76	9.27	4.80	0.00	0.00	101.83
433	21,700	21,700	47.6	No	**-6.06**	107.5	3.01	97.73	14.06	4.80	0.00	0.00	116.58
434	20,224	20,225	55.0	No	**-5.14**	107.5	3.01	97.12	13.75	4.80	0.00	0.00	115.67
435	19,362	19,363	54.6	No	**-4.58**	107.5	3.01	96.74	13.56	4.80	0.00	0.00	115.10
436	18,829	18,829	57.2	No	**-4.22**	107.5	3.01	96.50	13.44	4.80	0.00	0.00	114.74
437	18,555	18,556	51.8	No	**-4.03**	107.5	3.01	96.37	13.38	4.80	0.00	0.00	114.55
438	18,775	18,776	46.4	No	**-4.18**	107.5	3.01	96.47	13.43	4.80	0.00	0.00	114.70
439	16,133	16,134	60.0	No	**-2.22**	107.5	3.01	95.15	12.79	4.80	0.00	0.00	112.74
440	15,691	15,692	57.6	No	**-1.86**	107.5	3.01	94.91	12.67	4.80	0.00	0.00	112.39
441	15,452	15,453	57.3	No	**-1.66**	107.5	3.01	94.78	12.61	4.80	0.00	0.00	112.19
442	15,014	15,015	62.0	No	**-1.29**	107.5	3.01	94.53	12.49	4.80	0.00	0.00	111.82
443	14,677	14,678	59.5	No	**-1.00**	107.5	3.01	94.33	12.39	4.80	0.00	0.00	111.52
444	14,524	14,524	60.4	No	**-0.86**	107.5	3.01	94.24	12.35	4.80	0.00	0.00	111.39
445	19,832	19,833	52.3	No	**-4.89**	107.5	3.01	96.95	13.67	4.80	0.00	0.00	115.41

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
446	19,341	19,342	49.6	No	**-4.56**	107.5	3.01	96.73	13.56	4.80	0.00	0.00	115.09
447	18,480	18,480	47.2	No	**-3.97**	107.5	3.01	96.33	13.37	4.80	0.00	0.00	114.50
448	18,094	18,095	49.9	No	**-3.70**	107.5	3.01	96.15	13.28	4.80	0.00	0.00	114.23
449	17,468	17,469	55.8	No	**-3.25**	107.5	3.01	95.85	13.13	4.80	0.00	0.00	113.77
450	17,320	17,321	56.5	No	**-3.14**	107.5	3.01	95.77	13.09	4.80	0.00	0.00	113.66
451	16,654	16,654	63.1	No	**-2.63**	107.5	3.01	95.43	12.92	4.80	0.00	0.00	113.15
452	20,338	20,338	49.7	No	**-5.22**	107.5	3.01	97.17	13.78	4.80	0.00	0.00	115.74
453	19,284	19,284	46.2	No	**-4.53**	107.5	3.01	96.70	13.55	4.80	0.00	0.00	115.05
454	18,724	18,724	51.3	No	**-4.14**	107.5	3.01	96.45	13.42	4.80	0.00	0.00	114.67
455	17,638	17,639	55.3	No	**-3.37**	107.5	3.01	95.93	13.17	4.80	0.00	0.00	113.90
456	17,591	17,591	57.4	No	**-3.34**	107.5	3.01	95.91	13.16	4.80	0.00	0.00	113.86
457	17,382	17,382	55.1	No	**-3.18**	107.5	3.01	95.80	13.10	4.80	0.00	0.00	113.71
458	21,250	21,251	46.5	No	**-5.79**	107.5	3.01	97.55	13.96	4.80	0.00	0.00	116.31
459	20,853	20,853	48.0	No	**-5.54**	107.5	3.01	97.38	13.88	4.80	0.00	0.00	116.07
460	21,344	21,345	45.1	No	**-5.84**	107.5	3.01	97.59	13.98	4.80	0.00	0.00	116.37
461	20,885	20,885	47.9	No	**-5.56**	107.5	3.01	97.40	13.89	4.80	0.00	0.00	116.09
462	20,612	20,613	56.3	No	**-5.39**	107.5	3.01	97.28	13.83	4.80	0.00	0.00	115.92
463	20,149	20,150	49.1	No	**-5.10**	107.5	3.01	97.09	13.74	4.80	0.00	0.00	115.62
464	20,106	20,106	46.2	No	**-5.07**	107.5	3.01	97.07	13.73	4.80	0.00	0.00	115.59
T001	7,035	7,036	52.9	Yes	**8.18**	108.0	3.01	87.95	10.32	4.54	0.00	0.00	102.81
T002	5,930	5,931	59.2	Yes	**10.95**	108.0	3.01	86.46	9.12	4.46	0.00	0.00	100.04
T003	9,870	9,871	50.8	No	**0.69**	107.0	3.01	90.89	13.67	4.80	0.00	0.00	109.36
T004	9,903	9,903	44.4	No	**0.64**	107.0	3.01	90.92	13.70	4.80	0.00	0.00	109.41
T005	8,640	8,641	44.2	No	**2.78**	107.0	3.01	89.73	12.75	4.80	0.00	0.00	107.28
T006	5,369	5,370	49.4	No	**12.12**	108.0	3.01	85.60	8.47	4.80	0.00	0.00	98.87
T007	6,513	6,514	47.3	No	**9.14**	108.0	3.01	87.28	9.77	4.80	0.00	0.00	101.84
T008	10,577	10,577	52.0	No	**-0.40**	107.0	3.01	91.49	14.16	4.80	0.00	0.00	110.45
T009	7,016	7,017	51.2	Yes	**8.21**	108.0	3.01	87.92	10.30	4.55	0.00	0.00	102.77
T010	6,499	6,500	53.3	Yes	**9.46**	108.0	3.01	87.26	9.75	4.52	0.00	0.00	101.53
T011	6,318	6,319	40.8	Yes	**9.84**	108.0	3.01	87.01	9.55	4.58	0.00	0.00	101.14
T012	9,001	9,001	41.1	No	**2.14**	107.0	3.01	90.09	13.03	4.80	0.00	0.00	107.92
T013	9,566	9,567	42.1	No	**1.19**	107.0	3.01	90.62	13.45	4.80	0.00	0.00	108.87
T014	8,608	8,609	40.1	No	**2.83**	107.0	3.01	89.70	12.72	4.80	0.00	0.00	107.22
T015	6,563	6,563	47.2	No	**9.03**	108.0	3.01	87.34	9.82	4.80	0.00	0.00	101.96
T016	9,847	9,847	46.6	No	**0.73**	107.0	3.01	90.87	13.66	4.80	0.00	0.00	109.32
T017	5,103	5,104	48.9	No	**12.88**	108.0	3.01	85.16	8.15	4.80	0.00	0.00	98.10
T018	7,830	7,830	32.9	No	**4.30**	107.0	3.01	88.88	12.08	4.80	0.00	0.00	105.75
T019	8,437	8,437	33.7	No	**3.15**	107.0	3.01	89.52	12.58	4.80	0.00	0.00	106.91
T020	5,852	5,853	49.3	No	**10.81**	108.0	3.01	86.35	9.03	4.80	0.00	0.00	100.18
T022	10,608	10,609	41.8	No	**-0.44**	107.0	3.01	91.51	14.18	4.80	0.00	0.00	110.50
T023	11,339	11,339	56.6	No	**-1.50**	107.0	3.01	92.09	14.66	4.80	0.00	0.00	111.55
T025	4,716	4,716	41.4	No	**14.05**	108.0	3.01	84.47	7.67	4.80	0.00	0.00	96.94
T026	5,604	5,605	44.4	No	**11.47**	108.0	3.01	85.97	8.74	4.80	0.00	0.00	99.51
T027	7,360	7,361	41.3	No	**7.20**	108.0	3.01	88.34	10.65	4.80	0.00	0.00	103.79
T028	5,985	5,986	48.7	No	**10.46**	108.0	3.01	86.54	9.18	4.80	0.00	0.00	100.52
T029	9,264	9,264	43.1	No	**1.69**	107.0	3.01	90.34	13.23	4.80	0.00	0.00	108.37
T030	5,762	5,763	46.9	Yes	**11.33**	108.0	3.01	86.21	8.93	4.52	0.00	0.00	99.66
T031	9,429	9,430	40.5	No	**1.41**	107.0	3.01	90.49	13.35	4.80	0.00	0.00	108.64
T032	9,269	9,270	41.3	No	**1.68**	107.0	3.01	90.34	13.23	4.80	0.00	0.00	108.38
T033	9,942	9,942	44.7	No	**0.58**	107.0	3.01	90.95	13.73	4.80	0.00	0.00	109.47
T201	4,356	4,357	44.4	Yes	**15.54**	108.0	3.01	83.78	7.21	4.45	0.00	0.00	95.44
T202	4,086	4,087	43.9	Yes	**16.47**	108.0	3.01	83.23	6.86	4.43	0.00	0.00	94.52
T203	4,842	4,842	36.6	Yes	**13.92**	108.0	3.01	84.70	7.82	4.54	0.00	0.00	97.07
T204	4,370	4,371	44.0	Yes	**15.49**	108.0	3.01	83.81	7.23	4.46	0.00	0.00	95.49
T205	4,213	4,214	49.7	Yes	**16.07**	108.0	3.01	83.49	7.02	4.40	0.00	0.00	94.91
T206	5,821	5,821	38.0	Yes	**11.12**	108.0	3.01	86.30	8.99	4.58	0.00	0.00	99.87
T207	6,147	6,148	42.7	Yes	**10.29**	108.0	3.01	86.77	9.36	4.56	0.00	0.00	100.70
T208	11,301	11,302	46.0	No	**-0.01**	108.0	3.01	92.06	14.13	4.80	0.00	0.00	111.00
T209	11,713	11,714	51.9	No	**-0.63**	108.0	3.01	92.37	14.45	4.80	0.00	0.00	111.62
T210	12,221	12,221	51.1	No	**-1.37**	108.0	3.01	92.74	14.82	4.80	0.00	0.00	112.36
T211	12,012	12,012	50.8	No	**-1.07**	108.0	3.01	92.59	14.67	4.80	0.00	0.00	112.06
T212	12,179	12,179	47.7	No	**-1.31**	108.0	3.01	92.71	14.79	4.80	0.00	0.00	112.30
T213	12,427	12,428	45.0	No	**-1.67**	108.0	3.01	92.89	14.97	4.80	0.00	0.00	112.65

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T214	12,776	12,776	44.0	No	**-2.15**	108.0	3.01	93.13	15.21	4.80	0.00	0.00	113.14
T215	11,171	11,171	51.2	No	**0.19**	108.0	3.01	91.96	14.03	4.80	0.00	0.00	110.80
T216	12,576	12,576	39.5	No	**-1.87**	108.0	3.01	92.99	15.07	4.80	0.00	0.00	112.86
T217	13,292	13,293	36.8	No	**-2.85**	108.0	3.01	93.47	15.56	4.80	0.00	0.00	113.84
T218	14,751	14,752	43.1	No	**-4.70**	108.0	3.01	94.38	16.51	4.80	0.00	0.00	115.68
T219	15,314	15,314	41.8	No	**-5.36**	108.0	3.01	94.70	16.85	4.80	0.00	0.00	116.35
T220	15,764	15,764	37.5	No	**-5.88**	108.0	3.01	94.95	17.12	4.80	0.00	0.00	116.87
T221	16,388	16,388	33.5	No	**-6.58**	108.0	3.01	95.29	17.47	4.80	0.00	0.00	117.56
T222	17,276	17,276	30.1	No	**-7.53**	108.0	3.01	95.75	17.96	4.80	0.00	0.00	118.51
T223	16,663	16,664	31.4	No	**-6.88**	108.0	3.01	95.44	17.63	4.80	0.00	0.00	117.86
T224	16,288	16,288	42.6	No	**-6.47**	108.0	3.01	95.24	17.42	4.80	0.00	0.00	117.45
T225	15,979	15,979	42.6	No	**-6.12**	108.0	3.01	95.07	17.24	4.80	0.00	0.00	117.11
T226	15,820	15,821	42.0	No	**-5.95**	108.0	3.01	94.98	17.15	4.80	0.00	0.00	116.93
T227	15,016	15,016	38.9	No	**-5.01**	108.0	3.01	94.53	16.67	4.80	0.00	0.00	116.00
T228	16,860	16,860	27.9	No	**-7.09**	108.0	3.01	95.54	17.74	4.80	0.00	0.00	118.07
T229	14,376	14,377	44.7	No	**-4.24**	108.0	3.01	94.15	16.27	4.80	0.00	0.00	115.23
T230	14,072	14,072	48.6	No	**-3.86**	108.0	3.01	93.97	16.08	4.80	0.00	0.00	114.85
T231	13,578	13,578	42.3	No	**-3.23**	108.0	3.01	93.66	15.76	4.80	0.00	0.00	114.21
T232	13,334	13,334	41.1	No	**-2.90**	108.0	3.01	93.50	15.59	4.80	0.00	0.00	113.89
T233	12,932	12,932	44.1	No	**-2.36**	108.0	3.01	93.23	15.32	4.80	0.00	0.00	113.35
T234	12,646	12,647	46.3	No	**-1.97**	108.0	3.01	93.04	15.12	4.80	0.00	0.00	112.96
T235	12,057	12,058	37.9	No	**-1.14**	108.0	3.01	92.63	14.70	4.80	0.00	0.00	112.12
T301	8,920	8,920	33.2	No	**4.03**	108.0	3.01	90.01	12.15	4.80	0.00	0.00	106.96
T302	9,040	9,040	32.1	No	**3.81**	108.0	3.01	90.12	12.26	4.80	0.00	0.00	107.18
T303	8,865	8,865	37.5	No	**4.13**	108.0	3.01	89.95	12.10	4.80	0.00	0.00	106.85
T304	9,035	9,035	38.9	No	**3.81**	108.0	3.01	90.12	12.25	4.80	0.00	0.00	107.17
T305	8,279	8,279	39.8	No	**5.27**	108.0	3.01	89.36	11.56	4.80	0.00	0.00	105.72
T306	8,374	8,374	44.5	No	**5.08**	108.0	3.01	89.46	11.65	4.80	0.00	0.00	105.90
T307	7,945	7,945	37.8	No	**5.95**	108.0	3.01	89.00	11.24	4.80	0.00	0.00	105.04
T308	17,077	17,077	28.8	No	**-7.32**	108.0	3.01	95.65	17.86	4.80	0.00	0.00	118.30
T309	16,577	16,577	31.5	No	**-6.78**	108.0	3.01	95.39	17.58	4.80	0.00	0.00	117.77
T310	16,249	16,249	31.5	No	**-6.42**	108.0	3.01	95.22	17.40	4.80	0.00	0.00	117.41
T311	15,773	15,773	34.5	No	**-5.89**	108.0	3.01	94.96	17.12	4.80	0.00	0.00	116.88
T312	15,358	15,358	34.8	No	**-5.42**	108.0	3.01	94.73	16.88	4.80	0.00	0.00	116.40
T313	14,874	14,875	46.8	No	**-4.84**	108.0	3.01	94.45	16.58	4.80	0.00	0.00	115.83
T314	13,766	13,766	38.9	No	**-3.47**	108.0	3.01	93.78	15.88	4.80	0.00	0.00	114.46
T315	14,237	14,237	39.7	No	**-4.07**	108.0	3.01	94.07	16.18	4.80	0.00	0.00	115.05
T316	14,719	14,720	42.9	No	**-4.66**	108.0	3.01	94.36	16.49	4.80	0.00	0.00	115.65
T317	15,098	15,098	48.6	No	**-5.11**	108.0	3.01	94.58	16.72	4.80	0.00	0.00	116.10
T318	15,854	15,854	33.4	No	**-5.98**	108.0	3.01	95.00	17.17	4.80	0.00	0.00	116.97
T319	16,390	16,391	36.3	No	**-6.58**	108.0	3.01	95.29	17.48	4.80	0.00	0.00	117.57
T320	16,773	16,773	42.2	No	**-6.99**	108.0	3.01	95.49	17.69	4.80	0.00	0.00	117.98
T321	17,225	17,225	36.0	No	**-7.47**	108.0	3.01	95.72	17.94	4.80	0.00	0.00	118.46
T322	17,002	17,002	35.2	No	**-7.24**	108.0	3.01	95.61	17.82	4.80	0.00	0.00	118.23
T323	16,750	16,750	35.2	No	**-6.97**	108.0	3.01	95.48	17.68	4.80	0.00	0.00	117.96
T324	15,973	15,973	35.6	No	**-6.12**	108.0	3.01	95.07	17.24	4.80	0.00	0.00	117.11
T325	16,553	16,553	38.4	No	**-6.76**	108.0	3.01	95.38	17.57	4.80	0.00	0.00	117.74
T326	15,965	15,965	42.3	No	**-6.11**	108.0	3.01	95.06	17.23	4.80	0.00	0.00	117.10
T327	15,584	15,585	37.5	No	**-5.68**	108.0	3.01	94.85	17.01	4.80	0.00	0.00	116.66
T328	14,559	14,559	39.8	No	**-4.46**	108.0	3.01	94.26	16.39	4.80	0.00	0.00	115.45
T329	14,385	14,385	43.6	No	**-4.25**	108.0	3.01	94.16	16.28	4.80	0.00	0.00	115.24
T330	13,735	13,736	41.5	No	**-3.43**	108.0	3.01	93.76	15.86	4.80	0.00	0.00	114.42
T331	13,745	13,745	43.2	No	**-3.44**	108.0	3.01	93.76	15.87	4.80	0.00	0.00	114.43
T332	13,373	13,373	38.6	No	**-2.96**	108.0	3.01	93.52	15.62	4.80	0.00	0.00	113.94
T333	13,889	13,889	40.9	No	**-3.63**	108.0	3.01	93.85	15.96	4.80	0.00	0.00	114.61
T334	14,380	14,380	34.6	No	**-4.24**	108.0	3.01	94.16	16.28	4.80	0.00	0.00	115.23
T335	14,670	14,670	31.8	No	**-4.60**	108.0	3.01	94.33	16.46	4.80	0.00	0.00	115.59
Sum	33.42												

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

Noise sensitive area: SSA005 SSA005

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	6,239	6,240	66.0	Yes	**10.31**	107.5	3.01	86.90	8.88	4.44	0.00	0.00	100.22
402	6,210	6,211	68.7	Yes	**10.38**	107.5	3.01	86.86	8.86	4.42	0.00	0.00	100.14
403	6,402	6,403	68.4	Yes	**9.98**	107.5	3.01	87.13	8.98	4.44	0.00	0.00	100.54
404	6,348	6,349	74.6	Yes	**10.13**	107.5	3.01	87.05	8.94	4.40	0.00	0.00	100.40
405	6,113	6,113	65.0	Yes	**10.57**	107.5	3.01	86.73	8.80	4.44	0.00	0.00	99.96
406	5,644	5,645	64.7	Yes	**11.60**	107.5	3.01	86.03	8.48	4.41	0.00	0.00	98.93
407	6,946	6,946	66.8	Yes	**8.92**	107.5	3.01	87.84	9.30	4.47	0.00	0.00	101.61
408	2,256	2,258	44.2	Yes	**23.01**	107.5	3.01	78.08	5.31	4.13	0.00	0.00	87.52
409	1,666	1,669	40.4	Yes	**26.64**	107.5	3.01	75.45	4.47	3.97	0.00	0.00	83.89
410	1,329	1,333	42.9	Yes	**29.43**	107.5	3.01	73.50	3.91	3.69	0.00	0.00	81.10
411	974	979	42.5	Yes	**33.18**	107.5	3.01	70.82	3.23	3.30	0.00	0.00	77.34
412	1,025	1,030	45.6	Yes	**32.66**	107.5	3.01	71.26	3.34	3.27	0.00	0.00	77.86
413	865	871	47.0	Yes	**34.80**	107.5	3.01	69.80	3.00	2.93	0.00	0.00	75.72
414	729	737	47.8	Yes	**36.94**	107.5	3.01	68.35	2.69	2.54	0.00	0.00	73.58
415	11,037	11,037	56.6	No	**2.67**	107.5	3.01	91.86	11.20	4.80	0.00	0.00	107.85
416	10,623	10,623	61.5	No	**3.16**	107.5	3.01	91.53	11.04	4.80	0.00	0.00	107.36
417	10,180	10,181	58.8	No	**3.71**	107.5	3.01	91.16	10.86	4.80	0.00	0.00	106.82
418	9,738	9,738	55.8	No	**4.28**	107.5	3.01	90.77	10.68	4.80	0.00	0.00	106.25
419	9,272	9,272	66.3	No	**4.91**	107.5	3.01	90.34	10.48	4.80	0.00	0.00	105.62
420	8,809	8,810	64.8	No	**5.56**	107.5	3.01	89.90	10.26	4.80	0.00	0.00	104.96
421	8,059	8,060	74.7	No	**6.70**	107.5	3.01	89.13	9.90	4.80	0.00	0.00	103.83
422	7,621	7,622	62.5	No	**7.41**	107.5	3.01	88.64	9.67	4.80	0.00	0.00	103.12
423	7,276	7,277	65.6	No	**8.00**	107.5	3.01	88.24	9.49	4.80	0.00	0.00	102.53
424	6,485	6,486	60.3	No	**9.46**	107.5	3.01	87.24	9.03	4.80	0.00	0.00	101.07
425	6,060	6,061	60.1	No	**10.31**	107.5	3.01	86.65	8.76	4.80	0.00	0.00	100.21
426	9,565	9,566	70.5	No	**4.51**	107.5	3.01	90.61	10.60	4.80	0.00	0.00	106.02
427	9,021	9,022	70.4	No	**5.26**	107.5	3.01	90.11	10.36	4.80	0.00	0.00	105.27
428	8,603	8,604	68.7	No	**5.86**	107.5	3.01	89.69	10.17	4.80	0.00	0.00	104.66
429	8,098	8,099	63.3	No	**6.63**	107.5	3.01	89.17	9.92	4.80	0.00	0.00	103.89
430	7,718	7,719	62.2	No	**7.25**	107.5	3.01	88.75	9.73	4.80	0.00	0.00	103.28
431	7,109	7,110	64.3	No	**8.29**	107.5	3.01	88.04	9.39	4.80	0.00	0.00	102.23
432	6,838	6,838	59.1	No	**8.79**	107.5	3.01	87.70	9.24	4.80	0.00	0.00	101.74
433	22,076	22,076	53.6	No	**-6.28**	107.5	3.01	97.88	14.13	4.80	0.00	0.00	116.81
434	20,582	20,583	60.8	No	**-5.37**	107.5	3.01	97.27	13.83	4.80	0.00	0.00	115.90
435	19,746	19,746	60.2	No	**-4.83**	107.5	3.01	96.91	13.65	4.80	0.00	0.00	115.36
436	19,241	19,241	62.3	No	**-4.50**	107.5	3.01	96.68	13.54	4.80	0.00	0.00	115.02
437	18,940	18,940	57.3	No	**-4.29**	107.5	3.01	96.55	13.47	4.80	0.00	0.00	114.82
438	19,010	19,010	54.3	No	**-4.34**	107.5	3.01	96.58	13.49	4.80	0.00	0.00	114.87
439	16,150	16,151	72.9	No	**-2.23**	107.5	3.01	95.16	12.79	4.80	0.00	0.00	112.76
440	15,682	15,682	69.9	No	**-1.85**	107.5	3.01	94.91	12.67	4.80	0.00	0.00	112.38
441	15,381	15,382	69.6	No	**-1.60**	107.5	3.01	94.74	12.59	4.80	0.00	0.00	112.13
442	14,929	14,929	74.6	No	**-1.22**	107.5	3.01	94.48	12.46	4.80	0.00	0.00	111.74
443	14,541	14,541	70.9	No	**-0.88**	107.5	3.01	94.25	12.35	4.80	0.00	0.00	111.40
444	14,331	14,331	73.2	No	**-0.69**	107.5	3.01	94.13	12.29	4.80	0.00	0.00	111.22
445	20,065	20,066	60.7	No	**-5.04**	107.5	3.01	97.05	13.72	4.80	0.00	0.00	115.57
446	19,550	19,550	58.6	No	**-4.70**	107.5	3.01	96.82	13.61	4.80	0.00	0.00	115.23
447	18,593	18,593	60.3	No	**-4.05**	107.5	3.01	96.39	13.39	4.80	0.00	0.00	114.58
448	18,182	18,183	63.4	No	**-3.76**	107.5	3.01	96.19	13.30	4.80	0.00	0.00	114.29
449	17,546	17,546	69.2	No	**-3.30**	107.5	3.01	95.88	13.14	4.80	0.00	0.00	113.83
450	17,356	17,356	69.9	No	**-3.16**	107.5	3.01	95.79	13.10	4.80	0.00	0.00	113.69
451	16,675	16,675	76.1	No	**-2.65**	107.5	3.01	95.44	12.93	4.80	0.00	0.00	113.17
452	20,574	20,575	58.1	No	**-5.37**	107.5	3.01	97.27	13.82	4.80	0.00	0.00	115.89
453	19,003	19,003	62.6	No	**-4.34**	107.5	3.01	96.58	13.48	4.80	0.00	0.00	114.86
454	18,435	18,435	67.7	No	**-3.94**	107.5	3.01	96.31	13.35	4.80	0.00	0.00	114.47
455	17,350	17,350	71.6	No	**-3.16**	107.5	3.01	95.79	13.10	4.80	0.00	0.00	113.68
456	17,243	17,243	75.4	No	**-3.08**	107.5	3.01	95.73	13.07	4.80	0.00	0.00	113.60
457	16,992	16,992	72.6	No	**-2.89**	107.5	3.01	95.61	13.01	4.80	0.00	0.00	113.41
458	21,509	21,509	54.0	No	**-5.94**	107.5	3.01	97.65	14.02	4.80	0.00	0.00	116.47
459	21,107	21,107	55.5	No	**-5.70**	107.5	3.01	97.49	13.94	4.80	0.00	0.00	116.22
460	21,470	21,470	58.1	No	**-5.92**	107.5	3.01	97.64	14.01	4.80	0.00	0.00	116.45
461	20,998	20,998	61.4	No	**-5.63**	107.5	3.01	97.44	13.91	4.80	0.00	0.00	116.16
462	20,693	20,694	69.7	No	**-5.44**	107.5	3.01	97.32	13.85	4.80	0.00	0.00	115.97
463	20,226	20,226	62.6	No	**-5.15**	107.5	3.01	97.12	13.75	4.80	0.00	0.00	115.67

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
464	20,106	20,106	60.1	No	**-5.07**	107.5	3.01	97.07	13.73	4.80	0.00	0.00	115.59
T001	8,854	8,855	60.2	Yes	**4.39**	108.0	3.01	89.94	12.09	4.57	0.00	0.00	106.60
T002	7,737	7,737	65.6	Yes	**6.67**	108.0	3.01	88.77	11.03	4.51	0.00	0.00	104.31
T003	11,529	11,529	58.0	No	**-1.76**	107.0	3.01	92.24	14.78	4.80	0.00	0.00	111.82
T004	11,697	11,697	54.5	No	**-1.99**	107.0	3.01	92.36	14.89	4.80	0.00	0.00	112.05
T005	10,268	10,268	50.6	No	**0.07**	107.0	3.01	91.23	13.95	4.80	0.00	0.00	109.98
T006	6,987	6,987	56.8	Yes	**8.31**	108.0	3.01	87.89	10.27	4.52	0.00	0.00	102.68
T007	8,026	8,026	53.7	Yes	**6.01**	108.0	3.01	89.09	11.31	4.57	0.00	0.00	104.98
T008	12,284	12,284	59.3	No	**-2.77**	107.0	3.01	92.79	15.24	4.80	0.00	0.00	112.83
T009	8,939	8,939	57.7	Yes	**4.21**	108.0	3.01	90.03	12.17	4.58	0.00	0.00	106.77
T010	8,335	8,336	59.6	Yes	**5.40**	108.0	3.01	89.42	11.61	4.56	0.00	0.00	105.59
T011	8,333	8,333	48.5	Yes	**5.36**	108.0	3.01	89.42	11.61	4.60	0.00	0.00	105.62
T012	10,939	10,939	47.3	Yes	**-0.78**	107.0	3.01	91.78	14.40	4.65	0.00	0.00	110.84
T013	11,378	11,379	50.4	No	**-1.55**	107.0	3.01	92.12	14.69	4.80	0.00	0.00	111.61
T014	10,342	10,342	47.3	No	**-0.04**	107.0	3.01	91.29	14.00	4.80	0.00	0.00	110.10
T015	8,198	8,198	54.6	Yes	**5.66**	108.0	3.01	89.27	11.48	4.57	0.00	0.00	105.33
T016	11,574	11,575	53.9	No	**-1.83**	107.0	3.01	92.27	14.81	4.80	0.00	0.00	111.88
T017	6,610	6,611	52.3	Yes	**9.18**	108.0	3.01	87.40	9.87	4.53	0.00	0.00	101.80
T018	9,527	9,527	40.1	No	**1.25**	107.0	3.01	90.58	13.43	4.80	0.00	0.00	108.80
T019	10,242	10,242	42.5	No	**0.11**	107.0	3.01	91.21	13.94	4.80	0.00	0.00	109.94
T020	7,342	7,342	54.3	Yes	**7.49**	108.0	3.01	88.32	10.64	4.55	0.00	0.00	103.50
T022	12,458	12,459	45.1	No	**-3.00**	107.0	3.01	92.91	15.34	4.80	0.00	0.00	113.05
T023	13,030	13,030	63.3	No	**-3.72**	107.0	3.01	93.30	15.67	4.80	0.00	0.00	113.77
T025	6,319	6,319	48.2	Yes	**9.88**	108.0	3.01	87.01	9.55	4.54	0.00	0.00	101.10
T026	6,936	6,936	49.2	No	**8.15**	108.0	3.01	87.82	10.22	4.80	0.00	0.00	102.84
T027	9,141	9,141	50.5	No	**3.62**	108.0	3.01	90.22	12.35	4.80	0.00	0.00	107.37
T028	7,594	7,595	56.7	Yes	**6.94**	108.0	3.01	88.61	10.89	4.55	0.00	0.00	104.05
T029	11,240	11,240	48.9	Yes	**-1.21**	107.0	3.01	92.02	14.60	4.65	0.00	0.00	111.27
T030	7,636	7,636	52.6	Yes	**6.83**	108.0	3.01	88.66	10.93	4.57	0.00	0.00	104.15
T031	11,338	11,338	46.4	Yes	**-1.36**	107.0	3.01	92.09	14.66	4.66	0.00	0.00	111.41
T032	10,892	10,892	47.8	No	**-0.86**	107.0	3.01	91.74	14.37	4.80	0.00	0.00	110.92
T033	11,800	11,800	48.7	No	**-2.13**	107.0	3.01	92.44	14.95	4.80	0.00	0.00	112.19
T201	6,259	6,259	49.2	Yes	**10.04**	108.0	3.01	86.93	9.49	4.53	0.00	0.00	100.95
T202	6,016	6,016	48.1	Yes	**10.66**	108.0	3.01	86.59	9.21	4.53	0.00	0.00	100.33
T203	6,922	6,922	43.5	Yes	**8.40**	108.0	3.01	87.81	10.20	4.59	0.00	0.00	102.59
T204	6,450	6,451	50.5	Yes	**9.57**	108.0	3.01	87.19	9.70	4.53	0.00	0.00	101.42
T205	6,318	6,318	56.5	Yes	**9.93**	108.0	3.01	87.01	9.55	4.49	0.00	0.00	101.06
T206	7,925	7,925	45.9	Yes	**6.19**	108.0	3.01	88.98	11.22	4.60	0.00	0.00	104.80
T207	8,256	8,256	51.7	Yes	**5.53**	108.0	3.01	89.34	11.53	4.59	0.00	0.00	105.46
T208	13,235	13,235	52.7	Yes	**-2.64**	108.0	3.01	93.43	15.53	4.66	0.00	0.00	113.62
T209	13,642	13,642	58.6	Yes	**-3.16**	108.0	3.01	93.70	15.80	4.65	0.00	0.00	114.15
T210	14,136	14,136	57.9	Yes	**-3.80**	108.0	3.01	94.01	16.12	4.66	0.00	0.00	114.79
T211	13,834	13,834	57.5	No	**-3.56**	108.0	3.01	93.82	15.92	4.80	0.00	0.00	114.54
T212	13,969	13,969	58.4	No	**-3.73**	108.0	3.01	93.90	16.01	4.80	0.00	0.00	114.72
T213	14,184	14,184	55.2	No	**-4.00**	108.0	3.01	94.04	16.15	4.80	0.00	0.00	114.99
T214	14,522	14,522	53.4	No	**-4.42**	108.0	3.01	94.24	16.36	4.80	0.00	0.00	115.40
T215	12,811	12,811	58.4	No	**-2.20**	108.0	3.01	93.15	15.24	4.80	0.00	0.00	113.19
T216	14,210	14,210	47.3	No	**-4.03**	108.0	3.01	94.05	16.17	4.80	0.00	0.00	115.02
T217	14,923	14,924	45.0	No	**-4.90**	108.0	3.01	94.48	16.61	4.80	0.00	0.00	115.89
T218	16,516	16,516	53.8	No	**-6.72**	108.0	3.01	95.36	17.55	4.80	0.00	0.00	117.70
T219	17,032	17,032	49.7	No	**-7.27**	108.0	3.01	95.63	17.83	4.80	0.00	0.00	118.26
T220	17,492	17,493	46.3	No	**-7.75**	108.0	3.01	95.86	18.08	4.80	0.00	0.00	118.74
T221	18,101	18,101	41.3	No	**-8.37**	108.0	3.01	96.15	18.40	4.80	0.00	0.00	119.35
T222	18,707	18,707	37.3	No	**-8.96**	108.0	3.01	96.44	18.71	4.80	0.00	0.00	119.95
T223	18,073	18,073	38.3	No	**-8.34**	108.0	3.01	96.14	18.39	4.80	0.00	0.00	119.33
T224	17,859	17,859	50.8	No	**-8.12**	108.0	3.01	96.04	18.27	4.80	0.00	0.00	119.11
T225	17,540	17,540	50.1	No	**-7.80**	108.0	3.01	95.88	18.11	4.80	0.00	0.00	118.79
T226	17,301	17,301	49.7	No	**-7.55**	108.0	3.01	95.76	17.98	4.80	0.00	0.00	118.54
T227	16,472	16,472	46.9	No	**-6.67**	108.0	3.01	95.34	17.52	4.80	0.00	0.00	117.66
T228	18,337	18,337	35.8	No	**-8.60**	108.0	3.01	96.27	18.52	4.80	0.00	0.00	119.59
T229	15,862	15,863	52.0	No	**-5.99**	108.0	3.01	95.01	17.17	4.80	0.00	0.00	116.98
T230	15,575	15,575	55.1	No	**-5.67**	108.0	3.01	94.85	17.00	4.80	0.00	0.00	116.65
T231	15,072	15,073	49.0	No	**-5.08**	108.0	3.01	94.56	16.70	4.80	0.00	0.00	116.07

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T232	14,694	14,694	47.1	No	**-4.63**	108.0	3.01	94.34	16.47	4.80	0.00	0.00	115.61
T233	14,292	14,292	50.2	No	**-4.13**	108.0	3.01	94.10	16.22	4.80	0.00	0.00	115.12
T234	13,988	13,988	52.4	No	**-3.75**	108.0	3.01	93.91	16.02	4.80	0.00	0.00	114.74
T235	13,461	13,461	45.2	No	**-3.07**	108.0	3.01	93.58	15.68	4.80	0.00	0.00	114.06
T301	11,029	11,029	41.3	Yes	**0.54**	108.0	3.01	91.85	13.92	4.67	0.00	0.00	110.45
T302	11,142	11,142	40.8	No	**0.24**	108.0	3.01	91.94	14.01	4.80	0.00	0.00	110.75
T303	10,944	10,944	46.7	No	**0.55**	108.0	3.01	91.78	13.86	4.80	0.00	0.00	110.44
T304	11,089	11,089	48.4	No	**0.32**	108.0	3.01	91.90	13.97	4.80	0.00	0.00	110.67
T305	10,313	10,313	47.6	No	**1.57**	108.0	3.01	91.27	13.35	4.80	0.00	0.00	109.42
T306	10,427	10,428	53.7	No	**1.38**	108.0	3.01	91.36	13.44	4.80	0.00	0.00	109.61
T307	10,029	10,030	47.7	No	**2.05**	108.0	3.01	91.03	13.12	4.80	0.00	0.00	108.94
T308	18,332	18,332	34.7	No	**-8.60**	108.0	3.01	96.26	18.52	4.80	0.00	0.00	119.58
T309	17,852	17,852	37.9	No	**-8.12**	108.0	3.01	96.03	18.27	4.80	0.00	0.00	119.10
T310	17,589	17,589	38.2	No	**-7.85**	108.0	3.01	95.90	18.13	4.80	0.00	0.00	118.84
T311	17,126	17,126	40.7	No	**-7.37**	108.0	3.01	95.67	17.88	4.80	0.00	0.00	118.36
T312	16,714	16,714	40.8	No	**-6.93**	108.0	3.01	95.46	17.66	4.80	0.00	0.00	117.92
T313	16,236	16,236	52.7	No	**-6.41**	108.0	3.01	95.21	17.39	4.80	0.00	0.00	117.40
T314	15,163	15,163	45.7	No	**-5.19**	108.0	3.01	94.62	16.76	4.80	0.00	0.00	116.17
T315	15,533	15,534	45.5	No	**-5.62**	108.0	3.01	94.83	16.98	4.80	0.00	0.00	116.61
T316	15,945	15,945	48.1	No	**-6.09**	108.0	3.01	95.05	17.22	4.80	0.00	0.00	117.07
T317	16,336	16,337	54.3	No	**-6.52**	108.0	3.01	95.26	17.45	4.80	0.00	0.00	117.51
T318	17,053	17,053	40.8	No	**-7.29**	108.0	3.01	95.64	17.84	4.80	0.00	0.00	118.28
T319	17,406	17,406	49.7	No	**-7.66**	108.0	3.01	95.81	18.03	4.80	0.00	0.00	118.65
T320	17,752	17,752	57.1	No	**-8.02**	108.0	3.01	95.99	18.22	4.80	0.00	0.00	119.00
T321	18,188	18,188	51.0	No	**-8.45**	108.0	3.01	96.20	18.44	4.80	0.00	0.00	119.44
T322	17,843	17,843	49.1	No	**-8.11**	108.0	3.01	96.03	18.27	4.80	0.00	0.00	119.10
T323	17,562	17,562	48.0	No	**-7.82**	108.0	3.01	95.89	18.12	4.80	0.00	0.00	118.81
T324	16,818	16,818	50.1	No	**-7.04**	108.0	3.01	95.52	17.71	4.80	0.00	0.00	118.03
T325	17,228	17,228	46.4	No	**-7.48**	108.0	3.01	95.72	17.94	4.80	0.00	0.00	118.46
T326	16,694	16,694	51.5	No	**-6.91**	108.0	3.01	95.45	17.65	4.80	0.00	0.00	117.90
T327	16,309	16,310	46.6	No	**-6.49**	108.0	3.01	95.25	17.43	4.80	0.00	0.00	117.48
T328	15,288	15,289	48.9	No	**-5.33**	108.0	3.01	94.69	16.83	4.80	0.00	0.00	116.32
T329	14,958	14,958	49.8	No	**-4.94**	108.0	3.01	94.50	16.63	4.80	0.00	0.00	115.93
T330	14,374	14,374	47.9	No	**-4.24**	108.0	3.01	94.15	16.27	4.80	0.00	0.00	115.22
T331	14,517	14,517	54.0	No	**-4.41**	108.0	3.01	94.24	16.36	4.80	0.00	0.00	115.40
T332	14,201	14,201	53.4	No	**-4.02**	108.0	3.01	94.05	16.16	4.80	0.00	0.00	115.01
T333	14,801	14,801	57.2	No	**-4.76**	108.0	3.01	94.41	16.54	4.80	0.00	0.00	115.74
T334	15,272	15,272	50.8	No	**-5.31**	108.0	3.01	94.68	16.82	4.80	0.00	0.00	116.30
T335	15,618	15,618	47.4	No	**-5.71**	108.0	3.01	94.87	17.03	4.80	0.00	0.00	116.70
Sum	41.39												

Noise sensitive area: SSA006 SSA006

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	3,968	3,969	59.0	Yes	**16.09**	107.5	3.01	82.97	7.17	4.29	0.00	0.00	94.43
402	4,047	4,049	60.4	Yes	**15.85**	107.5	3.01	83.15	7.24	4.29	0.00	0.00	94.68
403	4,410	4,412	59.8	No	**14.28**	107.5	3.01	83.89	7.55	4.80	0.00	0.00	96.24
404	4,501	4,503	66.1	No	**14.03**	107.5	3.01	84.07	7.63	4.80	0.00	0.00	96.50
405	4,398	4,399	57.5	No	**14.32**	107.5	3.01	83.87	7.54	4.80	0.00	0.00	96.21
406	4,057	4,058	60.0	No	**15.31**	107.5	3.01	83.17	7.25	4.80	0.00	0.00	95.21
407	5,306	5,307	56.0	No	**11.98**	107.5	3.01	85.50	8.25	4.80	0.00	0.00	98.54
408	1,953	1,956	51.7	Yes	**24.90**	107.5	3.01	76.83	4.90	3.89	0.00	0.00	85.62
409	1,525	1,530	46.7	Yes	**27.84**	107.5	3.01	74.69	4.25	3.75	0.00	0.00	82.69
410	1,931	1,936	46.8	Yes	**24.95**	107.5	3.01	76.74	4.87	3.97	0.00	0.00	85.58
411	2,181	2,185	43.1	Yes	**23.40**	107.5	3.01	77.79	5.22	4.12	0.00	0.00	87.13
412	2,730	2,733	40.1	No	**20.09**	107.5	3.01	79.73	5.90	4.80	0.00	0.00	90.43
413	3,022	3,025	38.3	No	**18.88**	107.5	3.01	80.61	6.23	4.80	0.00	0.00	91.64
414	3,175	3,178	41.4	No	**18.29**	107.5	3.01	81.04	6.39	4.80	0.00	0.00	92.24
415	8,847	8,847	49.6	Yes	**5.70**	107.5	3.01	89.94	10.28	4.61	0.00	0.00	104.83
416	8,436	8,438	54.6	Yes	**6.33**	107.5	3.01	89.52	10.09	4.58	0.00	0.00	104.19
417	8,059	8,060	50.4	Yes	**6.91**	107.5	3.01	89.13	9.90	4.59	0.00	0.00	103.61

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
418	7,650	7,651	44.8	Yes	**7.56**	107.5	3.01	88.67	9.69	4.60	0.00	0.00	102.97
419	7,377	7,378	53.9	Yes	**8.07**	107.5	3.01	88.36	9.54	4.55	0.00	0.00	102.45
420	6,893	6,894	54.4	Yes	**8.95**	107.5	3.01	87.77	9.27	4.53	0.00	0.00	101.57
421	5,941	5,943	67.2	Yes	**10.94**	107.5	3.01	86.48	8.68	4.41	0.00	0.00	99.58
422	5,541	5,542	56.1	Yes	**11.78**	107.5	3.01	85.87	8.41	4.45	0.00	0.00	98.74
423	5,244	5,245	59.7	Yes	**12.52**	107.5	3.01	85.40	8.20	4.41	0.00	0.00	98.01
424	4,569	4,570	58.2	Yes	**14.28**	107.5	3.01	84.20	7.68	4.37	0.00	0.00	96.25
425	4,132	4,134	59.8	Yes	**15.58**	107.5	3.01	83.33	7.31	4.31	0.00	0.00	94.95
426	8,334	8,335	67.5	Yes	**6.54**	107.5	3.01	89.42	10.04	4.52	0.00	0.00	103.98
427	7,891	7,892	69.1	Yes	**7.26**	107.5	3.01	88.94	9.82	4.50	0.00	0.00	103.26
428	7,560	7,561	68.8	Yes	**7.82**	107.5	3.01	88.57	9.64	4.49	0.00	0.00	102.70
429	7,027	7,028	63.7	Yes	**8.75**	107.5	3.01	87.94	9.35	4.49	0.00	0.00	101.78
430	6,760	6,761	63.3	Yes	**9.25**	107.5	3.01	87.60	9.19	4.48	0.00	0.00	101.28
431	6,168	6,169	65.8	Yes	**10.45**	107.5	3.01	86.80	8.83	4.44	0.00	0.00	100.07
432	6,017	6,018	60.8	Yes	**10.75**	107.5	3.01	86.59	8.73	4.46	0.00	0.00	99.78
433	20,713	20,713	47.4	Yes	**-5.38**	107.5	3.01	97.32	13.85	4.72	0.00	0.00	115.90
434	19,239	19,240	54.9	Yes	**-4.40**	107.5	3.01	96.68	13.54	4.70	0.00	0.00	114.92
435	18,376	18,376	54.6	Yes	**-3.80**	107.5	3.01	96.29	13.34	4.70	0.00	0.00	114.33
436	17,840	17,841	56.9	Yes	**-3.41**	107.5	3.01	96.03	13.22	4.69	0.00	0.00	113.93
437	17,569	17,570	51.8	Yes	**-3.22**	107.5	3.01	95.90	13.15	4.70	0.00	0.00	113.75
438	17,804	17,805	46.1	Yes	**-3.40**	107.5	3.01	96.01	13.21	4.71	0.00	0.00	113.93
439	15,198	15,198	59.4	Yes	**-1.32**	107.5	3.01	94.64	12.54	4.67	0.00	0.00	111.84
440	14,761	14,762	56.5	Yes	**-0.94**	107.5	3.01	94.38	12.41	4.67	0.00	0.00	111.47
441	14,535	14,535	56.4	No	**-0.87**	107.5	3.01	94.25	12.35	4.80	0.00	0.00	111.40
442	14,101	14,101	61.9	No	**-0.48**	107.5	3.01	93.99	12.22	4.80	0.00	0.00	111.01
443	13,775	13,776	58.2	No	**-0.18**	107.5	3.01	93.78	12.12	4.80	0.00	0.00	110.71
444	13,634	13,635	58.9	No	**-0.05**	107.5	3.01	93.69	12.08	4.80	0.00	0.00	110.57
445	18,861	18,861	52.2	Yes	**-4.14**	107.5	3.01	96.51	13.45	4.71	0.00	0.00	114.67
446	18,373	18,374	49.2	Yes	**-3.81**	107.5	3.01	96.28	13.34	4.71	0.00	0.00	114.33
447	17,526	17,526	46.5	No	**-3.29**	107.5	3.01	95.87	13.14	4.80	0.00	0.00	113.81
448	17,144	17,145	49.6	Yes	**-2.91**	107.5	3.01	95.68	13.05	4.70	0.00	0.00	113.43
449	16,521	16,522	55.5	Yes	**-2.41**	107.5	3.01	95.36	12.89	4.69	0.00	0.00	112.94
450	16,380	16,381	56.1	Yes	**-2.30**	107.5	3.01	95.29	12.85	4.68	0.00	0.00	112.82
451	15,717	15,718	62.4	Yes	**-1.75**	107.5	3.01	94.93	12.68	4.66	0.00	0.00	112.27
452	19,365	19,366	49.6	Yes	**-4.49**	107.5	3.01	96.74	13.57	4.71	0.00	0.00	115.02
453	18,404	18,404	43.7	No	**-3.92**	107.5	3.01	96.30	13.35	4.80	0.00	0.00	114.45
454	17,847	17,847	49.3	No	**-3.52**	107.5	3.01	96.03	13.22	4.80	0.00	0.00	114.05
455	16,763	16,764	54.0	No	**-2.71**	107.5	3.01	95.49	12.95	4.80	0.00	0.00	113.24
456	16,731	16,731	57.1	No	**-2.69**	107.5	3.01	95.47	12.94	4.80	0.00	0.00	113.21
457	16,532	16,533	52.9	No	**-2.53**	107.5	3.01	95.37	12.89	4.80	0.00	0.00	113.06
458	20,275	20,275	46.7	Yes	**-5.10**	107.5	3.01	97.14	13.76	4.72	0.00	0.00	115.62
459	19,878	19,879	48.1	Yes	**-4.84**	107.5	3.01	96.97	13.68	4.72	0.00	0.00	115.36
460	20,386	20,386	44.9	Yes	**-5.17**	107.5	3.01	97.19	13.79	4.73	0.00	0.00	115.70
461	19,928	19,929	47.5	No	**-4.95**	107.5	3.01	96.99	13.69	4.80	0.00	0.00	115.48
462	19,661	19,661	55.8	No	**-4.78**	107.5	3.01	96.87	13.63	4.80	0.00	0.00	115.30
463	19,199	19,199	48.7	No	**-4.47**	107.5	3.01	96.67	13.53	4.80	0.00	0.00	114.99
464	19,168	19,168	45.4	No	**-4.45**	107.5	3.01	96.65	13.52	4.80	0.00	0.00	114.97
T001	6,281	6,282	50.4	Yes	**9.99**	108.0	3.01	86.96	9.51	4.53	0.00	0.00	101.00
T002	5,165	5,166	58.3	Yes	**13.09**	108.0	3.01	85.26	8.22	4.42	0.00	0.00	97.90
T003	9,028	9,029	49.2	Yes	**2.28**	107.0	3.01	90.11	13.05	4.61	0.00	0.00	107.78
T004	9,136	9,137	44.2	Yes	**2.07**	107.0	3.01	90.22	13.13	4.64	0.00	0.00	107.98
T005	7,781	7,782	41.6	Yes	**4.58**	107.0	3.01	88.82	12.04	4.62	0.00	0.00	105.48
T006	4,493	4,494	49.2	Yes	**15.12**	108.0	3.01	84.05	7.39	4.43	0.00	0.00	95.87
T007	5,602	5,603	46.3	Yes	**11.76**	108.0	3.01	85.97	8.74	4.52	0.00	0.00	99.23
T008	9,760	9,760	50.7	Yes	**1.05**	107.0	3.01	90.79	13.59	4.62	0.00	0.00	109.01
T009	6,352	6,353	50.2	Yes	**9.81**	108.0	3.01	87.06	9.59	4.53	0.00	0.00	101.18
T010	5,757	5,758	51.3	Yes	**11.36**	108.0	3.01	86.21	8.92	4.50	0.00	0.00	99.62
T011	5,772	5,772	42.1	Yes	**11.27**	108.0	3.01	86.23	8.94	4.55	0.00	0.00	99.71
T012	8,352	8,352	39.6	Yes	**3.46**	107.0	3.01	89.44	12.52	4.64	0.00	0.00	106.59
T013	8,811	8,812	40.6	Yes	**2.63**	107.0	3.01	89.90	12.88	4.64	0.00	0.00	107.43
T014	7,803	7,803	39.6	Yes	**4.53**	107.0	3.01	88.85	12.05	4.63	0.00	0.00	105.53
T015	5,700	5,701	45.1	Yes	**11.48**	108.0	3.01	86.12	8.85	4.53	0.00	0.00	99.50
T016	9,040	9,040	46.1	Yes	**2.25**	107.0	3.01	90.12	13.06	4.63	0.00	0.00	107.81

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T017	4,182	4,183	48.6	Yes	**16.17**	108.0	3.01	83.43	6.98	4.40	0.00	0.00	94.82
T018	7,002	7,003	31.9	Yes	**6.17**	107.0	3.01	87.91	11.34	4.64	0.00	0.00	103.89
T019	7,676	7,676	32.8	Yes	**4.75**	107.0	3.01	88.70	11.94	4.65	0.00	0.00	105.30
T020	4,930	4,931	48.4	Yes	**13.73**	108.0	3.01	84.86	7.93	4.47	0.00	0.00	97.26
T022	9,882	9,882	37.3	No	**0.68**	107.0	3.01	90.90	13.68	4.80	0.00	0.00	109.38
T023	10,515	10,515	54.2	Yes	**-0.13**	107.0	3.01	91.44	14.12	4.62	0.00	0.00	110.18
T025	3,828	3,829	42.8	Yes	**17.40**	108.0	3.01	82.66	6.51	4.42	0.00	0.00	93.59
T026	4,640	4,641	44.4	Yes	**14.61**	108.0	3.01	84.33	7.57	4.47	0.00	0.00	96.38
T027	6,580	6,581	41.0	Yes	**9.20**	108.0	3.01	87.37	9.84	4.59	0.00	0.00	101.79
T028	5,108	5,109	48.3	Yes	**13.19**	108.0	3.01	85.17	8.15	4.48	0.00	0.00	97.80
T029	8,658	8,658	41.4	Yes	**2.91**	107.0	3.01	89.75	12.76	4.64	0.00	0.00	107.15
T030	5,051	5,051	45.9	Yes	**13.35**	108.0	3.01	85.07	8.08	4.49	0.00	0.00	97.64
T031	8,751	8,752	38.6	Yes	**2.73**	107.0	3.01	89.84	12.84	4.65	0.00	0.00	107.33
T032	8,410	8,410	38.7	Yes	**3.35**	107.0	3.01	89.50	12.56	4.64	0.00	0.00	106.70
T033	9,221	9,222	41.2	No	**1.76**	107.0	3.01	90.30	13.20	4.80	0.00	0.00	108.29
T201	3,672	3,673	43.6	Yes	**18.00**	108.0	3.01	82.30	6.30	4.39	0.00	0.00	92.99
T202	3,432	3,433	42.8	Yes	**18.94**	108.0	3.01	81.71	5.96	4.37	0.00	0.00	92.05
T203	4,452	4,453	35.7	Yes	**15.16**	108.0	3.01	83.97	7.33	4.53	0.00	0.00	95.83
T204	3,987	3,988	44.1	Yes	**16.83**	108.0	3.01	83.02	6.72	4.42	0.00	0.00	94.16
T205	3,949	3,951	50.5	Yes	**17.02**	108.0	3.01	82.93	6.67	4.36	0.00	0.00	93.97
T206	5,524	5,525	40.0	Yes	**11.94**	108.0	3.01	85.85	8.65	4.55	0.00	0.00	99.05
T207	5,967	5,967	46.0	Yes	**10.78**	108.0	3.01	86.52	9.16	4.54	0.00	0.00	100.21
T208	10,648	10,648	44.4	Yes	**1.16**	108.0	3.01	91.55	13.62	4.66	0.00	0.00	109.82
T209	11,055	11,056	50.2	Yes	**0.53**	108.0	3.01	91.87	13.94	4.65	0.00	0.00	110.46
T210	11,550	11,550	49.4	Yes	**-0.24**	108.0	3.01	92.25	14.32	4.65	0.00	0.00	111.23
T211	11,266	11,266	47.1	Yes	**0.19**	108.0	3.01	92.04	14.11	4.66	0.00	0.00	110.80
T212	11,411	11,412	47.8	Yes	**-0.03**	108.0	3.01	92.15	14.22	4.66	0.00	0.00	111.02
T213	11,640	11,640	46.1	Yes	**-0.39**	108.0	3.01	92.32	14.39	4.67	0.00	0.00	111.37
T214	11,983	11,983	44.5	Yes	**-0.90**	108.0	3.01	92.57	14.64	4.67	0.00	0.00	111.89
T215	10,322	10,323	49.1	Yes	**1.72**	108.0	3.01	91.28	13.36	4.64	0.00	0.00	109.27
T216	11,727	11,727	37.4	No	**-0.65**	108.0	3.01	92.38	14.46	4.80	0.00	0.00	111.64
T217	12,443	12,443	34.7	No	**-1.69**	108.0	3.01	92.90	14.98	4.80	0.00	0.00	112.67
T218	13,971	13,971	44.1	No	**-3.73**	108.0	3.01	93.90	16.01	4.80	0.00	0.00	114.72
T219	14,508	14,508	40.5	No	**-4.40**	108.0	3.01	94.23	16.36	4.80	0.00	0.00	115.39
T220	14,963	14,964	37.1	No	**-4.95**	108.0	3.01	94.50	16.64	4.80	0.00	0.00	115.94
T221	15,580	15,580	32.1	No	**-5.67**	108.0	3.01	94.85	17.01	4.80	0.00	0.00	116.66
T222	16,360	16,360	29.0	No	**-6.55**	108.0	3.01	95.28	17.46	4.80	0.00	0.00	117.53
T223	15,741	15,741	30.0	No	**-5.86**	108.0	3.01	94.94	17.10	4.80	0.00	0.00	116.84
T224	15,416	15,417	42.1	Yes	**-5.39**	108.0	3.01	94.76	16.91	4.71	0.00	0.00	116.38
T225	15,103	15,104	42.0	Yes	**-5.02**	108.0	3.01	94.58	16.72	4.71	0.00	0.00	116.01
T226	14,918	14,918	40.2	Yes	**-4.80**	108.0	3.01	94.47	16.61	4.71	0.00	0.00	115.79
T227	14,105	14,105	37.7	Yes	**-3.81**	108.0	3.01	93.99	16.10	4.71	0.00	0.00	114.80
T228	15,957	15,957	26.1	No	**-6.10**	108.0	3.01	95.06	17.23	4.80	0.00	0.00	117.09
T229	13,474	13,474	43.0	Yes	**-2.98**	108.0	3.01	93.59	15.69	4.69	0.00	0.00	113.97
T230	13,175	13,175	47.6	Yes	**-2.57**	108.0	3.01	93.40	15.49	4.68	0.00	0.00	113.56
T231	12,677	12,678	40.9	Yes	**-1.91**	108.0	3.01	93.06	15.14	4.69	0.00	0.00	112.89
T232	12,396	12,396	39.8	Yes	**-1.51**	108.0	3.01	92.87	14.94	4.69	0.00	0.00	112.50
T233	11,993	11,993	42.9	Yes	**-0.92**	108.0	3.01	92.58	14.65	4.68	0.00	0.00	111.91
T234	11,703	11,703	45.4	Yes	**-0.48**	108.0	3.01	92.37	14.44	4.67	0.00	0.00	111.47
T235	11,128	11,129	36.4	Yes	**0.37**	108.0	3.01	91.93	14.00	4.69	0.00	0.00	110.62
T301	8,716	8,716	36.8	No	**4.42**	108.0	3.01	89.81	11.96	4.80	0.00	0.00	106.57
T302	8,890	8,890	34.8	No	**4.09**	108.0	3.01	89.98	12.12	4.80	0.00	0.00	106.90
T303	8,816	8,816	36.1	No	**4.23**	108.0	3.01	89.91	12.06	4.80	0.00	0.00	106.76
T304	9,050	9,051	35.9	No	**3.79**	108.0	3.01	90.13	12.27	4.80	0.00	0.00	107.20
T305	8,344	8,344	35.5	No	**5.14**	108.0	3.01	89.43	11.62	4.80	0.00	0.00	105.85
T306	8,395	8,395	41.2	No	**5.04**	108.0	3.01	89.48	11.67	4.80	0.00	0.00	105.95
T307	7,884	7,884	37.1	No	**6.08**	108.0	3.01	88.93	11.18	4.80	0.00	0.00	104.91
T308	16,120	16,120	27.7	No	**-6.28**	108.0	3.01	95.15	17.32	4.80	0.00	0.00	117.27
T309	15,624	15,624	30.6	No	**-5.72**	108.0	3.01	94.88	17.03	4.80	0.00	0.00	116.71
T310	15,309	15,309	30.1	No	**-5.36**	108.0	3.01	94.70	16.85	4.80	0.00	0.00	116.35
T311	14,836	14,836	33.1	No	**-4.80**	108.0	3.01	94.43	16.56	4.80	0.00	0.00	115.79
T312	14,421	14,421	33.4	No	**-4.29**	108.0	3.01	94.18	16.30	4.80	0.00	0.00	115.28
T313	13,938	13,939	45.4	Yes	**-3.58**	108.0	3.01	93.88	15.99	4.69	0.00	0.00	114.57

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T314	12,837	12,838	37.3	Yes	**-2.14**	108.0	3.01	93.17	15.25	4.70	0.00	0.00	113.12
T315	13,286	13,286	38.4	Yes	**-2.74**	108.0	3.01	93.47	15.56	4.70	0.00	0.00	113.73
T316	13,755	13,756	40.7	No	**-3.46**	108.0	3.01	93.77	15.87	4.80	0.00	0.00	114.44
T317	14,137	14,137	46.8	No	**-3.94**	108.0	3.01	94.01	16.12	4.80	0.00	0.00	114.93
T318	14,887	14,887	31.4	No	**-4.86**	108.0	3.01	94.46	16.59	4.80	0.00	0.00	115.85
T319	15,401	15,401	35.5	No	**-5.46**	108.0	3.01	94.75	16.90	4.80	0.00	0.00	116.45
T320	15,781	15,781	41.5	No	**-5.90**	108.0	3.01	94.96	17.13	4.80	0.00	0.00	116.89
T321	16,232	16,232	35.3	No	**-6.41**	108.0	3.01	95.21	17.39	4.80	0.00	0.00	117.39
T322	16,002	16,002	34.2	No	**-6.15**	108.0	3.01	95.08	17.25	4.80	0.00	0.00	117.14
T323	15,750	15,750	34.2	Yes	**-5.79**	108.0	3.01	94.95	17.11	4.73	0.00	0.00	116.78
T324	14,973	14,973	34.7	No	**-4.96**	108.0	3.01	94.51	16.64	4.80	0.00	0.00	115.95
T325	15,552	15,552	37.3	Yes	**-5.56**	108.0	3.01	94.84	16.99	4.72	0.00	0.00	116.55
T326	14,963	14,964	41.2	Yes	**-4.86**	108.0	3.01	94.50	16.64	4.71	0.00	0.00	115.84
T327	14,583	14,583	36.4	No	**-4.49**	108.0	3.01	94.28	16.40	4.80	0.00	0.00	115.48
T328	13,557	13,557	38.7	Yes	**-3.10**	108.0	3.01	93.64	15.74	4.70	0.00	0.00	114.09
T329	13,388	13,388	42.5	Yes	**-2.87**	108.0	3.01	93.53	15.63	4.69	0.00	0.00	113.86
T330	12,736	12,736	40.5	Yes	**-1.99**	108.0	3.01	93.10	15.18	4.69	0.00	0.00	112.98
T331	12,743	12,744	42.0	Yes	**-1.99**	108.0	3.01	93.11	15.19	4.69	0.00	0.00	112.98
T332	12,372	12,372	37.5	Yes	**-1.48**	108.0	3.01	92.85	14.93	4.70	0.00	0.00	112.47
T333	12,891	12,891	40.0	Yes	**-2.20**	108.0	3.01	93.21	15.29	4.69	0.00	0.00	113.19
T334	13,382	13,382	33.7	Yes	**-2.88**	108.0	3.01	93.53	15.62	4.71	0.00	0.00	113.87
T335	13,674	13,675	30.9	No	**-3.35**	108.0	3.01	93.72	15.82	4.80	0.00	0.00	114.34
Sum	34.51												

Noise sensitive area: SSA007 SSA007

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	7,375	7,375	62.1	No	**7.83**	107.5	3.01	88.36	9.54	4.80	0.00	0.00	102.70
402	7,458	7,458	63.1	No	**7.68**	107.5	3.01	88.45	9.59	4.80	0.00	0.00	102.84
403	7,799	7,800	60.3	No	**7.11**	107.5	3.01	88.84	9.77	4.80	0.00	0.00	103.41
404	7,852	7,853	65.7	No	**7.03**	107.5	3.01	88.90	9.80	4.80	0.00	0.00	103.50
405	7,698	7,699	55.0	No	**7.28**	107.5	3.01	88.73	9.72	4.80	0.00	0.00	103.24
406	7,295	7,295	53.8	No	**7.97**	107.5	3.01	88.26	9.50	4.80	0.00	0.00	102.56
407	8,590	8,590	56.0	No	**5.88**	107.5	3.01	89.68	10.16	4.80	0.00	0.00	104.64
408	1,646	1,649	52.6	Yes	**27.04**	107.5	3.01	75.34	4.44	3.70	0.00	0.00	83.49
409	1,890	1,893	44.9	Yes	**25.19**	107.5	3.01	76.54	4.81	3.99	0.00	0.00	85.33
410	1,555	1,559	49.0	Yes	**27.65**	107.5	3.01	74.86	4.29	3.72	0.00	0.00	82.87
411	1,529	1,533	49.5	Yes	**27.87**	107.5	3.01	74.71	4.25	3.69	0.00	0.00	82.65
412	1,200	1,205	49.9	Yes	**30.86**	107.5	3.01	72.62	3.68	3.37	0.00	0.00	79.67
413	1,458	1,462	51.5	Yes	**28.50**	107.5	3.01	74.30	4.13	3.59	0.00	0.00	82.02
414	1,830	1,833	50.2	Yes	**25.68**	107.5	3.01	76.26	4.72	3.86	0.00	0.00	84.84
415	10,173	10,173	61.7	Yes	**3.92**	107.5	3.01	91.15	10.86	4.59	0.00	0.00	106.60
416	9,766	9,767	66.7	Yes	**4.47**	107.5	3.01	90.79	10.69	4.57	0.00	0.00	106.05
417	9,255	9,256	66.2	Yes	**5.17**	107.5	3.01	90.33	10.47	4.56	0.00	0.00	105.35
418	8,788	8,788	62.7	Yes	**5.84**	107.5	3.01	89.88	10.25	4.56	0.00	0.00	104.69
419	8,128	8,128	73.5	Yes	**6.90**	107.5	3.01	89.20	9.94	4.49	0.00	0.00	103.63
420	7,710	7,711	73.1	Yes	**7.58**	107.5	3.01	88.74	9.72	4.48	0.00	0.00	102.94
421	7,235	7,236	79.8	Yes	**8.44**	107.5	3.01	88.19	9.47	4.42	0.00	0.00	102.08
422	6,782	6,783	67.9	Yes	**9.23**	107.5	3.01	87.63	9.21	4.46	0.00	0.00	101.29
423	6,408	6,409	70.5	Yes	**9.98**	107.5	3.01	87.14	8.98	4.42	0.00	0.00	100.54
424	5,565	5,566	67.2	Yes	**11.80**	107.5	3.01	85.91	8.43	4.39	0.00	0.00	98.73
425	5,204	5,205	65.2	Yes	**12.65**	107.5	3.01	85.33	8.17	4.37	0.00	0.00	97.87
426	7,864	7,865	67.8	Yes	**7.30**	107.5	3.01	88.91	9.80	4.51	0.00	0.00	103.22
427	7,276	7,277	70.1	Yes	**8.33**	107.5	3.01	88.24	9.49	4.47	0.00	0.00	102.20
428	6,821	6,822	71.6	Yes	**9.17**	107.5	3.01	87.68	9.23	4.44	0.00	0.00	101.35
429	6,356	6,357	65.0	Yes	**10.06**	107.5	3.01	87.06	8.95	4.45	0.00	0.00	100.47
430	5,926	5,927	67.0	Yes	**10.98**	107.5	3.01	86.46	8.67	4.41	0.00	0.00	99.55
431	5,342	5,343	69.3	Yes	**12.34**	107.5	3.01	85.56	8.27	4.36	0.00	0.00	98.19
432	5,017	5,018	66.0	Yes	**13.13**	107.5	3.01	85.01	8.03	4.35	0.00	0.00	97.40
433	20,290	20,290	53.6	Yes	**-5.10**	107.5	3.01	97.15	13.77	4.71	0.00	0.00	115.62
434	18,793	18,793	61.4	Yes	**-4.08**	107.5	3.01	96.48	13.44	4.69	0.00	0.00	114.61

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

...continued from previous page

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
435	17,977	17,978	58.9	Yes	**-3.51**	107.5	3.01	96.09	13.25	4.69	0.00	0.00	114.03
436	17,496	17,496	59.5	Yes	**-3.15**	107.5	3.01	95.86	13.13	4.68	0.00	0.00	113.68
437	17,177	17,178	55.5	Yes	**-2.92**	107.5	3.01	95.70	13.05	4.69	0.00	0.00	113.44
438	17,151	17,151	58.6	Yes	**-2.89**	107.5	3.01	95.69	13.05	4.68	0.00	0.00	113.42
439	14,187	14,188	75.9	Yes	**-0.38**	107.5	3.01	94.04	12.25	4.62	0.00	0.00	110.90
440	13,707	13,708	73.4	Yes	**0.06**	107.5	3.01	93.74	12.10	4.62	0.00	0.00	110.46
441	13,378	13,379	72.3	Yes	**0.38**	107.5	3.01	93.53	12.00	4.62	0.00	0.00	110.15
442	12,922	12,922	77.8	Yes	**0.85**	107.5	3.01	93.23	11.86	4.59	0.00	0.00	109.68
443	12,512	12,513	75.7	Yes	**1.26**	107.5	3.01	92.95	11.72	4.59	0.00	0.00	109.26
444	12,278	12,278	78.8	Yes	**1.52**	107.5	3.01	92.78	11.64	4.58	0.00	0.00	109.01
445	18,199	18,200	64.6	Yes	**-3.66**	107.5	3.01	96.20	13.30	4.68	0.00	0.00	114.18
446	17,672	17,672	62.8	Yes	**-3.28**	107.5	3.01	95.95	13.17	4.68	0.00	0.00	113.80
447	16,666	16,666	63.1	Yes	**-2.51**	107.5	3.01	95.44	12.93	4.67	0.00	0.00	113.03
448	16,244	16,244	65.8	Yes	**-2.17**	107.5	3.01	95.21	12.82	4.66	0.00	0.00	112.69
449	15,605	15,606	72.0	Yes	**-1.63**	107.5	3.01	94.87	12.65	4.64	0.00	0.00	112.16
450	15,394	15,394	71.9	Yes	**-1.45**	107.5	3.01	94.75	12.59	4.64	0.00	0.00	111.98
451	14,710	14,710	78.7	Yes	**-0.85**	107.5	3.01	94.35	12.40	4.62	0.00	0.00	111.37
452	18,708	18,708	61.9	Yes	**-4.02**	107.5	3.01	96.44	13.42	4.69	0.00	0.00	114.55
453	16,894	16,894	65.7	Yes	**-2.68**	107.5	3.01	95.55	12.98	4.67	0.00	0.00	113.21
454	16,325	16,325	71.0	Yes	**-2.22**	107.5	3.01	95.26	12.84	4.65	0.00	0.00	112.75
455	15,244	15,244	75.2	Yes	**-1.32**	107.5	3.01	94.66	12.55	4.63	0.00	0.00	111.84
456	15,116	15,117	79.1	Yes	**-1.20**	107.5	3.01	94.59	12.51	4.62	0.00	0.00	111.73
457	14,853	14,853	76.4	Yes	**-0.98**	107.5	3.01	94.44	12.44	4.62	0.00	0.00	111.50
458	19,651	19,651	57.4	Yes	**-4.67**	107.5	3.01	96.87	13.63	4.70	0.00	0.00	115.20
459	19,248	19,249	59.2	Yes	**-4.40**	107.5	3.01	96.69	13.54	4.70	0.00	0.00	114.92
460	19,535	19,536	59.7	Yes	**-4.59**	107.5	3.01	96.82	13.60	4.70	0.00	0.00	115.12
461	19,060	19,060	62.9	Yes	**-4.26**	107.5	3.01	96.60	13.50	4.69	0.00	0.00	114.79
462	18,739	18,739	70.4	Yes	**-4.03**	107.5	3.01	96.46	13.42	4.67	0.00	0.00	114.55
463	18,271	18,272	63.4	Yes	**-3.71**	107.5	3.01	96.24	13.32	4.68	0.00	0.00	114.23
464	18,113	18,113	61.2	Yes	**-3.60**	107.5	3.01	96.16	13.28	4.69	0.00	0.00	114.12
T001	8,939	8,939	57.1	Yes	**4.21**	108.0	3.01	90.03	12.17	4.58	0.00	0.00	106.78
T002	7,862	7,862	62.4	Yes	**6.39**	108.0	3.01	88.91	11.15	4.53	0.00	0.00	104.60
T003	11,238	11,238	55.6	Yes	**-1.19**	107.0	3.01	92.01	14.60	4.63	0.00	0.00	111.24
T004	11,632	11,633	49.6	Yes	**-1.76**	107.0	3.01	92.31	14.85	4.65	0.00	0.00	111.81
T005	9,973	9,974	49.4	Yes	**0.70**	107.0	3.01	90.98	13.75	4.63	0.00	0.00	109.36
T006	6,868	6,869	52.8	Yes	**8.57**	108.0	3.01	87.74	10.14	4.54	0.00	0.00	102.42
T007	7,680	7,681	54.1	Yes	**6.74**	108.0	3.01	88.71	10.98	4.56	0.00	0.00	104.24
T008	12,049	12,049	55.7	Yes	**-2.31**	107.0	3.01	92.62	15.10	4.64	0.00	0.00	112.36
T009	9,228	9,228	52.3	No	**3.46**	108.0	3.01	90.30	12.43	4.80	0.00	0.00	107.53
T010	8,478	8,478	55.2	No	**4.88**	108.0	3.01	89.57	11.74	4.80	0.00	0.00	106.11
T011	8,875	8,875	41.7	No	**4.12**	108.0	3.01	89.96	12.11	4.80	0.00	0.00	106.87
T012	11,193	11,193	38.7	No	**-1.29**	107.0	3.01	91.98	14.57	4.80	0.00	0.00	111.35
T013	11,355	11,355	47.5	No	**-1.52**	107.0	3.01	92.10	14.67	4.80	0.00	0.00	111.58
T014	10,214	10,214	42.1	Yes	**0.29**	107.0	3.01	91.18	13.92	4.66	0.00	0.00	109.76
T015	8,016	8,016	50.1	Yes	**6.02**	108.0	3.01	89.08	11.30	4.59	0.00	0.00	104.97
T016	11,395	11,396	50.3	Yes	**-1.43**	107.0	3.01	92.13	14.70	4.65	0.00	0.00	111.48
T017	6,374	6,375	50.1	Yes	**9.75**	108.0	3.01	87.09	9.61	4.53	0.00	0.00	101.23
T018	9,372	9,372	35.6	Yes	**1.64**	107.0	3.01	90.44	13.31	4.67	0.00	0.00	108.42
T019	10,244	10,244	39.5	No	**0.11**	107.0	3.01	91.21	13.94	4.80	0.00	0.00	109.95
T020	7,016	7,017	54.4	Yes	**8.23**	108.0	3.01	87.92	10.30	4.54	0.00	0.00	102.76
T022	12,481	12,481	42.6	No	**-3.03**	107.0	3.01	92.92	15.36	4.80	0.00	0.00	113.08
T023	12,752	12,752	59.9	Yes	**-3.21**	107.0	3.01	93.11	15.52	4.64	0.00	0.00	113.27
T025	6,243	6,244	44.5	Yes	**10.05**	108.0	3.01	86.91	9.47	4.56	0.00	0.00	100.93
T026	6,443	6,444	51.0	Yes	**9.59**	108.0	3.01	87.18	9.69	4.53	0.00	0.00	101.40
T027	9,143	9,143	46.3	No	**3.62**	108.0	3.01	90.22	12.35	4.80	0.00	0.00	107.37
T028	7,415	7,415	52.2	Yes	**7.31**	108.0	3.01	88.40	10.71	4.56	0.00	0.00	103.67
T029	11,579	11,579	42.5	No	**-1.83**	107.0	3.01	92.27	14.81	4.80	0.00	0.00	111.89
T030	7,889	7,889	49.1	No	**6.07**	108.0	3.01	88.94	11.18	4.80	0.00	0.00	104.92
T031	11,512	11,512	38.0	No	**-1.74**	107.0	3.01	92.22	14.77	4.80	0.00	0.00	111.79
T032	10,567	10,567	46.4	Yes	**-0.23**	107.0	3.01	91.48	14.16	4.65	0.00	0.00	110.29
T033	11,855	11,855	45.0	No	**-2.21**	107.0	3.01	92.48	14.98	4.80	0.00	0.00	112.26
T201	6,668	6,668	42.9	No	**8.78**	108.0	3.01	87.48	9.93	4.80	0.00	0.00	102.21
T202	6,498	6,499	41.5	No	**9.18**	108.0	3.01	87.26	9.75	4.80	0.00	0.00	101.80

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T203	7,758	7,759	37.5	No	**6.34**	108.0	3.01	88.80	11.05	4.80	0.00	0.00	104.65
T204	7,310	7,311	44.7	No	**7.30**	108.0	3.01	88.28	10.60	4.80	0.00	0.00	103.68
T205	7,332	7,332	53.8	No	**7.26**	108.0	3.01	88.30	10.63	4.80	0.00	0.00	103.73
T206	8,871	8,871	41.6	No	**4.12**	108.0	3.01	89.96	12.11	4.80	0.00	0.00	106.87
T207	9,360	9,360	51.1	No	**3.22**	108.0	3.01	90.43	12.54	4.80	0.00	0.00	107.77
T208	13,422	13,423	43.7	No	**-3.02**	108.0	3.01	93.56	15.65	4.80	0.00	0.00	114.01
T209	13,812	13,812	50.1	No	**-3.53**	108.0	3.01	93.80	15.91	4.80	0.00	0.00	114.51
T210	14,264	14,264	51.0	No	**-4.10**	108.0	3.01	94.08	16.20	4.80	0.00	0.00	115.09
T211	13,772	13,772	53.5	Yes	**-3.34**	108.0	3.01	93.78	15.88	4.67	0.00	0.00	114.33
T212	13,843	13,843	53.3	Yes	**-3.44**	108.0	3.01	93.82	15.93	4.67	0.00	0.00	114.42
T213	13,993	13,993	50.3	Yes	**-3.64**	108.0	3.01	93.92	16.03	4.68	0.00	0.00	114.62
T214	14,305	14,306	48.2	Yes	**-4.04**	108.0	3.01	94.11	16.23	4.69	0.00	0.00	115.02
T215	12,456	12,456	56.1	Yes	**-1.55**	108.0	3.01	92.91	14.99	4.65	0.00	0.00	112.54
T216	13,814	13,814	44.7	Yes	**-3.42**	108.0	3.01	93.81	15.91	4.69	0.00	0.00	114.41
T217	14,510	14,510	41.8	Yes	**-4.30**	108.0	3.01	94.23	16.36	4.70	0.00	0.00	115.29
T218	16,302	16,302	47.8	Yes	**-6.38**	108.0	3.01	95.24	17.43	4.70	0.00	0.00	117.37
T219	16,728	16,728	46.4	Yes	**-6.85**	108.0	3.01	95.47	17.66	4.71	0.00	0.00	117.84
T220	17,200	17,200	42.6	Yes	**-7.36**	108.0	3.01	95.71	17.92	4.72	0.00	0.00	118.35
T221	17,775	17,775	38.4	No	**-8.04**	108.0	3.01	96.00	18.23	4.80	0.00	0.00	119.03
T222	17,951	17,951	33.5	No	**-8.22**	108.0	3.01	96.08	18.32	4.80	0.00	0.00	119.20
T223	17,298	17,298	35.6	No	**-7.55**	108.0	3.01	95.76	17.98	4.80	0.00	0.00	118.54
T224	17,309	17,309	44.6	Yes	**-7.47**	108.0	3.01	95.77	17.98	4.71	0.00	0.00	118.46
T225	16,980	16,980	44.2	Yes	**-7.13**	108.0	3.01	95.60	17.80	4.71	0.00	0.00	118.11
T226	16,630	16,630	45.2	No	**-6.84**	108.0	3.01	95.42	17.61	4.80	0.00	0.00	117.83
T227	15,781	15,781	42.6	No	**-5.90**	108.0	3.01	94.96	17.13	4.80	0.00	0.00	116.89
T228	17,648	17,648	30.9	No	**-7.91**	108.0	3.01	95.93	18.16	4.80	0.00	0.00	118.90
T229	15,220	15,221	48.1	Yes	**-5.15**	108.0	3.01	94.65	16.79	4.69	0.00	0.00	116.13
T230	14,962	14,962	51.9	Yes	**-4.83**	108.0	3.01	94.50	16.64	4.68	0.00	0.00	115.82
T231	14,455	14,456	46.0	Yes	**-4.23**	108.0	3.01	94.20	16.32	4.69	0.00	0.00	115.22
T232	13,906	13,906	46.6	No	**-3.65**	108.0	3.01	93.86	15.97	4.80	0.00	0.00	114.64
T233	13,513	13,513	49.6	No	**-3.14**	108.0	3.01	93.62	15.71	4.80	0.00	0.00	114.13
T234	13,191	13,191	52.8	Yes	**-2.58**	108.0	3.01	93.41	15.50	4.66	0.00	0.00	113.57
T235	12,754	12,754	42.7	No	**-2.12**	108.0	3.01	93.11	15.20	4.80	0.00	0.00	113.11
T301	12,087	12,087	40.7	No	**-1.18**	108.0	3.01	92.65	14.72	4.80	0.00	0.00	112.17
T302	12,281	12,281	39.5	No	**-1.46**	108.0	3.01	92.78	14.86	4.80	0.00	0.00	112.45
T303	12,226	12,227	40.4	No	**-1.38**	108.0	3.01	92.75	14.82	4.80	0.00	0.00	112.37
T304	12,460	12,460	39.6	No	**-1.71**	108.0	3.01	92.91	14.99	4.80	0.00	0.00	112.70
T305	11,745	11,746	39.2	No	**-0.68**	108.0	3.01	92.40	14.47	4.80	0.00	0.00	111.67
T306	11,803	11,804	44.7	No	**-0.76**	108.0	3.01	92.44	14.51	4.80	0.00	0.00	111.75
T307	11,294	11,294	41.7	No	**0.00**	108.0	3.01	92.06	14.13	4.80	0.00	0.00	110.99
T308	17,363	17,363	40.7	Yes	**-7.54**	108.0	3.01	95.79	18.01	4.72	0.00	0.00	118.52
T309	16,913	16,913	42.0	Yes	**-7.06**	108.0	3.01	95.56	17.77	4.72	0.00	0.00	118.05
T310	16,732	16,732	39.7	Yes	**-6.87**	108.0	3.01	95.47	17.67	4.72	0.00	0.00	117.86
T311	16,290	16,290	41.7	Yes	**-6.38**	108.0	3.01	95.24	17.42	4.71	0.00	0.00	117.37
T312	15,888	15,888	41.6	Yes	**-5.93**	108.0	3.01	95.02	17.19	4.71	0.00	0.00	116.92
T313	15,425	15,425	53.0	Yes	**-5.38**	108.0	3.01	94.76	16.92	4.68	0.00	0.00	116.36
T314	14,414	14,414	43.2	No	**-4.28**	108.0	3.01	94.18	16.30	4.80	0.00	0.00	115.27
T315	14,652	14,653	48.4	Yes	**-4.46**	108.0	3.01	94.32	16.45	4.69	0.00	0.00	115.45
T316	14,973	14,973	54.7	Yes	**-4.84**	108.0	3.01	94.51	16.64	4.68	0.00	0.00	115.83
T317	15,374	15,374	60.1	Yes	**-5.30**	108.0	3.01	94.74	16.89	4.67	0.00	0.00	116.29
T318	16,036	16,036	48.8	Yes	**-6.08**	108.0	3.01	95.10	17.27	4.70	0.00	0.00	117.07
T319	16,188	16,188	45.7	Yes	**-6.26**	108.0	3.01	95.18	17.36	4.70	0.00	0.00	117.25
T320	16,493	16,494	51.2	Yes	**-6.59**	108.0	3.01	95.35	17.53	4.69	0.00	0.00	117.57
T321	16,908	16,908	44.9	Yes	**-7.05**	108.0	3.01	95.56	17.76	4.71	0.00	0.00	118.04
T322	16,452	16,452	45.1	Yes	**-6.55**	108.0	3.01	95.32	17.51	4.71	0.00	0.00	117.54
T323	16,148	16,149	44.1	Yes	**-6.22**	108.0	3.01	95.16	17.34	4.71	0.00	0.00	117.21
T324	15,443	15,443	45.7	Yes	**-5.41**	108.0	3.01	94.77	16.93	4.70	0.00	0.00	116.40
T325	15,699	15,699	43.3	Yes	**-5.71**	108.0	3.01	94.92	17.08	4.71	0.00	0.00	116.70
T326	15,217	15,217	48.2	Yes	**-5.14**	108.0	3.01	94.65	16.79	4.69	0.00	0.00	116.13
T327	14,834	14,834	43.4	Yes	**-4.70**	108.0	3.01	94.43	16.56	4.70	0.00	0.00	115.68
T328	13,830	13,831	46.2	Yes	**-3.44**	108.0	3.01	93.82	15.92	4.69	0.00	0.00	114.43
T329	13,374	13,374	45.9	Yes	**-2.84**	108.0	3.01	93.53	15.62	4.68	0.00	0.00	113.83
T330	12,852	12,852	45.3	Yes	**-2.14**	108.0	3.01	93.18	15.26	4.68	0.00	0.00	113.12

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T331	13,108	13,108	51.8	Yes	**-2.47**	108.0	3.01	93.35	15.44	4.67	0.00	0.00	113.46
T332	12,848	12,848	47.4	Yes	**-2.12**	108.0	3.01	93.18	15.26	4.67	0.00	0.00	113.11
T333	13,519	13,519	50.5	Yes	**-3.02**	108.0	3.01	93.62	15.72	4.67	0.00	0.00	114.01
T334	13,961	13,962	43.8	Yes	**-3.61**	108.0	3.01	93.90	16.01	4.69	0.00	0.00	114.60
T335	14,356	14,356	41.3	Yes	**-4.11**	108.0	3.01	94.14	16.26	4.70	0.00	0.00	115.10
Sum	36.72												

Noise sensitive area: SSA008 SSA008

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	4,058	4,059	57.2	Yes	**15.79**	107.5	3.01	83.17	7.25	4.32	0.00	0.00	94.74
402	4,356	4,357	61.5	Yes	**14.92**	107.5	3.01	83.78	7.51	4.32	0.00	0.00	95.61
403	4,947	4,948	57.3	Yes	**13.25**	107.5	3.01	84.89	7.98	4.41	0.00	0.00	97.27
404	5,245	5,246	63.7	Yes	**12.54**	107.5	3.01	85.40	8.20	4.39	0.00	0.00	97.99
405	5,343	5,344	56.1	Yes	**12.25**	107.5	3.01	85.56	8.27	4.44	0.00	0.00	98.27
406	5,231	5,232	58.6	Yes	**12.54**	107.5	3.01	85.37	8.19	4.42	0.00	0.00	97.98
407	6,184	6,185	51.3	Yes	**10.34**	107.5	3.01	86.83	8.84	4.52	0.00	0.00	100.19
408	3,084	3,086	65.2	Yes	**19.36**	107.5	3.01	80.79	6.30	4.08	0.00	0.00	91.16
409	3,296	3,297	61.5	Yes	**18.48**	107.5	3.01	81.36	6.52	4.16	0.00	0.00	92.04
410	3,751	3,752	63.1	Yes	**16.85**	107.5	3.01	82.49	6.97	4.23	0.00	0.00	93.68
411	4,130	4,131	62.1	Yes	**15.60**	107.5	3.01	83.32	7.31	4.29	0.00	0.00	94.92
412	4,593	4,595	60.5	Yes	**14.23**	107.5	3.01	84.25	7.70	4.35	0.00	0.00	96.30
413	5,002	5,004	56.9	Yes	**13.10**	107.5	3.01	84.99	8.02	4.41	0.00	0.00	97.42
414	5,280	5,281	56.8	Yes	**12.41**	107.5	3.01	85.45	8.23	4.43	0.00	0.00	98.12
415	6,302	6,303	49.9	No	**9.82**	107.5	3.01	86.99	8.92	4.80	0.00	0.00	100.71
416	5,892	5,893	54.8	No	**10.67**	107.5	3.01	86.41	8.65	4.80	0.00	0.00	99.86
417	5,519	5,520	49.5	No	**11.49**	107.5	3.01	85.84	8.40	4.80	0.00	0.00	99.04
418	5,119	5,120	42.3	No	**12.43**	107.5	3.01	85.18	8.11	4.80	0.00	0.00	98.09
419	4,923	4,924	47.7	No	**12.91**	107.5	3.01	84.85	7.96	4.80	0.00	0.00	97.61
420	4,437	4,439	48.3	No	**14.20**	107.5	3.01	83.94	7.57	4.80	0.00	0.00	96.32
421	3,412	3,415	60.2	No	**17.42**	107.5	3.01	81.67	6.64	4.80	0.00	0.00	93.11
422	3,030	3,033	48.1	No	**18.85**	107.5	3.01	80.64	6.24	4.80	0.00	0.00	91.67
423	2,764	2,767	52.3	No	**19.95**	107.5	3.01	79.84	5.94	4.80	0.00	0.00	90.58
424	2,219	2,221	52.9	Yes	**23.35**	107.5	3.01	77.93	5.26	3.98	0.00	0.00	87.18
425	1,821	1,823	53.7	Yes	**25.81**	107.5	3.01	76.22	4.70	3.79	0.00	0.00	84.71
426	6,329	6,331	63.7	No	**9.76**	107.5	3.01	87.03	8.93	4.80	0.00	0.00	100.76
427	6,000	6,001	67.6	No	**10.44**	107.5	3.01	86.57	8.72	4.80	0.00	0.00	100.09
428	5,773	5,774	69.2	Yes	**11.33**	107.5	3.01	86.23	8.57	4.39	0.00	0.00	99.19
429	5,258	5,260	64.9	Yes	**12.51**	107.5	3.01	85.42	8.21	4.38	0.00	0.00	98.01
430	5,130	5,131	66.4	Yes	**12.84**	107.5	3.01	85.20	8.12	4.36	0.00	0.00	97.68
431	4,628	4,630	69.4	Yes	**14.19**	107.5	3.01	84.31	7.73	4.29	0.00	0.00	96.33
432	4,626	4,627	66.2	Yes	**14.18**	107.5	3.01	84.31	7.73	4.31	0.00	0.00	96.35
433	18,424	18,424	47.9	No	**-3.94**	107.5	3.01	96.31	13.35	4.80	0.00	0.00	114.46
434	16,968	16,969	55.7	No	**-2.87**	107.5	3.01	95.59	13.00	4.80	0.00	0.00	113.40
435	16,095	16,095	54.7	No	**-2.19**	107.5	3.01	95.13	12.78	4.80	0.00	0.00	112.71
436	15,545	15,545	56.3	No	**-1.74**	107.5	3.01	94.83	12.63	4.80	0.00	0.00	112.26
437	15,293	15,294	51.9	No	**-1.53**	107.5	3.01	94.69	12.56	4.80	0.00	0.00	112.05
438	15,627	15,627	49.4	No	**-1.81**	107.5	3.01	94.88	12.65	4.80	0.00	0.00	112.33
439	13,223	13,224	60.4	No	**0.35**	107.5	3.01	93.43	11.95	4.80	0.00	0.00	110.18
440	12,818	12,818	56.6	No	**0.75**	107.5	3.01	93.16	11.82	4.80	0.00	0.00	109.78
441	12,651	12,651	54.7	No	**0.91**	107.5	3.01	93.04	11.77	4.80	0.00	0.00	109.61
442	12,240	12,240	60.2	No	**1.34**	107.5	3.01	92.76	11.63	4.80	0.00	0.00	109.18
443	11,970	11,971	57.5	No	**1.63**	107.5	3.01	92.56	11.54	4.80	0.00	0.00	108.90
444	11,889	11,890	60.4	No	**1.71**	107.5	3.01	92.50	11.51	4.80	0.00	0.00	108.81
445	16,675	16,676	55.4	No	**-2.65**	107.5	3.01	95.44	12.93	4.80	0.00	0.00	113.17
446	16,210	16,210	53.0	No	**-2.28**	107.5	3.01	95.20	12.81	4.80	0.00	0.00	112.80
447	15,441	15,442	49.0	No	**-1.65**	107.5	3.01	94.77	12.60	4.80	0.00	0.00	112.18
448	15,084	15,085	51.4	No	**-1.35**	107.5	3.01	94.57	12.51	4.80	0.00	0.00	111.88
449	14,477	14,478	56.9	No	**-0.82**	107.5	3.01	94.21	12.33	4.80	0.00	0.00	111.35
450	14,373	14,373	57.7	No	**-0.73**	107.5	3.01	94.15	12.30	4.80	0.00	0.00	111.25
451	13,731	13,732	63.1	No	**-0.14**	107.5	3.01	93.75	12.11	4.80	0.00	0.00	110.66

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
452	17,174	17,174	52.7	No	**-3.03**	107.5	3.01	95.70	13.05	4.80	0.00	0.00	113.55
453	16,654	16,655	43.2	No	**-2.63**	107.5	3.01	95.43	12.92	4.80	0.00	0.00	113.15
454	16,113	16,113	49.1	No	**-2.20**	107.5	3.01	95.14	12.78	4.80	0.00	0.00	112.73
455	15,047	15,047	54.0	No	**-1.32**	107.5	3.01	94.55	12.50	4.80	0.00	0.00	111.84
456	15,074	15,075	56.7	No	**-1.34**	107.5	3.01	94.57	12.50	4.80	0.00	0.00	111.87
457	14,923	14,923	53.1	No	**-1.21**	107.5	3.01	94.48	12.46	4.80	0.00	0.00	111.74
458	18,063	18,063	49.1	No	**-3.68**	107.5	3.01	96.14	13.27	4.80	0.00	0.00	114.20
459	17,672	17,672	50.9	No	**-3.40**	107.5	3.01	95.95	13.17	4.80	0.00	0.00	113.92
460	18,267	18,268	48.7	No	**-3.82**	107.5	3.01	96.23	13.32	4.80	0.00	0.00	114.35
461	17,822	17,822	51.4	No	**-3.51**	107.5	3.01	96.02	13.21	4.80	0.00	0.00	114.03
462	17,581	17,582	58.3	No	**-3.33**	107.5	3.01	95.90	13.15	4.80	0.00	0.00	113.85
463	17,127	17,127	51.1	No	**-2.99**	107.5	3.01	95.67	13.04	4.80	0.00	0.00	113.52
464	17,158	17,158	47.4	No	**-3.01**	107.5	3.01	95.69	13.05	4.80	0.00	0.00	113.54
T001	4,264	4,265	50.9	Yes	**15.91**	108.0	3.01	83.60	7.09	4.39	0.00	0.00	95.08
T002	3,199	3,201	58.2	Yes	**20.07**	108.0	3.01	81.11	5.63	4.18	0.00	0.00	90.92
T003	6,695	6,696	51.0	No	**6.69**	107.0	3.01	87.52	11.04	4.80	0.00	0.00	103.36
T004	6,984	6,984	50.3	No	**6.05**	107.0	3.01	87.88	11.32	4.80	0.00	0.00	104.00
T005	5,427	5,428	43.8	No	**9.83**	107.0	3.01	85.69	9.73	4.80	0.00	0.00	100.22
T006	2,205	2,207	47.8	Yes	**24.92**	108.0	3.01	77.88	4.13	4.06	0.00	0.00	86.06
T007	3,161	3,163	43.8	No	**19.61**	108.0	3.01	81.00	5.58	4.80	0.00	0.00	91.38
T008	7,475	7,476	51.5	No	**5.01**	107.0	3.01	88.47	11.77	4.80	0.00	0.00	105.04
T009	4,599	4,600	48.0	Yes	**14.77**	108.0	3.01	84.26	7.52	4.44	0.00	0.00	96.22
T010	3,813	3,814	48.3	Yes	**17.50**	108.0	3.01	82.63	6.49	4.37	0.00	0.00	93.48
T011	4,431	4,431	44.7	Yes	**15.30**	108.0	3.01	83.93	7.31	4.46	0.00	0.00	95.69
T012	6,533	6,534	35.7	No	**7.06**	107.0	3.01	87.30	10.89	4.80	0.00	0.00	102.99
T013	6,695	6,695	47.6	No	**6.70**	107.0	3.01	87.52	11.04	4.80	0.00	0.00	103.36
T014	5,580	5,581	40.4	No	**9.42**	107.0	3.01	85.93	9.90	4.80	0.00	0.00	100.63
T015	3,389	3,390	42.6	Yes	**19.11**	108.0	3.01	81.60	5.90	4.37	0.00	0.00	91.88
T016	6,790	6,790	47.4	No	**6.48**	107.0	3.01	87.64	11.14	4.80	0.00	0.00	103.57
T017	1,759	1,761	44.3	Yes	**27.74**	108.0	3.01	75.91	3.40	3.94	0.00	0.00	83.25
T018	4,744	4,744	32.2	No	**11.79**	107.0	3.01	84.52	8.94	4.80	0.00	0.00	98.26
T019	5,575	5,575	38.4	No	**9.44**	107.0	3.01	85.93	9.89	4.80	0.00	0.00	100.62
T020	2,476	2,478	45.8	No	**22.75**	108.0	3.01	78.88	4.55	4.80	0.00	0.00	88.24
T022	7,814	7,815	42.3	No	**4.33**	107.0	3.01	88.86	12.06	4.80	0.00	0.00	105.72
T023	8,207	8,207	55.4	No	**3.57**	107.0	3.01	89.28	12.40	4.80	0.00	0.00	106.48
T025	1,568	1,569	39.7	Yes	**29.07**	108.0	3.01	74.91	3.08	3.93	0.00	0.00	81.92
T026	2,102	2,103	41.3	No	**24.76**	108.0	3.01	77.46	3.96	4.80	0.00	0.00	86.22
T027	4,471	4,471	42.3	Yes	**15.15**	108.0	3.01	84.01	7.36	4.48	0.00	0.00	95.84
T028	2,781	2,782	45.5	Yes	**21.84**	108.0	3.01	79.89	5.02	4.24	0.00	0.00	89.15
T029	6,941	6,941	40.3	Yes	**6.35**	107.0	3.01	87.83	11.28	4.60	0.00	0.00	103.71
T030	3,277	3,278	47.5	Yes	**19.63**	108.0	3.01	81.31	5.74	4.30	0.00	0.00	91.36
T031	6,838	6,839	36.6	No	**6.37**	107.0	3.01	87.70	11.18	4.80	0.00	0.00	103.68
T032	6,045	6,046	41.9	No	**8.23**	107.0	3.01	86.63	10.39	4.80	0.00	0.00	101.82
T033	7,183	7,183	45.0	No	**5.63**	107.0	3.01	88.13	11.50	4.80	0.00	0.00	104.43
T201	2,289	2,290	39.9	Yes	**24.32**	108.0	3.01	78.20	4.26	4.20	0.00	0.00	86.66
T202	2,250	2,251	36.8	Yes	**24.50**	108.0	3.01	78.05	4.20	4.24	0.00	0.00	86.49
T203	3,806	3,806	33.0	Yes	**17.39**	108.0	3.01	82.61	6.48	4.50	0.00	0.00	93.59
T204	3,485	3,485	37.6	Yes	**18.68**	108.0	3.01	81.84	6.04	4.43	0.00	0.00	92.31
T205	3,784	3,785	45.1	Yes	**17.58**	108.0	3.01	82.56	6.45	4.39	0.00	0.00	93.40
T206	4,937	4,937	40.3	Yes	**13.65**	108.0	3.01	84.87	7.94	4.52	0.00	0.00	97.33
T207	5,629	5,630	48.9	Yes	**11.70**	108.0	3.01	86.01	8.77	4.50	0.00	0.00	99.29
T208	8,748	8,748	43.9	No	**4.36**	108.0	3.01	89.84	11.99	4.80	0.00	0.00	106.63
T209	9,136	9,136	50.6	No	**3.63**	108.0	3.01	90.22	12.34	4.80	0.00	0.00	107.36
T210	9,589	9,589	51.7	No	**2.81**	108.0	3.01	90.64	12.74	4.80	0.00	0.00	108.18
T211	9,129	9,130	53.9	No	**3.64**	108.0	3.01	90.21	12.34	4.80	0.00	0.00	107.35
T212	9,223	9,224	52.0	No	**3.47**	108.0	3.01	90.30	12.42	4.80	0.00	0.00	107.52
T213	9,403	9,403	47.4	No	**3.14**	108.0	3.01	90.47	12.58	4.80	0.00	0.00	107.85
T214	9,730	9,730	45.8	No	**2.56**	108.0	3.01	90.76	12.86	4.80	0.00	0.00	108.42
T215	7,963	7,963	52.8	No	**5.91**	108.0	3.01	89.02	11.25	4.80	0.00	0.00	105.07
T216	9,356	9,356	42.2	No	**3.23**	108.0	3.01	90.42	12.54	4.80	0.00	0.00	107.76
T217	10,067	10,067	40.3	No	**1.98**	108.0	3.01	91.06	13.15	4.80	0.00	0.00	109.01
T218	11,730	11,730	45.8	No	**-0.66**	108.0	3.01	92.39	14.46	4.80	0.00	0.00	111.64
T219	12,210	12,210	42.5	No	**-1.36**	108.0	3.01	92.73	14.81	4.80	0.00	0.00	112.34

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T220	12,675	12,676	38.7	No	**-2.01**	108.0	3.01	93.06	15.14	4.80	0.00	0.00	113.00
T221	13,273	13,273	35.5	No	**-2.82**	108.0	3.01	93.46	15.55	4.80	0.00	0.00	113.81
T222	13,863	13,863	33.4	No	**-3.59**	108.0	3.01	93.84	15.94	4.80	0.00	0.00	114.58
T223	13,236	13,236	34.2	No	**-2.77**	108.0	3.01	93.44	15.53	4.80	0.00	0.00	113.76
T224	12,991	12,991	46.4	No	**-2.44**	108.0	3.01	93.27	15.36	4.80	0.00	0.00	113.43
T225	12,672	12,672	45.8	No	**-2.01**	108.0	3.01	93.06	15.14	4.80	0.00	0.00	112.99
T226	12,441	12,442	44.0	No	**-1.69**	108.0	3.01	92.90	14.98	4.80	0.00	0.00	112.67
T227	11,618	11,618	41.6	No	**-0.49**	108.0	3.01	92.30	14.37	4.80	0.00	0.00	111.48
T228	13,479	13,479	30.6	No	**-3.10**	108.0	3.01	93.59	15.69	4.80	0.00	0.00	114.08
T229	11,001	11,001	46.1	No	**0.46**	108.0	3.01	91.83	13.90	4.80	0.00	0.00	110.53
T230	10,710	10,711	49.9	No	**0.92**	108.0	3.01	91.60	13.67	4.80	0.00	0.00	110.07
T231	10,209	10,209	43.6	No	**1.74**	108.0	3.01	91.18	13.26	4.80	0.00	0.00	109.24
T232	9,874	9,875	43.0	No	**2.31**	108.0	3.01	90.89	12.99	4.80	0.00	0.00	108.68
T233	9,472	9,472	46.0	No	**3.02**	108.0	3.01	90.53	12.64	4.80	0.00	0.00	107.97
T234	9,176	9,177	48.5	No	**3.55**	108.0	3.01	90.25	12.38	4.80	0.00	0.00	107.43
T235	8,620	8,620	39.6	No	**4.60**	108.0	3.01	89.71	11.88	4.80	0.00	0.00	106.39
T301	8,074	8,074	46.6	Yes	**5.88**	108.0	3.01	89.14	11.36	4.60	0.00	0.00	105.10
T302	8,377	8,378	45.8	Yes	**5.26**	108.0	3.01	89.46	11.65	4.61	0.00	0.00	105.73
T303	8,567	8,567	45.7	No	**4.70**	108.0	3.01	89.66	11.83	4.80	0.00	0.00	106.28
T304	8,953	8,953	42.3	No	**3.97**	108.0	3.01	90.04	12.18	4.80	0.00	0.00	107.02
T305	8,413	8,413	41.0	No	**5.01**	108.0	3.01	89.50	11.68	4.80	0.00	0.00	105.98
T306	8,350	8,350	46.8	Yes	**5.32**	108.0	3.01	89.43	11.62	4.61	0.00	0.00	105.67
T307	7,667	7,667	45.0	Yes	**6.73**	108.0	3.01	88.69	10.96	4.60	0.00	0.00	104.26
T308	13,581	13,581	31.2	No	**-3.23**	108.0	3.01	93.66	15.76	4.80	0.00	0.00	114.22
T309	13,087	13,087	34.4	No	**-2.57**	108.0	3.01	93.34	15.43	4.80	0.00	0.00	113.56
T310	12,784	12,784	34.3	No	**-2.16**	108.0	3.01	93.13	15.22	4.80	0.00	0.00	113.15
T311	12,314	12,314	36.9	No	**-1.50**	108.0	3.01	92.81	14.88	4.80	0.00	0.00	112.49
T312	11,900	11,900	37.1	No	**-0.91**	108.0	3.01	92.51	14.58	4.80	0.00	0.00	111.89
T313	11,418	11,418	48.9	No	**-0.19**	108.0	3.01	92.15	14.22	4.80	0.00	0.00	111.17
T314	10,327	10,328	41.0	No	**1.55**	108.0	3.01	91.28	13.36	4.80	0.00	0.00	109.44
T315	10,751	10,752	41.5	No	**0.85**	108.0	3.01	91.63	13.70	4.80	0.00	0.00	110.13
T316	11,213	11,213	43.8	No	**0.13**	108.0	3.01	91.99	14.07	4.80	0.00	0.00	110.86
T317	11,595	11,595	49.7	No	**-0.45**	108.0	3.01	92.29	14.36	4.80	0.00	0.00	111.44
T318	12,343	12,343	35.1	No	**-1.55**	108.0	3.01	92.83	14.90	4.80	0.00	0.00	112.53
T319	12,869	12,869	39.6	No	**-2.28**	108.0	3.01	93.19	15.28	4.80	0.00	0.00	113.27
T320	13,255	13,255	44.9	No	**-2.80**	108.0	3.01	93.45	15.54	4.80	0.00	0.00	113.79
T321	13,709	13,709	38.4	No	**-3.39**	108.0	3.01	93.74	15.84	4.80	0.00	0.00	114.38
T322	13,512	13,513	35.4	No	**-3.14**	108.0	3.01	93.61	15.71	4.80	0.00	0.00	114.13
T323	13,270	13,270	34.7	No	**-2.82**	108.0	3.01	93.46	15.55	4.80	0.00	0.00	113.81
T324	12,484	12,485	35.3	No	**-1.75**	108.0	3.01	92.93	15.01	4.80	0.00	0.00	112.73
T325	13,129	13,129	35.8	No	**-2.63**	108.0	3.01	93.36	15.45	4.80	0.00	0.00	113.62
T326	12,519	12,519	39.2	No	**-1.79**	108.0	3.01	92.95	15.03	4.80	0.00	0.00	112.78
T327	12,142	12,142	34.2	No	**-1.26**	108.0	3.01	92.69	14.76	4.80	0.00	0.00	112.25
T328	11,119	11,120	35.9	No	**0.27**	108.0	3.01	91.92	13.99	4.80	0.00	0.00	110.72
T329	11,032	11,032	42.2	No	**0.41**	108.0	3.01	91.85	13.93	4.80	0.00	0.00	110.58
T330	10,349	10,350	38.8	No	**1.51**	108.0	3.01	91.30	13.38	4.80	0.00	0.00	109.48
T331	10,292	10,292	38.3	No	**1.60**	108.0	3.01	91.25	13.33	4.80	0.00	0.00	109.38
T332	9,900	9,900	35.4	No	**2.27**	108.0	3.01	90.91	13.01	4.80	0.00	0.00	108.72
T333	10,387	10,388	39.8	No	**1.45**	108.0	3.01	91.33	13.41	4.80	0.00	0.00	109.54
T334	10,883	10,883	33.5	No	**0.64**	108.0	3.01	91.74	13.81	4.80	0.00	0.00	110.34
T335	11,159	11,160	32.1	No	**0.21**	108.0	3.01	91.95	14.02	4.80	0.00	0.00	110.78
Sum	37.33												

Noise sensitive area: SSA009 SSA009

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	7,268	7,269	57.4	No	**8.01**	107.5	3.01	88.23	9.48	4.80	0.00	0.00	102.51
402	7,417	7,418	59.3	No	**7.75**	107.5	3.01	88.41	9.57	4.80	0.00	0.00	102.77
403	7,843	7,844	56.3	No	**7.04**	107.5	3.01	88.89	9.79	4.80	0.00	0.00	103.48
404	7,966	7,967	62.4	No	**6.84**	107.5	3.01	89.03	9.85	4.80	0.00	0.00	103.68
405	7,875	7,876	52.0	No	**6.99**	107.5	3.01	88.93	9.81	4.80	0.00	0.00	103.53

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
406	7,531	7,532	51.7	No	**7.56**	107.5	3.01	88.54	9.63	4.80	0.00	0.00	102.96
407	8,784	8,785	52.0	No	**5.60**	107.5	3.01	89.87	10.25	4.80	0.00	0.00	104.93
408	1,537	1,542	50.0	Yes	**27.81**	107.5	3.01	74.76	4.27	3.68	0.00	0.00	82.71
409	2,175	2,178	45.1	Yes	**23.47**	107.5	3.01	77.76	5.21	4.09	0.00	0.00	87.06
410	2,098	2,102	54.9	Yes	**24.06**	107.5	3.01	77.45	5.10	3.90	0.00	0.00	86.46
411	2,297	2,300	50.9	Yes	**22.88**	107.5	3.01	78.24	5.37	4.04	0.00	0.00	87.64
412	2,223	2,226	47.8	Yes	**23.24**	107.5	3.01	77.95	5.27	4.06	0.00	0.00	87.29
413	2,593	2,596	47.2	Yes	**21.32**	107.5	3.01	79.29	5.74	4.18	0.00	0.00	89.20
414	2,986	2,989	46.2	Yes	**19.55**	107.5	3.01	80.51	6.19	4.27	0.00	0.00	90.97
415	9,039	9,040	54.3	No	**5.23**	107.5	3.01	90.12	10.37	4.80	0.00	0.00	105.29
416	8,638	8,639	59.3	No	**5.81**	107.5	3.01	89.73	10.18	4.80	0.00	0.00	104.71
417	8,110	8,111	59.6	No	**6.62**	107.5	3.01	89.18	9.93	4.80	0.00	0.00	103.91
418	7,639	7,640	56.6	No	**7.38**	107.5	3.01	88.66	9.68	4.80	0.00	0.00	103.15
419	6,932	6,933	66.1	No	**8.61**	107.5	3.01	87.82	9.29	4.80	0.00	0.00	101.91
420	6,530	6,531	67.8	No	**9.37**	107.5	3.01	87.30	9.06	4.80	0.00	0.00	101.16
421	6,148	6,150	75.5	Yes	**10.55**	107.5	3.01	86.78	8.82	4.38	0.00	0.00	99.98
422	5,698	5,699	63.7	Yes	**11.47**	107.5	3.01	86.12	8.52	4.42	0.00	0.00	99.06
423	5,322	5,324	66.5	Yes	**12.37**	107.5	3.01	85.52	8.26	4.37	0.00	0.00	98.16
424	4,481	4,483	64.2	Yes	**14.57**	107.5	3.01	84.03	7.61	4.31	0.00	0.00	95.95
425	4,158	4,160	64.3	Yes	**15.53**	107.5	3.01	83.38	7.34	4.27	0.00	0.00	94.99
426	6,604	6,605	58.2	No	**9.23**	107.5	3.01	87.40	9.10	4.80	0.00	0.00	101.30
427	6,019	6,021	60.3	Yes	**10.74**	107.5	3.01	86.59	8.74	4.46	0.00	0.00	99.79
428	5,568	5,570	61.5	Yes	**11.75**	107.5	3.01	85.92	8.43	4.42	0.00	0.00	98.77
429	5,097	5,099	56.2	Yes	**12.86**	107.5	3.01	85.15	8.09	4.42	0.00	0.00	97.67
430	4,673	4,674	57.7	Yes	**13.98**	107.5	3.01	84.39	7.77	4.38	0.00	0.00	96.54
431	4,084	4,086	61.3	Yes	**15.74**	107.5	3.01	83.23	7.27	4.29	0.00	0.00	94.79
432	3,766	3,767	58.2	Yes	**16.75**	107.5	3.01	82.52	6.98	4.27	0.00	0.00	93.77
433	19,047	19,048	42.6	No	**-4.37**	107.5	3.01	96.60	13.49	4.80	0.00	0.00	114.89
434	17,551	17,551	50.2	No	**-3.31**	107.5	3.01	95.89	13.15	4.80	0.00	0.00	113.83
435	16,731	16,732	47.8	No	**-2.69**	107.5	3.01	95.47	12.94	4.80	0.00	0.00	113.21
436	16,246	16,247	49.1	No	**-2.31**	107.5	3.01	95.22	12.82	4.80	0.00	0.00	112.83
437	15,930	15,930	44.7	No	**-2.06**	107.5	3.01	95.04	12.74	4.80	0.00	0.00	112.58
438	15,924	15,924	47.7	No	**-2.05**	107.5	3.01	95.04	12.73	4.80	0.00	0.00	112.58
439	12,995	12,995	65.7	No	**0.57**	107.5	3.01	93.28	11.88	4.80	0.00	0.00	109.95
440	12,519	12,520	63.2	No	**1.05**	107.5	3.01	92.95	11.72	4.80	0.00	0.00	109.48
441	12,205	12,206	61.3	No	**1.38**	107.5	3.01	92.73	11.62	4.80	0.00	0.00	109.15
442	11,750	11,751	66.8	No	**1.86**	107.5	3.01	92.40	11.46	4.80	0.00	0.00	108.66
443	11,353	11,354	63.9	No	**2.31**	107.5	3.01	92.10	11.32	4.80	0.00	0.00	108.22
444	11,135	11,136	67.0	No	**2.56**	107.5	3.01	91.93	11.23	4.80	0.00	0.00	107.97
445	16,974	16,975	53.4	No	**-2.88**	107.5	3.01	95.60	13.00	4.80	0.00	0.00	113.40
446	16,450	16,451	51.3	No	**-2.47**	107.5	3.01	95.32	12.87	4.80	0.00	0.00	112.99
447	15,460	15,460	52.5	No	**-1.67**	107.5	3.01	94.78	12.61	4.80	0.00	0.00	112.19
448	15,042	15,043	54.6	No	**-1.32**	107.5	3.01	94.55	12.49	4.80	0.00	0.00	111.84
449	14,404	14,405	60.7	No	**-0.76**	107.5	3.01	94.17	12.31	4.80	0.00	0.00	111.28
450	14,201	14,202	61.6	No	**-0.57**	107.5	3.01	94.05	12.25	4.80	0.00	0.00	111.10
451	13,518	13,519	68.4	No	**0.06**	107.5	3.01	93.62	12.04	4.80	0.00	0.00	110.46
452	17,483	17,484	50.6	No	**-3.26**	107.5	3.01	95.85	13.13	4.80	0.00	0.00	113.78
453	15,799	15,799	53.9	No	**-1.95**	107.5	3.01	94.97	12.70	4.80	0.00	0.00	112.47
454	15,231	15,231	59.3	No	**-1.48**	107.5	3.01	94.65	12.55	4.80	0.00	0.00	112.00
455	14,146	14,146	63.6	No	**-0.52**	107.5	3.01	94.01	12.24	4.80	0.00	0.00	111.05
456	14,040	14,041	67.6	No	**-0.43**	107.5	3.01	93.95	12.20	4.80	0.00	0.00	110.95
457	13,792	13,792	65.3	No	**-0.20**	107.5	3.01	93.79	12.13	4.80	0.00	0.00	110.72
458	18,424	18,425	46.6	No	**-3.94**	107.5	3.01	96.31	13.35	4.80	0.00	0.00	114.46
459	18,022	18,022	48.3	No	**-3.65**	107.5	3.01	96.12	13.26	4.80	0.00	0.00	114.17
460	18,333	18,334	48.9	No	**-3.87**	107.5	3.01	96.27	13.33	4.80	0.00	0.00	114.40
461	17,859	17,860	52.0	No	**-3.53**	107.5	3.01	96.04	13.22	4.80	0.00	0.00	114.06
462	17,545	17,545	60.1	No	**-3.30**	107.5	3.01	95.88	13.14	4.80	0.00	0.00	113.83
463	17,077	17,078	53.1	No	**-2.95**	107.5	3.01	95.65	13.03	4.80	0.00	0.00	113.48
464	16,936	16,937	50.8	No	**-2.85**	107.5	3.01	95.58	12.99	4.80	0.00	0.00	113.37
T001	8,204	8,205	51.1	No	**5.42**	108.0	3.01	89.28	11.49	4.80	0.00	0.00	105.57
T002	7,175	7,176	54.2	No	**7.60**	108.0	3.01	88.12	10.47	4.80	0.00	0.00	103.38
T003	10,299	10,300	47.9	No	**0.02**	107.0	3.01	91.26	13.97	4.80	0.00	0.00	110.03
T004	10,786	10,786	45.7	No	**-0.71**	107.0	3.01	91.66	14.30	4.80	0.00	0.00	110.76

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T005	9,049	9,050	42.2	No	**2.06**	107.0	3.01	90.13	13.07	4.80	0.00	0.00	108.00
T006	6,095	6,096	49.5	No	**10.18**	108.0	3.01	86.70	9.30	4.80	0.00	0.00	100.80
T007	6,777	6,777	48.1	No	**8.52**	108.0	3.01	87.62	10.05	4.80	0.00	0.00	102.47
T008	11,126	11,126	47.6	No	**-1.20**	107.0	3.01	91.93	14.53	4.80	0.00	0.00	111.25
T009	8,588	8,588	43.3	No	**4.66**	108.0	3.01	89.68	11.85	4.80	0.00	0.00	106.32
T010	7,783	7,783	46.8	No	**6.29**	108.0	3.01	88.82	11.08	4.80	0.00	0.00	104.70
T011	8,376	8,376	37.9	No	**5.08**	108.0	3.01	89.46	11.65	4.80	0.00	0.00	105.91
T012	10,501	10,501	30.0	No	**-0.28**	107.0	3.01	91.42	14.11	4.80	0.00	0.00	110.34
T013	10,530	10,531	42.5	No	**-0.33**	107.0	3.01	91.45	14.13	4.80	0.00	0.00	110.38
T014	9,358	9,359	38.5	No	**1.53**	107.0	3.01	90.42	13.30	4.80	0.00	0.00	108.52
T015	7,178	7,178	46.7	No	**7.60**	108.0	3.01	88.12	10.47	4.80	0.00	0.00	103.39
T016	10,502	10,502	44.4	No	**-0.28**	107.0	3.01	91.43	14.11	4.80	0.00	0.00	110.34
T017	5,563	5,564	47.6	No	**11.59**	108.0	3.01	85.91	8.69	4.80	0.00	0.00	99.40
T018	8,518	8,518	32.1	No	**3.00**	107.0	3.01	89.61	12.65	4.80	0.00	0.00	107.06
T019	9,446	9,446	34.9	No	**1.38**	107.0	3.01	90.50	13.37	4.80	0.00	0.00	108.67
T020	6,140	6,141	50.3	No	**10.07**	108.0	3.01	86.77	9.35	4.80	0.00	0.00	100.92
T022	11,664	11,664	37.0	No	**-1.95**	107.0	3.01	92.34	14.87	4.80	0.00	0.00	112.00
T023	11,805	11,805	52.5	No	**-2.14**	107.0	3.01	92.44	14.95	4.80	0.00	0.00	112.19
T025	5,517	5,518	38.3	No	**11.71**	108.0	3.01	85.84	8.64	4.80	0.00	0.00	99.28
T026	5,511	5,511	46.0	No	**11.73**	108.0	3.01	85.83	8.63	4.80	0.00	0.00	99.26
T027	8,365	8,366	41.1	No	**5.10**	108.0	3.01	89.45	11.64	4.80	0.00	0.00	105.89
T028	6,594	6,595	49.0	No	**8.95**	108.0	3.01	87.38	9.85	4.80	0.00	0.00	102.04
T029	10,923	10,923	31.5	No	**-0.91**	107.0	3.01	91.77	14.39	4.80	0.00	0.00	110.96
T030	7,267	7,267	42.5	No	**7.40**	108.0	3.01	88.23	10.56	4.80	0.00	0.00	103.59
T031	10,777	10,777	33.2	No	**-0.69**	107.0	3.01	91.65	14.30	4.80	0.00	0.00	110.75
T032	9,623	9,623	39.1	No	**1.09**	107.0	3.01	90.67	13.50	4.80	0.00	0.00	108.96
T033	11,059	11,060	40.1	No	**-1.10**	107.0	3.01	91.87	14.48	4.80	0.00	0.00	111.16
T201	6,175	6,176	39.7	No	**9.98**	108.0	3.01	86.81	9.39	4.80	0.00	0.00	101.01
T202	6,054	6,054	39.0	No	**10.29**	108.0	3.01	86.64	9.26	4.80	0.00	0.00	100.70
T203	7,459	7,459	33.3	No	**6.98**	108.0	3.01	88.45	10.75	4.80	0.00	0.00	104.01
T204	7,042	7,042	40.0	No	**7.91**	108.0	3.01	87.95	10.33	4.80	0.00	0.00	103.08
T205	7,153	7,154	45.0	No	**7.65**	108.0	3.01	88.09	10.44	4.80	0.00	0.00	103.33
T206	8,601	8,602	36.7	No	**4.64**	108.0	3.01	89.69	11.86	4.80	0.00	0.00	106.35
T207	9,173	9,173	43.1	No	**3.56**	108.0	3.01	90.25	12.38	4.80	0.00	0.00	107.43
T208	12,672	12,672	39.3	No	**-2.01**	108.0	3.01	93.06	15.14	4.80	0.00	0.00	113.00
T209	13,049	13,049	45.1	No	**-2.52**	108.0	3.01	93.31	15.40	4.80	0.00	0.00	113.51
T210	13,478	13,479	45.0	No	**-3.10**	108.0	3.01	93.59	15.69	4.80	0.00	0.00	114.08
T211	12,906	12,907	48.4	No	**-2.33**	108.0	3.01	93.22	15.30	4.80	0.00	0.00	113.32
T212	12,949	12,950	46.2	No	**-2.39**	108.0	3.01	93.25	15.33	4.80	0.00	0.00	113.38
T213	13,071	13,071	41.4	No	**-2.55**	108.0	3.01	93.33	15.41	4.80	0.00	0.00	113.54
T214	13,372	13,372	39.5	No	**-2.95**	108.0	3.01	93.52	15.62	4.80	0.00	0.00	113.94
T215	11,481	11,481	49.1	No	**-0.28**	108.0	3.01	92.20	14.27	4.80	0.00	0.00	111.27
T216	12,814	12,814	37.4	No	**-2.20**	108.0	3.01	93.15	15.24	4.80	0.00	0.00	113.19
T217	13,499	13,499	34.6	No	**-3.12**	108.0	3.01	93.61	15.70	4.80	0.00	0.00	114.11
T218	15,358	15,358	40.4	No	**-5.41**	108.0	3.01	94.73	16.88	4.80	0.00	0.00	116.40
T219	15,747	15,747	38.9	No	**-5.86**	108.0	3.01	94.94	17.11	4.80	0.00	0.00	116.85
T220	16,222	16,222	35.1	No	**-6.39**	108.0	3.01	95.20	17.38	4.80	0.00	0.00	117.38
T221	16,781	16,782	31.8	No	**-7.00**	108.0	3.01	95.50	17.69	4.80	0.00	0.00	117.99
T222	16,817	16,817	26.4	No	**-7.04**	108.0	3.01	95.51	17.71	4.80	0.00	0.00	118.03
T223	16,160	16,160	28.7	No	**-6.33**	108.0	3.01	95.17	17.34	4.80	0.00	0.00	117.31
T224	16,240	16,240	37.5	No	**-6.41**	108.0	3.01	95.21	17.39	4.80	0.00	0.00	117.40
T225	15,908	15,908	37.1	No	**-6.04**	108.0	3.01	95.03	17.20	4.80	0.00	0.00	117.03
T226	15,524	15,524	37.9	No	**-5.61**	108.0	3.01	94.82	16.97	4.80	0.00	0.00	116.60
T227	14,671	14,671	35.4	No	**-4.60**	108.0	3.01	94.33	16.46	4.80	0.00	0.00	115.59
T228	16,534	16,534	23.3	No	**-6.74**	108.0	3.01	95.37	17.56	4.80	0.00	0.00	117.72
T229	14,128	14,129	41.7	No	**-3.93**	108.0	3.01	94.00	16.11	4.80	0.00	0.00	114.92
T230	13,880	13,880	44.8	No	**-3.61**	108.0	3.01	93.85	15.95	4.80	0.00	0.00	114.60
T231	13,375	13,375	38.9	No	**-2.96**	108.0	3.01	93.53	15.62	4.80	0.00	0.00	113.95
T232	12,775	12,775	39.0	No	**-2.15**	108.0	3.01	93.13	15.21	4.80	0.00	0.00	113.14
T233	12,386	12,386	42.0	No	**-1.61**	108.0	3.01	92.86	14.94	4.80	0.00	0.00	112.59
T234	12,060	12,061	45.2	No	**-1.14**	108.0	3.01	92.63	14.70	4.80	0.00	0.00	112.13
T235	11,653	11,653	36.6	No	**-0.54**	108.0	3.01	92.33	14.40	4.80	0.00	0.00	111.53
T301	11,822	11,822	35.6	No	**-0.79**	108.0	3.01	92.45	14.53	4.80	0.00	0.00	111.78

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T302	12,063	12,063	34.1	No	**-1.14**	108.0	3.01	92.63	14.70	4.80	0.00	0.00	112.13
T303	12,102	12,102	34.5	No	**-1.20**	108.0	3.01	92.66	14.73	4.80	0.00	0.00	112.19
T304	12,392	12,392	35.2	No	**-1.62**	108.0	3.01	92.86	14.94	4.80	0.00	0.00	112.60
T305	11,729	11,729	34.3	No	**-0.65**	108.0	3.01	92.39	14.46	4.80	0.00	0.00	111.64
T306	11,747	11,747	41.6	No	**-0.68**	108.0	3.01	92.40	14.47	4.80	0.00	0.00	111.67
T307	11,171	11,172	35.9	No	**0.19**	108.0	3.01	91.96	14.03	4.80	0.00	0.00	110.80
T308	16,176	16,176	34.3	No	**-6.34**	108.0	3.01	95.18	17.35	4.80	0.00	0.00	117.33
T309	15,733	15,733	36.1	No	**-5.85**	108.0	3.01	94.94	17.10	4.80	0.00	0.00	116.83
T310	15,573	15,573	34.1	No	**-5.66**	108.0	3.01	94.85	17.00	4.80	0.00	0.00	116.65
T311	15,138	15,138	35.8	No	**-5.16**	108.0	3.01	94.60	16.74	4.80	0.00	0.00	116.15
T312	14,739	14,739	35.3	No	**-4.68**	108.0	3.01	94.37	16.50	4.80	0.00	0.00	115.67
T313	14,282	14,283	46.3	No	**-4.12**	108.0	3.01	94.10	16.21	4.80	0.00	0.00	115.11
T314	13,292	13,292	35.6	No	**-2.85**	108.0	3.01	93.47	15.56	4.80	0.00	0.00	113.84
T315	13,493	13,493	42.9	No	**-3.11**	108.0	3.01	93.60	15.70	4.80	0.00	0.00	114.10
T316	13,790	13,790	48.8	No	**-3.50**	108.0	3.01	93.79	15.90	4.80	0.00	0.00	114.49
T317	14,192	14,192	54.2	No	**-4.01**	108.0	3.01	94.04	16.16	4.80	0.00	0.00	115.00
T318	14,841	14,841	40.3	No	**-4.80**	108.0	3.01	94.43	16.56	4.80	0.00	0.00	115.79
T319	14,954	14,955	37.1	No	**-4.94**	108.0	3.01	94.50	16.63	4.80	0.00	0.00	115.93
T320	15,253	15,254	42.7	No	**-5.29**	108.0	3.01	94.67	16.81	4.80	0.00	0.00	116.28
T321	15,664	15,664	36.3	No	**-5.77**	108.0	3.01	94.90	17.06	4.80	0.00	0.00	116.76
T322	15,197	15,197	35.8	No	**-5.23**	108.0	3.01	94.64	16.78	4.80	0.00	0.00	116.21
T323	14,892	14,892	34.4	No	**-4.86**	108.0	3.01	94.46	16.59	4.80	0.00	0.00	115.85
T324	14,190	14,190	37.0	No	**-4.01**	108.0	3.01	94.04	16.15	4.80	0.00	0.00	114.99
T325	14,437	14,437	34.1	No	**-4.31**	108.0	3.01	94.19	16.31	4.80	0.00	0.00	115.30
T326	13,957	13,957	39.0	No	**-3.71**	108.0	3.01	93.90	16.00	4.80	0.00	0.00	114.70
T327	13,573	13,574	34.2	No	**-3.22**	108.0	3.01	93.65	15.75	4.80	0.00	0.00	114.21
T328	12,572	12,572	36.7	No	**-1.87**	108.0	3.01	92.99	15.07	4.80	0.00	0.00	112.86
T329	12,111	12,112	36.5	No	**-1.21**	108.0	3.01	92.66	14.74	4.80	0.00	0.00	112.20
T330	11,590	11,591	36.1	No	**-0.45**	108.0	3.01	92.28	14.35	4.80	0.00	0.00	111.44
T331	11,853	11,854	42.4	No	**-0.84**	108.0	3.01	92.48	14.55	4.80	0.00	0.00	111.83
T332	11,599	11,600	39.5	No	**-0.46**	108.0	3.01	92.29	14.36	4.80	0.00	0.00	111.45
T333	12,278	12,279	41.8	No	**-1.45**	108.0	3.01	92.78	14.86	4.80	0.00	0.00	112.44
T334	12,717	12,717	35.2	No	**-2.07**	108.0	3.01	93.09	15.17	4.80	0.00	0.00	113.06
T335	13,118	13,118	32.6	No	**-2.62**	108.0	3.01	93.36	15.45	4.80	0.00	0.00	113.60
Sum	33.59												

Noise sensitive area: SSA010 SSA010

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	5,726	5,727	59.9	No	**11.03**	107.5	3.01	86.16	8.54	4.80	0.00	0.00	99.50
402	6,120	6,121	62.2	No	**10.19**	107.5	3.01	86.74	8.80	4.80	0.00	0.00	100.34
403	6,758	6,759	57.6	No	**8.93**	107.5	3.01	87.60	9.19	4.80	0.00	0.00	101.59
404	7,162	7,163	60.7	No	**8.20**	107.5	3.01	88.10	9.42	4.80	0.00	0.00	102.33
405	7,393	7,394	50.2	No	**7.79**	107.5	3.01	88.38	9.55	4.80	0.00	0.00	102.73
406	7,454	7,454	51.9	No	**7.69**	107.5	3.01	88.45	9.58	4.80	0.00	0.00	102.83
407	8,072	8,073	50.1	No	**6.68**	107.5	3.01	89.14	9.91	4.80	0.00	0.00	103.85
408	5,751	5,752	63.1	No	**10.97**	107.5	3.01	86.20	8.56	4.80	0.00	0.00	99.55
409	6,134	6,135	57.1	No	**10.16**	107.5	3.01	86.76	8.81	4.80	0.00	0.00	100.36
410	6,558	6,559	61.9	No	**9.31**	107.5	3.01	87.34	9.07	4.80	0.00	0.00	101.21
411	6,951	6,951	61.7	No	**8.58**	107.5	3.01	87.84	9.30	4.80	0.00	0.00	101.95
412	7,352	7,353	62.0	No	**7.87**	107.5	3.01	88.33	9.53	4.80	0.00	0.00	102.66
413	7,785	7,786	60.2	No	**7.14**	107.5	3.01	88.83	9.76	4.80	0.00	0.00	103.39
414	8,103	8,104	59.0	No	**6.63**	107.5	3.01	89.17	9.92	4.80	0.00	0.00	103.90
415	3,328	3,330	53.4	Yes	**18.27**	107.5	3.01	81.45	6.55	4.25	0.00	0.00	92.25
416	2,920	2,922	59.2	Yes	**19.99**	107.5	3.01	80.31	6.12	4.11	0.00	0.00	90.54
417	2,587	2,589	55.1	Yes	**21.46**	107.5	3.01	79.26	5.73	4.07	0.00	0.00	89.06
418	2,236	2,239	50.3	Yes	**23.21**	107.5	3.01	78.00	5.29	4.03	0.00	0.00	87.32
419	2,406	2,408	43.9	Yes	**22.21**	107.5	3.01	78.63	5.51	4.18	0.00	0.00	88.31
420	1,990	1,992	39.6	Yes	**24.47**	107.5	3.01	76.99	4.95	4.12	0.00	0.00	86.06
421	740	753	57.4	Yes	**37.12**	107.5	3.01	68.53	2.73	2.14	0.00	0.00	73.40
422	793	800	48.9	Yes	**35.95**	107.5	3.01	69.06	2.84	2.68	0.00	0.00	74.58

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
423	1,037	1,043	48.4	Yes	**32.60**	107.5	3.01	71.36	3.36	3.20	0.00	0.00	77.92
424	1,734	1,737	42.6	Yes	**26.20**	107.5	3.01	75.79	4.57	3.96	0.00	0.00	84.33
425	1,984	1,987	39.4	Yes	**24.50**	107.5	3.01	76.96	4.94	4.12	0.00	0.00	86.02
426	4,821	4,823	58.0	No	**13.17**	107.5	3.01	84.67	7.88	4.80	0.00	0.00	97.35
427	4,782	4,783	59.5	Yes	**13.70**	107.5	3.01	84.59	7.85	4.38	0.00	0.00	96.82
428	4,803	4,804	57.7	Yes	**13.63**	107.5	3.01	84.63	7.87	4.39	0.00	0.00	96.89
429	4,445	4,446	55.0	Yes	**14.61**	107.5	3.01	83.96	7.58	4.38	0.00	0.00	95.92
430	4,604	4,605	58.0	Yes	**14.18**	107.5	3.01	84.26	7.71	4.37	0.00	0.00	96.35
431	4,411	4,413	60.8	Yes	**14.75**	107.5	3.01	83.89	7.55	4.33	0.00	0.00	95.78
432	4,648	4,649	57.0	Yes	**14.05**	107.5	3.01	84.35	7.75	4.38	0.00	0.00	96.47
433	15,914	15,915	50.4	No	**-2.04**	107.5	3.01	95.04	12.73	4.80	0.00	0.00	112.57
434	14,502	14,502	56.1	No	**-0.84**	107.5	3.01	94.23	12.34	4.80	0.00	0.00	111.37
435	13,619	13,620	55.2	No	**-0.03**	107.5	3.01	93.68	12.08	4.80	0.00	0.00	110.56
436	13,050	13,051	57.5	No	**0.51**	107.5	3.01	93.31	11.90	4.80	0.00	0.00	110.01
437	12,834	12,835	51.7	No	**0.73**	107.5	3.01	93.17	11.83	4.80	0.00	0.00	109.79
438	13,330	13,330	47.7	No	**0.24**	107.5	3.01	93.50	11.99	4.80	0.00	0.00	110.28
439	11,309	11,310	58.1	No	**2.36**	107.5	3.01	92.07	11.30	4.80	0.00	0.00	108.17
440	10,967	10,968	54.8	No	**2.75**	107.5	3.01	91.80	11.17	4.80	0.00	0.00	107.77
441	10,903	10,904	53.0	No	**2.83**	107.5	3.01	91.75	11.15	4.80	0.00	0.00	107.70
442	10,543	10,544	57.6	No	**3.26**	107.5	3.01	91.46	11.01	4.80	0.00	0.00	107.27
443	10,375	10,376	54.1	No	**3.46**	107.5	3.01	91.32	10.94	4.80	0.00	0.00	107.06
444	10,393	10,393	55.5	No	**3.44**	107.5	3.01	91.34	10.95	4.80	0.00	0.00	107.08
445	14,353	14,353	54.6	No	**-0.71**	107.5	3.01	94.14	12.30	4.80	0.00	0.00	111.24
446	13,928	13,928	51.0	No	**-0.32**	107.5	3.01	93.88	12.17	4.80	0.00	0.00	110.85
447	13,301	13,301	46.7	No	**0.27**	107.5	3.01	93.48	11.98	4.80	0.00	0.00	110.25
448	12,988	12,989	48.6	No	**0.58**	107.5	3.01	93.27	11.88	4.80	0.00	0.00	109.95
449	12,419	12,420	54.6	No	**1.15**	107.5	3.01	92.88	11.69	4.80	0.00	0.00	109.37
450	12,377	12,377	55.4	No	**1.20**	107.5	3.01	92.85	11.68	4.80	0.00	0.00	109.33
451	11,785	11,786	61.3	No	**1.83**	107.5	3.01	92.43	11.47	4.80	0.00	0.00	108.70
452	14,836	14,836	52.0	No	**-1.14**	107.5	3.01	94.43	12.44	4.80	0.00	0.00	111.66
453	15,009	15,009	39.7	No	**-1.29**	107.5	3.01	94.53	12.48	4.80	0.00	0.00	111.81
454	14,502	14,502	44.5	No	**-0.84**	107.5	3.01	94.23	12.34	4.80	0.00	0.00	111.37
455	13,488	13,488	48.6	No	**0.09**	107.5	3.01	93.60	12.04	4.80	0.00	0.00	110.43
456	13,605	13,605	51.4	No	**-0.02**	107.5	3.01	93.67	12.07	4.80	0.00	0.00	110.55
457	13,526	13,526	47.7	No	**0.05**	107.5	3.01	93.62	12.05	4.80	0.00	0.00	110.47
458	15,682	15,683	49.1	No	**-1.85**	107.5	3.01	94.91	12.67	4.80	0.00	0.00	112.38
459	15,304	15,304	50.5	No	**-1.54**	107.5	3.01	94.70	12.57	4.80	0.00	0.00	112.06
460	16,034	16,034	47.4	No	**-2.14**	107.5	3.01	95.10	12.76	4.80	0.00	0.00	112.66
461	15,612	15,613	50.2	No	**-1.80**	107.5	3.01	94.87	12.65	4.80	0.00	0.00	112.32
462	15,417	15,418	57.5	No	**-1.63**	107.5	3.01	94.76	12.60	4.80	0.00	0.00	112.16
463	14,980	14,981	49.9	No	**-1.26**	107.5	3.01	94.51	12.48	4.80	0.00	0.00	111.79
464	15,107	15,108	45.5	No	**-1.37**	107.5	3.01	94.58	12.51	4.80	0.00	0.00	111.90
T001	2,995	2,996	52.2	Yes	**20.92**	108.0	3.01	80.53	5.33	4.20	0.00	0.00	90.07
T002	2,611	2,613	44.3	Yes	**22.66**	108.0	3.01	79.34	4.76	4.22	0.00	0.00	88.33
T003	4,197	4,198	58.4	Yes	**14.01**	107.0	3.01	83.46	8.25	4.33	0.00	0.00	96.04
T004	4,858	4,858	56.2	Yes	**11.84**	107.0	3.01	84.73	9.08	4.40	0.00	0.00	98.21
T005	2,990	2,991	52.7	Yes	**18.79**	107.0	3.01	80.52	6.55	4.20	0.00	0.00	91.26
T006	1,744	1,746	41.0	Yes	**27.78**	108.0	3.01	75.84	3.38	3.99	0.00	0.00	83.21
T007	1,061	1,065	39.7	Yes	**33.75**	108.0	3.01	71.54	2.18	3.51	0.00	0.00	77.24
T008	5,036	5,037	56.7	Yes	**11.31**	107.0	3.01	85.04	9.29	4.42	0.00	0.00	98.75
T009	3,767	3,768	40.9	Yes	**17.61**	108.0	3.01	82.52	6.43	4.43	0.00	0.00	93.38
T010	2,912	2,913	44.5	Yes	**21.21**	108.0	3.01	80.29	5.21	4.28	0.00	0.00	89.78
T011	4,362	4,362	30.2	No	**15.18**	108.0	3.01	83.79	7.22	4.80	0.00	0.00	95.81
T012	5,119	5,119	51.0	Yes	**11.03**	107.0	3.01	85.18	9.38	4.46	0.00	0.00	99.02
T013	4,673	4,674	55.3	Yes	**12.41**	107.0	3.01	84.39	8.85	4.40	0.00	0.00	97.64
T014	3,467	3,467	50.1	Yes	**16.69**	107.0	3.01	81.80	7.26	4.31	0.00	0.00	93.36
T015	1,706	1,708	39.7	Yes	**28.02**	108.0	3.01	75.65	3.31	4.00	0.00	0.00	82.96
T016	4,472	4,473	54.2	Yes	**13.05**	107.0	3.01	84.01	8.60	4.39	0.00	0.00	97.00
T017	1,579	1,581	43.5	Yes	**29.06**	108.0	3.01	74.98	3.10	3.85	0.00	0.00	81.93
T018	2,697	2,698	41.2	Yes	**20.07**	107.0	3.01	79.62	6.09	4.28	0.00	0.00	89.99
T019	3,750	3,750	48.7	Yes	**15.56**	107.0	3.01	82.48	7.66	4.36	0.00	0.00	94.49
T020	1,047	1,050	40.8	Yes	**33.95**	108.0	3.01	71.42	2.16	3.46	0.00	0.00	77.04
T022	5,785	5,786	48.6	Yes	**9.17**	107.0	3.01	86.25	10.12	4.51	0.00	0.00	100.88

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T023	5,685	5,686	61.1	Yes	**9.51**	107.0	3.01	86.10	10.01	4.43	0.00	0.00	100.54
T025	2,087	2,088	38.2	No	**24.85**	108.0	3.01	77.40	3.94	4.80	0.00	0.00	86.13
T026	890	893	39.5	Yes	**35.83**	108.0	3.01	70.02	1.86	3.27	0.00	0.00	75.15
T027	2,902	2,903	48.0	Yes	**21.30**	108.0	3.01	80.26	5.20	4.23	0.00	0.00	89.69
T028	1,525	1,527	40.2	Yes	**29.41**	108.0	3.01	74.68	3.01	3.89	0.00	0.00	81.58
T029	5,647	5,648	50.9	No	**9.24**	107.0	3.01	86.04	9.97	4.80	0.00	0.00	100.81
T030	3,032	3,033	32.0	Yes	**20.52**	108.0	3.01	80.64	5.39	4.44	0.00	0.00	90.47
T031	5,204	5,204	49.8	Yes	**10.77**	107.0	3.01	85.33	9.48	4.47	0.00	0.00	99.28
T032	3,519	3,520	50.5	Yes	**16.48**	107.0	3.01	81.93	7.33	4.31	0.00	0.00	93.57
T033	5,267	5,267	53.0	Yes	**10.62**	107.0	3.01	85.43	9.55	4.46	0.00	0.00	99.44
T201	3,387	3,388	41.4	No	**18.69**	108.0	3.01	81.60	5.90	4.80	0.00	0.00	92.30
T202	3,616	3,617	41.0	No	**17.80**	108.0	3.01	82.17	6.22	4.80	0.00	0.00	93.18
T203	4,872	4,872	40.2	No	**13.57**	108.0	3.01	84.75	7.86	4.80	0.00	0.00	97.42
T204	4,829	4,830	44.2	No	**13.70**	108.0	3.01	84.68	7.81	4.80	0.00	0.00	97.29
T205	5,324	5,324	50.1	No	**12.25**	108.0	3.01	85.53	8.41	4.80	0.00	0.00	98.74
T206	5,691	5,692	43.6	No	**11.24**	108.0	3.01	86.10	8.84	4.80	0.00	0.00	99.75
T207	6,492	6,493	54.2	No	**9.20**	108.0	3.01	87.25	9.74	4.80	0.00	0.00	101.79
T208	6,949	6,950	52.5	Yes	**8.38**	108.0	3.01	87.84	10.23	4.54	0.00	0.00	102.61
T209	7,278	7,278	57.3	Yes	**7.65**	108.0	3.01	88.24	10.57	4.53	0.00	0.00	103.34
T210	7,634	7,634	56.1	Yes	**6.85**	108.0	3.01	88.65	10.93	4.55	0.00	0.00	104.13
T211	6,891	6,892	57.0	Yes	**8.53**	108.0	3.01	87.77	10.17	4.52	0.00	0.00	102.45
T212	6,887	6,887	54.2	Yes	**8.53**	108.0	3.01	87.76	10.16	4.53	0.00	0.00	102.46
T213	6,971	6,971	48.6	Yes	**8.31**	108.0	3.01	87.87	10.25	4.56	0.00	0.00	102.68
T214	7,258	7,258	47.6	Yes	**7.64**	108.0	3.01	88.22	10.55	4.58	0.00	0.00	103.34
T215	5,345	5,346	58.3	Yes	**12.56**	108.0	3.01	85.56	8.44	4.43	0.00	0.00	98.43
T216	6,679	6,679	47.0	Yes	**8.99**	108.0	3.01	87.49	9.94	4.56	0.00	0.00	102.00
T217	7,369	7,369	44.6	Yes	**7.38**	108.0	3.01	88.35	10.66	4.59	0.00	0.00	103.60
T218	9,232	9,232	50.1	Yes	**3.64**	108.0	3.01	90.31	12.43	4.61	0.00	0.00	107.35
T219	9,609	9,610	48.8	Yes	**2.95**	108.0	3.01	90.65	12.76	4.63	0.00	0.00	108.04
T220	10,085	10,085	45.1	Yes	**2.11**	108.0	3.01	91.07	13.16	4.65	0.00	0.00	108.88
T221	10,646	10,646	42.9	Yes	**1.16**	108.0	3.01	91.54	13.62	4.66	0.00	0.00	109.83
T222	10,939	10,940	36.6	No	**0.55**	108.0	3.01	91.78	13.85	4.80	0.00	0.00	110.43
T223	10,303	10,304	37.2	No	**1.59**	108.0	3.01	91.26	13.34	4.80	0.00	0.00	109.40
T224	10,178	10,179	49.0	No	**1.79**	108.0	3.01	91.15	13.24	4.80	0.00	0.00	109.19
T225	9,852	9,852	48.3	No	**2.35**	108.0	3.01	90.87	12.97	4.80	0.00	0.00	108.64
T226	9,553	9,554	48.0	No	**2.87**	108.0	3.01	90.60	12.71	4.80	0.00	0.00	108.11
T227	8,716	8,716	44.8	No	**4.42**	108.0	3.01	89.81	11.96	4.80	0.00	0.00	106.57
T228	10,585	10,585	34.7	No	**1.12**	108.0	3.01	91.49	13.57	4.80	0.00	0.00	109.86
T229	8,124	8,124	50.4	No	**5.58**	108.0	3.01	89.20	11.41	4.80	0.00	0.00	105.40
T230	7,850	7,850	54.2	No	**6.15**	108.0	3.01	88.90	11.14	4.80	0.00	0.00	104.84
T231	7,344	7,344	48.2	No	**7.23**	108.0	3.01	88.32	10.64	4.80	0.00	0.00	103.76
T232	6,924	6,924	44.7	No	**8.18**	108.0	3.01	87.81	10.20	4.80	0.00	0.00	102.81
T233	6,522	6,523	48.0	No	**9.12**	108.0	3.01	87.29	9.77	4.80	0.00	0.00	101.86
T234	6,220	6,220	50.0	Yes	**10.14**	108.0	3.01	86.88	9.44	4.53	0.00	0.00	100.84
T235	5,695	5,695	42.5	No	**11.23**	108.0	3.01	86.11	8.85	4.80	0.00	0.00	99.76
T301	8,186	8,186	41.8	No	**5.46**	108.0	3.01	89.26	11.47	4.80	0.00	0.00	105.53
T302	8,614	8,614	43.7	No	**4.61**	108.0	3.01	89.70	11.87	4.80	0.00	0.00	106.37
T303	9,092	9,092	48.7	No	**3.71**	108.0	3.01	90.17	12.30	4.80	0.00	0.00	107.28
T304	9,608	9,608	48.6	No	**2.78**	108.0	3.01	90.65	12.76	4.80	0.00	0.00	108.21
T305	9,301	9,301	48.2	No	**3.33**	108.0	3.01	90.37	12.49	4.80	0.00	0.00	107.66
T306	9,123	9,123	53.5	No	**3.65**	108.0	3.01	90.20	12.33	4.80	0.00	0.00	107.34
T307	8,329	8,329	49.5	No	**5.17**	108.0	3.01	89.41	11.60	4.80	0.00	0.00	105.82
T308	10,606	10,606	35.3	No	**1.09**	108.0	3.01	91.51	13.59	4.80	0.00	0.00	109.90
T309	10,114	10,114	37.9	No	**1.90**	108.0	3.01	91.10	13.19	4.80	0.00	0.00	109.08
T310	9,825	9,825	36.8	No	**2.40**	108.0	3.01	90.85	12.94	4.80	0.00	0.00	108.59
T311	9,359	9,359	38.8	No	**3.22**	108.0	3.01	90.42	12.54	4.80	0.00	0.00	107.77
T312	8,946	8,946	38.8	No	**3.98**	108.0	3.01	90.03	12.17	4.80	0.00	0.00	107.01
T313	8,467	8,468	50.7	No	**4.90**	108.0	3.01	89.56	11.73	4.80	0.00	0.00	106.09
T314	7,393	7,394	43.4	No	**7.12**	108.0	3.01	88.38	10.69	4.80	0.00	0.00	103.87
T315	7,782	7,782	44.0	No	**6.29**	108.0	3.01	88.82	11.08	4.80	0.00	0.00	104.70
T316	8,236	8,237	47.9	No	**5.36**	108.0	3.01	89.32	11.52	4.80	0.00	0.00	105.63
T317	8,619	8,619	53.5	No	**4.60**	108.0	3.01	89.71	11.87	4.80	0.00	0.00	106.38
T318	9,367	9,367	39.6	No	**3.21**	108.0	3.01	90.43	12.55	4.80	0.00	0.00	107.78

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T319	9,937	9,937	47.1	No	**2.21**	108.0	3.01	90.95	13.04	4.80	0.00	0.00	108.78
T320	10,337	10,338	52.3	No	**1.53**	108.0	3.01	91.29	13.37	4.80	0.00	0.00	109.46
T321	10,797	10,797	45.6	No	**0.78**	108.0	3.01	91.67	13.74	4.80	0.00	0.00	110.21
T322	10,672	10,672	42.6	No	**0.98**	108.0	3.01	91.56	13.64	4.80	0.00	0.00	110.01
T323	10,452	10,452	42.0	No	**1.34**	108.0	3.01	91.38	13.46	4.80	0.00	0.00	109.65
T324	9,651	9,651	42.5	No	**2.70**	108.0	3.01	90.69	12.79	4.80	0.00	0.00	108.29
T325	10,424	10,424	40.0	No	**1.39**	108.0	3.01	91.36	13.44	4.80	0.00	0.00	109.60
T326	9,776	9,777	45.0	No	**2.48**	108.0	3.01	90.80	12.90	4.80	0.00	0.00	108.51
T327	9,410	9,411	39.6	No	**3.13**	108.0	3.01	90.47	12.59	4.80	0.00	0.00	107.86
T328	8,405	8,405	40.8	No	**5.02**	108.0	3.01	89.49	11.68	4.80	0.00	0.00	105.97
T329	8,486	8,487	40.9	No	**4.86**	108.0	3.01	89.58	11.75	4.80	0.00	0.00	106.13
T330	7,754	7,755	38.3	No	**6.35**	108.0	3.01	88.79	11.05	4.80	0.00	0.00	104.64
T331	7,557	7,558	44.0	No	**6.77**	108.0	3.01	88.57	10.85	4.80	0.00	0.00	104.22
T332	7,123	7,123	42.0	No	**7.72**	108.0	3.01	88.05	10.41	4.80	0.00	0.00	103.26
T333	7,532	7,533	47.3	No	**6.82**	108.0	3.01	88.54	10.83	4.80	0.00	0.00	104.17
T334	8,036	8,037	40.8	No	**5.76**	108.0	3.01	89.10	11.32	4.80	0.00	0.00	105.23
T335	8,272	8,273	39.3	No	**5.28**	108.0	3.01	89.35	11.55	4.80	0.00	0.00	105.70
Sum	44.23												

Noise sensitive area: SSA011 SSA011

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	6,844	6,846	40.2	No	**8.77**	107.5	3.01	87.71	9.24	4.80	0.00	0.00	101.75
402	7,178	7,179	43.6	No	**8.17**	107.5	3.01	88.12	9.43	4.80	0.00	0.00	102.36
403	7,791	7,792	40.7	No	**7.13**	107.5	3.01	88.83	9.76	4.80	0.00	0.00	103.40
404	8,115	8,116	48.0	No	**6.61**	107.5	3.01	89.19	9.93	4.80	0.00	0.00	103.92
405	8,234	8,235	40.1	No	**6.42**	107.5	3.01	89.31	9.99	4.80	0.00	0.00	104.10
406	8,133	8,134	43.3	No	**6.58**	107.5	3.01	89.21	9.94	4.80	0.00	0.00	103.94
407	9,057	9,058	36.0	No	**5.20**	107.5	3.01	90.14	10.38	4.80	0.00	0.00	105.32
408	4,322	4,325	62.1	Yes	**15.02**	107.5	3.01	83.72	7.48	4.31	0.00	0.00	95.51
409	4,924	4,926	56.9	Yes	**13.31**	107.5	3.01	84.85	7.96	4.41	0.00	0.00	97.22
410	5,243	5,245	57.8	Yes	**12.50**	107.5	3.01	85.39	8.20	4.42	0.00	0.00	98.02
411	5,622	5,624	56.4	Yes	**11.60**	107.5	3.01	86.00	8.47	4.46	0.00	0.00	98.93
412	5,881	5,883	55.8	Yes	**11.01**	107.5	3.01	86.39	8.65	4.48	0.00	0.00	99.51
413	6,323	6,325	52.9	Yes	**10.06**	107.5	3.01	87.02	8.93	4.51	0.00	0.00	100.46
414	6,694	6,696	52.6	Yes	**9.32**	107.5	3.01	87.52	9.16	4.53	0.00	0.00	101.20
415	4,923	4,925	37.9	Yes	**13.18**	107.5	3.01	84.85	7.96	4.54	0.00	0.00	97.35
416	4,532	4,535	43.2	Yes	**14.27**	107.5	3.01	84.13	7.65	4.47	0.00	0.00	96.26
417	3,985	3,988	43.8	Yes	**15.90**	107.5	3.01	83.01	7.18	4.43	0.00	0.00	94.62
418	3,513	3,515	41.5	Yes	**17.47**	107.5	3.01	81.92	6.74	4.40	0.00	0.00	93.06
419	2,794	2,798	58.2	Yes	**20.53**	107.5	3.01	79.94	5.97	4.09	0.00	0.00	90.00
420	2,383	2,387	58.3	Yes	**22.52**	107.5	3.01	78.56	5.48	3.96	0.00	0.00	88.00
421	2,215	2,222	61.2	Yes	**23.47**	107.5	3.01	77.93	5.26	3.86	0.00	0.00	87.06
422	1,823	1,828	50.3	Yes	**25.71**	107.5	3.01	76.24	4.71	3.86	0.00	0.00	84.81
423	1,494	1,501	51.5	Yes	**28.18**	107.5	3.01	74.53	4.20	3.62	0.00	0.00	82.34
424	967	976	48.5	Yes	**33.43**	107.5	3.01	70.79	3.22	3.08	0.00	0.00	77.09
425	1,157	1,164	50.1	Yes	**31.29**	107.5	3.01	72.32	3.60	3.31	0.00	0.00	79.23
426	3,439	3,443	39.6	No	**17.32**	107.5	3.01	81.74	6.67	4.80	0.00	0.00	93.21
427	3,099	3,103	42.4	No	**18.57**	107.5	3.01	80.84	6.31	4.80	0.00	0.00	91.95
428	2,896	2,901	44.1	No	**19.38**	107.5	3.01	80.25	6.09	4.80	0.00	0.00	91.14
429	2,402	2,406	42.1	Yes	**22.20**	107.5	3.01	78.62	5.50	4.20	0.00	0.00	88.33
430	2,367	2,372	44.6	Yes	**22.41**	107.5	3.01	78.50	5.46	4.16	0.00	0.00	88.12
431	2,006	2,011	48.1	Yes	**24.50**	107.5	3.01	77.07	4.98	3.98	0.00	0.00	86.03
432	2,175	2,178	44.4	Yes	**23.45**	107.5	3.01	77.76	5.21	4.10	0.00	0.00	87.07
433	15,746	15,747	31.2	No	**-1.91**	107.5	3.01	94.94	12.69	4.80	0.00	0.00	112.43
434	14,271	14,272	38.5	No	**-0.64**	107.5	3.01	94.09	12.27	4.80	0.00	0.00	111.16
435	13,409	13,410	37.8	No	**0.17**	107.5	3.01	93.55	12.01	4.80	0.00	0.00	110.36
436	12,876	12,877	40.2	No	**0.69**	107.5	3.01	93.20	11.84	4.80	0.00	0.00	109.84
437	12,602	12,603	35.0	No	**0.96**	107.5	3.01	93.01	11.75	4.80	0.00	0.00	109.56
438	12,845	12,846	30.9	No	**0.72**	107.5	3.01	93.18	11.83	4.80	0.00	0.00	109.81
439	10,341	10,343	41.0	No	**3.50**	107.5	3.01	91.29	10.93	4.80	0.00	0.00	107.02

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
440	9,929	9,930	37.4	No	**4.03**	107.5	3.01	90.94	10.76	4.80	0.00	0.00	106.50
441	9,753	9,754	36.1	No	**4.26**	107.5	3.01	90.78	10.68	4.80	0.00	0.00	106.27
442	9,339	9,340	41.1	No	**4.81**	107.5	3.01	90.41	10.51	4.80	0.00	0.00	105.71
443	9,069	9,070	38.2	No	**5.19**	107.5	3.01	90.15	10.38	4.80	0.00	0.00	105.34
444	8,991	8,992	41.0	No	**5.30**	107.5	3.01	90.08	10.35	4.80	0.00	0.00	105.23
445	13,900	13,901	37.1	No	**-0.30**	107.5	3.01	93.86	12.16	4.80	0.00	0.00	110.82
446	13,419	13,419	34.1	No	**0.16**	107.5	3.01	93.55	12.01	4.80	0.00	0.00	110.37
447	12,603	12,604	29.1	No	**0.96**	107.5	3.01	93.01	11.75	4.80	0.00	0.00	109.56
448	12,234	12,235	31.2	No	**1.35**	107.5	3.01	92.75	11.63	4.80	0.00	0.00	109.18
449	11,620	11,621	36.9	No	**2.01**	107.5	3.01	92.30	11.41	4.80	0.00	0.00	108.52
450	11,502	11,503	38.1	No	**2.14**	107.5	3.01	92.22	11.37	4.80	0.00	0.00	108.39
451	10,853	10,854	44.1	No	**2.88**	107.5	3.01	91.71	11.13	4.80	0.00	0.00	107.64
452	14,404	14,404	34.5	No	**-0.76**	107.5	3.01	94.17	12.31	4.80	0.00	0.00	111.28
453	13,753	13,754	24.7	No	**-0.16**	107.5	3.01	93.77	12.12	4.80	0.00	0.00	110.69
454	13,213	13,213	30.3	No	**0.36**	107.5	3.01	93.42	11.95	4.80	0.00	0.00	110.17
455	12,149	12,150	35.3	No	**1.44**	107.5	3.01	92.69	11.60	4.80	0.00	0.00	109.09
456	12,184	12,185	38.2	No	**1.40**	107.5	3.01	92.72	11.61	4.80	0.00	0.00	109.13
457	12,041	12,041	34.0	No	**1.55**	107.5	3.01	92.61	11.56	4.80	0.00	0.00	108.97
458	15,310	15,310	31.7	No	**-1.54**	107.5	3.01	94.70	12.57	4.80	0.00	0.00	112.07
459	14,914	14,914	33.0	No	**-1.21**	107.5	3.01	94.47	12.46	4.80	0.00	0.00	111.73
460	15,449	15,450	29.4	No	**-1.66**	107.5	3.01	94.78	12.61	4.80	0.00	0.00	112.18
461	14,997	14,997	31.9	No	**-1.28**	107.5	3.01	94.52	12.48	4.80	0.00	0.00	111.80
462	14,743	14,743	39.2	No	**-1.06**	107.5	3.01	94.37	12.41	4.80	0.00	0.00	111.58
463	14,284	14,285	31.9	No	**-0.65**	107.5	3.01	94.10	12.28	4.80	0.00	0.00	111.17
464	14,291	14,291	29.0	No	**-0.66**	107.5	3.01	94.10	12.28	4.80	0.00	0.00	111.18
T001	5,380	5,382	32.5	No	**12.09**	108.0	3.01	85.62	8.48	4.80	0.00	0.00	98.90
T002	4,702	4,704	35.2	No	**14.09**	108.0	3.01	84.45	7.65	4.80	0.00	0.00	96.90
T003	6,623	6,624	36.8	No	**6.86**	107.0	3.01	87.42	10.97	4.80	0.00	0.00	103.20
T004	7,368	7,369	33.6	No	**5.23**	107.0	3.01	88.35	11.67	4.80	0.00	0.00	104.82
T005	5,473	5,474	30.9	No	**9.71**	107.0	3.01	85.77	9.78	4.80	0.00	0.00	100.35
T006	3,532	3,534	29.9	No	**18.12**	108.0	3.01	81.97	6.10	4.80	0.00	0.00	92.87
T007	3,504	3,506	25.7	No	**18.23**	108.0	3.01	81.90	6.06	4.80	0.00	0.00	92.76
T008	7,465	7,466	35.7	No	**5.03**	107.0	3.01	88.46	11.76	4.80	0.00	0.00	105.02
T009	6,060	6,061	22.2	No	**10.27**	108.0	3.01	86.65	9.27	4.80	0.00	0.00	100.72
T010	5,168	5,169	28.3	No	**12.69**	108.0	3.01	85.27	8.23	4.80	0.00	0.00	98.29
T011	6,390	6,391	20.6	No	**9.44**	108.0	3.01	87.11	9.63	4.80	0.00	0.00	101.54
T012	7,603	7,603	22.7	No	**4.75**	107.0	3.01	88.62	11.88	4.80	0.00	0.00	105.30
T013	7,194	7,195	31.7	No	**5.60**	107.0	3.01	88.14	11.51	4.80	0.00	0.00	104.45
T014	5,989	5,990	26.4	No	**8.37**	107.0	3.01	86.55	10.34	4.80	0.00	0.00	101.68
T015	4,105	4,106	24.1	No	**16.04**	108.0	3.01	83.27	6.88	4.80	0.00	0.00	94.95
T016	6,952	6,953	32.8	No	**6.12**	107.0	3.01	87.84	11.29	4.80	0.00	0.00	103.93
T017	3,014	3,016	29.1	No	**20.24**	108.0	3.01	80.59	5.36	4.80	0.00	0.00	90.75
T018	5,219	5,220	17.3	No	**10.40**	107.0	3.01	85.35	9.50	4.80	0.00	0.00	99.65
T019	6,267	6,268	23.3	No	**7.69**	107.0	3.01	86.94	10.62	4.80	0.00	0.00	102.36
T020	3,118	3,120	26.6	No	**19.79**	108.0	3.01	80.88	5.52	4.80	0.00	0.00	91.20
T022	8,300	8,300	25.9	No	**3.40**	107.0	3.01	89.38	12.47	4.80	0.00	0.00	106.65
T023	8,060	8,061	39.8	No	**3.85**	107.0	3.01	89.13	12.27	4.80	0.00	0.00	106.20
T025	3,361	3,362	26.3	No	**18.79**	108.0	3.01	81.53	5.86	4.80	0.00	0.00	92.19
T026	2,406	2,409	23.7	No	**23.10**	108.0	3.01	78.64	4.45	4.80	0.00	0.00	87.88
T027	5,360	5,361	23.2	No	**12.15**	108.0	3.01	85.58	8.46	4.80	0.00	0.00	98.84
T028	3,704	3,706	27.2	No	**17.47**	108.0	3.01	82.38	6.34	4.80	0.00	0.00	93.52
T029	8,118	8,119	21.9	No	**3.74**	107.0	3.01	89.19	12.32	4.80	0.00	0.00	106.31
T030	5,023	5,024	23.6	No	**13.12**	108.0	3.01	85.02	8.05	4.80	0.00	0.00	97.87
T031	7,717	7,718	24.3	No	**4.52**	107.0	3.01	88.75	11.98	4.80	0.00	0.00	105.53
T032	5,954	5,955	28.7	No	**8.46**	107.0	3.01	86.50	10.30	4.80	0.00	0.00	101.60
T033	7,790	7,791	29.7	No	**4.38**	107.0	3.01	88.83	12.04	4.80	0.00	0.00	105.67
T201	4,707	4,708	28.8	No	**14.07**	108.0	3.01	84.46	7.66	4.80	0.00	0.00	96.91
T202	4,803	4,804	26.4	No	**13.78**	108.0	3.01	84.63	7.78	4.80	0.00	0.00	97.21
T203	6,346	6,347	23.6	No	**9.55**	108.0	3.01	87.05	9.58	4.80	0.00	0.00	101.43
T204	6,130	6,131	27.8	No	**10.09**	108.0	3.01	86.75	9.34	4.80	0.00	0.00	100.89
T205	6,519	6,520	31.0	No	**9.13**	108.0	3.01	87.28	9.77	4.80	0.00	0.00	101.86
T206	7,381	7,382	30.0	No	**7.15**	108.0	3.01	88.36	10.68	4.80	0.00	0.00	103.84
T207	8,149	8,149	39.0	No	**5.53**	108.0	3.01	89.22	11.43	4.80	0.00	0.00	105.45

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T208	9,473	9,474	29.4	No	**3.02**	108.0	3.01	90.53	12.64	4.80	0.00	0.00	107.97
T209	9,799	9,800	34.6	No	**2.44**	108.0	3.01	90.82	12.92	4.80	0.00	0.00	108.55
T210	10,147	10,147	33.7	No	**1.85**	108.0	3.01	91.13	13.21	4.80	0.00	0.00	109.14
T211	9,359	9,359	36.4	No	**3.22**	108.0	3.01	90.42	12.54	4.80	0.00	0.00	107.77
T212	9,324	9,324	32.5	No	**3.28**	108.0	3.01	90.39	12.51	4.80	0.00	0.00	107.70
T213	9,367	9,368	28.4	No	**3.21**	108.0	3.01	90.43	12.55	4.80	0.00	0.00	107.78
T214	9,631	9,631	27.6	No	**2.74**	108.0	3.01	90.67	12.78	4.80	0.00	0.00	108.25
T215	7,670	7,671	34.9	No	**6.53**	108.0	3.01	88.70	10.97	4.80	0.00	0.00	104.46
T216	8,920	8,920	23.3	No	**4.03**	108.0	3.01	90.01	12.15	4.80	0.00	0.00	106.96
T217	9,574	9,574	22.4	No	**2.84**	108.0	3.01	90.62	12.73	4.80	0.00	0.00	108.15
T218	11,563	11,563	29.0	No	**-0.41**	108.0	3.01	92.26	14.33	4.80	0.00	0.00	111.39
T219	11,865	11,865	27.6	No	**-0.86**	108.0	3.01	92.49	14.56	4.80	0.00	0.00	111.84
T220	12,342	12,342	24.1	No	**-1.54**	108.0	3.01	92.83	14.90	4.80	0.00	0.00	112.53
T221	12,866	12,866	22.0	No	**-2.27**	108.0	3.01	93.19	15.27	4.80	0.00	0.00	113.26
T222	12,686	12,686	15.9	No	**-2.03**	108.0	3.01	93.07	15.15	4.80	0.00	0.00	113.01
T223	12,026	12,026	17.6	No	**-1.09**	108.0	3.01	92.60	14.68	4.80	0.00	0.00	112.08
T224	12,187	12,188	24.3	No	**-1.32**	108.0	3.01	92.72	14.79	4.80	0.00	0.00	112.31
T225	11,853	11,854	24.0	No	**-0.84**	108.0	3.01	92.48	14.55	4.80	0.00	0.00	111.83
T226	11,423	11,424	24.9	No	**-0.20**	108.0	3.01	92.16	14.23	4.80	0.00	0.00	111.18
T227	10,567	10,568	22.0	No	**1.15**	108.0	3.01	91.48	13.56	4.80	0.00	0.00	109.84
T228	12,422	12,422	11.3	No	**-1.66**	108.0	3.01	92.88	14.96	4.80	0.00	0.00	112.65
T229	10,049	10,050	27.7	No	**2.01**	108.0	3.01	91.04	13.13	4.80	0.00	0.00	108.98
T230	9,817	9,817	31.2	No	**2.41**	108.0	3.01	90.84	12.94	4.80	0.00	0.00	108.58
T231	9,316	9,316	25.3	No	**3.30**	108.0	3.01	90.38	12.50	4.80	0.00	0.00	107.69
T232	8,651	8,652	25.5	No	**4.54**	108.0	3.01	89.74	11.90	4.80	0.00	0.00	106.45
T233	8,267	8,268	28.0	No	**5.29**	108.0	3.01	89.35	11.55	4.80	0.00	0.00	105.69
T234	7,938	7,939	31.3	No	**5.96**	108.0	3.01	89.00	11.23	4.80	0.00	0.00	105.02
T235	7,570	7,571	21.4	No	**6.74**	108.0	3.01	88.58	10.87	4.80	0.00	0.00	104.25
T301	10,258	10,258	25.4	No	**1.66**	108.0	3.01	91.22	13.30	4.80	0.00	0.00	109.33
T302	10,637	10,637	29.0	No	**1.04**	108.0	3.01	91.54	13.61	4.80	0.00	0.00	109.95
T303	10,983	10,983	34.4	No	**0.49**	108.0	3.01	91.81	13.89	4.80	0.00	0.00	110.50
T304	11,438	11,438	33.2	No	**-0.22**	108.0	3.01	92.17	14.24	4.80	0.00	0.00	111.20
T305	10,997	10,997	30.6	No	**0.46**	108.0	3.01	91.83	13.90	4.80	0.00	0.00	110.52
T306	10,882	10,883	36.9	No	**0.65**	108.0	3.01	91.73	13.81	4.80	0.00	0.00	110.34
T307	10,136	10,137	35.1	No	**1.87**	108.0	3.01	91.12	13.20	4.80	0.00	0.00	109.12
T308	12,033	12,034	22.7	No	**-1.10**	108.0	3.01	92.61	14.68	4.80	0.00	0.00	112.09
T309	11,587	11,588	23.8	No	**-0.44**	108.0	3.01	92.28	14.35	4.80	0.00	0.00	111.43
T310	11,429	11,429	22.3	No	**-0.20**	108.0	3.01	92.16	14.23	4.80	0.00	0.00	111.19
T311	10,997	10,997	23.8	No	**0.46**	108.0	3.01	91.83	13.90	4.80	0.00	0.00	110.52
T312	10,600	10,600	23.2	No	**1.10**	108.0	3.01	91.51	13.58	4.80	0.00	0.00	109.89
T313	10,147	10,147	33.9	No	**1.85**	108.0	3.01	91.13	13.21	4.80	0.00	0.00	109.14
T314	9,177	9,177	21.7	No	**3.55**	108.0	3.01	90.25	12.38	4.80	0.00	0.00	107.44
T315	9,349	9,350	30.0	No	**3.24**	108.0	3.01	90.42	12.53	4.80	0.00	0.00	107.75
T316	9,645	9,646	35.9	No	**2.71**	108.0	3.01	90.69	12.79	4.80	0.00	0.00	108.28
T317	10,047	10,048	41.2	No	**2.02**	108.0	3.01	91.04	13.13	4.80	0.00	0.00	108.97
T318	10,703	10,704	29.6	No	**0.93**	108.0	3.01	91.59	13.67	4.80	0.00	0.00	110.06
T319	10,894	10,895	29.7	No	**0.63**	108.0	3.01	91.74	13.82	4.80	0.00	0.00	110.36
T320	11,220	11,221	34.1	No	**0.12**	108.0	3.01	92.00	14.07	4.80	0.00	0.00	110.87
T321	11,647	11,648	27.3	No	**-0.53**	108.0	3.01	92.32	14.40	4.80	0.00	0.00	111.52
T322	11,276	11,277	23.4	No	**0.03**	108.0	3.01	92.04	14.11	4.80	0.00	0.00	110.96
T323	10,995	10,995	22.7	No	**0.47**	108.0	3.01	91.82	13.90	4.80	0.00	0.00	110.52
T324	10,252	10,253	23.7	No	**1.67**	108.0	3.01	91.22	13.30	4.80	0.00	0.00	109.32
T325	10,686	10,686	23.2	No	**0.96**	108.0	3.01	91.58	13.65	4.80	0.00	0.00	110.03
T326	10,135	10,136	27.1	No	**1.87**	108.0	3.01	91.12	13.20	4.80	0.00	0.00	109.12
T327	9,751	9,752	22.1	No	**2.52**	108.0	3.01	90.78	12.88	4.80	0.00	0.00	108.46
T328	8,728	8,729	24.0	No	**4.39**	108.0	3.01	89.82	11.98	4.80	0.00	0.00	106.59
T329	8,461	8,462	26.6	No	**4.91**	108.0	3.01	89.55	11.73	4.80	0.00	0.00	106.08
T330	7,841	7,841	23.8	No	**6.17**	108.0	3.01	88.89	11.13	4.80	0.00	0.00	104.82
T331	7,950	7,951	27.6	No	**5.94**	108.0	3.01	89.01	11.24	4.80	0.00	0.00	105.05
T332	7,636	7,636	25.3	No	**6.60**	108.0	3.01	88.66	10.93	4.80	0.00	0.00	104.39
T333	8,255	8,255	31.5	No	**5.32**	108.0	3.01	89.33	11.53	4.80	0.00	0.00	105.67
T334	8,717	8,717	23.9	No	**4.41**	108.0	3.01	89.81	11.97	4.80	0.00	0.00	106.57
T335	9,081	9,081	23.1	No	**3.73**	108.0	3.01	90.16	12.30	4.80	0.00	0.00	107.26
Sum	38.80												

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

Noise sensitive area: SSA012 SSA012

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	8,364	8,365	58.4	Yes	**6.46**	107.5	3.01	89.45	10.05	4.56	0.00	0.00	104.06
402	8,614	8,615	62.8	Yes	**6.09**	107.5	3.01	89.71	10.17	4.55	0.00	0.00	104.43
403	9,151	9,152	59.4	Yes	**5.29**	107.5	3.01	90.23	10.42	4.58	0.00	0.00	105.23
404	9,376	9,377	65.1	Yes	**5.00**	107.5	3.01	90.44	10.52	4.56	0.00	0.00	105.53
405	9,382	9,383	55.9	Yes	**4.96**	107.5	3.01	90.45	10.52	4.60	0.00	0.00	105.57
406	9,140	9,140	57.8	Yes	**5.30**	107.5	3.01	90.22	10.42	4.58	0.00	0.00	105.22
407	10,279	10,280	53.8	Yes	**3.76**	107.5	3.01	91.24	10.90	4.62	0.00	0.00	106.76
408	3,642	3,645	55.4	Yes	**17.15**	107.5	3.01	82.23	6.87	4.28	0.00	0.00	93.38
409	4,375	4,377	47.2	Yes	**14.75**	107.5	3.01	83.82	7.52	4.43	0.00	0.00	95.78
410	4,461	4,463	52.3	Yes	**14.54**	107.5	3.01	83.99	7.59	4.40	0.00	0.00	95.99
411	4,735	4,737	54.5	Yes	**13.79**	107.5	3.01	84.51	7.82	4.41	0.00	0.00	96.73
412	4,736	4,738	53.0	Yes	**13.78**	107.5	3.01	84.51	7.82	4.42	0.00	0.00	96.75
413	5,116	5,118	51.9	Yes	**12.78**	107.5	3.01	85.18	8.11	4.45	0.00	0.00	97.74
414	5,509	5,511	50.8	Yes	**11.82**	107.5	3.01	85.82	8.39	4.49	0.00	0.00	98.70
415	7,463	7,464	41.8	No	**7.67**	107.5	3.01	88.46	9.59	4.80	0.00	0.00	102.85
416	7,100	7,102	47.7	No	**8.31**	107.5	3.01	88.03	9.39	4.80	0.00	0.00	102.22
417	6,525	6,526	46.8	No	**9.38**	107.5	3.01	87.29	9.05	4.80	0.00	0.00	101.15
418	6,062	6,063	44.0	No	**10.31**	107.5	3.01	86.65	8.76	4.80	0.00	0.00	100.22
419	5,157	5,159	42.6	No	**12.34**	107.5	3.01	85.25	8.14	4.80	0.00	0.00	98.19
420	4,861	4,863	48.5	No	**13.07**	107.5	3.01	84.74	7.91	4.80	0.00	0.00	97.45
421	4,941	4,944	67.4	No	**12.87**	107.5	3.01	84.88	7.98	4.80	0.00	0.00	97.66
422	4,553	4,555	55.2	No	**13.89**	107.5	3.01	84.17	7.67	4.80	0.00	0.00	96.64
423	4,215	4,217	56.4	No	**14.84**	107.5	3.01	83.50	7.39	4.80	0.00	0.00	95.69
424	3,528	3,531	56.8	Yes	**17.56**	107.5	3.01	81.96	6.75	4.25	0.00	0.00	92.96
425	3,440	3,442	57.6	Yes	**17.89**	107.5	3.01	81.74	6.67	4.23	0.00	0.00	92.63
426	4,185	4,187	40.3	No	**14.92**	107.5	3.01	83.44	7.36	4.80	0.00	0.00	95.60
427	3,575	3,578	45.3	No	**16.85**	107.5	3.01	82.07	6.80	4.80	0.00	0.00	93.68
428	3,103	3,107	48.8	Yes	**19.10**	107.5	3.01	80.85	6.32	4.26	0.00	0.00	91.43
429	2,679	2,683	39.7	No	**20.31**	107.5	3.01	79.57	5.84	4.80	0.00	0.00	90.21
430	2,220	2,224	44.2	Yes	**23.20**	107.5	3.01	77.94	5.27	4.12	0.00	0.00	87.33
431	1,687	1,693	45.9	Yes	**26.58**	107.5	3.01	75.57	4.51	3.87	0.00	0.00	83.95
432	1,318	1,324	45.4	Yes	**29.57**	107.5	3.01	73.44	3.89	3.62	0.00	0.00	80.95
433	16,541	16,542	33.5	No	**-2.54**	107.5	3.01	95.37	12.89	4.80	0.00	0.00	113.07
434	15,045	15,045	41.0	No	**-1.32**	107.5	3.01	94.55	12.49	4.80	0.00	0.00	111.84
435	14,232	14,233	38.9	No	**-0.60**	107.5	3.01	94.07	12.26	4.80	0.00	0.00	111.13
436	13,755	13,756	39.9	No	**-0.16**	107.5	3.01	93.77	12.12	4.80	0.00	0.00	110.69
437	13,433	13,434	35.6	No	**0.14**	107.5	3.01	93.56	12.02	4.80	0.00	0.00	110.38
438	13,404	13,404	36.9	No	**0.17**	107.5	3.01	93.54	12.01	4.80	0.00	0.00	110.35
439	10,475	10,476	53.4	No	**3.34**	107.5	3.01	91.40	10.98	4.80	0.00	0.00	107.18
440	10,002	10,004	50.9	No	**3.93**	107.5	3.01	91.00	10.79	4.80	0.00	0.00	106.59
441	9,697	9,698	49.7	No	**4.33**	107.5	3.01	90.73	10.66	4.80	0.00	0.00	106.19
442	9,244	9,246	55.1	No	**4.94**	107.5	3.01	90.32	10.46	4.80	0.00	0.00	105.58
443	8,858	8,859	51.4	No	**5.49**	107.5	3.01	89.95	10.29	4.80	0.00	0.00	105.04
444	8,656	8,657	52.9	No	**5.78**	107.5	3.01	89.75	10.19	4.80	0.00	0.00	104.74
445	14,453	14,454	42.7	No	**-0.80**	107.5	3.01	94.20	12.33	4.80	0.00	0.00	111.33
446	13,928	13,929	40.6	No	**-0.32**	107.5	3.01	93.88	12.17	4.80	0.00	0.00	110.85
447	12,936	12,937	41.0	No	**0.63**	107.5	3.01	93.24	11.86	4.80	0.00	0.00	109.90
448	12,519	12,520	42.8	No	**1.05**	107.5	3.01	92.95	11.72	4.80	0.00	0.00	109.48
449	11,881	11,882	48.8	No	**1.72**	107.5	3.01	92.50	11.50	4.80	0.00	0.00	108.80
450	11,682	11,683	48.9	No	**1.94**	107.5	3.01	92.35	11.43	4.80	0.00	0.00	108.59
451	10,999	11,000	55.9	No	**2.71**	107.5	3.01	91.83	11.18	4.80	0.00	0.00	107.81
452	14,962	14,963	39.9	No	**-1.25**	107.5	3.01	94.50	12.47	4.80	0.00	0.00	111.77
453	13,364	13,364	39.7	No	**0.21**	107.5	3.01	93.52	12.00	4.80	0.00	0.00	110.32
454	12,798	12,799	44.8	No	**0.77**	107.5	3.01	93.14	11.82	4.80	0.00	0.00	109.76
455	11,711	11,712	49.2	No	**1.91**	107.5	3.01	92.37	11.44	4.80	0.00	0.00	108.62
456	11,633	11,634	52.2	No	**1.99**	107.5	3.01	92.31	11.42	4.80	0.00	0.00	108.53
457	11,406	11,407	49.3	No	**2.25**	107.5	3.01	92.14	11.33	4.80	0.00	0.00	108.28
458	15,904	15,905	35.9	No	**-2.03**	107.5	3.01	95.03	12.73	4.80	0.00	0.00	112.56
459	15,501	15,502	37.5	No	**-1.70**	107.5	3.01	94.81	12.62	4.80	0.00	0.00	112.23
460	15,810	15,811	37.7	No	**-1.96**	107.5	3.01	94.98	12.70	4.80	0.00	0.00	112.48
461	15,336	15,337	40.6	No	**-1.57**	107.5	3.01	94.71	12.58	4.80	0.00	0.00	112.09
462	15,024	15,025	48.1	No	**-1.30**	107.5	3.01	94.54	12.49	4.80	0.00	0.00	111.82
463	14,556	14,557	41.1	No	**-0.89**	107.5	3.01	94.26	12.36	4.80	0.00	0.00	111.42

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
464	14,424	14,424	39.3	No	**-0.77**	107.5	3.01	94.18	12.32	4.80	0.00	0.00	111.30
T001	7,932	7,933	46.1	No	**5.98**	108.0	3.01	88.99	11.22	4.80	0.00	0.00	105.01
T002	7,101	7,103	49.6	No	**7.77**	108.0	3.01	88.03	10.39	4.80	0.00	0.00	103.22
T003	9,352	9,353	40.3	No	**1.54**	107.0	3.01	90.42	13.30	4.80	0.00	0.00	108.52
T004	10,085	10,085	36.3	No	**0.35**	107.0	3.01	91.07	13.83	4.80	0.00	0.00	109.70
T005	8,199	8,200	34.0	No	**3.59**	107.0	3.01	89.28	12.39	4.80	0.00	0.00	106.47
T006	5,909	5,910	43.9	No	**10.66**	108.0	3.01	86.43	9.09	4.80	0.00	0.00	100.33
T007	6,147	6,148	37.6	No	**10.05**	108.0	3.01	86.77	9.36	4.80	0.00	0.00	100.94
T008	10,195	10,196	39.3	No	**0.18**	107.0	3.01	91.17	13.90	4.80	0.00	0.00	109.87
T009	8,524	8,525	33.9	No	**4.79**	108.0	3.01	89.61	11.79	4.80	0.00	0.00	106.20
T010	7,639	7,640	40.9	No	**6.59**	108.0	3.01	88.66	10.94	4.80	0.00	0.00	104.40
T011	8,648	8,648	33.3	No	**4.55**	108.0	3.01	89.74	11.90	4.80	0.00	0.00	106.44
T012	10,213	10,214	25.3	No	**0.16**	107.0	3.01	91.18	13.92	4.80	0.00	0.00	109.90
T013	9,899	9,900	33.9	No	**0.65**	107.0	3.01	90.91	13.69	4.80	0.00	0.00	109.41
T014	8,692	8,692	29.3	No	**2.68**	107.0	3.01	89.78	12.79	4.80	0.00	0.00	107.37
T015	6,704	6,705	37.1	No	**8.69**	108.0	3.01	87.53	9.97	4.80	0.00	0.00	102.30
T016	9,680	9,680	35.2	No	**1.00**	107.0	3.01	90.72	13.54	4.80	0.00	0.00	109.06
T017	5,344	5,345	43.4	No	**12.19**	108.0	3.01	85.56	8.44	4.80	0.00	0.00	98.80
T018	7,901	7,901	23.2	No	**4.16**	107.0	3.01	88.95	12.14	4.80	0.00	0.00	105.89
T019	8,934	8,935	26.8	No	**2.25**	107.0	3.01	90.02	12.98	4.80	0.00	0.00	107.80
T020	5,660	5,661	41.3	No	**11.32**	108.0	3.01	86.06	8.81	4.80	0.00	0.00	99.67
T022	11,013	11,014	28.3	No	**-1.04**	107.0	3.01	91.84	14.45	4.80	0.00	0.00	111.09
T023	10,782	10,783	42.7	No	**-0.70**	107.0	3.01	91.65	14.30	4.80	0.00	0.00	110.76
T025	5,531	5,532	38.6	No	**11.67**	108.0	3.01	85.86	8.66	4.80	0.00	0.00	99.31
T026	4,937	4,938	38.6	No	**13.37**	108.0	3.01	84.87	7.94	4.80	0.00	0.00	97.61
T027	7,968	7,969	31.8	No	**5.90**	108.0	3.01	89.03	11.26	4.80	0.00	0.00	105.09
T028	6,224	6,226	42.4	No	**9.86**	108.0	3.01	86.88	9.45	4.80	0.00	0.00	101.13
T029	10,708	10,708	26.2	No	**-0.59**	107.0	3.01	91.59	14.25	4.80	0.00	0.00	110.65
T030	7,340	7,341	38.1	No	**7.24**	108.0	3.01	88.31	10.63	4.80	0.00	0.00	103.75
T031	10,370	10,371	26.6	No	**-0.09**	107.0	3.01	91.32	14.02	4.80	0.00	0.00	110.14
T032	8,684	8,684	32.0	No	**2.70**	107.0	3.01	89.77	12.78	4.80	0.00	0.00	107.36
T033	10,487	10,487	31.8	No	**-0.26**	107.0	3.01	91.41	14.10	4.80	0.00	0.00	110.32
T201	6,642	6,643	36.7	Yes	**9.02**	108.0	3.01	87.45	9.90	4.61	0.00	0.00	101.96
T202	6,634	6,635	35.5	Yes	**9.04**	108.0	3.01	87.44	9.90	4.62	0.00	0.00	101.95
T203	8,197	8,197	28.3	No	**5.44**	108.0	3.01	89.27	11.48	4.80	0.00	0.00	105.55
T204	7,869	7,870	36.8	Yes	**6.27**	108.0	3.01	88.92	11.16	4.64	0.00	0.00	104.72
T205	8,134	8,135	46.3	Yes	**5.76**	108.0	3.01	89.21	11.42	4.61	0.00	0.00	105.23
T206	9,324	9,324	31.9	No	**3.28**	108.0	3.01	90.39	12.51	4.80	0.00	0.00	107.70
T207	10,020	10,021	40.8	No	**2.06**	108.0	3.01	91.02	13.11	4.80	0.00	0.00	108.93
T208	12,166	12,166	31.1	No	**-1.29**	108.0	3.01	92.70	14.78	4.80	0.00	0.00	112.28
T209	12,502	12,502	36.4	No	**-1.77**	108.0	3.01	92.94	15.02	4.80	0.00	0.00	112.76
T210	12,861	12,862	35.7	No	**-2.27**	108.0	3.01	93.19	15.27	4.80	0.00	0.00	113.26
T211	12,088	12,089	38.5	No	**-1.18**	108.0	3.01	92.65	14.72	4.80	0.00	0.00	112.17
T212	12,053	12,054	35.7	No	**-1.13**	108.0	3.01	92.62	14.70	4.80	0.00	0.00	112.12
T213	12,092	12,092	31.3	No	**-1.19**	108.0	3.01	92.65	14.72	4.80	0.00	0.00	112.17
T214	12,350	12,350	30.1	No	**-1.56**	108.0	3.01	92.83	14.91	4.80	0.00	0.00	112.54
T215	10,383	10,383	37.9	No	**1.45**	108.0	3.01	91.33	13.41	4.80	0.00	0.00	109.53
T216	11,604	11,605	27.4	No	**-0.47**	108.0	3.01	92.29	14.36	4.80	0.00	0.00	111.46
T217	12,243	12,243	25.7	No	**-1.40**	108.0	3.01	92.76	14.83	4.80	0.00	0.00	112.39
T218	14,268	14,269	31.2	No	**-4.10**	108.0	3.01	94.09	16.20	4.80	0.00	0.00	115.09
T219	14,544	14,544	30.5	No	**-4.44**	108.0	3.01	94.25	16.38	4.80	0.00	0.00	115.43
T220	15,020	15,020	26.9	No	**-5.02**	108.0	3.01	94.53	16.67	4.80	0.00	0.00	116.01
T221	15,527	15,528	24.6	No	**-5.61**	108.0	3.01	94.82	16.98	4.80	0.00	0.00	116.60
T222	15,102	15,102	16.8	No	**-5.12**	108.0	3.01	94.58	16.72	4.80	0.00	0.00	116.10
T223	14,436	14,437	18.7	No	**-4.31**	108.0	3.01	94.19	16.31	4.80	0.00	0.00	115.30
T224	14,754	14,754	25.3	No	**-4.70**	108.0	3.01	94.38	16.51	4.80	0.00	0.00	115.69
T225	14,418	14,418	25.1	No	**-4.29**	108.0	3.01	94.18	16.30	4.80	0.00	0.00	115.28
T226	13,923	13,924	24.8	No	**-3.67**	108.0	3.01	93.88	15.98	4.80	0.00	0.00	114.66
T227	13,068	13,068	22.3	No	**-2.55**	108.0	3.01	93.32	15.41	4.80	0.00	0.00	113.54
T228	14,893	14,894	12.8	No	**-4.87**	108.0	3.01	94.46	16.59	4.80	0.00	0.00	115.85
T229	12,594	12,594	28.8	No	**-1.90**	108.0	3.01	93.00	15.08	4.80	0.00	0.00	112.89
T230	12,384	12,384	32.9	No	**-1.60**	108.0	3.01	92.86	14.93	4.80	0.00	0.00	112.59
T231	11,891	11,891	26.8	No	**-0.89**	108.0	3.01	92.50	14.58	4.80	0.00	0.00	111.88

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T232	11,120	11,120	27.1	No	**0.27**	108.0	3.01	91.92	13.99	4.80	0.00	0.00	110.72
T233	10,753	10,753	29.5	No	**0.85**	108.0	3.01	91.63	13.71	4.80	0.00	0.00	110.14
T234	10,419	10,419	32.6	No	**1.39**	108.0	3.01	91.36	13.44	4.80	0.00	0.00	109.59
T235	10,130	10,130	24.4	No	**1.88**	108.0	3.01	91.11	13.20	4.80	0.00	0.00	109.11
T301	12,420	12,420	32.6	No	**-1.65**	108.0	3.01	92.88	14.96	4.80	0.00	0.00	112.64
T302	12,745	12,745	31.8	No	**-2.11**	108.0	3.01	93.11	15.19	4.80	0.00	0.00	113.10
T303	12,958	12,958	33.2	No	**-2.40**	108.0	3.01	93.25	15.34	4.80	0.00	0.00	113.39
T304	13,342	13,343	31.1	No	**-2.92**	108.0	3.01	93.50	15.60	4.80	0.00	0.00	113.90
T305	12,788	12,788	31.9	No	**-2.17**	108.0	3.01	93.14	15.22	4.80	0.00	0.00	113.16
T306	12,736	12,736	36.8	No	**-2.10**	108.0	3.01	93.10	15.18	4.80	0.00	0.00	113.08
T307	12,058	12,058	34.0	No	**-1.14**	108.0	3.01	92.63	14.70	4.80	0.00	0.00	112.12
T308	14,259	14,260	19.2	No	**-4.09**	108.0	3.01	94.08	16.20	4.80	0.00	0.00	115.08
T309	13,852	13,852	21.1	No	**-3.58**	108.0	3.01	93.83	15.94	4.80	0.00	0.00	114.57
T310	13,777	13,778	21.6	No	**-3.48**	108.0	3.01	93.78	15.89	4.80	0.00	0.00	114.47
T311	13,372	13,373	23.4	No	**-2.96**	108.0	3.01	93.52	15.62	4.80	0.00	0.00	113.94
T312	12,992	12,992	23.6	No	**-2.45**	108.0	3.01	93.27	15.36	4.80	0.00	0.00	113.43
T313	12,561	12,561	35.0	No	**-1.85**	108.0	3.01	92.98	15.06	4.80	0.00	0.00	112.84
T314	11,663	11,664	23.2	No	**-0.56**	108.0	3.01	92.34	14.41	4.80	0.00	0.00	111.54
T315	11,717	11,717	28.6	No	**-0.64**	108.0	3.01	92.38	14.45	4.80	0.00	0.00	111.62
T316	11,913	11,914	31.5	No	**-0.93**	108.0	3.01	92.52	14.59	4.80	0.00	0.00	111.91
T317	12,316	12,317	37.3	No	**-1.51**	108.0	3.01	92.81	14.89	4.80	0.00	0.00	112.50
T318	12,898	12,898	23.5	No	**-2.32**	108.0	3.01	93.21	15.30	4.80	0.00	0.00	113.31
T319	12,823	12,823	22.1	No	**-2.22**	108.0	3.01	93.16	15.24	4.80	0.00	0.00	113.20
T320	13,083	13,084	27.9	No	**-2.57**	108.0	3.01	93.33	15.42	4.80	0.00	0.00	113.56
T321	13,472	13,472	21.8	No	**-3.09**	108.0	3.01	93.59	15.69	4.80	0.00	0.00	114.07
T322	12,919	12,920	19.3	No	**-2.35**	108.0	3.01	93.23	15.31	4.80	0.00	0.00	113.34
T323	12,599	12,600	18.5	No	**-1.91**	108.0	3.01	93.01	15.09	4.80	0.00	0.00	112.89
T324	11,933	11,934	20.0	No	**-0.96**	108.0	3.01	92.54	14.61	4.80	0.00	0.00	111.94
T325	12,065	12,066	18.9	No	**-1.15**	108.0	3.01	92.63	14.70	4.80	0.00	0.00	112.14
T326	11,624	11,625	23.1	No	**-0.50**	108.0	3.01	92.31	14.38	4.80	0.00	0.00	111.49
T327	11,245	11,245	18.1	No	**0.08**	108.0	3.01	92.02	14.09	4.80	0.00	0.00	110.91
T328	10,265	10,266	19.8	No	**1.65**	108.0	3.01	91.23	13.31	4.80	0.00	0.00	109.34
T329	9,717	9,718	20.5	No	**2.58**	108.0	3.01	90.75	12.85	4.80	0.00	0.00	108.40
T330	9,244	9,245	18.4	No	**3.43**	108.0	3.01	90.32	12.44	4.80	0.00	0.00	107.56
T331	9,595	9,596	23.5	No	**2.80**	108.0	3.01	90.64	12.75	4.80	0.00	0.00	108.19
T332	9,395	9,395	21.2	No	**3.16**	108.0	3.01	90.46	12.57	4.80	0.00	0.00	107.83
T333	10,126	10,127	25.5	No	**1.88**	108.0	3.01	91.11	13.20	4.80	0.00	0.00	109.11
T334	10,533	10,533	18.5	No	**1.21**	108.0	3.01	91.45	13.53	4.80	0.00	0.00	109.78
T335	10,971	10,972	16.8	No	**0.50**	108.0	3.01	91.81	13.88	4.80	0.00	0.00	110.48
Sum	34.15												

Noise sensitive area: SSA014 SSA014

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	7,123	7,124	56.6	Yes	**8.54**	107.5	3.01	88.05	9.40	4.53	0.00	0.00	101.99
402	7,529	7,530	59.1	Yes	**7.83**	107.5	3.01	88.54	9.63	4.53	0.00	0.00	102.69
403	8,154	8,155	55.5	Yes	**6.78**	107.5	3.01	89.23	9.95	4.57	0.00	0.00	103.75
404	8,582	8,583	57.8	Yes	**6.12**	107.5	3.01	89.67	10.16	4.57	0.00	0.00	104.40
405	8,857	8,858	45.7	Yes	**5.67**	107.5	3.01	89.95	10.29	4.62	0.00	0.00	104.86
406	8,981	8,981	45.9	Yes	**5.49**	107.5	3.01	90.07	10.34	4.63	0.00	0.00	105.04
407	9,451	9,451	49.4	Yes	**4.84**	107.5	3.01	90.51	10.55	4.62	0.00	0.00	105.69
408	7,494	7,495	54.5	Yes	**7.87**	107.5	3.01	88.50	9.61	4.55	0.00	0.00	102.65
409	7,911	7,911	49.6	Yes	**7.15**	107.5	3.01	88.96	9.83	4.59	0.00	0.00	103.38
410	8,326	8,327	54.7	Yes	**6.50**	107.5	3.01	89.41	10.03	4.58	0.00	0.00	104.02
411	8,719	8,720	54.9	Yes	**5.91**	107.5	3.01	89.81	10.22	4.59	0.00	0.00	104.62
412	9,103	9,103	54.7	No	**5.14**	107.5	3.01	90.18	10.40	4.80	0.00	0.00	105.38
413	9,540	9,541	53.4	No	**4.54**	107.5	3.01	90.59	10.59	4.80	0.00	0.00	105.98
414	9,868	9,869	52.8	No	**4.11**	107.5	3.01	90.89	10.73	4.80	0.00	0.00	106.42
415	1,544	1,548	41.1	Yes	**27.56**	107.5	3.01	74.80	4.28	3.89	0.00	0.00	82.96
416	1,150	1,156	48.8	Yes	**31.33**	107.5	3.01	72.26	3.58	3.34	0.00	0.00	79.19
417	1,003	1,010	47.3	Yes	**32.96**	107.5	3.01	71.09	3.30	3.18	0.00	0.00	77.57

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
418	946	952	47.4	Yes	**33.71**	107.5	3.01	70.57	3.17	3.07	0.00	0.00	76.82
419	1,862	1,865	50.8	Yes	**25.48**	107.5	3.01	76.42	4.77	3.86	0.00	0.00	85.05
420	1,805	1,809	49.2	Yes	**25.83**	107.5	3.01	76.15	4.68	3.87	0.00	0.00	84.70
421	1,588	1,595	64.7	Yes	**27.71**	107.5	3.01	75.05	4.35	3.41	0.00	0.00	82.81
422	2,039	2,042	45.5	Yes	**24.27**	107.5	3.01	77.20	5.02	4.04	0.00	0.00	86.26
423	2,415	2,418	45.4	Yes	**22.18**	107.5	3.01	78.67	5.52	4.16	0.00	0.00	88.34
424	3,258	3,260	40.7	Yes	**18.41**	107.5	3.01	81.26	6.48	4.37	0.00	0.00	92.12
425	3,615	3,617	40.7	Yes	**17.11**	107.5	3.01	82.17	6.84	4.42	0.00	0.00	93.42
426	4,721	4,723	55.1	Yes	**13.83**	107.5	3.01	84.48	7.81	4.40	0.00	0.00	96.69
427	4,914	4,916	56.9	Yes	**13.33**	107.5	3.01	84.83	7.96	4.41	0.00	0.00	97.19
428	5,108	5,110	54.1	Yes	**12.82**	107.5	3.01	85.17	8.10	4.44	0.00	0.00	97.71
429	4,916	4,917	48.2	Yes	**13.27**	107.5	3.01	84.83	7.96	4.47	0.00	0.00	97.26
430	5,224	5,226	49.4	Yes	**12.50**	107.5	3.01	85.36	8.19	4.48	0.00	0.00	98.03
431	5,237	5,239	52.4	Yes	**12.48**	107.5	3.01	85.38	8.20	4.46	0.00	0.00	98.04
432	5,559	5,560	47.7	Yes	**11.69**	107.5	3.01	85.90	8.43	4.51	0.00	0.00	98.83
433	14,526	14,526	46.9	No	**-0.87**	107.5	3.01	94.24	12.35	4.80	0.00	0.00	111.39
434	13,157	13,158	52.5	No	**0.41**	107.5	3.01	93.38	11.93	4.80	0.00	0.00	110.12
435	12,275	12,276	51.6	No	**1.30**	107.5	3.01	92.78	11.64	4.80	0.00	0.00	109.22
436	11,696	11,697	53.9	No	**1.92**	107.5	3.01	92.36	11.44	4.80	0.00	0.00	108.60
437	11,513	11,513	47.5	No	**2.13**	107.5	3.01	92.22	11.37	4.80	0.00	0.00	108.40
438	12,136	12,136	43.3	No	**1.45**	107.5	3.01	92.68	11.59	4.80	0.00	0.00	109.07
439	10,457	10,458	52.0	No	**3.36**	107.5	3.01	91.39	10.97	4.80	0.00	0.00	107.16
440	10,173	10,174	50.4	No	**3.72**	107.5	3.01	91.15	10.86	4.80	0.00	0.00	106.81
441	10,190	10,191	48.0	No	**3.69**	107.5	3.01	91.16	10.87	4.80	0.00	0.00	106.83
442	9,881	9,882	52.7	No	**4.09**	107.5	3.01	90.90	10.74	4.80	0.00	0.00	106.43
443	9,795	9,796	47.8	No	**4.20**	107.5	3.01	90.82	10.70	4.80	0.00	0.00	106.32
444	9,885	9,886	49.5	No	**4.08**	107.5	3.01	90.90	10.74	4.80	0.00	0.00	106.44
445	13,127	13,127	48.8	No	**0.44**	107.5	3.01	93.36	11.92	4.80	0.00	0.00	110.09
446	12,739	12,740	46.5	No	**0.83**	107.5	3.01	93.10	11.80	4.80	0.00	0.00	109.70
447	12,232	12,232	41.4	No	**1.35**	107.5	3.01	92.75	11.63	4.80	0.00	0.00	109.18
448	11,960	11,960	42.8	No	**1.64**	107.5	3.01	92.55	11.53	4.80	0.00	0.00	108.89
449	11,430	11,431	47.7	No	**2.22**	107.5	3.01	92.16	11.34	4.80	0.00	0.00	108.31
450	11,437	11,438	48.5	No	**2.21**	107.5	3.01	92.17	11.35	4.80	0.00	0.00	108.31
451	10,897	10,898	54.9	No	**2.83**	107.5	3.01	91.75	11.14	4.80	0.00	0.00	107.69
452	13,592	13,593	46.5	No	**-0.01**	107.5	3.01	93.67	12.07	4.80	0.00	0.00	110.53
453	14,286	14,287	34.3	No	**-0.65**	107.5	3.01	94.10	12.28	4.80	0.00	0.00	111.18
454	13,813	13,813	38.8	No	**-0.22**	107.5	3.01	93.81	12.14	4.80	0.00	0.00	110.74
455	12,854	12,855	42.6	No	**0.71**	107.5	3.01	93.18	11.83	4.80	0.00	0.00	109.81
456	13,033	13,033	45.2	No	**0.53**	107.5	3.01	93.30	11.89	4.80	0.00	0.00	109.99
457	13,007	13,007	38.9	No	**0.56**	107.5	3.01	93.28	11.88	4.80	0.00	0.00	109.97
458	14,398	14,399	43.2	No	**-0.75**	107.5	3.01	94.17	12.31	4.80	0.00	0.00	111.28
459	14,032	14,033	45.0	No	**-0.42**	107.5	3.01	93.94	12.20	4.80	0.00	0.00	110.94
460	14,861	14,862	42.2	No	**-1.16**	107.5	3.01	94.44	12.44	4.80	0.00	0.00	111.68
461	14,462	14,463	45.0	No	**-0.81**	107.5	3.01	94.20	12.33	4.80	0.00	0.00	111.33
462	14,304	14,304	53.0	No	**-0.67**	107.5	3.01	94.11	12.28	4.80	0.00	0.00	111.19
463	13,885	13,886	44.9	No	**-0.28**	107.5	3.01	93.85	12.16	4.80	0.00	0.00	110.81
464	14,084	14,085	39.5	No	**-0.47**	107.5	3.01	93.97	12.22	4.80	0.00	0.00	110.99
T001	3,406	3,407	63.6	Yes	**19.25**	108.0	3.01	81.65	5.93	4.16	0.00	0.00	91.74
T002	3,610	3,611	54.3	Yes	**18.34**	108.0	3.01	82.15	6.21	4.29	0.00	0.00	92.65
T003	3,064	3,066	48.9	Yes	**18.40**	107.0	3.01	80.73	6.67	4.25	0.00	0.00	91.65
T004	4,055	4,056	47.5	Yes	**14.42**	107.0	3.01	83.16	8.07	4.40	0.00	0.00	95.63
T005	2,198	2,200	44.9	Yes	**22.85**	107.0	3.01	77.85	5.26	4.10	0.00	0.00	87.21
T006	3,220	3,221	40.1	Yes	**19.79**	108.0	3.01	81.16	5.66	4.37	0.00	0.00	91.20
T007	2,055	2,057	48.5	Yes	**25.84**	108.0	3.01	77.26	3.89	3.99	0.00	0.00	85.15
T008	3,880	3,881	46.5	Yes	**15.05**	107.0	3.01	82.78	7.83	4.39	0.00	0.00	95.00
T009	4,252	4,253	49.4	Yes	**15.94**	108.0	3.01	83.57	7.07	4.40	0.00	0.00	95.05
T010	3,610	3,611	57.0	Yes	**18.36**	108.0	3.01	82.15	6.21	4.26	0.00	0.00	92.62
T011	5,168	5,169	39.5	Yes	**12.96**	108.0	3.01	85.27	8.22	4.54	0.00	0.00	98.03
T012	4,917	4,917	44.4	Yes	**11.58**	107.0	3.01	84.83	9.14	4.49	0.00	0.00	98.47
T013	4,002	4,002	46.8	Yes	**14.61**	107.0	3.01	83.05	8.00	4.40	0.00	0.00	95.44
T014	2,942	2,943	41.9	Yes	**18.89**	107.0	3.01	80.38	6.48	4.31	0.00	0.00	91.17
T015	2,469	2,471	50.7	Yes	**23.49**	108.0	3.01	78.86	4.54	4.10	0.00	0.00	87.50
T016	3,517	3,518	45.2	Yes	**16.44**	107.0	3.01	81.93	7.33	4.36	0.00	0.00	93.62

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

...continued from previous page

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T017	3,260	3,261	38.6	Yes	**19.61**	108.0	3.01	81.27	5.72	4.39	0.00	0.00	91.38
T018	2,518	2,518	41.5	Yes	**21.00**	107.0	3.01	79.02	5.80	4.24	0.00	0.00	89.06
T019	3,451	3,452	43.8	Yes	**16.69**	107.0	3.01	81.76	7.24	4.37	0.00	0.00	93.36
T020	2,557	2,559	41.7	Yes	**22.91**	108.0	3.01	79.16	4.68	4.24	0.00	0.00	88.08
T022	4,974	4,975	38.9	Yes	**11.37**	107.0	3.01	84.94	9.21	4.53	0.00	0.00	98.68
T023	4,388	4,390	49.3	Yes	**13.29**	107.0	3.01	83.85	8.50	4.42	0.00	0.00	96.76
T025	3,737	3,737	31.9	Yes	**17.64**	108.0	3.01	82.45	6.38	4.51	0.00	0.00	93.34
T026	2,679	2,681	39.7	Yes	**22.26**	108.0	3.01	79.57	4.86	4.29	0.00	0.00	88.72
T027	3,106	3,107	53.9	Yes	**20.44**	108.0	3.01	80.85	5.50	4.21	0.00	0.00	90.55
T028	2,732	2,734	44.9	Yes	**22.07**	108.0	3.01	79.74	4.95	4.24	0.00	0.00	88.92
T029	5,470	5,470	44.9	Yes	**10.00**	107.0	3.01	85.76	9.78	4.52	0.00	0.00	100.06
T030	4,061	4,062	37.4	Yes	**16.51**	108.0	3.01	83.17	6.82	4.49	0.00	0.00	94.48
T031	4,810	4,810	42.0	Yes	**11.89**	107.0	3.01	84.64	9.02	4.50	0.00	0.00	98.16
T032	2,460	2,462	42.0	Yes	**21.31**	107.0	3.01	78.82	5.70	4.22	0.00	0.00	88.75
T033	4,615	4,616	43.6	Yes	**12.51**	107.0	3.01	84.28	8.78	4.48	0.00	0.00	97.54
T201	4,852	4,852	36.3	Yes	**13.89**	108.0	3.01	84.72	7.84	4.54	0.00	0.00	97.10
T202	5,121	5,121	35.1	Yes	**13.07**	108.0	3.01	85.19	8.17	4.57	0.00	0.00	97.92
T203	6,117	6,117	34.7	No	**10.13**	108.0	3.01	86.73	9.33	4.80	0.00	0.00	100.86
T204	6,182	6,183	41.4	Yes	**10.19**	108.0	3.01	86.82	9.40	4.57	0.00	0.00	100.80
T205	6,703	6,704	46.8	Yes	**8.93**	108.0	3.01	87.53	9.97	4.56	0.00	0.00	102.06
T206	6,722	6,722	40.6	No	**8.65**	108.0	3.01	87.55	9.99	4.80	0.00	0.00	102.34
T207	7,505	7,506	51.4	Yes	**7.11**	108.0	3.01	88.51	10.80	4.57	0.00	0.00	103.88
T208	6,246	6,247	41.3	Yes	**10.03**	108.0	3.01	86.91	9.47	4.57	0.00	0.00	100.96
T209	6,503	6,504	47.5	Yes	**9.42**	108.0	3.01	87.26	9.75	4.55	0.00	0.00	101.57
T210	6,758	6,758	46.6	Yes	**8.80**	108.0	3.01	87.60	10.03	4.57	0.00	0.00	102.19
T211	5,807	5,808	44.9	Yes	**11.19**	108.0	3.01	86.28	8.98	4.54	0.00	0.00	99.79
T212	5,712	5,712	41.5	Yes	**11.43**	108.0	3.01	86.14	8.87	4.55	0.00	0.00	99.56
T213	5,701	5,702	37.9	No	**11.21**	108.0	3.01	86.12	8.86	4.80	0.00	0.00	99.78
T214	5,939	5,940	38.7	No	**10.58**	108.0	3.01	86.48	9.13	4.80	0.00	0.00	100.40
T215	3,963	3,964	45.9	Yes	**16.93**	108.0	3.01	82.96	6.69	4.40	0.00	0.00	94.06
T216	5,176	5,177	36.1	No	**12.67**	108.0	3.01	85.28	8.23	4.80	0.00	0.00	98.32
T217	5,829	5,829	36.5	No	**10.87**	108.0	3.01	86.31	9.00	4.80	0.00	0.00	100.11
T218	7,837	7,838	40.7	No	**6.17**	108.0	3.01	88.88	11.13	4.80	0.00	0.00	104.81
T219	8,121	8,121	42.1	No	**5.59**	108.0	3.01	89.19	11.41	4.80	0.00	0.00	105.40
T220	8,597	8,598	38.6	No	**4.65**	108.0	3.01	89.69	11.85	4.80	0.00	0.00	106.34
T221	9,121	9,121	37.0	No	**3.66**	108.0	3.01	90.20	12.33	4.80	0.00	0.00	107.33
T222	9,173	9,173	29.3	No	**3.56**	108.0	3.01	90.25	12.38	4.80	0.00	0.00	107.43
T223	8,530	8,530	29.5	No	**4.78**	108.0	3.01	89.62	11.79	4.80	0.00	0.00	106.21
T224	8,504	8,504	40.6	No	**4.83**	108.0	3.01	89.59	11.77	4.80	0.00	0.00	106.16
T225	8,172	8,173	40.0	No	**5.49**	108.0	3.01	89.25	11.45	4.80	0.00	0.00	105.50
T226	7,817	7,818	40.2	No	**6.21**	108.0	3.01	88.86	11.11	4.80	0.00	0.00	104.77
T227	6,972	6,972	37.0	No	**8.07**	108.0	3.01	87.87	10.25	4.80	0.00	0.00	102.92
T228	8,841	8,841	27.6	No	**4.18**	108.0	3.01	89.93	12.08	4.80	0.00	0.00	106.81
T229	6,404	6,404	42.1	No	**9.41**	108.0	3.01	87.13	9.65	4.80	0.00	0.00	101.58
T230	6,147	6,148	45.5	No	**10.05**	108.0	3.01	86.77	9.36	4.80	0.00	0.00	100.94
T231	5,641	5,642	39.7	No	**11.37**	108.0	3.01	86.03	8.79	4.80	0.00	0.00	99.61
T232	5,141	5,142	35.7	No	**12.77**	108.0	3.01	85.22	8.19	4.80	0.00	0.00	98.22
T233	4,741	4,742	39.3	No	**13.97**	108.0	3.01	84.52	7.70	4.80	0.00	0.00	97.02
T234	4,432	4,433	41.2	No	**14.94**	108.0	3.01	83.93	7.31	4.80	0.00	0.00	96.04
T235	3,943	3,943	34.7	No	**16.61**	108.0	3.01	82.92	6.66	4.80	0.00	0.00	94.38
T301	8,698	8,699	46.6	No	**4.45**	108.0	3.01	89.79	11.95	4.80	0.00	0.00	106.54
T302	9,172	9,172	45.5	No	**3.56**	108.0	3.01	90.25	12.38	4.80	0.00	0.00	107.43
T303	9,784	9,784	49.5	No	**2.47**	108.0	3.01	90.81	12.91	4.80	0.00	0.00	108.52
T304	10,348	10,348	49.6	No	**1.51**	108.0	3.01	91.30	13.38	4.80	0.00	0.00	109.48
T305	10,174	10,174	49.5	No	**1.80**	108.0	3.01	91.15	13.24	4.80	0.00	0.00	109.19
T306	9,945	9,945	55.6	No	**2.19**	108.0	3.01	90.95	13.04	4.80	0.00	0.00	108.80
T307	9,130	9,130	52.8	No	**3.64**	108.0	3.01	90.21	12.34	4.80	0.00	0.00	107.35
T308	8,806	8,806	28.9	No	**4.25**	108.0	3.01	89.90	12.05	4.80	0.00	0.00	106.74
T309	8,314	8,314	31.3	No	**5.20**	108.0	3.01	89.40	11.59	4.80	0.00	0.00	105.79
T310	8,033	8,033	29.8	No	**5.77**	108.0	3.01	89.10	11.32	4.80	0.00	0.00	105.22
T311	7,569	7,570	31.4	No	**6.74**	108.0	3.01	88.58	10.87	4.80	0.00	0.00	104.25
T312	7,158	7,158	31.0	No	**7.64**	108.0	3.01	88.10	10.45	4.80	0.00	0.00	103.34
T313	6,682	6,682	42.2	No	**8.74**	108.0	3.01	87.50	9.95	4.80	0.00	0.00	102.25

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T314	5,624	5,625	35.1	No	**11.42**	108.0	3.01	86.00	8.77	4.80	0.00	0.00	99.57
T315	5,983	5,984	36.3	No	**10.47**	108.0	3.01	86.54	9.18	4.80	0.00	0.00	100.52
T316	6,438	6,438	41.1	No	**9.33**	108.0	3.01	87.18	9.68	4.80	0.00	0.00	101.66
T317	6,819	6,820	46.5	No	**8.42**	108.0	3.01	87.68	10.09	4.80	0.00	0.00	102.57
T318	7,571	7,571	33.1	No	**6.74**	108.0	3.01	88.58	10.87	4.80	0.00	0.00	104.25
T319	8,195	8,196	41.3	No	**5.44**	108.0	3.01	89.27	11.48	4.80	0.00	0.00	105.55
T320	8,611	8,611	47.4	No	**4.62**	108.0	3.01	89.70	11.87	4.80	0.00	0.00	106.37
T321	9,075	9,076	40.9	No	**3.74**	108.0	3.01	90.16	12.29	4.80	0.00	0.00	107.25
T322	9,023	9,024	37.9	No	**3.84**	108.0	3.01	90.11	12.24	4.80	0.00	0.00	107.15
T323	8,827	8,827	37.0	No	**4.21**	108.0	3.01	89.92	12.07	4.80	0.00	0.00	106.78
T324	8,017	8,017	37.5	No	**5.80**	108.0	3.01	89.08	11.31	4.80	0.00	0.00	105.19
T325	8,909	8,910	35.0	No	**4.05**	108.0	3.01	90.00	12.14	4.80	0.00	0.00	106.94
T326	8,233	8,233	40.2	No	**5.36**	108.0	3.01	89.31	11.51	4.80	0.00	0.00	105.62
T327	7,881	7,882	34.8	No	**6.08**	108.0	3.01	88.93	11.17	4.80	0.00	0.00	104.91
T328	6,908	6,909	35.7	No	**8.21**	108.0	3.01	87.79	10.19	4.80	0.00	0.00	102.77
T329	7,159	7,159	34.8	No	**7.64**	108.0	3.01	88.10	10.45	4.80	0.00	0.00	103.35
T330	6,396	6,397	32.6	No	**9.43**	108.0	3.01	87.12	9.64	4.80	0.00	0.00	101.56
T331	6,055	6,056	38.8	No	**10.28**	108.0	3.01	86.64	9.26	4.80	0.00	0.00	100.70
T332	5,581	5,582	36.4	No	**11.53**	108.0	3.01	85.94	8.72	4.80	0.00	0.00	99.45
T333	5,894	5,894	41.9	No	**10.70**	108.0	3.01	86.41	9.08	4.80	0.00	0.00	100.29
T334	6,401	6,402	35.3	No	**9.42**	108.0	3.01	87.13	9.64	4.80	0.00	0.00	101.57
T335	6,590	6,590	33.5	No	**8.96**	108.0	3.01	87.38	9.85	4.80	0.00	0.00	102.03
Sum	40.67												

Noise sensitive area: SSA015 SSA015

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	10,934	10,935	58.2	No	**2.79**	107.5	3.01	91.78	11.16	4.80	0.00	0.00	107.73
402	11,170	11,171	61.4	No	**2.51**	107.5	3.01	91.96	11.25	4.80	0.00	0.00	108.01
403	11,689	11,690	57.0	No	**1.93**	107.5	3.01	92.36	11.44	4.80	0.00	0.00	108.59
404	11,893	11,894	61.2	No	**1.71**	107.5	3.01	92.51	11.51	4.80	0.00	0.00	108.82
405	11,872	11,873	51.1	No	**1.73**	107.5	3.01	92.49	11.50	4.80	0.00	0.00	108.79
406	11,596	11,596	49.6	No	**2.04**	107.5	3.01	92.29	11.40	4.80	0.00	0.00	108.49
407	12,777	12,778	49.9	No	**0.79**	107.5	3.01	93.13	11.81	4.80	0.00	0.00	109.74
408	5,770	5,772	58.5	Yes	**11.27**	107.5	3.01	86.23	8.57	4.45	0.00	0.00	99.25
409	6,464	6,465	52.8	Yes	**9.77**	107.5	3.01	87.21	9.02	4.52	0.00	0.00	100.75
410	6,406	6,408	61.2	Yes	**9.93**	107.5	3.01	87.13	8.98	4.47	0.00	0.00	100.59
411	6,576	6,578	60.5	Yes	**9.59**	107.5	3.01	87.36	9.08	4.49	0.00	0.00	100.93
412	6,389	6,391	59.8	Yes	**9.96**	107.5	3.01	87.11	8.97	4.48	0.00	0.00	100.56
413	6,664	6,666	59.4	Yes	**9.41**	107.5	3.01	87.48	9.14	4.50	0.00	0.00	101.11
414	7,023	7,025	59.0	Yes	**8.73**	107.5	3.01	87.93	9.35	4.51	0.00	0.00	101.79
415	9,168	9,169	34.1	No	**5.05**	107.5	3.01	90.25	10.43	4.80	0.00	0.00	105.48
416	8,863	8,864	38.3	No	**5.48**	107.5	3.01	89.95	10.29	4.80	0.00	0.00	105.04
417	8,279	8,280	37.3	No	**6.35**	107.5	3.01	89.36	10.01	4.80	0.00	0.00	104.17
418	7,857	7,858	33.2	No	**7.02**	107.5	3.01	88.91	9.80	4.80	0.00	0.00	103.51
419	6,832	6,834	37.4	No	**8.79**	107.5	3.01	87.69	9.24	4.80	0.00	0.00	101.73
420	6,678	6,679	38.6	No	**9.08**	107.5	3.01	87.49	9.15	4.80	0.00	0.00	101.44
421	7,107	7,109	59.5	No	**8.29**	107.5	3.01	88.04	9.39	4.80	0.00	0.00	102.23
422	6,785	6,787	51.8	No	**8.88**	107.5	3.01	87.63	9.21	4.80	0.00	0.00	101.64
423	6,496	6,498	54.0	No	**9.43**	107.5	3.01	87.26	9.04	4.80	0.00	0.00	101.09
424	5,937	5,938	51.5	No	**10.57**	107.5	3.01	86.47	8.68	4.80	0.00	0.00	99.96
425	5,929	5,931	51.6	No	**10.58**	107.5	3.01	86.46	8.68	4.80	0.00	0.00	99.94
426	4,779	4,782	49.0	Yes	**13.63**	107.5	3.01	84.59	7.85	4.45	0.00	0.00	96.89
427	4,199	4,203	51.1	Yes	**15.29**	107.5	3.01	83.47	7.37	4.39	0.00	0.00	95.23
428	3,760	3,764	54.6	Yes	**16.73**	107.5	3.01	82.51	6.98	4.30	0.00	0.00	93.80
429	3,680	3,684	47.1	Yes	**16.93**	107.5	3.01	82.33	6.90	4.36	0.00	0.00	93.59
430	3,270	3,274	50.1	Yes	**18.45**	107.5	3.01	81.30	6.49	4.28	0.00	0.00	92.07
431	3,195	3,199	56.8	Yes	**18.81**	107.5	3.01	81.10	6.42	4.19	0.00	0.00	91.71
432	2,901	2,904	55.4	Yes	**20.02**	107.5	3.01	80.26	6.10	4.15	0.00	0.00	90.50
433	15,963	15,964	34.3	No	**-2.08**	107.5	3.01	95.06	12.74	4.80	0.00	0.00	112.61
434	14,487	14,488	43.1	No	**-0.83**	107.5	3.01	94.22	12.34	4.80	0.00	0.00	111.36

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
435	13,748	13,749	41.8	No	**-0.16**	107.5	3.01	93.77	12.12	4.80	0.00	0.00	110.68
436	13,342	13,343	42.1	No	**0.23**	107.5	3.01	93.51	11.99	4.80	0.00	0.00	110.29
437	12,986	12,986	38.4	No	**0.58**	107.5	3.01	93.27	11.88	4.80	0.00	0.00	109.95
438	12,697	12,698	37.6	No	**0.87**	107.5	3.01	93.07	11.78	4.80	0.00	0.00	109.66
439	9,514	9,516	52.5	Yes	**4.76**	107.5	3.01	90.57	10.58	4.61	0.00	0.00	105.76
440	9,016	9,018	50.6	Yes	**5.45**	107.5	3.01	90.10	10.36	4.61	0.00	0.00	105.07
441	8,612	8,614	50.0	Yes	**6.05**	107.5	3.01	89.70	10.17	4.60	0.00	0.00	104.48
442	8,156	8,158	56.5	Yes	**6.78**	107.5	3.01	89.23	9.95	4.56	0.00	0.00	103.75
443	7,694	7,696	54.4	Yes	**7.53**	107.5	3.01	88.72	9.71	4.56	0.00	0.00	103.00
444	7,393	7,395	58.2	Yes	**8.06**	107.5	3.01	88.38	9.55	4.53	0.00	0.00	102.46
445	13,705	13,706	42.4	No	**-0.12**	107.5	3.01	93.74	12.10	4.80	0.00	0.00	110.64
446	13,156	13,157	40.2	No	**0.41**	107.5	3.01	93.38	11.93	4.80	0.00	0.00	110.11
447	12,038	12,039	36.5	No	**1.55**	107.5	3.01	92.61	11.56	4.80	0.00	0.00	108.97
448	11,594	11,595	39.2	Yes	**2.15**	107.5	3.01	92.29	11.40	4.68	0.00	0.00	108.37
449	10,963	10,964	45.9	Yes	**2.90**	107.5	3.01	91.80	11.17	4.66	0.00	0.00	107.63
450	10,698	10,699	47.4	Yes	**3.22**	107.5	3.01	91.59	11.07	4.65	0.00	0.00	107.30
451	10,019	10,021	54.6	Yes	**4.10**	107.5	3.01	91.02	10.80	4.61	0.00	0.00	106.43
452	14,203	14,204	39.3	No	**-0.58**	107.5	3.01	94.05	12.25	4.80	0.00	0.00	111.10
453	11,815	11,815	45.3	Yes	**1.93**	107.5	3.01	92.45	11.48	4.67	0.00	0.00	108.60
454	11,246	11,247	50.8	Yes	**2.58**	107.5	3.01	92.02	11.28	4.65	0.00	0.00	107.94
455	10,179	10,181	55.4	Yes	**3.89**	107.5	3.01	91.16	10.86	4.61	0.00	0.00	106.63
456	10,009	10,010	59.0	Yes	**4.13**	107.5	3.01	91.01	10.79	4.60	0.00	0.00	106.40
457	9,721	9,722	55.3	Yes	**4.49**	107.5	3.01	90.75	10.67	4.61	0.00	0.00	106.03
458	15,152	15,152	34.9	No	**-1.41**	107.5	3.01	94.61	12.52	4.80	0.00	0.00	111.93
459	14,754	14,755	36.8	No	**-1.07**	107.5	3.01	94.38	12.41	4.80	0.00	0.00	111.59
460	14,845	14,846	34.1	No	**-1.15**	107.5	3.01	94.43	12.44	4.80	0.00	0.00	111.67
461	14,365	14,365	37.5	No	**-0.72**	107.5	3.01	94.15	12.30	4.80	0.00	0.00	111.25
462	14,008	14,009	46.9	No	**-0.40**	107.5	3.01	93.93	12.19	4.80	0.00	0.00	110.92
463	13,546	13,546	39.8	No	**0.03**	107.5	3.01	93.64	12.05	4.80	0.00	0.00	110.49
464	13,292	13,293	38.9	No	**0.28**	107.5	3.01	93.47	11.97	4.80	0.00	0.00	110.25
T001	10,386	10,387	40.2	No	**1.45**	108.0	3.01	91.33	13.41	4.80	0.00	0.00	109.54
T002	9,621	9,623	44.2	No	**2.75**	108.0	3.01	90.67	12.77	4.80	0.00	0.00	108.24
T003	11,470	11,470	31.9	No	**-1.68**	107.0	3.01	92.19	14.75	4.80	0.00	0.00	111.74
T004	12,322	12,323	28.3	No	**-2.82**	107.0	3.01	92.81	15.26	4.80	0.00	0.00	112.88
T005	10,406	10,407	26.7	No	**-0.14**	107.0	3.01	91.35	14.05	4.80	0.00	0.00	110.19
T006	8,427	8,428	38.9	No	**4.98**	108.0	3.01	89.51	11.70	4.80	0.00	0.00	106.01
T007	8,527	8,528	34.5	No	**4.78**	108.0	3.01	89.62	11.79	4.80	0.00	0.00	106.21
T008	12,300	12,301	30.9	No	**-2.80**	107.0	3.01	92.80	15.25	4.80	0.00	0.00	112.85
T009	11,026	11,027	29.1	No	**0.42**	108.0	3.01	91.85	13.92	4.80	0.00	0.00	110.57
T010	10,134	10,135	37.1	No	**1.87**	108.0	3.01	91.12	13.20	4.80	0.00	0.00	109.12
T011	11,212	11,213	27.6	No	**0.13**	108.0	3.01	91.99	14.07	4.80	0.00	0.00	110.86
T012	12,625	12,626	20.2	No	**-3.21**	107.0	3.01	93.03	15.44	4.80	0.00	0.00	113.27
T013	12,175	12,175	28.2	No	**-2.63**	107.0	3.01	92.71	15.18	4.80	0.00	0.00	112.69
T014	10,978	10,978	25.2	No	**-0.99**	107.0	3.01	91.81	14.43	4.80	0.00	0.00	111.04
T015	9,122	9,123	33.1	No	**3.65**	108.0	3.01	90.20	12.33	4.80	0.00	0.00	107.33
T016	11,862	11,862	27.4	No	**-2.22**	107.0	3.01	92.48	14.99	4.80	0.00	0.00	112.27
T017	7,870	7,871	38.1	No	**6.10**	108.0	3.01	88.92	11.16	4.80	0.00	0.00	104.88
T018	10,230	10,230	19.3	No	**0.13**	107.0	3.01	91.20	13.93	4.80	0.00	0.00	109.92
T019	11,283	11,283	23.0	No	**-1.42**	107.0	3.01	92.05	14.63	4.80	0.00	0.00	111.48
T020	8,110	8,111	37.6	No	**5.61**	108.0	3.01	89.18	11.40	4.80	0.00	0.00	105.38
T022	13,259	13,259	20.0	No	**-4.00**	107.0	3.01	93.45	15.80	4.80	0.00	0.00	114.05
T023	12,814	12,815	34.3	No	**-3.45**	107.0	3.01	93.15	15.55	4.80	0.00	0.00	113.51
T025	8,092	8,093	34.2	No	**5.65**	108.0	3.01	89.16	11.38	4.80	0.00	0.00	105.34
T026	7,386	7,387	35.4	No	**7.14**	108.0	3.01	88.37	10.68	4.80	0.00	0.00	103.85
T027	10,381	10,382	27.6	No	**1.46**	108.0	3.01	91.33	13.41	4.80	0.00	0.00	109.53
T028	8,689	8,690	37.9	No	**4.47**	108.0	3.01	89.78	11.94	4.80	0.00	0.00	106.52
T029	13,138	13,139	19.6	No	**-3.85**	107.0	3.01	93.37	15.73	4.80	0.00	0.00	113.91
T030	9,886	9,886	32.9	No	**2.29**	108.0	3.01	90.90	12.99	4.80	0.00	0.00	108.70
T031	12,736	12,736	21.8	No	**-3.35**	107.0	3.01	93.10	15.51	4.80	0.00	0.00	113.41
T032	10,826	10,827	23.6	No	**-0.77**	107.0	3.01	91.69	14.33	4.80	0.00	0.00	110.82
T033	12,779	12,780	26.0	No	**-3.41**	107.0	3.01	93.13	15.53	4.80	0.00	0.00	113.46
T201	9,235	9,236	35.1	No	**3.45**	108.0	3.01	90.31	12.43	4.80	0.00	0.00	107.54
T202	9,230	9,230	34.2	No	**3.46**	108.0	3.01	90.30	12.43	4.80	0.00	0.00	107.53

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T203	10,792	10,792	26.9	No	**0.79**	108.0	3.01	91.66	13.74	4.80	0.00	0.00	110.20
T204	10,461	10,462	36.7	No	**1.32**	108.0	3.01	91.39	13.47	4.80	0.00	0.00	109.66
T205	10,716	10,717	46.8	No	**0.91**	108.0	3.01	91.60	13.68	4.80	0.00	0.00	110.08
T206	11,919	11,919	29.0	No	**-0.93**	108.0	3.01	92.53	14.60	4.80	0.00	0.00	111.92
T207	12,614	12,615	38.4	No	**-1.93**	108.0	3.01	93.02	15.10	4.80	0.00	0.00	112.92
T208	14,463	14,464	24.1	No	**-4.35**	108.0	3.01	94.21	16.33	4.80	0.00	0.00	115.33
T209	14,775	14,776	28.6	No	**-4.73**	108.0	3.01	94.39	16.52	4.80	0.00	0.00	115.71
T210	15,096	15,096	26.8	No	**-5.11**	108.0	3.01	94.58	16.72	4.80	0.00	0.00	116.10
T211	14,223	14,224	28.6	No	**-4.05**	108.0	3.01	94.06	16.18	4.80	0.00	0.00	115.04
T212	14,141	14,142	26.3	No	**-3.95**	108.0	3.01	94.01	16.12	4.80	0.00	0.00	114.93
T213	14,125	14,126	22.6	No	**-3.93**	108.0	3.01	94.00	16.11	4.80	0.00	0.00	114.91
T214	14,350	14,350	20.9	No	**-4.21**	108.0	3.01	94.14	16.26	4.80	0.00	0.00	115.19
T215	12,373	12,374	29.0	No	**-1.59**	108.0	3.01	92.85	14.93	4.80	0.00	0.00	112.58
T216	13,481	13,481	17.2	No	**-3.10**	108.0	3.01	93.59	15.69	4.80	0.00	0.00	114.09
T217	14,067	14,067	16.1	No	**-3.85**	108.0	3.01	93.96	16.08	4.80	0.00	0.00	114.84
T218	16,187	16,187	21.8	No	**-6.36**	108.0	3.01	95.18	17.36	4.80	0.00	0.00	117.34
T219	16,369	16,369	21.9	No	**-6.56**	108.0	3.01	95.28	17.46	4.80	0.00	0.00	117.54
T220	16,838	16,839	18.6	No	**-7.06**	108.0	3.01	95.53	17.73	4.80	0.00	0.00	118.05
T221	17,295	17,295	14.4	No	**-7.55**	108.0	3.01	95.76	17.97	4.80	0.00	0.00	118.53
T222	16,405	16,405	7.6	No	**-6.60**	108.0	3.01	95.30	17.48	4.80	0.00	0.00	117.58
T223	15,742	15,742	9.5	No	**-5.86**	108.0	3.01	94.94	17.10	4.80	0.00	0.00	116.84
T224	16,318	16,318	16.2	No	**-6.50**	108.0	3.01	95.25	17.43	4.80	0.00	0.00	117.49
T225	15,984	15,985	15.9	No	**-6.13**	108.0	3.01	95.07	17.24	4.80	0.00	0.00	117.12
T226	15,382	15,383	19.1	No	**-5.44**	108.0	3.01	94.74	16.89	4.80	0.00	0.00	116.43
T227	14,543	14,543	16.6	No	**-4.44**	108.0	3.01	94.25	16.38	4.80	0.00	0.00	115.43
T228	16,289	16,289	5.2	No	**-6.47**	108.0	3.01	95.24	17.42	4.80	0.00	0.00	117.46
T229	14,152	14,153	20.0	No	**-3.96**	108.0	3.01	94.02	16.13	4.80	0.00	0.00	114.95
T230	13,987	13,987	23.5	No	**-3.75**	108.0	3.01	93.91	16.02	4.80	0.00	0.00	114.74
T231	13,518	13,519	17.6	No	**-3.15**	108.0	3.01	93.62	15.72	4.80	0.00	0.00	114.14
T232	12,588	12,588	21.0	No	**-1.89**	108.0	3.01	93.00	15.08	4.80	0.00	0.00	112.88
T233	12,257	12,258	22.8	No	**-1.42**	108.0	3.01	92.77	14.84	4.80	0.00	0.00	112.41
T234	11,925	11,926	25.7	No	**-0.94**	108.0	3.01	92.53	14.60	4.80	0.00	0.00	111.93
T235	11,770	11,771	15.9	No	**-0.72**	108.0	3.01	92.42	14.49	4.80	0.00	0.00	111.70
T301	15,006	15,006	26.3	No	**-5.00**	108.0	3.01	94.53	16.66	4.80	0.00	0.00	115.99
T302	15,336	15,336	26.6	No	**-5.39**	108.0	3.01	94.71	16.86	4.80	0.00	0.00	116.38
T303	15,553	15,553	28.8	No	**-5.64**	108.0	3.01	94.84	16.99	4.80	0.00	0.00	116.63
T304	15,935	15,936	27.7	No	**-6.08**	108.0	3.01	95.05	17.22	4.80	0.00	0.00	117.06
T305	15,374	15,374	30.1	No	**-5.43**	108.0	3.01	94.74	16.89	4.80	0.00	0.00	116.42
T306	15,326	15,327	34.3	No	**-5.38**	108.0	3.01	94.71	16.86	4.80	0.00	0.00	116.37
T307	14,652	14,653	30.4	No	**-4.58**	108.0	3.01	94.32	16.45	4.80	0.00	0.00	115.56
T308	15,308	15,308	10.4	No	**-5.36**	108.0	3.01	94.70	16.85	4.80	0.00	0.00	116.34
T309	14,960	14,961	11.6	No	**-4.95**	108.0	3.01	94.50	16.64	4.80	0.00	0.00	115.93
T310	15,005	15,005	11.5	No	**-5.00**	108.0	3.01	94.52	16.66	4.80	0.00	0.00	115.99
T311	14,648	14,648	14.2	No	**-4.57**	108.0	3.01	94.32	16.44	4.80	0.00	0.00	115.56
T312	14,299	14,299	14.1	No	**-4.14**	108.0	3.01	94.11	16.22	4.80	0.00	0.00	115.13
T313	13,911	13,912	26.1	No	**-3.65**	108.0	3.01	93.87	15.97	4.80	0.00	0.00	114.64
T314	13,146	13,146	17.3	No	**-2.65**	108.0	3.01	93.38	15.47	4.80	0.00	0.00	113.64
T315	13,022	13,023	19.2	No	**-2.49**	108.0	3.01	93.29	15.38	4.80	0.00	0.00	113.48
T316	13,078	13,078	21.9	No	**-2.56**	108.0	3.01	93.33	15.42	4.80	0.00	0.00	113.55
T317	13,470	13,471	27.8	No	**-3.09**	108.0	3.01	93.59	15.68	4.80	0.00	0.00	114.07
T318	13,940	13,940	14.4	No	**-3.69**	108.0	3.01	93.89	15.99	4.80	0.00	0.00	114.68
T319	13,544	13,545	20.3	No	**-3.18**	108.0	3.01	93.64	15.73	4.80	0.00	0.00	114.17
T320	13,720	13,721	26.6	No	**-3.41**	108.0	3.01	93.75	15.85	4.80	0.00	0.00	114.40
T321	14,053	14,054	20.2	No	**-3.83**	108.0	3.01	93.96	16.07	4.80	0.00	0.00	114.82
T322	13,319	13,320	18.7	No	**-2.89**	108.0	3.01	93.49	15.58	4.80	0.00	0.00	113.87
T323	12,969	12,970	18.7	No	**-2.42**	108.0	3.01	93.26	15.34	4.80	0.00	0.00	113.40
T324	12,413	12,413	18.9	No	**-1.65**	108.0	3.01	92.88	14.96	4.80	0.00	0.00	112.63
T325	12,222	12,223	21.3	No	**-1.37**	108.0	3.01	92.74	14.82	4.80	0.00	0.00	112.36
T326	11,914	11,915	24.6	No	**-0.93**	108.0	3.01	92.52	14.59	4.80	0.00	0.00	111.92
T327	11,558	11,559	19.9	No	**-0.40**	108.0	3.01	92.26	14.33	4.80	0.00	0.00	111.39
T328	10,677	10,678	21.4	No	**0.97**	108.0	3.01	91.57	13.65	4.80	0.00	0.00	110.01
T329	9,882	9,883	24.8	No	**2.30**	108.0	3.01	90.90	12.99	4.80	0.00	0.00	108.69
T330	9,589	9,590	21.8	No	**2.81**	108.0	3.01	90.64	12.74	4.80	0.00	0.00	108.18

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T331	10,160	10,160	25.6	No	**1.83**	108.0	3.01	91.14	13.22	4.80	0.00	0.00	109.16
T332	10,090	10,090	21.9	No	**1.94**	108.0	3.01	91.08	13.17	4.80	0.00	0.00	109.04
T333	10,897	10,898	24.4	No	**0.62**	108.0	3.01	91.75	13.82	4.80	0.00	0.00	110.37
T334	11,222	11,223	18.7	No	**0.11**	108.0	3.01	92.00	14.07	4.80	0.00	0.00	110.88
T335	11,722	11,722	15.4	No	**-0.64**	108.0	3.01	92.38	14.45	4.80	0.00	0.00	111.63
Sum	28.52												

Noise sensitive area: SSA016 SSA016

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	12,370	12,371	68.3	Yes	**1.39**	107.5	3.01	92.85	11.67	4.61	0.00	0.00	109.13
402	12,602	12,603	71.3	Yes	**1.16**	107.5	3.01	93.01	11.75	4.61	0.00	0.00	109.37
403	13,114	13,115	66.7	Yes	**0.62**	107.5	3.01	93.36	11.92	4.63	0.00	0.00	109.90
404	13,310	13,311	70.9	Yes	**0.44**	107.5	3.01	93.48	11.98	4.62	0.00	0.00	110.08
405	13,280	13,280	60.0	Yes	**0.44**	107.5	3.01	93.46	11.97	4.65	0.00	0.00	110.08
406	12,991	12,991	57.8	Yes	**0.73**	107.5	3.01	93.27	11.88	4.65	0.00	0.00	109.80
407	14,187	14,188	59.2	Yes	**-0.42**	107.5	3.01	94.04	12.25	4.66	0.00	0.00	110.94
408	7,099	7,100	71.1	Yes	**8.65**	107.5	3.01	88.03	9.39	4.46	0.00	0.00	101.87
409	7,769	7,770	64.5	Yes	**7.45**	107.5	3.01	88.81	9.75	4.52	0.00	0.00	103.08
410	7,668	7,669	71.1	Yes	**7.65**	107.5	3.01	88.70	9.70	4.48	0.00	0.00	102.88
411	7,800	7,801	69.5	Yes	**7.42**	107.5	3.01	88.84	9.77	4.50	0.00	0.00	103.11
412	7,556	7,557	72.2	Yes	**7.84**	107.5	3.01	88.57	9.64	4.47	0.00	0.00	102.68
413	7,786	7,787	73.4	No	**7.14**	107.5	3.01	88.83	9.76	4.80	0.00	0.00	103.39
414	8,122	8,123	73.5	No	**6.60**	107.5	3.01	89.19	9.93	4.80	0.00	0.00	103.93
415	10,263	10,263	43.3	Yes	**3.75**	107.5	3.01	91.23	10.90	4.66	0.00	0.00	106.78
416	9,986	9,987	49.1	Yes	**4.12**	107.5	3.01	90.99	10.78	4.63	0.00	0.00	106.40
417	9,409	9,410	48.9	Yes	**4.89**	107.5	3.01	90.47	10.54	4.62	0.00	0.00	105.63
418	9,011	9,012	44.7	Yes	**5.44**	107.5	3.01	90.10	10.36	4.63	0.00	0.00	105.09
419	7,965	7,966	48.4	Yes	**7.05**	107.5	3.01	89.02	9.85	4.59	0.00	0.00	103.47
420	7,865	7,866	49.6	Yes	**7.22**	107.5	3.01	88.92	9.80	4.59	0.00	0.00	103.30
421	8,406	8,408	69.5	Yes	**6.44**	107.5	3.01	89.49	10.07	4.52	0.00	0.00	104.09
422	8,111	8,112	61.0	Yes	**6.87**	107.5	3.01	89.18	9.93	4.54	0.00	0.00	103.65
423	7,840	7,842	63.6	Yes	**7.32**	107.5	3.01	88.89	9.79	4.52	0.00	0.00	103.20
424	7,325	7,326	60.9	Yes	**8.20**	107.5	3.01	88.30	9.52	4.52	0.00	0.00	102.33
425	7,341	7,342	63.0	Yes	**8.18**	107.5	3.01	88.32	9.52	4.51	0.00	0.00	102.35
426	5,604	5,606	70.1	Yes	**11.72**	107.5	3.01	85.97	8.46	4.37	0.00	0.00	98.80
427	5,096	5,099	69.2	Yes	**12.94**	107.5	3.01	85.15	8.09	4.34	0.00	0.00	97.58
428	4,723	4,726	67.2	Yes	**13.91**	107.5	3.01	84.49	7.81	4.31	0.00	0.00	96.61
429	4,772	4,774	59.9	Yes	**13.73**	107.5	3.01	84.58	7.85	4.37	0.00	0.00	96.79
430	4,428	4,430	63.6	Yes	**14.72**	107.5	3.01	83.93	7.57	4.31	0.00	0.00	95.81
431	4,477	4,479	69.0	Yes	**14.62**	107.5	3.01	84.02	7.61	4.27	0.00	0.00	95.91
432	4,229	4,230	66.4	Yes	**15.33**	107.5	3.01	83.53	7.40	4.26	0.00	0.00	95.19
433	15,792	15,792	41.8	Yes	**-1.85**	107.5	3.01	94.97	12.70	4.71	0.00	0.00	112.38
434	14,345	14,346	50.9	Yes	**-0.58**	107.5	3.01	94.13	12.29	4.68	0.00	0.00	111.11
435	13,659	13,660	51.4	Yes	**0.06**	107.5	3.01	93.71	12.09	4.67	0.00	0.00	110.47
436	13,301	13,302	52.8	Yes	**0.40**	107.5	3.01	93.48	11.98	4.66	0.00	0.00	110.12
437	12,930	12,931	48.9	Yes	**0.76**	107.5	3.01	93.23	11.86	4.67	0.00	0.00	109.76
438	12,495	12,496	45.2	Yes	**1.20**	107.5	3.01	92.94	11.72	4.68	0.00	0.00	109.33
439	9,230	9,231	61.5	Yes	**5.19**	107.5	3.01	90.31	10.46	4.57	0.00	0.00	105.34
440	8,731	8,733	60.1	Yes	**5.91**	107.5	3.01	89.82	10.23	4.57	0.00	0.00	104.62
441	8,278	8,279	59.3	Yes	**6.60**	107.5	3.01	89.36	10.01	4.56	0.00	0.00	103.93
442	7,837	7,839	65.7	Yes	**7.34**	107.5	3.01	88.88	9.79	4.51	0.00	0.00	103.19
443	7,343	7,345	64.1	Yes	**8.18**	107.5	3.01	88.32	9.53	4.50	0.00	0.00	102.35
444	6,990	6,991	67.5	Yes	**8.84**	107.5	3.01	87.89	9.33	4.47	0.00	0.00	101.69
445	13,462	13,463	49.7	Yes	**0.24**	107.5	3.01	93.58	12.03	4.67	0.00	0.00	110.28
446	12,907	12,908	47.5	Yes	**0.78**	107.5	3.01	93.22	11.85	4.67	0.00	0.00	109.74
447	11,733	11,734	44.9	Yes	**2.01**	107.5	3.01	92.39	11.45	4.67	0.00	0.00	108.51
448	11,281	11,282	48.1	Yes	**2.53**	107.5	3.01	92.05	11.29	4.65	0.00	0.00	107.99
449	10,667	10,669	54.0	Yes	**3.28**	107.5	3.01	91.56	11.06	4.63	0.00	0.00	107.25
450	10,368	10,369	56.3	Yes	**3.66**	107.5	3.01	91.31	10.94	4.62	0.00	0.00	106.87
451	9,709	9,710	63.0	Yes	**4.54**	107.5	3.01	90.74	10.67	4.58	0.00	0.00	105.99

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
452	13,947	13,947	46.1	Yes	**-0.23**	107.5	3.01	93.89	12.18	4.69	0.00	0.00	110.75
453	11,100	11,100	48.5	No	**2.60**	107.5	3.01	91.91	11.22	4.80	0.00	0.00	107.93
454	10,538	10,539	54.0	No	**3.26**	107.5	3.01	91.46	11.01	4.80	0.00	0.00	107.26
455	9,505	9,506	59.6	No	**4.59**	107.5	3.01	90.56	10.58	4.80	0.00	0.00	105.94
456	9,275	9,276	60.6	No	**4.90**	107.5	3.01	90.35	10.48	4.80	0.00	0.00	105.62
457	8,950	8,951	55.2	No	**5.36**	107.5	3.01	90.04	10.33	4.80	0.00	0.00	105.17
458	14,887	14,888	41.5	No	**-1.18**	107.5	3.01	94.46	12.45	4.80	0.00	0.00	111.71
459	14,497	14,498	43.5	Yes	**-0.74**	107.5	3.01	94.23	12.34	4.70	0.00	0.00	111.26
460	14,457	14,458	45.8	No	**-0.80**	107.5	3.01	94.20	12.33	4.80	0.00	0.00	111.33
461	13,979	13,979	49.2	No	**-0.37**	107.5	3.01	93.91	12.19	4.80	0.00	0.00	110.90
462	13,599	13,600	58.4	No	**-0.02**	107.5	3.01	93.67	12.07	4.80	0.00	0.00	110.54
463	13,147	13,148	51.4	No	**0.42**	107.5	3.01	93.38	11.93	4.80	0.00	0.00	110.11
464	12,823	12,824	49.7	No	**0.74**	107.5	3.01	93.16	11.82	4.80	0.00	0.00	109.78
T001	11,770	11,770	49.1	Yes	**-0.57**	108.0	3.01	92.42	14.49	4.66	0.00	0.00	111.56
T002	11,033	11,034	55.3	Yes	**0.58**	108.0	3.01	91.85	13.93	4.63	0.00	0.00	110.41
T003	12,711	12,712	40.3	No	**-3.32**	107.0	3.01	93.08	15.49	4.80	0.00	0.00	113.38
T004	13,610	13,611	37.7	No	**-4.42**	107.0	3.01	93.68	15.99	4.80	0.00	0.00	114.47
T005	11,692	11,692	36.8	No	**-1.99**	107.0	3.01	92.36	14.88	4.80	0.00	0.00	112.04
T006	9,840	9,841	50.1	Yes	**2.54**	108.0	3.01	90.86	12.96	4.63	0.00	0.00	108.44
T007	9,889	9,890	45.1	Yes	**2.44**	108.0	3.01	90.90	13.00	4.64	0.00	0.00	108.55
T008	13,532	13,532	39.1	No	**-4.33**	107.0	3.01	93.63	15.95	4.80	0.00	0.00	114.38
T009	12,428	12,428	39.7	Yes	**-1.56**	108.0	3.01	92.89	14.97	4.69	0.00	0.00	112.55
T010	11,535	11,536	47.7	Yes	**-0.22**	108.0	3.01	92.24	14.31	4.66	0.00	0.00	111.21
T011	12,640	12,640	37.1	Yes	**-1.86**	108.0	3.01	93.04	15.12	4.70	0.00	0.00	112.85
T012	13,987	13,987	30.4	No	**-4.86**	107.0	3.01	93.91	16.20	4.80	0.00	0.00	114.91
T013	13,479	13,480	35.2	No	**-4.26**	107.0	3.01	93.59	15.92	4.80	0.00	0.00	114.32
T014	12,292	12,292	32.3	No	**-2.78**	107.0	3.01	92.79	15.25	4.80	0.00	0.00	112.84
T015	10,496	10,496	43.1	Yes	**1.41**	108.0	3.01	91.42	13.50	4.66	0.00	0.00	109.58
T016	13,128	13,129	36.2	No	**-3.84**	107.0	3.01	93.36	15.73	4.80	0.00	0.00	113.89
T017	9,287	9,287	49.2	Yes	**3.53**	108.0	3.01	90.36	12.48	4.62	0.00	0.00	107.46
T018	11,565	11,565	28.9	No	**-1.81**	107.0	3.01	92.26	14.80	4.80	0.00	0.00	111.87
T019	12,622	12,622	32.2	No	**-3.21**	107.0	3.01	93.02	15.44	4.80	0.00	0.00	113.26
T020	9,499	9,499	47.4	Yes	**3.14**	108.0	3.01	90.55	12.66	4.63	0.00	0.00	107.85
T022	14,546	14,547	29.1	No	**-5.49**	107.0	3.01	94.26	16.49	4.80	0.00	0.00	115.55
T023	14,011	14,012	41.3	No	**-4.89**	107.0	3.01	93.93	16.21	4.80	0.00	0.00	114.94
T025	9,521	9,522	44.1	Yes	**3.09**	108.0	3.01	90.57	12.68	4.64	0.00	0.00	107.90
T026	8,778	8,778	45.2	Yes	**4.47**	108.0	3.01	89.87	12.02	4.62	0.00	0.00	106.51
T027	11,749	11,749	38.0	No	**-0.68**	108.0	3.01	92.40	14.47	4.80	0.00	0.00	111.67
T028	10,082	10,082	47.7	Yes	**2.12**	108.0	3.01	91.07	13.16	4.64	0.00	0.00	108.87
T029	14,507	14,507	29.8	No	**-5.45**	107.0	3.01	94.23	16.47	4.80	0.00	0.00	115.50
T030	11,307	11,307	42.9	Yes	**0.11**	108.0	3.01	92.07	14.14	4.67	0.00	0.00	110.88
T031	14,077	14,077	30.8	No	**-4.96**	107.0	3.01	93.97	16.25	4.80	0.00	0.00	115.02
T032	12,082	12,082	31.7	No	**-2.51**	107.0	3.01	92.64	15.12	4.80	0.00	0.00	112.56
T033	14,089	14,089	32.8	No	**-4.97**	107.0	3.01	93.98	16.25	4.80	0.00	0.00	115.03
T201	10,676	10,676	45.7	Yes	**1.12**	108.0	3.01	91.57	13.64	4.65	0.00	0.00	109.87
T202	10,672	10,672	45.0	Yes	**1.12**	108.0	3.01	91.57	13.64	4.66	0.00	0.00	109.86
T203	12,235	12,235	37.5	Yes	**-1.29**	108.0	3.01	92.75	14.83	4.70	0.00	0.00	112.28
T204	11,903	11,904	47.6	Yes	**-0.78**	108.0	3.01	92.51	14.59	4.66	0.00	0.00	111.76
T205	12,156	12,156	57.4	Yes	**-1.12**	108.0	3.01	92.70	14.77	4.64	0.00	0.00	112.11
T206	13,361	13,362	39.3	Yes	**-2.84**	108.0	3.01	93.52	15.61	4.70	0.00	0.00	113.83
T207	14,057	14,057	48.7	Yes	**-3.72**	108.0	3.01	93.96	16.07	4.68	0.00	0.00	114.71
T208	15,770	15,770	30.5	No	**-5.89**	108.0	3.01	94.96	17.12	4.80	0.00	0.00	116.88
T209	16,071	16,071	36.0	No	**-6.23**	108.0	3.01	95.12	17.29	4.80	0.00	0.00	117.21
T210	16,372	16,372	36.0	No	**-6.56**	108.0	3.01	95.28	17.47	4.80	0.00	0.00	117.55
T211	15,459	15,459	36.4	No	**-5.53**	108.0	3.01	94.78	16.94	4.80	0.00	0.00	116.52
T212	15,356	15,356	33.1	No	**-5.41**	108.0	3.01	94.73	16.87	4.80	0.00	0.00	116.40
T213	15,315	15,316	30.3	No	**-5.37**	108.0	3.01	94.70	16.85	4.80	0.00	0.00	116.35
T214	15,524	15,524	28.8	No	**-5.61**	108.0	3.01	94.82	16.97	4.80	0.00	0.00	116.59
T215	13,554	13,554	36.9	No	**-3.19**	108.0	3.01	93.64	15.74	4.80	0.00	0.00	114.18
T216	14,604	14,604	27.0	No	**-4.52**	108.0	3.01	94.29	16.42	4.80	0.00	0.00	115.51
T217	15,162	15,163	25.2	No	**-5.19**	108.0	3.01	94.62	16.76	4.80	0.00	0.00	116.17
T218	17,314	17,314	31.7	No	**-7.57**	108.0	3.01	95.77	17.98	4.80	0.00	0.00	118.55
T219	17,452	17,452	30.4	No	**-7.71**	108.0	3.01	95.84	18.06	4.80	0.00	0.00	118.70

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T220	17,916	17,916	26.6	No	**-8.18**	108.0	3.01	96.06	18.30	4.80	0.00	0.00	119.17
T221	18,346	18,346	20.4	No	**-8.61**	108.0	3.01	96.27	18.53	4.80	0.00	0.00	119.60
T222	17,236	17,236	19.9	No	**-7.48**	108.0	3.01	95.73	17.94	4.80	0.00	0.00	118.47
T223	16,579	16,579	22.5	No	**-6.79**	108.0	3.01	95.39	17.58	4.80	0.00	0.00	117.77
T224	17,276	17,277	28.3	No	**-7.53**	108.0	3.01	95.75	17.96	4.80	0.00	0.00	118.51
T225	16,946	16,946	27.9	No	**-7.18**	108.0	3.01	95.58	17.78	4.80	0.00	0.00	118.17
T226	16,296	16,297	31.1	No	**-6.48**	108.0	3.01	95.24	17.42	4.80	0.00	0.00	117.46
T227	15,471	15,471	28.9	No	**-5.55**	108.0	3.01	94.79	16.94	4.80	0.00	0.00	116.53
T228	17,165	17,165	17.6	No	**-7.41**	108.0	3.01	95.69	17.90	4.80	0.00	0.00	118.40
T229	15,124	15,124	31.8	No	**-5.14**	108.0	3.01	94.59	16.74	4.80	0.00	0.00	116.13
T230	14,980	14,981	34.3	No	**-4.97**	108.0	3.01	94.51	16.65	4.80	0.00	0.00	115.96
T231	14,527	14,527	27.5	No	**-4.42**	108.0	3.01	94.24	16.37	4.80	0.00	0.00	115.41
T232	13,532	13,532	33.4	No	**-3.17**	108.0	3.01	93.63	15.73	4.80	0.00	0.00	114.15
T233	13,222	13,223	35.2	No	**-2.76**	108.0	3.01	93.43	15.52	4.80	0.00	0.00	113.74
T234	12,895	12,895	38.0	No	**-2.31**	108.0	3.01	93.21	15.29	4.80	0.00	0.00	113.30
T235	12,802	12,802	24.4	No	**-2.19**	108.0	3.01	93.15	15.23	4.80	0.00	0.00	113.18
T301	16,443	16,444	35.1	No	**-6.64**	108.0	3.01	95.32	17.51	4.80	0.00	0.00	117.63
T302	16,776	16,776	35.5	No	**-7.00**	108.0	3.01	95.49	17.69	4.80	0.00	0.00	117.99
T303	16,996	16,996	38.4	Yes	**-7.15**	108.0	3.01	95.61	17.81	4.72	0.00	0.00	118.14
T304	17,378	17,378	37.7	Yes	**-7.56**	108.0	3.01	95.80	18.02	4.73	0.00	0.00	118.55
T305	16,814	16,814	40.3	Yes	**-6.96**	108.0	3.01	95.51	17.71	4.72	0.00	0.00	117.94
T306	16,768	16,769	44.5	Yes	**-6.90**	108.0	3.01	95.49	17.69	4.71	0.00	0.00	117.89
T307	16,095	16,095	40.3	Yes	**-6.17**	108.0	3.01	95.13	17.31	4.71	0.00	0.00	117.16
T308	16,021	16,021	20.3	No	**-6.17**	108.0	3.01	95.09	17.26	4.80	0.00	0.00	117.16
T309	15,707	15,708	22.8	No	**-5.82**	108.0	3.01	94.92	17.08	4.80	0.00	0.00	116.80
T310	15,809	15,810	23.3	No	**-5.93**	108.0	3.01	94.98	17.14	4.80	0.00	0.00	116.92
T311	15,479	15,479	27.5	No	**-5.56**	108.0	3.01	94.80	16.95	4.80	0.00	0.00	116.54
T312	15,149	15,150	28.0	No	**-5.17**	108.0	3.01	94.61	16.75	4.80	0.00	0.00	116.16
T313	14,786	14,786	39.6	No	**-4.74**	108.0	3.01	94.40	16.53	4.80	0.00	0.00	115.73
T314	14,091	14,091	29.7	No	**-3.88**	108.0	3.01	93.98	16.09	4.80	0.00	0.00	114.87
T315	13,885	13,886	33.6	No	**-3.62**	108.0	3.01	93.85	15.96	4.80	0.00	0.00	114.61
T316	13,873	13,873	34.7	No	**-3.61**	108.0	3.01	93.84	15.95	4.80	0.00	0.00	114.59
T317	14,256	14,256	40.6	Yes	**-3.99**	108.0	3.01	94.08	16.20	4.70	0.00	0.00	114.98
T318	14,664	14,665	24.8	No	**-4.59**	108.0	3.01	94.33	16.45	4.80	0.00	0.00	115.58
T319	14,113	14,114	27.6	No	**-3.91**	108.0	3.01	93.99	16.11	4.80	0.00	0.00	114.90
T320	14,244	14,245	33.7	No	**-4.07**	108.0	3.01	94.07	16.19	4.80	0.00	0.00	115.06
T321	14,543	14,544	26.9	No	**-4.44**	108.0	3.01	94.25	16.38	4.80	0.00	0.00	115.43
T322	13,725	13,726	27.8	No	**-3.42**	108.0	3.01	93.75	15.85	4.80	0.00	0.00	114.40
T323	13,365	13,365	27.9	No	**-2.95**	108.0	3.01	93.52	15.61	4.80	0.00	0.00	113.93
T324	12,875	12,875	26.9	No	**-2.29**	108.0	3.01	93.20	15.28	4.80	0.00	0.00	113.27
T325	12,517	12,518	34.1	Yes	**-1.70**	108.0	3.01	92.95	15.03	4.71	0.00	0.00	112.69
T326	12,287	12,287	34.9	No	**-1.47**	108.0	3.01	92.79	14.87	4.80	0.00	0.00	112.45
T327	11,949	11,950	29.2	No	**-0.98**	108.0	3.01	92.55	14.62	4.80	0.00	0.00	111.97
T328	11,139	11,140	29.1	No	**0.24**	108.0	3.01	91.94	14.01	4.80	0.00	0.00	110.75
T329	10,235	10,236	35.8	Yes	**1.82**	108.0	3.01	91.20	13.29	4.68	0.00	0.00	109.17
T330	10,045	10,045	29.5	No	**2.02**	108.0	3.01	91.04	13.13	4.80	0.00	0.00	108.97
T331	10,712	10,712	32.5	No	**0.92**	108.0	3.01	91.60	13.67	4.80	0.00	0.00	110.07
T332	10,708	10,709	30.1	No	**0.92**	108.0	3.01	91.59	13.67	4.80	0.00	0.00	110.06
T333	11,535	11,536	32.9	No	**-0.37**	108.0	3.01	92.24	14.31	4.80	0.00	0.00	111.35
T334	11,813	11,814	26.3	No	**-0.78**	108.0	3.01	92.45	14.52	4.80	0.00	0.00	111.77
T335	12,334	12,334	23.6	No	**-1.53**	108.0	3.01	92.82	14.90	4.80	0.00	0.00	112.52
Sum	26.09												

Noise sensitive area: SSA017 SSA017

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	11,020	11,021	51.5	No	**2.69**	107.5	3.01	91.84	11.19	4.80	0.00	0.00	107.83
402	11,313	11,314	56.1	No	**2.35**	107.5	3.01	92.07	11.30	4.80	0.00	0.00	108.17
403	11,889	11,890	53.6	No	**1.71**	107.5	3.01	92.50	11.51	4.80	0.00	0.00	108.81
404	12,158	12,158	59.2	No	**1.43**	107.5	3.01	92.70	11.60	4.80	0.00	0.00	109.10
405	12,206	12,206	49.9	No	**1.38**	107.5	3.01	92.73	11.62	4.80	0.00	0.00	109.15

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
406	12,007	12,007	53.4	No	**1.59**	107.5	3.01	92.59	11.55	4.80	0.00	0.00	108.94
407	13,083	13,084	48.7	No	**0.48**	107.5	3.01	93.33	11.91	4.80	0.00	0.00	110.04
408	6,651	6,653	61.2	No	**9.14**	107.5	3.01	87.46	9.13	4.80	0.00	0.00	101.39
409	7,383	7,384	54.1	No	**7.81**	107.5	3.01	88.37	9.55	4.80	0.00	0.00	102.71
410	7,447	7,448	61.0	No	**7.70**	107.5	3.01	88.44	9.58	4.80	0.00	0.00	102.82
411	7,699	7,700	64.0	No	**7.28**	107.5	3.01	88.73	9.72	4.80	0.00	0.00	103.25
412	7,638	7,639	65.7	No	**7.38**	107.5	3.01	88.66	9.68	4.80	0.00	0.00	103.14
413	7,983	7,984	65.1	No	**6.82**	107.5	3.01	89.04	9.86	4.80	0.00	0.00	103.71
414	8,368	8,369	64.8	No	**6.22**	107.5	3.01	89.45	10.05	4.80	0.00	0.00	104.31
415	7,653	7,654	36.0	No	**7.36**	107.5	3.01	88.68	9.69	4.80	0.00	0.00	103.17
416	7,399	7,400	40.5	No	**7.78**	107.5	3.01	88.39	9.56	4.80	0.00	0.00	102.74
417	6,832	6,833	39.7	No	**8.80**	107.5	3.01	87.69	9.24	4.80	0.00	0.00	101.73
418	6,461	6,462	36.9	No	**9.50**	107.5	3.01	87.21	9.01	4.80	0.00	0.00	101.02
419	5,407	5,409	39.7	No	**11.74**	107.5	3.01	85.66	8.32	4.80	0.00	0.00	98.78
420	5,372	5,374	40.9	Yes	**12.08**	107.5	3.01	85.61	8.29	4.54	0.00	0.00	98.44
421	6,098	6,100	57.2	No	**10.23**	107.5	3.01	86.71	8.79	4.80	0.00	0.00	100.29
422	5,877	5,879	45.8	No	**10.70**	107.5	3.01	86.39	8.64	4.80	0.00	0.00	99.83
423	5,672	5,673	47.6	No	**11.14**	107.5	3.01	86.08	8.50	4.80	0.00	0.00	99.38
424	5,347	5,348	41.4	No	**11.88**	107.5	3.01	85.56	8.28	4.80	0.00	0.00	98.64
425	5,490	5,491	43.6	No	**11.55**	107.5	3.01	85.79	8.38	4.80	0.00	0.00	98.97
426	2,929	2,933	56.5	Yes	**19.91**	107.5	3.01	80.34	6.13	4.14	0.00	0.00	90.61
427	2,435	2,439	57.2	Yes	**22.24**	107.5	3.01	78.75	5.54	4.00	0.00	0.00	88.29
428	2,103	2,108	56.9	Yes	**24.06**	107.5	3.01	77.48	5.11	3.87	0.00	0.00	86.46
429	2,273	2,277	51.7	Yes	**23.02**	107.5	3.01	78.15	5.34	4.02	0.00	0.00	87.50
430	2,066	2,071	44.6	Yes	**24.08**	107.5	3.01	77.32	5.06	4.06	0.00	0.00	86.44
431	2,387	2,391	42.4	No	**21.67**	107.5	3.01	78.57	5.48	4.80	0.00	0.00	88.85
432	2,336	2,340	45.1	No	**21.92**	107.5	3.01	78.38	5.42	4.80	0.00	0.00	88.60
433	14,040	14,041	38.2	No	**-0.43**	107.5	3.01	93.95	12.20	4.80	0.00	0.00	110.95
434	12,554	12,555	46.1	No	**1.01**	107.5	3.01	92.98	11.73	4.80	0.00	0.00	109.51
435	11,793	11,794	44.3	No	**1.82**	107.5	3.01	92.43	11.47	4.80	0.00	0.00	108.71
436	11,369	11,370	46.5	No	**2.29**	107.5	3.01	92.12	11.32	4.80	0.00	0.00	108.24
437	11,019	11,020	42.0	No	**2.69**	107.5	3.01	91.84	11.19	4.80	0.00	0.00	107.83
438	10,804	10,805	41.4	No	**2.94**	107.5	3.01	91.67	11.11	4.80	0.00	0.00	107.58
439	7,705	7,707	52.7	No	**7.27**	107.5	3.01	88.74	9.72	4.80	0.00	0.00	103.26
440	7,215	7,217	50.0	No	**8.10**	107.5	3.01	88.17	9.45	4.80	0.00	0.00	102.42
441	6,857	6,859	47.3	No	**8.75**	107.5	3.01	87.72	9.25	4.80	0.00	0.00	101.78
442	6,399	6,401	53.7	No	**9.62**	107.5	3.01	87.12	8.98	4.80	0.00	0.00	100.90
443	5,974	5,976	52.6	No	**10.49**	107.5	3.01	86.53	8.71	4.80	0.00	0.00	100.03
444	5,731	5,733	55.5	No	**11.01**	107.5	3.01	86.17	8.54	4.80	0.00	0.00	99.51
445	11,831	11,832	46.6	No	**1.78**	107.5	3.01	92.46	11.49	4.80	0.00	0.00	108.75
446	11,288	11,289	44.6	No	**2.38**	107.5	3.01	92.05	11.29	4.80	0.00	0.00	108.14
447	10,216	10,217	39.9	No	**3.66**	107.5	3.01	91.19	10.88	4.80	0.00	0.00	106.86
448	9,782	9,783	41.4	No	**4.22**	107.5	3.01	90.81	10.70	4.80	0.00	0.00	106.31
449	9,144	9,145	48.0	No	**5.08**	107.5	3.01	90.22	10.42	4.80	0.00	0.00	105.44
450	8,907	8,908	47.1	No	**5.42**	107.5	3.01	90.00	10.31	4.80	0.00	0.00	105.11
451	8,223	8,224	54.3	No	**6.44**	107.5	3.01	89.30	9.98	4.80	0.00	0.00	104.09
452	12,334	12,335	43.8	No	**1.24**	107.5	3.01	92.82	11.66	4.80	0.00	0.00	109.28
453	10,380	10,380	40.8	No	**3.46**	107.5	3.01	91.32	10.94	4.80	0.00	0.00	107.07
454	9,812	9,813	46.0	No	**4.18**	107.5	3.01	90.84	10.71	4.80	0.00	0.00	106.35
455	8,726	8,727	50.3	No	**5.68**	107.5	3.01	89.82	10.23	4.80	0.00	0.00	104.84
456	8,632	8,633	54.0	No	**5.82**	107.5	3.01	89.72	10.18	4.80	0.00	0.00	104.71
457	8,398	8,399	51.4	No	**6.17**	107.5	3.01	89.48	10.07	4.80	0.00	0.00	104.35
458	13,284	13,284	39.6	No	**0.29**	107.5	3.01	93.47	11.97	4.80	0.00	0.00	110.24
459	12,883	12,884	41.2	No	**0.68**	107.5	3.01	93.20	11.84	4.80	0.00	0.00	109.84
460	13,063	13,064	35.6	No	**0.50**	107.5	3.01	93.32	11.90	4.80	0.00	0.00	110.02
461	12,584	12,585	38.9	No	**0.98**	107.5	3.01	93.00	11.74	4.80	0.00	0.00	109.54
462	12,247	12,248	47.4	No	**1.33**	107.5	3.01	92.76	11.63	4.80	0.00	0.00	109.19
463	11,780	11,781	40.3	No	**1.83**	107.5	3.01	92.42	11.47	4.80	0.00	0.00	108.69
464	11,588	11,588	38.3	No	**2.04**	107.5	3.01	92.28	11.40	4.80	0.00	0.00	108.48
T001	9,652	9,653	38.2	No	**2.70**	108.0	3.01	90.69	12.80	4.80	0.00	0.00	108.29
T002	9,065	9,066	39.4	No	**3.76**	108.0	3.01	90.15	12.28	4.80	0.00	0.00	107.23
T003	10,238	10,238	34.3	No	**0.12**	107.0	3.01	91.20	13.93	4.80	0.00	0.00	109.94
T004	11,208	11,208	32.0	No	**-1.31**	107.0	3.01	91.99	14.58	4.80	0.00	0.00	111.37

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T005	9,300	9,301	30.6	No	**1.63**	107.0	3.01	90.37	13.26	4.80	0.00	0.00	108.43
T006	7,909	7,910	32.7	No	**6.02**	108.0	3.01	88.96	11.20	4.80	0.00	0.00	104.96
T007	7,723	7,724	32.5	No	**6.41**	108.0	3.01	88.76	11.02	4.80	0.00	0.00	104.57
T008	11,039	11,040	33.2	No	**-1.07**	107.0	3.01	91.86	14.47	4.80	0.00	0.00	111.13
T009	10,384	10,384	27.9	No	**1.45**	108.0	3.01	91.33	13.41	4.80	0.00	0.00	109.54
T010	9,498	9,499	33.9	No	**2.97**	108.0	3.01	90.55	12.66	4.80	0.00	0.00	108.02
T011	10,769	10,770	21.0	No	**0.83**	108.0	3.01	91.64	13.72	4.80	0.00	0.00	110.16
T012	11,762	11,762	23.6	No	**-2.08**	107.0	3.01	92.41	14.93	4.80	0.00	0.00	112.14
T013	11,112	11,112	30.7	No	**-1.18**	107.0	3.01	91.92	14.52	4.80	0.00	0.00	111.23
T014	9,955	9,956	26.3	No	**0.56**	107.0	3.01	90.96	13.73	4.80	0.00	0.00	109.50
T015	8,359	8,360	31.4	No	**5.11**	108.0	3.01	89.44	11.63	4.80	0.00	0.00	105.88
T016	10,691	10,691	30.3	No	**-0.57**	107.0	3.01	91.58	14.24	4.80	0.00	0.00	110.62
T017	7,394	7,395	31.2	No	**7.12**	108.0	3.01	88.38	10.69	4.80	0.00	0.00	103.87
T018	9,288	9,288	18.3	No	**1.65**	107.0	3.01	90.36	13.25	4.80	0.00	0.00	108.41
T019	10,343	10,343	23.6	No	**-0.04**	107.0	3.01	91.29	14.00	4.80	0.00	0.00	110.10
T020	7,447	7,448	32.0	No	**7.00**	108.0	3.01	88.44	10.74	4.80	0.00	0.00	103.98
T022	12,138	12,138	23.9	No	**-2.58**	107.0	3.01	92.68	15.15	4.80	0.00	0.00	112.64
T023	11,473	11,474	35.2	No	**-1.69**	107.0	3.01	92.19	14.75	4.80	0.00	0.00	111.74
T025	7,727	7,727	28.3	No	**6.41**	108.0	3.01	88.76	11.02	4.80	0.00	0.00	104.58
T026	6,760	6,761	28.3	No	**8.56**	108.0	3.01	87.60	10.03	4.80	0.00	0.00	102.43
T027	9,569	9,569	29.3	No	**2.85**	108.0	3.01	90.62	12.72	4.80	0.00	0.00	108.14
T028	8,032	8,033	32.6	No	**5.77**	108.0	3.01	89.10	11.32	4.80	0.00	0.00	105.22
T029	12,301	12,301	24.9	No	**-2.80**	107.0	3.01	92.80	15.25	4.80	0.00	0.00	112.85
T030	9,400	9,400	26.1	No	**3.15**	108.0	3.01	90.46	12.58	4.80	0.00	0.00	107.84
T031	11,792	11,793	24.1	No	**-2.12**	107.0	3.01	92.43	14.95	4.80	0.00	0.00	112.18
T032	9,635	9,636	26.2	No	**1.07**	107.0	3.01	90.68	13.50	4.80	0.00	0.00	108.98
T033	11,727	11,728	28.4	No	**-2.03**	107.0	3.01	92.38	14.91	4.80	0.00	0.00	112.09
T201	9,030	9,031	31.6	No	**3.82**	108.0	3.01	90.11	12.25	4.80	0.00	0.00	107.16
T202	9,091	9,091	30.8	No	**3.71**	108.0	3.01	90.17	12.30	4.80	0.00	0.00	107.28
T203	10,659	10,659	25.4	No	**1.00**	108.0	3.01	91.55	13.63	4.80	0.00	0.00	109.99
T204	10,399	10,399	32.4	No	**1.43**	108.0	3.01	91.34	13.42	4.80	0.00	0.00	109.56
T205	10,738	10,738	38.6	No	**0.88**	108.0	3.01	91.62	13.69	4.80	0.00	0.00	110.11
T206	11,729	11,729	29.3	No	**-0.65**	108.0	3.01	92.39	14.46	4.80	0.00	0.00	111.64
T207	12,480	12,481	38.9	No	**-1.74**	108.0	3.01	92.92	15.00	4.80	0.00	0.00	112.73
T208	13,392	13,392	26.5	No	**-2.98**	108.0	3.01	93.54	15.63	4.80	0.00	0.00	113.97
T209	13,668	13,669	31.9	No	**-3.34**	108.0	3.01	93.71	15.82	4.80	0.00	0.00	114.33
T210	13,935	13,935	31.1	No	**-3.68**	108.0	3.01	93.88	15.99	4.80	0.00	0.00	114.67
T211	12,962	12,963	31.0	No	**-2.41**	108.0	3.01	93.25	15.34	4.80	0.00	0.00	113.39
T212	12,833	12,834	26.9	No	**-2.23**	108.0	3.01	93.17	15.25	4.80	0.00	0.00	113.22
T213	12,766	12,766	24.8	No	**-2.14**	108.0	3.01	93.12	15.20	4.80	0.00	0.00	113.12
T214	12,957	12,957	25.0	No	**-2.40**	108.0	3.01	93.25	15.34	4.80	0.00	0.00	113.39
T215	11,001	11,002	30.5	No	**0.46**	108.0	3.01	91.83	13.90	4.80	0.00	0.00	110.53
T216	11,998	11,999	22.9	No	**-1.05**	108.0	3.01	92.58	14.66	4.80	0.00	0.00	112.04
T217	12,537	12,538	23.1	No	**-1.82**	108.0	3.01	92.96	15.04	4.80	0.00	0.00	112.81
T218	14,706	14,706	29.2	No	**-4.64**	108.0	3.01	94.35	16.48	4.80	0.00	0.00	115.63
T219	14,816	14,817	27.9	No	**-4.77**	108.0	3.01	94.41	16.55	4.80	0.00	0.00	115.76
T220	15,277	15,277	24.2	No	**-5.32**	108.0	3.01	94.68	16.83	4.80	0.00	0.00	116.31
T221	15,695	15,695	18.8	No	**-5.80**	108.0	3.01	94.92	17.08	4.80	0.00	0.00	116.79
T222	14,568	14,568	18.2	No	**-4.47**	108.0	3.01	94.27	16.39	4.80	0.00	0.00	115.46
T223	13,910	13,910	19.8	No	**-3.65**	108.0	3.01	93.87	15.97	4.80	0.00	0.00	114.64
T224	14,604	14,604	25.8	No	**-4.52**	108.0	3.01	94.29	16.42	4.80	0.00	0.00	115.50
T225	14,274	14,274	25.3	No	**-4.11**	108.0	3.01	94.09	16.21	4.80	0.00	0.00	115.10
T226	13,621	13,621	27.4	No	**-3.28**	108.0	3.01	93.68	15.78	4.80	0.00	0.00	114.27
T227	12,796	12,797	24.9	No	**-2.18**	108.0	3.01	93.14	15.23	4.80	0.00	0.00	113.17
T228	14,491	14,491	14.5	No	**-4.38**	108.0	3.01	94.22	16.35	4.80	0.00	0.00	115.37
T229	12,454	12,454	28.5	No	**-1.70**	108.0	3.01	92.91	14.98	4.80	0.00	0.00	112.69
T230	12,315	12,316	31.9	No	**-1.51**	108.0	3.01	92.81	14.89	4.80	0.00	0.00	112.49
T231	11,866	11,866	24.7	No	**-0.86**	108.0	3.01	92.49	14.56	4.80	0.00	0.00	111.84
T232	10,859	10,860	28.7	No	**0.68**	108.0	3.01	91.72	13.79	4.80	0.00	0.00	110.31
T233	10,552	10,553	31.0	No	**1.18**	108.0	3.01	91.47	13.54	4.80	0.00	0.00	109.81
T234	10,226	10,227	33.9	No	**1.71**	108.0	3.01	91.19	13.28	4.80	0.00	0.00	109.27
T235	10,151	10,151	19.9	No	**1.84**	108.0	3.01	91.13	13.22	4.80	0.00	0.00	109.15
T301	14,638	14,638	22.9	No	**-4.56**	108.0	3.01	94.31	16.44	4.80	0.00	0.00	115.55

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T302	15,017	15,017	26.4	No	**-5.01**	108.0	3.01	94.53	16.67	4.80	0.00	0.00	116.00
T303	15,348	15,348	33.1	No	**-5.40**	108.0	3.01	94.72	16.87	4.80	0.00	0.00	116.39
T304	15,789	15,790	31.5	No	**-5.91**	108.0	3.01	94.97	17.13	4.80	0.00	0.00	116.90
T305	15,315	15,315	29.5	No	**-5.37**	108.0	3.01	94.70	16.85	4.80	0.00	0.00	116.35
T306	15,219	15,219	35.8	No	**-5.25**	108.0	3.01	94.65	16.79	4.80	0.00	0.00	116.24
T307	14,489	14,489	33.4	No	**-4.38**	108.0	3.01	94.22	16.34	4.80	0.00	0.00	115.36
T308	13,387	13,387	18.7	No	**-2.97**	108.0	3.01	93.53	15.63	4.80	0.00	0.00	113.96
T309	13,061	13,061	21.4	No	**-2.54**	108.0	3.01	93.32	15.41	4.80	0.00	0.00	113.53
T310	13,146	13,147	21.2	No	**-2.65**	108.0	3.01	93.38	15.47	4.80	0.00	0.00	113.64
T311	12,811	12,811	24.4	No	**-2.20**	108.0	3.01	93.15	15.24	4.80	0.00	0.00	113.19
T312	12,478	12,478	23.8	No	**-1.74**	108.0	3.01	92.92	15.00	4.80	0.00	0.00	112.72
T313	12,112	12,112	34.9	No	**-1.22**	108.0	3.01	92.66	14.74	4.80	0.00	0.00	112.20
T314	11,417	11,418	25.4	No	**-0.19**	108.0	3.01	92.15	14.22	4.80	0.00	0.00	111.17
T315	11,212	11,212	28.5	No	**0.13**	108.0	3.01	91.99	14.06	4.80	0.00	0.00	110.86
T316	11,211	11,211	31.7	No	**0.13**	108.0	3.01	91.99	14.06	4.80	0.00	0.00	110.86
T317	11,596	11,597	37.9	No	**-0.46**	108.0	3.01	92.29	14.36	4.80	0.00	0.00	111.44
T318	12,025	12,025	22.9	No	**-1.09**	108.0	3.01	92.60	14.68	4.80	0.00	0.00	112.08
T319	11,552	11,553	25.8	No	**-0.39**	108.0	3.01	92.25	14.32	4.80	0.00	0.00	111.38
T320	11,713	11,714	31.8	No	**-0.63**	108.0	3.01	92.37	14.45	4.80	0.00	0.00	111.62
T321	12,037	12,037	25.3	No	**-1.11**	108.0	3.01	92.61	14.68	4.80	0.00	0.00	112.09
T322	11,286	11,286	23.6	No	**0.01**	108.0	3.01	92.05	14.12	4.80	0.00	0.00	110.97
T323	10,934	10,935	23.1	No	**0.56**	108.0	3.01	91.78	13.85	4.80	0.00	0.00	110.42
T324	10,388	10,389	23.5	No	**1.44**	108.0	3.01	91.33	13.41	4.80	0.00	0.00	109.54
T325	10,181	10,182	25.4	No	**1.79**	108.0	3.01	91.16	13.24	4.80	0.00	0.00	109.20
T326	9,876	9,877	28.2	No	**2.31**	108.0	3.01	90.89	12.99	4.80	0.00	0.00	108.68
T327	9,522	9,522	23.4	No	**2.93**	108.0	3.01	90.57	12.68	4.80	0.00	0.00	108.06
T328	8,651	8,652	24.9	No	**4.54**	108.0	3.01	89.74	11.90	4.80	0.00	0.00	106.45
T329	7,842	7,842	26.9	No	**6.16**	108.0	3.01	88.89	11.14	4.80	0.00	0.00	104.82
T330	7,560	7,561	24.6	No	**6.76**	108.0	3.01	88.57	10.86	4.80	0.00	0.00	104.23
T331	8,157	8,157	28.3	No	**5.52**	108.0	3.01	89.23	11.44	4.80	0.00	0.00	105.47
T332	8,113	8,113	25.1	No	**5.61**	108.0	3.01	89.18	11.40	4.80	0.00	0.00	105.38
T333	8,931	8,932	28.5	No	**4.01**	108.0	3.01	90.02	12.16	4.80	0.00	0.00	106.98
T334	9,236	9,236	22.3	No	**3.44**	108.0	3.01	90.31	12.43	4.80	0.00	0.00	107.54
T335	9,745	9,745	19.8	No	**2.54**	108.0	3.01	90.78	12.88	4.80	0.00	0.00	108.45
Sum	32.31												

Noise sensitive area: SSA018 SSA018

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	9,882	9,882	58.7	Yes	**4.29**	107.5	3.01	90.90	10.74	4.60	0.00	0.00	106.23
402	10,264	10,265	61.8	Yes	**3.81**	107.5	3.01	91.23	10.90	4.59	0.00	0.00	106.72
403	10,903	10,903	57.7	Yes	**3.01**	107.5	3.01	91.75	11.15	4.62	0.00	0.00	107.52
404	11,287	11,288	61.4	Yes	**2.57**	107.5	3.01	92.05	11.29	4.61	0.00	0.00	107.96
405	11,483	11,484	51.4	Yes	**2.31**	107.5	3.01	92.20	11.36	4.65	0.00	0.00	108.21
406	11,481	11,481	51.4	Yes	**2.32**	107.5	3.01	92.20	11.36	4.65	0.00	0.00	108.21
407	12,215	12,215	50.5	Yes	**1.51**	107.5	3.01	92.74	11.62	4.66	0.00	0.00	109.02
408	8,045	8,046	67.5	Yes	**7.00**	107.5	3.01	89.11	9.89	4.51	0.00	0.00	103.52
409	8,679	8,679	65.2	Yes	**6.01**	107.5	3.01	89.77	10.20	4.54	0.00	0.00	104.52
410	8,972	8,973	66.7	Yes	**5.58**	107.5	3.01	90.06	10.34	4.55	0.00	0.00	104.95
411	9,341	9,342	67.2	Yes	**5.06**	107.5	3.01	90.41	10.51	4.55	0.00	0.00	105.47
412	9,548	9,549	68.5	Yes	**4.77**	107.5	3.01	90.60	10.60	4.56	0.00	0.00	105.75
413	9,983	9,983	66.9	Yes	**4.19**	107.5	3.01	90.99	10.78	4.57	0.00	0.00	106.34
414	10,366	10,367	66.8	Yes	**3.69**	107.5	3.01	91.31	10.94	4.58	0.00	0.00	106.83
415	3,368	3,369	51.7	Yes	**18.11**	107.5	3.01	81.55	6.59	4.28	0.00	0.00	92.42
416	3,239	3,241	54.1	Yes	**18.62**	107.5	3.01	81.21	6.46	4.23	0.00	0.00	91.90
417	2,785	2,786	51.7	Yes	**20.50**	107.5	3.01	79.90	5.96	4.17	0.00	0.00	90.03
418	2,618	2,620	47.9	Yes	**21.22**	107.5	3.01	79.36	5.77	4.17	0.00	0.00	89.30
419	1,842	1,844	50.0	Yes	**25.60**	107.5	3.01	76.32	4.74	3.87	0.00	0.00	84.92
420	2,221	2,223	53.6	Yes	**23.35**	107.5	3.01	77.94	5.27	3.97	0.00	0.00	87.18
421	3,473	3,476	65.1	Yes	**17.84**	107.5	3.01	81.82	6.70	4.16	0.00	0.00	92.68
422	3,630	3,631	58.6	Yes	**17.22**	107.5	3.01	82.20	6.85	4.25	0.00	0.00	93.30

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
423	3,752	3,753	62.0	Yes	**16.83**	107.5	3.01	82.49	6.97	4.24	0.00	0.00	93.69
424	4,198	4,198	57.5	Yes	**15.36**	107.5	3.01	83.46	7.37	4.33	0.00	0.00	95.17
425	4,617	4,618	57.6	Yes	**14.14**	107.5	3.01	84.29	7.72	4.37	0.00	0.00	96.39
426	1,631	1,635	57.4	Yes	**27.24**	107.5	3.01	75.27	4.42	3.59	0.00	0.00	83.28
427	2,155	2,158	51.6	Yes	**23.68**	107.5	3.01	77.68	5.18	3.98	0.00	0.00	86.84
428	2,593	2,596	48.5	Yes	**21.34**	107.5	3.01	79.29	5.74	4.16	0.00	0.00	89.18
429	2,791	2,793	45.1	Yes	**20.39**	107.5	3.01	79.92	5.97	4.25	0.00	0.00	90.14
430	3,269	3,271	45.7	Yes	**18.42**	107.5	3.01	81.29	6.49	4.32	0.00	0.00	92.11
431	3,692	3,694	49.2	Yes	**16.92**	107.5	3.01	82.35	6.91	4.34	0.00	0.00	93.61
432	4,077	4,078	43.3	Yes	**15.61**	107.5	3.01	83.21	7.27	4.44	0.00	0.00	94.91
433	12,020	12,021	49.6	No	**1.57**	107.5	3.01	92.60	11.55	4.80	0.00	0.00	108.95
434	10,559	10,560	57.2	Yes	**3.42**	107.5	3.01	91.47	11.01	4.62	0.00	0.00	107.10
435	9,688	9,688	56.4	Yes	**4.54**	107.5	3.01	90.72	10.66	4.60	0.00	0.00	105.98
436	9,143	9,144	58.6	Yes	**5.30**	107.5	3.01	90.22	10.42	4.58	0.00	0.00	105.22
437	8,884	8,885	53.8	Yes	**5.66**	107.5	3.01	89.97	10.30	4.59	0.00	0.00	104.87
438	9,235	9,236	49.7	Yes	**5.14**	107.5	3.01	90.31	10.46	4.62	0.00	0.00	105.39
439	7,100	7,101	61.7	Yes	**8.61**	107.5	3.01	88.03	9.39	4.50	0.00	0.00	101.92
440	6,765	6,766	59.3	Yes	**9.22**	107.5	3.01	87.61	9.20	4.50	0.00	0.00	101.30
441	6,725	6,726	56.3	Yes	**9.28**	107.5	3.01	87.56	9.17	4.51	0.00	0.00	101.24
442	6,386	6,387	61.4	Yes	**9.98**	107.5	3.01	87.11	8.97	4.47	0.00	0.00	100.55
443	6,266	6,267	55.5	Yes	**10.19**	107.5	3.01	86.94	8.89	4.50	0.00	0.00	100.33
444	6,338	6,339	59.5	Yes	**10.07**	107.5	3.01	87.04	8.94	4.48	0.00	0.00	100.46
445	10,278	10,279	56.2	Yes	**3.77**	107.5	3.01	91.24	10.90	4.61	0.00	0.00	106.75
446	9,825	9,825	52.9	Yes	**4.35**	107.5	3.01	90.85	10.71	4.62	0.00	0.00	106.18
447	9,127	9,128	48.8	Yes	**5.29**	107.5	3.01	90.21	10.41	4.62	0.00	0.00	105.24
448	8,800	8,801	51.5	Yes	**5.77**	107.5	3.01	89.89	10.26	4.60	0.00	0.00	104.75
449	8,221	8,222	57.2	Yes	**6.68**	107.5	3.01	89.30	9.98	4.56	0.00	0.00	103.84
450	8,169	8,170	57.8	Yes	**6.76**	107.5	3.01	89.24	9.96	4.56	0.00	0.00	103.76
451	7,575	7,576	64.2	Yes	**7.77**	107.5	3.01	88.59	9.65	4.51	0.00	0.00	102.75
452	10,773	10,774	53.7	Yes	**3.15**	107.5	3.01	91.65	11.10	4.63	0.00	0.00	107.37
453	10,835	10,836	42.1	No	**2.91**	107.5	3.01	91.70	11.12	4.80	0.00	0.00	107.62
454	10,342	10,342	47.2	Yes	**3.66**	107.5	3.01	91.29	10.93	4.64	0.00	0.00	106.86
455	9,354	9,354	50.7	No	**4.79**	107.5	3.01	90.42	10.51	4.80	0.00	0.00	105.73
456	9,509	9,509	53.0	Yes	**4.77**	107.5	3.01	90.56	10.58	4.61	0.00	0.00	105.75
457	9,468	9,468	48.5	Yes	**4.81**	107.5	3.01	90.53	10.56	4.63	0.00	0.00	105.71
458	11,655	11,655	49.9	Yes	**2.12**	107.5	3.01	92.33	11.42	4.65	0.00	0.00	108.41
459	11,265	11,266	51.6	Yes	**2.56**	107.5	3.01	92.04	11.28	4.64	0.00	0.00	107.96
460	11,906	11,907	49.4	Yes	**1.84**	107.5	3.01	92.52	11.51	4.66	0.00	0.00	108.69
461	11,472	11,473	52.7	Yes	**2.33**	107.5	3.01	92.19	11.36	4.64	0.00	0.00	108.20
462	11,257	11,257	59.6	Yes	**2.60**	107.5	3.01	92.03	11.28	4.62	0.00	0.00	107.93
463	10,812	10,813	52.2	Yes	**3.10**	107.5	3.01	91.68	11.11	4.64	0.00	0.00	107.43
464	10,912	10,912	48.6	Yes	**2.97**	107.5	3.01	91.76	11.15	4.65	0.00	0.00	107.56
T001	6,852	6,853	59.7	Yes	**8.64**	108.0	3.01	87.72	10.13	4.50	0.00	0.00	102.35
T002	6,767	6,768	50.4	Yes	**8.79**	108.0	3.01	87.61	10.04	4.55	0.00	0.00	102.19
T003	6,312	6,313	42.1	Yes	**7.81**	107.0	3.01	87.00	10.67	4.57	0.00	0.00	102.24
T004	7,448	7,448	42.9	Yes	**5.27**	107.0	3.01	88.44	11.74	4.60	0.00	0.00	104.79
T005	5,710	5,710	42.2	Yes	**9.33**	107.0	3.01	86.13	10.04	4.55	0.00	0.00	100.72
T006	5,945	5,945	40.1	Yes	**10.80**	108.0	3.01	86.48	9.13	4.57	0.00	0.00	100.19
T007	5,112	5,112	44.0	Yes	**13.15**	108.0	3.01	85.17	8.16	4.51	0.00	0.00	97.84
T008	7,017	7,017	43.9	No	**5.98**	107.0	3.01	87.92	11.35	4.80	0.00	0.00	104.07
T009	7,696	7,696	48.4	Yes	**6.68**	108.0	3.01	88.73	10.99	4.59	0.00	0.00	104.30
T010	6,944	6,944	51.0	Yes	**8.38**	108.0	3.01	87.83	10.22	4.55	0.00	0.00	102.61
T011	8,480	8,480	33.6	Yes	**5.01**	108.0	3.01	89.57	11.75	4.67	0.00	0.00	105.98
T012	8,466	8,466	41.2	Yes	**3.26**	107.0	3.01	89.55	12.61	4.63	0.00	0.00	106.80
T013	7,458	7,458	43.6	Yes	**5.25**	107.0	3.01	88.45	11.75	4.60	0.00	0.00	104.81
T014	6,478	6,479	38.9	Yes	**7.40**	107.0	3.01	87.23	10.83	4.60	0.00	0.00	102.66
T015	5,707	5,708	45.8	Yes	**11.47**	108.0	3.01	86.13	8.86	4.53	0.00	0.00	99.52
T016	6,854	6,854	39.8	Yes	**6.54**	107.0	3.01	87.72	11.20	4.60	0.00	0.00	103.52
T017	5,672	5,672	42.3	Yes	**11.55**	108.0	3.01	86.07	8.82	4.55	0.00	0.00	99.44
T018	6,064	6,064	38.2	No	**8.19**	107.0	3.01	86.66	10.41	4.80	0.00	0.00	101.87
T019	7,004	7,004	40.2	Yes	**6.21**	107.0	3.01	87.91	11.34	4.60	0.00	0.00	103.85
T020	5,257	5,257	39.6	Yes	**12.70**	108.0	3.01	85.41	8.33	4.54	0.00	0.00	98.29
T022	8,315	8,316	33.3	No	**3.37**	107.0	3.01	89.40	12.48	4.80	0.00	0.00	106.68

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 6:07 PM/3.1.633

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T023	7,301	7,301	53.0	No	**5.38**	107.0	3.01	88.27	11.61	4.80	0.00	0.00	104.68
T025	6,170	6,170	37.7	Yes	**10.20**	108.0	3.01	86.81	9.39	4.59	0.00	0.00	100.79
T026	4,877	4,877	39.9	Yes	**13.84**	108.0	3.01	84.76	7.87	4.52	0.00	0.00	97.15
T027	6,603	6,603	52.6	Yes	**9.20**	108.0	3.01	87.39	9.86	4.53	0.00	0.00	101.78
T028	5,706	5,707	42.8	Yes	**11.45**	108.0	3.01	86.13	8.86	4.54	0.00	0.00	99.53
T029	9,019	9,019	42.0	Yes	**2.27**	107.0	3.01	90.10	13.04	4.64	0.00	0.00	107.79
T030	7,207	7,208	34.6	Yes	**7.70**	108.0	3.01	88.16	10.50	4.64	0.00	0.00	103.29
T031	8,330	8,331	38.9	Yes	**3.50**	107.0	3.01	89.41	12.50	4.64	0.00	0.00	106.55
T032	5,835	5,835	37.1	Yes	**8.98**	107.0	3.01	86.32	10.17	4.58	0.00	0.00	101.08
T033	8,056	8,056	40.3	Yes	**4.03**	107.0	3.01	89.12	12.27	4.63	0.00	0.00	106.02
T201	7,549	7,549	39.4	Yes	**6.96**	108.0	3.01	88.56	10.84	4.62	0.00	0.00	104.03
T202	7,749	7,749	39.7	Yes	**6.53**	108.0	3.01	88.79	11.04	4.63	0.00	0.00	104.45
T203	9,079	9,079	33.2	No	**3.73**	108.0	3.01	90.16	12.29	4.80	0.00	0.00	107.25
T204	9,014	9,014	41.0	No	**3.85**	108.0	3.01	90.10	12.23	4.80	0.00	0.00	107.13
T205	9,493	9,493	47.8	Yes	**3.15**	108.0	3.01	90.55	12.66	4.63	0.00	0.00	107.83
T206	9,891	9,891	36.8	Yes	**2.41**	108.0	3.01	90.90	13.00	4.67	0.00	0.00	108.58
T207	10,691	10,692	47.6	Yes	**1.10**	108.0	3.01	91.58	13.66	4.65	0.00	0.00	109.89
T208	9,606	9,606	36.6	No	**2.78**	108.0	3.01	90.65	12.76	4.80	0.00	0.00	108.21
T209	9,809	9,809	42.2	No	**2.43**	108.0	3.01	90.83	12.93	4.80	0.00	0.00	108.56
T210	9,977	9,977	42.3	No	**2.14**	108.0	3.01	90.98	13.07	4.80	0.00	0.00	108.85
T211	8,870	8,870	45.2	No	**4.12**	108.0	3.01	89.96	12.10	4.80	0.00	0.00	106.86
T212	8,673	8,673	44.5	No	**4.50**	108.0	3.01	89.76	11.92	4.80	0.00	0.00	106.49
T213	8,531	8,531	45.3	No	**4.77**	108.0	3.01	89.62	11.79	4.80	0.00	0.00	106.21
T214	8,672	8,673	46.6	No	**4.50**	108.0	3.01	89.76	11.92	4.80	0.00	0.00	106.49
T215	6,797	6,797	49.3	No	**8.47**	108.0	3.01	87.65	10.07	4.80	0.00	0.00	102.52
T216	7,617	7,617	45.7	No	**6.64**	108.0	3.01	88.64	10.91	4.80	0.00	0.00	104.35
T217	8,098	8,098	43.6	No	**5.64**	108.0	3.01	89.17	11.38	4.80	0.00	0.00	105.35
T218	10,294	10,295	52.4	No	**1.60**	108.0	3.01	91.25	13.33	4.80	0.00	0.00	109.39
T219	10,339	10,339	49.0	No	**1.53**	108.0	3.01	91.29	13.37	4.80	0.00	0.00	109.46
T220	10,791	10,791	45.3	No	**0.79**	108.0	3.01	91.66	13.74	4.80	0.00	0.00	110.20
T221	11,181	11,181	40.9	No	**0.18**	108.0	3.01	91.97	14.04	4.80	0.00	0.00	110.81
T222	10,056	10,056	37.5	No	**2.00**	108.0	3.01	91.05	13.14	4.80	0.00	0.00	108.99
T223	9,393	9,393	38.8	No	**3.16**	108.0	3.01	90.46	12.57	4.80	0.00	0.00	107.83
T224	10,049	10,049	45.2	No	**2.01**	108.0	3.01	91.04	13.13	4.80	0.00	0.00	108.97
T225	9,719	9,719	44.8	No	**2.58**	108.0	3.01	90.75	12.85	4.80	0.00	0.00	108.41
T226	9,068	9,068	46.1	No	**3.75**	108.0	3.01	90.15	12.28	4.80	0.00	0.00	107.23
T227	8,241	8,241	43.6	No	**5.35**	108.0	3.01	89.32	11.52	4.80	0.00	0.00	105.64
T228	9,951	9,951	33.8	No	**2.18**	108.0	3.01	90.96	13.05	4.80	0.00	0.00	108.81
T229	7,903	7,903	46.9	No	**6.04**	108.0	3.01	88.96	11.19	4.80	0.00	0.00	104.95
T230	7,773	7,773	50.7	No	**6.31**	108.0	3.01	88.81	11.07	4.80	0.00	0.00	104.68
T231	7,335	7,335	44.4	No	**7.25**	108.0	3.01	88.31	10.63	4.80	0.00	0.00	103.74
T232	6,304	6,304	47.0	No	**9.66**	108.0	3.01	86.99	9.54	4.80	0.00	0.00	101.33
T233	6,002	6,003	49.3	No	**10.42**	108.0	3.01	86.57	9.20	4.80	0.00	0.00	100.57
T234	5,678	5,679	52.4	No	**11.27**	108.0	3.01	86.09	8.83	4.80	0.00	0.00	99.71
T235	5,653	5,653	40.0	No	**11.34**	108.0	3.01	86.05	8.80	4.80	0.00	0.00	99.65
T301	12,179	12,179	41.1	No	**-1.31**	108.0	3.01	92.71	14.79	4.80	0.00	0.00	112.30
T302	12,637	12,637	41.9	No	**-1.96**	108.0	3.01	93.03	15.11	4.80	0.00	0.00	112.95
T303	13,192	13,192	47.1	No	**-2.72**	108.0	3.01	93.41	15.50	4.80	0.00	0.00	113.70
T304	13,733	13,733	46.3	No	**-3.43**	108.0	3.01	93.76	15.86	4.80	0.00	0.00	114.41
T305	13,475	13,476	42.7	No	**-3.09**	108.0	3.01	93.59	15.69	4.80	0.00	0.00	114.08
T306	13,280	13,280	49.5	Yes	**-2.71**	108.0	3.01	93.46	15.56	4.67	0.00	0.00	113.69
T307	12,475	12,475	46.1	No	**-1.73**	108.0	3.01	92.92	15.00	4.80	0.00	0.00	112.72
T308	9,003	9,004	38.7	No	**3.87**	108.0	3.01	90.09	12.23	4.80	0.00	0.00	107.11
T309	8,634	8,634	40.4	No	**4.57**	108.0	3.01	89.72	11.89	4.80	0.00	0.00	106.41
T310	8,656	8,656	40.8	No	**4.53**	108.0	3.01	89.75	11.91	4.80	0.00	0.00	106.46
T311	8,298	8,298	42.9	No	**5.23**	108.0	3.01	89.38	11.57	4.80	0.00	0.00	105.75
T312	7,951	7,952	42.0	No	**5.94**	108.0	3.01	89.01	11.24	4.80	0.00	0.00	105.05
T313	7,571	7,572	52.9	No	**6.74**	108.0	3.01	88.58	10.87	4.80	0.00	0.00	104.25
T314	6,862	6,862	43.7	No	**8.32**	108.0	3.01	87.73	10.14	4.80	0.00	0.00	102.67
T315	6,677	6,678	46.4	No	**8.75**	108.0	3.01	87.49	9.94	4.80	0.00	0.00	102.23
T316	6,733	6,734	50.4	No	**8.62**	108.0	3.01	87.57	10.00	4.80	0.00	0.00	102.37
T317	7,129	7,129	56.3	No	**7.71**	108.0	3.01	88.06	10.42	4.80	0.00	0.00	103.28
T318	7,634	7,634	42.0	No	**6.60**	108.0	3.01	88.65	10.93	4.80	0.00	0.00	104.38

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T319	7,457	7,457	43.1	No	**6.98**	108.0	3.01	88.45	10.75	4.80	0.00	0.00	104.00
T320	7,718	7,718	49.4	Yes	**6.64**	108.0	3.01	88.75	11.01	4.58	0.00	0.00	104.35
T321	8,112	8,112	43.4	Yes	**5.79**	108.0	3.01	89.18	11.40	4.62	0.00	0.00	105.20
T322	7,615	7,615	41.5	Yes	**6.83**	108.0	3.01	88.63	10.91	4.61	0.00	0.00	104.16
T323	7,312	7,312	40.4	Yes	**7.49**	108.0	3.01	88.28	10.61	4.61	0.00	0.00	103.50
T324	6,608	6,609	41.3	Yes	**9.13**	108.0	3.01	87.40	9.87	4.59	0.00	0.00	101.86
T325	6,926	6,927	41.3	No	**8.17**	108.0	3.01	87.81	10.21	4.80	0.00	0.00	102.82
T326	6,401	6,402	44.7	Yes	**9.66**	108.0	3.01	87.13	9.64	4.56	0.00	0.00	101.33
T327	6,017	6,017	39.5	Yes	**10.61**	108.0	3.01	86.59	9.22	4.58	0.00	0.00	100.38
T328	5,003	5,004	40.6	Yes	**13.45**	108.0	3.01	84.99	8.02	4.52	0.00	0.00	97.53
T329	4,687	4,688	41.1	Yes	**14.43**	108.0	3.01	84.42	7.63	4.50	0.00	0.00	96.55
T330	4,074	4,074	39.0	Yes	**16.47**	108.0	3.01	83.20	6.84	4.47	0.00	0.00	94.51
T331	4,271	4,272	42.9	Yes	**15.82**	108.0	3.01	83.61	7.10	4.46	0.00	0.00	95.17
T332	4,034	4,035	39.3	Yes	**16.62**	108.0	3.01	83.12	6.79	4.47	0.00	0.00	94.37
T333	4,760	4,760	43.5	Yes	**14.22**	108.0	3.01	84.55	7.72	4.49	0.00	0.00	96.76
T334	5,168	5,168	37.3	Yes	**12.94**	108.0	3.01	85.27	8.22	4.55	0.00	0.00	98.05
T335	5,605	5,605	35.4	Yes	**11.69**	108.0	3.01	85.97	8.74	4.58	0.00	0.00	99.30
Sum	35.10												

Noise sensitive area: SSA019 SSA019

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	10,081	10,081	58.4	Yes	**4.03**	107.5	3.01	91.07	10.82	4.60	0.00	0.00	106.49
402	10,457	10,458	60.6	Yes	**3.56**	107.5	3.01	91.39	10.97	4.60	0.00	0.00	106.96
403	11,095	11,095	56.1	Yes	**2.78**	107.5	3.01	91.90	11.22	4.63	0.00	0.00	107.75
404	11,470	11,471	58.8	Yes	**2.35**	107.5	3.01	92.19	11.36	4.63	0.00	0.00	108.17
405	11,654	11,654	49.6	Yes	**2.12**	107.5	3.01	92.33	11.42	4.66	0.00	0.00	108.41
406	11,632	11,633	53.6	Yes	**2.15**	107.5	3.01	92.31	11.42	4.64	0.00	0.00	108.37
407	12,403	12,404	48.3	Yes	**1.30**	107.5	3.01	92.87	11.68	4.67	0.00	0.00	109.22
408	7,975	7,975	66.0	Yes	**7.11**	107.5	3.01	89.04	9.86	4.52	0.00	0.00	103.41
409	8,627	8,627	61.6	Yes	**6.07**	107.5	3.01	89.72	10.18	4.56	0.00	0.00	104.45
410	8,902	8,902	65.4	Yes	**5.68**	107.5	3.01	89.99	10.31	4.55	0.00	0.00	104.85
411	9,263	9,264	66.7	Yes	**5.16**	107.5	3.01	90.34	10.47	4.55	0.00	0.00	105.36
412	9,447	9,447	66.9	No	**4.67**	107.5	3.01	90.51	10.55	4.80	0.00	0.00	105.86
413	9,877	9,877	65.5	No	**4.10**	107.5	3.01	90.89	10.74	4.80	0.00	0.00	106.43
414	10,264	10,265	65.2	No	**3.60**	107.5	3.01	91.23	10.90	4.80	0.00	0.00	106.92
415	3,809	3,810	50.6	Yes	**16.54**	107.5	3.01	82.62	7.02	4.35	0.00	0.00	93.99
416	3,673	3,674	53.2	Yes	**17.02**	107.5	3.01	82.30	6.89	4.31	0.00	0.00	93.50
417	3,204	3,206	50.9	Yes	**18.73**	107.5	3.01	81.12	6.42	4.26	0.00	0.00	91.80
418	3,011	3,012	47.4	Yes	**19.47**	107.5	3.01	80.58	6.22	4.26	0.00	0.00	91.05
419	2,160	2,162	51.0	Yes	**23.65**	107.5	3.01	77.70	5.18	3.99	0.00	0.00	86.88
420	2,488	2,490	54.3	Yes	**21.94**	107.5	3.01	78.92	5.61	4.05	0.00	0.00	88.59
421	3,725	3,727	68.0	Yes	**16.98**	107.5	3.01	82.43	6.94	4.18	0.00	0.00	93.55
422	3,836	3,837	58.3	Yes	**16.52**	107.5	3.01	82.68	7.05	4.28	0.00	0.00	94.01
423	3,919	3,921	58.7	Yes	**16.25**	107.5	3.01	82.87	7.12	4.29	0.00	0.00	94.28
424	4,287	4,288	59.7	Yes	**15.11**	107.5	3.01	83.65	7.45	4.33	0.00	0.00	95.42
425	4,692	4,693	58.0	Yes	**13.93**	107.5	3.01	84.43	7.78	4.38	0.00	0.00	96.59
426	1,225	1,231	55.4	Yes	**30.75**	107.5	3.01	72.80	3.72	3.25	0.00	0.00	79.77
427	1,789	1,793	49.2	Yes	**25.94**	107.5	3.01	76.07	4.66	3.86	0.00	0.00	84.59
428	2,250	2,253	46.0	Yes	**23.06**	107.5	3.01	78.06	5.31	4.10	0.00	0.00	87.46
429	2,508	2,510	42.3	Yes	**21.68**	107.5	3.01	78.99	5.63	4.22	0.00	0.00	88.85
430	2,988	2,990	42.8	Yes	**19.51**	107.5	3.01	80.51	6.19	4.31	0.00	0.00	91.02
431	3,457	3,458	46.4	Yes	**17.72**	107.5	3.01	81.78	6.68	4.34	0.00	0.00	92.80
432	3,835	3,836	40.3	Yes	**16.36**	107.5	3.01	82.68	7.05	4.44	0.00	0.00	94.16
433	11,977	11,978	48.3	Yes	**1.76**	107.5	3.01	92.57	11.54	4.66	0.00	0.00	108.77
434	10,504	10,505	55.9	Yes	**3.49**	107.5	3.01	91.43	10.99	4.62	0.00	0.00	107.04
435	9,640	9,641	55.1	Yes	**4.60**	107.5	3.01	90.68	10.64	4.61	0.00	0.00	105.92
436	9,106	9,107	57.3	Yes	**5.35**	107.5	3.01	90.19	10.40	4.59	0.00	0.00	105.17
437	8,834	8,834	52.5	Yes	**5.73**	107.5	3.01	89.92	10.28	4.60	0.00	0.00	104.80
438	9,121	9,122	48.8	Yes	**5.30**	107.5	3.01	90.20	10.41	4.62	0.00	0.00	105.23
439	6,861	6,862	60.3	Yes	**9.04**	107.5	3.01	87.73	9.25	4.50	0.00	0.00	101.48

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
440	6,507	6,508	57.7	Yes	**9.72**	107.5	3.01	87.27	9.04	4.50	0.00	0.00	100.81
441	6,439	6,440	54.7	Yes	**9.84**	107.5	3.01	87.18	9.00	4.51	0.00	0.00	100.69
442	6,085	6,086	59.8	Yes	**10.60**	107.5	3.01	86.69	8.78	4.46	0.00	0.00	99.93
443	5,939	5,940	55.6	Yes	**10.88**	107.5	3.01	86.48	8.68	4.48	0.00	0.00	99.64
444	5,991	5,992	58.6	Yes	**10.79**	107.5	3.01	86.55	8.72	4.47	0.00	0.00	99.73
445	10,171	10,171	55.0	Yes	**3.90**	107.5	3.01	91.15	10.86	4.62	0.00	0.00	106.62
446	9,704	9,704	52.5	Yes	**4.51**	107.5	3.01	90.74	10.66	4.62	0.00	0.00	106.02
447	8,960	8,961	48.3	Yes	**5.53**	107.5	3.01	90.05	10.33	4.62	0.00	0.00	105.00
448	8,619	8,620	50.9	Yes	**6.04**	107.5	3.01	89.71	10.18	4.60	0.00	0.00	104.48
449	8,028	8,029	56.1	Yes	**6.98**	107.5	3.01	89.09	9.89	4.56	0.00	0.00	103.54
450	7,958	7,958	56.8	Yes	**7.10**	107.5	3.01	89.02	9.85	4.56	0.00	0.00	103.42
451	7,347	7,348	62.8	Yes	**8.16**	107.5	3.01	88.32	9.53	4.51	0.00	0.00	102.36
452	10,670	10,671	52.2	Yes	**3.27**	107.5	3.01	91.56	11.06	4.63	0.00	0.00	107.25
453	10,546	10,547	41.3	No	**3.25**	107.5	3.01	91.46	11.01	4.80	0.00	0.00	107.27
454	10,044	10,045	45.9	No	**3.88**	107.5	3.01	91.04	10.81	4.80	0.00	0.00	106.64
455	9,041	9,042	49.7	Yes	**5.41**	107.5	3.01	90.13	10.37	4.61	0.00	0.00	105.11
456	9,180	9,181	53.3	Yes	**5.23**	107.5	3.01	90.26	10.43	4.60	0.00	0.00	105.29
457	9,127	9,127	48.7	Yes	**5.29**	107.5	3.01	90.21	10.41	4.62	0.00	0.00	105.24
458	11,565	11,565	49.2	Yes	**2.21**	107.5	3.01	92.26	11.39	4.66	0.00	0.00	108.31
459	11,172	11,172	50.9	Yes	**2.67**	107.5	3.01	91.96	11.25	4.64	0.00	0.00	107.86
460	11,768	11,768	49.1	Yes	**1.99**	107.5	3.01	92.41	11.46	4.66	0.00	0.00	108.54
461	11,326	11,327	51.6	Yes	**2.49**	107.5	3.01	92.08	11.30	4.64	0.00	0.00	108.03
462	11,097	11,098	58.6	Yes	**2.78**	107.5	3.01	91.90	11.22	4.62	0.00	0.00	107.74
463	10,647	10,648	51.4	Yes	**3.30**	107.5	3.01	91.55	11.05	4.64	0.00	0.00	107.23
464	10,720	10,720	47.5	Yes	**3.20**	107.5	3.01	91.60	11.08	4.65	0.00	0.00	107.33
T001	7,186	7,187	57.5	Yes	**7.85**	108.0	3.01	88.13	10.48	4.53	0.00	0.00	103.13
T002	7,051	7,051	49.2	Yes	**8.12**	108.0	3.01	87.97	10.34	4.56	0.00	0.00	102.86
T003	6,740	6,740	41.3	Yes	**6.80**	107.0	3.01	87.57	11.09	4.59	0.00	0.00	103.25
T004	7,867	7,867	42.4	Yes	**4.41**	107.0	3.01	88.92	12.11	4.62	0.00	0.00	105.64
T005	6,109	6,110	41.7	Yes	**8.31**	107.0	3.01	86.72	10.46	4.57	0.00	0.00	101.75
T006	6,181	6,182	43.1	Yes	**10.20**	108.0	3.01	86.82	9.40	4.56	0.00	0.00	100.78
T007	5,405	5,405	43.9	Yes	**12.30**	108.0	3.01	85.66	8.51	4.52	0.00	0.00	98.69
T008	7,451	7,452	42.6	Yes	**5.26**	107.0	3.01	88.45	11.75	4.61	0.00	0.00	104.80
T009	8,026	8,027	46.6	Yes	**5.98**	108.0	3.01	89.09	11.31	4.60	0.00	0.00	105.01
T010	7,255	7,255	50.0	Yes	**7.66**	108.0	3.01	88.21	10.55	4.57	0.00	0.00	103.33
T011	8,778	8,778	32.3	Yes	**4.42**	108.0	3.01	89.87	12.02	4.67	0.00	0.00	106.56
T012	8,854	8,854	40.7	No	**2.40**	107.0	3.01	89.94	12.92	4.80	0.00	0.00	107.66
T013	7,870	7,870	42.7	Yes	**4.41**	107.0	3.01	88.92	12.11	4.62	0.00	0.00	105.65
T014	6,872	6,872	38.6	Yes	**6.49**	107.0	3.01	87.74	11.21	4.61	0.00	0.00	103.56
T015	6,014	6,014	45.6	Yes	**10.65**	108.0	3.01	86.58	9.21	4.54	0.00	0.00	100.34
T016	7,277	7,278	39.4	Yes	**5.61**	107.0	3.01	88.24	11.59	4.62	0.00	0.00	104.44
T017	5,876	5,877	42.9	Yes	**11.00**	108.0	3.01	86.38	9.06	4.55	0.00	0.00	99.99
T018	6,432	6,432	37.1	Yes	**7.50**	107.0	3.01	87.17	10.79	4.60	0.00	0.00	102.56
T019	7,389	7,389	39.9	Yes	**5.38**	107.0	3.01	88.37	11.69	4.62	0.00	0.00	104.68
T020	5,505	5,506	41.1	Yes	**12.00**	108.0	3.01	85.82	8.63	4.55	0.00	0.00	98.99
T022	8,741	8,741	33.0	Yes	**2.72**	107.0	3.01	89.83	12.83	4.67	0.00	0.00	107.33
T023	7,742	7,743	51.6	Yes	**4.70**	107.0	3.01	88.78	12.00	4.57	0.00	0.00	105.35
T025	6,367	6,367	37.5	Yes	**9.70**	108.0	3.01	87.08	9.60	4.60	0.00	0.00	101.28
T026	5,081	5,081	40.5	Yes	**13.22**	108.0	3.01	85.12	8.12	4.53	0.00	0.00	97.77
T027	6,951	6,951	50.1	Yes	**8.36**	108.0	3.01	87.84	10.23	4.55	0.00	0.00	102.63
T028	5,978	5,979	42.3	Yes	**10.73**	108.0	3.01	86.53	9.17	4.56	0.00	0.00	100.26
T029	9,407	9,407	41.7	No	**1.45**	107.0	3.01	90.47	13.34	4.80	0.00	0.00	108.61
T030	7,485	7,485	33.5	Yes	**7.08**	108.0	3.01	88.48	10.78	4.65	0.00	0.00	103.91
T031	8,731	8,731	37.9	No	**2.61**	107.0	3.01	89.82	12.82	4.80	0.00	0.00	107.44
T032	6,252	6,252	36.6	Yes	**7.93**	107.0	3.01	86.92	10.61	4.60	0.00	0.00	102.13
T033	8,471	8,471	39.7	Yes	**3.24**	107.0	3.01	89.56	12.61	4.64	0.00	0.00	106.81
T201	7,759	7,759	40.4	Yes	**6.52**	108.0	3.01	88.80	11.05	4.62	0.00	0.00	104.47
T202	7,947	7,947	39.6	Yes	**6.12**	108.0	3.01	89.00	11.24	4.63	0.00	0.00	104.87
T203	9,314	9,314	35.3	No	**3.30**	108.0	3.01	90.38	12.50	4.80	0.00	0.00	107.68
T204	9,229	9,229	42.4	Yes	**3.61**	108.0	3.01	90.30	12.43	4.64	0.00	0.00	107.37
T205	9,699	9,699	48.3	Yes	**2.79**	108.0	3.01	90.73	12.84	4.63	0.00	0.00	108.20
T206	10,156	10,156	36.9	No	**1.83**	108.0	3.01	91.13	13.22	4.80	0.00	0.00	109.16
T207	10,957	10,957	47.6	No	**0.53**	108.0	3.01	91.79	13.87	4.80	0.00	0.00	110.46

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T208	10,032	10,032	36.2	Yes	**2.17**	108.0	3.01	91.03	13.12	4.68	0.00	0.00	108.82
T209	10,239	10,239	40.9	Yes	**1.83**	108.0	3.01	91.21	13.29	4.66	0.00	0.00	109.16
T210	10,411	10,412	40.7	Yes	**1.54**	108.0	3.01	91.35	13.43	4.67	0.00	0.00	109.45
T211	9,310	9,310	43.9	Yes	**3.47**	108.0	3.01	90.38	12.50	4.64	0.00	0.00	107.52
T212	9,114	9,115	43.2	Yes	**3.83**	108.0	3.01	90.19	12.32	4.64	0.00	0.00	107.16
T213	8,974	8,975	44.0	Yes	**4.10**	108.0	3.01	90.06	12.20	4.63	0.00	0.00	106.89
T214	9,117	9,117	45.2	Yes	**3.83**	108.0	3.01	90.20	12.33	4.63	0.00	0.00	107.15
T215	7,239	7,240	48.0	Yes	**7.69**	108.0	3.01	88.19	10.53	4.57	0.00	0.00	103.30
T216	8,060	8,060	44.2	No	**5.71**	108.0	3.01	89.13	11.35	4.80	0.00	0.00	105.27
T217	8,538	8,539	41.9	No	**4.76**	108.0	3.01	89.63	11.80	4.80	0.00	0.00	106.23
T218	10,736	10,736	50.8	No	**0.88**	108.0	3.01	91.62	13.69	4.80	0.00	0.00	110.11
T219	10,776	10,776	47.5	No	**0.82**	108.0	3.01	91.65	13.72	4.80	0.00	0.00	110.17
T220	11,226	11,226	43.8	No	**0.11**	108.0	3.01	92.00	14.08	4.80	0.00	0.00	110.88
T221	11,612	11,612	39.5	No	**-0.48**	108.0	3.01	92.30	14.37	4.80	0.00	0.00	111.47
T222	10,431	10,431	35.9	Yes	**1.49**	108.0	3.01	91.37	13.45	4.68	0.00	0.00	109.49
T223	9,770	9,770	37.2	Yes	**2.62**	108.0	3.01	90.80	12.90	4.67	0.00	0.00	108.36
T224	10,461	10,461	44.0	Yes	**1.47**	108.0	3.01	91.39	13.47	4.66	0.00	0.00	109.52
T225	10,133	10,133	43.8	Yes	**2.02**	108.0	3.01	91.11	13.20	4.65	0.00	0.00	108.97
T226	9,469	9,469	44.8	Yes	**3.18**	108.0	3.01	90.53	12.64	4.64	0.00	0.00	107.80
T227	8,647	8,647	42.0	Yes	**4.72**	108.0	3.01	89.74	11.90	4.63	0.00	0.00	106.27
T228	10,341	10,341	32.4	Yes	**1.63**	108.0	3.01	91.29	13.37	4.69	0.00	0.00	109.36
T229	8,321	8,322	45.7	Yes	**5.37**	108.0	3.01	89.40	11.60	4.61	0.00	0.00	105.61
T230	8,197	8,197	49.6	Yes	**5.64**	108.0	3.01	89.27	11.48	4.59	0.00	0.00	105.35
T231	7,763	7,763	43.1	Yes	**6.52**	108.0	3.01	88.80	11.06	4.61	0.00	0.00	104.47
T232	6,717	6,718	45.9	Yes	**8.89**	108.0	3.01	87.54	9.98	4.57	0.00	0.00	102.10
T233	6,422	6,423	48.0	Yes	**9.62**	108.0	3.01	87.15	9.67	4.55	0.00	0.00	101.37
T234	6,101	6,101	51.2	Yes	**10.46**	108.0	3.01	86.71	9.31	4.51	0.00	0.00	100.53
T235	6,089	6,090	38.8	Yes	**10.42**	108.0	3.01	86.69	9.30	4.58	0.00	0.00	100.57
T301	12,510	12,510	38.9	No	**-1.78**	108.0	3.01	92.95	15.02	4.80	0.00	0.00	112.77
T302	12,964	12,964	40.6	No	**-2.41**	108.0	3.01	93.25	15.34	4.80	0.00	0.00	113.40
T303	13,501	13,501	44.7	No	**-3.12**	108.0	3.01	93.61	15.70	4.80	0.00	0.00	114.11
T304	14,035	14,035	44.5	No	**-3.81**	108.0	3.01	93.94	16.05	4.80	0.00	0.00	114.80
T305	13,758	13,758	40.7	No	**-3.46**	108.0	3.01	93.77	15.87	4.80	0.00	0.00	114.45
T306	13,570	13,570	47.0	Yes	**-3.10**	108.0	3.01	93.65	15.75	4.68	0.00	0.00	114.08
T307	12,769	12,769	43.9	Yes	**-2.02**	108.0	3.01	93.12	15.21	4.68	0.00	0.00	113.01
T308	9,334	9,334	37.0	No	**3.27**	108.0	3.01	90.40	12.52	4.80	0.00	0.00	107.72
T309	8,977	8,977	38.5	Yes	**4.07**	108.0	3.01	90.06	12.20	4.65	0.00	0.00	106.92
T310	9,021	9,021	38.7	Yes	**3.99**	108.0	3.01	90.11	12.24	4.65	0.00	0.00	107.00
T311	8,672	8,672	41.2	Yes	**4.66**	108.0	3.01	89.76	11.92	4.64	0.00	0.00	106.32
T312	8,333	8,333	40.6	Yes	**5.33**	108.0	3.01	89.42	11.61	4.63	0.00	0.00	105.66
T313	7,961	7,961	51.5	Yes	**6.14**	108.0	3.01	89.02	11.25	4.58	0.00	0.00	104.85
T314	7,275	7,275	42.5	Yes	**7.58**	108.0	3.01	88.24	10.57	4.60	0.00	0.00	103.40
T315	7,063	7,063	44.9	Yes	**8.08**	108.0	3.01	87.98	10.35	4.58	0.00	0.00	102.91
T316	7,092	7,092	48.1	Yes	**8.02**	108.0	3.01	88.02	10.38	4.57	0.00	0.00	102.96
T317	7,484	7,484	54.0	Yes	**7.17**	108.0	3.01	88.48	10.78	4.55	0.00	0.00	103.82
T318	7,964	7,964	40.1	Yes	**6.08**	108.0	3.01	89.02	11.25	4.63	0.00	0.00	104.91
T319	7,712	7,712	42.0	Yes	**6.62**	108.0	3.01	88.74	11.01	4.61	0.00	0.00	104.36
T320	7,952	7,953	48.9	Yes	**6.14**	108.0	3.01	89.01	11.24	4.59	0.00	0.00	104.84
T321	8,334	8,334	42.4	Yes	**5.34**	108.0	3.01	89.42	11.61	4.63	0.00	0.00	105.65
T322	7,785	7,785	40.0	No	**6.28**	108.0	3.01	88.83	11.08	4.80	0.00	0.00	104.70
T323	7,471	7,471	39.2	No	**6.95**	108.0	3.01	88.47	10.77	4.80	0.00	0.00	104.03
T324	6,792	6,793	40.2	No	**8.48**	108.0	3.01	87.64	10.06	4.80	0.00	0.00	102.50
T325	7,018	7,018	40.4	No	**7.96**	108.0	3.01	87.92	10.30	4.80	0.00	0.00	103.03
T326	6,526	6,526	43.7	Yes	**9.34**	108.0	3.01	87.29	9.78	4.57	0.00	0.00	101.64
T327	6,142	6,143	38.6	Yes	**10.28**	108.0	3.01	86.77	9.36	4.59	0.00	0.00	100.71
T328	5,144	5,144	39.5	Yes	**13.03**	108.0	3.01	85.23	8.20	4.54	0.00	0.00	97.96
T329	4,728	4,728	40.2	Yes	**14.30**	108.0	3.01	84.49	7.68	4.51	0.00	0.00	96.69
T330	4,164	4,165	37.9	Yes	**16.15**	108.0	3.01	83.39	6.96	4.49	0.00	0.00	94.84
T331	4,453	4,454	41.7	Yes	**15.20**	108.0	3.01	83.97	7.33	4.48	0.00	0.00	95.79
T332	4,261	4,262	39.1	Yes	**15.82**	108.0	3.01	83.59	7.09	4.49	0.00	0.00	95.16
T333	5,018	5,019	42.5	Yes	**13.42**	108.0	3.01	85.01	8.04	4.51	0.00	0.00	97.56
T334	5,403	5,404	36.9	Yes	**12.26**	108.0	3.01	85.65	8.51	4.57	0.00	0.00	98.73
T335	5,861	5,861	34.5	Yes	**10.99**	108.0	3.01	86.36	9.04	4.60	0.00	0.00	100.00
Sum	35.76												

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

Noise sensitive area: SSA020 SSA020

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	12,813	12,814	68.7	Yes	**0.93**	107.5	3.01	93.15	11.82	4.62	0.00	0.00	109.59
402	13,061	13,062	74.1	Yes	**0.70**	107.5	3.01	93.32	11.90	4.61	0.00	0.00	109.83
403	13,591	13,592	70.7	Yes	**0.17**	107.5	3.01	93.67	12.07	4.62	0.00	0.00	110.36
404	13,804	13,805	75.3	Yes	**-0.02**	107.5	3.01	93.80	12.13	4.61	0.00	0.00	110.55
405	13,792	13,792	65.1	Yes	**-0.04**	107.5	3.01	93.79	12.13	4.64	0.00	0.00	110.56
406	13,521	13,522	64.3	Yes	**0.22**	107.5	3.01	93.62	12.05	4.64	0.00	0.00	110.30
407	14,695	14,695	63.9	Yes	**-0.87**	107.5	3.01	94.34	12.40	4.65	0.00	0.00	111.39
408	7,696	7,697	75.5	Yes	**7.62**	107.5	3.01	88.73	9.71	4.47	0.00	0.00	102.91
409	8,383	8,384	69.2	Yes	**6.47**	107.5	3.01	89.47	10.06	4.52	0.00	0.00	104.05
410	8,308	8,309	76.7	Yes	**6.62**	107.5	3.01	89.39	10.03	4.49	0.00	0.00	103.90
411	8,459	8,460	75.5	Yes	**6.38**	107.5	3.01	89.55	10.10	4.50	0.00	0.00	104.14
412	8,238	8,239	76.6	Yes	**6.73**	107.5	3.01	89.32	9.99	4.48	0.00	0.00	103.79
413	8,483	8,484	77.4	Yes	**6.35**	107.5	3.01	89.57	10.11	4.49	0.00	0.00	104.17
414	8,827	8,828	77.6	Yes	**5.83**	107.5	3.01	89.92	10.27	4.50	0.00	0.00	104.69
415	10,164	10,165	47.5	Yes	**3.89**	107.5	3.01	91.14	10.86	4.64	0.00	0.00	106.64
416	9,912	9,913	52.2	Yes	**4.23**	107.5	3.01	90.92	10.75	4.62	0.00	0.00	106.30
417	9,344	9,345	51.7	Yes	**4.99**	107.5	3.01	90.41	10.51	4.61	0.00	0.00	105.53
418	8,969	8,969	49.3	Yes	**5.52**	107.5	3.01	90.06	10.34	4.61	0.00	0.00	105.01
419	7,915	7,916	53.4	Yes	**7.16**	107.5	3.01	88.97	9.83	4.57	0.00	0.00	103.37
420	7,862	7,863	53.6	Yes	**7.24**	107.5	3.01	88.91	9.80	4.57	0.00	0.00	103.28
421	8,507	8,509	68.1	Yes	**6.28**	107.5	3.01	89.60	10.12	4.53	0.00	0.00	104.25
422	8,244	8,245	59.4	Yes	**6.65**	107.5	3.01	89.32	9.99	4.55	0.00	0.00	103.87
423	8,000	8,001	61.7	Yes	**7.05**	107.5	3.01	89.06	9.87	4.54	0.00	0.00	103.47
424	7,551	7,552	63.3	Yes	**7.81**	107.5	3.01	88.56	9.64	4.51	0.00	0.00	102.71
425	7,610	7,611	64.4	Yes	**7.72**	107.5	3.01	88.63	9.67	4.51	0.00	0.00	102.81
426	5,385	5,387	68.2	Yes	**12.22**	107.5	3.01	85.63	8.30	4.37	0.00	0.00	98.30
427	4,935	4,937	72.3	Yes	**13.38**	107.5	3.01	84.87	7.97	4.30	0.00	0.00	97.14
428	4,616	4,618	73.3	Yes	**14.26**	107.5	3.01	84.29	7.72	4.26	0.00	0.00	96.27
429	4,749	4,751	64.7	Yes	**13.83**	107.5	3.01	84.54	7.83	4.34	0.00	0.00	96.70
430	4,466	4,468	63.0	Yes	**14.60**	107.5	3.01	84.00	7.60	4.32	0.00	0.00	95.92
431	4,617	4,619	67.7	Yes	**14.21**	107.5	3.01	84.29	7.72	4.30	0.00	0.00	96.31
432	4,423	4,425	68.6	Yes	**14.77**	107.5	3.01	83.92	7.56	4.27	0.00	0.00	95.75
433	15,094	15,095	44.7	No	**-1.36**	107.5	3.01	94.58	12.51	4.80	0.00	0.00	111.88
434	13,656	13,657	53.7	No	**-0.07**	107.5	3.01	93.71	12.09	4.80	0.00	0.00	110.59
435	12,986	12,986	54.4	No	**0.58**	107.5	3.01	93.27	11.88	4.80	0.00	0.00	109.95
436	12,641	12,641	55.6	No	**0.93**	107.5	3.01	93.04	11.76	4.80	0.00	0.00	109.60
437	12,267	12,268	51.7	No	**1.31**	107.5	3.01	92.78	11.64	4.80	0.00	0.00	109.21
438	11,795	11,796	48.2	No	**1.82**	107.5	3.01	92.43	11.47	4.80	0.00	0.00	108.71
439	8,519	8,520	63.8	No	**5.99**	107.5	3.01	89.61	10.13	4.80	0.00	0.00	104.54
440	8,022	8,023	62.7	Yes	**7.02**	107.5	3.01	89.09	9.88	4.53	0.00	0.00	103.50
441	7,560	7,561	62.2	No	**7.51**	107.5	3.01	88.57	9.64	4.80	0.00	0.00	103.01
442	7,124	7,125	68.9	Yes	**8.59**	107.5	3.01	88.06	9.40	4.47	0.00	0.00	101.93
443	6,625	6,627	67.4	Yes	**9.53**	107.5	3.01	87.43	9.11	4.45	0.00	0.00	100.99
444	6,262	6,264	71.1	No	**9.90**	107.5	3.01	86.94	8.89	4.80	0.00	0.00	100.63
445	12,751	12,752	51.7	No	**0.81**	107.5	3.01	93.11	11.80	4.80	0.00	0.00	109.71
446	12,197	12,197	49.5	No	**1.39**	107.5	3.01	92.73	11.61	4.80	0.00	0.00	109.14
447	11,012	11,013	48.2	No	**2.70**	107.5	3.01	91.84	11.19	4.80	0.00	0.00	107.83
448	10,559	10,560	51.4	No	**3.24**	107.5	3.01	91.47	11.01	4.80	0.00	0.00	107.29
449	9,951	9,952	56.7	No	**4.00**	107.5	3.01	90.96	10.77	4.80	0.00	0.00	106.53
450	9,644	9,646	59.7	No	**4.40**	107.5	3.01	90.69	10.64	4.80	0.00	0.00	106.12
451	8,991	8,993	65.7	No	**5.30**	107.5	3.01	90.08	10.35	4.80	0.00	0.00	105.23
452	13,233	13,233	48.5	No	**0.34**	107.5	3.01	93.43	11.96	4.80	0.00	0.00	110.19
453	10,331	10,332	52.2	No	**3.52**	107.5	3.01	91.28	10.92	4.80	0.00	0.00	107.01
454	9,770	9,771	57.6	No	**4.23**	107.5	3.01	90.80	10.69	4.80	0.00	0.00	106.29
455	8,739	8,740	63.0	No	**5.66**	107.5	3.01	89.83	10.23	4.80	0.00	0.00	104.86
456	8,506	8,507	64.3	No	**6.01**	107.5	3.01	89.60	10.12	4.80	0.00	0.00	104.52
457	8,182	8,183	59.1	No	**6.50**	107.5	3.01	89.26	9.96	4.80	0.00	0.00	104.02
458	14,171	14,171	44.3	No	**-0.55**	107.5	3.01	94.03	12.24	4.80	0.00	0.00	111.07
459	13,782	13,783	46.1	No	**-0.19**	107.5	3.01	93.79	12.13	4.80	0.00	0.00	110.71
460	13,718	13,719	49.1	No	**-0.13**	107.5	3.01	93.75	12.11	4.80	0.00	0.00	110.65
461	13,241	13,241	52.6	No	**0.33**	107.5	3.01	93.44	11.96	4.80	0.00	0.00	110.20
462	12,858	12,859	61.7	No	**0.71**	107.5	3.01	93.18	11.84	4.80	0.00	0.00	109.82
463	12,408	12,408	54.7	No	**1.16**	107.5	3.01	92.87	11.69	4.80	0.00	0.00	109.36

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
464	12,074	12,075	53.1	No	**1.52**	107.5	3.01	92.64	11.57	4.80	0.00	0.00	109.01
T001	11,967	11,968	50.5	Yes	**-0.86**	108.0	3.01	92.56	14.63	4.66	0.00	0.00	111.85
T002	11,285	11,286	56.9	Yes	**0.19**	108.0	3.01	92.05	14.12	4.63	0.00	0.00	110.80
T003	12,729	12,729	42.8	No	**-3.34**	107.0	3.01	93.10	15.50	4.80	0.00	0.00	113.40
T004	13,673	13,674	38.3	No	**-4.49**	107.0	3.01	93.72	16.03	4.80	0.00	0.00	114.55
T005	11,758	11,759	37.1	Yes	**-1.97**	107.0	3.01	92.41	14.92	4.69	0.00	0.00	112.02
T006	10,100	10,101	51.7	Yes	**2.10**	108.0	3.01	91.09	13.17	4.63	0.00	0.00	108.89
T007	10,060	10,061	44.8	Yes	**2.15**	108.0	3.01	91.05	13.14	4.65	0.00	0.00	108.84
T008	13,536	13,537	41.7	Yes	**-4.23**	107.0	3.01	93.63	15.95	4.70	0.00	0.00	114.28
T009	12,656	12,657	41.2	Yes	**-1.88**	108.0	3.01	93.05	15.13	4.69	0.00	0.00	112.86
T010	11,764	11,764	49.2	Yes	**-0.56**	108.0	3.01	92.41	14.48	4.66	0.00	0.00	111.55
T011	12,932	12,932	39.0	Yes	**-2.26**	108.0	3.01	93.23	15.32	4.70	0.00	0.00	113.25
T012	14,143	14,143	32.8	No	**-5.04**	107.0	3.01	94.01	16.28	4.80	0.00	0.00	115.09
T013	13,562	13,563	36.3	No	**-4.36**	107.0	3.01	93.65	15.97	4.80	0.00	0.00	114.42
T014	12,390	12,390	32.1	No	**-2.91**	107.0	3.01	92.86	15.30	4.80	0.00	0.00	112.97
T015	10,681	10,682	44.4	Yes	**1.11**	108.0	3.01	91.57	13.65	4.66	0.00	0.00	109.88
T016	13,170	13,170	36.7	No	**-3.89**	107.0	3.01	93.39	15.75	4.80	0.00	0.00	113.94
T017	9,557	9,558	50.6	Yes	**3.05**	108.0	3.01	90.61	12.71	4.62	0.00	0.00	107.94
T018	11,691	11,691	27.3	No	**-1.99**	107.0	3.01	92.36	14.88	4.80	0.00	0.00	112.04
T019	12,749	12,749	31.0	No	**-3.37**	107.0	3.01	93.11	15.51	4.80	0.00	0.00	113.42
T020	9,714	9,714	48.5	Yes	**2.76**	108.0	3.01	90.75	12.85	4.63	0.00	0.00	108.23
T022	14,607	14,607	29.9	No	**-5.56**	107.0	3.01	94.29	16.52	4.80	0.00	0.00	115.61
T023	13,981	13,982	44.6	No	**-4.85**	107.0	3.01	93.91	16.19	4.80	0.00	0.00	114.91
T025	9,825	9,825	47.3	Yes	**2.56**	108.0	3.01	90.85	12.94	4.64	0.00	0.00	108.43
T026	9,001	9,002	47.0	Yes	**4.06**	108.0	3.01	90.09	12.22	4.62	0.00	0.00	106.93
T027	11,920	11,920	38.8	No	**-0.94**	108.0	3.01	92.53	14.60	4.80	0.00	0.00	111.92
T028	10,300	10,301	48.9	Yes	**1.75**	108.0	3.01	91.26	13.34	4.64	0.00	0.00	109.24
T029	14,672	14,672	32.7	No	**-5.63**	107.0	3.01	94.33	16.55	4.80	0.00	0.00	115.68
T030	11,581	11,582	43.9	Yes	**-0.31**	108.0	3.01	92.28	14.35	4.67	0.00	0.00	111.29
T031	14,204	14,204	29.9	No	**-5.11**	107.0	3.01	94.05	16.31	4.80	0.00	0.00	115.16
T032	12,116	12,117	33.4	No	**-2.55**	107.0	3.01	92.67	15.14	4.80	0.00	0.00	112.61
T033	14,176	14,176	33.7	No	**-5.07**	107.0	3.01	94.03	16.30	4.80	0.00	0.00	115.13
T201	11,031	11,032	46.9	Yes	**0.55**	108.0	3.01	91.85	13.92	4.66	0.00	0.00	110.43
T202	11,046	11,046	45.5	Yes	**0.53**	108.0	3.01	91.86	13.94	4.66	0.00	0.00	110.46
T203	12,617	12,617	38.0	Yes	**-1.83**	108.0	3.01	93.02	15.10	4.70	0.00	0.00	112.82
T204	12,304	12,305	45.6	Yes	**-1.36**	108.0	3.01	92.80	14.88	4.67	0.00	0.00	112.35
T205	12,581	12,581	55.6	Yes	**-1.73**	108.0	3.01	92.99	15.07	4.65	0.00	0.00	112.72
T206	13,731	13,731	41.0	Yes	**-3.32**	108.0	3.01	93.75	15.86	4.70	0.00	0.00	114.31
T207	14,445	14,445	49.2	Yes	**-4.21**	108.0	3.01	94.19	16.32	4.68	0.00	0.00	115.19
T208	15,849	15,850	31.6	No	**-5.98**	108.0	3.01	95.00	17.17	4.80	0.00	0.00	116.97
T209	16,136	16,136	37.3	No	**-6.30**	108.0	3.01	95.16	17.33	4.80	0.00	0.00	117.29
T210	16,416	16,416	36.5	No	**-6.61**	108.0	3.01	95.31	17.49	4.80	0.00	0.00	117.60
T211	15,462	15,462	38.9	No	**-5.54**	108.0	3.01	94.79	16.94	4.80	0.00	0.00	116.52
T212	15,339	15,339	35.7	No	**-5.39**	108.0	3.01	94.72	16.86	4.80	0.00	0.00	116.38
T213	15,276	15,276	33.1	No	**-5.32**	108.0	3.01	94.68	16.83	4.80	0.00	0.00	116.31
T214	15,469	15,469	32.7	No	**-5.54**	108.0	3.01	94.79	16.94	4.80	0.00	0.00	116.53
T215	13,512	13,512	39.8	No	**-3.14**	108.0	3.01	93.61	15.71	4.80	0.00	0.00	114.13
T216	14,509	14,510	30.8	No	**-4.40**	108.0	3.01	94.23	16.36	4.80	0.00	0.00	115.39
T217	15,044	15,044	29.4	No	**-5.05**	108.0	3.01	94.55	16.69	4.80	0.00	0.00	116.03
T218	17,216	17,216	35.7	No	**-7.46**	108.0	3.01	95.72	17.93	4.80	0.00	0.00	118.45
T219	17,318	17,318	33.5	No	**-7.57**	108.0	3.01	95.77	17.99	4.80	0.00	0.00	118.56
T220	17,776	17,776	29.6	No	**-8.04**	108.0	3.01	96.00	18.23	4.80	0.00	0.00	119.03
T221	18,186	18,186	25.2	No	**-8.45**	108.0	3.01	96.19	18.44	4.80	0.00	0.00	119.44
T222	16,933	16,933	19.4	No	**-7.16**	108.0	3.01	95.57	17.78	4.80	0.00	0.00	118.15
T223	16,281	16,282	21.5	No	**-6.46**	108.0	3.01	95.23	17.41	4.80	0.00	0.00	117.45
T224	17,054	17,054	30.7	No	**-7.29**	108.0	3.01	95.64	17.84	4.80	0.00	0.00	118.28
T225	16,726	16,726	30.9	No	**-6.94**	108.0	3.01	95.47	17.66	4.80	0.00	0.00	117.93
T226	16,047	16,047	31.3	No	**-6.20**	108.0	3.01	95.11	17.28	4.80	0.00	0.00	117.19
T227	15,233	15,233	29.6	No	**-5.27**	108.0	3.01	94.66	16.80	4.80	0.00	0.00	116.26
T228	16,890	16,890	17.1	No	**-7.12**	108.0	3.01	95.55	17.75	4.80	0.00	0.00	118.11
T229	14,916	14,916	35.4	No	**-4.89**	108.0	3.01	94.47	16.61	4.80	0.00	0.00	115.88
T230	14,788	14,788	38.8	No	**-4.74**	108.0	3.01	94.40	16.53	4.80	0.00	0.00	115.73
T231	14,346	14,347	32.8	No	**-4.20**	108.0	3.01	94.14	16.25	4.80	0.00	0.00	115.19

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T232	13,311	13,311	35.7	No	**-2.87**	108.0	3.01	93.48	15.58	4.80	0.00	0.00	113.86
T233	13,016	13,016	38.6	Yes	**-2.38**	108.0	3.01	93.29	15.38	4.70	0.00	0.00	113.37
T234	12,693	12,693	41.6	Yes	**-1.93**	108.0	3.01	93.07	15.15	4.69	0.00	0.00	112.91
T235	12,644	12,644	29.4	No	**-1.97**	108.0	3.01	93.04	15.12	4.80	0.00	0.00	112.96
T301	16,766	16,766	38.1	No	**-6.99**	108.0	3.01	95.49	17.69	4.80	0.00	0.00	117.97
T302	17,114	17,114	38.4	Yes	**-7.28**	108.0	3.01	95.67	17.88	4.72	0.00	0.00	118.27
T303	17,369	17,369	40.9	No	**-7.62**	108.0	3.01	95.80	18.01	4.80	0.00	0.00	118.61
T304	17,770	17,770	38.6	Yes	**-7.96**	108.0	3.01	95.99	18.23	4.73	0.00	0.00	118.95
T305	17,230	17,230	39.3	Yes	**-7.40**	108.0	3.01	95.73	17.94	4.72	0.00	0.00	118.39
T306	17,170	17,170	43.9	Yes	**-7.33**	108.0	3.01	95.70	17.91	4.71	0.00	0.00	118.32
T307	16,479	16,479	42.0	Yes	**-6.59**	108.0	3.01	95.34	17.53	4.71	0.00	0.00	117.58
T308	15,655	15,656	22.8	No	**-5.76**	108.0	3.01	94.89	17.05	4.80	0.00	0.00	116.75
T309	15,361	15,361	24.4	No	**-5.42**	108.0	3.01	94.73	16.88	4.80	0.00	0.00	116.41
T310	15,495	15,495	23.6	No	**-5.57**	108.0	3.01	94.80	16.96	4.80	0.00	0.00	116.56
T311	15,181	15,182	26.2	No	**-5.21**	108.0	3.01	94.63	16.77	4.80	0.00	0.00	116.20
T312	14,864	14,864	26.6	No	**-4.83**	108.0	3.01	94.44	16.58	4.80	0.00	0.00	115.82
T313	14,516	14,517	38.4	No	**-4.41**	108.0	3.01	94.24	16.36	4.80	0.00	0.00	115.40
T314	13,868	13,868	31.9	No	**-3.60**	108.0	3.01	93.84	15.95	4.80	0.00	0.00	114.59
T315	13,611	13,612	31.9	No	**-3.27**	108.0	3.01	93.68	15.78	4.80	0.00	0.00	114.26
T316	13,559	13,559	34.2	No	**-3.20**	108.0	3.01	93.64	15.74	4.80	0.00	0.00	114.19
T317	13,935	13,935	40.6	No	**-3.68**	108.0	3.01	93.88	15.99	4.80	0.00	0.00	114.67
T318	14,309	14,309	26.6	No	**-4.15**	108.0	3.01	94.11	16.23	4.80	0.00	0.00	115.14
T319	13,681	13,681	31.2	No	**-3.36**	108.0	3.01	93.72	15.82	4.80	0.00	0.00	114.35
T320	13,790	13,790	37.8	Yes	**-3.41**	108.0	3.01	93.79	15.90	4.71	0.00	0.00	114.39
T321	14,073	14,073	32.0	No	**-3.86**	108.0	3.01	93.97	16.08	4.80	0.00	0.00	114.85
T322	13,220	13,221	33.3	Yes	**-2.67**	108.0	3.01	93.43	15.52	4.71	0.00	0.00	113.66
T323	12,857	12,857	33.4	Yes	**-2.17**	108.0	3.01	93.18	15.27	4.71	0.00	0.00	113.16
T324	12,397	12,398	32.2	No	**-1.62**	108.0	3.01	92.87	14.94	4.80	0.00	0.00	112.61
T325	11,972	11,972	37.4	No	**-1.01**	108.0	3.01	92.56	14.64	4.80	0.00	0.00	112.00
T326	11,773	11,774	39.9	Yes	**-0.60**	108.0	3.01	92.42	14.49	4.68	0.00	0.00	111.59
T327	11,445	11,446	34.7	Yes	**-0.13**	108.0	3.01	92.17	14.24	4.70	0.00	0.00	111.11
T328	10,669	10,670	34.1	Yes	**1.09**	108.0	3.01	91.56	13.64	4.69	0.00	0.00	109.89
T329	9,723	9,724	40.6	Yes	**2.72**	108.0	3.01	90.76	12.86	4.66	0.00	0.00	108.27
T330	9,578	9,579	34.2	Yes	**2.95**	108.0	3.01	90.63	12.73	4.68	0.00	0.00	108.04
T331	10,285	10,286	35.9	Yes	**1.73**	108.0	3.01	91.24	13.33	4.68	0.00	0.00	109.25
T332	10,315	10,315	33.1	No	**1.57**	108.0	3.01	91.27	13.35	4.80	0.00	0.00	109.42
T333	11,147	11,148	35.8	No	**0.23**	108.0	3.01	91.94	14.02	4.80	0.00	0.00	110.76
T334	11,400	11,401	29.9	No	**-0.16**	108.0	3.01	92.14	14.21	4.80	0.00	0.00	111.15
T335	11,929	11,929	27.2	No	**-0.95**	108.0	3.01	92.53	14.60	4.80	0.00	0.00	111.94
Sum	26.16												

Noise sensitive area: SSA021 SSA021

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	12,105	12,105	59.3	Yes	**1.65**	107.5	3.01	92.66	11.58	4.63	0.00	0.00	108.87
402	12,465	12,465	63.0	Yes	**1.28**	107.5	3.01	92.91	11.70	4.63	0.00	0.00	109.25
403	13,094	13,094	59.1	Yes	**0.63**	107.5	3.01	93.34	11.91	4.65	0.00	0.00	109.90
404	13,445	13,446	63.6	Yes	**0.29**	107.5	3.01	93.57	12.02	4.64	0.00	0.00	110.23
405	13,593	13,593	53.7	No	**-0.01**	107.5	3.01	93.67	12.07	4.80	0.00	0.00	110.53
406	13,519	13,519	55.4	No	**0.06**	107.5	3.01	93.62	12.04	4.80	0.00	0.00	110.46
407	14,387	14,387	52.6	Yes	**-0.62**	107.5	3.01	94.16	12.31	4.68	0.00	0.00	111.14
408	9,139	9,140	64.0	Yes	**5.33**	107.5	3.01	90.22	10.42	4.56	0.00	0.00	105.20
409	9,849	9,849	60.0	Yes	**4.34**	107.5	3.01	90.87	10.72	4.59	0.00	0.00	106.18
410	10,038	10,039	63.6	Yes	**4.10**	107.5	3.01	91.03	10.80	4.58	0.00	0.00	106.42
411	10,360	10,360	64.2	Yes	**3.69**	107.5	3.01	91.31	10.93	4.59	0.00	0.00	106.83
412	10,433	10,433	66.2	Yes	**3.61**	107.5	3.01	91.37	10.96	4.58	0.00	0.00	106.92
413	10,831	10,832	66.3	Yes	**3.12**	107.5	3.01	91.69	11.12	4.59	0.00	0.00	107.40
414	11,226	11,226	66.3	Yes	**2.65**	107.5	3.01	92.00	11.27	4.60	0.00	0.00	107.87
415	5,968	5,969	54.6	Yes	**10.82**	107.5	3.01	86.52	8.70	4.49	0.00	0.00	99.71
416	5,890	5,891	56.7	Yes	**11.00**	107.5	3.01	86.40	8.65	4.47	0.00	0.00	99.53
417	5,464	5,465	53.2	Yes	**11.95**	107.5	3.01	85.75	8.36	4.47	0.00	0.00	98.58

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

...continued from previous page

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
418	5,301	5,301	48.9	Yes	**12.31**	107.5	3.01	85.49	8.24	4.49	0.00	0.00	98.22
419	4,443	4,444	52.5	Yes	**14.59**	107.5	3.01	83.96	7.58	4.40	0.00	0.00	95.93
420	4,728	4,728	54.6	Yes	**13.81**	107.5	3.01	84.49	7.81	4.41	0.00	0.00	96.71
421	5,920	5,921	70.3	Yes	**11.01**	107.5	3.01	86.45	8.67	4.40	0.00	0.00	99.51
422	5,959	5,960	58.1	Yes	**10.86**	107.5	3.01	86.50	8.70	4.47	0.00	0.00	99.67
423	5,968	5,969	59.7	Yes	**10.85**	107.5	3.01	86.52	8.70	4.46	0.00	0.00	99.68
424	6,144	6,145	52.5	Yes	**10.43**	107.5	3.01	86.77	8.82	4.51	0.00	0.00	100.09
425	6,492	6,493	51.6	Yes	**9.71**	107.5	3.01	87.25	9.03	4.53	0.00	0.00	100.81
426	1,967	1,970	57.8	Yes	**24.92**	107.5	3.01	76.89	4.92	3.79	0.00	0.00	85.60
427	2,364	2,366	57.3	Yes	**22.62**	107.5	3.01	78.48	5.45	3.97	0.00	0.00	87.91
428	2,736	2,738	56.3	Yes	**20.77**	107.5	3.01	79.75	5.91	4.10	0.00	0.00	89.75
429	3,257	3,259	47.1	Yes	**18.48**	107.5	3.01	81.26	6.48	4.31	0.00	0.00	92.05
430	3,613	3,614	51.6	Yes	**17.22**	107.5	3.01	82.16	6.84	4.31	0.00	0.00	93.31
431	4,223	4,224	50.9	Yes	**15.23**	107.5	3.01	83.51	7.39	4.39	0.00	0.00	95.30
432	4,499	4,500	48.8	Yes	**14.40**	107.5	3.01	84.06	7.63	4.43	0.00	0.00	96.12
433	10,801	10,802	52.9	No	**2.95**	107.5	3.01	91.67	11.11	4.80	0.00	0.00	107.58
434	9,304	9,305	60.2	No	**4.86**	107.5	3.01	90.37	10.49	4.80	0.00	0.00	105.66
435	8,497	8,497	58.9	No	**6.02**	107.5	3.01	89.59	10.12	4.80	0.00	0.00	104.50
436	8,031	8,031	60.3	No	**6.74**	107.5	3.01	89.10	9.89	4.80	0.00	0.00	103.78
437	7,701	7,702	56.0	No	**7.28**	107.5	3.01	88.73	9.72	4.80	0.00	0.00	103.25
438	7,681	7,681	54.7	No	**7.31**	107.5	3.01	88.71	9.71	4.80	0.00	0.00	103.21
439	4,949	4,951	68.9	No	**12.85**	107.5	3.01	84.89	7.98	4.80	0.00	0.00	97.68
440	4,528	4,529	65.9	No	**13.96**	107.5	3.01	84.12	7.65	4.80	0.00	0.00	96.57
441	4,358	4,359	63.4	No	**14.43**	107.5	3.01	83.79	7.51	4.80	0.00	0.00	96.10
442	3,957	3,959	68.7	Yes	**16.21**	107.5	3.01	82.95	7.16	4.21	0.00	0.00	94.32
443	3,737	3,738	67.4	Yes	**16.93**	107.5	3.01	82.45	6.95	4.18	0.00	0.00	93.59
444	3,738	3,740	69.8	Yes	**16.95**	107.5	3.01	82.46	6.96	4.16	0.00	0.00	93.58
445	8,735	8,736	60.7	No	**5.67**	107.5	3.01	89.83	10.23	4.80	0.00	0.00	104.86
446	8,219	8,220	58.4	No	**6.45**	107.5	3.01	89.30	9.98	4.80	0.00	0.00	104.08
447	7,293	7,294	54.3	No	**7.97**	107.5	3.01	88.26	9.50	4.80	0.00	0.00	102.56
448	6,900	6,901	57.0	No	**8.67**	107.5	3.01	87.78	9.28	4.80	0.00	0.00	101.85
449	6,272	6,273	64.1	No	**9.88**	107.5	3.01	86.95	8.90	4.80	0.00	0.00	100.65
450	6,127	6,128	63.5	No	**10.17**	107.5	3.01	86.75	8.80	4.80	0.00	0.00	100.35
451	5,466	5,467	70.0	No	**11.61**	107.5	3.01	85.76	8.36	4.80	0.00	0.00	98.92
452	9,244	9,245	57.7	No	**4.94**	107.5	3.01	90.32	10.46	4.80	0.00	0.00	105.58
453	8,412	8,412	48.5	No	**6.15**	107.5	3.01	89.50	10.08	4.80	0.00	0.00	104.37
454	7,888	7,888	53.9	No	**6.97**	107.5	3.01	88.94	9.81	4.80	0.00	0.00	103.55
455	6,852	6,852	59.3	No	**8.76**	107.5	3.01	87.72	9.25	4.80	0.00	0.00	101.76
456	6,952	6,953	61.5	Yes	**8.88**	107.5	3.01	87.84	9.31	4.50	0.00	0.00	101.65
457	6,873	6,874	59.4	Yes	**9.02**	107.5	3.01	87.74	9.26	4.51	0.00	0.00	101.51
458	10,181	10,181	53.3	No	**3.71**	107.5	3.01	91.16	10.86	4.80	0.00	0.00	106.82
459	9,778	9,779	54.9	No	**4.22**	107.5	3.01	90.81	10.69	4.80	0.00	0.00	106.30
460	10,167	10,167	52.5	No	**3.72**	107.5	3.01	91.14	10.86	4.80	0.00	0.00	106.80
461	9,702	9,702	55.7	No	**4.32**	107.5	3.01	90.74	10.66	4.80	0.00	0.00	106.20
462	9,419	9,420	64.0	No	**4.70**	107.5	3.01	90.48	10.54	4.80	0.00	0.00	105.82
463	8,955	8,956	57.3	No	**5.35**	107.5	3.01	90.04	10.33	4.80	0.00	0.00	105.17
464	8,915	8,916	54.0	No	**5.41**	107.5	3.01	90.00	10.31	4.80	0.00	0.00	105.12
T001	9,461	9,462	57.9	Yes	**3.25**	108.0	3.01	90.52	12.63	4.59	0.00	0.00	107.74
T002	9,263	9,264	51.6	Yes	**3.58**	108.0	3.01	90.34	12.46	4.61	0.00	0.00	107.40
T003	8,969	8,969	44.5	Yes	**2.36**	107.0	3.01	90.06	13.01	4.63	0.00	0.00	107.69
T004	10,121	10,121	42.3	Yes	**0.44**	107.0	3.01	91.10	13.85	4.66	0.00	0.00	109.61
T005	8,396	8,396	41.9	Yes	**3.39**	107.0	3.01	89.48	12.55	4.63	0.00	0.00	106.66
T006	8,320	8,320	46.7	Yes	**5.38**	108.0	3.01	89.40	11.59	4.61	0.00	0.00	105.61
T007	7,640	7,640	46.5	Yes	**6.80**	108.0	3.01	88.66	10.94	4.59	0.00	0.00	104.19
T008	9,645	9,645	48.0	Yes	**1.23**	107.0	3.01	90.69	13.51	4.63	0.00	0.00	108.83
T009	10,296	10,296	47.4	Yes	**1.75**	108.0	3.01	91.25	13.34	4.64	0.00	0.00	109.23
T010	9,505	9,505	51.1	Yes	**3.14**	108.0	3.01	90.56	12.67	4.62	0.00	0.00	107.84
T011	11,007	11,007	33.5	Yes	**0.55**	108.0	3.01	91.83	13.91	4.70	0.00	0.00	110.44
T012	11,148	11,148	39.7	Yes	**-1.11**	107.0	3.01	91.94	14.54	4.68	0.00	0.00	111.16
T013	10,140	10,140	42.2	Yes	**0.41**	107.0	3.01	91.12	13.86	4.66	0.00	0.00	109.64
T014	9,163	9,163	38.3	Yes	**2.00**	107.0	3.01	90.24	13.15	4.66	0.00	0.00	108.05
T015	8,263	8,263	47.0	Yes	**5.50**	108.0	3.01	89.34	11.54	4.61	0.00	0.00	105.49
T016	9,521	9,521	40.2	Yes	**1.40**	107.0	3.01	90.57	13.42	4.66	0.00	0.00	108.65

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T017	7,956	7,956	43.7	Yes	**6.11**	108.0	3.01	89.01	11.25	4.61	0.00	0.00	104.87
T018	8,727	8,727	36.5	Yes	**2.76**	107.0	3.01	89.82	12.82	4.66	0.00	0.00	107.29
T019	9,684	9,684	39.1	Yes	**1.13**	107.0	3.01	90.72	13.54	4.66	0.00	0.00	108.92
T020	7,672	7,672	45.4	Yes	**6.72**	108.0	3.01	88.70	10.97	4.60	0.00	0.00	104.26
T022	10,976	10,976	33.6	Yes	**-0.88**	107.0	3.01	91.81	14.43	4.70	0.00	0.00	110.93
T023	9,870	9,871	55.5	Yes	**0.88**	107.0	3.01	90.89	13.67	4.61	0.00	0.00	109.17
T025	8,422	8,422	39.3	Yes	**5.15**	108.0	3.01	89.51	11.69	4.64	0.00	0.00	105.84
T026	7,172	7,172	41.3	Yes	**7.81**	108.0	3.01	88.11	10.46	4.60	0.00	0.00	103.18
T027	9,237	9,237	49.2	Yes	**3.62**	108.0	3.01	90.31	12.43	4.62	0.00	0.00	107.36
T028	8,179	8,179	44.7	Yes	**5.66**	108.0	3.01	89.25	11.46	4.61	0.00	0.00	105.33
T029	11,701	11,701	40.7	Yes	**-1.88**	107.0	3.01	92.36	14.89	4.68	0.00	0.00	111.93
T030	9,686	9,687	36.7	Yes	**2.77**	108.0	3.01	90.72	12.82	4.67	0.00	0.00	108.22
T031	11,016	11,016	37.4	Yes	**-0.92**	107.0	3.01	91.84	14.45	4.68	0.00	0.00	110.98
T032	8,512	8,512	37.1	Yes	**3.16**	107.0	3.01	89.60	12.64	4.65	0.00	0.00	106.90
T033	10,735	10,735	39.1	Yes	**-0.51**	107.0	3.01	91.62	14.27	4.68	0.00	0.00	110.56
T201	9,827	9,827	42.2	Yes	**2.54**	108.0	3.01	90.85	12.94	4.65	0.00	0.00	108.45
T202	9,987	9,987	40.3	Yes	**2.26**	108.0	3.01	90.99	13.08	4.66	0.00	0.00	108.73
T203	11,426	11,426	37.2	Yes	**-0.09**	108.0	3.01	92.16	14.23	4.69	0.00	0.00	111.08
T204	11,299	11,299	43.9	Yes	**0.13**	108.0	3.01	92.06	14.13	4.67	0.00	0.00	110.86
T205	11,743	11,743	48.8	Yes	**-0.53**	108.0	3.01	92.40	14.47	4.66	0.00	0.00	111.52
T206	12,326	12,326	40.7	Yes	**-1.41**	108.0	3.01	92.82	14.89	4.69	0.00	0.00	112.40
T207	13,124	13,124	51.4	Yes	**-2.49**	108.0	3.01	93.36	15.45	4.67	0.00	0.00	113.48
T208	12,266	12,266	36.6	Yes	**-1.33**	108.0	3.01	92.77	14.85	4.70	0.00	0.00	112.32
T209	12,455	12,455	44.4	Yes	**-1.58**	108.0	3.01	92.91	14.98	4.68	0.00	0.00	112.57
T210	12,598	12,598	44.9	Yes	**-1.78**	108.0	3.01	93.01	15.09	4.68	0.00	0.00	112.77
T211	11,456	11,456	47.0	Yes	**-0.11**	108.0	3.01	92.18	14.25	4.66	0.00	0.00	111.09
T212	11,231	11,231	47.6	Yes	**0.24**	108.0	3.01	92.01	14.08	4.66	0.00	0.00	110.74
T213	11,052	11,052	47.8	Yes	**0.53**	108.0	3.01	91.87	13.94	4.65	0.00	0.00	110.46
T214	11,160	11,160	47.9	Yes	**0.36**	108.0	3.01	91.95	14.02	4.65	0.00	0.00	110.63
T215	9,359	9,359	51.6	Yes	**3.41**	108.0	3.01	90.42	12.54	4.61	0.00	0.00	107.58
T216	10,038	10,038	44.4	Yes	**2.18**	108.0	3.01	91.03	13.12	4.65	0.00	0.00	108.80
T217	10,441	10,441	41.7	Yes	**1.49**	108.0	3.01	91.38	13.45	4.66	0.00	0.00	109.49
T218	12,644	12,644	50.6	Yes	**-1.83**	108.0	3.01	93.04	15.12	4.66	0.00	0.00	112.82
T219	12,588	12,588	46.2	No	**-1.89**	108.0	3.01	93.00	15.08	4.80	0.00	0.00	112.88
T220	13,017	13,017	42.1	No	**-2.48**	108.0	3.01	93.29	15.38	4.80	0.00	0.00	113.47
T221	13,337	13,337	36.4	No	**-2.91**	108.0	3.01	93.50	15.59	4.80	0.00	0.00	113.90
T222	11,657	11,657	37.7	No	**-0.55**	108.0	3.01	92.33	14.40	4.80	0.00	0.00	111.53
T223	11,022	11,022	38.8	No	**0.42**	108.0	3.01	91.85	13.92	4.80	0.00	0.00	110.56
T224	11,999	11,999	42.6	No	**-1.05**	108.0	3.01	92.58	14.66	4.80	0.00	0.00	112.04
T225	11,685	11,685	41.8	No	**-0.59**	108.0	3.01	92.35	14.42	4.80	0.00	0.00	111.58
T226	10,921	10,921	44.6	No	**0.58**	108.0	3.01	91.77	13.84	4.80	0.00	0.00	110.40
T227	10,155	10,155	40.7	No	**1.83**	108.0	3.01	91.13	13.22	4.80	0.00	0.00	109.15
T228	11,683	11,683	34.8	No	**-0.59**	108.0	3.01	92.35	14.42	4.80	0.00	0.00	111.57
T229	9,946	9,946	43.3	No	**2.19**	108.0	3.01	90.95	13.05	4.80	0.00	0.00	108.80
T230	9,879	9,880	46.3	No	**2.30**	108.0	3.01	90.89	12.99	4.80	0.00	0.00	108.68
T231	9,497	9,497	41.1	No	**2.97**	108.0	3.01	90.55	12.66	4.80	0.00	0.00	108.01
T232	8,332	8,332	41.5	No	**5.17**	108.0	3.01	89.42	11.61	4.80	0.00	0.00	105.82
T233	8,103	8,103	44.5	No	**5.63**	108.0	3.01	89.17	11.39	4.80	0.00	0.00	105.36
T234	7,809	7,810	47.9	No	**6.23**	108.0	3.01	88.85	11.10	4.80	0.00	0.00	104.76
T235	7,953	7,954	40.0	Yes	**6.10**	108.0	3.01	89.01	11.24	4.63	0.00	0.00	104.88
T301	14,777	14,777	38.8	Yes	**-4.64**	108.0	3.01	94.39	16.52	4.71	0.00	0.00	115.63
T302	15,224	15,224	39.4	Yes	**-5.17**	108.0	3.01	94.65	16.80	4.71	0.00	0.00	116.16
T303	15,737	15,737	44.5	Yes	**-5.76**	108.0	3.01	94.94	17.10	4.70	0.00	0.00	116.74
T304	16,260	16,260	43.4	No	**-6.44**	108.0	3.01	95.22	17.40	4.80	0.00	0.00	117.42
T305	15,950	15,950	44.0	Yes	**-6.00**	108.0	3.01	95.06	17.22	4.71	0.00	0.00	116.99
T306	15,777	15,777	48.4	No	**-5.90**	108.0	3.01	94.96	17.12	4.80	0.00	0.00	116.88
T307	14,983	14,983	43.5	No	**-4.97**	108.0	3.01	94.51	16.65	4.80	0.00	0.00	115.96
T308	10,270	10,270	39.2	No	**1.64**	108.0	3.01	91.23	13.31	4.80	0.00	0.00	109.35
T309	10,006	10,006	40.2	No	**2.09**	108.0	3.01	91.01	13.10	4.80	0.00	0.00	108.90
T310	10,203	10,203	40.4	No	**1.75**	108.0	3.01	91.17	13.26	4.80	0.00	0.00	109.23
T311	9,931	9,931	42.9	No	**2.21**	108.0	3.01	90.94	13.03	4.80	0.00	0.00	108.77
T312	9,648	9,649	42.4	No	**2.71**	108.0	3.01	90.69	12.79	4.80	0.00	0.00	108.28
T313	9,351	9,351	51.7	No	**3.24**	108.0	3.01	90.42	12.53	4.80	0.00	0.00	107.75

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T314	8,869	8,869	38.9	No	**4.13**	108.0	3.01	89.96	12.10	4.80	0.00	0.00	106.86
T315	8,447	8,447	44.5	No	**4.94**	108.0	3.01	89.53	11.71	4.80	0.00	0.00	106.05
T316	8,285	8,285	49.9	No	**5.26**	108.0	3.01	89.37	11.56	4.80	0.00	0.00	105.73
T317	8,641	8,642	56.0	No	**4.56**	108.0	3.01	89.73	11.90	4.80	0.00	0.00	106.43
T318	8,944	8,944	41.3	No	**3.99**	108.0	3.01	90.03	12.17	4.80	0.00	0.00	107.00
T319	8,244	8,244	44.5	No	**5.34**	108.0	3.01	89.32	11.52	4.80	0.00	0.00	105.65
T320	8,355	8,355	50.4	No	**5.12**	108.0	3.01	89.44	11.63	4.80	0.00	0.00	105.87
T321	8,647	8,648	43.6	No	**4.55**	108.0	3.01	89.74	11.90	4.80	0.00	0.00	106.44
T322	7,837	7,838	42.1	No	**6.17**	108.0	3.01	88.88	11.13	4.80	0.00	0.00	104.81
T323	7,480	7,480	41.6	No	**6.93**	108.0	3.01	88.48	10.78	4.80	0.00	0.00	104.05
T324	6,978	6,978	41.4	No	**8.05**	108.0	3.01	87.87	10.26	4.80	0.00	0.00	102.93
T325	6,694	6,695	44.6	No	**8.71**	108.0	3.01	87.51	9.96	4.80	0.00	0.00	102.27
T326	6,410	6,411	46.3	No	**9.40**	108.0	3.01	87.14	9.65	4.80	0.00	0.00	101.59
T327	6,064	6,065	41.2	No	**10.26**	108.0	3.01	86.66	9.27	4.80	0.00	0.00	100.73
T328	5,242	5,243	40.9	No	**12.48**	108.0	3.01	85.39	8.31	4.80	0.00	0.00	98.51
T329	4,365	4,366	43.4	No	**15.17**	108.0	3.01	83.80	7.22	4.80	0.00	0.00	95.82
T330	4,149	4,149	39.1	No	**15.89**	108.0	3.01	83.36	6.94	4.80	0.00	0.00	95.10
T331	4,853	4,854	43.1	Yes	**13.93**	108.0	3.01	84.72	7.84	4.50	0.00	0.00	97.06
T332	4,914	4,915	41.4	No	**13.44**	108.0	3.01	84.83	7.91	4.80	0.00	0.00	97.54
T333	5,749	5,750	45.3	No	**11.08**	108.0	3.01	86.19	8.91	4.80	0.00	0.00	99.90
T334	5,975	5,975	38.7	No	**10.49**	108.0	3.01	86.53	9.17	4.80	0.00	0.00	100.49
T335	6,509	6,509	37.0	No	**9.16**	108.0	3.01	87.27	9.76	4.80	0.00	0.00	101.83
Sum	32.31												

Noise sensitive area: SSA022 SSA022

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	13,198	13,199	47.2	No	**0.37**	107.5	3.01	93.41	11.94	4.80	0.00	0.00	110.15
402	13,509	13,509	53.0	No	**0.07**	107.5	3.01	93.61	12.04	4.80	0.00	0.00	110.45
403	14,100	14,101	50.3	No	**-0.48**	107.5	3.01	93.98	12.22	4.80	0.00	0.00	111.01
404	14,387	14,388	56.6	No	**-0.74**	107.5	3.01	94.16	12.31	4.80	0.00	0.00	111.27
405	14,454	14,455	48.2	No	**-0.80**	107.5	3.01	94.20	12.33	4.80	0.00	0.00	111.33
406	14,276	14,276	49.3	No	**-0.64**	107.5	3.01	94.09	12.27	4.80	0.00	0.00	111.17
407	15,320	15,321	46.1	No	**-1.55**	107.5	3.01	94.71	12.57	4.80	0.00	0.00	112.08
408	8,973	8,973	61.1	No	**5.32**	107.5	3.01	90.06	10.34	4.80	0.00	0.00	105.20
409	9,704	9,705	54.9	No	**4.32**	107.5	3.01	90.74	10.66	4.80	0.00	0.00	106.20
410	9,757	9,757	63.2	No	**4.25**	107.5	3.01	90.79	10.69	4.80	0.00	0.00	106.27
411	9,997	9,998	65.5	No	**3.94**	107.5	3.01	91.00	10.79	4.80	0.00	0.00	106.58
412	9,910	9,911	67.1	No	**4.05**	107.5	3.01	90.92	10.75	4.80	0.00	0.00	106.47
413	10,238	10,239	67.7	No	**3.63**	107.5	3.01	91.21	10.89	4.80	0.00	0.00	106.89
414	10,617	10,618	68.0	No	**3.17**	107.5	3.01	91.52	11.04	4.80	0.00	0.00	107.36
415	8,615	8,616	37.8	No	**5.84**	107.5	3.01	89.71	10.17	4.80	0.00	0.00	104.68
416	8,455	8,456	40.4	No	**6.08**	107.5	3.01	89.54	10.10	4.80	0.00	0.00	104.44
417	7,947	7,948	37.7	No	**6.87**	107.5	3.01	89.01	9.84	4.80	0.00	0.00	103.65
418	7,672	7,673	32.7	No	**7.32**	107.5	3.01	88.70	9.70	4.80	0.00	0.00	103.20
419	6,663	6,664	36.1	No	**9.11**	107.5	3.01	87.47	9.14	4.80	0.00	0.00	101.41
420	6,781	6,782	38.6	No	**8.89**	107.5	3.01	87.63	9.21	4.80	0.00	0.00	101.63
421	7,754	7,756	52.9	No	**7.19**	107.5	3.01	88.79	9.75	4.80	0.00	0.00	103.34
422	7,631	7,632	41.1	No	**7.39**	107.5	3.01	88.65	9.68	4.80	0.00	0.00	103.13
423	7,501	7,502	44.9	No	**7.61**	107.5	3.01	88.50	9.61	4.80	0.00	0.00	102.91
424	7,342	7,343	41.2	No	**7.88**	107.5	3.01	88.32	9.52	4.80	0.00	0.00	102.64
425	7,557	7,558	43.7	No	**7.52**	107.5	3.01	88.57	9.64	4.80	0.00	0.00	103.01
426	3,808	3,811	49.1	Yes	**16.52**	107.5	3.01	82.62	7.02	4.36	0.00	0.00	94.00
427	3,658	3,661	52.4	Yes	**17.06**	107.5	3.01	82.27	6.88	4.31	0.00	0.00	93.47
428	3,618	3,621	51.7	Yes	**17.19**	107.5	3.01	82.18	6.84	4.31	0.00	0.00	93.33
429	4,036	4,038	44.8	Yes	**15.75**	107.5	3.01	83.12	7.23	4.42	0.00	0.00	94.77
430	4,047	4,049	46.1	Yes	**15.73**	107.5	3.01	83.15	7.24	4.41	0.00	0.00	94.80
431	4,526	4,528	49.1	No	**13.96**	107.5	3.01	84.12	7.65	4.80	0.00	0.00	96.57
432	4,568	4,570	45.8	No	**13.84**	107.5	3.01	84.20	7.68	4.80	0.00	0.00	96.68
433	12,318	12,319	38.1	No	**1.26**	107.5	3.01	92.81	11.66	4.80	0.00	0.00	109.27
434	10,866	10,867	46.9	No	**2.87**	107.5	3.01	91.72	11.13	4.80	0.00	0.00	107.65

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
435	10,177	10,178	47.8	No	**3.71**	107.5	3.01	91.15	10.86	4.80	0.00	0.00	106.81
436	9,822	9,823	49.1	No	**4.17**	107.5	3.01	90.85	10.71	4.80	0.00	0.00	106.36
437	9,451	9,452	45.2	No	**4.66**	107.5	3.01	90.51	10.55	4.80	0.00	0.00	105.86
438	9,025	9,026	40.4	No	**5.25**	107.5	3.01	90.11	10.36	4.80	0.00	0.00	105.27
439	5,781	5,783	54.3	Yes	**11.22**	107.5	3.01	86.24	8.58	4.48	0.00	0.00	99.30
440	5,281	5,283	53.2	Yes	**12.38**	107.5	3.01	85.46	8.23	4.46	0.00	0.00	98.14
441	4,852	4,854	51.7	Yes	**13.46**	107.5	3.01	84.72	7.91	4.44	0.00	0.00	97.07
442	4,401	4,403	59.0	Yes	**14.76**	107.5	3.01	83.88	7.55	4.34	0.00	0.00	95.76
443	3,924	3,926	58.6	Yes	**16.23**	107.5	3.01	82.88	7.13	4.29	0.00	0.00	94.30
444	3,609	3,612	63.0	Yes	**17.33**	107.5	3.01	82.15	6.83	4.20	0.00	0.00	93.19
445	10,005	10,006	44.6	No	**3.93**	107.5	3.01	91.01	10.79	4.80	0.00	0.00	106.59
446	9,452	9,453	42.5	No	**4.66**	107.5	3.01	90.51	10.55	4.80	0.00	0.00	105.87
447	8,299	8,300	36.9	No	**6.32**	107.5	3.01	89.38	10.02	4.80	0.00	0.00	104.20
448	7,851	7,852	39.5	No	**7.03**	107.5	3.01	88.90	9.80	4.80	0.00	0.00	103.49
449	7,227	7,229	46.5	Yes	**8.30**	107.5	3.01	88.18	9.46	4.58	0.00	0.00	102.22
450	6,944	6,946	47.2	Yes	**8.82**	107.5	3.01	87.83	9.30	4.57	0.00	0.00	101.70
451	6,274	6,276	54.9	Yes	**10.17**	107.5	3.01	86.95	8.90	4.50	0.00	0.00	100.35
452	10,495	10,496	41.7	No	**3.32**	107.5	3.01	91.42	10.99	4.80	0.00	0.00	107.21
453	8,106	8,107	44.0	Yes	**6.81**	107.5	3.01	89.18	9.93	4.61	0.00	0.00	103.72
454	7,537	7,538	49.5	Yes	**7.77**	107.5	3.01	88.55	9.63	4.58	0.00	0.00	102.75
455	6,457	6,458	54.0	Yes	**9.80**	107.5	3.01	87.20	9.01	4.51	0.00	0.00	100.73
456	6,334	6,335	58.0	Yes	**10.07**	107.5	3.01	87.04	8.94	4.49	0.00	0.00	100.46
457	6,086	6,087	55.6	Yes	**10.57**	107.5	3.01	86.69	8.78	4.49	0.00	0.00	99.96
458	11,440	11,441	37.4	No	**2.21**	107.5	3.01	92.17	11.35	4.80	0.00	0.00	108.32
459	11,046	11,047	39.3	No	**2.66**	107.5	3.01	91.86	11.20	4.80	0.00	0.00	107.87
460	11,076	11,077	37.7	No	**2.62**	107.5	3.01	91.89	11.21	4.80	0.00	0.00	107.90
461	10,596	10,597	41.0	No	**3.19**	107.5	3.01	91.50	11.03	4.80	0.00	0.00	107.33
462	10,233	10,234	50.4	No	**3.64**	107.5	3.01	91.20	10.88	4.80	0.00	0.00	106.88
463	9,773	9,774	43.3	No	**4.23**	107.5	3.01	90.80	10.69	4.80	0.00	0.00	106.29
464	9,507	9,508	42.1	No	**4.58**	107.5	3.01	90.56	10.58	4.80	0.00	0.00	105.94
T001	11,397	11,398	35.9	No	**-0.16**	108.0	3.01	92.14	14.21	4.80	0.00	0.00	111.14
T002	10,951	10,952	38.0	No	**0.54**	108.0	3.01	91.79	13.86	4.80	0.00	0.00	110.45
T003	11,485	11,486	28.4	No	**-1.70**	107.0	3.01	92.20	14.75	4.80	0.00	0.00	111.76
T004	12,564	12,564	27.2	No	**-3.13**	107.0	3.01	92.98	15.41	4.80	0.00	0.00	113.19
T005	10,719	10,720	26.5	No	**-0.61**	107.0	3.01	91.60	14.26	4.80	0.00	0.00	110.66
T006	9,848	9,849	33.5	No	**2.36**	108.0	3.01	90.87	12.96	4.80	0.00	0.00	108.63
T007	9,472	9,473	28.1	No	**3.02**	108.0	3.01	90.53	12.64	4.80	0.00	0.00	107.97
T008	12,228	12,228	26.6	No	**-2.70**	107.0	3.01	92.75	15.21	4.80	0.00	0.00	112.76
T009	12,182	12,182	25.5	No	**-1.32**	108.0	3.01	92.71	14.79	4.80	0.00	0.00	112.30
T010	11,319	11,320	32.6	No	**-0.04**	108.0	3.01	92.08	14.15	4.80	0.00	0.00	111.02
T011	12,693	12,694	19.1	No	**-2.04**	108.0	3.01	93.07	15.15	4.80	0.00	0.00	113.02
T012	13,354	13,354	22.6	No	**-4.11**	107.0	3.01	93.51	15.85	4.80	0.00	0.00	114.17
T013	12,525	12,525	26.6	No	**-3.09**	107.0	3.01	92.96	15.38	4.80	0.00	0.00	113.14
T014	11,440	11,440	23.1	No	**-1.64**	107.0	3.01	92.17	14.73	4.80	0.00	0.00	111.69
T015	10,118	10,119	27.7	No	**1.90**	108.0	3.01	91.10	13.19	4.80	0.00	0.00	109.09
T016	11,997	11,998	24.9	No	**-2.40**	107.0	3.01	92.58	15.07	4.80	0.00	0.00	112.45
T017	9,374	9,374	31.1	No	**3.19**	108.0	3.01	90.44	12.55	4.80	0.00	0.00	107.79
T018	10,868	10,868	16.9	No	**-0.83**	107.0	3.01	91.72	14.36	4.80	0.00	0.00	110.88
T019	11,896	11,896	22.4	No	**-2.26**	107.0	3.01	92.51	15.01	4.80	0.00	0.00	112.32
T020	9,309	9,310	30.6	No	**3.31**	108.0	3.01	90.38	12.50	4.80	0.00	0.00	107.68
T022	13,465	13,465	18.5	No	**-4.25**	107.0	3.01	93.58	15.92	4.80	0.00	0.00	114.30
T023	12,547	12,547	36.3	No	**-3.11**	107.0	3.01	92.97	15.40	4.80	0.00	0.00	113.17
T025	9,756	9,757	25.8	No	**2.52**	108.0	3.01	90.79	12.88	4.80	0.00	0.00	108.47
T026	8,671	8,672	29.3	No	**4.50**	108.0	3.01	89.76	11.92	4.80	0.00	0.00	106.49
T027	11,254	11,255	26.1	No	**0.06**	108.0	3.01	92.03	14.10	4.80	0.00	0.00	110.92
T028	9,879	9,879	31.1	No	**2.30**	108.0	3.01	90.89	12.99	4.80	0.00	0.00	108.68
T029	13,905	13,905	23.4	No	**-4.76**	107.0	3.01	93.86	16.15	4.80	0.00	0.00	114.82
T030	11,323	11,323	25.8	No	**-0.04**	108.0	3.01	92.08	14.15	4.80	0.00	0.00	111.03
T031	13,309	13,310	21.7	No	**-4.06**	107.0	3.01	93.48	15.83	4.80	0.00	0.00	114.11
T032	10,950	10,950	21.2	No	**-0.95**	107.0	3.01	91.79	14.41	4.80	0.00	0.00	111.00
T033	13,138	13,138	24.1	No	**-3.85**	107.0	3.01	93.37	15.73	4.80	0.00	0.00	113.90
T201	11,112	11,112	29.2	No	**0.28**	108.0	3.01	91.92	13.99	4.80	0.00	0.00	110.70
T202	11,202	11,202	28.6	No	**0.14**	108.0	3.01	91.99	14.06	4.80	0.00	0.00	110.84

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T203	12,751	12,751	23.5	No	**-2.12**	108.0	3.01	93.11	15.19	4.80	0.00	0.00	113.10
T204	12,525	12,526	29.8	No	**-1.80**	108.0	3.01	92.96	15.04	4.80	0.00	0.00	112.79
T205	12,894	12,895	35.2	No	**-2.31**	108.0	3.01	93.21	15.29	4.80	0.00	0.00	113.30
T206	13,781	13,781	26.6	No	**-3.49**	108.0	3.01	93.79	15.89	4.80	0.00	0.00	114.47
T207	14,552	14,553	36.5	No	**-4.45**	108.0	3.01	94.26	16.38	4.80	0.00	0.00	115.44
T208	14,750	14,750	20.8	No	**-4.69**	108.0	3.01	94.38	16.51	4.80	0.00	0.00	115.68
T209	14,982	14,982	26.0	No	**-4.97**	108.0	3.01	94.51	16.65	4.80	0.00	0.00	115.96
T210	15,183	15,183	23.1	No	**-5.21**	108.0	3.01	94.63	16.77	4.80	0.00	0.00	116.20
T211	14,107	14,107	27.3	No	**-3.90**	108.0	3.01	93.99	16.10	4.80	0.00	0.00	114.89
T212	13,920	13,920	27.4	No	**-3.67**	108.0	3.01	93.87	15.98	4.80	0.00	0.00	114.65
T213	13,784	13,784	27.8	No	**-3.49**	108.0	3.01	93.79	15.89	4.80	0.00	0.00	114.48
T214	13,924	13,924	28.6	No	**-3.67**	108.0	3.01	93.88	15.98	4.80	0.00	0.00	114.66
T215	12,046	12,046	32.4	No	**-1.12**	108.0	3.01	92.62	14.69	4.80	0.00	0.00	112.11
T216	12,852	12,852	26.5	No	**-2.26**	108.0	3.01	93.18	15.26	4.80	0.00	0.00	113.24
T217	13,302	13,302	23.7	No	**-2.86**	108.0	3.01	93.48	15.57	4.80	0.00	0.00	113.85
T218	15,506	15,507	32.0	No	**-5.59**	108.0	3.01	94.81	16.96	4.80	0.00	0.00	116.57
T219	15,497	15,497	29.4	No	**-5.58**	108.0	3.01	94.81	16.96	4.80	0.00	0.00	116.56
T220	15,935	15,935	25.7	No	**-6.07**	108.0	3.01	95.05	17.22	4.80	0.00	0.00	117.06
T221	16,278	16,278	19.8	No	**-6.46**	108.0	3.01	95.23	17.41	4.80	0.00	0.00	117.44
T222	14,645	14,645	18.4	No	**-4.57**	108.0	3.01	94.31	16.44	4.80	0.00	0.00	115.55
T223	14,012	14,012	19.8	No	**-3.78**	108.0	3.01	93.93	16.04	4.80	0.00	0.00	114.77
T224	14,978	14,978	24.3	No	**-4.97**	108.0	3.01	94.51	16.65	4.80	0.00	0.00	115.96
T225	14,662	14,662	24.0	No	**-4.59**	108.0	3.01	94.32	16.45	4.80	0.00	0.00	115.58
T226	13,908	13,908	26.7	No	**-3.65**	108.0	3.01	93.87	15.97	4.80	0.00	0.00	114.64
T227	13,135	13,135	23.3	No	**-2.64**	108.0	3.01	93.37	15.46	4.80	0.00	0.00	113.63
T228	14,674	14,674	15.5	No	**-4.60**	108.0	3.01	94.33	16.46	4.80	0.00	0.00	115.59
T229	12,906	12,906	27.8	No	**-2.33**	108.0	3.01	93.22	15.30	4.80	0.00	0.00	113.32
T230	12,825	12,826	31.6	No	**-2.22**	108.0	3.01	93.16	15.25	4.80	0.00	0.00	113.21
T231	12,426	12,427	26.8	No	**-1.66**	108.0	3.01	92.89	14.96	4.80	0.00	0.00	112.65
T232	11,289	11,289	27.4	No	**0.01**	108.0	3.01	92.05	14.12	4.80	0.00	0.00	110.98
T233	11,043	11,043	30.7	No	**0.39**	108.0	3.01	91.86	13.93	4.80	0.00	0.00	110.60
T234	10,740	10,740	34.4	No	**0.87**	108.0	3.01	91.62	13.70	4.80	0.00	0.00	110.12
T235	10,826	10,826	24.5	No	**0.73**	108.0	3.01	91.69	13.76	4.80	0.00	0.00	110.25
T301	16,561	16,561	17.6	No	**-6.77**	108.0	3.01	95.38	17.57	4.80	0.00	0.00	117.75
T302	16,966	16,966	20.9	No	**-7.20**	108.0	3.01	95.59	17.80	4.80	0.00	0.00	118.19
T303	17,360	17,360	29.6	No	**-7.61**	108.0	3.01	95.79	18.01	4.80	0.00	0.00	118.60
T304	17,830	17,830	29.3	No	**-8.09**	108.0	3.01	96.02	18.26	4.80	0.00	0.00	119.08
T305	17,402	17,402	28.3	No	**-7.66**	108.0	3.01	95.81	18.03	4.80	0.00	0.00	118.64
T306	17,283	17,283	34.2	No	**-7.53**	108.0	3.01	95.75	17.97	4.80	0.00	0.00	118.52
T307	16,529	16,529	30.8	No	**-6.73**	108.0	3.01	95.37	17.55	4.80	0.00	0.00	117.72
T308	13,223	13,224	20.1	No	**-2.76**	108.0	3.01	93.43	15.52	4.80	0.00	0.00	113.75
T309	12,976	12,976	21.0	No	**-2.43**	108.0	3.01	93.26	15.35	4.80	0.00	0.00	113.41
T310	13,190	13,190	21.9	No	**-2.71**	108.0	3.01	93.40	15.50	4.80	0.00	0.00	113.70
T311	12,922	12,922	24.5	No	**-2.35**	108.0	3.01	93.23	15.31	4.80	0.00	0.00	113.34
T312	12,640	12,640	24.2	No	**-1.96**	108.0	3.01	93.03	15.12	4.80	0.00	0.00	112.95
T313	12,340	12,340	34.2	No	**-1.54**	108.0	3.01	92.83	14.90	4.80	0.00	0.00	112.53
T314	11,832	11,832	24.1	No	**-0.81**	108.0	3.01	92.46	14.53	4.80	0.00	0.00	111.79
T315	11,435	11,435	27.5	No	**-0.21**	108.0	3.01	92.17	14.24	4.80	0.00	0.00	111.20
T316	11,275	11,276	32.1	No	**0.03**	108.0	3.01	92.04	14.11	4.80	0.00	0.00	110.96
T317	11,629	11,630	38.1	No	**-0.51**	108.0	3.01	92.31	14.38	4.80	0.00	0.00	111.49
T318	11,911	11,912	22.5	No	**-0.92**	108.0	3.01	92.52	14.59	4.80	0.00	0.00	111.91
T319	11,113	11,114	29.9	No	**0.28**	108.0	3.01	91.92	13.99	4.80	0.00	0.00	110.71
T320	11,178	11,178	35.2	No	**0.18**	108.0	3.01	91.97	14.04	4.80	0.00	0.00	110.81
T321	11,429	11,430	29.8	No	**-0.20**	108.0	3.01	92.16	14.23	4.80	0.00	0.00	111.19
T322	10,521	10,522	29.8	No	**1.23**	108.0	3.01	91.44	13.52	4.80	0.00	0.00	109.76
T323	10,154	10,154	29.7	No	**1.84**	108.0	3.01	91.13	13.22	4.80	0.00	0.00	109.15
T324	9,750	9,750	29.4	No	**2.53**	108.0	3.01	90.78	12.88	4.80	0.00	0.00	108.46
T325	9,216	9,217	33.6	No	**3.48**	108.0	3.01	90.29	12.42	4.80	0.00	0.00	107.51
T326	9,065	9,066	35.9	No	**3.76**	108.0	3.01	90.15	12.28	4.80	0.00	0.00	107.23
T327	8,755	8,756	30.7	No	**4.34**	108.0	3.01	89.85	12.00	4.80	0.00	0.00	106.65
T328	8,049	8,050	30.7	No	**5.73**	108.0	3.01	89.12	11.34	4.80	0.00	0.00	105.25
T329	7,032	7,033	35.7	No	**7.93**	108.0	3.01	87.94	10.32	4.80	0.00	0.00	103.06
T330	6,978	6,979	30.0	No	**8.05**	108.0	3.01	87.88	10.26	4.80	0.00	0.00	102.94

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T331	7,766	7,767	30.6	No	**6.32**	108.0	3.01	88.81	11.06	4.80	0.00	0.00	104.67
T332	7,874	7,875	26.4	No	**6.10**	108.0	3.01	88.93	11.17	4.80	0.00	0.00	104.89
T333	8,707	8,708	29.6	No	**4.43**	108.0	3.01	89.80	11.96	4.80	0.00	0.00	106.55
T334	8,898	8,898	24.5	No	**4.07**	108.0	3.01	89.99	12.13	4.80	0.00	0.00	106.92
T335	9,438	9,439	21.8	No	**3.08**	108.0	3.01	90.50	12.61	4.80	0.00	0.00	107.91
Sum	28.80												

Noise sensitive area: SSA023 SSA023

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	13,642	13,642	49.6	No	**-0.06**	107.5	3.01	93.70	12.08	4.80	0.00	0.00	110.58
402	13,960	13,960	55.0	No	**-0.35**	107.5	3.01	93.90	12.18	4.80	0.00	0.00	110.88
403	14,557	14,558	52.0	No	**-0.89**	107.5	3.01	94.26	12.36	4.80	0.00	0.00	111.42
404	14,853	14,853	57.7	No	**-1.15**	107.5	3.01	94.44	12.44	4.80	0.00	0.00	111.68
405	14,929	14,930	49.4	No	**-1.22**	107.5	3.01	94.48	12.46	4.80	0.00	0.00	111.74
406	14,762	14,763	51.0	No	**-1.07**	107.5	3.01	94.38	12.41	4.80	0.00	0.00	111.60
407	15,789	15,789	47.1	No	**-1.94**	107.5	3.01	94.97	12.70	4.80	0.00	0.00	112.47
408	9,524	9,525	63.1	No	**4.56**	107.5	3.01	90.58	10.59	4.80	0.00	0.00	105.96
409	10,257	10,257	57.1	No	**3.61**	107.5	3.01	91.22	10.89	4.80	0.00	0.00	106.91
410	10,317	10,318	64.9	No	**3.54**	107.5	3.01	91.27	10.92	4.80	0.00	0.00	106.99
411	10,563	10,564	68.0	No	**3.23**	107.5	3.01	91.48	11.01	4.80	0.00	0.00	107.29
412	10,483	10,484	69.6	No	**3.33**	107.5	3.01	91.41	10.98	4.80	0.00	0.00	107.19
413	10,815	10,815	70.2	Yes	**3.15**	107.5	3.01	91.68	11.11	4.58	0.00	0.00	107.37
414	11,195	11,195	70.4	Yes	**2.70**	107.5	3.01	91.98	11.26	4.59	0.00	0.00	107.82
415	8,723	8,724	40.9	No	**5.69**	107.5	3.01	89.81	10.22	4.80	0.00	0.00	104.84
416	8,589	8,590	44.7	No	**5.88**	107.5	3.01	89.68	10.16	4.80	0.00	0.00	104.64
417	8,102	8,103	42.8	No	**6.63**	107.5	3.01	89.17	9.92	4.80	0.00	0.00	103.90
418	7,855	7,855	38.8	No	**7.02**	107.5	3.01	88.90	9.80	4.80	0.00	0.00	103.50
419	6,872	6,873	40.5	No	**8.72**	107.5	3.01	87.74	9.26	4.80	0.00	0.00	101.80
420	7,027	7,028	43.3	No	**8.44**	107.5	3.01	87.94	9.35	4.80	0.00	0.00	102.09
421	8,053	8,055	56.9	No	**6.70**	107.5	3.01	89.12	9.90	4.80	0.00	0.00	103.82
422	7,958	7,959	44.9	No	**6.86**	107.5	3.01	89.02	9.85	4.80	0.00	0.00	103.67
423	7,850	7,851	48.4	No	**7.03**	107.5	3.01	88.90	9.79	4.80	0.00	0.00	103.49
424	7,740	7,741	46.1	No	**7.21**	107.5	3.01	88.78	9.74	4.80	0.00	0.00	103.31
425	7,976	7,976	47.4	No	**6.83**	107.5	3.01	89.04	9.86	4.80	0.00	0.00	103.70
426	4,017	4,019	55.0	Yes	**15.90**	107.5	3.01	83.08	7.21	4.33	0.00	0.00	94.63
427	3,951	3,954	57.9	Yes	**16.13**	107.5	3.01	82.94	7.15	4.30	0.00	0.00	94.40
428	3,974	3,976	57.2	Yes	**16.05**	107.5	3.01	82.99	7.17	4.31	0.00	0.00	94.47
429	4,426	4,428	50.8	Yes	**14.63**	107.5	3.01	83.92	7.57	4.41	0.00	0.00	95.90
430	4,485	4,486	51.6	No	**14.07**	107.5	3.01	84.04	7.61	4.80	0.00	0.00	96.45
431	4,993	4,995	50.7	No	**12.74**	107.5	3.01	84.97	8.02	4.80	0.00	0.00	97.79
432	5,062	5,063	49.2	No	**12.57**	107.5	3.01	85.09	8.07	4.80	0.00	0.00	97.96
433	11,779	11,780	39.5	No	**1.83**	107.5	3.01	92.42	11.47	4.80	0.00	0.00	108.69
434	10,335	10,336	48.4	No	**3.51**	107.5	3.01	91.29	10.92	4.80	0.00	0.00	107.01
435	9,661	9,662	49.7	No	**4.38**	107.5	3.01	90.70	10.65	4.80	0.00	0.00	106.15
436	9,320	9,321	51.1	No	**4.84**	107.5	3.01	90.39	10.50	4.80	0.00	0.00	105.69
437	8,946	8,946	47.2	No	**5.36**	107.5	3.01	90.03	10.33	4.80	0.00	0.00	105.16
438	8,482	8,483	41.7	Yes	**6.21**	107.5	3.01	89.57	10.11	4.63	0.00	0.00	104.31
439	5,224	5,226	56.2	Yes	**12.54**	107.5	3.01	85.36	8.19	4.43	0.00	0.00	97.98
440	4,724	4,726	55.3	Yes	**13.82**	107.5	3.01	84.49	7.81	4.40	0.00	0.00	96.70
441	4,285	4,287	53.9	Yes	**15.06**	107.5	3.01	83.64	7.45	4.37	0.00	0.00	95.46
442	3,837	3,839	61.7	Yes	**16.54**	107.5	3.01	82.69	7.05	4.25	0.00	0.00	93.99
443	3,353	3,356	61.3	Yes	**18.25**	107.5	3.01	81.52	6.58	4.18	0.00	0.00	92.27
444	3,029	3,032	66.0	Yes	**19.60**	107.5	3.01	80.64	6.24	4.06	0.00	0.00	90.93
445	9,453	9,454	46.6	Yes	**4.82**	107.5	3.01	90.51	10.56	4.63	0.00	0.00	105.70
446	8,899	8,900	44.2	Yes	**5.60**	107.5	3.01	89.99	10.31	4.63	0.00	0.00	104.93
447	7,737	7,738	38.2	Yes	**7.38**	107.5	3.01	88.77	9.74	4.63	0.00	0.00	103.14
448	7,287	7,288	41.0	Yes	**8.17**	107.5	3.01	88.25	9.49	4.61	0.00	0.00	102.35
449	6,667	6,668	47.5	Yes	**9.35**	107.5	3.01	87.48	9.14	4.56	0.00	0.00	101.18
450	6,378	6,380	49.2	Yes	**9.93**	107.5	3.01	87.10	8.96	4.54	0.00	0.00	100.60
451	5,711	5,713	56.2	Yes	**11.39**	107.5	3.01	86.14	8.53	4.46	0.00	0.00	99.13

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
452	9,941	9,942	42.7	Yes	**4.16**	107.5	3.01	90.95	10.76	4.65	0.00	0.00	106.37
453	7,529	7,529	45.4	Yes	**7.77**	107.5	3.01	88.54	9.63	4.59	0.00	0.00	102.76
454	6,960	6,961	50.8	Yes	**8.81**	107.5	3.01	87.85	9.31	4.55	0.00	0.00	101.71
455	5,878	5,879	55.3	Yes	**11.02**	107.5	3.01	86.39	8.64	4.48	0.00	0.00	99.51
456	5,764	5,765	59.0	Yes	**11.29**	107.5	3.01	86.22	8.57	4.45	0.00	0.00	99.23
457	5,525	5,526	56.5	Yes	**11.82**	107.5	3.01	85.85	8.40	4.45	0.00	0.00	98.70
458	10,884	10,885	38.7	Yes	**2.97**	107.5	3.01	91.74	11.14	4.68	0.00	0.00	107.55
459	10,492	10,493	40.4	Yes	**3.45**	107.5	3.01	91.42	10.99	4.67	0.00	0.00	107.07
460	10,502	10,503	40.0	No	**3.31**	107.5	3.01	91.43	10.99	4.80	0.00	0.00	107.22
461	10,022	10,023	43.3	No	**3.91**	107.5	3.01	91.02	10.80	4.80	0.00	0.00	106.62
462	9,656	9,657	52.9	Yes	**4.57**	107.5	3.01	90.70	10.64	4.61	0.00	0.00	105.95
463	9,197	9,198	45.7	Yes	**5.18**	107.5	3.01	90.27	10.44	4.63	0.00	0.00	105.35
464	8,925	8,926	44.5	Yes	**5.56**	107.5	3.01	90.01	10.32	4.63	0.00	0.00	104.96
T001	11,699	11,699	38.9	No	**-0.61**	108.0	3.01	92.36	14.43	4.80	0.00	0.00	111.60
T002	11,297	11,297	41.1	No	**0.00**	108.0	3.01	92.06	14.13	4.80	0.00	0.00	110.99
T003	11,645	11,646	32.0	No	**-1.92**	107.0	3.01	92.32	14.85	4.80	0.00	0.00	111.98
T004	12,749	12,749	31.2	No	**-3.37**	107.0	3.01	93.11	15.51	4.80	0.00	0.00	113.42
T005	10,931	10,931	30.3	No	**-0.92**	107.0	3.01	91.77	14.40	4.80	0.00	0.00	110.97
T006	10,215	10,216	34.9	No	**1.73**	108.0	3.01	91.19	13.27	4.80	0.00	0.00	109.26
T007	9,784	9,785	32.4	No	**2.47**	108.0	3.01	90.81	12.91	4.80	0.00	0.00	108.52
T008	12,368	12,369	31.6	No	**-2.88**	107.0	3.01	92.85	15.29	4.80	0.00	0.00	112.94
T009	12,496	12,496	29.5	No	**-1.76**	108.0	3.01	92.94	15.01	4.80	0.00	0.00	112.75
T010	11,644	11,644	35.9	No	**-0.53**	108.0	3.01	92.32	14.39	4.80	0.00	0.00	111.52
T011	13,046	13,046	20.6	No	**-2.52**	108.0	3.01	93.31	15.40	4.80	0.00	0.00	113.51
T012	13,603	13,603	26.7	No	**-4.41**	107.0	3.01	93.67	15.99	4.80	0.00	0.00	114.46
T013	12,726	12,726	29.8	No	**-3.34**	107.0	3.01	93.09	15.50	4.80	0.00	0.00	113.39
T014	11,665	11,666	25.6	No	**-1.95**	107.0	3.01	92.34	14.87	4.80	0.00	0.00	112.01
T015	10,430	10,430	31.8	No	**1.38**	108.0	3.01	91.37	13.45	4.80	0.00	0.00	109.61
T016	12,171	12,171	28.9	No	**-2.63**	107.0	3.01	92.71	15.17	4.80	0.00	0.00	112.68
T017	9,756	9,756	34.3	No	**2.52**	108.0	3.01	90.79	12.88	4.80	0.00	0.00	108.47
T018	11,124	11,124	22.2	No	**-1.20**	107.0	3.01	91.93	14.52	4.80	0.00	0.00	111.25
T019	12,139	12,139	26.0	No	**-2.58**	107.0	3.01	92.68	15.16	4.80	0.00	0.00	112.64
T020	9,655	9,656	34.2	No	**2.69**	108.0	3.01	90.70	12.80	4.80	0.00	0.00	108.29
T022	13,638	13,638	21.9	No	**-4.45**	107.0	3.01	93.70	16.01	4.80	0.00	0.00	114.51
T023	12,655	12,655	39.9	No	**-3.25**	107.0	3.01	93.05	15.46	4.80	0.00	0.00	113.30
T025	10,153	10,153	29.8	No	**1.84**	108.0	3.01	91.13	13.22	4.80	0.00	0.00	109.15
T026	9,036	9,036	30.8	No	**3.81**	108.0	3.01	90.12	12.25	4.80	0.00	0.00	107.17
T027	11,538	11,539	30.9	No	**-0.37**	108.0	3.01	92.24	14.31	4.80	0.00	0.00	111.36
T028	10,217	10,218	34.3	No	**1.73**	108.0	3.01	91.19	13.27	4.80	0.00	0.00	109.26
T029	14,155	14,155	27.7	No	**-5.05**	107.0	3.01	94.02	16.29	4.80	0.00	0.00	115.10
T030	11,679	11,679	27.4	No	**-0.58**	108.0	3.01	92.35	14.42	4.80	0.00	0.00	111.57
T031	13,536	13,536	23.7	No	**-4.33**	107.0	3.01	93.63	15.95	4.80	0.00	0.00	114.38
T032	11,132	11,132	25.9	No	**-1.21**	107.0	3.01	91.93	14.53	4.80	0.00	0.00	111.26
T033	13,335	13,336	27.1	No	**-4.09**	107.0	3.01	93.50	15.84	4.80	0.00	0.00	114.14
T201	11,522	11,523	32.8	No	**-0.35**	108.0	3.01	92.23	14.30	4.80	0.00	0.00	111.33
T202	11,622	11,623	31.7	No	**-0.50**	108.0	3.01	92.31	14.38	4.80	0.00	0.00	111.48
T203	13,162	13,162	27.0	No	**-2.67**	108.0	3.01	93.39	15.48	4.80	0.00	0.00	113.66
T204	12,949	12,949	33.4	No	**-2.39**	108.0	3.01	93.24	15.33	4.80	0.00	0.00	113.38
T205	13,329	13,330	38.6	No	**-2.90**	108.0	3.01	93.50	15.59	4.80	0.00	0.00	113.89
T206	14,174	14,174	29.7	No	**-3.99**	108.0	3.01	94.03	16.14	4.80	0.00	0.00	114.97
T207	14,952	14,952	40.0	No	**-4.94**	108.0	3.01	94.49	16.63	4.80	0.00	0.00	115.92
T208	14,927	14,927	24.2	No	**-4.91**	108.0	3.01	94.48	16.62	4.80	0.00	0.00	115.89
T209	15,146	15,146	28.4	No	**-5.17**	108.0	3.01	94.61	16.75	4.80	0.00	0.00	116.15
T210	15,328	15,328	27.3	No	**-5.38**	108.0	3.01	94.71	16.86	4.80	0.00	0.00	116.37
T211	14,227	14,227	31.5	No	**-4.05**	108.0	3.01	94.06	16.18	4.80	0.00	0.00	115.04
T212	14,025	14,026	31.3	No	**-3.80**	108.0	3.01	93.94	16.05	4.80	0.00	0.00	114.79
T213	13,871	13,872	31.9	No	**-3.60**	108.0	3.01	93.84	15.95	4.80	0.00	0.00	114.59
T214	13,997	13,998	31.9	No	**-3.76**	108.0	3.01	93.92	16.03	4.80	0.00	0.00	114.75
T215	12,149	12,149	36.1	No	**-1.27**	108.0	3.01	92.69	14.77	4.80	0.00	0.00	112.26
T216	12,900	12,901	28.9	No	**-2.32**	108.0	3.01	93.21	15.30	4.80	0.00	0.00	113.31
T217	13,325	13,326	26.0	No	**-2.89**	108.0	3.01	93.49	15.59	4.80	0.00	0.00	113.88
T218	15,530	15,530	34.4	No	**-5.61**	108.0	3.01	94.82	16.98	4.80	0.00	0.00	116.60
T219	15,489	15,489	30.3	No	**-5.57**	108.0	3.01	94.80	16.95	4.80	0.00	0.00	116.55

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T220	15,920	15,920	26.2	No	**-6.06**	108.0	3.01	95.04	17.21	4.80	0.00	0.00	117.05
T221	16,243	16,243	20.0	No	**-6.42**	108.0	3.01	95.21	17.39	4.80	0.00	0.00	117.41
T222	14,488	14,488	21.1	No	**-4.38**	108.0	3.01	94.22	16.34	4.80	0.00	0.00	115.36
T223	13,865	13,865	22.5	No	**-3.59**	108.0	3.01	93.84	15.94	4.80	0.00	0.00	114.58
T224	14,894	14,894	27.3	No	**-4.87**	108.0	3.01	94.46	16.59	4.80	0.00	0.00	115.86
T225	14,583	14,583	26.4	No	**-4.49**	108.0	3.01	94.28	16.40	4.80	0.00	0.00	115.48
T226	13,807	13,807	29.5	No	**-3.52**	108.0	3.01	93.80	15.91	4.80	0.00	0.00	114.51
T227	13,050	13,051	26.2	No	**-2.53**	108.0	3.01	93.31	15.40	4.80	0.00	0.00	113.51
T228	14,544	14,544	18.3	No	**-4.44**	108.0	3.01	94.25	16.38	4.80	0.00	0.00	115.43
T229	12,851	12,851	28.4	No	**-2.25**	108.0	3.01	93.18	15.26	4.80	0.00	0.00	113.24
T230	12,785	12,786	31.6	No	**-2.16**	108.0	3.01	93.13	15.22	4.80	0.00	0.00	113.15
T231	12,401	12,402	26.6	No	**-1.63**	108.0	3.01	92.87	14.95	4.80	0.00	0.00	112.62
T232	11,238	11,238	27.3	No	**0.09**	108.0	3.01	92.01	14.08	4.80	0.00	0.00	110.90
T233	11,009	11,009	30.8	No	**0.45**	108.0	3.01	91.84	13.91	4.80	0.00	0.00	110.54
T234	10,714	10,714	34.3	No	**0.91**	108.0	3.01	91.60	13.67	4.80	0.00	0.00	110.07
T235	10,840	10,840	26.0	No	**0.71**	108.0	3.01	91.70	13.77	4.80	0.00	0.00	110.28
T301	16,905	16,905	20.1	No	**-7.14**	108.0	3.01	95.56	17.76	4.80	0.00	0.00	118.12
T302	17,319	17,319	21.6	No	**-7.57**	108.0	3.01	95.77	17.99	4.80	0.00	0.00	118.56
T303	17,734	17,734	31.3	No	**-8.00**	108.0	3.01	95.98	18.21	4.80	0.00	0.00	118.98
T304	18,213	18,213	31.6	No	**-8.48**	108.0	3.01	96.21	18.46	4.80	0.00	0.00	119.47
T305	17,804	17,804	31.6	No	**-8.07**	108.0	3.01	96.01	18.25	4.80	0.00	0.00	119.06
T306	17,676	17,676	37.4	No	**-7.94**	108.0	3.01	95.95	18.18	4.80	0.00	0.00	118.93
T307	16,914	16,914	33.5	No	**-7.15**	108.0	3.01	95.57	17.77	4.80	0.00	0.00	118.13
T308	13,015	13,015	25.2	No	**-2.48**	108.0	3.01	93.29	15.38	4.80	0.00	0.00	113.47
T309	12,788	12,788	25.8	No	**-2.17**	108.0	3.01	93.14	15.22	4.80	0.00	0.00	113.16
T310	13,031	13,032	24.5	No	**-2.50**	108.0	3.01	93.30	15.39	4.80	0.00	0.00	113.49
T311	12,782	12,782	26.7	No	**-2.16**	108.0	3.01	93.13	15.21	4.80	0.00	0.00	113.15
T312	12,514	12,514	27.0	No	**-1.79**	108.0	3.01	92.95	15.03	4.80	0.00	0.00	112.77
T313	12,231	12,232	37.3	No	**-1.39**	108.0	3.01	92.75	14.83	4.80	0.00	0.00	112.37
T314	11,773	11,774	24.5	No	**-0.72**	108.0	3.01	92.42	14.49	4.80	0.00	0.00	111.71
T315	11,331	11,331	30.4	No	**-0.05**	108.0	3.01	92.09	14.16	4.80	0.00	0.00	111.04
T316	11,133	11,133	34.5	No	**0.25**	108.0	3.01	91.93	14.00	4.80	0.00	0.00	110.74
T317	11,477	11,477	40.5	No	**-0.28**	108.0	3.01	92.20	14.27	4.80	0.00	0.00	111.26
T318	11,722	11,722	27.4	No	**-0.64**	108.0	3.01	92.38	14.45	4.80	0.00	0.00	111.63
T319	10,850	10,851	33.9	No	**0.70**	108.0	3.01	91.71	13.78	4.80	0.00	0.00	110.29
T320	10,891	10,892	38.8	No	**0.63**	108.0	3.01	91.74	13.82	4.80	0.00	0.00	110.36
T321	11,125	11,125	33.0	No	**0.26**	108.0	3.01	91.93	14.00	4.80	0.00	0.00	110.72
T322	10,185	10,185	33.1	No	**1.78**	108.0	3.01	91.16	13.24	4.80	0.00	0.00	109.20
T323	9,816	9,817	33.1	No	**2.41**	108.0	3.01	90.84	12.94	4.80	0.00	0.00	108.58
T324	9,448	9,449	32.7	No	**3.06**	108.0	3.01	90.51	12.62	4.80	0.00	0.00	107.93
T325	8,842	8,843	35.9	No	**4.18**	108.0	3.01	89.93	12.08	4.80	0.00	0.00	106.81
T326	8,728	8,729	39.1	No	**4.39**	108.0	3.01	89.82	11.98	4.80	0.00	0.00	106.59
T327	8,431	8,431	33.9	No	**4.97**	108.0	3.01	89.52	11.70	4.80	0.00	0.00	106.02
T328	7,772	7,772	34.3	No	**6.31**	108.0	3.01	88.81	11.07	4.80	0.00	0.00	104.68
T329	6,715	6,716	38.5	No	**8.66**	108.0	3.01	87.54	9.98	4.80	0.00	0.00	102.32
T330	6,719	6,720	34.0	No	**8.65**	108.0	3.01	87.55	9.99	4.80	0.00	0.00	102.33
T331	7,544	7,545	35.5	No	**6.79**	108.0	3.01	88.55	10.84	4.80	0.00	0.00	104.19
T332	7,689	7,689	31.1	No	**6.49**	108.0	3.01	88.72	10.98	4.80	0.00	0.00	104.50
T333	8,515	8,516	34.6	No	**4.80**	108.0	3.01	89.60	11.78	4.80	0.00	0.00	106.18
T334	8,676	8,676	29.4	No	**4.49**	108.0	3.01	89.77	11.93	4.80	0.00	0.00	106.49
T335	9,219	9,219	26.8	No	**3.48**	108.0	3.01	90.29	12.42	4.80	0.00	0.00	107.51
Sum	29.14												

Noise sensitive area: SSA024 SSA024

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	14,840	14,840	52.4	Yes	**-1.02**	107.5	3.01	94.43	12.44	4.68	0.00	0.00	111.55
402	15,234	15,234	55.8	Yes	**-1.35**	107.5	3.01	94.66	12.55	4.68	0.00	0.00	111.88
403	15,872	15,873	52.2	Yes	**-1.90**	107.5	3.01	95.01	12.72	4.69	0.00	0.00	112.42
404	16,274	16,274	55.9	Yes	**-2.21**	107.5	3.01	95.23	12.83	4.68	0.00	0.00	112.74
405	16,495	16,495	44.4	No	**-2.51**	107.5	3.01	95.35	12.88	4.80	0.00	0.00	113.03

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
406	16,523	16,523	44.5	No	**-2.53**	107.5	3.01	95.36	12.89	4.80	0.00	0.00	113.05
407	17,186	17,187	45.9	No	**-3.04**	107.5	3.01	95.70	13.06	4.80	0.00	0.00	113.56
408	12,947	12,947	58.5	Yes	**0.77**	107.5	3.01	93.24	11.86	4.65	0.00	0.00	109.75
409	13,621	13,621	54.6	Yes	**0.10**	107.5	3.01	93.68	12.08	4.66	0.00	0.00	110.42
410	13,869	13,870	58.8	Yes	**-0.12**	107.5	3.01	93.84	12.15	4.66	0.00	0.00	110.65
411	14,218	14,218	59.7	Yes	**-0.45**	107.5	3.01	94.06	12.26	4.66	0.00	0.00	110.97
412	14,354	14,355	56.4	Yes	**-0.58**	107.5	3.01	94.14	12.30	4.67	0.00	0.00	111.10
413	14,772	14,772	55.5	Yes	**-0.95**	107.5	3.01	94.39	12.42	4.67	0.00	0.00	111.48
414	15,164	15,165	55.7	Yes	**-1.29**	107.5	3.01	94.62	12.53	4.67	0.00	0.00	111.82
415	6,843	6,844	51.4	Yes	**9.03**	107.5	3.01	87.71	9.24	4.54	0.00	0.00	101.49
416	7,023	7,024	54.2	Yes	**8.71**	107.5	3.01	87.93	9.35	4.54	0.00	0.00	101.82
417	6,920	6,921	50.8	Yes	**8.88**	107.5	3.01	87.80	9.29	4.55	0.00	0.00	101.64
418	7,052	7,052	45.9	Yes	**8.62**	107.5	3.01	87.97	9.36	4.58	0.00	0.00	101.91
419	6,726	6,727	47.5	Yes	**9.23**	107.5	3.01	87.56	9.17	4.56	0.00	0.00	101.29
420	7,186	7,187	48.2	Yes	**8.38**	107.5	3.01	88.13	9.44	4.57	0.00	0.00	102.14
421	8,412	8,413	63.2	Yes	**6.41**	107.5	3.01	89.50	10.08	4.54	0.00	0.00	104.12
422	8,646	8,647	50.4	Yes	**6.00**	107.5	3.01	89.74	10.19	4.60	0.00	0.00	104.53
423	8,812	8,813	54.4	Yes	**5.77**	107.5	3.01	89.90	10.27	4.59	0.00	0.00	104.76
424	9,289	9,289	49.8	Yes	**5.06**	107.5	3.01	90.36	10.48	4.62	0.00	0.00	105.46
425	9,707	9,707	49.7	Yes	**4.49**	107.5	3.01	90.74	10.66	4.63	0.00	0.00	106.03
426	5,639	5,641	57.5	Yes	**11.56**	107.5	3.01	86.03	8.48	4.45	0.00	0.00	98.96
427	6,217	6,219	56.5	Yes	**10.30**	107.5	3.01	86.87	8.86	4.49	0.00	0.00	100.23
428	6,676	6,677	54.0	Yes	**9.36**	107.5	3.01	87.49	9.14	4.52	0.00	0.00	101.16
429	7,139	7,140	45.1	Yes	**8.45**	107.5	3.01	88.07	9.41	4.58	0.00	0.00	102.07
430	7,569	7,569	45.8	Yes	**7.70**	107.5	3.01	88.58	9.65	4.59	0.00	0.00	102.82
431	8,152	8,153	45.7	Yes	**6.74**	107.5	3.01	89.23	9.95	4.61	0.00	0.00	103.78
432	8,479	8,479	40.4	Yes	**6.21**	107.5	3.01	89.57	10.11	4.64	0.00	0.00	104.31
433	6,939	6,939	45.9	Yes	**8.83**	107.5	3.01	87.83	9.30	4.57	0.00	0.00	101.70
434	5,469	5,470	54.5	Yes	**11.94**	107.5	3.01	85.76	8.36	4.46	0.00	0.00	98.58
435	4,602	4,603	54.3	Yes	**14.16**	107.5	3.01	84.26	7.71	4.40	0.00	0.00	96.37
436	4,069	4,071	57.1	Yes	**15.75**	107.5	3.01	83.19	7.26	4.32	0.00	0.00	94.77
437	3,796	3,798	53.5	Yes	**16.61**	107.5	3.01	82.59	7.01	4.32	0.00	0.00	93.92
438	4,225	4,227	49.9	Yes	**15.21**	107.5	3.01	83.52	7.40	4.40	0.00	0.00	95.31
439	3,264	3,266	54.8	Yes	**18.53**	107.5	3.01	81.28	6.49	4.23	0.00	0.00	91.99
440	3,277	3,279	53.3	Yes	**18.46**	107.5	3.01	81.32	6.50	4.24	0.00	0.00	92.06
441	3,636	3,638	53.5	Yes	**17.15**	107.5	3.01	82.22	6.86	4.30	0.00	0.00	93.37
442	3,660	3,662	59.2	Yes	**17.12**	107.5	3.01	82.27	6.88	4.25	0.00	0.00	93.40
443	3,987	3,989	56.6	Yes	**16.01**	107.5	3.01	83.02	7.19	4.32	0.00	0.00	94.52
444	4,373	4,374	56.4	Yes	**14.83**	107.5	3.01	83.82	7.52	4.36	0.00	0.00	95.70
445	5,239	5,241	55.3	Yes	**12.50**	107.5	3.01	85.39	8.20	4.44	0.00	0.00	98.03
446	4,827	4,829	52.5	Yes	**13.53**	107.5	3.01	84.68	7.89	4.43	0.00	0.00	96.99
447	4,364	4,365	46.2	Yes	**14.77**	107.5	3.01	83.80	7.51	4.44	0.00	0.00	95.75
448	4,150	4,152	47.2	Yes	**15.42**	107.5	3.01	83.36	7.33	4.41	0.00	0.00	95.11
449	3,716	3,718	52.9	Yes	**16.87**	107.5	3.01	82.41	6.94	4.31	0.00	0.00	93.66
450	3,839	3,841	50.5	Yes	**16.43**	107.5	3.01	82.69	7.05	4.35	0.00	0.00	94.09
451	3,505	3,508	55.7	Yes	**17.63**	107.5	3.01	81.90	6.73	4.26	0.00	0.00	92.89
452	5,722	5,723	51.5	Yes	**11.34**	107.5	3.01	86.15	8.54	4.49	0.00	0.00	99.18
453	7,065	7,066	33.4	No	**8.37**	107.5	3.01	87.98	9.37	4.80	0.00	0.00	102.15
454	6,727	6,728	36.6	No	**8.99**	107.5	3.01	87.56	9.17	4.80	0.00	0.00	101.53
455	6,056	6,057	42.1	No	**10.32**	107.5	3.01	86.65	8.76	4.80	0.00	0.00	100.21
456	6,430	6,431	44.9	No	**9.56**	107.5	3.01	87.17	8.99	4.80	0.00	0.00	100.96
457	6,604	6,605	43.0	No	**9.23**	107.5	3.01	87.40	9.10	4.80	0.00	0.00	101.30
458	6,580	6,580	47.6	Yes	**9.52**	107.5	3.01	87.36	9.09	4.55	0.00	0.00	101.00
459	6,196	6,197	49.5	Yes	**10.31**	107.5	3.01	86.84	8.85	4.53	0.00	0.00	100.22
460	6,946	6,947	47.3	Yes	**8.82**	107.5	3.01	87.84	9.30	4.57	0.00	0.00	101.71
461	6,544	6,545	51.1	Yes	**9.61**	107.5	3.01	87.32	9.06	4.53	0.00	0.00	100.92
462	6,392	6,393	59.6	Yes	**9.96**	107.5	3.01	87.11	8.97	4.48	0.00	0.00	100.57
463	5,983	5,984	53.3	Yes	**10.78**	107.5	3.01	86.54	8.71	4.50	0.00	0.00	99.75
464	6,243	6,243	46.7	No	**9.94**	107.5	3.01	86.91	8.88	4.80	0.00	0.00	100.59
T001	11,299	11,299	52.9	Yes	**0.15**	108.0	3.01	92.06	14.13	4.64	0.00	0.00	110.83
T002	11,492	11,492	52.0	Yes	**-0.15**	108.0	3.01	92.21	14.28	4.65	0.00	0.00	111.13
T003	9,669	9,670	46.2	Yes	**1.18**	107.0	3.01	90.71	13.53	4.64	0.00	0.00	108.88
T004	10,875	10,875	41.8	Yes	**-0.71**	107.0	3.01	91.73	14.36	4.67	0.00	0.00	110.76

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T005	9,638	9,639	38.3	Yes	**1.20**	107.0	3.01	90.68	13.51	4.66	0.00	0.00	108.85
T006	10,851	10,852	40.0	Yes	**0.82**	108.0	3.01	91.71	13.78	4.67	0.00	0.00	110.17
T007	9,853	9,854	42.9	Yes	**2.50**	108.0	3.01	90.87	12.97	4.65	0.00	0.00	108.49
T008	10,071	10,071	49.5	Yes	**0.54**	107.0	3.01	91.06	13.82	4.63	0.00	0.00	109.51
T009	12,135	12,135	43.7	Yes	**-1.13**	108.0	3.01	92.68	14.76	4.68	0.00	0.00	112.11
T010	11,528	11,528	50.1	Yes	**-0.21**	108.0	3.01	92.24	14.31	4.65	0.00	0.00	111.19
T011	13,086	13,086	33.9	Yes	**-2.48**	108.0	3.01	93.34	15.42	4.71	0.00	0.00	113.47
T012	12,336	12,336	33.6	Yes	**-2.75**	107.0	3.01	92.82	15.27	4.71	0.00	0.00	112.80
T013	11,032	11,032	38.2	Yes	**-0.95**	107.0	3.01	91.85	14.46	4.68	0.00	0.00	111.00
T014	10,406	10,406	33.5	Yes	**-0.03**	107.0	3.01	91.35	14.05	4.69	0.00	0.00	110.08
T015	10,362	10,362	44.8	Yes	**1.64**	108.0	3.01	91.31	13.39	4.65	0.00	0.00	109.35
T016	10,258	10,258	40.6	Yes	**0.22**	107.0	3.01	91.22	13.95	4.67	0.00	0.00	109.83
T017	10,657	10,657	35.3	Yes	**1.12**	108.0	3.01	91.55	13.63	4.69	0.00	0.00	109.87
T018	10,293	10,293	29.0	Yes	**0.13**	107.0	3.01	91.25	13.97	4.70	0.00	0.00	109.92
T019	11,000	11,000	31.7	Yes	**-0.92**	107.0	3.01	91.83	14.44	4.70	0.00	0.00	110.97
T020	10,146	10,146	40.0	Yes	**1.98**	108.0	3.01	91.13	13.21	4.67	0.00	0.00	109.00
T022	11,527	11,528	36.9	Yes	**-1.65**	107.0	3.01	92.23	14.78	4.69	0.00	0.00	111.71
T023	9,976	9,977	56.8	Yes	**0.72**	107.0	3.01	90.98	13.75	4.61	0.00	0.00	109.34
T025	11,165	11,165	29.7	No	**0.20**	108.0	3.01	91.96	14.03	4.80	0.00	0.00	110.79
T026	9,875	9,875	32.8	Yes	**2.42**	108.0	3.01	90.89	12.99	4.69	0.00	0.00	108.56
T027	10,963	10,963	42.0	Yes	**0.65**	108.0	3.01	91.80	13.87	4.67	0.00	0.00	110.34
T028	10,508	10,508	43.0	Yes	**1.39**	108.0	3.01	91.43	13.51	4.66	0.00	0.00	109.60
T029	12,848	12,848	34.0	No	**-3.49**	107.0	3.01	93.18	15.57	4.80	0.00	0.00	113.55
T030	11,945	11,945	36.3	Yes	**-0.87**	108.0	3.01	92.54	14.62	4.70	0.00	0.00	111.86
T031	12,033	12,033	31.8	Yes	**-2.35**	107.0	3.01	92.61	15.09	4.71	0.00	0.00	112.41
T032	9,475	9,475	34.9	Yes	**1.46**	107.0	3.01	90.53	13.39	4.67	0.00	0.00	108.59
T033	11,527	11,528	36.4	Yes	**-1.65**	107.0	3.01	92.23	14.78	4.69	0.00	0.00	111.71
T201	12,501	12,502	33.3	No	**-1.77**	108.0	3.01	92.94	15.02	4.80	0.00	0.00	112.76
T202	12,725	12,726	32.4	No	**-2.08**	108.0	3.01	93.09	15.18	4.80	0.00	0.00	113.07
T203	13,943	13,943	30.8	No	**-3.69**	108.0	3.01	93.89	15.99	4.80	0.00	0.00	114.68
T204	13,936	13,936	36.0	Yes	**-3.60**	108.0	3.01	93.88	15.99	4.71	0.00	0.00	114.59
T205	14,436	14,436	42.0	Yes	**-4.21**	108.0	3.01	94.19	16.31	4.70	0.00	0.00	115.20
T206	14,628	14,628	35.4	No	**-4.55**	108.0	3.01	94.30	16.43	4.80	0.00	0.00	115.53
T207	15,417	15,417	46.1	Yes	**-5.38**	108.0	3.01	94.76	16.91	4.70	0.00	0.00	116.37
T208	12,725	12,725	39.1	Yes	**-1.98**	108.0	3.01	93.09	15.18	4.70	0.00	0.00	112.96
T209	12,783	12,784	44.7	Yes	**-2.04**	108.0	3.01	93.13	15.22	4.68	0.00	0.00	113.03
T210	12,750	12,750	43.8	Yes	**-2.00**	108.0	3.01	93.11	15.19	4.68	0.00	0.00	112.99
T211	11,494	11,494	48.6	Yes	**-0.16**	108.0	3.01	92.21	14.28	4.66	0.00	0.00	111.15
T212	11,160	11,160	48.8	Yes	**0.36**	108.0	3.01	91.95	14.02	4.65	0.00	0.00	110.63
T213	10,841	10,841	48.3	Yes	**0.86**	108.0	3.01	91.70	13.77	4.65	0.00	0.00	110.12
T214	10,812	10,812	47.6	Yes	**0.91**	108.0	3.01	91.68	13.75	4.65	0.00	0.00	110.08
T215	9,487	9,487	52.6	Yes	**3.18**	108.0	3.01	90.54	12.65	4.61	0.00	0.00	107.81
T216	9,585	9,585	43.4	Yes	**2.97**	108.0	3.01	90.63	12.74	4.65	0.00	0.00	108.01
T217	9,714	9,714	40.8	Yes	**2.73**	108.0	3.01	90.75	12.85	4.66	0.00	0.00	108.25
T218	11,734	11,735	47.7	Yes	**-0.52**	108.0	3.01	92.39	14.46	4.66	0.00	0.00	111.51
T219	11,411	11,412	43.8	Yes	**-0.05**	108.0	3.01	92.15	14.22	4.67	0.00	0.00	111.03
T220	11,750	11,750	43.9	Yes	**-0.56**	108.0	3.01	92.40	14.47	4.67	0.00	0.00	111.55
T221	11,878	11,878	39.1	Yes	**-0.76**	108.0	3.01	92.49	14.57	4.69	0.00	0.00	111.75
T222	9,264	9,264	43.9	Yes	**3.56**	108.0	3.01	90.34	12.46	4.64	0.00	0.00	107.43
T223	8,733	8,734	44.8	Yes	**4.56**	108.0	3.01	89.82	11.98	4.63	0.00	0.00	106.43
T224	10,201	10,201	47.6	Yes	**1.92**	108.0	3.01	91.17	13.26	4.64	0.00	0.00	109.07
T225	9,946	9,947	46.0	Yes	**2.35**	108.0	3.01	90.95	13.05	4.64	0.00	0.00	108.64
T226	9,039	9,039	49.3	Yes	**3.99**	108.0	3.01	90.12	12.26	4.61	0.00	0.00	106.99
T227	8,478	8,478	43.1	Yes	**5.05**	108.0	3.01	89.57	11.74	4.63	0.00	0.00	105.94
T228	9,506	9,506	39.5	Yes	**3.10**	108.0	3.01	90.56	12.67	4.66	0.00	0.00	107.89
T229	8,556	8,557	45.8	Yes	**4.91**	108.0	3.01	89.65	11.82	4.62	0.00	0.00	106.08
T230	8,636	8,636	48.1	Yes	**4.76**	108.0	3.01	89.73	11.89	4.61	0.00	0.00	106.23
T231	8,432	8,432	43.3	Yes	**5.14**	108.0	3.01	89.52	11.70	4.63	0.00	0.00	105.84
T232	7,169	7,170	46.5	Yes	**7.84**	108.0	3.01	88.11	10.46	4.58	0.00	0.00	103.15
T233	7,139	7,139	48.2	Yes	**7.92**	108.0	3.01	88.07	10.43	4.57	0.00	0.00	103.07
T234	6,972	6,972	51.8	Yes	**8.32**	108.0	3.01	87.87	10.25	4.55	0.00	0.00	102.67
T235	7,480	7,480	40.8	Yes	**7.12**	108.0	3.01	88.48	10.77	4.61	0.00	0.00	103.87
T301	16,481	16,481	38.9	No	**-6.68**	108.0	3.01	95.34	17.53	4.80	0.00	0.00	117.67

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T302	16,973	16,973	39.4	No	**-7.21**	108.0	3.01	95.60	17.80	4.80	0.00	0.00	118.19
T303	17,643	17,643	44.7	No	**-7.90**	108.0	3.01	95.93	18.16	4.80	0.00	0.00	118.89
T304	18,222	18,222	44.5	No	**-8.49**	108.0	3.01	96.21	18.46	4.80	0.00	0.00	119.47
T305	18,084	18,084	41.8	No	**-8.35**	108.0	3.01	96.15	18.39	4.80	0.00	0.00	119.34
T306	17,845	17,845	46.7	Yes	**-8.02**	108.0	3.01	96.03	18.27	4.71	0.00	0.00	119.01
T307	17,030	17,030	43.0	No	**-7.27**	108.0	3.01	95.62	17.83	4.80	0.00	0.00	118.25
T308	7,501	7,501	43.8	Yes	**7.09**	108.0	3.01	88.50	10.80	4.60	0.00	0.00	103.90
T309	7,420	7,420	45.8	Yes	**7.27**	108.0	3.01	88.41	10.71	4.59	0.00	0.00	103.71
T310	7,868	7,868	46.3	Yes	**6.31**	108.0	3.01	88.92	11.16	4.60	0.00	0.00	104.68
T311	7,772	7,772	45.7	Yes	**6.51**	108.0	3.01	88.81	11.07	4.60	0.00	0.00	104.48
T312	7,636	7,636	44.6	Yes	**6.80**	108.0	3.01	88.66	10.93	4.60	0.00	0.00	104.19
T313	7,529	7,529	54.3	Yes	**7.07**	108.0	3.01	88.53	10.82	4.55	0.00	0.00	103.91
T314	7,565	7,565	41.5	Yes	**6.94**	108.0	3.01	88.58	10.86	4.61	0.00	0.00	104.05
T315	6,761	6,762	46.0	Yes	**8.79**	108.0	3.01	87.60	10.03	4.57	0.00	0.00	102.20
T316	6,251	6,251	52.2	Yes	**10.08**	108.0	3.01	86.92	9.48	4.52	0.00	0.00	100.91
T317	6,475	6,476	58.2	Yes	**9.55**	108.0	3.01	87.23	9.72	4.49	0.00	0.00	101.44
T318	6,408	6,408	48.8	Yes	**9.66**	108.0	3.01	87.13	9.65	4.54	0.00	0.00	101.33
T319	5,095	5,095	46.1	Yes	**13.22**	108.0	3.01	85.14	8.14	4.49	0.00	0.00	97.77
T320	5,008	5,009	49.3	Yes	**13.50**	108.0	3.01	84.99	8.03	4.46	0.00	0.00	97.49
T321	5,152	5,152	45.6	Yes	**13.04**	108.0	3.01	85.24	8.21	4.50	0.00	0.00	97.94
T322	4,117	4,118	45.2	Yes	**16.37**	108.0	3.01	83.29	6.90	4.42	0.00	0.00	94.62
T323	3,749	3,750	44.9	Yes	**17.71**	108.0	3.01	82.48	6.40	4.39	0.00	0.00	93.27
T324	3,542	3,543	43.2	Yes	**18.50**	108.0	3.01	81.99	6.12	4.38	0.00	0.00	92.49
T325	2,715	2,716	48.8	Yes	**22.21**	108.0	3.01	79.68	4.92	4.18	0.00	0.00	88.78
T326	2,683	2,684	50.1	Yes	**22.38**	108.0	3.01	79.58	4.87	4.16	0.00	0.00	88.61
T327	2,456	2,458	44.6	Yes	**23.48**	108.0	3.01	78.81	4.52	4.18	0.00	0.00	87.51
T328	2,219	2,221	43.6	Yes	**24.78**	108.0	3.01	77.93	4.15	4.13	0.00	0.00	86.21
T329	1,087	1,090	43.7	Yes	**33.59**	108.0	3.01	71.75	2.23	3.42	0.00	0.00	77.39
T330	1,753	1,755	40.7	Yes	**27.71**	108.0	3.01	75.89	3.39	4.00	0.00	0.00	83.28
T331	2,610	2,612	43.1	Yes	**22.65**	108.0	3.01	79.34	4.76	4.24	0.00	0.00	88.33
T332	3,087	3,088	41.2	Yes	**20.38**	108.0	3.01	80.79	5.47	4.34	0.00	0.00	90.61
T333	3,603	3,604	44.3	Yes	**18.27**	108.0	3.01	82.14	6.20	4.38	0.00	0.00	92.72
T334	3,446	3,447	41.9	Yes	**18.87**	108.0	3.01	81.75	5.98	4.38	0.00	0.00	92.12
T335	3,924	3,924	41.3	Yes	**17.03**	108.0	3.01	82.88	6.64	4.44	0.00	0.00	93.95
Sum	37.50												

Noise sensitive area: SSA025 SSA025

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	15,875	15,875	50.1	No	**-2.01**	107.5	3.01	95.01	12.72	4.80	0.00	0.00	112.54
402	16,270	16,270	53.3	No	**-2.33**	107.5	3.01	95.23	12.82	4.80	0.00	0.00	112.85
403	16,908	16,909	49.8	No	**-2.83**	107.5	3.01	95.56	12.99	4.80	0.00	0.00	113.35
404	17,312	17,313	53.4	No	**-3.13**	107.5	3.01	95.77	13.09	4.80	0.00	0.00	113.65
405	17,537	17,537	42.1	No	**-3.30**	107.5	3.01	95.88	13.14	4.80	0.00	0.00	113.82
406	17,570	17,570	41.3	No	**-3.32**	107.5	3.01	95.90	13.15	4.80	0.00	0.00	113.85
407	18,222	18,222	43.6	No	**-3.79**	107.5	3.01	96.21	13.31	4.80	0.00	0.00	114.32
408	13,985	13,986	54.6	No	**-0.38**	107.5	3.01	93.91	12.19	4.80	0.00	0.00	110.90
409	14,663	14,663	51.0	No	**-0.99**	107.5	3.01	94.32	12.39	4.80	0.00	0.00	111.51
410	14,906	14,907	54.9	No	**-1.20**	107.5	3.01	94.47	12.46	4.80	0.00	0.00	111.72
411	15,252	15,252	55.7	No	**-1.49**	107.5	3.01	94.67	12.55	4.80	0.00	0.00	112.02
412	15,380	15,380	52.4	No	**-1.60**	107.5	3.01	94.74	12.59	4.80	0.00	0.00	112.13
413	15,795	15,795	51.9	No	**-1.95**	107.5	3.01	94.97	12.70	4.80	0.00	0.00	112.47
414	16,188	16,188	52.0	No	**-2.26**	107.5	3.01	95.18	12.80	4.80	0.00	0.00	112.79
415	7,781	7,781	49.3	No	**7.14**	107.5	3.01	88.82	9.76	4.80	0.00	0.00	103.38
416	7,984	7,984	52.8	No	**6.82**	107.5	3.01	89.04	9.86	4.80	0.00	0.00	103.71
417	7,912	7,912	48.7	Yes	**7.14**	107.5	3.01	88.97	9.83	4.59	0.00	0.00	103.38
418	8,063	8,064	44.1	Yes	**6.88**	107.5	3.01	89.13	9.90	4.61	0.00	0.00	103.65
419	7,770	7,771	45.7	Yes	**7.36**	107.5	3.01	88.81	9.75	4.60	0.00	0.00	103.16
420	8,233	8,233	46.2	Yes	**6.62**	107.5	3.01	89.31	9.99	4.61	0.00	0.00	103.91
421	9,453	9,454	61.5	Yes	**4.88**	107.5	3.01	90.51	10.56	4.58	0.00	0.00	105.65
422	9,695	9,695	48.1	Yes	**4.50**	107.5	3.01	90.73	10.66	4.63	0.00	0.00	106.02

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
423	9,864	9,865	51.7	Yes	**4.29**	107.5	3.01	90.88	10.73	4.62	0.00	0.00	106.23
424	10,345	10,346	46.9	Yes	**3.66**	107.5	3.01	91.30	10.93	4.65	0.00	0.00	106.87
425	10,763	10,764	46.7	Yes	**3.14**	107.5	3.01	91.64	11.09	4.65	0.00	0.00	107.38
426	6,664	6,666	54.8	No	**9.11**	107.5	3.01	87.48	9.14	4.80	0.00	0.00	101.41
427	7,232	7,233	53.5	No	**8.07**	107.5	3.01	88.19	9.46	4.80	0.00	0.00	102.45
428	7,682	7,683	51.0	No	**7.31**	107.5	3.01	88.71	9.71	4.80	0.00	0.00	103.22
429	8,156	8,157	42.4	No	**6.54**	107.5	3.01	89.23	9.95	4.80	0.00	0.00	103.98
430	8,577	8,578	42.9	No	**5.90**	107.5	3.01	89.67	10.16	4.80	0.00	0.00	104.62
431	9,167	9,167	43.0	No	**5.05**	107.5	3.01	90.24	10.43	4.80	0.00	0.00	105.47
432	9,486	9,486	37.6	No	**4.61**	107.5	3.01	90.54	10.57	4.80	0.00	0.00	105.91
433	5,885	5,886	41.4	No	**10.68**	107.5	3.01	86.40	8.65	4.80	0.00	0.00	99.84
434	4,413	4,415	49.8	No	**14.27**	107.5	3.01	83.90	7.55	4.80	0.00	0.00	96.25
435	3,547	3,549	49.7	No	**16.95**	107.5	3.01	82.00	6.77	4.80	0.00	0.00	93.57
436	3,020	3,023	51.9	Yes	**19.48**	107.5	3.01	80.61	6.23	4.21	0.00	0.00	91.05
437	2,741	2,743	49.4	Yes	**20.66**	107.5	3.01	79.76	5.91	4.18	0.00	0.00	89.86
438	3,227	3,228	48.2	Yes	**18.61**	107.5	3.01	81.18	6.45	4.29	0.00	0.00	91.92
439	3,006	3,009	49.7	Yes	**19.51**	107.5	3.01	80.57	6.21	4.23	0.00	0.00	91.01
440	3,180	3,182	48.4	Yes	**18.79**	107.5	3.01	81.05	6.40	4.28	0.00	0.00	91.73
441	3,639	3,641	47.6	Yes	**17.09**	107.5	3.01	82.22	6.86	4.35	0.00	0.00	93.44
442	3,792	3,794	53.6	Yes	**16.62**	107.5	3.01	82.58	7.01	4.32	0.00	0.00	93.91
443	4,211	4,212	51.0	Yes	**15.26**	107.5	3.01	83.49	7.38	4.39	0.00	0.00	95.26
444	4,631	4,633	50.9	Yes	**14.05**	107.5	3.01	84.32	7.73	4.42	0.00	0.00	96.47
445	4,216	4,218	51.0	Yes	**15.25**	107.5	3.01	83.50	7.39	4.39	0.00	0.00	95.28
446	3,830	3,832	50.3	Yes	**16.46**	107.5	3.01	82.67	7.04	4.35	0.00	0.00	94.06
447	3,508	3,510	45.0	Yes	**17.52**	107.5	3.01	81.91	6.73	4.36	0.00	0.00	93.00
448	3,368	3,370	44.9	Yes	**18.03**	107.5	3.01	81.55	6.59	4.34	0.00	0.00	92.49
449	3,044	3,047	48.4	Yes	**19.34**	107.5	3.01	80.68	6.25	4.26	0.00	0.00	91.19
450	3,253	3,255	49.2	Yes	**18.52**	107.5	3.01	81.25	6.48	4.28	0.00	0.00	92.01
451	3,093	3,096	48.8	Yes	**19.14**	107.5	3.01	80.81	6.31	4.26	0.00	0.00	91.38
452	4,690	4,691	47.1	Yes	**13.86**	107.5	3.01	84.43	7.78	4.46	0.00	0.00	96.66
453	6,533	6,534	34.6	No	**9.36**	107.5	3.01	87.30	9.06	4.80	0.00	0.00	101.16
454	6,262	6,263	33.8	No	**9.90**	107.5	3.01	86.94	8.89	4.80	0.00	0.00	100.63
455	5,735	5,736	33.7	No	**11.01**	107.5	3.01	86.17	8.55	4.80	0.00	0.00	99.52
456	6,159	6,160	37.6	No	**10.11**	107.5	3.01	86.79	8.83	4.80	0.00	0.00	100.42
457	6,392	6,393	35.0	No	**9.64**	107.5	3.01	87.11	8.97	4.80	0.00	0.00	100.89
458	5,533	5,535	43.1	No	**11.45**	107.5	3.01	85.86	8.41	4.80	0.00	0.00	99.07
459	5,153	5,154	45.0	No	**12.35**	107.5	3.01	85.24	8.14	4.80	0.00	0.00	98.18
460	5,954	5,955	43.9	Yes	**10.79**	107.5	3.01	86.50	8.69	4.55	0.00	0.00	99.74
461	5,568	5,569	48.1	Yes	**11.67**	107.5	3.01	85.92	8.43	4.51	0.00	0.00	98.85
462	5,446	5,448	56.4	Yes	**12.01**	107.5	3.01	85.72	8.35	4.45	0.00	0.00	98.52
463	5,058	5,059	51.9	Yes	**12.93**	107.5	3.01	85.08	8.06	4.45	0.00	0.00	97.60
464	5,385	5,386	46.7	Yes	**12.09**	107.5	3.01	85.63	8.30	4.50	0.00	0.00	98.43
T001	12,276	12,276	50.7	No	**-1.45**	108.0	3.01	92.78	14.86	4.80	0.00	0.00	112.44
T002	12,502	12,502	49.8	No	**-1.77**	108.0	3.01	92.94	15.02	4.80	0.00	0.00	112.76
T003	10,529	10,529	44.9	No	**-0.32**	107.0	3.01	91.45	14.13	4.80	0.00	0.00	110.38
T004	11,725	11,725	40.4	No	**-2.03**	107.0	3.01	92.38	14.90	4.80	0.00	0.00	112.09
T005	10,568	10,568	36.1	No	**-0.38**	107.0	3.01	91.48	14.16	4.80	0.00	0.00	110.44
T006	11,885	11,885	38.0	No	**-0.88**	108.0	3.01	92.50	14.57	4.80	0.00	0.00	111.87
T007	10,871	10,871	40.4	No	**0.66**	108.0	3.01	91.73	13.80	4.80	0.00	0.00	110.32
T008	10,883	10,884	47.7	No	**-0.85**	107.0	3.01	91.74	14.37	4.80	0.00	0.00	110.90
T009	13,107	13,107	41.3	No	**-2.60**	108.0	3.01	93.35	15.44	4.80	0.00	0.00	113.59
T010	12,521	12,521	47.5	No	**-1.80**	108.0	3.01	92.95	15.03	4.80	0.00	0.00	112.78
T011	14,076	14,076	31.4	No	**-3.86**	108.0	3.01	93.97	16.08	4.80	0.00	0.00	114.85
T012	13,231	13,231	30.9	No	**-3.96**	107.0	3.01	93.43	15.79	4.80	0.00	0.00	114.02
T013	11,900	11,900	36.5	No	**-2.27**	107.0	3.01	92.51	15.01	4.80	0.00	0.00	112.32
T014	11,326	11,326	30.9	No	**-1.48**	107.0	3.01	92.08	14.65	4.80	0.00	0.00	111.54
T015	11,368	11,368	42.2	No	**-0.11**	108.0	3.01	92.11	14.18	4.80	0.00	0.00	111.10
T016	11,114	11,114	39.4	No	**-1.18**	107.0	3.01	91.92	14.52	4.80	0.00	0.00	111.24
T017	11,699	11,699	33.4	No	**-0.61**	108.0	3.01	92.36	14.43	4.80	0.00	0.00	111.60
T018	11,251	11,251	27.0	No	**-1.38**	107.0	3.01	92.02	14.61	4.80	0.00	0.00	111.43
T019	11,924	11,924	29.0	No	**-2.30**	107.0	3.01	92.53	15.03	4.80	0.00	0.00	112.35
T020	11,178	11,179	38.0	No	**0.18**	108.0	3.01	91.97	14.04	4.80	0.00	0.00	110.81
T022	12,339	12,339	35.0	No	**-2.85**	107.0	3.01	92.83	15.27	4.80	0.00	0.00	112.90

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T023	10,737	10,738	54.1	No	**-0.63**	107.0	3.01	91.62	14.27	4.80	0.00	0.00	110.69
T025	12,208	12,208	27.5	No	**-1.35**	108.0	3.01	92.73	14.81	4.80	0.00	0.00	112.34
T026	10,920	10,920	30.8	Yes	**0.68**	108.0	3.01	91.76	13.84	4.70	0.00	0.00	110.31
T027	11,932	11,932	39.5	No	**-0.95**	108.0	3.01	92.53	14.61	4.80	0.00	0.00	111.94
T028	11,530	11,531	40.8	No	**-0.36**	108.0	3.01	92.24	14.31	4.80	0.00	0.00	111.34
T029	13,733	13,733	31.4	No	**-4.56**	107.0	3.01	93.76	16.06	4.80	0.00	0.00	114.62
T030	12,955	12,955	34.2	No	**-2.40**	108.0	3.01	93.25	15.33	4.80	0.00	0.00	113.38
T031	12,908	12,908	29.4	No	**-3.57**	107.0	3.01	93.22	15.60	4.80	0.00	0.00	113.62
T032	10,373	10,373	33.3	No	**-0.09**	107.0	3.01	91.32	14.03	4.80	0.00	0.00	110.14
T033	12,376	12,376	35.0	No	**-2.89**	107.0	3.01	92.85	15.30	4.80	0.00	0.00	112.95
T201	13,538	13,538	30.9	No	**-3.17**	108.0	3.01	93.63	15.73	4.80	0.00	0.00	114.16
T202	13,765	13,765	29.9	No	**-3.47**	108.0	3.01	93.78	15.88	4.80	0.00	0.00	114.45
T203	14,965	14,965	28.1	No	**-4.95**	108.0	3.01	94.50	16.64	4.80	0.00	0.00	115.94
T204	14,967	14,967	33.6	No	**-4.95**	108.0	3.01	94.50	16.64	4.80	0.00	0.00	115.94
T205	15,470	15,470	39.5	No	**-5.54**	108.0	3.01	94.79	16.94	4.80	0.00	0.00	116.53
T206	15,633	15,633	32.1	No	**-5.73**	108.0	3.01	94.88	17.04	4.80	0.00	0.00	116.72
T207	16,418	16,418	42.9	No	**-6.61**	108.0	3.01	95.31	17.49	4.80	0.00	0.00	117.60
T208	13,508	13,508	35.7	No	**-3.13**	108.0	3.01	93.61	15.71	4.80	0.00	0.00	114.12
T209	13,544	13,544	42.1	No	**-3.18**	108.0	3.01	93.63	15.73	4.80	0.00	0.00	114.17
T210	13,480	13,480	41.7	No	**-3.10**	108.0	3.01	93.59	15.69	4.80	0.00	0.00	114.08
T211	12,219	12,219	47.0	No	**-1.37**	108.0	3.01	92.74	14.82	4.80	0.00	0.00	112.36
T212	11,870	11,870	48.1	No	**-0.86**	108.0	3.01	92.49	14.56	4.80	0.00	0.00	111.85
T213	11,529	11,529	46.8	No	**-0.35**	108.0	3.01	92.24	14.31	4.80	0.00	0.00	111.34
T214	11,473	11,473	44.3	No	**-0.27**	108.0	3.01	92.19	14.26	4.80	0.00	0.00	111.26
T215	10,260	10,261	49.9	No	**1.66**	108.0	3.01	91.22	13.31	4.80	0.00	0.00	109.33
T216	10,248	10,248	40.4	No	**1.68**	108.0	3.01	91.21	13.30	4.80	0.00	0.00	109.31
T217	10,318	10,318	37.5	No	**1.56**	108.0	3.01	91.27	13.35	4.80	0.00	0.00	109.43
T218	12,259	12,260	47.3	No	**-1.43**	108.0	3.01	92.77	14.85	4.80	0.00	0.00	112.41
T219	11,877	11,878	46.7	Yes	**-0.74**	108.0	3.01	92.49	14.57	4.67	0.00	0.00	111.73
T220	12,188	12,188	44.4	Yes	**-1.20**	108.0	3.01	92.72	14.79	4.68	0.00	0.00	112.19
T221	12,263	12,263	39.0	Yes	**-1.32**	108.0	3.01	92.77	14.85	4.69	0.00	0.00	112.31
T222	9,418	9,419	40.3	Yes	**3.26**	108.0	3.01	90.48	12.59	4.65	0.00	0.00	107.73
T223	8,938	8,938	40.3	Yes	**4.15**	108.0	3.01	90.02	12.17	4.65	0.00	0.00	106.84
T224	10,523	10,523	48.7	Yes	**1.38**	108.0	3.01	91.44	13.52	4.64	0.00	0.00	109.61
T225	10,291	10,292	46.7	Yes	**1.76**	108.0	3.01	91.25	13.33	4.65	0.00	0.00	109.23
T226	9,364	9,364	50.1	Yes	**3.40**	108.0	3.01	90.43	12.55	4.62	0.00	0.00	107.59
T227	8,878	8,878	43.4	Yes	**4.28**	108.0	3.01	89.97	12.11	4.63	0.00	0.00	106.71
T228	9,728	9,728	36.2	Yes	**2.69**	108.0	3.01	90.76	12.86	4.67	0.00	0.00	108.29
T229	9,032	9,032	48.6	Yes	**4.00**	108.0	3.01	90.12	12.25	4.62	0.00	0.00	106.98
T230	9,146	9,146	50.1	Yes	**3.80**	108.0	3.01	90.22	12.35	4.61	0.00	0.00	107.19
T231	8,991	8,991	41.7	No	**3.90**	108.0	3.01	90.08	12.21	4.80	0.00	0.00	107.09
T232	7,748	7,748	43.5	No	**6.36**	108.0	3.01	88.78	11.04	4.80	0.00	0.00	104.63
T233	7,764	7,765	46.8	No	**6.33**	108.0	3.01	88.80	11.06	4.80	0.00	0.00	104.66
T234	7,631	7,632	50.2	No	**6.61**	108.0	3.01	88.65	10.93	4.80	0.00	0.00	104.38
T235	8,195	8,195	39.5	No	**5.44**	108.0	3.01	89.27	11.48	4.80	0.00	0.00	105.55
T301	17,417	17,417	35.0	No	**-7.67**	108.0	3.01	95.82	18.04	4.80	0.00	0.00	118.66
T302	17,912	17,912	36.0	No	**-8.18**	108.0	3.01	96.06	18.30	4.80	0.00	0.00	119.17
T303	18,598	18,598	41.8	No	**-8.86**	108.0	3.01	96.39	18.65	4.80	0.00	0.00	119.84
T304	19,182	19,182	42.1	No	**-9.42**	108.0	3.01	96.66	18.95	4.80	0.00	0.00	120.40
T305	19,063	19,063	38.2	No	**-9.30**	108.0	3.01	96.60	18.89	4.80	0.00	0.00	120.29
T306	18,818	18,818	44.3	No	**-9.07**	108.0	3.01	96.49	18.76	4.80	0.00	0.00	120.06
T307	18,002	18,002	40.5	No	**-8.27**	108.0	3.01	96.11	18.35	4.80	0.00	0.00	119.26
T308	7,568	7,568	39.3	Yes	**6.92**	108.0	3.01	88.58	10.86	4.62	0.00	0.00	104.07
T309	7,561	7,561	42.8	Yes	**6.95**	108.0	3.01	88.57	10.86	4.61	0.00	0.00	104.04
T310	8,083	8,083	42.4	Yes	**5.85**	108.0	3.01	89.15	11.37	4.62	0.00	0.00	105.14
T311	8,049	8,050	46.7	Yes	**5.93**	108.0	3.01	89.12	11.34	4.60	0.00	0.00	105.05
T312	7,965	7,966	45.5	Yes	**6.10**	108.0	3.01	89.02	11.26	4.61	0.00	0.00	104.88
T313	7,919	7,920	55.0	Yes	**6.24**	108.0	3.01	88.97	11.21	4.56	0.00	0.00	104.75
T314	8,094	8,094	42.5	Yes	**5.82**	108.0	3.01	89.16	11.38	4.62	0.00	0.00	105.16
T315	7,222	7,222	48.1	Yes	**7.73**	108.0	3.01	88.17	10.51	4.57	0.00	0.00	103.26
T316	6,632	6,633	53.0	Yes	**9.13**	108.0	3.01	87.43	9.89	4.53	0.00	0.00	101.86
T317	6,803	6,804	59.6	Yes	**8.75**	108.0	3.01	87.66	10.08	4.50	0.00	0.00	102.23
T318	6,610	6,610	43.7	Yes	**9.14**	108.0	3.01	87.40	9.87	4.57	0.00	0.00	101.85

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T319	5,106	5,106	41.6	Yes	**13.15**	108.0	3.01	85.16	8.15	4.52	0.00	0.00	97.83
T320	4,919	4,919	48.4	Yes	**13.77**	108.0	3.01	84.84	7.92	4.46	0.00	0.00	97.22
T321	4,966	4,967	45.3	Yes	**13.60**	108.0	3.01	84.92	7.98	4.49	0.00	0.00	97.39
T322	3,841	3,842	44.4	Yes	**17.36**	108.0	3.01	82.69	6.53	4.41	0.00	0.00	93.62
T323	3,495	3,496	43.7	Yes	**18.69**	108.0	3.01	81.87	6.05	4.37	0.00	0.00	92.29
T324	3,525	3,526	41.2	Yes	**18.55**	108.0	3.01	81.95	6.09	4.40	0.00	0.00	92.44
T325	2,310	2,311	45.6	Yes	**24.29**	108.0	3.01	78.28	4.29	4.12	0.00	0.00	86.69
T326	2,563	2,564	48.4	Yes	**22.97**	108.0	3.01	79.18	4.69	4.15	0.00	0.00	88.02
T327	2,481	2,483	43.8	Yes	**23.33**	108.0	3.01	78.90	4.56	4.20	0.00	0.00	87.66
T328	2,674	2,675	44.6	Yes	**22.35**	108.0	3.01	79.55	4.86	4.23	0.00	0.00	88.63
T329	1,821	1,824	43.3	Yes	**27.28**	108.0	3.01	76.22	3.51	3.98	0.00	0.00	83.71
T330	2,589	2,590	39.3	Yes	**22.71**	108.0	3.01	79.27	4.73	4.28	0.00	0.00	88.28
T331	3,292	3,293	44.2	Yes	**19.53**	108.0	3.01	81.35	5.76	4.34	0.00	0.00	91.46
T332	3,809	3,810	40.2	Yes	**17.45**	108.0	3.01	82.62	6.48	4.44	0.00	0.00	93.54
T333	4,161	4,162	45.9	Yes	**16.22**	108.0	3.01	83.39	6.96	4.42	0.00	0.00	94.77
T334	3,892	3,892	42.9	Yes	**17.16**	108.0	3.01	82.80	6.60	4.42	0.00	0.00	93.82
T335	4,288	4,289	42.0	Yes	**15.75**	108.0	3.01	83.65	7.12	4.47	0.00	0.00	95.23
Sum	35.62												

Noise sensitive area: SSA026 SSA026

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	16,769	16,769	54.4	No	**-2.72**	107.5	3.01	95.49	12.95	4.80	0.00	0.00	113.24
402	17,155	17,155	58.4	No	**-3.01**	107.5	3.01	95.69	13.05	4.80	0.00	0.00	113.54
403	17,794	17,794	54.9	No	**-3.49**	107.5	3.01	96.01	13.20	4.80	0.00	0.00	114.01
404	18,182	18,183	59.6	No	**-3.76**	107.5	3.01	96.19	13.30	4.80	0.00	0.00	114.29
405	18,382	18,382	49.7	No	**-3.91**	107.5	3.01	96.29	13.34	4.80	0.00	0.00	114.43
406	18,375	18,376	49.6	No	**-3.90**	107.5	3.01	96.28	13.34	4.80	0.00	0.00	114.43
407	19,107	19,108	48.7	No	**-4.41**	107.5	3.01	96.62	13.51	4.80	0.00	0.00	114.93
408	14,370	14,370	59.2	No	**-0.73**	107.5	3.01	94.15	12.30	4.80	0.00	0.00	111.25
409	15,073	15,074	55.5	No	**-1.34**	107.5	3.01	94.56	12.50	4.80	0.00	0.00	111.87
410	15,275	15,275	59.4	No	**-1.51**	107.5	3.01	94.68	12.56	4.80	0.00	0.00	112.04
411	15,600	15,600	60.7	No	**-1.78**	107.5	3.01	94.86	12.65	4.80	0.00	0.00	112.31
412	15,674	15,675	62.7	No	**-1.85**	107.5	3.01	94.90	12.67	4.80	0.00	0.00	112.37
413	16,072	16,072	63.3	No	**-2.17**	107.5	3.01	95.12	12.77	4.80	0.00	0.00	112.69
414	16,466	16,466	63.5	No	**-2.48**	107.5	3.01	95.33	12.88	4.80	0.00	0.00	113.01
415	8,990	8,991	53.5	No	**5.30**	107.5	3.01	90.08	10.35	4.80	0.00	0.00	105.22
416	9,148	9,149	56.3	No	**5.08**	107.5	3.01	90.23	10.42	4.80	0.00	0.00	105.45
417	9,002	9,003	53.2	No	**5.28**	107.5	3.01	90.09	10.35	4.80	0.00	0.00	105.24
418	9,092	9,092	48.4	No	**5.16**	107.5	3.01	90.17	10.39	4.80	0.00	0.00	105.37
419	8,652	8,653	50.3	No	**5.79**	107.5	3.01	89.74	10.19	4.80	0.00	0.00	104.73
420	9,086	9,087	51.2	No	**5.16**	107.5	3.01	90.17	10.39	4.80	0.00	0.00	105.36
421	10,335	10,336	66.5	No	**3.51**	107.5	3.01	91.29	10.92	4.80	0.00	0.00	107.01
422	10,524	10,525	55.3	No	**3.28**	107.5	3.01	91.44	11.00	4.80	0.00	0.00	107.24
423	10,648	10,649	57.7	No	**3.13**	107.5	3.01	91.55	11.05	4.80	0.00	0.00	107.39
424	11,033	11,034	53.7	No	**2.67**	107.5	3.01	91.85	11.20	4.80	0.00	0.00	107.85
425	11,431	11,431	52.6	No	**2.22**	107.5	3.01	92.16	11.34	4.80	0.00	0.00	108.30
426	7,068	7,069	60.1	No	**8.37**	107.5	3.01	87.99	9.37	4.80	0.00	0.00	102.16
427	7,566	7,567	60.0	No	**7.50**	107.5	3.01	88.58	9.65	4.80	0.00	0.00	103.02
428	7,970	7,970	59.5	No	**6.84**	107.5	3.01	89.03	9.86	4.80	0.00	0.00	103.69
429	8,481	8,482	50.2	No	**6.05**	107.5	3.01	89.57	10.11	4.80	0.00	0.00	104.48
430	8,853	8,854	53.1	No	**5.50**	107.5	3.01	89.94	10.29	4.80	0.00	0.00	105.03
431	9,462	9,463	52.5	No	**4.65**	107.5	3.01	90.52	10.56	4.80	0.00	0.00	105.88
432	9,741	9,742	49.1	No	**4.27**	107.5	3.01	90.77	10.68	4.80	0.00	0.00	106.25
433	5,623	5,624	49.1	Yes	**11.55**	107.5	3.01	86.00	8.47	4.50	0.00	0.00	98.97
434	4,139	4,140	56.5	Yes	**15.53**	107.5	3.01	83.34	7.32	4.33	0.00	0.00	94.99
435	3,412	3,413	56.8	Yes	**17.99**	107.5	3.01	81.66	6.64	4.23	0.00	0.00	92.53
436	3,065	3,067	56.6	Yes	**19.35**	107.5	3.01	80.73	6.28	4.17	0.00	0.00	91.18
437	2,688	2,690	53.7	Yes	**20.96**	107.5	3.01	79.59	5.85	4.12	0.00	0.00	89.56
438	2,439	2,441	50.6	Yes	**22.14**	107.5	3.01	78.75	5.55	4.09	0.00	0.00	88.39
439	1,572	1,576	48.1	Yes	**27.50**	107.5	3.01	74.95	4.32	3.75	0.00	0.00	83.02

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
440	1,890	1,893	47.8	Yes	**25.24**	107.5	3.01	76.54	4.81	3.93	0.00	0.00	85.28
441	2,409	2,411	47.1	No	**21.57**	107.5	3.01	78.64	5.51	4.80	0.00	0.00	88.95
442	2,697	2,700	53.7	No	**20.24**	107.5	3.01	79.63	5.86	4.80	0.00	0.00	90.29
443	3,189	3,191	49.1	No	**18.24**	107.5	3.01	81.08	6.41	4.80	0.00	0.00	92.29
444	3,620	3,621	48.2	No	**16.71**	107.5	3.01	82.18	6.84	4.80	0.00	0.00	93.82
445	3,494	3,496	55.6	Yes	**17.68**	107.5	3.01	81.87	6.72	4.26	0.00	0.00	92.85
446	2,988	2,990	54.8	Yes	**19.65**	107.5	3.01	80.51	6.19	4.17	0.00	0.00	90.88
447	2,247	2,249	46.4	Yes	**23.09**	107.5	3.01	78.04	5.30	4.09	0.00	0.00	87.43
448	1,981	1,984	46.2	Yes	**24.63**	107.5	3.01	76.95	4.94	4.00	0.00	0.00	85.89
449	1,533	1,537	52.1	Yes	**27.90**	107.5	3.01	74.74	4.26	3.63	0.00	0.00	82.63
450	1,696	1,700	51.5	Yes	**26.64**	107.5	3.01	75.61	4.52	3.76	0.00	0.00	83.88
451	1,549	1,554	48.2	Yes	**27.68**	107.5	3.01	74.83	4.28	3.73	0.00	0.00	82.84
452	4,003	4,005	51.8	Yes	**15.91**	107.5	3.01	83.05	7.20	4.36	0.00	0.00	94.61
453	4,973	4,974	40.1	Yes	**13.07**	107.5	3.01	84.93	8.00	4.52	0.00	0.00	97.46
454	4,694	4,695	38.7	Yes	**13.79**	107.5	3.01	84.43	7.78	4.52	0.00	0.00	96.73
455	4,191	4,192	37.7	Yes	**15.22**	107.5	3.01	83.45	7.37	4.49	0.00	0.00	95.31
456	4,631	4,632	40.0	No	**13.68**	107.5	3.01	84.32	7.73	4.80	0.00	0.00	96.85
457	4,888	4,889	38.3	No	**13.01**	107.5	3.01	84.78	7.94	4.80	0.00	0.00	97.52
458	4,938	4,939	47.6	Yes	**13.21**	107.5	3.01	84.87	7.97	4.47	0.00	0.00	97.32
459	4,536	4,537	49.1	Yes	**14.30**	107.5	3.01	84.14	7.66	4.43	0.00	0.00	96.22
460	5,018	5,019	50.4	Yes	**13.02**	107.5	3.01	85.01	8.03	4.46	0.00	0.00	97.50
461	4,576	4,578	53.4	Yes	**14.22**	107.5	3.01	84.21	7.69	4.40	0.00	0.00	96.30
462	4,361	4,362	60.0	Yes	**14.89**	107.5	3.01	83.79	7.51	4.33	0.00	0.00	95.64
463	3,922	3,923	53.8	Yes	**16.19**	107.5	3.01	82.87	7.13	4.33	0.00	0.00	94.33
464	4,099	4,100	49.4	Yes	**15.60**	107.5	3.01	83.26	7.28	4.39	0.00	0.00	94.93
T001	13,389	13,389	54.8	No	**-2.98**	108.0	3.01	93.53	15.63	4.80	0.00	0.00	113.96
T002	13,516	13,517	53.2	No	**-3.14**	108.0	3.01	93.62	15.71	4.80	0.00	0.00	114.13
T003	11,850	11,850	48.3	No	**-2.20**	107.0	3.01	92.47	14.98	4.80	0.00	0.00	112.25
T004	13,056	13,057	43.7	No	**-3.75**	107.0	3.01	93.32	15.69	4.80	0.00	0.00	113.80
T005	11,785	11,785	40.3	No	**-2.11**	107.0	3.01	92.43	14.94	4.80	0.00	0.00	112.17
T006	12,802	12,802	42.0	No	**-2.19**	108.0	3.01	93.15	15.23	4.80	0.00	0.00	113.18
T007	11,862	11,863	45.0	No	**-0.85**	108.0	3.01	92.48	14.56	4.80	0.00	0.00	111.84
T008	12,257	12,257	51.6	No	**-2.74**	107.0	3.01	92.77	15.23	4.80	0.00	0.00	112.79
T009	14,231	14,231	45.1	No	**-4.06**	108.0	3.01	94.06	16.18	4.80	0.00	0.00	115.04
T010	13,590	13,590	52.2	No	**-3.24**	108.0	3.01	93.66	15.76	4.80	0.00	0.00	114.23
T011	15,150	15,150	35.4	No	**-5.17**	108.0	3.01	94.61	16.75	4.80	0.00	0.00	116.16
T012	14,501	14,501	35.5	No	**-5.44**	107.0	3.01	94.23	16.47	4.80	0.00	0.00	115.49
T013	13,209	13,209	40.3	No	**-3.94**	107.0	3.01	93.42	15.77	4.80	0.00	0.00	113.99
T014	12,557	12,557	35.5	No	**-3.13**	107.0	3.01	92.98	15.40	4.80	0.00	0.00	113.18
T015	12,399	12,400	46.2	No	**-1.63**	108.0	3.01	92.87	14.95	4.80	0.00	0.00	112.61
T016	12,439	12,439	42.7	No	**-2.97**	107.0	3.01	92.90	15.33	4.80	0.00	0.00	113.03
T017	12,561	12,561	39.8	No	**-1.85**	108.0	3.01	92.98	15.06	4.80	0.00	0.00	112.84
T018	12,410	12,410	30.7	No	**-2.94**	107.0	3.01	92.88	15.32	4.80	0.00	0.00	112.99
T019	13,149	13,149	33.6	No	**-3.86**	107.0	3.01	93.38	15.74	4.80	0.00	0.00	113.92
T020	12,102	12,102	42.0	No	**-1.20**	108.0	3.01	92.66	14.73	4.80	0.00	0.00	112.19
T022	13,713	13,713	38.9	No	**-4.54**	107.0	3.01	93.74	16.05	4.80	0.00	0.00	114.59
T023	12,158	12,158	58.8	No	**-2.61**	107.0	3.01	92.70	15.17	4.80	0.00	0.00	112.66
T025	13,063	13,064	35.1	No	**-2.54**	108.0	3.01	93.32	15.41	4.80	0.00	0.00	113.53
T026	11,769	11,769	38.6	No	**-0.71**	108.0	3.01	92.41	14.49	4.80	0.00	0.00	111.70
T027	13,066	13,066	43.3	No	**-2.55**	108.0	3.01	93.32	15.41	4.80	0.00	0.00	113.53
T028	12,501	12,502	45.0	No	**-1.77**	108.0	3.01	92.94	15.02	4.80	0.00	0.00	112.76
T029	15,017	15,017	35.9	No	**-6.01**	107.0	3.01	94.53	16.73	4.80	0.00	0.00	116.06
T030	13,967	13,967	37.6	No	**-3.73**	108.0	3.01	93.90	16.01	4.80	0.00	0.00	114.71
T031	14,208	14,208	33.7	No	**-5.11**	107.0	3.01	94.05	16.31	4.80	0.00	0.00	115.16
T032	11,642	11,642	37.4	No	**-1.92**	107.0	3.01	92.32	14.85	4.80	0.00	0.00	111.97
T033	13,709	13,709	38.3	No	**-4.53**	107.0	3.01	93.74	16.05	4.80	0.00	0.00	114.59
T201	14,431	14,431	35.4	No	**-4.31**	108.0	3.01	94.19	16.31	4.80	0.00	0.00	115.29
T202	14,639	14,639	35.4	No	**-4.56**	108.0	3.01	94.31	16.44	4.80	0.00	0.00	115.55
T203	15,923	15,923	31.9	No	**-6.06**	108.0	3.01	95.04	17.21	4.80	0.00	0.00	117.05
T204	15,886	15,886	37.3	No	**-6.02**	108.0	3.01	95.02	17.19	4.80	0.00	0.00	117.01
T205	16,374	16,374	43.7	No	**-6.56**	108.0	3.01	95.28	17.47	4.80	0.00	0.00	117.55
T206	16,660	16,660	35.3	No	**-6.87**	108.0	3.01	95.43	17.63	4.80	0.00	0.00	117.86
T207	17,455	17,455	46.3	No	**-7.71**	108.0	3.01	95.84	18.06	4.80	0.00	0.00	118.70

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T208	14,910	14,910	40.9	No	**-4.89**	108.0	3.01	94.47	16.60	4.80	0.00	0.00	115.87
T209	14,966	14,966	46.7	No	**-4.95**	108.0	3.01	94.50	16.64	4.80	0.00	0.00	115.94
T210	14,926	14,926	45.7	No	**-4.91**	108.0	3.01	94.48	16.61	4.80	0.00	0.00	115.89
T211	13,668	13,668	50.5	No	**-3.34**	108.0	3.01	93.71	15.82	4.80	0.00	0.00	114.33
T212	13,329	13,329	50.2	No	**-2.90**	108.0	3.01	93.50	15.59	4.80	0.00	0.00	113.89
T213	13,001	13,002	50.0	No	**-2.46**	108.0	3.01	93.28	15.37	4.80	0.00	0.00	113.45
T214	12,961	12,962	49.1	No	**-2.40**	108.0	3.01	93.25	15.34	4.80	0.00	0.00	113.39
T215	11,670	11,670	54.5	No	**-0.57**	108.0	3.01	92.34	14.41	4.80	0.00	0.00	111.55
T216	11,734	11,734	44.9	No	**-0.66**	108.0	3.01	92.39	14.46	4.80	0.00	0.00	111.65
T217	11,833	11,833	42.5	No	**-0.81**	108.0	3.01	92.46	14.53	4.80	0.00	0.00	111.80
T218	13,803	13,803	50.9	No	**-3.52**	108.0	3.01	93.80	15.90	4.80	0.00	0.00	114.50
T219	13,435	13,435	50.6	No	**-3.04**	108.0	3.01	93.56	15.66	4.80	0.00	0.00	114.02
T220	13,750	13,750	48.4	No	**-3.45**	108.0	3.01	93.77	15.87	4.80	0.00	0.00	114.43
T221	13,830	13,830	43.2	No	**-3.55**	108.0	3.01	93.82	15.92	4.80	0.00	0.00	114.54
T222	10,967	10,967	43.3	No	**0.51**	108.0	3.01	91.80	13.87	4.80	0.00	0.00	110.48
T223	10,496	10,497	44.0	No	**1.27**	108.0	3.01	91.42	13.50	4.80	0.00	0.00	109.72
T224	12,091	12,091	52.5	No	**-1.18**	108.0	3.01	92.65	14.72	4.80	0.00	0.00	112.17
T225	11,859	11,859	50.7	No	**-0.85**	108.0	3.01	92.48	14.55	4.80	0.00	0.00	111.83
T226	10,932	10,932	53.9	No	**0.57**	108.0	3.01	91.77	13.85	4.80	0.00	0.00	110.42
T227	10,442	10,443	47.5	No	**1.36**	108.0	3.01	91.38	13.46	4.80	0.00	0.00	109.63
T228	11,288	11,288	39.4	No	**0.01**	108.0	3.01	92.05	14.12	4.80	0.00	0.00	110.98
T229	10,585	10,585	51.9	No	**1.12**	108.0	3.01	91.49	13.57	4.80	0.00	0.00	109.87
T230	10,691	10,692	53.2	No	**0.95**	108.0	3.01	91.58	13.66	4.80	0.00	0.00	110.04
T231	10,522	10,522	45.1	No	**1.23**	108.0	3.01	91.44	13.52	4.80	0.00	0.00	109.76
T232	9,270	9,270	48.0	No	**3.38**	108.0	3.01	90.34	12.46	4.80	0.00	0.00	107.60
T233	9,267	9,267	50.6	No	**3.39**	108.0	3.01	90.34	12.46	4.80	0.00	0.00	107.60
T234	9,116	9,117	53.8	No	**3.66**	108.0	3.01	90.20	12.33	4.80	0.00	0.00	107.32
T235	9,647	9,648	41.9	No	**2.71**	108.0	3.01	90.69	12.79	4.80	0.00	0.00	108.28
T301	18,614	18,614	38.9	No	**-8.87**	108.0	3.01	96.40	18.66	4.80	0.00	0.00	119.86
T302	19,102	19,102	39.5	No	**-9.34**	108.0	3.01	96.62	18.91	4.80	0.00	0.00	120.33
T303	19,754	19,754	44.4	No	**-9.95**	108.0	3.01	96.91	19.22	4.80	0.00	0.00	120.94
T304	20,327	20,327	43.9	No	**-10.47**	108.0	3.01	97.16	19.49	4.80	0.00	0.00	121.46
T305	20,161	20,162	42.9	No	**-10.32**	108.0	3.01	97.09	19.42	4.80	0.00	0.00	121.31
T306	19,933	19,933	49.1	No	**-10.11**	108.0	3.01	96.99	19.31	4.80	0.00	0.00	121.10
T307	19,118	19,118	45.3	No	**-9.35**	108.0	3.01	96.63	18.91	4.80	0.00	0.00	120.34
T308	9,098	9,098	41.9	No	**3.70**	108.0	3.01	90.18	12.31	4.80	0.00	0.00	107.29
T309	9,110	9,110	45.5	No	**3.68**	108.0	3.01	90.19	12.32	4.80	0.00	0.00	107.31
T310	9,644	9,644	45.2	No	**2.71**	108.0	3.01	90.68	12.79	4.80	0.00	0.00	108.27
T311	9,616	9,616	49.9	No	**2.76**	108.0	3.01	90.66	12.76	4.80	0.00	0.00	108.22
T312	9,533	9,533	49.0	No	**2.91**	108.0	3.01	90.58	12.69	4.80	0.00	0.00	108.08
T313	9,484	9,484	58.6	No	**3.00**	108.0	3.01	90.54	12.65	4.80	0.00	0.00	107.99
T314	9,633	9,633	45.4	No	**2.73**	108.0	3.01	90.68	12.78	4.80	0.00	0.00	108.25
T315	8,776	8,776	51.0	No	**4.30**	108.0	3.01	89.87	12.02	4.80	0.00	0.00	106.69
T316	8,197	8,197	55.9	No	**5.44**	108.0	3.01	89.27	11.48	4.80	0.00	0.00	105.55
T317	8,371	8,371	62.7	No	**5.09**	108.0	3.01	89.46	11.64	4.80	0.00	0.00	105.90
T318	8,172	8,172	46.2	No	**5.49**	108.0	3.01	89.25	11.45	4.80	0.00	0.00	105.50
T319	6,633	6,634	45.3	Yes	**9.09**	108.0	3.01	87.44	9.89	4.57	0.00	0.00	101.90
T320	6,414	6,414	53.0	Yes	**9.67**	108.0	3.01	87.14	9.66	4.52	0.00	0.00	101.32
T321	6,417	6,417	48.6	Yes	**9.64**	108.0	3.01	87.15	9.66	4.54	0.00	0.00	101.35
T322	5,268	5,269	46.6	Yes	**12.71**	108.0	3.01	85.43	8.35	4.50	0.00	0.00	98.28
T323	4,944	4,944	46.1	Yes	**13.67**	108.0	3.01	84.88	7.95	4.48	0.00	0.00	97.31
T324	5,062	5,062	44.0	Yes	**13.30**	108.0	3.01	85.09	8.10	4.50	0.00	0.00	97.69
T325	3,731	3,732	45.7	Yes	**17.79**	108.0	3.01	82.44	6.38	4.38	0.00	0.00	93.20
T326	4,092	4,092	49.9	Yes	**16.50**	108.0	3.01	83.24	6.86	4.38	0.00	0.00	94.49
T327	4,041	4,041	45.3	Yes	**16.65**	108.0	3.01	83.13	6.79	4.42	0.00	0.00	94.34
T328	4,208	4,209	46.5	No	**15.69**	108.0	3.01	83.48	7.02	4.80	0.00	0.00	95.30
T329	3,221	3,222	45.0	No	**19.36**	108.0	3.01	81.16	5.66	4.80	0.00	0.00	91.62
T330	3,935	3,936	42.9	No	**16.63**	108.0	3.01	82.90	6.65	4.80	0.00	0.00	94.35
T331	4,748	4,749	46.1	No	**13.95**	108.0	3.01	84.53	7.71	4.80	0.00	0.00	97.04
T332	5,246	5,247	43.3	No	**12.47**	108.0	3.01	85.40	8.32	4.80	0.00	0.00	98.52
T333	5,679	5,680	49.0	No	**11.27**	108.0	3.01	86.09	8.83	4.80	0.00	0.00	99.72
T334	5,439	5,440	45.3	No	**11.93**	108.0	3.01	85.71	8.55	4.80	0.00	0.00	99.06
T335	5,851	5,851	44.5	No	**10.82**	108.0	3.01	86.34	9.03	4.80	0.00	0.00	100.17
Sum	37.04												

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

Noise sensitive area: SSA027 SSA027

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	18,366	18,366	50.3	No	**-3.89**	107.5	3.01	96.28	13.34	4.80	0.00	0.00	114.42
402	18,697	18,698	55.2	No	**-4.13**	107.5	3.01	96.44	13.42	4.80	0.00	0.00	114.65
403	19,306	19,306	52.9	No	**-4.54**	107.5	3.01	96.71	13.55	4.80	0.00	0.00	115.07
404	19,616	19,617	59.9	No	**-4.75**	107.5	3.01	96.85	13.62	4.80	0.00	0.00	115.27
405	19,708	19,709	51.2	No	**-4.81**	107.5	3.01	96.89	13.64	4.80	0.00	0.00	115.33
406	19,557	19,557	52.3	No	**-4.71**	107.5	3.01	96.83	13.61	4.80	0.00	0.00	115.23
407	20,556	20,556	49.0	No	**-5.36**	107.5	3.01	97.26	13.82	4.80	0.00	0.00	115.88
408	14,313	14,313	69.0	No	**-0.67**	107.5	3.01	94.11	12.28	4.80	0.00	0.00	111.20
409	15,043	15,043	63.4	No	**-1.32**	107.5	3.01	94.55	12.49	4.80	0.00	0.00	111.84
410	15,080	15,081	72.2	No	**-1.35**	107.5	3.01	94.57	12.50	4.80	0.00	0.00	111.87
411	15,306	15,306	73.9	No	**-1.54**	107.5	3.01	94.70	12.57	4.80	0.00	0.00	112.06
412	15,186	15,187	76.0	No	**-1.44**	107.5	3.01	94.63	12.53	4.80	0.00	0.00	111.96
413	15,491	15,491	76.1	No	**-1.69**	107.5	3.01	94.80	12.62	4.80	0.00	0.00	112.22
414	15,860	15,860	76.2	No	**-2.00**	107.5	3.01	95.01	12.72	4.80	0.00	0.00	112.52
415	12,352	12,353	44.0	No	**1.22**	107.5	3.01	92.84	11.67	4.80	0.00	0.00	109.30
416	12,340	12,341	49.1	No	**1.23**	107.5	3.01	92.83	11.66	4.80	0.00	0.00	109.29
417	11,969	11,969	48.4	No	**1.63**	107.5	3.01	92.56	11.54	4.80	0.00	0.00	108.90
418	11,845	11,845	43.0	No	**1.76**	107.5	3.01	92.47	11.49	4.80	0.00	0.00	108.76
419	11,008	11,008	47.6	No	**2.70**	107.5	3.01	91.83	11.19	4.80	0.00	0.00	107.82
420	11,280	11,281	48.0	No	**2.39**	107.5	3.01	92.05	11.29	4.80	0.00	0.00	108.13
421	12,442	12,442	62.6	No	**1.13**	107.5	3.01	92.90	11.70	4.80	0.00	0.00	109.40
422	12,431	12,432	48.8	No	**1.14**	107.5	3.01	92.89	11.69	4.80	0.00	0.00	109.38
423	12,386	12,387	50.3	No	**1.19**	107.5	3.01	92.86	11.68	4.80	0.00	0.00	109.34
424	12,399	12,400	48.0	No	**1.17**	107.5	3.01	92.87	11.68	4.80	0.00	0.00	109.35
425	12,675	12,676	48.4	No	**0.89**	107.5	3.01	93.06	11.78	4.80	0.00	0.00	109.63
426	8,347	8,348	59.9	No	**6.25**	107.5	3.01	89.43	10.04	4.80	0.00	0.00	104.28
427	8,484	8,486	64.3	No	**6.04**	107.5	3.01	89.57	10.11	4.80	0.00	0.00	104.49
428	8,626	8,627	62.9	No	**5.83**	107.5	3.01	89.72	10.18	4.80	0.00	0.00	104.70
429	9,124	9,124	55.8	No	**5.11**	107.5	3.01	90.20	10.41	4.80	0.00	0.00	105.41
430	9,248	9,249	59.4	No	**4.94**	107.5	3.01	90.32	10.46	4.80	0.00	0.00	105.59
431	9,785	9,786	59.3	No	**4.21**	107.5	3.01	90.81	10.70	4.80	0.00	0.00	106.31
432	9,874	9,875	56.5	No	**4.10**	107.5	3.01	90.89	10.74	4.80	0.00	0.00	106.43
433	9,483	9,484	41.2	No	**4.62**	107.5	3.01	90.54	10.57	4.80	0.00	0.00	105.91
434	8,343	8,344	46.6	Yes	**6.44**	107.5	3.01	89.43	10.04	4.61	0.00	0.00	104.08
435	8,024	8,026	46.5	Yes	**6.95**	107.5	3.01	89.09	9.88	4.60	0.00	0.00	103.58
436	7,972	7,973	47.0	Yes	**7.04**	107.5	3.01	89.03	9.86	4.60	0.00	0.00	103.49
437	7,606	7,607	42.2	Yes	**7.62**	107.5	3.01	88.62	9.67	4.61	0.00	0.00	102.90
438	6,516	6,517	41.5	Yes	**9.61**	107.5	3.01	87.28	9.05	4.58	0.00	0.00	100.91
439	3,928	3,931	54.0	Yes	**16.17**	107.5	3.01	82.89	7.13	4.33	0.00	0.00	94.35
440	3,735	3,737	51.6	Yes	**16.79**	107.5	3.01	82.45	6.95	4.33	0.00	0.00	93.73
441	3,329	3,331	50.0	Yes	**18.23**	107.5	3.01	81.45	6.55	4.29	0.00	0.00	92.29
442	3,353	3,356	50.9	Yes	**18.15**	107.5	3.01	81.52	6.58	4.28	0.00	0.00	92.38
443	3,185	3,187	49.4	Yes	**18.78**	107.5	3.01	81.07	6.40	4.27	0.00	0.00	91.74
444	2,965	2,968	53.0	Yes	**19.72**	107.5	3.01	80.45	6.17	4.19	0.00	0.00	90.81
445	7,117	7,118	49.0	Yes	**8.51**	107.5	3.01	88.05	9.40	4.57	0.00	0.00	102.01
446	6,625	6,626	46.6	Yes	**9.43**	107.5	3.01	87.43	9.11	4.56	0.00	0.00	101.10
447	5,406	5,407	43.3	Yes	**12.02**	107.5	3.01	85.66	8.32	4.53	0.00	0.00	98.50
448	5,022	5,024	45.8	Yes	**12.98**	107.5	3.01	85.02	8.04	4.49	0.00	0.00	97.55
449	4,680	4,682	48.6	Yes	**13.90**	107.5	3.01	84.41	7.77	4.45	0.00	0.00	96.63
450	4,296	4,299	50.8	Yes	**15.00**	107.5	3.01	83.67	7.46	4.40	0.00	0.00	95.52
451	4,014	4,016	55.7	Yes	**15.91**	107.5	3.01	83.08	7.21	4.33	0.00	0.00	94.61
452	7,473	7,474	46.1	Yes	**7.87**	107.5	3.01	88.47	9.60	4.59	0.00	0.00	102.66
453	3,227	3,229	46.0	Yes	**18.58**	107.5	3.01	81.18	6.45	4.31	0.00	0.00	91.94
454	2,714	2,716	50.3	Yes	**20.80**	107.5	3.01	79.68	5.88	4.17	0.00	0.00	89.73
455	1,933	1,936	51.9	Yes	**25.03**	107.5	3.01	76.74	4.87	3.88	0.00	0.00	85.49
456	1,497	1,502	56.4	Yes	**28.28**	107.5	3.01	74.53	4.20	3.51	0.00	0.00	82.24
457	1,088	1,094	54.7	Yes	**32.21**	107.5	3.01	71.78	3.46	3.07	0.00	0.00	78.31
458	8,271	8,272	43.2	No	**6.37**	107.5	3.01	89.35	10.01	4.80	0.00	0.00	104.16
459	7,955	7,956	43.5	Yes	**7.05**	107.5	3.01	89.01	9.85	4.61	0.00	0.00	103.48
460	7,385	7,386	45.5	Yes	**8.02**	107.5	3.01	88.37	9.55	4.59	0.00	0.00	102.51
461	6,957	6,958	48.8	Yes	**8.81**	107.5	3.01	87.85	9.31	4.56	0.00	0.00	101.72
462	6,528	6,529	58.1	Yes	**9.68**	107.5	3.01	87.30	9.06	4.50	0.00	0.00	100.85
463	6,162	6,164	51.4	Yes	**10.38**	107.5	3.01	86.80	8.83	4.52	0.00	0.00	100.14

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
464	5,595	5,596	48.5	Yes	**11.61**	107.5	3.01	85.96	8.45	4.50	0.00	0.00	98.91
T001	16,021	16,021	46.3	No	**-6.17**	108.0	3.01	95.09	17.27	4.80	0.00	0.00	117.16
T002	15,773	15,774	43.5	No	**-5.89**	108.0	3.01	94.96	17.12	4.80	0.00	0.00	116.88
T003	15,391	15,391	34.6	No	**-6.41**	107.0	3.01	94.75	16.91	4.80	0.00	0.00	116.46
T004	16,575	16,576	30.3	No	**-7.61**	107.0	3.01	95.39	17.48	4.80	0.00	0.00	117.67
T005	14,922	14,922	32.3	No	**-5.90**	107.0	3.01	94.48	16.68	4.80	0.00	0.00	115.96
T006	14,768	14,768	36.3	No	**-4.72**	108.0	3.01	94.39	16.52	4.80	0.00	0.00	115.70
T007	14,176	14,176	37.2	No	**-3.99**	108.0	3.01	94.03	16.15	4.80	0.00	0.00	114.98
T008	15,999	15,999	35.7	No	**-7.04**	107.0	3.01	95.08	17.21	4.80	0.00	0.00	117.09
T009	16,852	16,852	35.9	No	**-7.08**	108.0	3.01	95.53	17.73	4.80	0.00	0.00	118.07
T010	16,047	16,047	40.8	No	**-6.20**	108.0	3.01	95.11	17.28	4.80	0.00	0.00	117.19
T011	17,526	17,526	21.5	No	**-7.78**	108.0	3.01	95.87	18.10	4.80	0.00	0.00	118.77
T012	17,691	17,691	24.8	No	**-8.68**	107.0	3.01	95.95	17.98	4.80	0.00	0.00	118.74
T013	16,626	16,626	29.2	No	**-7.66**	107.0	3.01	95.42	17.50	4.80	0.00	0.00	117.72
T014	15,697	15,698	26.9	No	**-6.73**	107.0	3.01	94.92	17.06	4.80	0.00	0.00	116.78
T015	14,807	14,807	38.0	No	**-4.76**	108.0	3.01	94.41	16.54	4.80	0.00	0.00	115.75
T016	15,962	15,963	29.2	No	**-7.00**	107.0	3.01	95.06	17.19	4.80	0.00	0.00	117.05
T017	14,353	14,353	36.2	No	**-4.21**	108.0	3.01	94.14	16.26	4.80	0.00	0.00	115.20
T018	15,288	15,288	23.8	No	**-6.30**	107.0	3.01	94.69	16.86	4.80	0.00	0.00	116.35
T019	16,231	16,231	25.6	No	**-7.27**	107.0	3.01	95.21	17.32	4.80	0.00	0.00	117.33
T020	14,154	14,154	36.2	No	**-3.96**	108.0	3.01	94.02	16.13	4.80	0.00	0.00	114.95
T022	17,390	17,390	22.1	No	**-8.40**	107.0	3.01	95.81	17.85	4.80	0.00	0.00	118.45
T023	16,114	16,115	42.9	No	**-7.15**	107.0	3.01	95.14	17.26	4.80	0.00	0.00	117.21
T025	14,785	14,785	31.8	No	**-4.74**	108.0	3.01	94.40	16.53	4.80	0.00	0.00	115.72
T026	13,595	13,595	33.1	No	**-3.25**	108.0	3.01	93.67	15.77	4.80	0.00	0.00	114.24
T027	15,801	15,801	36.7	No	**-5.92**	108.0	3.01	94.97	17.14	4.80	0.00	0.00	116.91
T028	14,685	14,685	37.5	No	**-4.62**	108.0	3.01	94.34	16.47	4.80	0.00	0.00	115.60
T029	18,242	18,242	25.3	No	**-9.19**	107.0	3.01	96.22	18.22	4.80	0.00	0.00	119.24
T030	16,184	16,184	29.0	No	**-6.35**	108.0	3.01	95.18	17.36	4.80	0.00	0.00	117.34
T031	17,534	17,534	24.5	No	**-8.54**	107.0	3.01	95.88	17.91	4.80	0.00	0.00	118.59
T032	14,990	14,990	26.9	No	**-5.98**	107.0	3.01	94.52	16.72	4.80	0.00	0.00	116.03
T033	17,207	17,207	25.8	No	**-8.23**	107.0	3.01	95.71	17.77	4.80	0.00	0.00	118.28
T201	16,179	16,179	33.6	No	**-6.35**	108.0	3.01	95.18	17.36	4.80	0.00	0.00	117.33
T202	16,303	16,303	32.3	No	**-6.48**	108.0	3.01	95.25	17.43	4.80	0.00	0.00	117.47
T203	17,809	17,809	27.3	No	**-8.07**	108.0	3.01	96.01	18.25	4.80	0.00	0.00	119.06
T204	17,631	17,631	33.9	No	**-7.89**	108.0	3.01	95.93	18.15	4.80	0.00	0.00	118.88
T205	18,036	18,036	38.8	No	**-8.30**	108.0	3.01	96.12	18.37	4.80	0.00	0.00	119.29
T206	18,772	18,772	27.6	No	**-9.02**	108.0	3.01	96.47	18.74	4.80	0.00	0.00	120.01
T207	19,563	19,563	38.3	No	**-9.77**	108.0	3.01	96.83	19.13	4.80	0.00	0.00	120.76
T208	18,669	18,669	24.3	No	**-8.93**	108.0	3.01	96.42	18.69	4.80	0.00	0.00	119.91
T209	18,820	18,820	30.6	No	**-9.07**	108.0	3.01	96.49	18.77	4.80	0.00	0.00	120.06
T210	18,904	18,904	29.9	No	**-9.15**	108.0	3.01	96.53	18.81	4.80	0.00	0.00	120.14
T211	17,702	17,703	34.7	No	**-7.97**	108.0	3.01	95.96	18.19	4.80	0.00	0.00	118.95
T212	17,429	17,429	35.1	No	**-7.68**	108.0	3.01	95.83	18.05	4.80	0.00	0.00	118.67
T213	17,185	17,185	33.3	No	**-7.43**	108.0	3.01	95.70	17.92	4.80	0.00	0.00	118.42
T214	17,230	17,231	32.5	No	**-7.48**	108.0	3.01	95.73	17.94	4.80	0.00	0.00	118.47
T215	15,600	15,600	38.6	No	**-5.69**	108.0	3.01	94.86	17.02	4.80	0.00	0.00	116.68
T216	16,033	16,034	28.8	No	**-6.18**	108.0	3.01	95.10	17.27	4.80	0.00	0.00	117.17
T217	16,298	16,298	26.8	No	**-6.48**	108.0	3.01	95.24	17.42	4.80	0.00	0.00	117.47
T218	18,430	18,430	36.1	No	**-8.69**	108.0	3.01	96.31	18.57	4.80	0.00	0.00	119.68
T219	18,200	18,200	32.0	No	**-8.47**	108.0	3.01	96.20	18.45	4.80	0.00	0.00	119.45
T220	18,571	18,571	28.4	No	**-8.83**	108.0	3.01	96.38	18.64	4.80	0.00	0.00	119.82
T221	18,752	18,752	23.8	No	**-9.01**	108.0	3.01	96.46	18.73	4.80	0.00	0.00	119.99
T222	16,225	16,225	25.5	No	**-6.40**	108.0	3.01	95.20	17.38	4.80	0.00	0.00	117.39
T223	15,698	15,698	26.8	No	**-5.81**	108.0	3.01	94.92	17.08	4.80	0.00	0.00	116.79
T224	17,130	17,130	30.2	No	**-7.37**	108.0	3.01	95.68	17.89	4.80	0.00	0.00	118.36
T225	16,863	16,863	28.5	No	**-7.09**	108.0	3.01	95.54	17.74	4.80	0.00	0.00	118.08
T226	15,971	15,972	32.4	No	**-6.12**	108.0	3.01	95.07	17.24	4.80	0.00	0.00	117.10
T227	15,365	15,365	27.7	No	**-5.42**	108.0	3.01	94.73	16.88	4.80	0.00	0.00	116.41
T228	16,469	16,469	21.3	No	**-6.67**	108.0	3.01	95.33	17.52	4.80	0.00	0.00	117.65
T229	15,368	15,368	34.5	No	**-5.43**	108.0	3.01	94.73	16.88	4.80	0.00	0.00	116.41
T230	15,402	15,402	38.2	No	**-5.47**	108.0	3.01	94.75	16.90	4.80	0.00	0.00	116.45
T231	15,128	15,128	32.1	No	**-5.15**	108.0	3.01	94.60	16.74	4.80	0.00	0.00	116.13

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T232	13,868	13,868	35.1	No	**-3.60**	108.0	3.01	93.84	15.95	4.80	0.00	0.00	114.59
T233	13,756	13,756	37.6	No	**-3.46**	108.0	3.01	93.77	15.87	4.80	0.00	0.00	114.44
T234	13,527	13,527	39.7	No	**-3.16**	108.0	3.01	93.62	15.72	4.80	0.00	0.00	114.15
T235	13,877	13,877	27.1	No	**-3.61**	108.0	3.01	93.85	15.95	4.80	0.00	0.00	114.60
T301	21,327	21,327	22.6	No	**-11.34**	108.0	3.01	97.58	19.95	4.80	0.00	0.00	122.33
T302	21,767	21,768	22.6	No	**-11.71**	108.0	3.01	97.76	20.15	4.80	0.00	0.00	122.70
T303	22,254	22,254	28.2	No	**-12.12**	108.0	3.01	97.95	20.36	4.80	0.00	0.00	123.11
T304	22,762	22,762	29.1	No	**-12.53**	108.0	3.01	98.14	20.57	4.80	0.00	0.00	123.52
T305	22,409	22,409	29.3	No	**-12.24**	108.0	3.01	98.01	20.42	4.80	0.00	0.00	123.23
T306	22,256	22,256	34.5	No	**-12.12**	108.0	3.01	97.95	20.36	4.80	0.00	0.00	123.11
T307	21,474	21,474	30.8	No	**-11.47**	108.0	3.01	97.64	20.02	4.80	0.00	0.00	122.45
T308	14,432	14,432	26.4	No	**-4.31**	108.0	3.01	94.19	16.31	4.80	0.00	0.00	115.29
T309	14,377	14,377	28.0	No	**-4.24**	108.0	3.01	94.15	16.27	4.80	0.00	0.00	115.23
T310	14,832	14,832	28.5	No	**-4.79**	108.0	3.01	94.42	16.56	4.80	0.00	0.00	115.78
T311	14,727	14,728	29.1	No	**-4.67**	108.0	3.01	94.36	16.49	4.80	0.00	0.00	115.65
T312	14,574	14,574	28.6	No	**-4.48**	108.0	3.01	94.27	16.40	4.80	0.00	0.00	115.47
T313	14,432	14,432	37.7	No	**-4.31**	108.0	3.01	94.19	16.31	4.80	0.00	0.00	115.29
T314	14,326	14,326	31.5	No	**-4.18**	108.0	3.01	94.12	16.24	4.80	0.00	0.00	115.16
T315	13,617	13,618	31.8	No	**-3.28**	108.0	3.01	93.68	15.78	4.80	0.00	0.00	114.26
T316	13,172	13,172	35.5	No	**-2.69**	108.0	3.01	93.39	15.48	4.80	0.00	0.00	113.68
T317	13,419	13,420	42.4	No	**-3.02**	108.0	3.01	93.55	15.65	4.80	0.00	0.00	114.01
T318	13,372	13,372	30.4	No	**-2.96**	108.0	3.01	93.52	15.62	4.80	0.00	0.00	113.94
T319	11,986	11,986	30.8	No	**-1.03**	108.0	3.01	92.57	14.65	4.80	0.00	0.00	112.02
T320	11,823	11,824	36.8	No	**-0.79**	108.0	3.01	92.46	14.53	4.80	0.00	0.00	111.78
T321	11,870	11,870	31.7	No	**-0.86**	108.0	3.01	92.49	14.56	4.80	0.00	0.00	111.85
T322	10,734	10,734	29.7	No	**0.88**	108.0	3.01	91.62	13.69	4.80	0.00	0.00	110.11
T323	10,396	10,396	29.7	No	**1.43**	108.0	3.01	91.34	13.42	4.80	0.00	0.00	109.56
T324	10,404	10,405	30.3	No	**1.42**	108.0	3.01	91.34	13.42	4.80	0.00	0.00	109.57
T325	9,193	9,193	29.6	No	**3.52**	108.0	3.01	90.27	12.39	4.80	0.00	0.00	107.46
T326	9,458	9,459	35.6	Yes	**3.17**	108.0	3.01	90.52	12.63	4.67	0.00	0.00	107.82
T327	9,327	9,327	31.3	No	**3.28**	108.0	3.01	90.40	12.51	4.80	0.00	0.00	107.71
T328	9,174	9,174	31.5	No	**3.56**	108.0	3.01	90.25	12.38	4.80	0.00	0.00	107.43
T329	8,000	8,001	33.6	No	**5.84**	108.0	3.01	89.06	11.29	4.80	0.00	0.00	105.15
T330	8,456	8,457	30.8	No	**4.92**	108.0	3.01	89.54	11.72	4.80	0.00	0.00	106.07
T331	9,405	9,405	33.8	No	**3.14**	108.0	3.01	90.47	12.58	4.80	0.00	0.00	107.85
T332	9,782	9,782	32.0	No	**2.47**	108.0	3.01	90.81	12.91	4.80	0.00	0.00	108.52
T333	10,456	10,456	34.0	No	**1.33**	108.0	3.01	91.39	13.47	4.80	0.00	0.00	109.65
T334	10,378	10,378	29.2	No	**1.46**	108.0	3.01	91.32	13.40	4.80	0.00	0.00	109.53
T335	10,876	10,876	27.0	No	**0.65**	108.0	3.01	91.73	13.80	4.80	0.00	0.00	110.33
Sum	35.54												

Noise sensitive area: SSA028 SSA028

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	19,434	19,434	42.6	No	**-4.63**	107.5	3.01	96.77	13.58	4.80	0.00	0.00	115.15
402	19,821	19,821	46.3	No	**-4.88**	107.5	3.01	96.94	13.66	4.80	0.00	0.00	115.41
403	20,460	20,460	42.9	No	**-5.29**	107.5	3.01	97.22	13.80	4.80	0.00	0.00	115.82
404	20,849	20,849	47.7	No	**-5.54**	107.5	3.01	97.38	13.88	4.80	0.00	0.00	116.06
405	21,048	21,049	37.7	No	**-5.66**	107.5	3.01	97.46	13.92	4.80	0.00	0.00	116.19
406	21,041	21,041	37.6	No	**-5.66**	107.5	3.01	97.46	13.92	4.80	0.00	0.00	116.18
407	21,773	21,774	36.7	No	**-6.10**	107.5	3.01	97.76	14.07	4.80	0.00	0.00	116.63
408	16,932	16,932	47.3	No	**-2.84**	107.5	3.01	95.57	12.99	4.80	0.00	0.00	113.37
409	17,644	17,644	42.9	No	**-3.38**	107.5	3.01	95.93	13.17	4.80	0.00	0.00	113.90
410	17,825	17,826	48.4	No	**-3.51**	107.5	3.01	96.02	13.21	4.80	0.00	0.00	114.03
411	18,140	18,140	50.4	No	**-3.73**	107.5	3.01	96.17	13.29	4.80	0.00	0.00	114.26
412	18,187	18,187	53.7	No	**-3.77**	107.5	3.01	96.20	13.30	4.80	0.00	0.00	114.29
413	18,573	18,573	54.8	No	**-4.04**	107.5	3.01	96.38	13.39	4.80	0.00	0.00	114.56
414	18,966	18,966	55.3	No	**-4.31**	107.5	3.01	96.56	13.48	4.80	0.00	0.00	114.84
415	11,545	11,546	43.8	No	**2.09**	107.5	3.01	92.25	11.38	4.80	0.00	0.00	108.43
416	11,729	11,730	46.7	No	**1.89**	107.5	3.01	92.39	11.45	4.80	0.00	0.00	108.64
417	11,617	11,617	43.3	No	**2.01**	107.5	3.01	92.30	11.41	4.80	0.00	0.00	108.51

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
418	11,727	11,728	37.8	No	**1.89**	107.5	3.01	92.38	11.45	4.80	0.00	0.00	108.63
419	11,315	11,315	39.2	No	**2.35**	107.5	3.01	92.07	11.30	4.80	0.00	0.00	108.17
420	11,751	11,752	39.8	No	**1.86**	107.5	3.01	92.40	11.46	4.80	0.00	0.00	108.66
421	12,999	13,000	55.5	No	**0.57**	107.5	3.01	93.28	11.88	4.80	0.00	0.00	109.96
422	13,191	13,191	43.6	No	**0.38**	107.5	3.01	93.41	11.94	4.80	0.00	0.00	110.15
423	13,315	13,315	45.6	No	**0.26**	107.5	3.01	93.49	11.98	4.80	0.00	0.00	110.27
424	13,692	13,692	40.9	No	**-0.10**	107.5	3.01	93.73	12.10	4.80	0.00	0.00	110.63
425	14,086	14,086	39.8	No	**-0.47**	107.5	3.01	93.98	12.22	4.80	0.00	0.00	110.99
426	9,679	9,680	49.1	No	**4.35**	107.5	3.01	90.72	10.65	4.80	0.00	0.00	106.17
427	10,150	10,151	49.5	No	**3.75**	107.5	3.01	91.13	10.85	4.80	0.00	0.00	106.78
428	10,531	10,532	48.0	No	**3.27**	107.5	3.01	91.45	11.00	4.80	0.00	0.00	107.25
429	11,052	11,053	39.5	No	**2.65**	107.5	3.01	91.87	11.20	4.80	0.00	0.00	107.87
430	11,400	11,401	41.9	No	**2.25**	107.5	3.01	92.14	11.33	4.80	0.00	0.00	108.27
431	12,012	12,012	41.9	No	**1.58**	107.5	3.01	92.59	11.55	4.80	0.00	0.00	108.94
432	12,270	12,270	38.4	No	**1.31**	107.5	3.01	92.78	11.64	4.80	0.00	0.00	109.22
433	3,687	3,688	37.0	No	**16.48**	107.5	3.01	82.34	6.91	4.80	0.00	0.00	94.04
434	2,496	2,500	41.0	Yes	**21.71**	107.5	3.01	78.96	5.62	4.24	0.00	0.00	88.81
435	2,333	2,336	45.4	Yes	**22.61**	107.5	3.01	78.37	5.41	4.13	0.00	0.00	87.92
436	2,509	2,513	47.1	Yes	**21.73**	107.5	3.01	79.00	5.64	4.16	0.00	0.00	88.80
437	2,253	2,257	46.8	Yes	**23.06**	107.5	3.01	78.07	5.31	4.09	0.00	0.00	87.47
438	899	906	50.0	Yes	**34.41**	107.5	3.01	70.15	3.08	2.89	0.00	0.00	76.11
439	3,066	3,069	37.0	No	**18.71**	107.5	3.01	80.74	6.28	4.80	0.00	0.00	91.82
440	3,565	3,567	32.6	No	**16.89**	107.5	3.01	82.05	6.79	4.80	0.00	0.00	93.64
441	3,999	4,001	31.9	No	**15.48**	107.5	3.01	83.04	7.20	4.80	0.00	0.00	95.04
442	4,444	4,446	34.8	No	**14.18**	107.5	3.01	83.96	7.58	4.80	0.00	0.00	96.34
443	4,934	4,935	31.3	No	**12.89**	107.5	3.01	84.87	7.97	4.80	0.00	0.00	97.64
444	5,296	5,297	32.8	No	**12.00**	107.5	3.01	85.48	8.24	4.80	0.00	0.00	98.52
445	1,279	1,285	48.2	Yes	**30.01**	107.5	3.01	73.18	3.82	3.51	0.00	0.00	80.51
446	774	784	52.7	Yes	**36.37**	107.5	3.01	68.89	2.80	2.46	0.00	0.00	74.15
447	544	557	44.8	Yes	**40.39**	107.5	3.01	65.91	2.24	1.98	0.00	0.00	70.13
448	997	1,004	41.2	Yes	**32.82**	107.5	3.01	71.04	3.28	3.38	0.00	0.00	77.70
449	1,617	1,622	43.4	No	**26.13**	107.5	3.01	75.20	4.40	4.80	0.00	0.00	84.40
450	1,913	1,917	41.9	No	**24.23**	107.5	3.01	76.65	4.84	4.80	0.00	0.00	86.30
451	2,570	2,574	43.6	No	**20.80**	107.5	3.01	79.21	5.71	4.80	0.00	0.00	89.72
452	1,704	1,708	40.2	Yes	**26.35**	107.5	3.01	75.65	4.53	3.99	0.00	0.00	84.17
453	3,780	3,782	45.5	No	**16.18**	107.5	3.01	82.55	7.00	4.80	0.00	0.00	94.35
454	3,820	3,822	43.9	No	**16.05**	107.5	3.01	82.64	7.03	4.80	0.00	0.00	94.48
455	3,990	3,991	40.4	No	**15.51**	107.5	3.01	83.02	7.19	4.80	0.00	0.00	95.01
456	4,489	4,491	41.5	No	**14.06**	107.5	3.01	84.05	7.62	4.80	0.00	0.00	96.46
457	4,882	4,883	35.9	No	**13.02**	107.5	3.01	84.77	7.93	4.80	0.00	0.00	97.51
458	2,620	2,623	36.7	No	**20.58**	107.5	3.01	79.38	5.77	4.80	0.00	0.00	89.95
459	2,243	2,246	37.5	No	**22.40**	107.5	3.01	78.03	5.30	4.80	0.00	0.00	88.12
460	2,374	2,377	36.9	Yes	**22.27**	107.5	3.01	78.52	5.47	4.27	0.00	0.00	88.25
461	1,917	1,921	40.4	Yes	**24.92**	107.5	3.01	76.67	4.85	4.08	0.00	0.00	85.60
462	1,698	1,703	48.6	Yes	**26.56**	107.5	3.01	75.63	4.52	3.82	0.00	0.00	83.97
463	1,277	1,283	47.5	Yes	**30.02**	107.5	3.01	73.16	3.82	3.52	0.00	0.00	80.51
464	1,655	1,659	50.4	Yes	**26.92**	107.5	3.01	75.40	4.45	3.76	0.00	0.00	83.61
T001	16,000	16,000	43.7	No	**-6.15**	108.0	3.01	95.08	17.25	4.80	0.00	0.00	117.14
T002	16,161	16,161	42.2	No	**-6.33**	108.0	3.01	95.17	17.35	4.80	0.00	0.00	117.32
T003	14,317	14,317	39.3	No	**-5.23**	107.0	3.01	94.12	16.37	4.80	0.00	0.00	115.29
T004	15,512	15,512	34.7	No	**-6.53**	107.0	3.01	94.81	16.97	4.80	0.00	0.00	116.59
T005	14,338	14,339	30.3	No	**-5.26**	107.0	3.01	94.13	16.38	4.80	0.00	0.00	115.31
T006	15,464	15,464	30.9	No	**-5.54**	108.0	3.01	94.79	16.94	4.80	0.00	0.00	116.53
T007	14,511	14,512	33.7	No	**-4.40**	108.0	3.01	94.23	16.36	4.80	0.00	0.00	115.39
T008	14,662	14,662	41.8	No	**-5.62**	107.0	3.01	94.32	16.55	4.80	0.00	0.00	115.67
T009	16,838	16,838	34.2	No	**-7.06**	108.0	3.01	95.53	17.73	4.80	0.00	0.00	118.05
T010	16,219	16,219	40.3	No	**-6.39**	108.0	3.01	95.20	17.38	4.80	0.00	0.00	117.38
T011	17,778	17,778	23.6	No	**-8.04**	108.0	3.01	96.00	18.23	4.80	0.00	0.00	119.03
T012	17,016	17,016	24.6	No	**-8.04**	107.0	3.01	95.62	17.68	4.80	0.00	0.00	118.10
T013	15,688	15,688	30.8	No	**-6.72**	107.0	3.01	94.91	17.06	4.80	0.00	0.00	116.77
T014	15,102	15,102	25.2	No	**-6.10**	107.0	3.01	94.58	16.77	4.80	0.00	0.00	116.15
T015	15,039	15,039	35.1	No	**-5.04**	108.0	3.01	94.54	16.68	4.80	0.00	0.00	116.03
T016	14,901	14,901	33.8	No	**-5.88**	107.0	3.01	94.46	16.67	4.80	0.00	0.00	115.94

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T017	15,227	15,228	28.1	No	**-5.26**	108.0	3.01	94.65	16.80	4.80	0.00	0.00	116.25
T018	14,999	14,999	19.9	No	**-5.99**	107.0	3.01	94.52	16.72	4.80	0.00	0.00	116.04
T019	15,698	15,698	23.1	No	**-6.73**	107.0	3.01	94.92	17.06	4.80	0.00	0.00	116.78
T020	14,763	14,763	30.9	No	**-4.71**	108.0	3.01	94.38	16.51	4.80	0.00	0.00	115.70
T022	16,116	16,117	28.9	No	**-7.15**	107.0	3.01	95.15	17.26	4.80	0.00	0.00	117.21
T023	14,494	14,494	48.9	No	**-5.43**	107.0	3.01	94.22	16.46	4.80	0.00	0.00	115.49
T025	15,730	15,730	23.3	No	**-5.84**	108.0	3.01	94.93	17.10	4.80	0.00	0.00	116.83
T026	14,435	14,435	27.1	No	**-4.31**	108.0	3.01	94.19	16.31	4.80	0.00	0.00	115.30
T027	15,667	15,668	32.3	No	**-5.77**	108.0	3.01	94.90	17.06	4.80	0.00	0.00	116.76
T028	15,155	15,155	33.9	No	**-5.18**	108.0	3.01	94.61	16.75	4.80	0.00	0.00	116.17
T029	17,520	17,520	25.1	No	**-8.52**	107.0	3.01	95.87	17.91	4.80	0.00	0.00	118.58
T030	16,613	16,613	26.6	No	**-6.82**	108.0	3.01	95.41	17.60	4.80	0.00	0.00	117.81
T031	16,696	16,696	23.3	No	**-7.73**	107.0	3.01	95.45	17.53	4.80	0.00	0.00	117.79
T032	14,157	14,157	28.0	No	**-5.05**	107.0	3.01	94.02	16.29	4.80	0.00	0.00	115.11
T033	16,162	16,162	29.3	No	**-7.20**	107.0	3.01	95.17	17.29	4.80	0.00	0.00	117.26
T201	17,096	17,096	23.8	No	**-7.34**	108.0	3.01	95.66	17.87	4.80	0.00	0.00	118.32
T202	17,305	17,305	23.4	No	**-7.56**	108.0	3.01	95.76	17.98	4.80	0.00	0.00	118.54
T203	18,581	18,581	20.0	No	**-8.84**	108.0	3.01	96.38	18.65	4.80	0.00	0.00	119.83
T204	18,549	18,549	25.7	No	**-8.81**	108.0	3.01	96.37	18.63	4.80	0.00	0.00	119.80
T205	19,039	19,039	31.9	No	**-9.28**	108.0	3.01	96.59	18.87	4.80	0.00	0.00	120.27
T206	19,303	19,303	24.1	No	**-9.53**	108.0	3.01	96.71	19.00	4.80	0.00	0.00	120.52
T207	20,096	20,096	35.2	No	**-10.26**	108.0	3.01	97.06	19.39	4.80	0.00	0.00	121.25
T208	17,272	17,272	29.7	No	**-7.52**	108.0	3.01	95.75	17.96	4.80	0.00	0.00	118.51
T209	17,295	17,295	36.5	No	**-7.55**	108.0	3.01	95.76	17.97	4.80	0.00	0.00	118.53
T210	17,210	17,210	35.8	No	**-7.46**	108.0	3.01	95.72	17.93	4.80	0.00	0.00	118.44
T211	15,949	15,949	41.0	No	**-6.09**	108.0	3.01	95.05	17.22	4.80	0.00	0.00	117.08
T212	15,589	15,589	40.8	No	**-5.68**	108.0	3.01	94.86	17.01	4.80	0.00	0.00	116.67
T213	15,232	15,232	38.8	No	**-5.27**	108.0	3.01	94.66	16.80	4.80	0.00	0.00	116.26
T214	15,154	15,154	38.8	No	**-5.18**	108.0	3.01	94.61	16.75	4.80	0.00	0.00	116.16
T215	14,024	14,025	44.3	No	**-3.80**	108.0	3.01	93.94	16.05	4.80	0.00	0.00	114.79
T216	13,937	13,937	34.3	No	**-3.69**	108.0	3.01	93.88	15.99	4.80	0.00	0.00	114.67
T217	13,948	13,948	34.0	No	**-3.70**	108.0	3.01	93.89	16.00	4.80	0.00	0.00	114.69
T218	15,781	15,781	43.5	No	**-5.90**	108.0	3.01	94.96	17.13	4.80	0.00	0.00	116.89
T219	15,322	15,322	39.0	No	**-5.37**	108.0	3.01	94.71	16.85	4.80	0.00	0.00	116.36
T220	15,588	15,588	37.5	No	**-5.68**	108.0	3.01	94.86	17.01	4.80	0.00	0.00	116.67
T221	15,580	15,580	34.4	No	**-5.67**	108.0	3.01	94.85	17.01	4.80	0.00	0.00	116.66
T222	12,390	12,390	36.3	No	**-1.61**	108.0	3.01	92.86	14.94	4.80	0.00	0.00	112.60
T223	12,019	12,019	36.2	No	**-1.08**	108.0	3.01	92.60	14.67	4.80	0.00	0.00	112.07
T224	13,766	13,766	43.1	No	**-3.47**	108.0	3.01	93.78	15.88	4.80	0.00	0.00	114.46
T225	13,576	13,576	41.4	No	**-3.22**	108.0	3.01	93.66	15.75	4.80	0.00	0.00	114.21
T226	12,638	12,638	43.7	No	**-1.96**	108.0	3.01	93.03	15.11	4.80	0.00	0.00	112.95
T227	12,277	12,277	36.5	No	**-1.45**	108.0	3.01	92.78	14.86	4.80	0.00	0.00	112.44
T228	12,815	12,815	31.6	No	**-2.20**	108.0	3.01	93.15	15.24	4.80	0.00	0.00	113.19
T229	12,529	12,529	44.3	No	**-1.81**	108.0	3.01	92.96	15.04	4.80	0.00	0.00	112.80
T230	12,684	12,685	46.1	No	**-2.03**	108.0	3.01	93.07	15.15	4.80	0.00	0.00	113.01
T231	12,588	12,588	38.4	No	**-1.89**	108.0	3.01	93.00	15.08	4.80	0.00	0.00	112.88
T232	11,379	11,380	40.4	No	**-0.13**	108.0	3.01	92.12	14.19	4.80	0.00	0.00	111.12
T233	11,439	11,439	41.4	No	**-0.22**	108.0	3.01	92.17	14.24	4.80	0.00	0.00	111.21
T234	11,334	11,335	43.1	No	**-0.06**	108.0	3.01	92.09	14.16	4.80	0.00	0.00	111.05
T235	11,933	11,933	33.6	No	**-0.95**	108.0	3.01	92.53	14.61	4.80	0.00	0.00	111.94
T301	21,185	21,185	27.2	No	**-11.22**	108.0	3.01	97.52	19.89	4.80	0.00	0.00	122.21
T302	21,677	21,677	27.8	No	**-11.64**	108.0	3.01	97.72	20.11	4.80	0.00	0.00	122.63
T303	22,349	22,349	32.9	No	**-12.20**	108.0	3.01	97.99	20.40	4.80	0.00	0.00	123.18
T304	22,927	22,928	32.8	No	**-12.66**	108.0	3.01	98.21	20.64	4.80	0.00	0.00	123.65
T305	22,783	22,783	30.8	No	**-12.55**	108.0	3.01	98.15	20.58	4.80	0.00	0.00	123.54
T306	22,547	22,547	35.9	No	**-12.36**	108.0	3.01	98.06	20.48	4.80	0.00	0.00	123.34
T307	21,732	21,732	32.0	No	**-11.68**	108.0	3.01	97.74	20.13	4.80	0.00	0.00	122.67
T308	10,451	10,451	36.7	No	**1.34**	108.0	3.01	91.38	13.46	4.80	0.00	0.00	109.65
T309	10,585	10,585	37.4	No	**1.12**	108.0	3.01	91.49	13.57	4.80	0.00	0.00	109.86
T310	11,215	11,215	37.8	No	**0.13**	108.0	3.01	92.00	14.07	4.80	0.00	0.00	110.86
T311	11,286	11,286	39.5	No	**0.02**	108.0	3.01	92.05	14.12	4.80	0.00	0.00	110.97
T312	11,284	11,284	38.5	No	**0.02**	108.0	3.01	92.05	14.12	4.80	0.00	0.00	110.97
T313	11,327	11,327	47.2	Yes	**0.09**	108.0	3.01	92.08	14.15	4.66	0.00	0.00	110.89

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T314	11,670	11,670	38.9	No	**-0.57**	108.0	3.01	92.34	14.41	4.80	0.00	0.00	111.55
T315	10,737	10,737	42.6	No	**0.88**	108.0	3.01	91.62	13.69	4.80	0.00	0.00	110.11
T316	10,067	10,068	46.2	No	**1.98**	108.0	3.01	91.06	13.15	4.80	0.00	0.00	109.01
T317	10,161	10,161	50.1	Yes	**1.99**	108.0	3.01	91.14	13.22	4.63	0.00	0.00	109.00
T318	9,788	9,788	38.6	No	**2.46**	108.0	3.01	90.81	12.91	4.80	0.00	0.00	108.53
T319	8,076	8,076	41.2	No	**5.68**	108.0	3.01	89.14	11.36	4.80	0.00	0.00	105.31
T320	7,727	7,728	48.4	No	**6.40**	108.0	3.01	88.76	11.02	4.80	0.00	0.00	104.58
T321	7,574	7,574	43.6	No	**6.73**	108.0	3.01	88.59	10.87	4.80	0.00	0.00	104.26
T322	6,461	6,461	42.6	No	**9.27**	108.0	3.01	87.21	9.71	4.80	0.00	0.00	101.71
T323	6,235	6,236	41.7	No	**9.83**	108.0	3.01	86.90	9.46	4.80	0.00	0.00	101.16
T324	6,656	6,657	38.4	Yes	**9.00**	108.0	3.01	87.46	9.92	4.60	0.00	0.00	101.99
T325	5,136	5,137	40.4	Yes	**13.06**	108.0	3.01	85.21	8.19	4.53	0.00	0.00	97.93
T326	5,745	5,745	43.2	Yes	**11.35**	108.0	3.01	86.19	8.91	4.54	0.00	0.00	99.64
T327	5,854	5,854	36.7	Yes	**11.02**	108.0	3.01	86.35	9.03	4.59	0.00	0.00	99.97
T328	6,363	6,363	36.3	Yes	**9.71**	108.0	3.01	87.07	9.60	4.61	0.00	0.00	101.28
T329	5,609	5,610	37.0	No	**11.46**	108.0	3.01	85.98	8.75	4.80	0.00	0.00	99.53
T330	6,374	6,375	33.8	No	**9.49**	108.0	3.01	87.09	9.61	4.80	0.00	0.00	101.50
T331	7,058	7,058	39.0	No	**7.87**	108.0	3.01	87.97	10.34	4.80	0.00	0.00	103.12
T332	7,581	7,582	35.6	No	**6.71**	108.0	3.01	88.60	10.88	4.80	0.00	0.00	104.27
T333	7,848	7,849	40.0	Yes	**6.32**	108.0	3.01	88.90	11.14	4.63	0.00	0.00	104.66
T334	7,506	7,506	36.1	No	**6.88**	108.0	3.01	88.51	10.80	4.80	0.00	0.00	104.11
T335	7,808	7,809	34.9	No	**6.23**	108.0	3.01	88.85	11.10	4.80	0.00	0.00	104.75
Sum	44.19												

Noise sensitive area: SSA029 SSA029

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	20,170	20,170	63.8	No	**-5.11**	107.5	3.01	97.09	13.74	4.80	0.00	0.00	115.63
402	20,573	20,573	67.3	No	**-5.37**	107.5	3.01	97.27	13.82	4.80	0.00	0.00	115.89
403	21,204	21,204	64.0	No	**-5.76**	107.5	3.01	97.53	13.96	4.80	0.00	0.00	116.28
404	21,625	21,625	67.7	No	**-6.01**	107.5	3.01	97.70	14.04	4.80	0.00	0.00	116.54
405	21,880	21,880	55.7	No	**-6.17**	107.5	3.01	97.80	14.09	4.80	0.00	0.00	116.69
406	21,958	21,958	54.9	No	**-6.21**	107.5	3.01	97.83	14.11	4.80	0.00	0.00	116.74
407	22,507	22,507	58.5	No	**-6.54**	107.5	3.01	98.05	14.21	4.80	0.00	0.00	117.06
408	18,654	18,655	64.4	No	**-4.10**	107.5	3.01	96.42	13.41	4.80	0.00	0.00	114.62
409	19,325	19,325	60.4	No	**-4.55**	107.5	3.01	96.72	13.56	4.80	0.00	0.00	115.08
410	19,577	19,578	65.1	No	**-4.72**	107.5	3.01	96.84	13.61	4.80	0.00	0.00	115.25
411	19,926	19,927	66.0	No	**-4.95**	107.5	3.01	96.99	13.69	4.80	0.00	0.00	115.48
412	20,062	20,062	62.9	No	**-5.04**	107.5	3.01	97.05	13.72	4.80	0.00	0.00	115.56
413	20,478	20,478	62.2	No	**-5.31**	107.5	3.01	97.23	13.80	4.80	0.00	0.00	115.83
414	20,871	20,871	62.6	No	**-5.55**	107.5	3.01	97.39	13.89	4.80	0.00	0.00	116.08
415	11,718	11,719	63.2	No	**1.90**	107.5	3.01	92.38	11.45	4.80	0.00	0.00	108.62
416	12,006	12,007	66.6	No	**1.59**	107.5	3.01	92.59	11.55	4.80	0.00	0.00	108.94
417	12,071	12,071	64.3	No	**1.52**	107.5	3.01	92.63	11.57	4.80	0.00	0.00	109.01
418	12,312	12,312	58.4	No	**1.26**	107.5	3.01	92.81	11.65	4.80	0.00	0.00	109.26
419	12,202	12,203	59.5	No	**1.38**	107.5	3.01	92.73	11.62	4.80	0.00	0.00	109.14
420	12,682	12,682	59.6	No	**0.88**	107.5	3.01	93.06	11.78	4.80	0.00	0.00	109.64
421	13,849	13,850	75.9	No	**-0.25**	107.5	3.01	93.83	12.15	4.80	0.00	0.00	110.77
422	14,140	14,140	61.2	No	**-0.52**	107.5	3.01	94.01	12.23	4.80	0.00	0.00	111.04
423	14,348	14,348	63.8	No	**-0.71**	107.5	3.01	94.14	12.29	4.80	0.00	0.00	111.23
424	14,897	14,897	58.1	No	**-1.19**	107.5	3.01	94.46	12.45	4.80	0.00	0.00	111.71
425	15,325	15,325	57.3	No	**-1.56**	107.5	3.01	94.71	12.57	4.80	0.00	0.00	112.08
426	11,346	11,346	66.5	No	**2.32**	107.5	3.01	92.10	11.31	4.80	0.00	0.00	108.21
427	11,916	11,917	65.2	No	**1.68**	107.5	3.01	92.52	11.52	4.80	0.00	0.00	108.84
428	12,366	12,367	62.5	No	**1.21**	107.5	3.01	92.85	11.67	4.80	0.00	0.00	109.32
429	12,840	12,841	54.8	No	**0.72**	107.5	3.01	93.17	11.83	4.80	0.00	0.00	109.80
430	13,261	13,261	54.6	No	**0.31**	107.5	3.01	93.45	11.96	4.80	0.00	0.00	110.22
431	13,851	13,851	55.1	No	**-0.25**	107.5	3.01	93.83	12.15	4.80	0.00	0.00	110.78
432	14,170	14,170	49.2	No	**-0.55**	107.5	3.01	94.03	12.24	4.80	0.00	0.00	111.07
433	1,596	1,598	55.9	Yes	**27.50**	107.5	3.01	75.07	4.36	3.60	0.00	0.00	83.03
434	1,186	1,190	44.5	Yes	**30.85**	107.5	3.01	72.51	3.65	3.51	0.00	0.00	79.67

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
435	1,424	1,427	49.3	Yes	**28.75**	107.5	3.01	74.09	4.07	3.61	0.00	0.00	81.77
436	1,737	1,740	51.7	Yes	**26.35**	107.5	3.01	75.81	4.58	3.78	0.00	0.00	84.17
437	2,104	2,106	46.1	Yes	**23.90**	107.5	3.01	77.47	5.11	4.05	0.00	0.00	86.62
438	2,890	2,891	45.9	Yes	**19.97**	107.5	3.01	80.22	6.08	4.26	0.00	0.00	90.56
439	6,033	6,034	57.7	No	**10.37**	107.5	3.01	86.61	8.74	4.80	0.00	0.00	100.16
440	6,491	6,492	54.9	No	**9.44**	107.5	3.01	87.25	9.03	4.80	0.00	0.00	101.08
441	7,007	7,008	52.3	No	**8.48**	107.5	3.01	87.91	9.34	4.80	0.00	0.00	102.05
442	7,382	7,383	57.5	No	**7.81**	107.5	3.01	88.36	9.55	4.80	0.00	0.00	102.71
443	7,891	7,891	53.0	No	**6.97**	107.5	3.01	88.94	9.82	4.80	0.00	0.00	103.56
444	8,308	8,308	52.1	No	**6.31**	107.5	3.01	89.39	10.03	4.80	0.00	0.00	104.22
445	2,467	2,469	44.1	Yes	**21.91**	107.5	3.01	78.85	5.58	4.19	0.00	0.00	88.62
446	2,842	2,843	45.3	Yes	**20.17**	107.5	3.01	80.08	6.03	4.25	0.00	0.00	90.36
447	4,003	4,004	51.2	No	**15.48**	107.5	3.01	83.05	7.20	4.80	0.00	0.00	95.05
448	4,383	4,384	53.6	No	**14.36**	107.5	3.01	83.84	7.53	4.80	0.00	0.00	96.17
449	4,801	4,802	60.6	No	**13.23**	107.5	3.01	84.63	7.87	4.80	0.00	0.00	97.30
450	5,183	5,184	60.1	No	**12.27**	107.5	3.01	85.29	8.16	4.80	0.00	0.00	98.25
451	5,674	5,675	64.0	No	**11.14**	107.5	3.01	86.08	8.51	4.80	0.00	0.00	99.38
452	2,364	2,366	41.0	Yes	**22.38**	107.5	3.01	78.48	5.45	4.21	0.00	0.00	88.14
453	7,295	7,295	49.5	No	**7.97**	107.5	3.01	88.26	9.50	4.80	0.00	0.00	102.56
454	7,400	7,400	51.7	No	**7.78**	107.5	3.01	88.39	9.56	4.80	0.00	0.00	102.74
455	7,583	7,583	51.4	No	**7.47**	107.5	3.01	88.60	9.65	4.80	0.00	0.00	103.05
456	8,085	8,085	52.5	No	**6.66**	107.5	3.01	89.15	9.91	4.80	0.00	0.00	103.87
457	8,470	8,471	47.0	No	**6.06**	107.5	3.01	89.56	10.10	4.80	0.00	0.00	104.46
458	2,307	2,308	49.7	Yes	**22.82**	107.5	3.01	78.27	5.38	4.06	0.00	0.00	87.71
459	2,237	2,239	47.1	Yes	**23.15**	107.5	3.01	78.00	5.29	4.08	0.00	0.00	87.37
460	3,601	3,602	49.0	Yes	**17.23**	107.5	3.01	82.13	6.82	4.34	0.00	0.00	93.29
461	3,609	3,610	47.8	Yes	**17.19**	107.5	3.01	82.15	6.83	4.35	0.00	0.00	93.33
462	3,890	3,892	52.4	Yes	**16.28**	107.5	3.01	82.80	7.10	4.34	0.00	0.00	94.24
463	3,917	3,918	41.4	Yes	**16.10**	107.5	3.01	82.86	7.12	4.44	0.00	0.00	94.42
464	4,651	4,651	40.0	Yes	**13.92**	107.5	3.01	84.35	7.75	4.51	0.00	0.00	96.61
T001	16,265	16,265	64.3	No	**-6.44**	108.0	3.01	95.23	17.40	4.80	0.00	0.00	117.43
T002	16,664	16,664	63.9	No	**-6.88**	108.0	3.01	95.44	17.63	4.80	0.00	0.00	117.87
T003	14,034	14,034	59.0	No	**-4.91**	107.0	3.01	93.94	16.22	4.80	0.00	0.00	114.97
T004	15,146	15,146	55.1	No	**-6.14**	107.0	3.01	94.61	16.79	4.80	0.00	0.00	116.20
T005	14,373	14,373	49.5	No	**-5.30**	107.0	3.01	94.15	16.40	4.80	0.00	0.00	115.35
T006	16,197	16,197	52.3	No	**-6.37**	108.0	3.01	95.19	17.37	4.80	0.00	0.00	117.35
T007	15,100	15,100	54.7	No	**-5.11**	108.0	3.01	94.58	16.72	4.80	0.00	0.00	116.10
T008	14,177	14,178	60.9	No	**-5.08**	107.0	3.01	94.03	16.30	4.80	0.00	0.00	115.13
T009	17,054	17,054	55.3	No	**-7.29**	108.0	3.01	95.64	17.84	4.80	0.00	0.00	118.28
T010	16,587	16,587	60.6	No	**-6.79**	108.0	3.01	95.40	17.59	4.80	0.00	0.00	117.78
T011	18,105	18,105	44.3	No	**-8.37**	108.0	3.01	96.16	18.40	4.80	0.00	0.00	119.36
T012	16,806	16,806	44.2	No	**-7.84**	107.0	3.01	95.51	17.58	4.80	0.00	0.00	117.89
T013	15,392	15,392	51.4	No	**-6.41**	107.0	3.01	94.75	16.92	4.80	0.00	0.00	116.46
T014	15,069	15,069	45.9	No	**-6.06**	107.0	3.01	94.56	16.75	4.80	0.00	0.00	116.12
T015	15,525	15,525	55.5	No	**-5.61**	108.0	3.01	94.82	16.98	4.80	0.00	0.00	116.60
T016	14,581	14,582	54.1	No	**-5.53**	107.0	3.01	94.28	16.51	4.80	0.00	0.00	115.58
T017	16,080	16,080	48.8	No	**-6.24**	108.0	3.01	95.13	17.30	4.80	0.00	0.00	117.22
T018	15,167	15,167	40.0	No	**-6.17**	107.0	3.01	94.62	16.80	4.80	0.00	0.00	116.22
T019	15,663	15,663	44.0	No	**-6.69**	107.0	3.01	94.90	17.05	4.80	0.00	0.00	116.74
T020	15,494	15,494	52.3	No	**-5.57**	108.0	3.01	94.80	16.96	4.80	0.00	0.00	116.56
T022	15,572	15,572	47.3	No	**-6.60**	107.0	3.01	94.85	17.00	4.80	0.00	0.00	116.65
T023	13,829	13,829	67.3	No	**-4.67**	107.0	3.01	93.82	16.11	4.80	0.00	0.00	114.73
T025	16,590	16,590	42.9	No	**-6.80**	108.0	3.01	95.40	17.59	4.80	0.00	0.00	117.78
T026	15,326	15,326	45.6	No	**-5.38**	108.0	3.01	94.71	16.86	4.80	0.00	0.00	116.37
T027	15,885	15,885	53.0	No	**-6.02**	108.0	3.01	95.02	17.19	4.80	0.00	0.00	117.01
T028	15,776	15,776	54.9	No	**-5.89**	108.0	3.01	94.96	17.12	4.80	0.00	0.00	116.88
T029	17,251	17,251	45.1	No	**-8.27**	107.0	3.01	95.74	17.79	4.80	0.00	0.00	118.32
T030	17,113	17,113	48.5	No	**-7.35**	108.0	3.01	95.67	17.88	4.80	0.00	0.00	118.34
T031	16,400	16,400	44.1	No	**-7.44**	107.0	3.01	95.30	17.40	4.80	0.00	0.00	117.49
T032	14,046	14,046	47.8	No	**-4.92**	107.0	3.01	93.95	16.23	4.80	0.00	0.00	114.98
T033	15,765	15,765	49.9	No	**-6.80**	107.0	3.01	94.95	17.10	4.80	0.00	0.00	116.85
T201	17,858	17,858	44.8	No	**-8.12**	108.0	3.01	96.04	18.27	4.80	0.00	0.00	119.11
T202	18,105	18,105	43.7	No	**-8.37**	108.0	3.01	96.16	18.40	4.80	0.00	0.00	119.36

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T203	19,179	19,179	41.1	No	**-9.41**	108.0	3.01	96.66	18.94	4.80	0.00	0.00	120.40
T204	19,236	19,236	47.5	No	**-9.47**	108.0	3.01	96.68	18.97	4.80	0.00	0.00	120.45
T205	19,753	19,753	53.3	No	**-9.95**	108.0	3.01	96.91	19.22	4.80	0.00	0.00	120.94
T206	19,724	19,725	45.9	No	**-9.92**	108.0	3.01	96.90	19.21	4.80	0.00	0.00	120.91
T207	20,483	20,483	56.5	No	**-10.61**	108.0	3.01	97.23	19.57	4.80	0.00	0.00	121.59
T208	16,576	16,576	48.7	No	**-6.78**	108.0	3.01	95.39	17.58	4.80	0.00	0.00	117.77
T209	16,512	16,513	54.4	No	**-6.71**	108.0	3.01	95.36	17.54	4.80	0.00	0.00	117.70
T210	16,319	16,319	53.9	No	**-6.50**	108.0	3.01	95.25	17.44	4.80	0.00	0.00	117.49
T211	15,091	15,091	59.5	No	**-5.10**	108.0	3.01	94.57	16.71	4.80	0.00	0.00	116.09
T212	14,695	14,695	59.6	No	**-4.63**	108.0	3.01	94.34	16.47	4.80	0.00	0.00	115.62
T213	14,283	14,283	57.8	No	**-4.12**	108.0	3.01	94.10	16.21	4.80	0.00	0.00	115.11
T214	14,124	14,124	57.4	No	**-3.92**	108.0	3.01	94.00	16.11	4.80	0.00	0.00	114.91
T215	13,428	13,429	63.3	No	**-3.03**	108.0	3.01	93.56	15.66	4.80	0.00	0.00	114.02
T216	12,984	12,984	53.3	No	**-2.43**	108.0	3.01	93.27	15.35	4.80	0.00	0.00	113.42
T217	12,812	12,812	49.7	No	**-2.20**	108.0	3.01	93.15	15.24	4.80	0.00	0.00	113.19
T218	14,305	14,305	60.8	No	**-4.15**	108.0	3.01	94.11	16.23	4.80	0.00	0.00	115.14
T219	13,706	13,706	58.9	No	**-3.39**	108.0	3.01	93.74	15.84	4.80	0.00	0.00	114.38
T220	13,879	13,879	58.1	No	**-3.61**	108.0	3.01	93.85	15.95	4.80	0.00	0.00	114.60
T221	13,733	13,733	54.7	No	**-3.43**	108.0	3.01	93.76	15.86	4.80	0.00	0.00	114.41
T222	10,225	10,225	50.6	No	**1.72**	108.0	3.01	91.19	13.28	4.80	0.00	0.00	109.27
T223	10,013	10,013	53.3	No	**2.08**	108.0	3.01	91.01	13.10	4.80	0.00	0.00	108.91
T224	11,881	11,882	61.9	No	**-0.88**	108.0	3.01	92.50	14.57	4.80	0.00	0.00	111.87
T225	11,764	11,764	60.5	No	**-0.71**	108.0	3.01	92.41	14.48	4.80	0.00	0.00	111.69
T226	10,860	10,860	61.4	No	**0.68**	108.0	3.01	91.72	13.79	4.80	0.00	0.00	110.31
T227	10,725	10,725	54.7	No	**0.90**	108.0	3.01	91.61	13.68	4.80	0.00	0.00	110.09
T228	10,767	10,767	48.5	No	**0.83**	108.0	3.01	91.64	13.72	4.80	0.00	0.00	110.16
T229	11,148	11,148	58.7	No	**0.23**	108.0	3.01	91.94	14.02	4.80	0.00	0.00	110.76
T230	11,382	11,382	60.0	No	**-0.13**	108.0	3.01	92.12	14.20	4.80	0.00	0.00	111.12
T231	11,428	11,428	53.9	No	**-0.20**	108.0	3.01	92.16	14.23	4.80	0.00	0.00	111.19
T232	10,388	10,388	57.0	No	**1.45**	108.0	3.01	91.33	13.41	4.80	0.00	0.00	109.54
T233	10,570	10,570	59.5	No	**1.15**	108.0	3.01	91.48	13.56	4.80	0.00	0.00	109.84
T234	10,571	10,571	62.7	No	**1.15**	108.0	3.01	91.48	13.56	4.80	0.00	0.00	109.84
T235	11,280	11,280	52.0	No	**0.02**	108.0	3.01	92.05	14.12	4.80	0.00	0.00	110.96
T301	21,114	21,114	46.3	No	**-11.16**	108.0	3.01	97.49	19.85	4.80	0.00	0.00	122.15
T302	21,620	21,621	47.2	No	**-11.59**	108.0	3.01	97.70	20.08	4.80	0.00	0.00	122.58
T303	22,383	22,383	53.3	No	**-12.22**	108.0	3.01	98.00	20.41	4.80	0.00	0.00	123.21
T304	22,986	22,986	53.6	No	**-12.71**	108.0	3.01	98.23	20.67	4.80	0.00	0.00	123.70
T305	22,974	22,974	51.6	No	**-12.70**	108.0	3.01	98.22	20.66	4.80	0.00	0.00	123.69
T306	22,696	22,696	57.5	No	**-12.48**	108.0	3.01	98.12	20.55	4.80	0.00	0.00	123.46
T307	21,888	21,888	53.8	No	**-11.82**	108.0	3.01	97.80	20.20	4.80	0.00	0.00	122.80
T308	8,329	8,329	49.8	No	**5.17**	108.0	3.01	89.41	11.60	4.80	0.00	0.00	105.82
T309	8,617	8,617	53.7	No	**4.61**	108.0	3.01	89.71	11.87	4.80	0.00	0.00	106.38
T310	9,332	9,332	54.2	No	**3.27**	108.0	3.01	90.40	12.52	4.80	0.00	0.00	107.72
T311	9,544	9,544	54.0	No	**2.89**	108.0	3.01	90.59	12.70	4.80	0.00	0.00	108.10
T312	9,668	9,668	53.8	No	**2.67**	108.0	3.01	90.71	12.81	4.80	0.00	0.00	108.32
T313	9,857	9,857	64.8	No	**2.34**	108.0	3.01	90.87	12.97	4.80	0.00	0.00	108.65
T314	10,516	10,517	53.7	No	**1.23**	108.0	3.01	91.44	13.52	4.80	0.00	0.00	109.75
T315	9,517	9,518	56.5	No	**2.94**	108.0	3.01	90.57	12.68	4.80	0.00	0.00	108.05
T316	8,754	8,754	58.9	No	**4.34**	108.0	3.01	89.84	12.00	4.80	0.00	0.00	106.64
T317	8,705	8,705	66.2	Yes	**4.70**	108.0	3.01	89.80	11.95	4.54	0.00	0.00	106.29
T318	8,100	8,100	51.6	No	**5.63**	108.0	3.01	89.17	11.39	4.80	0.00	0.00	105.35
T319	6,362	6,362	51.7	Yes	**9.79**	108.0	3.01	87.07	9.60	4.52	0.00	0.00	101.19
T320	5,893	5,893	58.5	Yes	**11.04**	108.0	3.01	86.41	9.08	4.46	0.00	0.00	99.94
T321	5,556	5,556	52.0	Yes	**11.93**	108.0	3.01	85.90	8.69	4.48	0.00	0.00	99.06
T322	4,744	4,744	47.1	Yes	**14.30**	108.0	3.01	84.52	7.70	4.46	0.00	0.00	96.69
T323	4,722	4,722	46.9	Yes	**14.37**	108.0	3.01	84.48	7.67	4.46	0.00	0.00	96.62
T324	5,460	5,460	49.8	No	**11.87**	108.0	3.01	85.74	8.57	4.80	0.00	0.00	99.12
T325	4,200	4,201	48.2	Yes	**16.11**	108.0	3.01	83.47	7.01	4.41	0.00	0.00	94.88
T326	4,915	4,915	53.2	No	**13.44**	108.0	3.01	84.83	7.91	4.80	0.00	0.00	97.55
T327	5,227	5,228	48.6	No	**12.53**	108.0	3.01	85.37	8.30	4.80	0.00	0.00	98.46
T328	6,159	6,159	52.2	No	**10.02**	108.0	3.01	86.79	9.37	4.80	0.00	0.00	100.97
T329	6,058	6,059	54.0	No	**10.28**	108.0	3.01	86.65	9.26	4.80	0.00	0.00	100.71
T330	6,759	6,759	52.5	No	**8.56**	108.0	3.01	87.60	10.03	4.80	0.00	0.00	102.43

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T331	7,010	7,010	55.3	No	**7.98**	108.0	3.01	87.91	10.29	4.80	0.00	0.00	103.01
T332	7,499	7,499	52.0	No	**6.89**	108.0	3.01	88.50	10.79	4.80	0.00	0.00	104.09
T333	7,371	7,372	55.6	No	**7.17**	108.0	3.01	88.35	10.67	4.80	0.00	0.00	103.82
T334	6,893	6,893	50.1	No	**8.25**	108.0	3.01	87.77	10.17	4.80	0.00	0.00	102.74
T335	6,948	6,948	49.2	No	**8.12**	108.0	3.01	87.84	10.23	4.80	0.00	0.00	102.87
Sum	36.87												

Noise sensitive area: SSA030 SSA030

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	20,204	20,204	43.8	No	**-5.13**	107.5	3.01	97.11	13.75	4.80	0.00	0.00	115.66
402	20,584	20,585	47.4	No	**-5.37**	107.5	3.01	97.27	13.83	4.80	0.00	0.00	115.90
403	21,222	21,223	43.7	No	**-5.77**	107.5	3.01	97.54	13.96	4.80	0.00	0.00	116.29
404	21,601	21,601	46.8	No	**-6.00**	107.5	3.01	97.69	14.04	4.80	0.00	0.00	116.52
405	21,783	21,784	36.6	No	**-6.11**	107.5	3.01	97.76	14.07	4.80	0.00	0.00	116.63
406	21,752	21,752	38.5	No	**-6.09**	107.5	3.01	97.75	14.07	4.80	0.00	0.00	116.62
407	22,532	22,533	36.9	No	**-6.55**	107.5	3.01	98.06	14.22	4.80	0.00	0.00	117.08
408	17,404	17,404	49.1	No	**-3.20**	107.5	3.01	95.81	13.11	4.80	0.00	0.00	113.72
409	18,125	18,126	44.7	No	**-3.72**	107.5	3.01	96.17	13.28	4.80	0.00	0.00	114.25
410	18,280	18,280	51.2	No	**-3.83**	107.5	3.01	96.24	13.32	4.80	0.00	0.00	114.36
411	18,578	18,578	54.0	No	**-4.04**	107.5	3.01	96.38	13.39	4.80	0.00	0.00	114.57
412	18,591	18,591	55.6	No	**-4.05**	107.5	3.01	96.39	13.39	4.80	0.00	0.00	114.58
413	18,962	18,963	56.0	No	**-4.31**	107.5	3.01	96.56	13.48	4.80	0.00	0.00	114.83
414	19,353	19,354	56.5	No	**-4.57**	107.5	3.01	96.74	13.56	4.80	0.00	0.00	115.10
415	12,514	12,515	40.7	No	**1.05**	107.5	3.01	92.95	11.72	4.80	0.00	0.00	109.47
416	12,675	12,675	43.6	No	**0.89**	107.5	3.01	93.06	11.77	4.80	0.00	0.00	109.63
417	12,524	12,524	40.3	No	**1.04**	107.5	3.01	92.96	11.72	4.80	0.00	0.00	109.48
418	12,602	12,602	35.5	No	**0.96**	107.5	3.01	93.01	11.75	4.80	0.00	0.00	109.56
419	12,118	12,118	37.5	No	**1.47**	107.5	3.01	92.67	11.59	4.80	0.00	0.00	109.06
420	12,536	12,537	39.2	No	**1.03**	107.5	3.01	92.96	11.73	4.80	0.00	0.00	109.49
421	13,789	13,790	54.9	No	**-0.19**	107.5	3.01	93.79	12.13	4.80	0.00	0.00	110.72
422	13,952	13,952	43.4	No	**-0.35**	107.5	3.01	93.89	12.18	4.80	0.00	0.00	110.87
423	14,050	14,050	44.0	No	**-0.44**	107.5	3.01	93.95	12.21	4.80	0.00	0.00	110.96
424	14,371	14,372	39.2	No	**-0.73**	107.5	3.01	94.15	12.30	4.80	0.00	0.00	111.25
425	14,750	14,750	38.7	No	**-1.06**	107.5	3.01	94.38	12.41	4.80	0.00	0.00	111.59
426	10,270	10,271	50.7	No	**3.59**	107.5	3.01	91.23	10.90	4.80	0.00	0.00	106.93
427	10,694	10,695	50.5	No	**3.08**	107.5	3.01	91.58	11.07	4.80	0.00	0.00	107.45
428	11,041	11,042	49.1	No	**2.67**	107.5	3.01	91.86	11.20	4.80	0.00	0.00	107.86
429	11,571	11,571	40.8	No	**2.06**	107.5	3.01	92.27	11.39	4.80	0.00	0.00	108.46
430	11,884	11,885	43.8	No	**1.72**	107.5	3.01	92.50	11.51	4.80	0.00	0.00	108.81
431	12,495	12,495	44.0	No	**1.07**	107.5	3.01	92.93	11.71	4.80	0.00	0.00	109.45
432	12,725	12,725	39.7	No	**0.84**	107.5	3.01	93.09	11.79	4.80	0.00	0.00	109.68
433	4,280	4,282	38.9	No	**14.65**	107.5	3.01	83.63	7.44	4.80	0.00	0.00	95.88
434	3,395	3,397	39.0	Yes	**17.87**	107.5	3.01	81.62	6.62	4.41	0.00	0.00	92.65
435	3,444	3,446	45.7	Yes	**17.76**	107.5	3.01	81.75	6.67	4.35	0.00	0.00	92.76
436	3,698	3,701	51.6	Yes	**16.92**	107.5	3.01	82.37	6.92	4.32	0.00	0.00	93.61
437	3,469	3,471	51.1	Yes	**17.72**	107.5	3.01	81.81	6.69	4.30	0.00	0.00	92.80
438	2,119	2,122	54.7	Yes	**23.94**	107.5	3.01	77.54	5.13	3.92	0.00	0.00	86.58
439	3,395	3,398	43.5	Yes	**17.92**	107.5	3.01	81.62	6.62	4.36	0.00	0.00	92.61
440	3,856	3,858	40.1	Yes	**16.29**	107.5	3.01	82.73	7.07	4.45	0.00	0.00	94.24
441	4,178	4,180	41.3	Yes	**15.28**	107.5	3.01	83.42	7.35	4.46	0.00	0.00	95.24
442	4,637	4,638	43.9	Yes	**13.98**	107.5	3.01	84.33	7.74	4.48	0.00	0.00	96.54
443	5,074	5,075	39.7	Yes	**12.81**	107.5	3.01	85.11	8.08	4.53	0.00	0.00	97.72
444	5,370	5,371	40.6	No	**11.83**	107.5	3.01	85.60	8.29	4.80	0.00	0.00	98.69
445	2,104	2,108	45.6	Yes	**23.88**	107.5	3.01	77.48	5.11	4.06	0.00	0.00	86.65
446	1,808	1,812	50.9	Yes	**25.84**	107.5	3.01	76.16	4.69	3.84	0.00	0.00	84.69
447	1,344	1,349	47.8	Yes	**29.41**	107.5	3.01	73.60	3.94	3.58	0.00	0.00	81.12
448	1,547	1,552	46.7	Yes	**27.66**	107.5	3.01	74.82	4.28	3.77	0.00	0.00	82.86
449	2,103	2,108	48.3	Yes	**23.92**	107.5	3.01	77.48	5.11	4.01	0.00	0.00	86.60
450	2,205	2,209	51.2	Yes	**23.39**	107.5	3.01	77.88	5.25	4.01	0.00	0.00	87.13
451	2,872	2,875	51.8	Yes	**20.10**	107.5	3.01	80.17	6.06	4.18	0.00	0.00	90.42

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
452	2,316	2,319	39.2	Yes	**22.60**	107.5	3.01	78.31	5.39	4.22	0.00	0.00	87.92
453	2,729	2,730	50.5	Yes	**20.74**	107.5	3.01	79.72	5.90	4.17	0.00	0.00	89.79
454	2,893	2,895	53.3	Yes	**20.04**	107.5	3.01	80.23	6.09	4.17	0.00	0.00	90.49
455	3,343	3,344	48.2	Yes	**18.16**	107.5	3.01	81.49	6.57	4.31	0.00	0.00	92.36
456	3,809	3,810	49.8	Yes	**16.53**	107.5	3.01	82.62	7.02	4.35	0.00	0.00	93.99
457	4,222	4,223	43.9	Yes	**15.17**	107.5	3.01	83.51	7.39	4.45	0.00	0.00	95.35
458	3,015	3,018	38.1	No	**18.91**	107.5	3.01	80.59	6.22	4.80	0.00	0.00	91.62
459	2,733	2,735	38.3	No	**20.08**	107.5	3.01	79.74	5.90	4.80	0.00	0.00	90.44
460	2,171	2,174	33.3	No	**22.78**	107.5	3.01	77.74	5.20	4.80	0.00	0.00	87.74
461	1,710	1,715	37.2	No	**25.50**	107.5	3.01	75.68	4.54	4.80	0.00	0.00	85.03
462	1,297	1,305	46.5	Yes	**29.78**	107.5	3.01	73.31	3.86	3.57	0.00	0.00	80.74
463	891	899	46.2	Yes	**34.37**	107.5	3.01	70.08	3.06	3.02	0.00	0.00	76.15
464	589	600	46.7	Yes	**39.53**	107.5	3.01	66.56	2.35	2.08	0.00	0.00	70.99
T001	16,909	16,909	41.0	No	**-7.14**	108.0	3.01	95.56	17.76	4.80	0.00	0.00	118.13
T002	17,012	17,013	39.9	No	**-7.25**	108.0	3.01	95.62	17.82	4.80	0.00	0.00	118.24
T003	15,349	15,349	35.5	No	**-6.36**	107.0	3.01	94.72	16.89	4.80	0.00	0.00	116.42
T004	16,551	16,551	31.2	No	**-7.59**	107.0	3.01	95.38	17.47	4.80	0.00	0.00	117.64
T005	15,309	15,309	27.3	No	**-6.32**	107.0	3.01	94.70	16.87	4.80	0.00	0.00	116.37
T006	16,262	16,262	29.6	No	**-6.44**	108.0	3.01	95.22	17.40	4.80	0.00	0.00	117.43
T007	15,355	15,355	31.6	No	**-5.41**	108.0	3.01	94.72	16.87	4.80	0.00	0.00	116.40
T008	15,727	15,727	38.6	No	**-6.76**	107.0	3.01	94.93	17.08	4.80	0.00	0.00	116.81
T009	17,752	17,753	31.3	No	**-8.02**	108.0	3.01	95.99	18.22	4.80	0.00	0.00	119.00
T010	17,102	17,102	38.5	No	**-7.34**	108.0	3.01	95.66	17.87	4.80	0.00	0.00	118.33
T011	18,661	18,661	21.4	No	**-8.92**	108.0	3.01	96.42	18.69	4.80	0.00	0.00	119.91
T012	18,018	18,018	21.2	No	**-8.98**	107.0	3.01	96.11	18.12	4.80	0.00	0.00	119.04
T013	16,714	16,714	27.3	No	**-7.75**	107.0	3.01	95.46	17.54	4.80	0.00	0.00	117.80
T014	16,081	16,081	22.3	No	**-7.12**	107.0	3.01	95.13	17.25	4.80	0.00	0.00	117.17
T015	15,903	15,903	32.5	No	**-6.04**	108.0	3.01	95.03	17.20	4.80	0.00	0.00	117.03
T016	15,936	15,936	30.1	No	**-6.97**	107.0	3.01	95.05	17.18	4.80	0.00	0.00	117.03
T017	15,994	15,995	29.2	No	**-6.14**	108.0	3.01	95.08	17.25	4.80	0.00	0.00	117.13
T018	15,936	15,936	16.9	No	**-6.97**	107.0	3.01	95.05	17.18	4.80	0.00	0.00	117.03
T019	16,673	16,674	20.3	No	**-7.71**	107.0	3.01	95.44	17.52	4.80	0.00	0.00	117.76
T020	15,567	15,567	29.4	No	**-5.66**	108.0	3.01	94.84	17.00	4.80	0.00	0.00	116.64
T022	17,183	17,183	25.8	No	**-8.20**	107.0	3.01	95.70	17.76	4.80	0.00	0.00	118.26
T023	15,588	15,588	45.9	No	**-6.61**	107.0	3.01	94.86	17.01	4.80	0.00	0.00	116.67
T025	16,491	16,491	23.8	No	**-6.69**	108.0	3.01	95.34	17.53	4.80	0.00	0.00	117.68
T026	15,199	15,199	27.5	No	**-5.23**	108.0	3.01	94.64	16.78	4.80	0.00	0.00	116.22
T027	16,589	16,590	29.4	No	**-6.80**	108.0	3.01	95.40	17.59	4.80	0.00	0.00	117.78
T028	15,985	15,985	31.6	No	**-6.13**	108.0	3.01	95.07	17.24	4.80	0.00	0.00	117.12
T029	18,531	18,531	21.7	No	**-9.45**	107.0	3.01	96.36	18.34	4.80	0.00	0.00	119.50
T030	17,462	17,462	24.3	No	**-7.72**	108.0	3.01	95.84	18.06	4.80	0.00	0.00	118.71
T031	17,716	17,716	20.1	No	**-8.71**	107.0	3.01	95.97	17.99	4.80	0.00	0.00	118.76
T032	15,158	15,158	24.3	No	**-6.16**	107.0	3.01	94.61	16.80	4.80	0.00	0.00	116.21
T033	17,203	17,203	25.8	No	**-8.22**	107.0	3.01	95.71	17.77	4.80	0.00	0.00	118.28
T201	17,873	17,873	24.7	No	**-8.14**	108.0	3.01	96.04	18.28	4.80	0.00	0.00	119.13
T202	18,071	18,071	24.7	No	**-8.34**	108.0	3.01	96.14	18.38	4.80	0.00	0.00	119.32
T203	19,392	19,392	18.1	No	**-9.61**	108.0	3.01	96.75	19.05	4.80	0.00	0.00	120.60
T204	19,337	19,337	25.5	No	**-9.56**	108.0	3.01	96.73	19.02	4.80	0.00	0.00	120.55
T205	19,817	19,817	32.7	No	**-10.01**	108.0	3.01	96.94	19.25	4.80	0.00	0.00	120.99
T206	20,156	20,156	21.2	No	**-10.31**	108.0	3.01	97.09	19.41	4.80	0.00	0.00	121.30
T207	20,952	20,953	31.8	No	**-11.02**	108.0	3.01	97.42	19.78	4.80	0.00	0.00	122.01
T208	18,358	18,358	27.4	No	**-8.62**	108.0	3.01	96.28	18.53	4.80	0.00	0.00	119.61
T209	18,394	18,394	33.8	No	**-8.66**	108.0	3.01	96.29	18.55	4.80	0.00	0.00	119.64
T210	18,325	18,326	34.0	No	**-8.59**	108.0	3.01	96.26	18.52	4.80	0.00	0.00	119.58
T211	17,064	17,064	39.2	No	**-7.30**	108.0	3.01	95.64	17.85	4.80	0.00	0.00	118.29
T212	16,711	16,711	39.4	No	**-6.93**	108.0	3.01	95.46	17.66	4.80	0.00	0.00	117.92
T213	16,362	16,362	36.6	No	**-6.55**	108.0	3.01	95.28	17.46	4.80	0.00	0.00	117.54
T214	16,295	16,295	35.7	No	**-6.48**	108.0	3.01	95.24	17.42	4.80	0.00	0.00	117.46
T215	15,110	15,111	41.4	No	**-5.13**	108.0	3.01	94.59	16.73	4.80	0.00	0.00	116.11
T216	15,074	15,074	31.2	No	**-5.08**	108.0	3.01	94.56	16.70	4.80	0.00	0.00	116.07
T217	15,107	15,107	30.1	No	**-5.12**	108.0	3.01	94.58	16.72	4.80	0.00	0.00	116.11
T218	16,968	16,969	40.6	No	**-7.20**	108.0	3.01	95.59	17.80	4.80	0.00	0.00	118.19
T219	16,522	16,522	37.7	No	**-6.72**	108.0	3.01	95.36	17.55	4.80	0.00	0.00	117.71

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T220	16,794	16,794	34.7	No	**-7.02**	108.0	3.01	95.50	17.70	4.80	0.00	0.00	118.00
T221	16,795	16,795	32.6	No	**-7.02**	108.0	3.01	95.50	17.70	4.80	0.00	0.00	118.01
T222	13,619	13,619	35.2	No	**-3.28**	108.0	3.01	93.68	15.78	4.80	0.00	0.00	114.27
T223	13,246	13,246	35.7	No	**-2.79**	108.0	3.01	93.44	15.53	4.80	0.00	0.00	113.77
T224	14,985	14,986	41.5	No	**-4.98**	108.0	3.01	94.51	16.65	4.80	0.00	0.00	115.96
T225	14,792	14,792	39.6	No	**-4.75**	108.0	3.01	94.40	16.53	4.80	0.00	0.00	115.73
T226	13,854	13,854	42.0	No	**-3.58**	108.0	3.01	93.83	15.94	4.80	0.00	0.00	114.57
T227	13,480	13,480	34.7	No	**-3.10**	108.0	3.01	93.59	15.69	4.80	0.00	0.00	114.08
T228	14,042	14,042	30.9	No	**-3.82**	108.0	3.01	93.95	16.06	4.80	0.00	0.00	114.81
T229	13,718	13,718	41.3	No	**-3.41**	108.0	3.01	93.75	15.85	4.80	0.00	0.00	114.39
T230	13,865	13,865	43.3	No	**-3.60**	108.0	3.01	93.84	15.94	4.80	0.00	0.00	114.58
T231	13,755	13,755	35.1	No	**-3.45**	108.0	3.01	93.77	15.87	4.80	0.00	0.00	114.44
T232	12,535	12,535	36.4	No	**-1.82**	108.0	3.01	92.96	15.04	4.80	0.00	0.00	112.80
T233	12,579	12,580	38.1	No	**-1.88**	108.0	3.01	92.99	15.07	4.80	0.00	0.00	112.87
T234	12,462	12,463	40.6	No	**-1.71**	108.0	3.01	92.91	14.99	4.80	0.00	0.00	112.70
T235	13,041	13,041	31.4	No	**-2.51**	108.0	3.01	93.31	15.39	4.80	0.00	0.00	113.50
T301	22,141	22,141	23.7	No	**-12.02**	108.0	3.01	97.90	20.31	4.80	0.00	0.00	123.01
T302	22,629	22,629	24.2	No	**-12.42**	108.0	3.01	98.09	20.52	4.80	0.00	0.00	123.41
T303	23,278	23,278	29.0	No	**-12.94**	108.0	3.01	98.34	20.79	4.80	0.00	0.00	123.93
T304	23,849	23,850	28.6	No	**-13.39**	108.0	3.01	98.55	21.02	4.80	0.00	0.00	124.37
T305	23,675	23,675	27.7	No	**-13.25**	108.0	3.01	98.49	20.95	4.80	0.00	0.00	124.24
T306	23,450	23,450	34.4	No	**-13.08**	108.0	3.01	98.40	20.86	4.80	0.00	0.00	124.06
T307	22,636	22,636	30.5	No	**-12.43**	108.0	3.01	98.10	20.52	4.80	0.00	0.00	123.42
T308	11,681	11,681	36.0	No	**-0.58**	108.0	3.01	92.35	14.42	4.80	0.00	0.00	111.57
T309	11,812	11,812	36.9	No	**-0.78**	108.0	3.01	92.45	14.52	4.80	0.00	0.00	111.76
T310	12,438	12,438	36.8	No	**-1.68**	108.0	3.01	92.90	14.97	4.80	0.00	0.00	112.67
T311	12,503	12,503	37.7	No	**-1.77**	108.0	3.01	92.94	15.02	4.80	0.00	0.00	112.76
T312	12,494	12,494	36.4	No	**-1.76**	108.0	3.01	92.93	15.01	4.80	0.00	0.00	112.75
T313	12,527	12,528	45.7	No	**-1.81**	108.0	3.01	92.96	15.04	4.80	0.00	0.00	112.79
T314	12,841	12,841	35.2	No	**-2.24**	108.0	3.01	93.17	15.26	4.80	0.00	0.00	113.23
T315	11,919	11,919	39.6	No	**-0.94**	108.0	3.01	92.53	14.60	4.80	0.00	0.00	111.92
T316	11,261	11,262	43.9	No	**0.05**	108.0	3.01	92.03	14.10	4.80	0.00	0.00	110.93
T317	11,365	11,365	48.0	No	**-0.11**	108.0	3.01	92.11	14.18	4.80	0.00	0.00	111.09
T318	11,006	11,006	37.0	No	**0.45**	108.0	3.01	91.83	13.91	4.80	0.00	0.00	110.54
T319	9,301	9,301	41.2	Yes	**3.48**	108.0	3.01	90.37	12.49	4.65	0.00	0.00	107.51
T320	8,956	8,957	48.3	Yes	**4.15**	108.0	3.01	90.04	12.18	4.62	0.00	0.00	106.84
T321	8,804	8,804	43.4	Yes	**4.42**	108.0	3.01	89.89	12.04	4.63	0.00	0.00	106.57
T322	7,690	7,690	42.6	Yes	**6.67**	108.0	3.01	88.72	10.99	4.61	0.00	0.00	104.32
T323	7,462	7,462	41.8	Yes	**7.16**	108.0	3.01	88.46	10.76	4.61	0.00	0.00	103.82
T324	7,867	7,867	36.9	No	**6.11**	108.0	3.01	88.92	11.16	4.80	0.00	0.00	104.88
T325	6,351	6,352	39.5	No	**9.54**	108.0	3.01	87.06	9.59	4.80	0.00	0.00	101.45
T326	6,944	6,944	40.6	No	**8.13**	108.0	3.01	87.83	10.22	4.80	0.00	0.00	102.86
T327	7,035	7,035	33.8	No	**7.92**	108.0	3.01	87.95	10.32	4.80	0.00	0.00	103.06
T328	7,486	7,487	33.4	No	**6.92**	108.0	3.01	88.49	10.78	4.80	0.00	0.00	104.07
T329	6,654	6,655	33.3	No	**8.81**	108.0	3.01	87.46	9.92	4.80	0.00	0.00	102.18
T330	7,404	7,404	29.6	No	**7.10**	108.0	3.01	88.39	10.70	4.80	0.00	0.00	103.89
T331	8,142	8,143	35.8	No	**5.55**	108.0	3.01	89.22	11.43	4.80	0.00	0.00	105.44
T332	8,660	8,660	32.4	No	**4.52**	108.0	3.01	89.75	11.91	4.80	0.00	0.00	106.46
T333	8,978	8,978	37.0	No	**3.92**	108.0	3.01	90.06	12.20	4.80	0.00	0.00	107.07
T334	8,657	8,657	32.0	No	**4.53**	108.0	3.01	89.75	11.91	4.80	0.00	0.00	106.46
T335	8,981	8,982	31.4	No	**3.92**	108.0	3.01	90.07	12.21	4.80	0.00	0.00	107.07
Sum	42.41												

Noise sensitive area: SSA031 SSA031

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	20,313	20,314	63.8	No	**-5.20**	107.5	3.01	97.16	13.77	4.80	0.00	0.00	115.73
402	20,715	20,715	67.2	No	**-5.46**	107.5	3.01	97.33	13.85	4.80	0.00	0.00	115.98
403	21,348	21,348	63.9	No	**-5.85**	107.5	3.01	97.59	13.98	4.80	0.00	0.00	116.37
404	21,766	21,766	67.7	No	**-6.10**	107.5	3.01	97.76	14.07	4.80	0.00	0.00	116.62
405	22,016	22,016	55.8	No	**-6.25**	107.5	3.01	97.85	14.12	4.80	0.00	0.00	116.77

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
406	22,084	22,084	55.0	No	**-6.29**	107.5	3.01	97.88	14.13	4.80	0.00	0.00	116.81
407	22,654	22,654	58.1	No	**-6.62**	107.5	3.01	98.10	14.24	4.80	0.00	0.00	117.15
408	18,681	18,681	63.4	No	**-4.11**	107.5	3.01	96.43	13.41	4.80	0.00	0.00	114.64
409	19,358	19,358	60.0	No	**-4.58**	107.5	3.01	96.74	13.56	4.80	0.00	0.00	115.10
410	19,602	19,602	63.9	No	**-4.74**	107.5	3.01	96.85	13.62	4.80	0.00	0.00	115.26
411	19,947	19,947	64.7	No	**-4.96**	107.5	3.01	97.00	13.69	4.80	0.00	0.00	115.49
412	20,071	20,072	61.9	No	**-5.05**	107.5	3.01	97.05	13.72	4.80	0.00	0.00	115.57
413	20,484	20,484	61.9	No	**-5.31**	107.5	3.01	97.23	13.81	4.80	0.00	0.00	115.83
414	20,878	20,878	62.2	No	**-5.56**	107.5	3.01	97.39	13.89	4.80	0.00	0.00	116.08
415	11,899	11,899	63.4	No	**1.70**	107.5	3.01	92.51	11.51	4.80	0.00	0.00	108.82
416	12,178	12,178	67.3	No	**1.41**	107.5	3.01	92.71	11.61	4.80	0.00	0.00	109.12
417	12,224	12,224	65.0	No	**1.36**	107.5	3.01	92.74	11.62	4.80	0.00	0.00	109.17
418	12,452	12,452	58.5	No	**1.12**	107.5	3.01	92.90	11.70	4.80	0.00	0.00	109.41
419	12,309	12,309	58.9	No	**1.27**	107.5	3.01	92.80	11.65	4.80	0.00	0.00	109.26
420	12,786	12,786	59.1	No	**0.78**	107.5	3.01	93.13	11.81	4.80	0.00	0.00	109.75
421	13,966	13,966	75.6	No	**-0.36**	107.5	3.01	93.90	12.18	4.80	0.00	0.00	110.88
422	14,246	14,247	60.8	No	**-0.61**	107.5	3.01	94.07	12.26	4.80	0.00	0.00	111.14
423	14,446	14,446	63.6	No	**-0.79**	107.5	3.01	94.20	12.32	4.80	0.00	0.00	111.32
424	14,977	14,977	57.6	No	**-1.26**	107.5	3.01	94.51	12.48	4.80	0.00	0.00	111.78
425	15,402	15,402	56.9	No	**-1.62**	107.5	3.01	94.75	12.59	4.80	0.00	0.00	112.14
426	11,358	11,358	65.1	No	**2.30**	107.5	3.01	92.11	11.32	4.80	0.00	0.00	108.22
427	11,919	11,919	64.5	No	**1.68**	107.5	3.01	92.52	11.52	4.80	0.00	0.00	108.84
428	12,362	12,363	62.4	No	**1.21**	107.5	3.01	92.84	11.67	4.80	0.00	0.00	109.31
429	12,844	12,844	54.2	No	**0.72**	107.5	3.01	93.17	11.83	4.80	0.00	0.00	109.80
430	13,257	13,258	54.6	No	**0.31**	107.5	3.01	93.45	11.96	4.80	0.00	0.00	110.21
431	13,852	13,852	54.7	No	**-0.25**	107.5	3.01	93.83	12.15	4.80	0.00	0.00	110.78
432	14,164	14,164	49.5	No	**-0.54**	107.5	3.01	94.02	12.24	4.80	0.00	0.00	111.06
433	1,328	1,330	55.1	Yes	**29.77**	107.5	3.01	73.48	3.90	3.37	0.00	0.00	80.76
434	807	813	43.4	Yes	**35.50**	107.5	3.01	69.20	2.87	2.94	0.00	0.00	75.02
435	1,252	1,256	48.6	Yes	**30.31**	107.5	3.01	72.98	3.77	3.46	0.00	0.00	80.21
436	1,684	1,687	50.0	Yes	**26.71**	107.5	3.01	75.54	4.50	3.78	0.00	0.00	83.82
437	2,016	2,017	46.1	Yes	**24.43**	107.5	3.01	77.10	4.99	4.02	0.00	0.00	86.10
438	2,621	2,622	45.7	Yes	**21.18**	107.5	3.01	79.37	5.77	4.20	0.00	0.00	89.34
439	5,835	5,836	58.0	No	**10.79**	107.5	3.01	86.32	8.61	4.80	0.00	0.00	99.74
440	6,304	6,305	54.5	No	**9.81**	107.5	3.01	86.99	8.92	4.80	0.00	0.00	100.71
441	6,814	6,815	51.9	No	**8.83**	107.5	3.01	87.67	9.23	4.80	0.00	0.00	101.69
442	7,202	7,203	57.3	No	**8.13**	107.5	3.01	88.15	9.45	4.80	0.00	0.00	102.40
443	7,712	7,713	52.7	No	**7.26**	107.5	3.01	88.74	9.72	4.80	0.00	0.00	103.27
444	8,123	8,124	51.4	No	**6.60**	107.5	3.01	89.20	9.93	4.80	0.00	0.00	103.93
445	2,100	2,102	43.0	Yes	**23.87**	107.5	3.01	77.45	5.10	4.10	0.00	0.00	86.66
446	2,510	2,512	45.0	Yes	**21.70**	107.5	3.01	79.00	5.63	4.19	0.00	0.00	88.82
447	3,706	3,707	51.4	No	**16.42**	107.5	3.01	82.38	6.92	4.80	0.00	0.00	94.11
448	4,104	4,105	53.3	No	**15.17**	107.5	3.01	83.27	7.29	4.80	0.00	0.00	95.35
449	4,556	4,557	60.7	No	**13.88**	107.5	3.01	84.17	7.67	4.80	0.00	0.00	96.65
450	4,933	4,934	59.7	No	**12.89**	107.5	3.01	84.86	7.97	4.80	0.00	0.00	97.63
451	5,453	5,454	63.5	No	**11.64**	107.5	3.01	85.73	8.35	4.80	0.00	0.00	98.89
452	1,964	1,966	42.1	Yes	**24.67**	107.5	3.01	76.87	4.91	4.07	0.00	0.00	85.85
453	6,930	6,930	49.4	No	**8.62**	107.5	3.01	87.81	9.29	4.80	0.00	0.00	101.91
454	7,051	7,052	52.4	No	**8.40**	107.5	3.01	87.97	9.36	4.80	0.00	0.00	102.13
455	7,270	7,271	51.9	No	**8.01**	107.5	3.01	88.23	9.48	4.80	0.00	0.00	102.52
456	7,770	7,771	53.2	No	**7.16**	107.5	3.01	88.81	9.75	4.80	0.00	0.00	103.36
457	8,161	8,162	47.7	No	**6.54**	107.5	3.01	89.24	9.95	4.80	0.00	0.00	103.99
458	1,900	1,902	51.1	Yes	**25.24**	107.5	3.01	76.58	4.82	3.88	0.00	0.00	85.28
459	1,823	1,826	48.0	Yes	**25.69**	107.5	3.01	76.23	4.71	3.90	0.00	0.00	84.83
460	3,188	3,189	50.1	Yes	**18.78**	107.5	3.01	81.07	6.41	4.26	0.00	0.00	91.74
461	3,197	3,199	49.2	Yes	**18.73**	107.5	3.01	81.10	6.42	4.27	0.00	0.00	91.79
462	3,484	3,486	54.0	Yes	**17.70**	107.5	3.01	81.85	6.71	4.27	0.00	0.00	92.83
463	3,524	3,526	42.8	No	**17.03**	107.5	3.01	81.94	6.75	4.80	0.00	0.00	93.49
464	4,260	4,261	41.2	No	**14.71**	107.5	3.01	83.59	7.42	4.80	0.00	0.00	95.81
T001	16,451	16,451	64.3	No	**-6.65**	108.0	3.01	95.32	17.51	4.80	0.00	0.00	117.63
T002	16,826	16,826	64.4	No	**-7.05**	108.0	3.01	95.52	17.72	4.80	0.00	0.00	118.04
T003	14,268	14,269	57.8	No	**-5.18**	107.0	3.01	94.09	16.35	4.80	0.00	0.00	115.23
T004	15,391	15,391	54.3	No	**-6.41**	107.0	3.01	94.75	16.91	4.80	0.00	0.00	116.46

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T005	14,577	14,577	49.8	No	**-5.52**	107.0	3.01	94.27	16.51	4.80	0.00	0.00	115.58
T006	16,333	16,333	52.5	No	**-6.52**	108.0	3.01	95.26	17.44	4.80	0.00	0.00	117.50
T007	15,249	15,249	54.8	No	**-5.29**	108.0	3.01	94.66	16.81	4.80	0.00	0.00	116.28
T008	14,431	14,431	60.5	No	**-5.36**	107.0	3.01	94.19	16.43	4.80	0.00	0.00	115.42
T009	17,247	17,247	55.7	No	**-7.50**	108.0	3.01	95.73	17.95	4.80	0.00	0.00	118.48
T010	16,763	16,763	61.0	No	**-6.98**	108.0	3.01	95.49	17.68	4.80	0.00	0.00	117.97
T011	18,288	18,288	44.2	No	**-8.55**	108.0	3.01	96.24	18.50	4.80	0.00	0.00	119.54
T012	17,040	17,040	43.2	No	**-8.07**	107.0	3.01	95.63	17.69	4.80	0.00	0.00	118.12
T013	15,631	15,631	50.3	No	**-6.66**	107.0	3.01	94.88	17.03	4.80	0.00	0.00	116.71
T014	15,282	15,282	46.1	No	**-6.29**	107.0	3.01	94.68	16.86	4.80	0.00	0.00	116.34
T015	15,686	15,686	56.0	No	**-5.79**	108.0	3.01	94.91	17.07	4.80	0.00	0.00	116.78
T016	14,821	14,821	52.9	No	**-5.79**	107.0	3.01	94.42	16.63	4.80	0.00	0.00	115.85
T017	16,203	16,203	48.5	No	**-6.37**	108.0	3.01	95.19	17.37	4.80	0.00	0.00	117.36
T018	15,360	15,360	40.4	No	**-6.37**	107.0	3.01	94.73	16.90	4.80	0.00	0.00	116.43
T019	15,877	15,877	44.1	No	**-6.91**	107.0	3.01	95.02	17.15	4.80	0.00	0.00	116.97
T020	15,629	15,629	52.4	No	**-5.73**	108.0	3.01	94.88	17.04	4.80	0.00	0.00	116.72
T022	15,834	15,834	46.7	No	**-6.87**	107.0	3.01	94.99	17.13	4.80	0.00	0.00	116.92
T023	14,098	14,098	67.6	No	**-4.99**	107.0	3.01	93.98	16.26	4.80	0.00	0.00	115.04
T025	16,713	16,713	42.7	No	**-6.93**	108.0	3.01	95.46	17.66	4.80	0.00	0.00	117.92
T026	15,443	15,443	45.2	No	**-5.51**	108.0	3.01	94.77	16.93	4.80	0.00	0.00	116.50
T027	16,075	16,075	53.3	No	**-6.23**	108.0	3.01	95.12	17.30	4.80	0.00	0.00	117.22
T028	15,923	15,923	54.9	No	**-6.06**	108.0	3.01	95.04	17.21	4.80	0.00	0.00	117.05
T029	17,491	17,491	44.0	No	**-8.50**	107.0	3.01	95.86	17.89	4.80	0.00	0.00	118.55
T030	17,276	17,276	49.1	No	**-7.53**	108.0	3.01	95.75	17.96	4.80	0.00	0.00	118.51
T031	16,641	16,641	43.0	No	**-7.68**	107.0	3.01	95.42	17.51	4.80	0.00	0.00	117.73
T032	14,263	14,264	47.9	No	**-5.17**	107.0	3.01	94.08	16.34	4.80	0.00	0.00	115.23
T033	16,015	16,015	49.4	No	**-7.05**	107.0	3.01	95.09	17.22	4.80	0.00	0.00	117.11
T201	17,994	17,994	44.9	No	**-8.26**	108.0	3.01	96.10	18.34	4.80	0.00	0.00	119.25
T202	18,239	18,239	43.8	No	**-8.50**	108.0	3.01	96.22	18.47	4.80	0.00	0.00	119.49
T203	19,336	19,336	41.8	No	**-9.56**	108.0	3.01	96.73	19.02	4.80	0.00	0.00	120.55
T204	19,384	19,384	47.3	No	**-9.61**	108.0	3.01	96.75	19.04	4.80	0.00	0.00	120.59
T205	19,899	19,899	53.2	No	**-10.08**	108.0	3.01	96.98	19.29	4.80	0.00	0.00	121.07
T206	19,901	19,901	46.1	No	**-10.08**	108.0	3.01	96.98	19.29	4.80	0.00	0.00	121.07
T207	20,664	20,664	56.5	No	**-10.77**	108.0	3.01	97.30	19.65	4.80	0.00	0.00	121.75
T208	16,854	16,854	49.1	No	**-7.08**	108.0	3.01	95.53	17.73	4.80	0.00	0.00	118.07
T209	16,798	16,798	54.4	No	**-7.02**	108.0	3.01	95.51	17.70	4.80	0.00	0.00	118.01
T210	16,613	16,614	53.9	No	**-6.82**	108.0	3.01	95.41	17.60	4.80	0.00	0.00	117.81
T211	15,380	15,380	59.3	No	**-5.44**	108.0	3.01	94.74	16.89	4.80	0.00	0.00	116.43
T212	14,986	14,987	59.5	No	**-4.98**	108.0	3.01	94.51	16.65	4.80	0.00	0.00	115.97
T213	14,579	14,579	57.7	No	**-4.49**	108.0	3.01	94.27	16.40	4.80	0.00	0.00	115.47
T214	14,426	14,426	57.6	No	**-4.30**	108.0	3.01	94.18	16.30	4.80	0.00	0.00	115.29
T215	13,690	13,691	62.4	No	**-3.37**	108.0	3.01	93.73	15.83	4.80	0.00	0.00	114.36
T216	13,276	13,276	53.1	No	**-2.83**	108.0	3.01	93.46	15.55	4.80	0.00	0.00	113.82
T217	13,120	13,120	50.3	No	**-2.62**	108.0	3.01	93.36	15.45	4.80	0.00	0.00	113.61
T218	14,643	14,643	59.9	No	**-4.57**	108.0	3.01	94.31	16.44	4.80	0.00	0.00	115.55
T219	14,054	14,054	58.3	No	**-3.84**	108.0	3.01	93.96	16.07	4.80	0.00	0.00	114.82
T220	14,234	14,234	56.4	No	**-4.06**	108.0	3.01	94.07	16.18	4.80	0.00	0.00	115.05
T221	14,097	14,097	53.9	No	**-3.89**	108.0	3.01	93.98	16.09	4.80	0.00	0.00	114.88
T222	10,604	10,604	50.3	No	**1.09**	108.0	3.01	91.51	13.59	4.80	0.00	0.00	109.90
T223	10,381	10,381	52.4	No	**1.46**	108.0	3.01	91.32	13.41	4.80	0.00	0.00	109.53
T224	12,245	12,245	61.1	No	**-1.41**	108.0	3.01	92.76	14.83	4.80	0.00	0.00	112.39
T225	12,123	12,123	59.4	No	**-1.23**	108.0	3.01	92.67	14.75	4.80	0.00	0.00	112.22
T226	11,214	11,214	59.6	No	**0.13**	108.0	3.01	92.00	14.07	4.80	0.00	0.00	110.86
T227	11,061	11,061	54.1	No	**0.36**	108.0	3.01	91.88	13.95	4.80	0.00	0.00	110.62
T228	11,140	11,140	48.1	No	**0.24**	108.0	3.01	91.94	14.01	4.80	0.00	0.00	110.75
T229	11,472	11,472	58.0	No	**-0.27**	108.0	3.01	92.19	14.26	4.80	0.00	0.00	111.26
T230	11,700	11,700	59.6	No	**-0.61**	108.0	3.01	92.36	14.44	4.80	0.00	0.00	111.60
T231	11,734	11,734	54.6	No	**-0.66**	108.0	3.01	92.39	14.46	4.80	0.00	0.00	111.65
T232	10,676	10,676	56.8	No	**0.98**	108.0	3.01	91.57	13.64	4.80	0.00	0.00	110.01
T233	10,847	10,847	59.8	No	**0.70**	108.0	3.01	91.71	13.78	4.80	0.00	0.00	110.29
T234	10,838	10,839	62.6	No	**0.72**	108.0	3.01	91.70	13.77	4.80	0.00	0.00	110.27
T235	11,540	11,540	51.1	No	**-0.37**	108.0	3.01	92.24	14.32	4.80	0.00	0.00	111.36
T301	21,341	21,341	46.1	No	**-11.35**	108.0	3.01	97.58	19.96	4.80	0.00	0.00	122.34

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T302	21,847	21,847	47.0	No	**-11.78**	108.0	3.01	97.79	20.18	4.80	0.00	0.00	122.77
T303	22,602	22,602	53.3	No	**-12.40**	108.0	3.01	98.08	20.51	4.80	0.00	0.00	123.39
T304	23,203	23,203	53.5	No	**-12.88**	108.0	3.01	98.31	20.76	4.80	0.00	0.00	123.87
T305	23,178	23,178	51.7	No	**-12.86**	108.0	3.01	98.30	20.75	4.80	0.00	0.00	123.85
T306	22,904	22,904	57.6	No	**-12.64**	108.0	3.01	98.20	20.63	4.80	0.00	0.00	123.63
T307	22,094	22,094	53.9	No	**-11.99**	108.0	3.01	97.89	20.29	4.80	0.00	0.00	122.97
T308	8,701	8,701	49.2	No	**4.45**	108.0	3.01	89.79	11.95	4.80	0.00	0.00	106.54
T309	8,978	8,978	52.7	No	**3.92**	108.0	3.01	90.06	12.20	4.80	0.00	0.00	107.07
T310	9,690	9,690	53.0	No	**2.63**	108.0	3.01	90.73	12.83	4.80	0.00	0.00	108.35
T311	9,891	9,891	53.3	No	**2.28**	108.0	3.01	90.91	13.00	4.80	0.00	0.00	108.70
T312	10,006	10,006	52.8	No	**2.09**	108.0	3.01	91.01	13.10	4.80	0.00	0.00	108.90
T313	10,184	10,184	64.4	No	**1.79**	108.0	3.01	91.16	13.24	4.80	0.00	0.00	109.20
T314	10,819	10,819	54.0	No	**0.75**	108.0	3.01	91.68	13.76	4.80	0.00	0.00	110.24
T315	9,821	9,822	56.9	No	**2.40**	108.0	3.01	90.84	12.94	4.80	0.00	0.00	108.58
T316	9,063	9,063	59.6	No	**3.76**	108.0	3.01	90.15	12.28	4.80	0.00	0.00	107.22
T317	9,026	9,026	65.5	No	**3.83**	108.0	3.01	90.11	12.25	4.80	0.00	0.00	107.16
T318	8,437	8,437	50.7	No	**4.96**	108.0	3.01	89.52	11.71	4.80	0.00	0.00	106.03
T319	6,690	6,691	51.2	No	**8.72**	108.0	3.01	87.51	9.96	4.80	0.00	0.00	102.27
T320	6,229	6,229	57.4	No	**9.85**	108.0	3.01	86.89	9.45	4.80	0.00	0.00	101.14
T321	5,905	5,905	51.0	No	**10.67**	108.0	3.01	86.42	9.09	4.80	0.00	0.00	100.31
T322	5,055	5,056	47.9	No	**13.02**	108.0	3.01	85.08	8.09	4.80	0.00	0.00	97.96
T323	5,012	5,012	46.6	No	**13.15**	108.0	3.01	85.00	8.03	4.80	0.00	0.00	97.83
T324	5,728	5,729	49.3	No	**11.14**	108.0	3.01	86.16	8.89	4.80	0.00	0.00	99.85
T325	4,413	4,413	47.7	No	**15.01**	108.0	3.01	83.90	7.28	4.80	0.00	0.00	95.98
T326	5,133	5,134	52.2	No	**12.80**	108.0	3.01	85.21	8.18	4.80	0.00	0.00	98.19
T327	5,430	5,430	49.0	No	**11.95**	108.0	3.01	85.70	8.54	4.80	0.00	0.00	99.03
T328	6,332	6,332	52.5	No	**9.59**	108.0	3.01	87.03	9.57	4.80	0.00	0.00	101.40
T329	6,157	6,157	53.6	No	**10.03**	108.0	3.01	86.79	9.37	4.80	0.00	0.00	100.96
T330	6,876	6,877	52.2	No	**8.29**	108.0	3.01	87.75	10.15	4.80	0.00	0.00	102.70
T331	7,178	7,179	55.9	No	**7.60**	108.0	3.01	88.12	10.47	4.80	0.00	0.00	103.39
T332	7,677	7,677	52.4	No	**6.51**	108.0	3.01	88.70	10.97	4.80	0.00	0.00	104.48
T333	7,589	7,590	55.4	No	**6.70**	108.0	3.01	88.60	10.89	4.80	0.00	0.00	104.29
T334	7,120	7,120	49.0	No	**7.73**	108.0	3.01	88.05	10.41	4.80	0.00	0.00	103.26
T335	7,200	7,200	48.1	No	**7.55**	108.0	3.01	88.15	10.49	4.80	0.00	0.00	103.44
Sum	39.35												

Noise sensitive area: SSA032 SSA032

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	20,312	20,312	56.4	Yes	**-5.11**	107.5	3.01	97.16	13.77	4.71	0.00	0.00	115.63
402	20,698	20,699	60.3	Yes	**-5.35**	107.5	3.01	97.32	13.85	4.70	0.00	0.00	115.87
403	21,338	21,338	56.8	Yes	**-5.75**	107.5	3.01	97.58	13.98	4.71	0.00	0.00	116.27
404	21,726	21,726	61.6	Yes	**-5.98**	107.5	3.01	97.74	14.06	4.70	0.00	0.00	116.50
405	21,924	21,925	51.4	Yes	**-6.11**	107.5	3.01	97.82	14.10	4.72	0.00	0.00	116.64
406	21,915	21,915	51.5	Yes	**-6.11**	107.5	3.01	97.81	14.10	4.72	0.00	0.00	116.63
407	22,651	22,651	50.7	Yes	**-6.54**	107.5	3.01	98.10	14.24	4.72	0.00	0.00	117.07
408	17,763	17,763	62.2	Yes	**-3.34**	107.5	3.01	95.99	13.20	4.68	0.00	0.00	113.87
409	18,477	18,478	57.6	Yes	**-3.87**	107.5	3.01	96.33	13.36	4.69	0.00	0.00	114.39
410	18,653	18,653	63.7	Yes	**-3.98**	107.5	3.01	96.41	13.40	4.68	0.00	0.00	114.50
411	18,963	18,963	65.7	Yes	**-4.19**	107.5	3.01	96.56	13.48	4.68	0.00	0.00	114.72
412	19,000	19,001	67.9	Yes	**-4.21**	107.5	3.01	96.58	13.48	4.68	0.00	0.00	114.74
413	19,382	19,383	68.3	Yes	**-4.47**	107.5	3.01	96.75	13.57	4.68	0.00	0.00	115.00
414	19,775	19,775	68.7	Yes	**-4.73**	107.5	3.01	96.92	13.65	4.68	0.00	0.00	115.26
415	12,411	12,412	58.3	Yes	**1.32**	107.5	3.01	92.88	11.69	4.64	0.00	0.00	109.20
416	12,600	12,600	61.2	Yes	**1.13**	107.5	3.01	93.01	11.75	4.63	0.00	0.00	109.39
417	12,492	12,492	57.9	Yes	**1.24**	107.5	3.01	92.93	11.71	4.64	0.00	0.00	109.29
418	12,605	12,605	52.3	Yes	**1.10**	107.5	3.01	93.01	11.75	4.66	0.00	0.00	109.42
419	12,193	12,194	53.3	Yes	**1.54**	107.5	3.01	92.72	11.61	4.65	0.00	0.00	108.99
420	12,629	12,630	53.9	Yes	**1.08**	107.5	3.01	93.03	11.76	4.65	0.00	0.00	109.44
421	13,877	13,878	69.6	Yes	**-0.11**	107.5	3.01	93.85	12.15	4.63	0.00	0.00	110.63
422	14,068	14,068	57.5	Yes	**-0.31**	107.5	3.01	93.96	12.21	4.66	0.00	0.00	110.84

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
423	14,190	14,190	59.1	Yes	**-0.42**	107.5	3.01	94.04	12.25	4.66	0.00	0.00	110.95
424	14,561	14,561	54.3	Yes	**-0.77**	107.5	3.01	94.26	12.36	4.67	0.00	0.00	111.29
425	14,953	14,953	53.0	Yes	**-1.12**	107.5	3.01	94.49	12.47	4.68	0.00	0.00	111.64
426	10,532	10,533	62.6	Yes	**3.47**	107.5	3.01	91.45	11.00	4.60	0.00	0.00	107.05
427	10,994	10,994	63.8	Yes	**2.92**	107.5	3.01	91.82	11.18	4.60	0.00	0.00	107.61
428	11,367	11,368	62.8	Yes	**2.48**	107.5	3.01	92.11	11.32	4.61	0.00	0.00	108.05
429	11,891	11,892	54.2	Yes	**1.87**	107.5	3.01	92.50	11.51	4.64	0.00	0.00	108.66
430	12,231	12,231	57.1	Yes	**1.51**	107.5	3.01	92.75	11.63	4.64	0.00	0.00	109.02
431	12,843	12,843	57.1	Yes	**0.87**	107.5	3.01	93.17	11.83	4.65	0.00	0.00	109.65
432	13,094	13,094	53.6	Yes	**0.61**	107.5	3.01	93.34	11.91	4.66	0.00	0.00	109.91
433	3,348	3,349	49.8	No	**17.65**	107.5	3.01	81.50	6.57	4.80	0.00	0.00	92.87
434	2,469	2,471	44.5	Yes	**21.90**	107.5	3.01	78.86	5.58	4.18	0.00	0.00	88.63
435	2,615	2,617	50.5	Yes	**21.27**	107.5	3.01	79.36	5.76	4.14	0.00	0.00	89.26
436	2,953	2,955	53.3	Yes	**19.78**	107.5	3.01	80.41	6.15	4.18	0.00	0.00	90.75
437	2,787	2,789	51.2	Yes	**20.48**	107.5	3.01	79.91	5.96	4.17	0.00	0.00	90.04
438	1,531	1,533	51.2	Yes	**27.91**	107.5	3.01	74.71	4.25	3.65	0.00	0.00	82.62
439	3,816	3,818	54.2	Yes	**16.54**	107.5	3.01	82.64	7.03	4.32	0.00	0.00	93.98
440	4,308	4,309	49.7	Yes	**14.97**	107.5	3.01	83.69	7.47	4.41	0.00	0.00	95.56
441	4,703	4,704	50.8	Yes	**13.85**	107.5	3.01	84.45	7.79	4.43	0.00	0.00	96.67
442	5,158	5,159	53.3	Yes	**12.69**	107.5	3.01	85.25	8.14	4.45	0.00	0.00	97.84
443	5,630	5,631	50.2	Yes	**11.54**	107.5	3.01	86.01	8.48	4.50	0.00	0.00	98.98
444	5,966	5,967	52.5	Yes	**10.81**	107.5	3.01	86.52	8.70	4.50	0.00	0.00	99.72
445	1,193	1,198	49.1	Yes	**30.91**	107.5	3.01	72.57	3.66	3.38	0.00	0.00	79.61
446	1,037	1,041	49.0	Yes	**32.64**	107.5	3.01	71.35	3.36	3.17	0.00	0.00	77.88
447	1,341	1,344	60.5	Yes	**29.78**	107.5	3.01	73.57	3.93	3.25	0.00	0.00	80.75
448	1,747	1,750	60.0	Yes	**26.45**	107.5	3.01	75.86	4.59	3.62	0.00	0.00	84.08
449	2,386	2,388	61.1	Yes	**22.56**	107.5	3.01	78.56	5.48	3.92	0.00	0.00	87.96
450	2,618	2,620	60.7	Yes	**21.38**	107.5	3.01	79.37	5.77	4.01	0.00	0.00	89.14
451	3,301	3,303	61.7	Yes	**18.46**	107.5	3.01	81.38	6.52	4.16	0.00	0.00	92.06
452	1,371	1,374	45.2	Yes	**29.11**	107.5	3.01	73.76	3.98	3.67	0.00	0.00	81.41
453	3,667	3,668	58.9	Yes	**17.10**	107.5	3.01	82.29	6.89	4.25	0.00	0.00	93.43
454	3,837	3,838	65.0	Yes	**16.57**	107.5	3.01	82.68	7.05	4.22	0.00	0.00	93.95
455	4,236	4,237	60.1	Yes	**15.26**	107.5	3.01	83.54	7.40	4.32	0.00	0.00	95.26
456	4,715	4,716	61.6	Yes	**13.90**	107.5	3.01	84.47	7.80	4.35	0.00	0.00	96.62
457	5,125	5,126	55.7	Yes	**12.79**	107.5	3.01	85.20	8.11	4.43	0.00	0.00	97.74
458	2,113	2,115	46.6	Yes	**23.85**	107.5	3.01	77.51	5.12	4.04	0.00	0.00	86.67
459	1,804	1,806	45.5	Yes	**25.77**	107.5	3.01	76.14	4.68	3.93	0.00	0.00	84.75
460	1,544	1,547	46.8	Yes	**27.70**	107.5	3.01	74.79	4.27	3.76	0.00	0.00	82.82
461	1,070	1,074	48.8	Yes	**32.25**	107.5	3.01	71.62	3.42	3.23	0.00	0.00	78.28
462	819	826	53.0	Yes	**35.71**	107.5	3.01	69.34	2.90	2.57	0.00	0.00	74.82
463	427	437	49.7	Yes	**44.02**	107.5	3.00	63.82	1.90	0.78	0.00	0.00	66.50
464	1,042	1,046	52.2	Yes	**32.69**	107.5	3.01	71.39	3.37	3.07	0.00	0.00	77.83
T001	16,874	16,874	57.8	Yes	**-6.99**	108.0	3.01	95.54	17.75	4.68	0.00	0.00	117.97
T002	17,039	17,039	56.4	Yes	**-7.16**	108.0	3.01	95.63	17.84	4.69	0.00	0.00	118.15
T003	15,165	15,165	53.5	No	**-6.16**	107.0	3.01	94.62	16.80	4.80	0.00	0.00	116.22
T004	16,357	16,357	48.9	No	**-7.40**	107.0	3.01	95.27	17.38	4.80	0.00	0.00	117.45
T005	15,203	15,203	44.6	Yes	**-6.11**	107.0	3.01	94.64	16.82	4.70	0.00	0.00	116.16
T006	16,343	16,343	45.0	Yes	**-6.43**	108.0	3.01	95.27	17.45	4.71	0.00	0.00	117.42
T007	15,390	15,390	47.7	Yes	**-5.35**	108.0	3.01	94.74	16.89	4.69	0.00	0.00	116.33
T008	15,497	15,497	55.3	No	**-6.52**	107.0	3.01	94.81	16.97	4.80	0.00	0.00	116.57
T009	17,711	17,711	48.3	Yes	**-7.88**	108.0	3.01	95.97	18.20	4.71	0.00	0.00	118.87
T010	17,095	17,095	54.6	Yes	**-7.23**	108.0	3.01	95.66	17.87	4.69	0.00	0.00	118.22
T011	18,654	18,654	37.7	Yes	**-8.84**	108.0	3.01	96.42	18.68	4.73	0.00	0.00	119.83
T012	17,872	17,872	38.3	No	**-8.85**	107.0	3.01	96.04	18.06	4.80	0.00	0.00	118.90
T013	16,537	16,538	45.2	No	**-7.58**	107.0	3.01	95.37	17.46	4.80	0.00	0.00	117.63
T014	15,964	15,965	39.4	No	**-7.00**	107.0	3.01	95.06	17.19	4.80	0.00	0.00	117.05
T015	15,917	15,917	49.3	Yes	**-5.95**	108.0	3.01	95.04	17.20	4.69	0.00	0.00	116.94
T016	15,748	15,748	47.9	No	**-6.78**	107.0	3.01	94.94	17.09	4.80	0.00	0.00	116.83
T017	16,105	16,105	42.2	Yes	**-6.18**	108.0	3.01	95.14	17.31	4.71	0.00	0.00	117.16
T018	15,869	15,869	34.1	Yes	**-6.83**	107.0	3.01	95.01	17.15	4.73	0.00	0.00	116.88
T019	16,561	16,561	37.2	No	**-7.60**	107.0	3.01	95.38	17.47	4.80	0.00	0.00	117.65
T020	15,641	15,642	45.0	Yes	**-5.64**	108.0	3.01	94.89	17.04	4.70	0.00	0.00	116.63
T022	16,950	16,950	42.5	No	**-7.98**	107.0	3.01	95.58	17.65	4.80	0.00	0.00	118.03

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T023	15,314	15,314	62.1	No	**-6.32**	107.0	3.01	94.70	16.88	4.80	0.00	0.00	116.38
T025	16,607	16,607	37.2	Yes	**-6.74**	108.0	3.01	95.41	17.60	4.72	0.00	0.00	117.73
T026	15,312	15,312	41.1	Yes	**-5.27**	108.0	3.01	94.70	16.85	4.71	0.00	0.00	116.26
T027	16,540	16,540	46.4	Yes	**-6.65**	108.0	3.01	95.37	17.56	4.70	0.00	0.00	117.63
T028	16,034	16,034	48.0	Yes	**-6.08**	108.0	3.01	95.10	17.27	4.70	0.00	0.00	117.07
T029	18,373	18,373	39.0	No	**-9.31**	107.0	3.01	96.28	18.28	4.80	0.00	0.00	119.36
T030	17,491	17,491	40.7	Yes	**-7.67**	108.0	3.01	95.86	18.08	4.72	0.00	0.00	118.66
T031	17,547	17,547	37.5	No	**-8.55**	107.0	3.01	95.88	17.92	4.80	0.00	0.00	118.60
T032	15,014	15,014	42.1	No	**-6.00**	107.0	3.01	94.53	16.73	4.80	0.00	0.00	116.06
T033	17,006	17,006	43.4	No	**-8.03**	107.0	3.01	95.61	17.68	4.80	0.00	0.00	118.09
T201	17,974	17,974	37.7	Yes	**-8.17**	108.0	3.01	96.09	18.33	4.73	0.00	0.00	119.16
T202	18,183	18,183	37.4	Yes	**-8.38**	108.0	3.01	96.19	18.44	4.73	0.00	0.00	119.37
T203	19,460	19,460	33.8	Yes	**-9.62**	108.0	3.01	96.78	19.08	4.74	0.00	0.00	120.60
T204	19,428	19,428	39.6	Yes	**-9.58**	108.0	3.01	96.77	19.07	4.73	0.00	0.00	120.56
T205	19,917	19,917	45.7	Yes	**-10.02**	108.0	3.01	96.98	19.30	4.72	0.00	0.00	121.01
T206	20,181	20,181	38.1	Yes	**-10.27**	108.0	3.01	97.10	19.43	4.74	0.00	0.00	121.26
T207	20,974	20,974	49.1	Yes	**-10.96**	108.0	3.01	97.43	19.79	4.72	0.00	0.00	121.95
T208	18,095	18,095	43.2	No	**-8.36**	108.0	3.01	96.15	18.40	4.80	0.00	0.00	119.35
T209	18,111	18,111	49.8	No	**-8.38**	108.0	3.01	96.16	18.41	4.80	0.00	0.00	119.36
T210	18,016	18,016	48.7	No	**-8.28**	108.0	3.01	96.11	18.36	4.80	0.00	0.00	119.27
T211	16,755	16,755	53.9	No	**-6.97**	108.0	3.01	95.48	17.68	4.80	0.00	0.00	117.96
T212	16,391	16,391	53.7	No	**-6.58**	108.0	3.01	95.29	17.48	4.80	0.00	0.00	117.57
T213	16,028	16,028	52.1	No	**-6.18**	108.0	3.01	95.10	17.27	4.80	0.00	0.00	117.17
T214	15,941	15,941	52.6	No	**-6.08**	108.0	3.01	95.05	17.22	4.80	0.00	0.00	117.07
T215	14,849	14,849	57.6	No	**-4.81**	108.0	3.01	94.43	16.57	4.80	0.00	0.00	115.80
T216	14,728	14,729	47.9	No	**-4.67**	108.0	3.01	94.36	16.49	4.80	0.00	0.00	115.66
T217	14,720	14,720	46.9	No	**-4.66**	108.0	3.01	94.36	16.49	4.80	0.00	0.00	115.65
T218	16,515	16,516	55.4	No	**-6.72**	108.0	3.01	95.36	17.55	4.80	0.00	0.00	117.70
T219	16,035	16,035	52.2	No	**-6.19**	108.0	3.01	95.10	17.27	4.80	0.00	0.00	117.17
T220	16,287	16,287	51.9	No	**-6.47**	108.0	3.01	95.24	17.42	4.80	0.00	0.00	117.45
T221	16,258	16,258	46.4	No	**-6.43**	108.0	3.01	95.22	17.40	4.80	0.00	0.00	117.42
T222	12,996	12,996	44.6	No	**-2.45**	108.0	3.01	93.28	15.36	4.80	0.00	0.00	113.44
T223	12,654	12,654	45.9	No	**-1.98**	108.0	3.01	93.04	15.13	4.80	0.00	0.00	112.97
T224	14,430	14,430	53.9	No	**-4.30**	108.0	3.01	94.19	16.31	4.80	0.00	0.00	115.29
T225	14,252	14,252	53.1	No	**-4.08**	108.0	3.01	94.08	16.19	4.80	0.00	0.00	115.07
T226	13,315	13,315	55.3	No	**-2.88**	108.0	3.01	93.49	15.58	4.80	0.00	0.00	113.87
T227	12,987	12,987	49.7	No	**-2.44**	108.0	3.01	93.27	15.36	4.80	0.00	0.00	113.43
T228	13,446	13,446	41.9	No	**-3.05**	108.0	3.01	93.57	15.67	4.80	0.00	0.00	114.04
T229	13,265	13,265	55.8	No	**-2.81**	108.0	3.01	93.45	15.55	4.80	0.00	0.00	113.80
T230	13,431	13,431	58.8	No	**-3.03**	108.0	3.01	93.56	15.66	4.80	0.00	0.00	114.02
T231	13,351	13,351	52.0	No	**-2.93**	108.0	3.01	93.51	15.60	4.80	0.00	0.00	113.92
T232	12,157	12,157	53.3	No	**-1.28**	108.0	3.01	92.70	14.77	4.80	0.00	0.00	112.27
T233	12,229	12,230	54.7	No	**-1.38**	108.0	3.01	92.75	14.82	4.80	0.00	0.00	112.37
T234	12,135	12,135	56.1	No	**-1.25**	108.0	3.01	92.68	14.76	4.80	0.00	0.00	112.24
T235	12,746	12,746	46.6	No	**-2.11**	108.0	3.01	93.11	15.19	4.80	0.00	0.00	113.10
T301	22,051	22,051	40.7	No	**-11.95**	108.0	3.01	97.87	20.27	4.80	0.00	0.00	122.94
T302	22,544	22,544	41.5	No	**-12.35**	108.0	3.01	98.06	20.48	4.80	0.00	0.00	123.34
T303	23,220	23,220	46.7	Yes	**-12.83**	108.0	3.01	98.32	20.77	4.73	0.00	0.00	123.81
T304	23,799	23,799	46.6	Yes	**-13.28**	108.0	3.01	98.53	21.00	4.73	0.00	0.00	124.27
T305	23,658	23,658	44.5	Yes	**-13.17**	108.0	3.01	98.48	20.95	4.74	0.00	0.00	124.16
T306	23,421	23,421	49.5	Yes	**-12.98**	108.0	3.01	98.39	20.85	4.73	0.00	0.00	123.97
T307	22,606	22,606	45.7	Yes	**-12.34**	108.0	3.01	98.08	20.51	4.73	0.00	0.00	123.32
T308	11,054	11,054	43.6	No	**0.38**	108.0	3.01	91.87	13.94	4.80	0.00	0.00	110.61
T309	11,217	11,217	46.6	No	**0.12**	108.0	3.01	92.00	14.07	4.80	0.00	0.00	110.87
T310	11,866	11,866	47.0	No	**-0.86**	108.0	3.01	92.49	14.56	4.80	0.00	0.00	111.84
T311	11,961	11,961	50.5	No	**-1.00**	108.0	3.01	92.56	14.63	4.80	0.00	0.00	111.98
T312	11,979	11,979	51.6	No	**-1.02**	108.0	3.01	92.57	14.64	4.80	0.00	0.00	112.01
T313	12,044	12,044	59.7	No	**-1.12**	108.0	3.01	92.62	14.69	4.80	0.00	0.00	112.10
T314	12,430	12,430	51.9	No	**-1.67**	108.0	3.01	92.89	14.97	4.80	0.00	0.00	112.66
T315	11,483	11,484	54.8	No	**-0.29**	108.0	3.01	92.20	14.27	4.80	0.00	0.00	111.27
T316	10,797	10,797	57.4	No	**0.78**	108.0	3.01	91.67	13.74	4.80	0.00	0.00	110.21
T317	10,872	10,872	62.7	No	**0.66**	108.0	3.01	91.73	13.80	4.80	0.00	0.00	110.33
T318	10,461	10,461	48.9	No	**1.33**	108.0	3.01	91.39	13.47	4.80	0.00	0.00	109.66

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T319	8,726	8,727	49.0	No	**4.40**	108.0	3.01	89.82	11.97	4.80	0.00	0.00	106.59
T320	8,353	8,353	55.8	No	**5.12**	108.0	3.01	89.44	11.63	4.80	0.00	0.00	105.86
T321	8,164	8,164	48.8	No	**5.50**	108.0	3.01	89.24	11.45	4.80	0.00	0.00	105.48
T322	7,082	7,083	48.0	No	**7.82**	108.0	3.01	88.00	10.37	4.80	0.00	0.00	103.17
T323	6,884	6,885	47.8	No	**8.27**	108.0	3.01	87.76	10.16	4.80	0.00	0.00	102.72
T324	7,361	7,361	50.0	No	**7.19**	108.0	3.01	88.34	10.66	4.80	0.00	0.00	103.79
T325	5,838	5,839	51.0	Yes	**11.15**	108.0	3.01	86.33	9.01	4.50	0.00	0.00	99.84
T326	6,479	6,479	53.9	Yes	**9.51**	108.0	3.01	87.23	9.73	4.52	0.00	0.00	101.47
T327	6,615	6,615	47.9	No	**8.90**	108.0	3.01	87.41	9.87	4.80	0.00	0.00	102.08
T328	7,176	7,176	49.1	Yes	**7.84**	108.0	3.01	88.12	10.47	4.57	0.00	0.00	103.15
T329	6,462	6,462	51.2	Yes	**9.54**	108.0	3.01	87.21	9.71	4.53	0.00	0.00	101.45
T330	7,230	7,231	48.1	Yes	**7.71**	108.0	3.01	88.18	10.52	4.57	0.00	0.00	103.28
T331	7,892	7,892	52.1	Yes	**6.29**	108.0	3.01	88.94	11.18	4.57	0.00	0.00	104.70
T332	8,417	8,417	49.0	No	**5.00**	108.0	3.01	89.50	11.69	4.80	0.00	0.00	105.99
T333	8,654	8,654	52.9	No	**4.54**	108.0	3.01	89.74	11.91	4.80	0.00	0.00	106.45
T334	8,294	8,294	48.2	No	**5.24**	108.0	3.01	89.38	11.57	4.80	0.00	0.00	105.75
T335	8,573	8,573	46.8	No	**4.69**	108.0	3.01	89.66	11.83	4.80	0.00	0.00	106.30
Sum	46.13												

Noise sensitive area: SSA033 SSA033

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	20,889	20,889	47.8	No	**-5.56**	107.5	3.01	97.40	13.89	4.80	0.00	0.00	116.09
402	21,262	21,262	50.7	No	**-5.79**	107.5	3.01	97.55	13.97	4.80	0.00	0.00	116.32
403	21,897	21,897	46.7	No	**-6.18**	107.5	3.01	97.81	14.09	4.80	0.00	0.00	116.70
404	22,263	22,263	51.9	No	**-6.39**	107.5	3.01	97.95	14.17	4.80	0.00	0.00	116.92
405	22,428	22,428	42.6	No	**-6.49**	107.5	3.01	98.02	14.20	4.80	0.00	0.00	117.01
406	22,371	22,371	42.6	No	**-6.46**	107.5	3.01	97.99	14.19	4.80	0.00	0.00	116.98
407	23,201	23,201	40.4	No	**-6.93**	107.5	3.01	98.31	14.35	4.80	0.00	0.00	117.46
408	17,790	17,790	55.7	No	**-3.48**	107.5	3.01	96.00	13.20	4.80	0.00	0.00	114.01
409	18,519	18,519	51.0	No	**-4.00**	107.5	3.01	96.35	13.37	4.80	0.00	0.00	114.53
410	18,644	18,644	57.9	No	**-4.09**	107.5	3.01	96.41	13.40	4.80	0.00	0.00	114.61
411	18,925	18,926	59.8	No	**-4.28**	107.5	3.01	96.54	13.47	4.80	0.00	0.00	114.81
412	18,903	18,903	61.5	No	**-4.27**	107.5	3.01	96.53	13.46	4.80	0.00	0.00	114.79
413	19,258	19,258	63.3	No	**-4.51**	107.5	3.01	96.69	13.54	4.80	0.00	0.00	115.03
414	19,645	19,645	64.1	No	**-4.77**	107.5	3.01	96.87	13.63	4.80	0.00	0.00	115.29
415	13,434	13,434	43.5	No	**0.14**	107.5	3.01	93.56	12.02	4.80	0.00	0.00	110.38
416	13,568	13,569	47.2	No	**0.01**	107.5	3.01	93.65	12.06	4.80	0.00	0.00	110.51
417	13,379	13,380	45.6	No	**0.19**	107.5	3.01	93.53	12.00	4.80	0.00	0.00	110.33
418	13,424	13,424	41.4	No	**0.15**	107.5	3.01	93.56	12.02	4.80	0.00	0.00	110.37
419	12,869	12,870	43.8	No	**0.69**	107.5	3.01	93.19	11.84	4.80	0.00	0.00	109.83
420	13,267	13,267	44.5	No	**0.30**	107.5	3.01	93.46	11.97	4.80	0.00	0.00	110.22
421	14,519	14,520	60.3	No	**-0.86**	107.5	3.01	94.24	12.34	4.80	0.00	0.00	111.38
422	14,650	14,651	47.8	No	**-0.98**	107.5	3.01	94.32	12.38	4.80	0.00	0.00	111.50
423	14,722	14,722	49.1	No	**-1.04**	107.5	3.01	94.36	12.40	4.80	0.00	0.00	111.56
424	14,985	14,985	43.7	No	**-1.27**	107.5	3.01	94.51	12.48	4.80	0.00	0.00	111.79
425	15,346	15,347	43.0	No	**-1.57**	107.5	3.01	94.72	12.58	4.80	0.00	0.00	112.10
426	10,828	10,828	55.0	No	**2.92**	107.5	3.01	91.69	11.12	4.80	0.00	0.00	107.61
427	11,200	11,201	55.5	No	**2.48**	107.5	3.01	91.99	11.26	4.80	0.00	0.00	108.04
428	11,510	11,511	54.7	No	**2.13**	107.5	3.01	92.22	11.37	4.80	0.00	0.00	108.39
429	12,043	12,043	46.5	No	**1.55**	107.5	3.01	92.61	11.56	4.80	0.00	0.00	108.98
430	12,319	12,320	48.0	No	**1.26**	107.5	3.01	92.81	11.66	4.80	0.00	0.00	109.27
431	12,923	12,923	48.4	No	**0.64**	107.5	3.01	93.23	11.86	4.80	0.00	0.00	109.88
432	13,123	13,124	44.0	No	**0.44**	107.5	3.01	93.36	11.92	4.80	0.00	0.00	110.08
433	5,237	5,239	43.0	No	**12.14**	107.5	3.01	85.38	8.20	4.80	0.00	0.00	98.38
434	4,545	4,547	42.0	No	**13.91**	107.5	3.01	84.15	7.66	4.80	0.00	0.00	96.62
435	4,674	4,676	47.7	No	**13.56**	107.5	3.01	84.40	7.77	4.80	0.00	0.00	96.96
436	4,948	4,949	55.2	No	**12.85**	107.5	3.01	84.89	7.98	4.80	0.00	0.00	97.67
437	4,720	4,721	54.5	No	**13.44**	107.5	3.01	84.48	7.80	4.80	0.00	0.00	97.08
438	3,369	3,371	55.8	Yes	**18.14**	107.5	3.01	81.55	6.59	4.23	0.00	0.00	92.38
439	3,954	3,956	50.8	Yes	**16.06**	107.5	3.01	82.95	7.16	4.36	0.00	0.00	94.46

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
440	4,339	4,341	46.9	Yes	**14.85**	107.5	3.01	83.75	7.49	4.43	0.00	0.00	95.68
441	4,534	4,536	45.1	Yes	**14.28**	107.5	3.01	84.13	7.65	4.46	0.00	0.00	96.25
442	4,972	4,973	48.3	Yes	**13.12**	107.5	3.01	84.93	8.00	4.47	0.00	0.00	97.40
443	5,333	5,334	45.7	Yes	**12.21**	107.5	3.01	85.54	8.27	4.51	0.00	0.00	98.32
444	5,549	5,550	48.3	Yes	**11.72**	107.5	3.01	85.89	8.42	4.50	0.00	0.00	98.81
445	3,279	3,281	47.1	Yes	**18.39**	107.5	3.01	81.32	6.50	4.31	0.00	0.00	92.13
446	3,044	3,047	51.0	Yes	**19.37**	107.5	3.01	80.68	6.25	4.23	0.00	0.00	91.16
447	2,493	2,495	53.2	Yes	**21.90**	107.5	3.01	78.94	5.61	4.07	0.00	0.00	88.63
448	2,555	2,557	52.6	Yes	**21.58**	107.5	3.01	79.16	5.69	4.10	0.00	0.00	88.94
449	2,957	2,960	56.2	Yes	**19.79**	107.5	3.01	80.43	6.16	4.15	0.00	0.00	90.73
450	2,909	2,911	61.3	Yes	**20.06**	107.5	3.01	80.28	6.10	4.08	0.00	0.00	90.47
451	3,471	3,474	60.0	Yes	**17.80**	107.5	3.01	81.82	6.70	4.21	0.00	0.00	92.72
452	3,397	3,399	43.5	Yes	**17.91**	107.5	3.01	81.63	6.62	4.36	0.00	0.00	92.61
453	1,743	1,746	55.2	Yes	**26.38**	107.5	3.01	75.84	4.59	3.71	0.00	0.00	84.14
454	2,097	2,100	55.8	Yes	**24.09**	107.5	3.01	77.44	5.10	3.89	0.00	0.00	86.43
455	2,892	2,894	56.0	Yes	**20.07**	107.5	3.01	80.23	6.08	4.14	0.00	0.00	90.45
456	3,265	3,266	56.7	Yes	**18.55**	107.5	3.01	81.28	6.49	4.21	0.00	0.00	91.98
457	3,671	3,672	51.1	Yes	**17.01**	107.5	3.01	82.30	6.89	4.32	0.00	0.00	93.51
458	3,921	3,923	41.4	No	**15.73**	107.5	3.01	82.87	7.13	4.80	0.00	0.00	94.80
459	3,717	3,719	42.5	No	**16.38**	107.5	3.01	82.41	6.94	4.80	0.00	0.00	94.15
460	2,768	2,770	44.0	Yes	**20.48**	107.5	3.01	79.85	5.94	4.26	0.00	0.00	90.05
461	2,424	2,426	45.3	Yes	**22.14**	107.5	3.01	78.70	5.53	4.16	0.00	0.00	88.39
462	2,009	2,014	54.2	Yes	**24.59**	107.5	3.01	77.08	4.98	3.88	0.00	0.00	85.94
463	1,830	1,834	48.2	Yes	**25.64**	107.5	3.01	76.27	4.72	3.90	0.00	0.00	84.88
464	1,095	1,100	46.6	Yes	**31.88**	107.5	3.01	71.83	3.48	3.34	0.00	0.00	78.64
T001	17,750	17,750	46.6	No	**-8.01**	108.0	3.01	95.98	18.22	4.80	0.00	0.00	119.00
T002	17,792	17,792	44.8	No	**-8.06**	108.0	3.01	96.00	18.24	4.80	0.00	0.00	119.04
T003	16,326	16,326	37.8	No	**-7.37**	107.0	3.01	95.26	17.36	4.80	0.00	0.00	117.42
T004	17,534	17,534	33.2	No	**-8.54**	107.0	3.01	95.88	17.91	4.80	0.00	0.00	118.59
T005	16,221	16,221	30.0	No	**-7.26**	107.0	3.01	95.20	17.31	4.80	0.00	0.00	117.31
T006	16,988	16,988	35.0	No	**-7.22**	108.0	3.01	95.60	17.81	4.80	0.00	0.00	118.21
T007	16,132	16,132	37.1	No	**-6.29**	108.0	3.01	95.15	17.33	4.80	0.00	0.00	117.28
T008	16,739	16,739	40.9	No	**-7.77**	107.0	3.01	95.47	17.55	4.80	0.00	0.00	117.83
T009	18,597	18,597	36.5	No	**-8.86**	108.0	3.01	96.39	18.65	4.80	0.00	0.00	119.84
T010	17,915	17,915	43.3	No	**-8.18**	108.0	3.01	96.06	18.30	4.80	0.00	0.00	119.17
T011	19,470	19,471	25.4	No	**-9.69**	108.0	3.01	96.79	19.09	4.80	0.00	0.00	120.67
T012	18,957	18,957	24.0	No	**-9.82**	107.0	3.01	96.56	18.52	4.80	0.00	0.00	119.88
T013	17,681	17,681	29.9	No	**-8.67**	107.0	3.01	95.95	17.98	4.80	0.00	0.00	118.73
T014	16,999	16,999	25.0	No	**-8.03**	107.0	3.01	95.61	17.67	4.80	0.00	0.00	118.08
T015	16,700	16,700	37.9	No	**-6.92**	108.0	3.01	95.45	17.65	4.80	0.00	0.00	117.90
T016	16,915	16,915	32.2	No	**-7.95**	107.0	3.01	95.57	17.63	4.80	0.00	0.00	118.00
T017	16,690	16,690	33.5	No	**-6.91**	108.0	3.01	95.45	17.64	4.80	0.00	0.00	117.89
T018	16,810	16,810	21.0	No	**-7.84**	107.0	3.01	95.51	17.59	4.80	0.00	0.00	117.90
T019	17,586	17,586	23.0	No	**-8.58**	107.0	3.01	95.90	17.94	4.80	0.00	0.00	118.64
T020	16,302	16,303	34.4	No	**-6.48**	108.0	3.01	95.25	17.43	4.80	0.00	0.00	117.47
T022	18,195	18,195	27.9	No	**-9.15**	107.0	3.01	96.20	18.20	4.80	0.00	0.00	119.20
T023	16,633	16,634	47.8	No	**-7.67**	107.0	3.01	95.42	17.51	4.80	0.00	0.00	117.73
T025	17,178	17,178	27.8	No	**-7.42**	108.0	3.01	95.70	17.91	4.80	0.00	0.00	118.41
T026	15,895	15,895	31.9	No	**-6.03**	108.0	3.01	95.03	17.19	4.80	0.00	0.00	117.02
T027	17,445	17,445	34.0	No	**-7.70**	108.0	3.01	95.83	18.06	4.80	0.00	0.00	118.69
T028	16,745	16,745	36.8	No	**-6.96**	108.0	3.01	95.48	17.67	4.80	0.00	0.00	117.95
T029	19,478	19,479	24.7	No	**-10.28**	107.0	3.01	96.79	18.74	4.80	0.00	0.00	120.33
T030	18,237	18,237	29.0	No	**-8.50**	108.0	3.01	96.22	18.47	4.80	0.00	0.00	119.49
T031	18,675	18,675	22.7	No	**-9.58**	107.0	3.01	96.43	18.41	4.80	0.00	0.00	119.63
T032	16,102	16,102	27.2	No	**-7.14**	107.0	3.01	95.14	17.26	4.80	0.00	0.00	117.19
T033	18,187	18,187	27.7	No	**-9.14**	107.0	3.01	96.20	18.20	4.80	0.00	0.00	119.19
T201	18,573	18,573	29.5	No	**-8.83**	108.0	3.01	96.38	18.64	4.80	0.00	0.00	119.82
T202	18,757	18,757	28.8	No	**-9.01**	108.0	3.01	96.46	18.73	4.80	0.00	0.00	120.00
T203	20,123	20,123	22.9	No	**-10.28**	108.0	3.01	97.07	19.40	4.80	0.00	0.00	121.27
T204	20,044	20,044	31.0	No	**-10.21**	108.0	3.01	97.04	19.36	4.80	0.00	0.00	121.20
T205	20,511	20,511	37.1	No	**-10.63**	108.0	3.01	97.24	19.58	4.80	0.00	0.00	121.62
T206	20,928	20,928	25.5	No	**-11.00**	108.0	3.01	97.41	19.77	4.80	0.00	0.00	121.99
T207	21,728	21,728	35.8	No	**-11.68**	108.0	3.01	97.74	20.13	4.80	0.00	0.00	122.67

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T208	19,390	19,390	29.5	No	**-9.61**	108.0	3.01	96.75	19.05	4.80	0.00	0.00	120.60
T209	19,442	19,442	35.6	No	**-9.66**	108.0	3.01	96.77	19.07	4.80	0.00	0.00	120.65
T210	19,392	19,392	34.6	No	**-9.61**	108.0	3.01	96.75	19.05	4.80	0.00	0.00	120.60
T211	18,132	18,132	39.6	No	**-8.40**	108.0	3.01	96.17	18.42	4.80	0.00	0.00	119.39
T212	17,787	17,787	40.6	No	**-8.05**	108.0	3.01	96.00	18.24	4.80	0.00	0.00	119.04
T213	17,450	17,450	40.4	No	**-7.71**	108.0	3.01	95.84	18.06	4.80	0.00	0.00	118.69
T214	17,395	17,395	38.4	No	**-7.65**	108.0	3.01	95.81	18.03	4.80	0.00	0.00	118.64
T215	16,148	16,148	43.1	No	**-6.31**	108.0	3.01	95.16	17.34	4.80	0.00	0.00	117.30
T216	16,170	16,170	34.3	No	**-6.34**	108.0	3.01	95.17	17.35	4.80	0.00	0.00	117.32
T217	16,230	16,230	31.8	No	**-6.40**	108.0	3.01	95.21	17.38	4.80	0.00	0.00	117.39
T218	18,127	18,127	41.5	No	**-8.39**	108.0	3.01	96.17	18.41	4.80	0.00	0.00	119.38
T219	17,699	17,699	40.4	No	**-7.96**	108.0	3.01	95.96	18.19	4.80	0.00	0.00	118.95
T220	17,980	17,980	36.7	No	**-8.25**	108.0	3.01	96.10	18.34	4.80	0.00	0.00	119.23
T221	17,995	17,995	33.1	No	**-8.26**	108.0	3.01	96.10	18.35	4.80	0.00	0.00	119.25
T222	14,852	14,852	35.9	No	**-4.82**	108.0	3.01	94.44	16.57	4.80	0.00	0.00	115.80
T223	14,469	14,469	36.1	No	**-4.35**	108.0	3.01	94.21	16.33	4.80	0.00	0.00	115.34
T224	16,194	16,194	41.3	No	**-6.36**	108.0	3.01	95.19	17.36	4.80	0.00	0.00	117.35
T225	15,995	15,995	39.8	No	**-6.14**	108.0	3.01	95.08	17.25	4.80	0.00	0.00	117.13
T226	15,057	15,057	42.1	No	**-5.06**	108.0	3.01	94.55	16.69	4.80	0.00	0.00	116.05
T227	14,662	14,663	37.0	No	**-4.59**	108.0	3.01	94.32	16.45	4.80	0.00	0.00	115.58
T228	15,266	15,266	31.5	No	**-5.31**	108.0	3.01	94.67	16.82	4.80	0.00	0.00	116.30
T229	14,880	14,880	41.9	No	**-4.85**	108.0	3.01	94.45	16.59	4.80	0.00	0.00	115.84
T230	15,018	15,018	44.2	No	**-5.02**	108.0	3.01	94.53	16.67	4.80	0.00	0.00	116.00
T231	14,890	14,890	36.9	No	**-4.86**	108.0	3.01	94.46	16.59	4.80	0.00	0.00	115.85
T232	13,657	13,657	38.5	No	**-3.33**	108.0	3.01	93.71	15.81	4.80	0.00	0.00	114.32
T233	13,684	13,685	41.0	No	**-3.36**	108.0	3.01	93.72	15.83	4.80	0.00	0.00	114.35
T234	13,553	13,553	43.8	No	**-3.19**	108.0	3.01	93.64	15.74	4.80	0.00	0.00	114.18
T235	14,108	14,108	31.9	No	**-3.90**	108.0	3.01	93.99	16.10	4.80	0.00	0.00	114.89
T301	23,022	23,022	26.8	No	**-12.74**	108.0	3.01	98.24	20.68	4.80	0.00	0.00	123.73
T302	23,504	23,504	27.2	No	**-13.12**	108.0	3.01	98.42	20.88	4.80	0.00	0.00	124.11
T303	24,128	24,128	32.4	No	**-13.60**	108.0	3.01	98.65	21.14	4.80	0.00	0.00	124.59
T304	24,691	24,691	33.6	No	**-14.02**	108.0	3.01	98.85	21.36	4.80	0.00	0.00	125.01
T305	24,484	24,484	30.6	No	**-13.87**	108.0	3.01	98.78	21.28	4.80	0.00	0.00	124.86
T306	24,271	24,271	37.6	No	**-13.71**	108.0	3.01	98.70	21.19	4.80	0.00	0.00	124.69
T307	23,460	23,460	34.0	No	**-13.08**	108.0	3.01	98.41	20.86	4.80	0.00	0.00	124.07
T308	12,916	12,916	36.9	No	**-2.34**	108.0	3.01	93.22	15.31	4.80	0.00	0.00	113.33
T309	13,037	13,037	37.7	No	**-2.51**	108.0	3.01	93.30	15.39	4.80	0.00	0.00	113.50
T310	13,655	13,655	36.6	No	**-3.33**	108.0	3.01	93.71	15.81	4.80	0.00	0.00	114.31
T311	13,709	13,709	37.5	No	**-3.39**	108.0	3.01	93.74	15.84	4.80	0.00	0.00	114.38
T312	13,689	13,689	36.4	No	**-3.37**	108.0	3.01	93.73	15.83	4.80	0.00	0.00	114.36
T313	13,707	13,707	47.9	No	**-3.39**	108.0	3.01	93.74	15.84	4.80	0.00	0.00	114.38
T314	13,982	13,982	36.4	No	**-3.74**	108.0	3.01	93.91	16.02	4.80	0.00	0.00	114.73
T315	13,076	13,076	40.2	No	**-2.56**	108.0	3.01	93.33	15.42	4.80	0.00	0.00	113.55
T316	12,434	12,434	44.7	No	**-1.67**	108.0	3.01	92.89	14.97	4.80	0.00	0.00	112.66
T317	12,551	12,551	49.7	No	**-1.84**	108.0	3.01	92.97	15.05	4.80	0.00	0.00	112.83
T318	12,215	12,215	36.4	No	**-1.36**	108.0	3.01	92.74	14.81	4.80	0.00	0.00	112.35
T319	10,523	10,523	41.0	No	**1.22**	108.0	3.01	91.44	13.52	4.80	0.00	0.00	109.76
T320	10,187	10,188	49.4	No	**1.78**	108.0	3.01	91.16	13.25	4.80	0.00	0.00	109.21
T321	10,044	10,044	46.0	No	**2.02**	108.0	3.01	91.04	13.13	4.80	0.00	0.00	108.97
T322	8,924	8,924	43.4	No	**4.02**	108.0	3.01	90.01	12.15	4.80	0.00	0.00	106.97
T323	8,688	8,688	41.9	No	**4.47**	108.0	3.01	89.78	11.94	4.80	0.00	0.00	106.52
T324	9,067	9,067	36.7	No	**3.76**	108.0	3.01	90.15	12.28	4.80	0.00	0.00	107.23
T325	7,559	7,559	38.5	No	**6.76**	108.0	3.01	88.57	10.85	4.80	0.00	0.00	104.22
T326	8,130	8,131	41.4	No	**5.57**	108.0	3.01	89.20	11.41	4.80	0.00	0.00	105.42
T327	8,200	8,200	34.7	No	**5.43**	108.0	3.01	89.28	11.48	4.80	0.00	0.00	105.56
T328	8,588	8,589	36.6	No	**4.66**	108.0	3.01	89.68	11.85	4.80	0.00	0.00	106.32
T329	7,687	7,688	35.5	No	**6.49**	108.0	3.01	88.72	10.98	4.80	0.00	0.00	104.50
T330	8,415	8,415	32.7	No	**5.00**	108.0	3.01	89.50	11.68	4.80	0.00	0.00	105.99
T331	9,201	9,202	37.5	No	**3.51**	108.0	3.01	90.28	12.40	4.80	0.00	0.00	107.48
T332	9,710	9,710	34.2	No	**2.60**	108.0	3.01	90.74	12.84	4.80	0.00	0.00	108.39
T333	10,080	10,080	40.1	No	**1.96**	108.0	3.01	91.07	13.16	4.80	0.00	0.00	109.03
T334	9,783	9,783	34.9	No	**2.47**	108.0	3.01	90.81	12.91	4.80	0.00	0.00	108.52
T335	10,131	10,132	32.6	No	**1.87**	108.0	3.01	91.11	13.20	4.80	0.00	0.00	109.11
Sum	36.67												

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc,net
Calculated:
7/15/2020 6:07 PM/3.1.633

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

Noise sensitive area: SSA034 SSA034

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	21,821	21,821	40.9	No	**-6.13**	107.5	3.01	97.78	14.08	4.80	0.00	0.00	116.66
402	22,165	22,165	44.3	No	**-6.34**	107.5	3.01	97.91	14.15	4.80	0.00	0.00	116.86
403	22,782	22,783	41.5	No	**-6.69**	107.5	3.01	98.15	14.27	4.80	0.00	0.00	117.22
404	23,108	23,108	48.2	No	**-6.88**	107.5	3.01	98.28	14.33	4.80	0.00	0.00	117.40
405	23,217	23,217	39.7	No	**-6.94**	107.5	3.01	98.32	14.35	4.80	0.00	0.00	117.47
406	23,086	23,086	41.4	No	**-6.87**	107.5	3.01	98.27	14.32	4.80	0.00	0.00	117.39
407	24,050	24,050	37.4	No	**-7.40**	107.5	3.01	98.62	14.50	4.80	0.00	0.00	117.93
408	17,929	17,929	60.8	No	**-3.58**	107.5	3.01	96.07	13.24	4.80	0.00	0.00	114.11
409	18,660	18,660	55.6	No	**-4.10**	107.5	3.01	96.42	13.41	4.80	0.00	0.00	114.62
410	18,702	18,703	64.1	No	**-4.13**	107.5	3.01	96.44	13.42	4.80	0.00	0.00	114.65
411	18,930	18,930	66.1	No	**-4.29**	107.5	3.01	96.54	13.47	4.80	0.00	0.00	114.81
412	18,810	18,811	67.9	No	**-4.20**	107.5	3.01	96.49	13.44	4.80	0.00	0.00	114.73
413	19,113	19,114	67.9	No	**-4.41**	107.5	3.01	96.63	13.51	4.80	0.00	0.00	114.94
414	19,481	19,481	68.3	No	**-4.66**	107.5	3.01	96.79	13.59	4.80	0.00	0.00	115.18
415	15,220	15,221	34.8	No	**-1.47**	107.5	3.01	94.65	12.54	4.80	0.00	0.00	111.99
416	15,274	15,274	39.5	No	**-1.51**	107.5	3.01	94.68	12.56	4.80	0.00	0.00	112.04
417	14,975	14,976	37.9	No	**-1.26**	107.5	3.01	94.51	12.47	4.80	0.00	0.00	111.78
418	14,920	14,921	33.7	No	**-1.21**	107.5	3.01	94.48	12.46	4.80	0.00	0.00	111.74
419	14,182	14,183	36.1	No	**-0.56**	107.5	3.01	94.04	12.25	4.80	0.00	0.00	111.08
420	14,506	14,507	38.0	No	**-0.85**	107.5	3.01	94.23	12.34	4.80	0.00	0.00	111.37
421	15,716	15,717	54.7	No	**-1.88**	107.5	3.01	94.93	12.68	4.80	0.00	0.00	112.41
422	15,754	15,755	41.4	No	**-1.91**	107.5	3.01	94.95	12.69	4.80	0.00	0.00	112.44
423	15,747	15,747	43.1	No	**-1.91**	107.5	3.01	94.94	12.69	4.80	0.00	0.00	112.43
424	15,835	15,836	39.9	No	**-1.98**	107.5	3.01	94.99	12.71	4.80	0.00	0.00	112.50
425	16,137	16,138	39.2	No	**-2.22**	107.5	3.01	95.16	12.79	4.80	0.00	0.00	112.75
426	11,696	11,697	53.2	No	**1.92**	107.5	3.01	92.36	11.44	4.80	0.00	0.00	108.60
427	11,911	11,912	55.5	No	**1.69**	107.5	3.01	92.52	11.51	4.80	0.00	0.00	108.83
428	12,102	12,103	54.8	No	**1.49**	107.5	3.01	92.66	11.58	4.80	0.00	0.00	109.04
429	12,616	12,616	47.0	No	**0.95**	107.5	3.01	93.02	11.76	4.80	0.00	0.00	109.57
430	12,778	12,779	49.9	No	**0.79**	107.5	3.01	93.13	11.81	4.80	0.00	0.00	109.74
431	13,335	13,335	50.5	No	**0.24**	107.5	3.01	93.50	11.99	4.80	0.00	0.00	110.29
432	13,445	13,446	46.8	No	**0.13**	107.5	3.01	93.57	12.02	4.80	0.00	0.00	110.39
433	8,555	8,557	39.6	Yes	**6.09**	107.5	3.01	89.65	10.15	4.64	0.00	0.00	104.43
434	7,909	7,910	44.8	Yes	**7.13**	107.5	3.01	88.96	9.83	4.61	0.00	0.00	103.40
435	7,982	7,984	51.9	Yes	**7.04**	107.5	3.01	89.04	9.86	4.58	0.00	0.00	103.49
436	8,191	8,192	53.1	Yes	**6.71**	107.5	3.01	89.27	9.97	4.58	0.00	0.00	103.81
437	7,917	7,918	49.2	Yes	**7.13**	107.5	3.01	88.97	9.83	4.59	0.00	0.00	103.39
438	6,573	6,574	50.9	Yes	**9.55**	107.5	3.01	87.36	9.08	4.54	0.00	0.00	100.97
439	5,703	5,705	47.6	Yes	**11.36**	107.5	3.01	86.13	8.53	4.52	0.00	0.00	99.17
440	5,834	5,836	44.7	Yes	**11.05**	107.5	3.01	86.32	8.61	4.54	0.00	0.00	99.47
441	5,709	5,711	45.0	Yes	**11.33**	107.5	3.01	86.13	8.53	4.53	0.00	0.00	99.19
442	5,988	5,990	48.9	Yes	**10.74**	107.5	3.01	86.55	8.72	4.52	0.00	0.00	99.79
443	6,087	6,089	47.3	Yes	**10.52**	107.5	3.01	86.69	8.78	4.53	0.00	0.00	100.00
444	6,061	6,063	47.2	Yes	**10.57**	107.5	3.01	86.65	8.76	4.53	0.00	0.00	99.95
445	6,633	6,635	50.9	Yes	**9.43**	107.5	3.01	87.44	9.12	4.54	0.00	0.00	101.09
446	6,348	6,349	55.0	Yes	**10.02**	107.5	3.01	87.05	8.94	4.50	0.00	0.00	100.50
447	5,519	5,521	50.8	Yes	**11.80**	107.5	3.01	85.84	8.40	4.49	0.00	0.00	98.73
448	5,379	5,381	50.3	Yes	**12.13**	107.5	3.01	85.62	8.30	4.48	0.00	0.00	98.40
449	5,473	5,475	50.0	Yes	**11.90**	107.5	3.01	85.77	8.37	4.49	0.00	0.00	98.62
450	5,216	5,218	49.2	Yes	**12.51**	107.5	3.01	85.35	8.18	4.48	0.00	0.00	98.01
451	5,432	5,434	50.0	Yes	**12.00**	107.5	3.01	85.70	8.34	4.49	0.00	0.00	98.53
452	6,763	6,764	45.5	Yes	**9.15**	107.5	3.01	87.60	9.20	4.57	0.00	0.00	101.37
453	1,965	1,968	52.5	Yes	**24.84**	107.5	3.01	76.88	4.92	3.88	0.00	0.00	85.68
454	2,209	2,213	51.0	Yes	**23.36**	107.5	3.01	77.90	5.25	4.01	0.00	0.00	87.16
455	3,021	3,024	50.3	Yes	**19.45**	107.5	3.01	80.61	6.23	4.23	0.00	0.00	91.07
456	2,847	2,850	51.5	Yes	**20.21**	107.5	3.01	80.10	6.03	4.18	0.00	0.00	90.31
457	2,953	2,955	48.9	Yes	**19.73**	107.5	3.01	80.41	6.15	4.23	0.00	0.00	90.80
458	7,234	7,236	41.1	Yes	**8.26**	107.5	3.01	88.19	9.47	4.61	0.00	0.00	102.26
459	7,064	7,065	42.8	Yes	**8.58**	107.5	3.01	87.98	9.37	4.59	0.00	0.00	101.95
460	5,974	5,976	41.7	Yes	**10.73**	107.5	3.01	86.53	8.71	4.56	0.00	0.00	99.80
461	5,714	5,715	46.8	Yes	**11.33**	107.5	3.01	86.14	8.53	4.52	0.00	0.00	99.19
462	5,328	5,331	56.8	Yes	**12.29**	107.5	3.01	85.54	8.26	4.44	0.00	0.00	98.24
463	5,195	5,197	51.3	Yes	**12.58**	107.5	3.01	85.32	8.17	4.46	0.00	0.00	97.95

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
464	4,458	4,460	50.5	Yes	**14.53**	107.5	3.01	83.99	7.59	4.41	0.00	0.00	95.99
T001	19,203	19,203	36.4	No	**-9.44**	108.0	3.01	96.67	18.96	4.80	0.00	0.00	120.42
T002	19,058	19,059	35.6	No	**-9.30**	108.0	3.01	96.60	18.88	4.80	0.00	0.00	120.29
T003	18,232	18,233	26.0	No	**-9.18**	107.0	3.01	96.22	18.22	4.80	0.00	0.00	119.23
T004	19,440	19,440	20.8	No	**-10.24**	107.0	3.01	96.77	18.72	4.80	0.00	0.00	120.30
T005	17,920	17,920	22.1	No	**-8.89**	107.0	3.01	96.07	18.08	4.80	0.00	0.00	118.95
T006	18,113	18,113	29.1	No	**-8.38**	108.0	3.01	96.16	18.41	4.80	0.00	0.00	119.37
T007	17,425	17,425	28.5	No	**-7.68**	108.0	3.01	95.82	18.04	4.80	0.00	0.00	118.67
T008	18,755	18,756	28.4	No	**-9.65**	107.0	3.01	96.46	18.44	4.80	0.00	0.00	119.70
T009	20,046	20,047	26.0	No	**-10.22**	108.0	3.01	97.04	19.36	4.80	0.00	0.00	121.20
T010	19,281	19,281	32.3	No	**-9.51**	108.0	3.01	96.70	18.99	4.80	0.00	0.00	120.50
T011	20,797	20,797	14.2	No	**-10.88**	108.0	3.01	97.36	19.71	4.80	0.00	0.00	121.87
T012	20,700	20,700	13.7	No	**-11.29**	107.0	3.01	97.32	19.23	4.80	0.00	0.00	121.35
T013	19,534	19,534	18.7	No	**-10.32**	107.0	3.01	96.82	18.76	4.80	0.00	0.00	120.38
T014	18,704	18,704	16.8	No	**-9.60**	107.0	3.01	96.44	18.42	4.80	0.00	0.00	119.66
T015	18,039	18,040	28.5	No	**-8.31**	108.0	3.01	96.12	18.37	4.80	0.00	0.00	119.29
T016	18,818	18,818	20.3	No	**-9.70**	107.0	3.01	96.49	18.47	4.80	0.00	0.00	119.76
T017	17,732	17,732	27.1	No	**-8.00**	108.0	3.01	95.98	18.21	4.80	0.00	0.00	118.98
T018	18,383	18,383	12.9	No	**-9.31**	107.0	3.01	96.29	18.28	4.80	0.00	0.00	119.37
T019	19,266	19,266	15.0	No	**-10.09**	107.0	3.01	96.70	18.65	4.80	0.00	0.00	120.15
T020	17,470	17,470	28.6	No	**-7.73**	108.0	3.01	95.85	18.07	4.80	0.00	0.00	118.71
T022	20,190	20,191	14.8	No	**-10.87**	107.0	3.01	97.10	19.03	4.80	0.00	0.00	120.93
T023	18,765	18,765	35.0	No	**-9.66**	107.0	3.01	96.47	18.44	4.80	0.00	0.00	119.71
T025	18,183	18,184	22.3	No	**-8.45**	108.0	3.01	96.19	18.44	4.80	0.00	0.00	119.44
T026	16,956	16,956	25.6	No	**-7.19**	108.0	3.01	95.59	17.79	4.80	0.00	0.00	118.18
T027	18,948	18,949	26.6	No	**-9.19**	108.0	3.01	96.55	18.83	4.80	0.00	0.00	120.18
T028	17,976	17,976	29.2	No	**-8.24**	108.0	3.01	96.09	18.34	4.80	0.00	0.00	119.23
T029	21,243	21,243	14.3	No	**-11.73**	107.0	3.01	97.54	19.44	4.80	0.00	0.00	121.78
T030	19,484	19,484	20.3	No	**-9.70**	108.0	3.01	96.79	19.09	4.80	0.00	0.00	120.69
T031	20,488	20,488	12.4	No	**-11.12**	107.0	3.01	97.23	19.14	4.80	0.00	0.00	121.17
T032	17,907	17,907	17.0	No	**-8.88**	107.0	3.01	96.06	18.08	4.80	0.00	0.00	118.94
T033	20,086	20,087	15.4	No	**-10.79**	107.0	3.01	97.06	18.98	4.80	0.00	0.00	120.84
T201	19,587	19,587	23.7	No	**-9.79**	108.0	3.01	96.84	19.14	4.80	0.00	0.00	120.78
T202	19,729	19,729	24.2	No	**-9.93**	108.0	3.01	96.90	19.21	4.80	0.00	0.00	120.91
T203	21,202	21,202	17.0	No	**-11.23**	108.0	3.01	97.53	19.89	4.80	0.00	0.00	122.22
T204	21,052	21,052	24.9	No	**-11.11**	108.0	3.01	97.47	19.83	4.80	0.00	0.00	122.09
T205	21,477	21,477	31.4	No	**-11.47**	108.0	3.01	97.64	20.02	4.80	0.00	0.00	122.46
T206	22,121	22,121	18.6	No	**-12.01**	108.0	3.01	97.90	20.30	4.80	0.00	0.00	123.00
T207	22,919	22,919	28.6	No	**-12.66**	108.0	3.01	98.20	20.64	4.80	0.00	0.00	123.64
T208	21,441	21,441	16.6	No	**-11.44**	108.0	3.01	97.62	20.00	4.80	0.00	0.00	122.43
T209	21,545	21,545	22.8	No	**-11.53**	108.0	3.01	97.67	20.05	4.80	0.00	0.00	122.51
T210	21,564	21,564	21.9	No	**-11.54**	108.0	3.01	97.67	20.06	4.80	0.00	0.00	122.53
T211	20,324	20,324	26.9	No	**-10.46**	108.0	3.01	97.16	19.49	4.80	0.00	0.00	121.45
T212	20,011	20,012	27.7	No	**-10.18**	108.0	3.01	97.03	19.35	4.80	0.00	0.00	121.17
T213	19,717	19,717	26.0	No	**-9.91**	108.0	3.01	96.90	19.21	4.80	0.00	0.00	120.90
T214	19,711	19,711	25.6	No	**-9.91**	108.0	3.01	96.89	19.20	4.80	0.00	0.00	120.90
T215	18,259	18,259	30.4	No	**-8.52**	108.0	3.01	96.23	18.48	4.80	0.00	0.00	119.51
T216	18,487	18,487	21.3	No	**-8.75**	108.0	3.01	96.34	18.60	4.80	0.00	0.00	119.74
T217	18,644	18,644	17.0	No	**-8.90**	108.0	3.01	96.41	18.68	4.80	0.00	0.00	119.89
T218	20,666	20,666	23.8	No	**-10.77**	108.0	3.01	97.31	19.65	4.80	0.00	0.00	121.76
T219	20,320	20,321	22.6	No	**-10.46**	108.0	3.01	97.16	19.49	4.80	0.00	0.00	121.45
T220	20,642	20,642	20.5	No	**-10.75**	108.0	3.01	97.29	19.64	4.80	0.00	0.00	121.73
T221	20,725	20,725	16.6	No	**-10.82**	108.0	3.01	97.33	19.68	4.80	0.00	0.00	121.81
T222	17,785	17,786	16.7	No	**-8.05**	108.0	3.01	96.00	18.24	4.80	0.00	0.00	119.04
T223	17,347	17,347	17.7	No	**-7.60**	108.0	3.01	95.78	18.00	4.80	0.00	0.00	118.59
T224	18,979	18,979	25.9	No	**-9.22**	108.0	3.01	96.57	18.85	4.80	0.00	0.00	120.21
T225	18,752	18,752	24.6	No	**-9.01**	108.0	3.01	96.46	18.73	4.80	0.00	0.00	119.99
T226	17,822	17,822	27.3	No	**-8.09**	108.0	3.01	96.02	18.25	4.80	0.00	0.00	119.07
T227	17,337	17,338	21.5	No	**-7.59**	108.0	3.01	95.78	18.00	4.80	0.00	0.00	118.58
T228	18,143	18,143	12.9	No	**-8.41**	108.0	3.01	96.17	18.42	4.80	0.00	0.00	119.40
T229	17,467	17,467	24.8	No	**-7.72**	108.0	3.01	95.84	18.07	4.80	0.00	0.00	118.71
T230	17,561	17,561	26.1	No	**-7.82**	108.0	3.01	95.89	18.12	4.80	0.00	0.00	118.81
T231	17,367	17,367	20.5	No	**-7.62**	108.0	3.01	95.79	18.01	4.80	0.00	0.00	118.61

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T232	16,104	16,105	23.6	No	**-6.26**	108.0	3.01	95.14	17.31	4.80	0.00	0.00	117.25
T233	16,068	16,068	26.1	No	**-6.22**	108.0	3.01	95.12	17.29	4.80	0.00	0.00	117.21
T234	15,888	15,888	30.0	No	**-6.02**	108.0	3.01	95.02	17.19	4.80	0.00	0.00	117.01
T235	16,353	16,353	20.4	No	**-6.54**	108.0	3.01	95.27	17.45	4.80	0.00	0.00	117.53
T301	24,529	24,529	13.1	No	**-13.90**	108.0	3.01	98.79	21.30	4.80	0.00	0.00	124.89
T302	24,987	24,987	13.8	No	**-14.24**	108.0	3.01	98.95	21.47	4.80	0.00	0.00	125.23
T303	25,525	25,525	19.4	No	**-14.63**	108.0	3.01	99.14	21.68	4.80	0.00	0.00	125.62
T304	26,054	26,054	19.6	No	**-15.01**	108.0	3.01	99.32	21.88	4.80	0.00	0.00	126.00
T305	25,748	25,748	19.6	No	**-14.79**	108.0	3.01	99.21	21.77	4.80	0.00	0.00	125.78
T306	25,574	25,575	24.3	No	**-14.67**	108.0	3.01	99.16	21.70	4.80	0.00	0.00	125.66
T307	24,779	24,780	20.2	No	**-14.09**	108.0	3.01	98.88	21.39	4.80	0.00	0.00	125.08
T308	15,877	15,877	18.1	No	**-6.01**	108.0	3.01	95.02	17.18	4.80	0.00	0.00	117.00
T309	15,938	15,938	19.0	No	**-6.08**	108.0	3.01	95.05	17.22	4.80	0.00	0.00	117.07
T310	16,504	16,504	19.3	No	**-6.70**	108.0	3.01	95.35	17.54	4.80	0.00	0.00	117.69
T311	16,498	16,499	22.9	No	**-6.70**	108.0	3.01	95.35	17.54	4.80	0.00	0.00	117.69
T312	16,425	16,426	22.8	No	**-6.62**	108.0	3.01	95.31	17.50	4.80	0.00	0.00	117.61
T313	16,379	16,379	32.3	No	**-6.57**	108.0	3.01	95.29	17.47	4.80	0.00	0.00	117.56
T314	16,494	16,494	19.1	No	**-6.69**	108.0	3.01	95.35	17.53	4.80	0.00	0.00	117.68
T315	15,661	15,661	23.7	No	**-5.76**	108.0	3.01	94.90	17.06	4.80	0.00	0.00	116.75
T316	15,092	15,092	28.8	No	**-5.10**	108.0	3.01	94.58	16.72	4.80	0.00	0.00	116.09
T317	15,264	15,265	36.5	No	**-5.31**	108.0	3.01	94.67	16.82	4.80	0.00	0.00	116.29
T318	15,037	15,037	20.3	No	**-5.04**	108.0	3.01	94.54	16.68	4.80	0.00	0.00	116.03
T319	13,429	13,429	23.7	No	**-3.03**	108.0	3.01	93.56	15.66	4.80	0.00	0.00	114.02
T320	13,148	13,148	32.3	No	**-2.66**	108.0	3.01	93.38	15.47	4.80	0.00	0.00	113.64
T321	13,066	13,066	29.1	No	**-2.55**	108.0	3.01	93.32	15.41	4.80	0.00	0.00	113.53
T322	11,918	11,918	26.9	No	**-0.93**	108.0	3.01	92.52	14.60	4.80	0.00	0.00	111.92
T323	11,640	11,641	25.7	No	**-0.52**	108.0	3.01	92.32	14.39	4.80	0.00	0.00	111.51
T324	11,892	11,893	21.9	No	**-0.90**	108.0	3.01	92.51	14.58	4.80	0.00	0.00	111.88
T325	10,451	10,451	25.2	No	**1.34**	108.0	3.01	91.38	13.46	4.80	0.00	0.00	109.65
T326	10,924	10,925	27.6	No	**0.58**	108.0	3.01	91.77	13.84	4.80	0.00	0.00	110.41
T327	10,915	10,916	23.1	No	**0.59**	108.0	3.01	91.76	13.83	4.80	0.00	0.00	110.40
T328	11,085	11,086	21.6	No	**0.33**	108.0	3.01	91.90	13.97	4.80	0.00	0.00	110.66
T329	10,020	10,021	23.7	No	**2.06**	108.0	3.01	91.02	13.11	4.80	0.00	0.00	108.93
T330	10,650	10,651	22.1	No	**1.02**	108.0	3.01	91.55	13.62	4.80	0.00	0.00	109.97
T331	11,544	11,545	24.4	No	**-0.38**	108.0	3.01	92.25	14.32	4.80	0.00	0.00	111.37
T332	12,007	12,007	22.2	No	**-1.06**	108.0	3.01	92.59	14.66	4.80	0.00	0.00	112.05
T333	12,530	12,530	24.4	No	**-1.81**	108.0	3.01	92.96	15.04	4.80	0.00	0.00	112.80
T334	12,322	12,323	19.9	No	**-1.52**	108.0	3.01	92.81	14.89	4.80	0.00	0.00	112.50
T335	12,745	12,745	18.9	No	**-2.11**	108.0	3.01	93.11	15.19	4.80	0.00	0.00	113.10
Sum	30.70												

Noise sensitive area: SSA035 SSA035

Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	22,434	22,434	43.9	No	**-6.49**	107.5	3.01	98.02	14.20	4.80	0.00	0.00	117.02
402	22,796	22,796	47.9	No	**-6.70**	107.5	3.01	98.16	14.27	4.80	0.00	0.00	117.23
403	23,425	23,425	44.5	No	**-7.06**	107.5	3.01	98.39	14.39	4.80	0.00	0.00	117.58
404	23,775	23,775	48.4	No	**-7.25**	107.5	3.01	98.52	14.45	4.80	0.00	0.00	117.78
405	23,917	23,917	38.7	No	**-7.33**	107.5	3.01	98.57	14.48	4.80	0.00	0.00	117.85
406	23,828	23,828	40.7	No	**-7.28**	107.5	3.01	98.54	14.46	4.80	0.00	0.00	117.81
407	24,717	24,717	37.6	No	**-7.76**	107.5	3.01	98.86	14.63	4.80	0.00	0.00	118.29
408	18,965	18,965	58.0	No	**-4.31**	107.5	3.01	96.56	13.48	4.80	0.00	0.00	114.83
409	19,697	19,698	53.1	No	**-4.80**	107.5	3.01	96.89	13.64	4.80	0.00	0.00	115.33
410	19,782	19,783	60.2	No	**-4.86**	107.5	3.01	96.93	13.66	4.80	0.00	0.00	115.38
411	20,038	20,038	63.5	No	**-5.02**	107.5	3.01	97.04	13.71	4.80	0.00	0.00	115.55
412	19,966	19,967	66.0	No	**-4.98**	107.5	3.01	97.01	13.70	4.80	0.00	0.00	115.50
413	20,296	20,297	67.5	No	**-5.19**	107.5	3.01	97.15	13.77	4.80	0.00	0.00	115.71
414	20,675	20,675	68.3	No	**-5.43**	107.5	3.01	97.31	13.85	4.80	0.00	0.00	115.95
415	15,270	15,270	40.0	No	**-1.51**	107.5	3.01	94.68	12.56	4.80	0.00	0.00	112.03
416	15,378	15,379	43.8	No	**-1.60**	107.5	3.01	94.74	12.59	4.80	0.00	0.00	112.13
417	15,150	15,151	41.6	No	**-1.41**	107.5	3.01	94.61	12.52	4.80	0.00	0.00	111.93

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
418	15,160	15,160	38.3	No	**-1.42**	107.5	3.01	94.61	12.53	4.80	0.00	0.00	111.94
419	14,533	14,533	41.3	No	**-0.87**	107.5	3.01	94.25	12.35	4.80	0.00	0.00	111.40
420	14,904	14,905	42.0	No	**-1.20**	107.5	3.01	94.47	12.45	4.80	0.00	0.00	111.72
421	16,147	16,147	58.1	Yes	**-2.11**	107.5	3.01	95.16	12.79	4.68	0.00	0.00	112.63
422	16,242	16,242	45.1	No	**-2.31**	107.5	3.01	95.21	12.82	4.80	0.00	0.00	112.83
423	16,281	16,282	46.5	Yes	**-2.24**	107.5	3.01	95.23	12.83	4.70	0.00	0.00	112.76
424	16,472	16,472	40.3	No	**-2.49**	107.5	3.01	95.34	12.88	4.80	0.00	0.00	113.01
425	16,810	16,810	40.1	No	**-2.75**	107.5	3.01	95.51	12.96	4.80	0.00	0.00	113.27
426	12,291	12,292	54.0	Yes	**1.44**	107.5	3.01	92.79	11.65	4.65	0.00	0.00	109.09
427	12,598	12,598	55.9	Yes	**1.12**	107.5	3.01	93.01	11.75	4.65	0.00	0.00	109.40
428	12,857	12,858	56.0	Yes	**0.86**	107.5	3.01	93.18	11.83	4.65	0.00	0.00	109.67
429	13,386	13,386	48.3	Yes	**0.31**	107.5	3.01	93.53	12.00	4.68	0.00	0.00	110.21
430	13,612	13,613	50.5	Yes	**0.10**	107.5	3.01	93.68	12.07	4.67	0.00	0.00	110.43
431	14,199	14,199	50.3	Yes	**-0.45**	107.5	3.01	94.05	12.25	4.68	0.00	0.00	110.98
432	14,358	14,359	47.9	Yes	**-0.60**	107.5	3.01	94.14	12.30	4.69	0.00	0.00	111.13
433	6,793	6,794	39.1	No	**8.87**	107.5	3.01	87.64	9.21	4.80	0.00	0.00	101.66
434	6,381	6,382	40.3	No	**9.66**	107.5	3.01	87.10	8.97	4.80	0.00	0.00	100.86
435	6,633	6,634	42.4	Yes	**9.39**	107.5	3.01	87.44	9.12	4.58	0.00	0.00	101.14
436	6,954	6,955	45.8	No	**8.57**	107.5	3.01	87.85	9.31	4.80	0.00	0.00	101.95
437	6,747	6,749	47.4	No	**8.95**	107.5	3.01	87.58	9.19	4.80	0.00	0.00	101.57
438	5,406	5,407	49.1	Yes	**12.06**	107.5	3.01	85.66	8.32	4.49	0.00	0.00	98.47
439	5,639	5,641	52.4	Yes	**11.53**	107.5	3.01	86.03	8.48	4.48	0.00	0.00	98.99
440	5,932	5,933	49.6	Yes	**10.87**	107.5	3.01	86.47	8.68	4.51	0.00	0.00	99.66
441	5,990	5,992	49.8	Yes	**10.74**	107.5	3.01	86.55	8.72	4.52	0.00	0.00	99.78
442	6,375	6,376	53.3	Yes	**9.96**	107.5	3.01	87.09	8.96	4.52	0.00	0.00	100.57
443	6,627	6,628	49.8	Yes	**9.44**	107.5	3.01	87.43	9.11	4.54	0.00	0.00	101.09
444	6,734	6,735	52.8	Yes	**9.25**	107.5	3.01	87.57	9.18	4.53	0.00	0.00	101.28
445	5,183	5,185	44.7	Yes	**12.57**	107.5	3.01	85.29	8.16	4.51	0.00	0.00	97.96
446	5,032	5,034	44.9	Yes	**12.95**	107.5	3.01	85.04	8.05	4.50	0.00	0.00	97.58
447	4,545	4,547	49.5	Yes	**14.28**	107.5	3.01	84.15	7.66	4.43	0.00	0.00	96.25
448	4,573	4,575	51.9	Yes	**14.22**	107.5	3.01	84.21	7.69	4.41	0.00	0.00	96.31
449	4,898	4,899	59.3	Yes	**13.39**	107.5	3.01	84.80	7.94	4.39	0.00	0.00	97.13
450	4,771	4,773	59.5	Yes	**13.73**	107.5	3.01	84.58	7.85	4.37	0.00	0.00	96.80
451	5,222	5,224	59.2	Yes	**12.56**	107.5	3.01	85.36	8.19	4.41	0.00	0.00	97.96
452	5,193	5,194	41.2	No	**12.25**	107.5	3.01	85.31	8.16	4.80	0.00	0.00	98.27
453	1,964	1,967	55.7	Yes	**24.91**	107.5	3.01	76.88	4.91	3.83	0.00	0.00	85.62
454	2,528	2,531	55.7	Yes	**21.75**	107.5	3.01	79.07	5.66	4.05	0.00	0.00	88.77
455	3,616	3,617	55.7	Yes	**17.24**	107.5	3.01	82.17	6.84	4.27	0.00	0.00	93.28
456	3,736	3,738	58.1	Yes	**16.85**	107.5	3.01	82.45	6.95	4.27	0.00	0.00	93.67
457	4,035	4,036	54.1	Yes	**15.83**	107.5	3.01	83.12	7.23	4.34	0.00	0.00	94.69
458	5,491	5,492	38.1	No	**11.55**	107.5	3.01	85.79	8.38	4.80	0.00	0.00	98.97
459	5,390	5,392	40.0	No	**11.78**	107.5	3.01	85.63	8.31	4.80	0.00	0.00	98.74
460	4,160	4,161	38.0	No	**15.00**	107.5	3.01	83.38	7.34	4.80	0.00	0.00	95.52
461	3,992	3,994	41.8	Yes	**15.86**	107.5	3.01	83.03	7.19	4.44	0.00	0.00	94.66
462	3,669	3,672	52.1	Yes	**17.02**	107.5	3.01	82.30	6.89	4.32	0.00	0.00	93.50
463	3,674	3,676	46.1	Yes	**16.95**	107.5	3.01	82.31	6.90	4.37	0.00	0.00	93.57
464	2,976	2,979	44.4	Yes	**19.58**	107.5	3.01	80.48	6.18	4.29	0.00	0.00	90.95
T001	19,488	19,488	43.8	No	**-9.70**	108.0	3.01	96.80	19.09	4.80	0.00	0.00	120.69
T002	19,461	19,461	40.6	No	**-9.68**	108.0	3.01	96.78	19.08	4.80	0.00	0.00	120.66
T003	18,209	18,209	33.0	No	**-9.16**	107.0	3.01	96.21	18.21	4.80	0.00	0.00	119.21
T004	19,420	19,420	27.8	No	**-10.23**	107.0	3.01	96.77	18.71	4.80	0.00	0.00	120.28
T005	18,039	18,039	26.0	No	**-9.00**	107.0	3.01	96.12	18.13	4.80	0.00	0.00	119.06
T006	18,598	18,599	32.9	No	**-8.86**	108.0	3.01	96.39	18.65	4.80	0.00	0.00	119.84
T007	17,804	17,805	33.3	No	**-8.07**	108.0	3.01	96.01	18.25	4.80	0.00	0.00	119.06
T008	18,655	18,655	35.4	No	**-9.56**	107.0	3.01	96.42	18.40	4.80	0.00	0.00	119.61
T009	20,336	20,336	33.7	No	**-10.48**	108.0	3.01	97.17	19.50	4.80	0.00	0.00	121.46
T010	19,621	19,622	38.8	No	**-9.83**	108.0	3.01	96.85	19.16	4.80	0.00	0.00	120.81
T011	21,167	21,167	20.2	No	**-11.20**	108.0	3.01	97.51	19.88	4.80	0.00	0.00	122.19
T012	20,797	20,797	18.7	No	**-11.37**	107.0	3.01	97.36	19.26	4.80	0.00	0.00	121.42
T013	19,552	19,552	25.0	No	**-10.34**	107.0	3.01	96.82	18.77	4.80	0.00	0.00	120.39
T014	18,821	18,821	20.7	No	**-9.70**	107.0	3.01	96.49	18.47	4.80	0.00	0.00	119.76
T015	18,392	18,392	33.8	No	**-8.65**	108.0	3.01	96.29	18.55	4.80	0.00	0.00	119.64
T016	18,799	18,799	27.2	No	**-9.69**	107.0	3.01	96.48	18.46	4.80	0.00	0.00	119.74

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T017	18,266	18,266	30.8	No	**-8.53**	108.0	3.01	96.23	18.49	4.80	0.00	0.00	119.52
T018	18,587	18,587	16.7	No	**-9.50**	107.0	3.01	96.38	18.37	4.80	0.00	0.00	119.55
T019	19,402	19,402	18.9	No	**-10.21**	107.0	3.01	96.76	18.71	4.80	0.00	0.00	120.26
T020	17,927	17,927	31.9	No	**-8.19**	108.0	3.01	96.07	18.31	4.80	0.00	0.00	119.18
T022	20,109	20,109	22.2	No	**-10.81**	107.0	3.01	97.07	18.99	4.80	0.00	0.00	120.86
T023	18,580	18,580	43.2	No	**-9.49**	107.0	3.01	96.38	18.37	4.80	0.00	0.00	119.55
T025	18,741	18,741	25.1	No	**-8.99**	108.0	3.01	96.46	18.73	4.80	0.00	0.00	119.98
T026	17,475	17,475	29.6	No	**-7.73**	108.0	3.01	95.85	18.07	4.80	0.00	0.00	118.72
T027	19,200	19,200	30.1	No	**-9.43**	108.0	3.01	96.67	18.95	4.80	0.00	0.00	120.42
T028	18,396	18,396	33.3	No	**-8.66**	108.0	3.01	96.29	18.55	4.80	0.00	0.00	119.65
T029	21,326	21,326	19.8	No	**-11.79**	107.0	3.01	97.58	19.47	4.80	0.00	0.00	121.85
T030	19,900	19,900	25.0	No	**-10.08**	108.0	3.01	96.98	19.29	4.80	0.00	0.00	121.07
T031	20,536	20,536	17.6	No	**-11.16**	107.0	3.01	97.25	19.16	4.80	0.00	0.00	121.21
T032	17,954	17,954	22.8	No	**-8.93**	107.0	3.01	96.08	18.10	4.80	0.00	0.00	118.98
T033	20,073	20,073	22.2	No	**-10.78**	107.0	3.01	97.05	18.98	4.80	0.00	0.00	120.83
T201	20,144	20,145	26.4	No	**-10.30**	108.0	3.01	97.08	19.41	4.80	0.00	0.00	121.29
T202	20,312	20,312	25.7	No	**-10.45**	108.0	3.01	97.16	19.49	4.80	0.00	0.00	121.44
T203	21,726	21,726	20.3	No	**-11.68**	108.0	3.01	97.74	20.13	4.80	0.00	0.00	122.67
T204	21,618	21,618	27.6	No	**-11.59**	108.0	3.01	97.70	20.08	4.80	0.00	0.00	122.58
T205	22,069	22,069	33.7	No	**-11.97**	108.0	3.01	97.88	20.28	4.80	0.00	0.00	122.95
T206	22,578	22,578	21.7	No	**-12.38**	108.0	3.01	98.07	20.50	4.80	0.00	0.00	123.37
T207	23,379	23,379	31.9	No	**-13.02**	108.0	3.01	98.38	20.83	4.80	0.00	0.00	124.01
T208	21,321	21,321	24.5	No	**-11.34**	108.0	3.01	97.58	19.95	4.80	0.00	0.00	122.32
T209	21,386	21,386	30.5	No	**-11.39**	108.0	3.01	97.60	19.98	4.80	0.00	0.00	122.38
T210	21,354	21,354	30.4	No	**-11.36**	108.0	3.01	97.59	19.96	4.80	0.00	0.00	122.35
T211	20,096	20,097	35.4	No	**-10.26**	108.0	3.01	97.06	19.39	4.80	0.00	0.00	121.25
T212	19,758	19,759	35.3	No	**-9.95**	108.0	3.01	96.92	19.23	4.80	0.00	0.00	120.94
T213	19,430	19,430	34.8	No	**-9.65**	108.0	3.01	96.77	19.07	4.80	0.00	0.00	120.64
T214	19,386	19,386	33.7	No	**-9.61**	108.0	3.01	96.75	19.05	4.80	0.00	0.00	120.60
T215	18,088	18,089	38.8	No	**-8.35**	108.0	3.01	96.15	18.39	4.80	0.00	0.00	119.34
T216	18,160	18,160	29.8	No	**-8.43**	108.0	3.01	96.18	18.43	4.80	0.00	0.00	119.41
T217	18,239	18,239	26.4	No	**-8.50**	108.0	3.01	96.22	18.47	4.80	0.00	0.00	119.49
T218	20,159	20,159	35.9	No	**-10.32**	108.0	3.01	97.09	19.42	4.80	0.00	0.00	121.30
T219	19,741	19,741	34.0	No	**-9.94**	108.0	3.01	96.91	19.22	4.80	0.00	0.00	120.92
T220	20,026	20,027	30.5	No	**-10.20**	108.0	3.01	97.03	19.35	4.80	0.00	0.00	121.18
T221	20,047	20,048	26.4	No	**-10.22**	108.0	3.01	97.04	19.36	4.80	0.00	0.00	121.20
T222	16,906	16,906	29.6	No	**-7.14**	108.0	3.01	95.56	17.76	4.80	0.00	0.00	118.12
T223	16,525	16,525	29.7	No	**-6.73**	108.0	3.01	95.36	17.55	4.80	0.00	0.00	117.71
T224	18,248	18,249	34.8	No	**-8.51**	108.0	3.01	96.22	18.48	4.80	0.00	0.00	119.50
T225	18,048	18,048	33.4	No	**-8.31**	108.0	3.01	96.13	18.37	4.80	0.00	0.00	119.30
T226	17,110	17,110	35.7	No	**-7.35**	108.0	3.01	95.67	17.87	4.80	0.00	0.00	118.34
T227	16,708	16,708	31.3	No	**-6.92**	108.0	3.01	95.46	17.65	4.80	0.00	0.00	117.91
T228	17,322	17,322	25.0	No	**-7.57**	108.0	3.01	95.77	17.99	4.80	0.00	0.00	118.56
T229	16,916	16,916	36.3	No	**-7.15**	108.0	3.01	95.57	17.77	4.80	0.00	0.00	118.13
T230	17,047	17,047	38.9	No	**-7.29**	108.0	3.01	95.63	17.84	4.80	0.00	0.00	118.27
T231	16,908	16,908	31.7	No	**-7.14**	108.0	3.01	95.56	17.76	4.80	0.00	0.00	118.13
T232	15,668	15,669	33.4	No	**-5.77**	108.0	3.01	94.90	17.06	4.80	0.00	0.00	116.76
T233	15,683	15,683	36.3	No	**-5.79**	108.0	3.01	94.91	17.07	4.80	0.00	0.00	116.78
T234	15,541	15,541	39.6	No	**-5.63**	108.0	3.01	94.83	16.98	4.80	0.00	0.00	116.61
T235	16,077	16,077	28.2	No	**-6.23**	108.0	3.01	95.12	17.30	4.80	0.00	0.00	117.22
T301	24,792	24,792	20.9	No	**-14.10**	108.0	3.01	98.89	21.40	4.80	0.00	0.00	125.08
T302	25,266	25,266	21.0	No	**-14.45**	108.0	3.01	99.05	21.58	4.80	0.00	0.00	125.43
T303	25,861	25,861	28.4	No	**-14.87**	108.0	3.01	99.25	21.81	4.80	0.00	0.00	125.86
T304	26,412	26,412	27.6	No	**-15.26**	108.0	3.01	99.44	22.01	4.80	0.00	0.00	126.25
T305	26,168	26,169	24.0	No	**-15.09**	108.0	3.01	99.36	21.92	4.80	0.00	0.00	126.08
T306	25,970	25,970	30.8	No	**-14.95**	108.0	3.01	99.29	21.85	4.80	0.00	0.00	125.94
T307	25,163	25,163	27.2	No	**-14.37**	108.0	3.01	99.02	21.54	4.80	0.00	0.00	125.36
T308	14,968	14,968	31.0	No	**-4.96**	108.0	3.01	94.50	16.64	4.80	0.00	0.00	115.94
T309	15,093	15,093	31.4	No	**-5.10**	108.0	3.01	94.58	16.72	4.80	0.00	0.00	116.09
T310	15,711	15,711	30.3	No	**-5.82**	108.0	3.01	94.92	17.08	4.80	0.00	0.00	116.81
T311	15,763	15,763	31.4	No	**-5.88**	108.0	3.01	94.95	17.11	4.80	0.00	0.00	116.87
T312	15,739	15,739	30.2	No	**-5.85**	108.0	3.01	94.94	17.10	4.80	0.00	0.00	116.84
T313	15,752	15,752	42.2	No	**-5.87**	108.0	3.01	94.95	17.11	4.80	0.00	0.00	116.86

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T314	16,005	16,005	31.7	No	**-6.15**	108.0	3.01	95.09	17.26	4.80	0.00	0.00	117.14
T315	15,109	15,109	35.2	No	**-5.12**	108.0	3.01	94.58	16.73	4.80	0.00	0.00	116.11
T316	14,476	14,476	38.7	No	**-4.36**	108.0	3.01	94.21	16.34	4.80	0.00	0.00	115.35
T317	14,599	14,599	43.9	No	**-4.51**	108.0	3.01	94.29	16.41	4.80	0.00	0.00	115.50
T318	14,270	14,270	30.5	No	**-4.11**	108.0	3.01	94.09	16.21	4.80	0.00	0.00	115.09
T319	12,578	12,579	35.3	No	**-1.88**	108.0	3.01	92.99	15.07	4.80	0.00	0.00	112.87
T320	12,241	12,242	43.7	No	**-1.40**	108.0	3.01	92.76	14.83	4.80	0.00	0.00	112.39
T321	12,093	12,093	39.3	No	**-1.19**	108.0	3.01	92.65	14.72	4.80	0.00	0.00	112.18
T322	10,977	10,977	37.9	No	**0.50**	108.0	3.01	91.81	13.88	4.80	0.00	0.00	110.49
T323	10,743	10,743	36.2	No	**0.87**	108.0	3.01	91.62	13.70	4.80	0.00	0.00	110.12
T324	11,120	11,120	31.7	No	**0.27**	108.0	3.01	91.92	13.99	4.80	0.00	0.00	110.72
T325	9,614	9,615	33.6	No	**2.77**	108.0	3.01	90.66	12.76	4.80	0.00	0.00	108.22
T326	10,180	10,181	36.3	No	**1.79**	108.0	3.01	91.16	13.24	4.80	0.00	0.00	109.20
T327	10,242	10,242	30.5	No	**1.69**	108.0	3.01	91.21	13.29	4.80	0.00	0.00	109.30
T328	10,595	10,595	33.1	No	**1.11**	108.0	3.01	91.50	13.58	4.80	0.00	0.00	109.88
T329	9,651	9,651	35.4	No	**2.70**	108.0	3.01	90.69	12.79	4.80	0.00	0.00	108.29
T330	10,357	10,358	31.5	No	**1.50**	108.0	3.01	91.31	13.39	4.80	0.00	0.00	109.49
T331	11,176	11,177	35.5	No	**0.18**	108.0	3.01	91.97	14.04	4.80	0.00	0.00	110.80
T332	11,676	11,676	32.5	No	**-0.58**	108.0	3.01	92.35	14.42	4.80	0.00	0.00	111.56
T333	12,082	12,083	36.0	No	**-1.17**	108.0	3.01	92.64	14.72	4.80	0.00	0.00	112.16
T334	11,802	11,802	31.3	No	**-0.76**	108.0	3.01	92.44	14.51	4.80	0.00	0.00	111.75
T335	12,164	12,164	28.6	No	**-1.29**	108.0	3.01	92.70	14.78	4.80	0.00	0.00	112.28
Sum	30.91												

Noise sensitive area: SSA036 SSA036

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	22,472	22,472	47.4	No	**-6.52**	107.5	3.01	98.03	14.21	4.80	0.00	0.00	117.04
402	22,858	22,858	51.4	No	**-6.74**	107.5	3.01	98.18	14.28	4.80	0.00	0.00	117.26
403	23,497	23,497	48.0	No	**-7.10**	107.5	3.01	98.42	14.40	4.80	0.00	0.00	117.62
404	23,885	23,885	52.7	No	**-7.31**	107.5	3.01	98.56	14.47	4.80	0.00	0.00	117.84
405	24,082	24,082	42.0	No	**-7.42**	107.5	3.01	98.63	14.51	4.80	0.00	0.00	117.94
406	24,069	24,069	42.7	No	**-7.41**	107.5	3.01	98.63	14.51	4.80	0.00	0.00	117.94
407	24,810	24,811	42.0	No	**-7.81**	107.5	3.01	98.89	14.64	4.80	0.00	0.00	118.33
408	19,837	19,837	53.4	No	**-4.89**	107.5	3.01	96.95	13.67	4.80	0.00	0.00	115.42
409	20,556	20,556	49.2	No	**-5.36**	107.5	3.01	97.26	13.82	4.80	0.00	0.00	115.88
410	20,717	20,718	55.1	No	**-5.46**	107.5	3.01	97.33	13.85	4.80	0.00	0.00	115.98
411	21,019	21,020	58.1	No	**-5.65**	107.5	3.01	97.45	13.92	4.80	0.00	0.00	116.17
412	21,038	21,038	59.5	No	**-5.66**	107.5	3.01	97.46	13.92	4.80	0.00	0.00	116.18
413	21,412	21,412	60.2	No	**-5.89**	107.5	3.01	97.61	14.00	4.80	0.00	0.00	116.41
414	21,803	21,803	60.8	No	**-6.12**	107.5	3.01	97.77	14.08	4.80	0.00	0.00	116.65
415	14,540	14,541	48.2	No	**-0.88**	107.5	3.01	94.25	12.35	4.80	0.00	0.00	111.40
416	14,738	14,738	51.6	No	**-1.05**	107.5	3.01	94.37	12.41	4.80	0.00	0.00	111.58
417	14,641	14,642	48.4	No	**-0.97**	107.5	3.01	94.31	12.38	4.80	0.00	0.00	111.49
418	14,761	14,761	43.3	No	**-1.07**	107.5	3.01	94.38	12.41	4.80	0.00	0.00	111.60
419	14,354	14,354	44.1	No	**-0.71**	107.5	3.01	94.14	12.30	4.80	0.00	0.00	111.24
420	14,789	14,790	44.6	No	**-1.10**	107.5	3.01	94.40	12.42	4.80	0.00	0.00	111.62
421	16,037	16,038	60.7	No	**-2.14**	107.5	3.01	95.10	12.76	4.80	0.00	0.00	112.67
422	16,226	16,227	48.4	No	**-2.29**	107.5	3.01	95.20	12.81	4.80	0.00	0.00	112.82
423	16,346	16,346	49.6	No	**-2.39**	107.5	3.01	95.27	12.84	4.80	0.00	0.00	112.91
424	16,708	16,708	44.6	No	**-2.67**	107.5	3.01	95.46	12.94	4.80	0.00	0.00	113.20
425	17,097	17,097	43.8	No	**-2.97**	107.5	3.01	95.66	13.03	4.80	0.00	0.00	113.49
426	12,653	12,654	54.9	No	**0.91**	107.5	3.01	93.04	11.77	4.80	0.00	0.00	109.61
427	13,098	13,098	56.4	No	**0.47**	107.5	3.01	93.34	11.91	4.80	0.00	0.00	110.06
428	13,458	13,458	55.2	No	**0.12**	107.5	3.01	93.58	12.03	4.80	0.00	0.00	110.41
429	13,985	13,986	47.1	No	**-0.38**	107.5	3.01	93.91	12.19	4.80	0.00	0.00	110.90
430	14,310	14,311	48.5	No	**-0.67**	107.5	3.01	94.11	12.28	4.80	0.00	0.00	111.20
431	14,922	14,922	48.8	No	**-1.21**	107.5	3.01	94.48	12.46	4.80	0.00	0.00	111.74
432	15,160	15,160	44.2	No	**-1.42**	107.5	3.01	94.61	12.53	4.80	0.00	0.00	111.94
433	3,408	3,410	54.8	Yes	**17.99**	107.5	3.01	81.65	6.63	4.25	0.00	0.00	92.54
434	3,479	3,481	46.8	Yes	**17.65**	107.5	3.01	81.83	6.70	4.34	0.00	0.00	92.88

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
435	4,078	4,079	44.2	Yes	**15.62**	107.5	3.01	83.21	7.27	4.43	0.00	0.00	94.91
436	4,586	4,588	45.5	Yes	**14.13**	107.5	3.01	84.23	7.70	4.46	0.00	0.00	96.39
437	4,557	4,558	41.6	Yes	**14.19**	107.5	3.01	84.18	7.67	4.49	0.00	0.00	96.34
438	3,551	3,553	40.4	Yes	**17.33**	107.5	3.01	82.01	6.78	4.41	0.00	0.00	93.20
439	5,830	5,831	50.2	No	**10.80**	107.5	3.01	86.31	8.61	4.80	0.00	0.00	99.73
440	6,301	6,302	46.8	No	**9.82**	107.5	3.01	86.99	8.91	4.80	0.00	0.00	100.70
441	6,633	6,634	48.4	No	**9.17**	107.5	3.01	87.44	9.12	4.80	0.00	0.00	101.35
442	7,091	7,092	51.5	No	**8.32**	107.5	3.01	88.02	9.38	4.80	0.00	0.00	102.20
443	7,526	7,527	47.7	No	**7.57**	107.5	3.01	88.53	9.62	4.80	0.00	0.00	102.96
444	7,814	7,815	48.3	No	**7.09**	107.5	3.01	88.86	9.78	4.80	0.00	0.00	103.43
445	2,714	2,716	45.5	Yes	**20.74**	107.5	3.01	79.68	5.88	4.23	0.00	0.00	89.79
446	2,956	2,958	43.2	Yes	**19.65**	107.5	3.01	80.42	6.16	4.30	0.00	0.00	90.88
447	3,477	3,479	46.2	Yes	**17.65**	107.5	3.01	81.83	6.70	4.35	0.00	0.00	92.88
448	3,840	3,841	48.8	Yes	**16.42**	107.5	3.01	82.69	7.05	4.37	0.00	0.00	94.11
449	4,462	4,464	53.2	Yes	**14.54**	107.5	3.01	83.99	7.60	4.39	0.00	0.00	95.98
450	4,626	4,627	54.1	Yes	**14.09**	107.5	3.01	84.31	7.73	4.40	0.00	0.00	96.44
451	5,305	5,307	57.0	Yes	**12.35**	107.5	3.01	85.50	8.25	4.43	0.00	0.00	98.18
452	2,409	2,411	47.6	Yes	**22.25**	107.5	3.01	78.65	5.51	4.12	0.00	0.00	88.28
453	4,276	4,277	45.9	Yes	**15.03**	107.5	3.01	83.62	7.44	4.43	0.00	0.00	95.49
454	4,686	4,687	51.0	Yes	**13.90**	107.5	3.01	84.42	7.78	4.43	0.00	0.00	96.62
455	5,464	5,465	51.7	No	**11.61**	107.5	3.01	85.75	8.36	4.80	0.00	0.00	98.91
456	5,857	5,858	54.5	Yes	**11.06**	107.5	3.01	86.35	8.63	4.48	0.00	0.00	99.47
457	6,265	6,266	49.5	No	**9.89**	107.5	3.01	86.94	8.89	4.80	0.00	0.00	100.63
458	2,225	2,227	49.5	Yes	**23.26**	107.5	3.01	77.96	5.27	4.04	0.00	0.00	87.27
459	2,301	2,304	47.9	Yes	**22.82**	107.5	3.01	78.25	5.37	4.09	0.00	0.00	87.71
460	951	957	47.2	Yes	**33.63**	107.5	3.01	70.62	3.18	3.09	0.00	0.00	76.89
461	1,206	1,211	45.0	Yes	**30.66**	107.5	3.01	72.66	3.69	3.52	0.00	0.00	79.87
462	1,343	1,348	52.0	Yes	**29.52**	107.5	3.01	73.60	3.94	3.47	0.00	0.00	81.00
463	1,791	1,794	42.9	Yes	**25.81**	107.5	3.01	76.08	4.66	3.98	0.00	0.00	84.72
464	1,916	1,919	44.1	Yes	**25.00**	107.5	3.01	76.66	4.85	4.01	0.00	0.00	85.52
T001	19,020	19,021	47.9	No	**-9.26**	108.0	3.01	96.58	18.87	4.80	0.00	0.00	120.25
T002	19,197	19,197	47.6	No	**-9.43**	108.0	3.01	96.66	18.95	4.80	0.00	0.00	120.42
T003	17,252	17,252	42.7	No	**-8.27**	107.0	3.01	95.74	17.79	4.80	0.00	0.00	118.32
T004	18,436	18,436	38.3	No	**-9.36**	107.0	3.01	96.31	18.30	4.80	0.00	0.00	119.42
T005	17,328	17,328	34.8	No	**-8.34**	107.0	3.01	95.77	17.82	4.80	0.00	0.00	118.40
T006	18,503	18,503	36.1	No	**-8.76**	108.0	3.01	96.34	18.61	4.80	0.00	0.00	119.75
T007	17,548	17,548	38.7	No	**-7.81**	108.0	3.01	95.88	18.11	4.80	0.00	0.00	118.80
T008	17,556	17,556	45.9	No	**-8.56**	107.0	3.01	95.89	17.92	4.80	0.00	0.00	118.61
T009	19,855	19,856	38.8	No	**-10.04**	108.0	3.01	96.96	19.27	4.80	0.00	0.00	121.03
T010	19,247	19,247	45.3	No	**-9.48**	108.0	3.01	96.69	18.98	4.80	0.00	0.00	120.46
T011	20,806	20,806	28.4	No	**-10.89**	108.0	3.01	97.36	19.72	4.80	0.00	0.00	121.88
T012	19,976	19,976	28.2	No	**-10.70**	107.0	3.01	97.01	18.94	4.80	0.00	0.00	120.75
T013	18,627	18,627	34.7	No	**-9.53**	107.0	3.01	96.40	18.38	4.80	0.00	0.00	119.59
T014	18,084	18,084	29.5	No	**-9.04**	107.0	3.01	96.15	18.15	4.80	0.00	0.00	119.10
T015	18,072	18,073	40.2	No	**-8.34**	108.0	3.01	96.14	18.39	4.80	0.00	0.00	119.33
T016	17,832	17,832	37.4	No	**-8.81**	107.0	3.01	96.02	18.04	4.80	0.00	0.00	118.87
T017	18,264	18,264	33.4	No	**-8.53**	108.0	3.01	96.23	18.48	4.80	0.00	0.00	119.52
T018	18,007	18,007	24.6	No	**-8.97**	107.0	3.01	96.11	18.12	4.80	0.00	0.00	119.03
T019	18,682	18,682	27.3	No	**-9.58**	107.0	3.01	96.43	18.41	4.80	0.00	0.00	119.64
T020	17,802	17,802	36.0	No	**-8.07**	108.0	3.01	96.01	18.24	4.80	0.00	0.00	119.05
T022	19,003	19,003	33.0	No	**-9.86**	107.0	3.01	96.58	18.54	4.80	0.00	0.00	119.92
T023	17,340	17,341	52.7	No	**-8.35**	107.0	3.01	95.78	17.83	4.80	0.00	0.00	118.41
T025	18,766	18,766	28.3	No	**-9.02**	108.0	3.01	96.47	18.74	4.80	0.00	0.00	120.01
T026	17,471	17,472	32.3	No	**-7.73**	108.0	3.01	95.85	18.07	4.80	0.00	0.00	118.72
T027	18,683	18,683	36.8	No	**-8.94**	108.0	3.01	96.43	18.70	4.80	0.00	0.00	119.93
T028	18,193	18,193	39.2	No	**-8.46**	108.0	3.01	96.20	18.45	4.80	0.00	0.00	119.45
T029	20,471	20,471	28.7	No	**-11.10**	107.0	3.01	97.22	19.14	4.80	0.00	0.00	121.16
T030	19,649	19,649	32.0	No	**-9.85**	108.0	3.01	96.87	19.17	4.80	0.00	0.00	120.84
T031	19,639	19,639	27.2	No	**-10.41**	107.0	3.01	96.86	18.80	4.80	0.00	0.00	120.47
T032	17,123	17,123	32.0	No	**-8.15**	107.0	3.01	95.67	17.73	4.80	0.00	0.00	118.20
T033	19,083	19,083	33.0	No	**-9.93**	107.0	3.01	96.61	18.58	4.80	0.00	0.00	119.99
T201	20,134	20,134	28.6	No	**-10.29**	108.0	3.01	97.08	19.40	4.80	0.00	0.00	121.28
T202	20,342	20,342	28.5	No	**-10.48**	108.0	3.01	97.17	19.50	4.80	0.00	0.00	121.47

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T203	21,620	21,620	24.7	No	**-11.59**	108.0	3.01	97.70	20.08	4.80	0.00	0.00	122.58
T204	21,588	21,588	30.4	No	**-11.56**	108.0	3.01	97.68	20.07	4.80	0.00	0.00	122.55
T205	22,077	22,077	36.6	No	**-11.97**	108.0	3.01	97.88	20.28	4.80	0.00	0.00	122.96
T206	22,338	22,338	29.1	No	**-12.19**	108.0	3.01	97.98	20.39	4.80	0.00	0.00	123.17
T207	23,130	23,130	39.9	No	**-12.82**	108.0	3.01	98.28	20.73	4.80	0.00	0.00	123.81
T208	20,125	20,125	34.1	No	**-10.29**	108.0	3.01	97.07	19.40	4.80	0.00	0.00	121.27
T209	20,124	20,124	40.3	No	**-10.29**	108.0	3.01	97.07	19.40	4.80	0.00	0.00	121.27
T210	20,006	20,006	39.6	No	**-10.18**	108.0	3.01	97.02	19.34	4.80	0.00	0.00	121.17
T211	18,749	18,749	44.4	No	**-9.00**	108.0	3.01	96.46	18.73	4.80	0.00	0.00	119.99
T212	18,376	18,376	45.0	No	**-8.64**	108.0	3.01	96.28	18.54	4.80	0.00	0.00	119.63
T213	17,999	17,999	43.6	No	**-8.26**	108.0	3.01	96.11	18.35	4.80	0.00	0.00	119.25
T214	17,893	17,894	43.3	No	**-8.16**	108.0	3.01	96.05	18.29	4.80	0.00	0.00	119.15
T215	16,886	16,887	48.0	No	**-7.12**	108.0	3.01	95.55	17.75	4.80	0.00	0.00	118.10
T216	16,694	16,694	38.7	No	**-6.91**	108.0	3.01	95.45	17.65	4.80	0.00	0.00	117.90
T217	16,642	16,642	36.5	No	**-6.85**	108.0	3.01	95.42	17.62	4.80	0.00	0.00	117.84
T218	18,352	18,352	42.7	No	**-8.62**	108.0	3.01	96.27	18.53	4.80	0.00	0.00	119.60
T219	17,827	17,827	41.8	No	**-8.09**	108.0	3.01	96.02	18.26	4.80	0.00	0.00	119.08
T220	18,049	18,049	38.9	No	**-8.31**	108.0	3.01	96.13	18.37	4.80	0.00	0.00	119.30
T221	17,970	17,970	35.0	No	**-8.24**	108.0	3.01	96.09	18.33	4.80	0.00	0.00	119.22
T222	14,576	14,576	32.7	No	**-4.48**	108.0	3.01	94.27	16.40	4.80	0.00	0.00	115.47
T223	14,296	14,296	34.5	No	**-4.14**	108.0	3.01	94.10	16.22	4.80	0.00	0.00	115.13
T224	16,124	16,125	42.4	No	**-6.29**	108.0	3.01	95.15	17.32	4.80	0.00	0.00	117.27
T225	15,972	15,972	40.6	No	**-6.12**	108.0	3.01	95.07	17.24	4.80	0.00	0.00	117.10
T226	15,043	15,043	42.0	No	**-5.04**	108.0	3.01	94.55	16.69	4.80	0.00	0.00	116.03
T227	14,787	14,787	38.3	No	**-4.74**	108.0	3.01	94.40	16.53	4.80	0.00	0.00	115.73
T228	15,075	15,075	30.8	No	**-5.08**	108.0	3.01	94.57	16.71	4.80	0.00	0.00	116.07
T229	15,116	15,116	42.8	No	**-5.13**	108.0	3.01	94.59	16.73	4.80	0.00	0.00	116.12
T230	15,304	15,305	46.4	No	**-5.35**	108.0	3.01	94.70	16.84	4.80	0.00	0.00	116.34
T231	15,262	15,262	40.1	No	**-5.30**	108.0	3.01	94.67	16.82	4.80	0.00	0.00	116.29
T232	14,100	14,100	43.1	No	**-3.89**	108.0	3.01	93.98	16.10	4.80	0.00	0.00	114.88
T233	14,200	14,200	45.3	No	**-4.02**	108.0	3.01	94.05	16.16	4.80	0.00	0.00	115.01
T234	14,127	14,127	46.5	No	**-3.93**	108.0	3.01	94.00	16.11	4.80	0.00	0.00	114.92
T235	14,763	14,763	37.0	No	**-4.71**	108.0	3.01	94.38	16.51	4.80	0.00	0.00	115.70
T301	24,177	24,177	30.1	No	**-13.64**	108.0	3.01	98.67	21.16	4.80	0.00	0.00	124.62
T302	24,672	24,672	31.0	No	**-14.01**	108.0	3.01	98.84	21.35	4.80	0.00	0.00	125.00
T303	25,356	25,356	36.9	No	**-14.51**	108.0	3.01	99.08	21.62	4.80	0.00	0.00	125.50
T304	25,938	25,938	36.9	No	**-14.93**	108.0	3.01	99.28	21.84	4.80	0.00	0.00	125.92
T305	25,806	25,806	34.2	No	**-14.84**	108.0	3.01	99.23	21.79	4.80	0.00	0.00	125.82
T306	25,566	25,567	39.6	No	**-14.66**	108.0	3.01	99.15	21.70	4.80	0.00	0.00	125.65
T307	24,751	24,751	35.8	No	**-14.07**	108.0	3.01	98.87	21.38	4.80	0.00	0.00	125.05
T308	12,645	12,645	31.9	No	**-1.97**	108.0	3.01	93.04	15.12	4.80	0.00	0.00	112.96
T309	12,867	12,867	34.5	No	**-2.28**	108.0	3.01	93.19	15.27	4.80	0.00	0.00	113.26
T310	13,551	13,551	34.9	No	**-3.19**	108.0	3.01	93.64	15.74	4.80	0.00	0.00	114.18
T311	13,695	13,695	36.8	No	**-3.38**	108.0	3.01	93.73	15.83	4.80	0.00	0.00	114.36
T312	13,753	13,754	36.7	No	**-3.45**	108.0	3.01	93.77	15.87	4.80	0.00	0.00	114.44
T313	13,863	13,863	47.0	No	**-3.59**	108.0	3.01	93.84	15.94	4.80	0.00	0.00	114.58
T314	14,336	14,337	39.5	No	**-4.19**	108.0	3.01	94.13	16.25	4.80	0.00	0.00	115.18
T315	13,367	13,367	42.2	No	**-2.95**	108.0	3.01	93.52	15.62	4.80	0.00	0.00	113.94
T316	12,651	12,651	44.1	No	**-1.98**	108.0	3.01	93.04	15.12	4.80	0.00	0.00	112.97
T317	12,687	12,687	49.4	No	**-2.03**	108.0	3.01	93.07	15.15	4.80	0.00	0.00	113.02
T318	12,202	12,202	34.8	No	**-1.35**	108.0	3.01	92.73	14.80	4.80	0.00	0.00	112.33
T319	10,443	10,443	35.3	No	**1.35**	108.0	3.01	91.38	13.46	4.80	0.00	0.00	109.63
T320	10,027	10,027	42.1	No	**2.05**	108.0	3.01	91.02	13.11	4.80	0.00	0.00	108.94
T321	9,773	9,773	36.4	No	**2.49**	108.0	3.01	90.80	12.90	4.80	0.00	0.00	108.50
T322	8,773	8,774	33.2	No	**4.31**	108.0	3.01	89.86	12.02	4.80	0.00	0.00	106.68
T323	8,630	8,631	32.9	No	**4.58**	108.0	3.01	89.72	11.89	4.80	0.00	0.00	106.41
T324	9,201	9,201	35.2	No	**3.51**	108.0	3.01	90.28	12.40	4.80	0.00	0.00	107.48
T325	7,700	7,700	35.1	No	**6.46**	108.0	3.01	88.73	10.99	4.80	0.00	0.00	104.52
T326	8,383	8,383	40.7	No	**5.06**	108.0	3.01	89.47	11.65	4.80	0.00	0.00	105.92
T327	8,565	8,565	36.2	No	**4.71**	108.0	3.01	89.65	11.82	4.80	0.00	0.00	106.28
T328	9,214	9,214	38.2	No	**3.49**	108.0	3.01	90.29	12.41	4.80	0.00	0.00	107.50
T329	8,573	8,574	38.7	No	**4.69**	108.0	3.01	89.66	11.83	4.80	0.00	0.00	106.30
T330	9,345	9,346	36.1	No	**3.25**	108.0	3.01	90.41	12.53	4.80	0.00	0.00	107.74

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T331	9,964	9,964	40.1	No	**2.16**	108.0	3.01	90.97	13.06	4.80	0.00	0.00	108.83
T332	10,491	10,491	37.2	No	**1.28**	108.0	3.01	91.42	13.49	4.80	0.00	0.00	109.71
T333	10,668	10,668	43.1	No	**0.99**	108.0	3.01	91.56	13.64	4.80	0.00	0.00	110.00
T334	10,279	10,279	37.6	No	**1.63**	108.0	3.01	91.24	13.32	4.80	0.00	0.00	109.36
T335	10,511	10,512	35.4	No	**1.24**	108.0	3.01	91.43	13.51	4.80	0.00	0.00	109.75
Sum	38.13												

Noise sensitive area: SSA037 SSA037

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	23,634	23,634	39.1	No	**-7.17**	107.5	3.01	98.47	14.43	4.80	0.00	0.00	117.70
402	24,025	24,025	42.6	No	**-7.39**	107.5	3.01	98.61	14.50	4.80	0.00	0.00	117.91
403	24,664	24,664	39.1	No	**-7.73**	107.5	3.01	98.84	14.62	4.80	0.00	0.00	118.26
404	25,059	25,060	43.1	No	**-7.94**	107.5	3.01	98.98	14.69	4.80	0.00	0.00	118.47
405	25,268	25,268	32.8	No	**-8.05**	107.5	3.01	99.05	14.72	4.80	0.00	0.00	118.57
406	25,273	25,273	32.9	No	**-8.05**	107.5	3.01	99.05	14.72	4.80	0.00	0.00	118.58
407	25,978	25,978	32.9	No	**-8.41**	107.5	3.01	99.29	14.85	4.80	0.00	0.00	118.94
408	21,171	21,171	43.9	No	**-5.74**	107.5	3.01	97.51	13.95	4.80	0.00	0.00	116.26
409	21,886	21,886	39.2	No	**-6.17**	107.5	3.01	97.80	14.09	4.80	0.00	0.00	116.70
410	22,059	22,059	45.0	No	**-6.27**	107.5	3.01	97.87	14.13	4.80	0.00	0.00	116.80
411	22,367	22,367	47.3	No	**-6.45**	107.5	3.01	97.99	14.19	4.80	0.00	0.00	116.98
412	22,398	22,399	48.3	No	**-6.47**	107.5	3.01	98.00	14.19	4.80	0.00	0.00	117.00
413	22,777	22,778	49.0	No	**-6.69**	107.5	3.01	98.15	14.27	4.80	0.00	0.00	117.22
414	23,169	23,170	49.6	No	**-6.91**	107.5	3.01	98.30	14.34	4.80	0.00	0.00	117.44
415	15,548	15,548	40.5	No	**-1.74**	107.5	3.01	94.83	12.63	4.80	0.00	0.00	112.27
416	15,770	15,770	44.0	No	**-1.92**	107.5	3.01	94.96	12.69	4.80	0.00	0.00	112.45
417	15,711	15,711	40.4	No	**-1.88**	107.5	3.01	94.92	12.68	4.80	0.00	0.00	112.40
418	15,858	15,859	35.6	No	**-2.00**	107.5	3.01	95.01	12.72	4.80	0.00	0.00	112.52
419	15,510	15,511	36.6	No	**-1.71**	107.5	3.01	94.81	12.62	4.80	0.00	0.00	112.24
420	15,958	15,958	37.2	No	**-2.08**	107.5	3.01	95.06	12.74	4.80	0.00	0.00	112.60
421	17,197	17,198	53.0	No	**-3.04**	107.5	3.01	95.71	13.06	4.80	0.00	0.00	113.57
422	17,407	17,408	40.2	No	**-3.20**	107.5	3.01	95.81	13.11	4.80	0.00	0.00	113.73
423	17,544	17,544	42.2	No	**-3.30**	107.5	3.01	95.88	13.14	4.80	0.00	0.00	113.83
424	17,940	17,941	37.4	No	**-3.59**	107.5	3.01	96.08	13.24	4.80	0.00	0.00	114.12
425	18,337	18,338	36.3	No	**-3.87**	107.5	3.01	96.27	13.33	4.80	0.00	0.00	114.40
426	13,938	13,938	46.2	No	**-0.33**	107.5	3.01	93.88	12.17	4.80	0.00	0.00	110.86
427	14,403	14,403	46.4	No	**-0.76**	107.5	3.01	94.17	12.31	4.80	0.00	0.00	111.28
428	14,776	14,777	45.6	No	**-1.09**	107.5	3.01	94.39	12.42	4.80	0.00	0.00	111.61
429	15,301	15,301	37.1	No	**-1.54**	107.5	3.01	94.69	12.57	4.80	0.00	0.00	112.06
430	15,639	15,640	39.7	No	**-1.82**	107.5	3.01	94.88	12.66	4.80	0.00	0.00	112.34
431	16,251	16,252	39.8	No	**-2.31**	107.5	3.01	95.22	12.82	4.80	0.00	0.00	112.84
432	16,500	16,500	35.3	No	**-2.51**	107.5	3.01	95.35	12.88	4.80	0.00	0.00	113.03
433	3,249	3,252	52.2	Yes	**18.56**	107.5	3.01	81.24	6.47	4.25	0.00	0.00	91.97
434	3,914	3,917	49.4	Yes	**16.18**	107.5	3.01	82.86	7.12	4.37	0.00	0.00	94.35
435	4,694	4,696	41.4	Yes	**13.81**	107.5	3.01	84.43	7.78	4.50	0.00	0.00	96.72
436	5,263	5,264	41.8	Yes	**12.35**	107.5	3.01	85.43	8.22	4.53	0.00	0.00	98.17
437	5,331	5,332	38.9	No	**11.92**	107.5	3.01	85.54	8.27	4.80	0.00	0.00	98.60
438	4,584	4,585	37.4	No	**13.80**	107.5	3.01	84.23	7.70	4.80	0.00	0.00	96.72
439	7,192	7,193	42.3	No	**8.14**	107.5	3.01	88.14	9.44	4.80	0.00	0.00	102.38
440	7,673	7,674	39.4	No	**7.32**	107.5	3.01	88.70	9.70	4.80	0.00	0.00	103.20
441	8,028	8,029	39.8	No	**6.75**	107.5	3.01	89.09	9.89	4.80	0.00	0.00	103.78
442	8,487	8,488	42.9	No	**6.04**	107.5	3.01	89.58	10.11	4.80	0.00	0.00	104.49
443	8,933	8,934	39.5	No	**5.38**	107.5	3.01	90.02	10.32	4.80	0.00	0.00	105.14
444	9,233	9,234	40.4	No	**4.96**	107.5	3.01	90.31	10.46	4.80	0.00	0.00	105.57
445	3,590	3,593	48.1	Yes	**17.26**	107.5	3.01	82.11	6.81	4.34	0.00	0.00	93.27
446	3,983	3,985	42.2	No	**15.53**	107.5	3.01	83.01	7.18	4.80	0.00	0.00	94.99
447	4,750	4,752	40.7	No	**13.36**	107.5	3.01	84.54	7.83	4.80	0.00	0.00	97.17
448	5,150	5,152	42.5	No	**12.35**	107.5	3.01	85.24	8.13	4.80	0.00	0.00	98.17
449	5,785	5,787	45.8	No	**10.89**	107.5	3.01	86.25	8.58	4.80	0.00	0.00	99.63
450	5,985	5,986	46.1	No	**10.47**	107.5	3.01	86.54	8.71	4.80	0.00	0.00	100.06
451	6,669	6,671	49.2	No	**9.10**	107.5	3.01	87.48	9.14	4.80	0.00	0.00	101.42

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
452	3,148	3,151	48.1	Yes	**18.91**	107.5	3.01	80.97	6.37	4.28	0.00	0.00	91.61
453	5,654	5,655	37.1	No	**11.19**	107.5	3.01	86.05	8.49	4.80	0.00	0.00	99.34
454	6,092	6,093	41.8	No	**10.25**	107.5	3.01	86.70	8.78	4.80	0.00	0.00	100.28
455	6,902	6,903	44.4	No	**8.67**	107.5	3.01	87.78	9.28	4.80	0.00	0.00	101.86
456	7,285	7,286	46.6	No	**7.98**	107.5	3.01	88.25	9.49	4.80	0.00	0.00	102.54
457	7,690	7,691	41.1	No	**7.29**	107.5	3.01	88.72	9.71	4.80	0.00	0.00	103.23
458	2,515	2,518	50.7	Yes	**21.75**	107.5	3.01	79.02	5.64	4.11	0.00	0.00	88.77
459	2,794	2,797	50.3	Yes	**20.43**	107.5	3.01	79.93	5.97	4.19	0.00	0.00	90.09
460	1,889	1,893	49.5	Yes	**25.27**	107.5	3.01	76.54	4.81	3.90	0.00	0.00	85.25
461	2,343	2,347	47.8	Yes	**22.58**	107.5	3.01	78.41	5.43	4.10	0.00	0.00	87.94
462	2,640	2,644	52.2	Yes	**21.16**	107.5	3.01	79.44	5.79	4.12	0.00	0.00	89.36
463	3,107	3,110	40.9	No	**18.55**	107.5	3.01	80.86	6.32	4.80	0.00	0.00	91.98
464	3,349	3,351	40.8	No	**17.65**	107.5	3.01	81.50	6.57	4.80	0.00	0.00	92.88
T001	20,068	20,069	40.2	No	**-10.24**	108.0	3.01	97.05	19.37	4.80	0.00	0.00	121.22
T002	20,299	20,299	40.1	No	**-10.44**	108.0	3.01	97.15	19.48	4.80	0.00	0.00	121.43
T003	18,163	18,163	36.3	No	**-9.12**	107.0	3.01	96.18	18.19	4.80	0.00	0.00	119.17
T004	19,329	19,329	31.5	No	**-10.15**	107.0	3.01	96.72	18.68	4.80	0.00	0.00	120.20
T005	18,316	18,316	27.4	No	**-9.25**	107.0	3.01	96.26	18.25	4.80	0.00	0.00	119.31
T006	19,651	19,651	28.3	No	**-9.85**	108.0	3.01	96.87	19.17	4.80	0.00	0.00	120.84
T007	18,662	18,662	30.7	No	**-8.92**	108.0	3.01	96.42	18.69	4.80	0.00	0.00	119.91
T008	18,415	18,416	37.9	No	**-9.34**	107.0	3.01	96.30	18.30	4.80	0.00	0.00	119.40
T009	20,895	20,895	30.9	No	**-10.97**	108.0	3.01	97.40	19.76	4.80	0.00	0.00	121.96
T010	20,319	20,320	36.9	No	**-10.46**	108.0	3.01	97.16	19.49	4.80	0.00	0.00	121.45
T011	21,874	21,874	20.4	No	**-11.80**	108.0	3.01	97.80	20.19	4.80	0.00	0.00	122.79
T012	20,912	20,912	21.0	No	**-11.46**	107.0	3.01	97.41	19.31	4.80	0.00	0.00	121.52
T013	19,538	19,538	28.1	No	**-10.33**	107.0	3.01	96.82	18.76	4.80	0.00	0.00	120.38
T014	19,059	19,059	22.5	No	**-9.91**	107.0	3.01	96.60	18.57	4.80	0.00	0.00	119.97
T015	19,166	19,166	32.3	No	**-9.40**	108.0	3.01	96.65	18.94	4.80	0.00	0.00	120.39
T016	18,735	18,735	30.7	No	**-9.63**	107.0	3.01	96.45	18.43	4.80	0.00	0.00	119.68
T017	19,436	19,436	24.7	No	**-9.65**	108.0	3.01	96.77	19.07	4.80	0.00	0.00	120.64
T018	19,029	19,029	16.7	No	**-9.89**	107.0	3.01	96.59	18.55	4.80	0.00	0.00	119.94
T019	19,658	19,658	20.2	No	**-10.43**	107.0	3.01	96.87	18.81	4.80	0.00	0.00	120.48
T020	18,947	18,947	28.3	No	**-9.19**	108.0	3.01	96.55	18.83	4.80	0.00	0.00	120.18
T022	19,850	19,850	24.3	No	**-10.59**	107.0	3.01	96.96	18.89	4.80	0.00	0.00	120.64
T023	18,152	18,152	43.4	No	**-9.11**	107.0	3.01	96.18	18.18	4.80	0.00	0.00	119.16
T025	19,941	19,942	19.0	No	**-10.12**	108.0	3.01	97.00	19.31	4.80	0.00	0.00	121.11
T026	18,647	18,647	23.4	No	**-8.90**	108.0	3.01	96.41	18.68	4.80	0.00	0.00	119.89
T027	19,718	19,719	28.8	No	**-9.92**	108.0	3.01	96.90	19.21	4.80	0.00	0.00	120.90
T028	19,317	19,317	30.9	No	**-9.54**	108.0	3.01	96.72	19.01	4.80	0.00	0.00	120.53
T029	21,393	21,393	21.6	No	**-11.84**	107.0	3.01	97.61	19.49	4.80	0.00	0.00	121.90
T030	20,751	20,752	24.6	No	**-10.84**	108.0	3.01	97.34	19.69	4.80	0.00	0.00	121.83
T031	20,552	20,552	20.3	No	**-11.17**	107.0	3.01	97.26	19.17	4.80	0.00	0.00	121.23
T032	18,075	18,076	25.4	No	**-9.04**	107.0	3.01	96.14	18.15	4.80	0.00	0.00	119.09
T033	19,968	19,969	26.1	No	**-10.69**	107.0	3.01	97.01	18.94	4.80	0.00	0.00	120.74
T201	21,294	21,295	20.6	No	**-11.31**	108.0	3.01	97.57	19.94	4.80	0.00	0.00	122.30
T202	21,511	21,512	19.7	No	**-11.50**	108.0	3.01	97.65	20.03	4.80	0.00	0.00	122.49
T203	22,750	22,750	16.7	No	**-12.52**	108.0	3.01	98.14	20.57	4.80	0.00	0.00	123.51
T204	22,737	22,738	22.5	No	**-12.51**	108.0	3.01	98.13	20.56	4.80	0.00	0.00	123.50
T205	23,234	23,234	28.5	No	**-12.91**	108.0	3.01	98.32	20.77	4.80	0.00	0.00	123.89
T206	23,431	23,432	21.1	No	**-13.06**	108.0	3.01	98.40	20.85	4.80	0.00	0.00	124.05
T207	24,217	24,217	31.4	No	**-13.67**	108.0	3.01	98.68	21.17	4.80	0.00	0.00	124.65
T208	20,931	20,932	25.1	No	**-11.00**	108.0	3.01	97.42	19.77	4.80	0.00	0.00	121.99
T209	20,906	20,906	31.1	No	**-10.98**	108.0	3.01	97.41	19.76	4.80	0.00	0.00	121.97
T210	20,757	20,757	30.5	No	**-10.85**	108.0	3.01	97.34	19.69	4.80	0.00	0.00	121.84
T211	19,508	19,508	35.8	No	**-9.72**	108.0	3.01	96.80	19.10	4.80	0.00	0.00	120.71
T212	19,125	19,125	35.7	No	**-9.36**	108.0	3.01	96.63	18.92	4.80	0.00	0.00	120.35
T213	18,732	18,732	34.1	No	**-8.99**	108.0	3.01	96.45	18.72	4.80	0.00	0.00	119.97
T214	18,603	18,603	34.2	No	**-8.86**	108.0	3.01	96.39	18.66	4.80	0.00	0.00	119.85
T215	17,715	17,716	39.0	No	**-7.98**	108.0	3.01	95.97	18.20	4.80	0.00	0.00	118.97
T216	17,425	17,425	29.2	No	**-7.68**	108.0	3.01	95.82	18.04	4.80	0.00	0.00	118.67
T217	17,320	17,321	27.2	No	**-7.57**	108.0	3.01	95.77	17.99	4.80	0.00	0.00	118.56
T218	18,924	18,924	37.2	No	**-9.17**	108.0	3.01	96.54	18.82	4.80	0.00	0.00	120.16
T219	18,353	18,354	34.8	No	**-8.62**	108.0	3.01	96.27	18.53	4.80	0.00	0.00	119.60

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T220	18,544	18,544	31.8	No	**-8.80**	108.0	3.01	96.36	18.63	4.80	0.00	0.00	119.79
T221	18,417	18,417	29.6	No	**-8.68**	108.0	3.01	96.30	18.56	4.80	0.00	0.00	119.67
T222	14,924	14,925	26.7	No	**-4.90**	108.0	3.01	94.48	16.61	4.80	0.00	0.00	115.89
T223	14,703	14,703	28.6	No	**-4.64**	108.0	3.01	94.35	16.48	4.80	0.00	0.00	115.63
T224	16,565	16,565	36.7	No	**-6.77**	108.0	3.01	95.38	17.57	4.80	0.00	0.00	117.76
T225	16,438	16,438	34.5	No	**-6.63**	108.0	3.01	95.32	17.50	4.80	0.00	0.00	117.62
T226	15,524	15,524	35.3	No	**-5.61**	108.0	3.01	94.82	16.97	4.80	0.00	0.00	116.59
T227	15,341	15,342	32.1	No	**-5.40**	108.0	3.01	94.72	16.87	4.80	0.00	0.00	116.38
T228	15,462	15,462	24.2	No	**-5.54**	108.0	3.01	94.79	16.94	4.80	0.00	0.00	116.52
T229	15,722	15,722	34.4	No	**-5.83**	108.0	3.01	94.93	17.09	4.80	0.00	0.00	116.82
T230	15,934	15,935	38.1	No	**-6.07**	108.0	3.01	95.05	17.21	4.80	0.00	0.00	117.06
T231	15,933	15,934	31.6	No	**-6.07**	108.0	3.01	95.05	17.21	4.80	0.00	0.00	117.06
T232	14,819	14,819	33.3	No	**-4.78**	108.0	3.01	94.42	16.55	4.80	0.00	0.00	115.77
T233	14,952	14,952	35.8	No	**-4.94**	108.0	3.01	94.49	16.63	4.80	0.00	0.00	115.92
T234	14,906	14,907	38.1	No	**-4.88**	108.0	3.01	94.47	16.60	4.80	0.00	0.00	115.87
T235	15,573	15,573	27.5	No	**-5.66**	108.0	3.01	94.85	17.00	4.80	0.00	0.00	116.65
T301	25,157	25,157	21.8	No	**-14.37**	108.0	3.01	99.01	21.54	4.80	0.00	0.00	125.35
T302	25,656	25,656	22.3	No	**-14.73**	108.0	3.01	99.18	21.73	4.80	0.00	0.00	125.72
T303	26,364	26,364	28.2	No	**-15.23**	108.0	3.01	99.42	22.00	4.80	0.00	0.00	126.22
T304	26,953	26,953	28.8	No	**-15.64**	108.0	3.01	99.61	22.21	4.80	0.00	0.00	126.63
T305	26,854	26,854	25.4	No	**-15.57**	108.0	3.01	99.58	22.18	4.80	0.00	0.00	126.56
T306	26,603	26,603	32.4	No	**-15.40**	108.0	3.01	99.50	22.09	4.80	0.00	0.00	126.38
T307	25,788	25,788	28.6	No	**-14.82**	108.0	3.01	99.23	21.78	4.80	0.00	0.00	125.81
T308	13,024	13,024	26.0	No	**-2.49**	108.0	3.01	93.29	15.38	4.80	0.00	0.00	113.48
T309	13,297	13,297	28.9	No	**-2.86**	108.0	3.01	93.48	15.57	4.80	0.00	0.00	113.84
T310	14,004	14,005	28.5	No	**-3.77**	108.0	3.01	93.93	16.04	4.80	0.00	0.00	114.76
T311	14,193	14,194	30.3	No	**-4.01**	108.0	3.01	94.04	16.16	4.80	0.00	0.00	115.00
T312	14,291	14,292	30.6	No	**-4.13**	108.0	3.01	94.10	16.22	4.80	0.00	0.00	115.12
T313	14,445	14,445	41.3	No	**-4.32**	108.0	3.01	94.19	16.32	4.80	0.00	0.00	115.31
T314	15,010	15,010	31.1	No	**-5.01**	108.0	3.01	94.53	16.67	4.80	0.00	0.00	115.99
T315	14,022	14,023	34.0	No	**-3.80**	108.0	3.01	93.94	16.05	4.80	0.00	0.00	114.78
T316	13,281	13,281	36.6	No	**-2.83**	108.0	3.01	93.46	15.56	4.80	0.00	0.00	113.82
T317	13,276	13,276	42.9	No	**-2.83**	108.0	3.01	93.46	15.55	4.80	0.00	0.00	113.82
T318	12,724	12,725	28.6	No	**-2.08**	108.0	3.01	93.09	15.17	4.80	0.00	0.00	113.07
T319	10,967	10,967	30.4	No	**0.51**	108.0	3.01	91.80	13.87	4.80	0.00	0.00	110.48
T320	10,519	10,519	36.6	No	**1.23**	108.0	3.01	91.44	13.52	4.80	0.00	0.00	109.76
T321	10,214	10,215	29.9	No	**1.73**	108.0	3.01	91.18	13.27	4.80	0.00	0.00	109.25
T322	9,307	9,308	28.7	No	**3.31**	108.0	3.01	90.38	12.50	4.80	0.00	0.00	107.67
T323	9,216	9,217	28.0	No	**3.48**	108.0	3.01	90.29	12.42	4.80	0.00	0.00	107.51
T324	9,863	9,864	27.3	No	**2.33**	108.0	3.01	90.88	12.98	4.80	0.00	0.00	108.66
T325	8,414	8,415	26.6	No	**5.00**	108.0	3.01	89.50	11.68	4.80	0.00	0.00	105.99
T326	9,125	9,126	31.9	No	**3.65**	108.0	3.01	90.21	12.33	4.80	0.00	0.00	107.34
T327	9,352	9,352	28.2	No	**3.23**	108.0	3.01	90.42	12.54	4.80	0.00	0.00	107.75
T328	10,096	10,097	31.6	No	**1.93**	108.0	3.01	91.08	13.17	4.80	0.00	0.00	109.06
T329	9,576	9,577	31.6	No	**2.83**	108.0	3.01	90.62	12.73	4.80	0.00	0.00	108.16
T330	10,349	10,349	28.8	No	**1.51**	108.0	3.01	91.30	13.38	4.80	0.00	0.00	109.48
T331	10,887	10,888	34.5	No	**0.64**	108.0	3.01	91.74	13.81	4.80	0.00	0.00	110.35
T332	11,412	11,413	31.6	No	**-0.18**	108.0	3.01	92.15	14.22	4.80	0.00	0.00	111.17
T333	11,504	11,504	35.1	No	**-0.32**	108.0	3.01	92.22	14.29	4.80	0.00	0.00	111.31
T334	11,081	11,081	28.9	No	**0.33**	108.0	3.01	91.89	13.96	4.80	0.00	0.00	110.66
T335	11,257	11,257	25.3	No	**0.06**	108.0	3.01	92.03	14.10	4.80	0.00	0.00	110.93
Sum	32.03												

Noise sensitive area: SSA038 SSA038

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	2,224	2,228	39.1	Yes	**23.10**	107.5	3.01	77.96	5.27	4.20	0.00	0.00	87.43
402	1,818	1,822	44.9	Yes	**25.65**	107.5	3.01	76.21	4.70	3.96	0.00	0.00	84.87
403	1,229	1,235	42.6	Yes	**30.35**	107.5	3.01	72.83	3.73	3.61	0.00	0.00	80.18
404	781	792	51.7	Yes	**36.20**	107.5	3.01	68.97	2.82	2.53	0.00	0.00	74.32
405	494	505	48.1	Yes	**41.90**	107.5	3.01	65.07	2.09	1.45	0.00	0.00	68.62

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
406	730	737	49.6	Yes	**37.03**	107.5	3.01	68.35	2.69	2.45	0.00	0.00	73.49
407	601	611	40.5	Yes	**38.94**	107.5	3.01	66.72	2.38	2.48	0.00	0.00	71.58
408	6,722	6,723	63.3	Yes	**9.32**	107.5	3.01	87.55	9.17	4.48	0.00	0.00	101.20
409	6,182	6,183	58.2	Yes	**10.38**	107.5	3.01	86.82	8.84	4.48	0.00	0.00	100.14
410	6,469	6,470	60.9	Yes	**9.81**	107.5	3.01	87.22	9.02	4.48	0.00	0.00	100.72
411	6,552	6,554	63.3	Yes	**9.65**	107.5	3.01	87.33	9.07	4.47	0.00	0.00	100.87
412	7,047	7,048	61.3	Yes	**8.70**	107.5	3.01	87.96	9.36	4.50	0.00	0.00	101.82
413	7,143	7,144	60.2	Yes	**8.52**	107.5	3.01	88.08	9.41	4.51	0.00	0.00	102.01
414	7,080	7,081	63.6	Yes	**8.65**	107.5	3.01	88.00	9.38	4.49	0.00	0.00	101.87
415	10,790	10,790	50.7	No	**2.96**	107.5	3.01	91.66	11.10	4.80	0.00	0.00	107.56
416	10,448	10,449	54.7	No	**3.37**	107.5	3.01	91.38	10.97	4.80	0.00	0.00	107.15
417	10,312	10,313	50.4	No	**3.54**	107.5	3.01	91.27	10.91	4.80	0.00	0.00	106.98
418	10,055	10,056	44.7	No	**3.87**	107.5	3.01	91.05	10.81	4.80	0.00	0.00	106.66
419	10,262	10,262	43.9	No	**3.60**	107.5	3.01	91.22	10.89	4.80	0.00	0.00	106.92
420	9,807	9,808	44.2	No	**4.19**	107.5	3.01	90.83	10.71	4.80	0.00	0.00	106.34
421	8,577	8,578	64.2	No	**5.90**	107.5	3.01	89.67	10.16	4.80	0.00	0.00	104.62
422	8,355	8,356	49.6	No	**6.24**	107.5	3.01	89.44	10.05	4.80	0.00	0.00	104.29
423	8,231	8,232	49.4	No	**6.43**	107.5	3.01	89.31	9.99	4.80	0.00	0.00	104.10
424	7,940	7,941	48.5	No	**6.89**	107.5	3.01	89.00	9.84	4.80	0.00	0.00	103.64
425	7,596	7,596	49.4	No	**7.45**	107.5	3.01	88.61	9.66	4.80	0.00	0.00	103.07
426	12,117	12,118	59.5	No	**1.47**	107.5	3.01	92.67	11.59	4.80	0.00	0.00	109.06
427	11,818	11,819	63.0	No	**1.79**	107.5	3.01	92.45	11.48	4.80	0.00	0.00	108.73
428	11,598	11,599	65.0	No	**2.03**	107.5	3.01	92.29	11.40	4.80	0.00	0.00	108.49
429	11,083	11,083	59.4	No	**2.62**	107.5	3.01	91.89	11.21	4.80	0.00	0.00	107.91
430	10,936	10,937	61.7	No	**2.79**	107.5	3.01	91.78	11.16	4.80	0.00	0.00	107.74
431	10,407	10,408	64.0	No	**3.42**	107.5	3.01	91.35	10.95	4.80	0.00	0.00	107.10
432	10,355	10,356	59.1	No	**3.49**	107.5	3.01	91.30	10.93	4.80	0.00	0.00	107.04
433	23,794	23,795	43.9	No	**-7.26**	107.5	3.01	98.53	14.46	4.80	0.00	0.00	117.79
434	22,386	22,386	49.9	No	**-6.47**	107.5	3.01	98.00	14.19	4.80	0.00	0.00	116.99
435	21,503	21,504	48.8	No	**-5.94**	107.5	3.01	97.65	14.02	4.80	0.00	0.00	116.47
436	20,933	20,934	50.8	No	**-5.59**	107.5	3.01	97.42	13.90	4.80	0.00	0.00	116.12
437	20,719	20,719	45.2	No	**-5.46**	107.5	3.01	97.33	13.86	4.80	0.00	0.00	115.98
438	21,190	21,191	41.4	No	**-5.75**	107.5	3.01	97.52	13.95	4.80	0.00	0.00	116.28
439	18,971	18,972	56.2	No	**-4.31**	107.5	3.01	96.56	13.48	4.80	0.00	0.00	114.84
440	18,583	18,584	52.6	No	**-4.05**	107.5	3.01	96.38	13.39	4.80	0.00	0.00	114.57
441	18,441	18,441	50.4	No	**-3.95**	107.5	3.01	96.32	13.36	4.80	0.00	0.00	114.47
442	18,038	18,038	54.8	No	**-3.66**	107.5	3.01	96.12	13.26	4.80	0.00	0.00	114.19
443	17,782	17,783	52.5	No	**-3.48**	107.5	3.01	96.00	13.20	4.80	0.00	0.00	114.00
444	17,710	17,711	55.3	No	**-3.42**	107.5	3.01	95.96	13.18	4.80	0.00	0.00	113.95
445	22,222	22,222	47.8	No	**-6.37**	107.5	3.01	97.94	14.16	4.80	0.00	0.00	116.89
446	21,785	21,786	45.0	No	**-6.11**	107.5	3.01	97.76	14.07	4.80	0.00	0.00	116.64
447	21,102	21,102	43.3	No	**-5.70**	107.5	3.01	97.49	13.93	4.80	0.00	0.00	116.22
448	20,766	20,767	45.5	No	**-5.49**	107.5	3.01	97.35	13.87	4.80	0.00	0.00	116.01
449	20,175	20,176	51.3	No	**-5.11**	107.5	3.01	97.10	13.74	4.80	0.00	0.00	115.64
450	20,096	20,097	53.3	No	**-5.06**	107.5	3.01	97.06	13.72	4.80	0.00	0.00	115.59
451	19,471	19,471	59.5	No	**-4.65**	107.5	3.01	96.79	13.59	4.80	0.00	0.00	115.18
452	22,709	22,709	45.3	No	**-6.65**	107.5	3.01	98.12	14.25	4.80	0.00	0.00	117.18
453	22,469	22,470	38.1	No	**-6.51**	107.5	3.01	98.03	14.21	4.80	0.00	0.00	117.04
454	21,931	21,931	43.4	No	**-6.20**	107.5	3.01	97.82	14.10	4.80	0.00	0.00	116.72
455	20,868	20,868	48.9	No	**-5.55**	107.5	3.01	97.39	13.89	4.80	0.00	0.00	116.08
456	20,899	20,900	52.1	No	**-5.57**	107.5	3.01	97.40	13.89	4.80	0.00	0.00	116.10
457	20,748	20,748	48.7	No	**-5.48**	107.5	3.01	97.34	13.86	4.80	0.00	0.00	116.00
458	23,563	23,563	42.7	No	**-7.13**	107.5	3.01	98.44	14.41	4.80	0.00	0.00	117.66
459	23,182	23,183	44.0	No	**-6.92**	107.5	3.01	98.30	14.34	4.80	0.00	0.00	117.45
460	23,879	23,880	42.2	No	**-7.31**	107.5	3.01	98.56	14.47	4.80	0.00	0.00	117.83
461	23,448	23,448	45.7	No	**-7.07**	107.5	3.01	98.40	14.39	4.80	0.00	0.00	117.60
462	23,234	23,234	53.2	No	**-6.95**	107.5	3.01	98.32	14.35	4.80	0.00	0.00	117.48
463	22,788	22,789	45.5	No	**-6.70**	107.5	3.01	98.15	14.27	4.80	0.00	0.00	117.22
464	22,866	22,866	41.8	No	**-6.74**	107.5	3.01	98.18	14.28	4.80	0.00	0.00	117.27
T001	6,553	6,554	51.6	No	**9.05**	108.0	3.01	87.33	9.81	4.80	0.00	0.00	101.94
T002	5,827	5,829	51.3	No	**10.88**	108.0	3.01	86.31	9.00	4.80	0.00	0.00	100.11
T003	9,523	9,524	53.0	No	**1.26**	107.0	3.01	90.58	13.42	4.80	0.00	0.00	108.80
T004	9,010	9,010	51.9	No	**2.12**	107.0	3.01	90.09	13.04	4.80	0.00	0.00	107.93

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T005	8,585	8,585	41.0	No	**2.88**	107.0	3.01	89.68	12.70	4.80	0.00	0.00	107.18
T006	6,172	6,172	40.5	No	**9.99**	108.0	3.01	86.81	9.39	4.80	0.00	0.00	101.00
T007	7,284	7,285	40.3	No	**7.36**	108.0	3.01	88.25	10.58	4.80	0.00	0.00	103.63
T008	9,961	9,962	55.4	No	**0.55**	107.0	3.01	90.97	13.74	4.80	0.00	0.00	109.51
T009	6,011	6,011	46.7	No	**10.40**	108.0	3.01	86.58	9.21	4.80	0.00	0.00	100.59
T010	6,085	6,086	49.4	No	**10.21**	108.0	3.01	86.69	9.29	4.80	0.00	0.00	100.78
T011	4,894	4,895	33.6	No	**13.50**	108.0	3.01	84.80	7.89	4.80	0.00	0.00	97.49
T012	7,514	7,514	42.0	No	**4.94**	107.0	3.01	88.52	11.80	4.80	0.00	0.00	105.12
T013	8,641	8,642	49.2	No	**2.77**	107.0	3.01	89.73	12.75	4.80	0.00	0.00	107.28
T014	8,162	8,162	40.0	No	**3.66**	107.0	3.01	89.24	12.36	4.80	0.00	0.00	106.39
T015	6,929	6,930	40.9	No	**8.16**	108.0	3.01	87.81	10.21	4.80	0.00	0.00	102.82
T016	9,238	9,239	49.5	No	**1.73**	107.0	3.01	90.31	13.21	4.80	0.00	0.00	108.32
T017	6,331	6,332	37.8	No	**9.59**	108.0	3.01	87.03	9.57	4.80	0.00	0.00	101.40
T018	7,672	7,673	29.1	No	**4.61**	107.0	3.01	88.70	11.94	4.80	0.00	0.00	105.44
T019	7,719	7,719	38.8	No	**4.52**	107.0	3.01	88.75	11.98	4.80	0.00	0.00	105.53
T020	6,876	6,876	39.2	No	**8.29**	108.0	3.01	87.75	10.15	4.80	0.00	0.00	102.70
T022	9,379	9,379	45.9	No	**1.50**	107.0	3.01	90.44	13.32	4.80	0.00	0.00	108.56
T023	10,700	10,701	61.0	No	**-0.58**	107.0	3.01	91.59	14.25	4.80	0.00	0.00	110.63
T025	5,823	5,824	31.3	No	**10.89**	108.0	3.01	86.30	9.00	4.80	0.00	0.00	100.10
T026	7,116	7,117	37.3	No	**7.74**	108.0	3.01	88.05	10.40	4.80	0.00	0.00	103.25
T027	6,969	6,970	38.7	No	**8.07**	108.0	3.01	87.86	10.25	4.80	0.00	0.00	102.92
T028	6,606	6,607	42.7	No	**8.92**	108.0	3.01	87.40	9.87	4.80	0.00	0.00	102.07
T029	7,509	7,509	42.9	No	**4.95**	107.0	3.01	88.51	11.80	4.80	0.00	0.00	105.11
T030	5,409	5,410	38.2	No	**12.01**	108.0	3.01	85.66	8.51	4.80	0.00	0.00	98.98
T031	8,050	8,050	42.2	No	**3.87**	107.0	3.01	89.12	12.26	4.80	0.00	0.00	106.18
T032	9,132	9,132	40.4	No	**1.91**	107.0	3.01	90.21	13.13	4.80	0.00	0.00	108.14
T033	8,753	8,754	47.7	No	**2.57**	107.0	3.01	89.84	12.84	4.80	0.00	0.00	107.48
T201	4,510	4,511	28.6	No	**14.69**	108.0	3.01	84.09	7.41	4.80	0.00	0.00	96.29
T202	4,269	4,270	26.9	No	**15.48**	108.0	3.01	83.61	7.10	4.80	0.00	0.00	95.50
T203	3,350	3,351	21.9	No	**18.84**	108.0	3.01	81.50	5.85	4.80	0.00	0.00	92.15
T204	3,175	3,176	24.4	No	**19.55**	108.0	3.01	81.04	5.60	4.80	0.00	0.00	91.43
T205	2,649	2,650	28.9	No	**21.90**	108.0	3.01	79.47	4.82	4.80	0.00	0.00	89.08
T206	3,397	3,398	30.6	No	**18.65**	108.0	3.01	81.63	5.91	4.80	0.00	0.00	92.34
T207	3,089	3,090	35.3	No	**19.91**	108.0	3.01	80.80	5.47	4.80	0.00	0.00	91.07
T208	9,575	9,575	45.8	No	**2.84**	108.0	3.01	90.62	12.73	4.80	0.00	0.00	108.15
T209	9,976	9,976	51.8	No	**2.14**	108.0	3.01	90.98	13.07	4.80	0.00	0.00	108.85
T210	10,517	10,517	51.4	No	**1.23**	108.0	3.01	91.44	13.52	4.80	0.00	0.00	109.75
T211	10,773	10,774	57.6	No	**0.82**	108.0	3.01	91.65	13.72	4.80	0.00	0.00	110.17
T212	11,067	11,067	56.3	No	**0.35**	108.0	3.01	91.88	13.95	4.80	0.00	0.00	110.63
T213	11,435	11,435	53.5	No	**-0.21**	108.0	3.01	92.16	14.24	4.80	0.00	0.00	111.20
T214	11,798	11,799	52.1	No	**-0.76**	108.0	3.01	92.44	14.51	4.80	0.00	0.00	111.74
T215	10,737	10,738	54.6	No	**0.88**	108.0	3.01	91.62	13.69	4.80	0.00	0.00	110.11
T216	12,036	12,036	44.4	No	**-1.10**	108.0	3.01	92.61	14.68	4.80	0.00	0.00	112.09
T217	12,705	12,706	42.2	No	**-2.05**	108.0	3.01	93.08	15.16	4.80	0.00	0.00	113.04
T218	13,565	13,566	51.3	No	**-3.21**	108.0	3.01	93.65	15.75	4.80	0.00	0.00	114.20
T219	14,281	14,281	47.7	No	**-4.12**	108.0	3.01	94.10	16.21	4.80	0.00	0.00	115.11
T220	14,668	14,668	44.1	No	**-4.59**	108.0	3.01	94.33	16.46	4.80	0.00	0.00	115.58
T221	15,320	15,320	39.3	No	**-5.37**	108.0	3.01	94.71	16.85	4.80	0.00	0.00	116.36
T222	17,109	17,109	35.8	No	**-7.35**	108.0	3.01	95.66	17.87	4.80	0.00	0.00	118.34
T223	16,585	16,585	36.6	No	**-6.79**	108.0	3.01	95.39	17.58	4.80	0.00	0.00	117.78
T224	15,726	15,726	47.5	No	**-5.84**	108.0	3.01	94.93	17.09	4.80	0.00	0.00	116.83
T225	15,465	15,465	46.7	No	**-5.54**	108.0	3.01	94.79	16.94	4.80	0.00	0.00	116.53
T226	15,571	15,572	46.9	No	**-5.66**	108.0	3.01	94.85	17.00	4.80	0.00	0.00	116.65
T227	14,885	14,885	43.6	No	**-4.86**	108.0	3.01	94.45	16.59	4.80	0.00	0.00	115.84
T228	16,570	16,571	33.1	No	**-6.78**	108.0	3.01	95.39	17.58	4.80	0.00	0.00	117.76
T229	14,194	14,194	48.4	No	**-4.01**	108.0	3.01	94.04	16.16	4.80	0.00	0.00	115.00
T230	13,856	13,856	52.0	No	**-3.58**	108.0	3.01	93.83	15.94	4.80	0.00	0.00	114.57
T231	13,423	13,423	46.2	No	**-3.02**	108.0	3.01	93.56	15.65	4.80	0.00	0.00	114.01
T232	13,596	13,596	44.6	No	**-3.25**	108.0	3.01	93.67	15.77	4.80	0.00	0.00	114.24
T233	13,222	13,222	46.2	No	**-2.76**	108.0	3.01	93.43	15.52	4.80	0.00	0.00	113.74
T234	13,012	13,012	48.2	No	**-2.47**	108.0	3.01	93.29	15.37	4.80	0.00	0.00	113.46
T235	12,298	12,298	39.1	No	**-1.48**	108.0	3.01	92.80	14.87	4.80	0.00	0.00	112.47
T301	5,444	5,444	36.3	No	**11.91**	108.0	3.01	85.72	8.55	4.80	0.00	0.00	99.07

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T302	5,371	5,371	35.4	No	**12.12**	108.0	3.01	85.60	8.47	4.80	0.00	0.00	98.87
T303	4,911	4,912	40.8	No	**13.45**	108.0	3.01	84.82	7.91	4.80	0.00	0.00	97.54
T304	4,913	4,913	41.8	No	**13.45**	108.0	3.01	84.83	7.91	4.80	0.00	0.00	97.54
T305	4,085	4,085	40.9	No	**16.11**	108.0	3.01	83.22	6.85	4.80	0.00	0.00	94.88
T306	4,272	4,273	46.6	No	**15.47**	108.0	3.01	83.61	7.10	4.80	0.00	0.00	95.52
T307	4,098	4,099	41.1	No	**16.06**	108.0	3.01	83.25	6.87	4.80	0.00	0.00	94.93
T308	17,411	17,411	33.8	No	**-7.67**	108.0	3.01	95.82	18.04	4.80	0.00	0.00	118.65
T309	16,880	16,881	36.9	No	**-7.11**	108.0	3.01	95.55	17.75	4.80	0.00	0.00	118.10
T310	16,389	16,389	37.8	No	**-6.58**	108.0	3.01	95.29	17.47	4.80	0.00	0.00	117.57
T311	15,903	15,904	40.9	No	**-6.04**	108.0	3.01	95.03	17.20	4.80	0.00	0.00	117.03
T312	15,502	15,503	41.6	No	**-5.58**	108.0	3.01	94.81	16.96	4.80	0.00	0.00	116.57
T313	15,028	15,029	53.2	No	**-5.03**	108.0	3.01	94.54	16.68	4.80	0.00	0.00	116.02
T314	13,891	13,892	44.1	No	**-3.63**	108.0	3.01	93.86	15.96	4.80	0.00	0.00	114.62
T315	14,613	14,613	41.7	No	**-4.53**	108.0	3.01	94.29	16.42	4.80	0.00	0.00	115.52
T316	15,254	15,255	44.0	No	**-5.29**	108.0	3.01	94.67	16.81	4.80	0.00	0.00	116.28
T317	15,577	15,577	49.7	No	**-5.67**	108.0	3.01	94.85	17.01	4.80	0.00	0.00	116.66
T318	16,393	16,393	34.5	No	**-6.58**	108.0	3.01	95.29	17.48	4.80	0.00	0.00	117.57
T319	17,352	17,352	41.7	No	**-7.60**	108.0	3.01	95.79	18.01	4.80	0.00	0.00	118.59
T320	17,802	17,802	47.7	No	**-8.07**	108.0	3.01	96.01	18.24	4.80	0.00	0.00	119.05
T321	18,273	18,273	41.2	No	**-8.54**	108.0	3.01	96.24	18.49	4.80	0.00	0.00	119.52
T322	18,328	18,328	36.8	No	**-8.59**	108.0	3.01	96.26	18.52	4.80	0.00	0.00	119.58
T323	18,148	18,149	36.2	No	**-8.41**	108.0	3.01	96.18	18.42	4.80	0.00	0.00	119.40
T324	17,335	17,336	36.9	No	**-7.59**	108.0	3.01	95.78	18.00	4.80	0.00	0.00	118.58
T325	18,241	18,241	34.1	No	**-8.51**	108.0	3.01	96.22	18.47	4.80	0.00	0.00	119.49
T326	17,569	17,570	39.6	No	**-7.83**	108.0	3.01	95.90	18.12	4.80	0.00	0.00	118.82
T327	17,215	17,216	34.2	No	**-7.46**	108.0	3.01	95.72	17.93	4.80	0.00	0.00	118.45
T328	16,231	16,231	35.2	No	**-6.40**	108.0	3.01	95.21	17.39	4.80	0.00	0.00	117.39
T329	16,369	16,370	35.7	No	**-6.56**	108.0	3.01	95.28	17.46	4.80	0.00	0.00	117.54
T330	15,632	15,632	33.3	No	**-5.73**	108.0	3.01	94.88	17.04	4.80	0.00	0.00	116.72
T331	15,378	15,379	38.5	No	**-5.44**	108.0	3.01	94.74	16.89	4.80	0.00	0.00	116.43
T332	14,915	14,915	36.8	No	**-4.89**	108.0	3.01	94.47	16.61	4.80	0.00	0.00	115.88
T333	15,218	15,218	42.1	No	**-5.25**	108.0	3.01	94.65	16.79	4.80	0.00	0.00	116.24
T334	15,726	15,726	35.7	No	**-5.84**	108.0	3.01	94.93	17.09	4.80	0.00	0.00	116.83
T335	15,876	15,876	33.7	No	**-6.01**	108.0	3.01	95.01	17.18	4.80	0.00	0.00	117.00
Sum	45.48												

Noise sensitive area: SSA039 SSA039

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
401	16,703	16,704	56.4	No	**-2.67**	107.5	3.01	95.46	12.94	4.80	0.00	0.00	113.19
402	17,065	17,065	60.4	No	**-2.94**	107.5	3.01	95.64	13.03	4.80	0.00	0.00	113.47
403	17,695	17,695	56.8	No	**-3.41**	107.5	3.01	95.96	13.18	4.80	0.00	0.00	113.94
404	18,046	18,046	61.1	No	**-3.67**	107.5	3.01	96.13	13.26	4.80	0.00	0.00	114.19
405	18,191	18,191	51.0	No	**-3.77**	107.5	3.01	96.20	13.30	4.80	0.00	0.00	114.30
406	18,110	18,110	52.9	No	**-3.71**	107.5	3.01	96.16	13.28	4.80	0.00	0.00	114.24
407	18,987	18,988	50.3	No	**-4.33**	107.5	3.01	96.57	13.48	4.80	0.00	0.00	114.85
408	13,436	13,436	67.0	No	**0.14**	107.5	3.01	93.57	12.02	4.80	0.00	0.00	110.38
409	14,164	14,165	62.0	No	**-0.54**	107.5	3.01	94.02	12.24	4.80	0.00	0.00	111.06
410	14,292	14,292	69.0	No	**-0.66**	107.5	3.01	94.10	12.28	4.80	0.00	0.00	111.18
411	14,576	14,577	71.2	No	**-0.91**	107.5	3.01	94.27	12.36	4.80	0.00	0.00	111.43
412	14,563	14,563	71.4	No	**-0.90**	107.5	3.01	94.27	12.36	4.80	0.00	0.00	111.42
413	14,924	14,925	72.2	No	**-1.21**	107.5	3.01	94.48	12.46	4.80	0.00	0.00	111.74
414	15,313	15,313	72.8	No	**-1.55**	107.5	3.01	94.70	12.57	4.80	0.00	0.00	112.07
415	9,840	9,840	51.8	No	**4.14**	107.5	3.01	90.86	10.72	4.80	0.00	0.00	106.38
416	9,891	9,891	56.9	No	**4.08**	107.5	3.01	90.90	10.74	4.80	0.00	0.00	106.45
417	9,597	9,598	55.2	No	**4.46**	107.5	3.01	90.64	10.62	4.80	0.00	0.00	106.06
418	9,555	9,555	50.6	No	**4.52**	107.5	3.01	90.61	10.60	4.80	0.00	0.00	106.00
419	8,858	8,859	52.2	No	**5.49**	107.5	3.01	89.95	10.29	4.80	0.00	0.00	105.04
420	9,209	9,210	53.3	No	**4.99**	107.5	3.01	90.29	10.45	4.80	0.00	0.00	105.53
421	10,442	10,443	69.2	No	**3.38**	107.5	3.01	91.38	10.97	4.80	0.00	0.00	107.14
422	10,522	10,522	57.0	No	**3.28**	107.5	3.01	91.44	11.00	4.80	0.00	0.00	107.24

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
423	10,554	10,554	57.7	No	**3.25**	107.5	3.01	91.47	11.01	4.80	0.00	0.00	107.28
424	10,744	10,744	51.5	No	**3.02**	107.5	3.01	91.62	11.09	4.80	0.00	0.00	107.51
425	11,086	11,086	50.6	No	**2.61**	107.5	3.01	91.90	11.22	4.80	0.00	0.00	107.91
426	6,563	6,564	63.6	No	**9.30**	107.5	3.01	87.34	9.08	4.80	0.00	0.00	101.22
427	6,891	6,892	66.2	No	**8.69**	107.5	3.01	87.77	9.27	4.80	0.00	0.00	101.84
428	7,177	7,178	65.2	No	**8.17**	107.5	3.01	88.12	9.43	4.80	0.00	0.00	102.35
429	7,710	7,710	56.7	No	**7.26**	107.5	3.01	88.74	9.72	4.80	0.00	0.00	103.26
430	7,972	7,973	58.2	No	**6.83**	107.5	3.01	89.03	9.86	4.80	0.00	0.00	103.69
431	8,573	8,574	58.4	No	**5.91**	107.5	3.01	89.66	10.15	4.80	0.00	0.00	104.62
432	8,770	8,770	54.7	No	**5.62**	107.5	3.01	89.86	10.25	4.80	0.00	0.00	104.91
433	7,632	7,633	44.5	No	**7.39**	107.5	3.01	88.65	9.68	4.80	0.00	0.00	103.13
434	6,264	6,265	50.1	No	**9.90**	107.5	3.01	86.94	8.89	4.80	0.00	0.00	100.63
435	5,722	5,723	49.3	No	**11.03**	107.5	3.01	86.15	8.54	4.80	0.00	0.00	99.49
436	5,515	5,516	50.4	No	**11.50**	107.5	3.01	85.83	8.40	4.80	0.00	0.00	99.03
437	5,130	5,131	46.2	No	**12.40**	107.5	3.01	85.20	8.12	4.80	0.00	0.00	98.12
438	4,357	4,358	44.3	Yes	**14.78**	107.5	3.01	83.79	7.51	4.45	0.00	0.00	95.75
439	1,129	1,134	50.4	Yes	**31.62**	107.5	3.01	72.09	3.54	3.27	0.00	0.00	78.90
440	773	780	47.1	Yes	**36.19**	107.5	3.01	68.84	2.79	2.70	0.00	0.00	74.34
441	351	366	47.3	Yes	**46.38**	107.5	3.00	62.27	1.68	0.19	0.00	0.00	64.13
442	644	653	44.9	Yes	**38.34**	107.5	3.01	67.30	2.49	2.40	0.00	0.00	72.18
443	990	995	43.4	Yes	**33.01**	107.5	3.01	70.96	3.26	3.29	0.00	0.00	77.51
444	1,291	1,295	45.5	Yes	**29.85**	107.5	3.01	73.25	3.84	3.59	0.00	0.00	80.68
445	5,243	5,244	50.2	Yes	**12.46**	107.5	3.01	85.39	8.20	4.47	0.00	0.00	98.07
446	4,690	4,692	47.1	Yes	**13.86**	107.5	3.01	84.43	7.78	4.46	0.00	0.00	96.66
447	3,474	3,476	39.5	Yes	**17.59**	107.5	3.01	81.82	6.70	4.41	0.00	0.00	92.93
448	3,021	3,022	41.1	Yes	**19.36**	107.5	3.01	80.61	6.23	4.34	0.00	0.00	91.17
449	2,436	2,439	46.1	Yes	**22.08**	107.5	3.01	78.74	5.54	4.15	0.00	0.00	88.44
450	2,104	2,107	46.3	Yes	**23.89**	107.5	3.01	77.47	5.11	4.05	0.00	0.00	86.63
451	1,490	1,495	52.0	Yes	**28.24**	107.5	3.01	74.49	4.19	3.60	0.00	0.00	82.29
452	5,709	5,710	47.5	Yes	**11.35**	107.5	3.01	86.13	8.53	4.52	0.00	0.00	99.18
453	3,827	3,827	43.8	Yes	**16.42**	107.5	3.01	82.66	7.04	4.41	0.00	0.00	94.11
454	3,324	3,326	48.5	Yes	**18.24**	107.5	3.01	81.44	6.55	4.30	0.00	0.00	92.29
455	2,362	2,364	51.4	Yes	**22.55**	107.5	3.01	78.47	5.45	4.05	0.00	0.00	87.98
456	2,607	2,608	55.2	Yes	**21.37**	107.5	3.01	79.33	5.75	4.07	0.00	0.00	89.15
457	2,694	2,695	54.7	Yes	**20.95**	107.5	3.01	79.61	5.86	4.11	0.00	0.00	89.57
458	6,636	6,637	44.0	No	**9.17**	107.5	3.01	87.44	9.12	4.80	0.00	0.00	101.36
459	6,254	6,255	45.0	No	**9.91**	107.5	3.01	86.92	8.89	4.80	0.00	0.00	100.61
460	6,187	6,188	47.4	Yes	**10.31**	107.5	3.01	86.83	8.84	4.54	0.00	0.00	100.21
461	5,707	5,708	50.5	Yes	**11.37**	107.5	3.01	86.13	8.53	4.50	0.00	0.00	99.16
462	5,340	5,342	59.8	Yes	**12.28**	107.5	3.01	85.55	8.27	4.42	0.00	0.00	98.24
463	4,881	4,882	53.0	Yes	**13.39**	107.5	3.01	84.77	7.93	4.43	0.00	0.00	97.13
464	4,630	4,631	49.4	Yes	**14.04**	107.5	3.01	84.31	7.73	4.44	0.00	0.00	96.48
T001	13,859	13,860	56.8	No	**-3.59**	108.0	3.01	93.84	15.94	4.80	0.00	0.00	114.58
T002	13,772	13,772	51.7	No	**-3.48**	108.0	3.01	93.78	15.88	4.80	0.00	0.00	114.46
T003	12,859	12,859	44.2	No	**-3.51**	107.0	3.01	93.18	15.58	4.80	0.00	0.00	113.56
T004	14,064	14,064	39.6	No	**-4.95**	107.0	3.01	93.96	16.24	4.80	0.00	0.00	115.00
T005	12,538	12,538	40.8	No	**-3.10**	107.0	3.01	92.96	15.39	4.80	0.00	0.00	113.16
T006	12,882	12,882	45.1	No	**-2.30**	108.0	3.01	93.20	15.28	4.80	0.00	0.00	113.28
T007	12,123	12,123	44.9	No	**-1.23**	108.0	3.01	92.67	14.75	4.80	0.00	0.00	112.22
T008	13,400	13,401	47.4	No	**-4.17**	107.0	3.01	93.54	15.88	4.80	0.00	0.00	114.22
T009	14,706	14,706	46.4	No	**-4.64**	108.0	3.01	94.35	16.48	4.80	0.00	0.00	115.63
T010	13,961	13,962	50.1	No	**-3.72**	108.0	3.01	93.90	16.01	4.80	0.00	0.00	114.71
T011	15,495	15,495	32.3	No	**-5.57**	108.0	3.01	94.80	16.96	4.80	0.00	0.00	116.56
T012	15,318	15,318	34.0	No	**-6.33**	107.0	3.01	94.70	16.88	4.80	0.00	0.00	116.38
T013	14,154	14,154	37.7	No	**-5.05**	107.0	3.01	94.02	16.29	4.80	0.00	0.00	115.10
T014	13,323	13,323	35.9	No	**-4.07**	107.0	3.01	93.49	15.84	4.80	0.00	0.00	114.13
T015	12,724	12,724	45.4	No	**-2.08**	108.0	3.01	93.09	15.17	4.80	0.00	0.00	113.07
T016	13,443	13,443	38.7	No	**-4.22**	107.0	3.01	93.57	15.90	4.80	0.00	0.00	114.27
T017	12,540	12,540	41.9	No	**-1.82**	108.0	3.01	92.97	15.05	4.80	0.00	0.00	112.81
T018	13,014	13,014	32.1	No	**-3.70**	107.0	3.01	93.29	15.66	4.80	0.00	0.00	113.75
T019	13,886	13,886	34.7	No	**-4.74**	107.0	3.01	93.85	16.14	4.80	0.00	0.00	114.80
T020	12,217	12,217	43.3	No	**-1.37**	108.0	3.01	92.74	14.81	4.80	0.00	0.00	112.35
T022	14,827	14,827	33.8	No	**-5.80**	107.0	3.01	94.42	16.63	4.80	0.00	0.00	115.85

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DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

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Wind speed: 8.0 m/s

WTG No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T023	13,443	13,443	54.7	No	**-4.22**	107.0	3.01	93.57	15.90	4.80	0.00	0.00	114.27
T025	13,012	13,012	36.9	No	**-2.47**	108.0	3.01	93.29	15.37	4.80	0.00	0.00	113.46
T026	11,750	11,750	40.4	No	**-0.69**	108.0	3.01	92.40	14.47	4.80	0.00	0.00	111.67
T027	13,593	13,593	45.9	No	**-3.24**	108.0	3.01	93.67	15.77	4.80	0.00	0.00	114.23
T028	12,699	12,699	44.7	No	**-2.04**	108.0	3.01	93.08	15.16	4.80	0.00	0.00	113.03
T029	15,860	15,860	35.0	No	**-6.89**	107.0	3.01	95.01	17.14	4.80	0.00	0.00	116.95
T030	14,206	14,206	36.2	No	**-4.03**	108.0	3.01	94.05	16.16	4.80	0.00	0.00	115.01
T031	15,106	15,106	32.6	No	**-6.10**	107.0	3.01	94.58	16.77	4.80	0.00	0.00	116.16
T032	12,525	12,525	35.4	No	**-3.08**	107.0	3.01	92.96	15.38	4.80	0.00	0.00	113.14
T033	14,710	14,710	34.5	No	**-5.67**	107.0	3.01	94.35	16.57	4.80	0.00	0.00	115.73
T201	14,417	14,417	38.8	No	**-4.29**	108.0	3.01	94.18	16.30	4.80	0.00	0.00	115.28
T202	14,582	14,582	38.0	No	**-4.49**	108.0	3.01	94.28	16.40	4.80	0.00	0.00	115.48
T203	16,004	16,004	33.8	No	**-6.15**	108.0	3.01	95.08	17.25	4.80	0.00	0.00	117.14
T204	15,890	15,890	40.5	No	**-6.02**	108.0	3.01	95.02	17.19	4.80	0.00	0.00	117.01
T205	16,339	16,339	46.4	No	**-6.52**	108.0	3.01	95.26	17.45	4.80	0.00	0.00	117.51
T206	16,873	16,873	35.2	No	**-7.10**	108.0	3.01	95.54	17.74	4.80	0.00	0.00	118.09
T207	17,674	17,674	45.6	No	**-7.94**	108.0	3.01	95.95	18.18	4.80	0.00	0.00	118.92
T208	16,086	16,086	36.8	No	**-6.24**	108.0	3.01	95.13	17.30	4.80	0.00	0.00	117.23
T209	16,203	16,204	43.6	No	**-6.37**	108.0	3.01	95.19	17.37	4.80	0.00	0.00	117.36
T210	16,244	16,244	42.0	No	**-6.42**	108.0	3.01	95.21	17.39	4.80	0.00	0.00	117.41
T211	15,016	15,016	46.9	No	**-5.01**	108.0	3.01	94.53	16.67	4.80	0.00	0.00	116.00
T212	14,719	14,719	47.1	No	**-4.66**	108.0	3.01	94.36	16.49	4.80	0.00	0.00	115.64
T213	14,446	14,446	46.8	No	**-4.32**	108.0	3.01	94.19	16.32	4.80	0.00	0.00	115.31
T214	14,464	14,464	47.5	No	**-4.35**	108.0	3.01	94.21	16.33	4.80	0.00	0.00	115.33
T215	12,932	12,933	50.3	No	**-2.37**	108.0	3.01	93.23	15.32	4.80	0.00	0.00	113.35
T216	13,250	13,251	43.8	No	**-2.79**	108.0	3.01	93.44	15.54	4.80	0.00	0.00	113.78
T217	13,468	13,468	41.0	No	**-3.08**	108.0	3.01	93.59	15.68	4.80	0.00	0.00	114.07
T218	15,564	15,564	49.1	No	**-5.65**	108.0	3.01	94.84	17.00	4.80	0.00	0.00	116.64
T219	15,297	15,297	45.3	No	**-5.34**	108.0	3.01	94.69	16.84	4.80	0.00	0.00	116.33
T220	15,655	15,655	42.1	No	**-5.76**	108.0	3.01	94.89	17.05	4.80	0.00	0.00	116.74
T221	15,814	15,814	37.4	No	**-5.94**	108.0	3.01	94.98	17.14	4.80	0.00	0.00	116.93
T222	13,234	13,234	40.0	No	**-2.77**	108.0	3.01	93.43	15.53	4.80	0.00	0.00	113.76
T223	12,711	12,711	41.6	No	**-2.06**	108.0	3.01	93.08	15.17	4.80	0.00	0.00	113.05
T224	14,166	14,166	45.4	No	**-3.98**	108.0	3.01	94.02	16.14	4.80	0.00	0.00	114.96
T225	13,905	13,905	43.7	No	**-3.65**	108.0	3.01	93.86	15.97	4.80	0.00	0.00	114.63
T226	13,005	13,005	47.2	No	**-2.46**	108.0	3.01	93.28	15.37	4.80	0.00	0.00	113.45
T227	12,418	12,418	41.1	No	**-1.65**	108.0	3.01	92.88	14.96	4.80	0.00	0.00	112.64
T228	13,484	13,485	36.4	No	**-3.10**	108.0	3.01	93.60	15.69	4.80	0.00	0.00	114.09
T229	12,451	12,451	47.2	No	**-1.70**	108.0	3.01	92.90	14.98	4.80	0.00	0.00	112.69
T230	12,502	12,502	50.9	No	**-1.77**	108.0	3.01	92.94	15.02	4.80	0.00	0.00	112.76
T231	12,253	12,253	44.6	No	**-1.42**	108.0	3.01	92.76	14.84	4.80	0.00	0.00	112.41
T232	10,987	10,987	47.5	No	**0.48**	108.0	3.01	91.82	13.89	4.80	0.00	0.00	110.51
T233	10,903	10,903	50.8	No	**0.61**	108.0	3.01	91.75	13.82	4.80	0.00	0.00	110.37
T234	10,693	10,693	52.9	No	**0.95**	108.0	3.01	91.58	13.66	4.80	0.00	0.00	110.04
T235	11,098	11,098	41.2	No	**0.31**	108.0	3.01	91.90	13.98	4.80	0.00	0.00	110.68
T301	19,183	19,183	37.0	No	**-9.42**	108.0	3.01	96.66	18.95	4.80	0.00	0.00	120.40
T302	19,647	19,647	36.3	No	**-9.85**	108.0	3.01	96.87	19.17	4.80	0.00	0.00	120.84
T303	20,210	20,210	41.2	No	**-10.36**	108.0	3.01	97.11	19.44	4.80	0.00	0.00	121.35
T304	20,750	20,750	40.7	No	**-10.84**	108.0	3.01	97.34	19.69	4.80	0.00	0.00	121.83
T305	20,479	20,479	37.7	No	**-10.60**	108.0	3.01	97.23	19.56	4.80	0.00	0.00	121.59
T306	20,291	20,291	44.1	No	**-10.44**	108.0	3.01	97.15	19.48	4.80	0.00	0.00	121.42
T307	19,488	19,488	40.8	No	**-9.70**	108.0	3.01	96.80	19.09	4.80	0.00	0.00	120.69
T308	11,441	11,441	40.7	No	**-0.22**	108.0	3.01	92.17	14.24	4.80	0.00	0.00	111.21
T309	11,385	11,385	41.9	No	**-0.14**	108.0	3.01	92.13	14.20	4.80	0.00	0.00	111.12
T310	11,845	11,845	43.1	No	**-0.83**	108.0	3.01	92.47	14.54	4.80	0.00	0.00	111.81
T311	11,748	11,749	43.5	No	**-0.68**	108.0	3.01	92.40	14.47	4.80	0.00	0.00	111.67
T312	11,604	11,605	42.7	No	**-0.47**	108.0	3.01	92.29	14.36	4.80	0.00	0.00	111.46
T313	11,478	11,478	51.7	No	**-0.28**	108.0	3.01	92.20	14.27	4.80	0.00	0.00	111.27
T314	11,425	11,425	44.1	No	**-0.20**	108.0	3.01	92.16	14.23	4.80	0.00	0.00	111.19
T315	10,680	10,680	44.5	No	**0.97**	108.0	3.01	91.57	13.65	4.80	0.00	0.00	110.02
T316	10,209	10,209	49.6	No	**1.74**	108.0	3.01	91.18	13.26	4.80	0.00	0.00	109.24
T317	10,446	10,447	56.4	No	**1.35**	108.0	3.01	91.38	13.46	4.80	0.00	0.00	109.64
T318	10,383	10,383	44.3	No	**1.45**	108.0	3.01	91.33	13.41	4.80	0.00	0.00	109.53

To be continued on next page...

DECIBEL - Detailed results

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Noise calculation model:** ISO 9613-2 General 8.0 m/s

...continued from previous page

WTG — **Wind speed: 8.0 m/s**

No.	Distance [m]	Sound distance [m]	Mean height [m]	Visible	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]
T319	8,999	8,999	43.7	No	**3.88**	108.0	3.01	90.08	12.22	4.80	0.00	0.00	107.11
T320	8,847	8,847	48.8	No	**4.17**	108.0	3.01	89.94	12.08	4.80	0.00	0.00	106.82
T321	8,911	8,911	44.3	No	**4.05**	108.0	3.01	90.00	12.14	4.80	0.00	0.00	106.94
T322	7,786	7,787	42.4	No	**6.28**	108.0	3.01	88.83	11.08	4.80	0.00	0.00	104.71
T323	7,441	7,441	41.9	No	**7.02**	108.0	3.01	88.43	10.74	4.80	0.00	0.00	103.97
T324	7,419	7,419	42.3	No	**7.07**	108.0	3.01	88.41	10.71	4.80	0.00	0.00	103.92
T325	6,250	6,250	41.1	No	**9.79**	108.0	3.01	86.92	9.48	4.80	0.00	0.00	101.19
T326	6,480	6,480	47.1	No	**9.23**	108.0	3.01	87.23	9.73	4.80	0.00	0.00	101.76
T327	6,338	6,339	43.1	No	**9.57**	108.0	3.01	87.04	9.57	4.80	0.00	0.00	101.41
T328	6,194	6,194	43.2	No	**9.93**	108.0	3.01	86.84	9.41	4.80	0.00	0.00	101.05
T329	5,028	5,028	44.9	No	**13.10**	108.0	3.01	85.03	8.05	4.80	0.00	0.00	97.88
T330	5,528	5,528	42.8	No	**11.68**	108.0	3.01	85.85	8.65	4.80	0.00	0.00	99.30
T331	6,469	6,469	45.9	No	**9.25**	108.0	3.01	87.22	9.72	4.80	0.00	0.00	101.73
T332	6,874	6,875	44.0	No	**8.29**	108.0	3.01	87.74	10.15	4.80	0.00	0.00	102.70
T333	7,511	7,511	45.9	No	**6.87**	108.0	3.01	88.51	10.81	4.80	0.00	0.00	104.12
T334	7,408	7,408	41.5	No	**7.09**	108.0	3.01	88.39	10.70	4.80	0.00	0.00	103.90
T335	7,898	7,898	40.0	No	**6.05**	108.0	3.01	88.95	11.19	4.80	0.00	0.00	104.94
Sum	47.86												

DECIBEL - Assumptions for noise calculation

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

Noise calculation model:
ISO 9613-2 General
Wind speed:
8.0 m/s
Ground attenuation:
Alternative
Meteorological coefficient, C0:
0.0 dB
Type of demand in calculation:
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
Noise values in calculation:
All noise values are mean values (Lwa) (Normal)
Pure tones:
Fixed penalty added to source noise of WTGs with pure tones: 0.0 dB(A)
Height above ground level, when no value in NSA object:
1.5 m Don't allow override of model height with height from NSA object
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:
0.0 dB(A)
Octave data required
Air absorption

63	125	250	500	1,000	2,000	4,000	8,000
[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]
0.1	0.4	1.0	1.9	3.7	9.7	32.8	117.0

WTG: Siemens SWT-3.2-113 3200 113.0 !O!
Noise: SWT-3.2-113 Sound Data

Source	Source/Date	Creator	Edited
Siemens via Minnesota Power	3/29/2013	USER	3/29/2013 10:24 AM

					Octave data							
Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]
From Windcat	92.5	8.0	107.5	No	94.2	96.2	99.2	99.9	101.5	100.6	97.2	88.3

WTG: Siemens SWT-2.3-101 60Hz 2300 101.0 !O!
Noise: SWT-2.3-101 Standard

Source	Source/Date	Creator	Edited
Siemens via MN Power	3/31/2009	USER	4/4/2013 11:05 AM

					Octave data							
Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]
From Windcat	80.0	8.0	107.0	No	83.5	94.4	98.1	102.1	102.1	98.4	91.2	87.2

WTG: Siemens SWT-3.0-101 60Hz 3000 101.0 !O!
Noise: SWT-3.0-101 Standard

Source	Source/Date	Creator	Edited
Siemens via MN Power	5/17/2010	USER	4/4/2011 3:17 PM

					Octave data							
Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]
From Windcat	80.0	8.0	108.0	No	82.8	94.7	101.4	104.7	101.4	93.5	82.6	79.3

NSA: SSA001-SSA001
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

DECIBEL - Assumptions for noise calculation

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

NSA: SSA002-SSA002
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA003-SSA003
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA004-SSA004
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA005-SSA005
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA006-SSA006
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA007-SSA007
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA008-SSA008
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA009-SSA009
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA010-SSA010
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA011-SSA011
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 5820[illegible]
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 6:07 PM/3.1.633

DECIBEL - Assumptions for noise calculation

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701
Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA012-SSA012
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA014-SSA014
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA015-SSA015
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA016-SSA016
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA017-SSA017
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA018-SSA018
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA019-SSA019
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA020-SSA020
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA021-SSA021
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

DECIBEL - Assumptions for noise calculation

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

NSA: SSA022-SSA022
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA023-SSA023
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA024-SSA024
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA025-SSA025
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA026-SSA026
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA027-SSA027
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA028-SSA028
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA029-SSA029
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA030-SSA030
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA031-SSA031
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

DECIBEL - Assumptions for noise calculation

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701
Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA032-SSA032
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA033-SSA033
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA034-SSA034
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA035-SSA035
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA036-SSA036
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA037-SSA037
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA038-SSA038
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

NSA: SSA039-SSA039
Predefined calculation standard:
Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 50.0 dB(A)
Distance demand: 404

Project:

MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

Assumptions for shadow calculations

Maximum distance for influence	1,500 m
Minimum sun height over horizon for influence	3 °
Day step for calculation	1 days
Time step for calculation	1 minutes

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational hours are calculated from WTGs in calculation and wind distribution:
SDO for PARK - BISON WEST #5

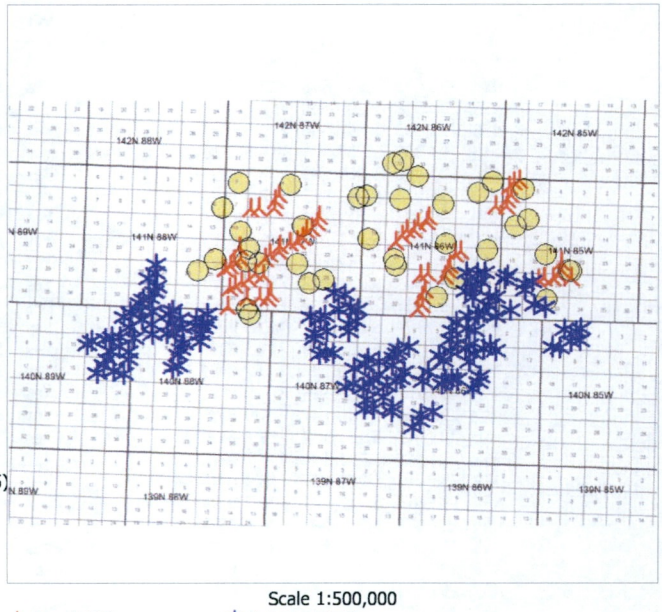
Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: MNP_BISON_2ft_10ft_HCLs_complete.wpo (5)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-WGS84 Zone: 14



Scale 1:500,000

New WTG
Existing WTG
Shadow receptor

WTGs

	Easting	Northing	Z [m]	Row data/Description	Valid	WTG type Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	RPM [RPM]
401	311,809	5,208,857	698.6	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
402	312,196	5,208,968	705.3	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
403	312,835	5,208,946	698.6	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
404	313,234	5,209,151	707.2	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
405	313,444	5,209,501	683.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
406	313,442	5,210,023	681.3	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
407	314,149	5,208,925	685.8	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
408	308,871	5,213,905	702.8	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
409	309,609	5,213,902	694.2	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
410	309,680	5,214,358	705.4	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
411	309,924	5,214,667	708.0	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
412	309,820	5,215,206	707.4	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
413	310,125	5,215,528	707.1	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
414	310,492	5,215,673	708.0	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
415	303,494	5,206,779	701.6	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
416	303,769	5,207,089	710.2	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
417	303,787	5,207,674	705.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
418	303,978	5,208,106	696.3	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
419	303,683	5,209,118	701.0	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
420	304,133	5,209,302	701.2	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
421	305,370	5,209,098	734.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
422	305,583	5,209,498	706.3	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
423	305,715	5,209,850	708.4	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
424	306,078	5,210,612	696.0	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
425	306,461	5,210,825	694.3	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
426	301,974	5,211,410	724.8	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
427	302,368	5,211,896	725.2	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
428	302,679	5,212,272	721.7	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
429	303,212	5,212,276	705.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
430	303,477	5,212,677	705.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
431	304,075	5,212,809	706.6	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
432	304,253	5,213,153	694.9	8641	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
433	290,278	5,206,964	709.0	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0

To be continued on next page...

SHADOW - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

...continued from previous page

	Easting	Northing	Z [m]	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	RPM [RPM]
434	291,631	5,207,603	722.5	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
435	292,514	5,207,648	718.1	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
436	293,093	5,207,566	719.9	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
437	293,280	5,207,903	710.6	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
438	292,750	5,209,149	706.6	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
439	295,072	5,211,483	725.8	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
440	295,493	5,211,752	718.1	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
441	295,703	5,212,234	715.1	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
442	296,135	5,212,388	723.0	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
443	296,463	5,212,779	714.3	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
444	296,617	5,213,182	714.5	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
445	291,724	5,208,893	720.3	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
446	292,154	5,209,244	714.5	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
447	292,851	5,210,284	710.2	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
448	293,200	5,210,574	714.5	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
449	293,804	5,210,781	724.9	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
450	293,911	5,211,152	725.4	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
451	294,559	5,211,374	735.2	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
452	291,242	5,208,729	716.4	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
453	291,871	5,213,721	690.7	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
454	292,435	5,213,798	699.2	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
455	293,522	5,213,807	705.9	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
456	293,601	5,214,304	707.7	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
457	293,841	5,214,643	696.4	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
458	290,406	5,208,279	710.6	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
459	290,780	5,208,428	713.2	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
460	290,059	5,209,590	709.6	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
461	290,492	5,209,798	715.1	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
462	290,714	5,210,168	730.9	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
463	291,164	5,210,295	715.0	BW5	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
464	291,124	5,211,031	706.7	BW1	Yes	Siemens	SWT-3.2-113-3,200	3,200	113.0	92.5	0.0
ACE001	281,637	5,202,998	694.9	ACE001	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE002	282,068	5,203,967	713.2	ACE002	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE003	282,721	5,204,284	719.3	ACE003	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE004	283,362	5,203,879	701.0	ACE004	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE005	286,402	5,202,780	719.3	ACE005	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE006	286,814	5,202,945	713.2	ACE006	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE007	286,811	5,203,675	737.6	ACE007	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE008	286,947	5,204,103	733.0	ACE008	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE009	287,146	5,204,457	725.4	ACE009	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE010	286,589	5,205,169	728.9	ACE010	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE011	286,038	5,205,181	732.9	ACE011	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE012	284,980	5,205,116	699.1	ACE012	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE013	283,754	5,204,847	701.0	ACE013	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE014	282,809	5,204,899	713.2	ACE014	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE015	281,747	5,204,801	719.3	ACE015	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE016	280,800	5,204,647	694.9	ACE016	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE017	280,522	5,204,370	688.8	ACE017	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE018	283,443	5,205,591	713.2	ACE018	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE019	283,028	5,206,315	725.4	ACE019	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE020	283,490	5,206,600	719.3	ACE020	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE021	284,109	5,207,234	719.3	ACE021	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE022	284,402	5,207,499	719.3	ACE022	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE023	284,800	5,207,609	719.9	ACE023	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE024	285,159	5,207,998	725.4	ACE024	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE025	285,301	5,208,390	711.1	ACE025	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE026	284,769	5,208,941	713.2	ACE026	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE027	285,217	5,209,335	713.2	ACE027	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE028	285,268	5,209,882	707.1	ACE028	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE029	286,430	5,206,749	719.3	ACE029	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE030	286,133	5,206,463	723.8	ACE030	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE031	286,316	5,205,788	743.7	ACE031	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE032	287,083	5,205,531	733.0	ACE032	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0

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SHADOW - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

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	Easting	Northing	Z [m]	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	RPM [RPM]
ACE033	286,924	5,206,141	737.6	ACE033	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE034	288,058	5,206,192	719.7	ACE034	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE035	288,803	5,206,462	719.3	ACE035	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE036	288,839	5,205,912	725.4	ACE036	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE037	287,997	5,205,688	737.6	ACE037	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE038	288,351	5,205,074	743.7	ACE038	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE039	288,533	5,205,542	731.5	ACE039	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE040	288,332	5,204,562	737.6	ACE040	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE041	282,195	5,204,910	710.9	ACE041	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE042	284,118	5,206,761	725.4	ACE042	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE043	284,284	5,206,133	725.4	ACE043	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE044	284,932	5,205,757	719.3	ACE044	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE045	285,023	5,206,649	737.6	ACE045	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE046	283,335	5,203,373	701.0	ACE046	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE047	281,877	5,203,371	704.1	ACE047	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE048	281,219	5,202,407	688.7	ACE048	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE049	283,039	5,202,343	701.0	ACE049	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
ACE050	282,326	5,202,530	688.8	ACE050	Yes	Siemens	SWT-2.3-108-2,300	2,300	108.0	80.0	0.0
T001	308,045	5,206,621	707.1	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T002	308,398	5,207,681	711.6	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T003	305,708	5,204,697	694.9	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T004	306,742	5,204,066	682.8	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T005	306,144	5,205,889	682.8	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T006	307,814	5,208,723	694.9	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T007	306,789	5,208,091	696.2	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T008	305,723	5,203,854	694.2	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T009	308,835	5,206,312	688.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T010	308,356	5,207,066	702.3	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T011	309,883	5,206,747	664.5	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T012	308,458	5,204,347	658.4	8642	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T013	307,026	5,204,302	676.7	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T014	306,821	5,205,492	670.6	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T015	307,258	5,207,647	694.9	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T016	306,222	5,204,408	682.8	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T017	307,611	5,209,252	689.2	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T018	306,948	5,206,325	660.8	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T019	307,408	5,205,372	664.5	8642	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T020	307,108	5,208,697	694.9	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T022	307,008	5,203,168	665.2	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T023	305,241	5,203,255	707.1	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T025	308,117	5,209,319	676.7	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T026	306,823	5,209,364	688.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T027	307,666	5,206,450	683.1	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T028	307,454	5,208,223	698.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T029	308,855	5,203,961	658.4	8642	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T030	308,850	5,207,651	680.7	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T031	308,007	5,204,045	658.4	8642	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T032	305,787	5,205,371	676.7	8644	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T033	307,319	5,203,760	670.6	8642	Yes	Siemens	SWT-2.3-101-2,300	2,300	101.0	80.0	16.0
T201	309,464	5,208,918	676.7	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T202	309,685	5,209,120	674.5	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T203	310,887	5,208,104	661.4	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T204	310,897	5,208,576	676.7	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T205	311,399	5,208,734	688.8	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T206	311,493	5,207,129	664.2	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T207	312,259	5,206,895	682.8	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T208	307,794	5,202,144	664.5	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T209	307,622	5,201,766	676.7	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T210	307,287	5,201,341	676.7	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T211	306,204	5,201,988	688.7	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T212	305,792	5,201,997	688.3	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T213	305,343	5,201,946	685.0	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T214	305,086	5,201,688	682.8	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0

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SHADOW - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

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					WTG type						
	Easting	Northing	Z [m]	Row data/Description	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	RPM [RPM]
T215	304,921	5,203,659	698.5	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T216	304,151	5,202,483	676.7	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T217	303,760	5,201,883	670.6	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T218	304,453	5,199,790	682.8	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T219	303,654	5,199,579	676.7	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T220	303,574	5,199,109	668.9	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T221	303,104	5,198,656	658.4	8644	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T222	299,716	5,199,978	658.4	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T223	299,930	5,200,609	664.5	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T224	301,600	5,199,737	676.7	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T225	301,676	5,200,064	676.7	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T226	301,044	5,200,758	682.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T227	301,339	5,201,562	679.3	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T228	300,385	5,199,954	652.3	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T229	301,958	5,201,876	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T230	302,272	5,202,012	694.9	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T231	302,500	5,202,464	682.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T232	301,742	5,203,479	690.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T233	302,013	5,203,777	695.3	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T234	302,093	5,204,102	701.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T235	302,838	5,204,194	680.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T301	312,774	5,204,170	646.1	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T302	313,282	5,204,157	646.2	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T303	314,088	5,204,579	658.4	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T304	314,697	5,204,634	658.4	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T305	314,736	5,205,482	658.4	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T306	314,446	5,205,246	670.6	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T307	313,645	5,205,400	664.5	8642	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T308	298,480	5,201,477	664.5	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T309	298,972	5,201,680	670.6	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T310	299,665	5,201,434	670.6	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T311	300,072	5,201,700	676.7	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T312	300,370	5,201,989	677.4	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T313	300,736	5,202,308	701.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T314	301,696	5,202,922	682.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T315	300,740	5,203,215	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T316	299,975	5,203,346	694.9	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T317	299,780	5,202,993	707.1	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T318	298,996	5,202,746	676.7	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T319	297,558	5,203,763	687.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T320	297,064	5,203,816	701.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T321	296,612	5,203,683	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T322	296,227	5,204,772	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T323	296,321	5,205,129	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T324	297,120	5,205,284	689.7	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T325	295,979	5,206,293	692.1	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T326	296,688	5,206,154	701.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T327	297,008	5,206,367	691.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T328	297,927	5,206,824	694.9	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T329	297,639	5,207,972	701.0	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T330	298,396	5,207,813	694.9	8641	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T331	298,772	5,206,941	701.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T332	299,272	5,206,774	694.9	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T333	299,137	5,205,950	701.0	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T334	298,647	5,205,816	688.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0
T335	298,632	5,205,272	682.8	8643	Yes	Siemens	SWT-3.0-101-3,000	3,000	101.0	80.0	16.0

SHADOW - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

Shadow receptor-Input

No.	Name	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
				[m]	[m]	[m]	[m]	[°]	[°]	
SR001	SR001	314,129	5,209,397	677.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR002	SR002	312,386	5,207,439	674.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR003	SR003	312,331	5,210,518	667.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR004	SR004	311,139	5,212,939	671.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR005	SR005	310,829	5,215,026	696.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR006	SR006	310,235	5,212,508	670.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR007	SR007	308,667	5,215,538	688.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR008	SR008	308,281	5,210,878	684.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR009	SR009	307,632	5,214,815	672.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR010	SR010	306,077	5,208,878	691.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR011	SR011	305,412	5,211,313	656.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR012	SR012	305,231	5,214,037	658.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR014	SR014	304,789	5,207,620	678.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR015	SR015	303,474	5,215,947	644.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR016	SR016	302,478	5,216,991	660.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR017	SR017	302,233	5,214,327	664.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR018	SR018	301,964	5,209,779	698.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR019	SR019	301,811	5,210,196	696.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR020	SR020	301,736	5,216,790	669.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR021	SR021	300,019	5,211,631	705.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR022	SR022	299,927	5,214,621	666.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR023	SR023	299,363	5,214,462	673.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR024	SR024	296,963	5,208,823	695.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR025	SR025	295,930	5,208,602	689.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR026	SR026	295,067	5,209,911	704.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR027	SR027	294,635	5,215,387	678.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR028	SR028	292,401	5,209,978	683.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR029	SR029	291,781	5,206,427	713.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR030	SR030	291,712	5,210,997	682.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR031	SR031	291,595	5,206,797	714.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR032	SR032	291,527	5,210,070	711.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR033	SR033	291,170	5,212,125	690.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR034	SR034	291,012	5,215,488	664.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR035	SR035	289,907	5,213,747	679.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR036	SR036	289,374	5,210,250	696.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR037	SR037	288,176	5,209,442	676.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR038	SR038	313,938	5,209,488	669.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
SR039	SR039	295,506	5,212,525	704.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"

Calculation Results

Shadow receptor

		Shadow, worst case			**Shadow, expected values**
No.	Name	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
SR001	SR001	45:01	109	0:38	18:14
SR002	SR002	8:00	32	0:23	2:28
SR003	SR003	7:51	30	0:22	2:54
SR004	SR004	0:00	0	0:00	0:00
SR005	SR005	32:18	109	0:28	11:16
SR006	SR006	0:00	0	0:00	0:00
SR007	SR007	12:15	50	0:22	5:07
SR008	SR008	0:00	0	0:00	0:00
SR009	SR009	0:00	0	0:00	0:00
SR010	SR010	46:08	126	0:37	21:53
SR011	SR011	39:33	101	0:29	13:35
SR012	SR012	14:51	48	0:22	3:34
SR014	SR014	44:25	124	0:29	19:30
SR015	SR015	0:00	0	0:00	0:00
SR016	SR016	0:00	0	0:00	0:00
SR017	SR017	0:00	0	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

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		Shadow, worst case			Shadow, expected values
No.	Name	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
SR018	SR018	0:00	0	0:00	0:00
SR019	SR019	0:00	0	0:00	0:00
SR020	SR020	0:00	0	0:00	0:00
SR021	SR021	0:00	0	0:00	0:00
SR022	SR022	0:00	0	0:00	0:00
SR023	SR023	0:00	0	0:00	0:00
SR024	SR024	0:00	0	0:00	0:00
SR025	SR025	0:00	0	0:00	0:00
SR026	SR026	0:00	0	0:00	0:00
SR027	SR027	17:52	50	0:26	4:15
SR028	SR028	8:21	31	0:21	3:52
SR029	SR029	0:00	0	0:00	0:00
SR030	SR030	68:05	158	0:44	24:16
SR031	SR031	4:28	24	0:17	1:59
SR032	SR032	56:57	120	0:45	26:15
SR033	SR033	0:00	0	0:00	0:00
SR034	SR034	0:00	0	0:00	0:00
SR035	SR035	0:00	0	0:00	0:00
SR036	SR036	45:53	126	0:30	16:30
SR037	SR037	0:00	0	0:00	0:00
SR038	SR038	73:59	131	0:52	29:01
SR039	SR039	182:18	251	1:16	66:02

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
401	8641	0:00	0:00
402	8641	0:00	0:00
403	8641	15:19	4:30
404	8641	33:51	10:45
405	8641	69:25	31:13
406	8641	7:51	2:54
407	8641	0:00	0:00
408	8641	0:00	0:00
409	8641	0:00	0:00
410	8641	7:41	2:06
411	8641	13:06	4:00
412	8641	19:11	8:22
413	8641	4:35	2:01
414	8641	0:00	0:00
415	8641	0:00	0:00
416	8641	10:58	3:05
417	8641	11:37	5:09
418	8641	21:50	11:31
419	8641	0:00	0:00
420	8641	0:00	0:00
421	8641	34:30	17:21
422	8641	0:00	0:00
423	8641	0:00	0:00
424	8641	30:13	10:07
425	8641	9:20	3:28
426	8641	0:00	0:00
427	8641	0:00	0:00
428	8641	0:00	0:00
429	8641	0:00	0:00
430	8641	0:00	0:00
431	8641	0:00	0:00
432	8641	14:51	3:34
433	BW1	4:28	1:59
434	BW5	0:00	0:00
435	BW5	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

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No.	Name	Worst case [h/year]	Expected [h/year]
436	BW5	0:00	0:00
437	BW5	0:00	0:00
438	BW5	0:00	0:00
439	BW5	0:00	0:00
440	BW5	0:00	0:00
441	BW5	135:52	45:19
442	BW5	26:40	12:06
443	BW5	15:50	6:40
444	BW5	3:56	1:36
445	BW5	0:00	0:00
446	BW5	0:00	0:00
447	BW5	13:26	5:02
448	BW5	0:00	0:00
449	BW5	0:00	0:00
450	BW5	0:00	0:00
451	BW5	0:00	0:00
452	BW5	0:00	0:00
453	BW1	0:00	0:00
454	BW1	0:00	0:00
455	BW1	0:00	0:00
456	BW1	0:00	0:00
457	BW1	17:52	4:15
458	BW1	0:00	0:00
459	BW5	0:00	0:00
460	BW1	31:31	10:36
461	BW5	17:11	6:04
462	BW5	44:45	16:13
463	BW5	37:40	17:49
464	BW1	34:43	15:35
ACE001	ACE001	0:00	0:00
ACE002	ACE002	0:00	0:00
ACE003	ACE003	0:00	0:00
ACE004	ACE004	0:00	0:00
ACE005	ACE005	0:00	0:00
ACE006	ACE006	0:00	0:00
ACE007	ACE007	0:00	0:00
ACE008	ACE008	0:00	0:00
ACE009	ACE009	0:00	0:00
ACE010	ACE010	0:00	0:00
ACE011	ACE011	0:00	0:00
ACE012	ACE012	0:00	0:00
ACE013	ACE013	0:00	0:00
ACE014	ACE014	0:00	0:00
ACE015	ACE015	0:00	0:00
ACE016	ACE016	0:00	0:00
ACE017	ACE017	0:00	0:00
ACE018	ACE018	0:00	0:00
ACE019	ACE019	0:00	0:00
ACE020	ACE020	0:00	0:00
ACE021	ACE021	0:00	0:00
ACE022	ACE022	0:00	0:00
ACE023	ACE023	0:00	0:00
ACE024	ACE024	0:00	0:00
ACE025	ACE025	0:00	0:00
ACE026	ACE026	0:00	0:00
ACE027	ACE027	0:00	0:00
ACE028	ACE028	0:00	0:00
ACE029	ACE029	0:00	0:00
ACE030	ACE030	0:00	0:00
ACE031	ACE031	0:00	0:00
ACE032	ACE032	0:00	0:00
ACE033	ACE033	0:00	0:00
ACE034	ACE034	0:00	0:00
ACE035	ACE035	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
ACE036	ACE036	0:00	0:00
ACE037	ACE037	0:00	0:00
ACE038	ACE038	0:00	0:00
ACE039	ACE039	0:00	0:00
ACE040	ACE040	0:00	0:00
ACE041	ACE041	0:00	0:00
ACE042	ACE042	0:00	0:00
ACE043	ACE043	0:00	0:00
ACE044	ACE044	0:00	0:00
ACE045	ACE045	0:00	0:00
ACE046	ACE046	0:00	0:00
ACE047	ACE047	0:00	0:00
ACE048	ACE048	0:00	0:00
ACE049	ACE049	0:00	0:00
ACE050	ACE050	0:00	0:00
T001	8641	0:00	0:00
T002	8641	0:00	0:00
T003	8644	0:00	0:00
T004	8644	0:00	0:00
T005	8644	0:00	0:00
T006	8641	0:00	0:00
T007	8641	4:52	1:30
T008	8644	0:00	0:00
T009	8641	0:00	0:00
T010	8641	0:00	0:00
T011	8642	0:00	0:00
T012	8642	0:00	0:00
T013	8644	0:00	0:00
T014	8644	0:00	0:00
T015	8641	0:00	0:00
T016	8644	0:00	0:00
T017	8641	0:00	0:00
T018	8644	0:00	0:00
T019	8642	0:00	0:00
T020	8641	6:46	3:01
T022	8644	0:00	0:00
T023	8644	0:00	0:00
T025	8641	0:00	0:00
T026	8641	0:00	0:00
T027	8641	0:00	0:00
T028	8641	0:00	0:00
T029	8642	0:00	0:00
T030	8641	0:00	0:00
T031	8642	0:00	0:00
T032	8644	0:00	0:00
T033	8642	0:00	0:00
T201	8641	0:00	0:00
T202	8641	0:00	0:00
T203	8641	0:00	0:00
T204	8641	0:00	0:00
T205	8641	0:00	0:00
T206	8642	8:00	2:28
T207	8642	0:00	0:00
T208	8644	0:00	0:00
T209	8644	0:00	0:00
T210	8644	0:00	0:00
T211	8644	0:00	0:00
T212	8644	0:00	0:00
T213	8644	0:00	0:00
T214	8644	0:00	0:00
T215	8644	0:00	0:00
T216	8644	0:00	0:00
T217	8644	0:00	0:00
T218	8644	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
T219	8644	0:00	0:00
T220	8644	0:00	0:00
T221	8644	0:00	0:00
T222	8643	0:00	0:00
T223	8643	0:00	0:00
T224	8643	0:00	0:00
T225	8643	0:00	0:00
T226	8643	0:00	0:00
T227	8643	0:00	0:00
T228	8643	0:00	0:00
T229	8643	0:00	0:00
T230	8643	0:00	0:00
T231	8643	0:00	0:00
T232	8643	0:00	0:00
T233	8643	0:00	0:00
T234	8643	0:00	0:00
T235	8643	0:00	0:00
T301	8642	0:00	0:00
T302	8642	0:00	0:00
T303	8642	0:00	0:00
T304	8642	0:00	0:00
T305	8642	0:00	0:00
T306	8642	0:00	0:00
T307	8642	0:00	0:00
T308	8643	0:00	0:00
T309	8643	0:00	0:00
T310	8643	0:00	0:00
T311	8643	0:00	0:00
T312	8643	0:00	0:00
T313	8643	0:00	0:00
T314	8643	0:00	0:00
T315	8643	0:00	0:00
T316	8643	0:00	0:00
T317	8643	0:00	0:00
T318	8643	0:00	0:00
T319	8643	0:00	0:00
T320	8643	0:00	0:00
T321	8643	0:00	0:00
T322	8643	0:00	0:00
T323	8643	0:00	0:00
T324	8643	0:00	0:00
T325	8643	0:00	0:00
T326	8641	0:00	0:00
T327	8641	0:00	0:00
T328	8641	0:00	0:00
T329	8641	0:00	0:00
T330	8641	0:00	0:00
T331	8643	0:00	0:00
T332	8643	0:00	0:00
T333	8643	0:00	0:00
T334	8643	0:00	0:00
T335	8643	0:00	0:00

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR001 - SR001

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May		June	
1	08:32		08:12		07:28		17:35 (404)	07:27		06:32	19:38 (405)	05:55
	17:07		17:48		18:29	25	18:00 (404)	20:13		20:55	6 19:44 (405)	21:32
2	08:32		08:11		07:26		17:34 (404)	07:25		06:30		05:55
	17:08		17:50		18:31	26	18:00 (404)	20:15		20:56		21:33
3	08:32		08:10		07:24		17:33 (404)	07:23		06:29		05:54
	17:09		17:51		18:32	28	18:01 (404)	20:16		20:57		21:34
4	08:32		08:08		07:22		17:33 (404)	07:21		06:27		05:54
	17:10		17:53		18:34	28	18:01 (404)	20:18		20:59		21:35
5	08:32		08:07		07:20		17:33 (404)	07:19	19:40 (405)	06:26		05:53
	17:11		17:54		18:35	28	18:01 (404)	20:19	12 19:52 (405)	21:00		21:36
6	08:32		08:06		07:18		17:33 (404)	07:17	19:37 (405)	06:24		05:53
	17:12		17:56		18:37	28	18:01 (404)	20:20	18 19:55 (405)	21:01		21:37
7	08:32		08:04		07:16		17:33 (404)	07:15	19:34 (405)	06:23		05:52
	17:14		17:57		18:38	27	18:00 (404)	20:22	23 19:57 (405)	21:03		21:37
8	08:31		08:03		08:14		18:33 (404)	07:13	19:32 (405)	06:21		05:52
	17:15		17:59		18:40	27	19:00 (404)	20:23	27 19:59 (405)	21:04		21:38
9	08:31		08:01		08:12		18:34 (404)	07:11	19:30 (405)	06:20		05:52
	17:16		18:01		19:41	25	18:59 (404)	20:24	30 20:00 (405)	21:05		21:39
10	08:31		08:00		08:10		18:34 (404)	07:09	19:29 (405)	06:18		05:51
	17:17		18:01		19:43	24	18:58 (404)	20:26	31 20:00 (405)	21:07		21:40
11	08:30		07:58		08:08		18:35 (404)	07:07	19:28 (405)	06:17		05:51
	17:18		18:02		19:44	21	18:56 (404)	20:27	34 20:02 (405)	21:08		21:40
12	08:30		07:57		08:07		18:37 (404)	07:05	19:27 (405)	06:16		05:51
	17:20		18:04		19:45	17	18:54 (404)	20:29	35 20:02 (405)	21:09		21:41
13	08:29		07:55		08:05		18:39 (404)	07:04	19:26 (405)	06:14		05:51
	17:21		18:05		19:47	12	18:51 (404)	20:30	36 20:02 (405)	21:11		21:41
14	08:29		07:54		08:03			07:02	19:25 (405)	06:13		05:51
	17:22		18:07		19:48			20:31	37 20:02 (405)	21:12		21:42
15	08:28		07:52		17:39 (403)	08:01		07:00	19:25 (405)	06:12		05:51
	17:23		18:08	5	17:44 (403)	19:50		20:33	37 20:02 (405)	21:13		21:42
16	08:28		07:50		17:38 (403)	07:59		06:58	19:24 (405)	06:11		05:51
	17:25		18:10	8	17:46 (403)	19:51		20:34	38 20:02 (405)	21:14		21:43
17	08:27		07:49		17:37 (403)	07:57		06:56	19:24 (405)	06:09		05:51
	17:26		18:11	11	17:48 (403)	19:53		20:35	38 20:02 (405)	21:16		21:43
18	08:26		07:47		17:35 (403)	07:55		06:54	19:24 (405)	06:08		05:51
	17:28		18:13	14	17:49 (403)	19:54		20:37	38 20:02 (405)	21:17		21:44
19	08:25		07:45		17:35 (403)	07:53		06:52	19:24 (405)	06:07		05:51
	17:29		18:14	16	17:51 (403)	19:55		20:38	38 20:02 (405)	21:18		21:44
20	08:25		07:44		17:35 (403)	07:51		06:51	19:24 (405)	06:06		05:51
	17:30		18:16	18	17:53 (403)	19:57		20:40	37 20:01 (405)	21:19		21:44
21	08:24		07:42		17:34 (403)	07:49		06:49	19:24 (405)	06:05		05:51
	17:32		18:17	20	17:54 (403)	19:58		20:41	36 20:00 (405)	21:20		21:45
22	08:23		07:40		17:34 (403)	07:47		06:47	19:25 (405)	06:04		05:51
	17:33		18:19	19	17:53 (403)	20:00		20:42	35 20:00 (405)	21:22		21:45
23	08:22		07:38		17:34 (403)	07:45		06:45	19:25 (405)	06:03		05:51
	17:35		18:20	19	17:53 (403)	20:01		20:44	34 19:59 (405)	21:23		21:45
24	08:21		07:37		17:35 (403)	07:43		06:44	19:25 (405)	06:02		05:52
	17:36		18:22	17	17:52 (403)	20:02		20:45	33 19:58 (405)	21:24		21:45
25	08:20		07:35		17:37 (403)	07:41		06:42	19:27 (405)	06:01		05:52
	17:38		18:23	18	17:55 (404)	20:04		20:46	30 19:57 (405)	21:25		21:45
26	08:19		07:33		17:38 (403)	07:39		06:40	19:27 (405)	06:00		05:52
	17:39		18:25	19	17:57 (404)	20:05		20:48	29 19:56 (405)	21:26		21:46
27	08:18		07:31		17:37 (404)	07:37		06:38	19:28 (405)	05:59		05:53
	17:41		18:26	21	17:58 (404)	20:06		20:49	26 19:54 (405)	21:27		21:46
28	08:17		07:29		17:36 (404)	07:35		06:37	19:30 (405)	05:58		05:53
	17:42		18:28	23	17:59 (404)	20:08		20:51	23 19:53 (405)	21:28		21:46
29	08:16					07:33		06:35	19:31 (405)	05:58		05:54
	17:44					20:09		20:52	20 19:51 (405)	21:29		21:45
30	08:15					07:31		06:33	19:33 (405)	05:57		05:54
	17:45					20:11		20:53	15 19:48 (405)	21:30		21:45
31	08:13					07:29				05:56		
	17:47					20:12				21:31		
Potential sun hours	279		287		368		407			466		475
Total, worst case				228		316		790		6		
Sun reduction				0.50		0.63		0.59		0.68		
Oper. time red.				0.98		0.98		0.98		0.98		
Wind dir. red.				0.62		0.62		0.71		0.71		
Total reduction				0.30		0.38		0.41		0.47		
Total, real				69		120		325		3		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR001 - SR001

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October		November	December
1	05:55	06:25			07:05	19:27 (405)	07:44	18:16 (404)	07:28	08:11
	21:45	21:21			20:29	34 20:01 (405)	19:29	16 18:32 (404)	17:31	16:59
2	05:55	06:26			07:06	19:28 (405)	07:46	18:15 (404)	07:30	08:12
	21:45	21:20			20:27	31 19:59 (405)	19:27	19 18:34 (404)	17:30	16:59
3	05:56	06:27			07:07	19:28 (405)	07:47	18:13 (404)	07:31	08:13
	21:45	21:18			20:25	30 19:58 (405)	19:25	22 18:35 (404)	17:28	16:59
4	05:57	06:28			07:09	19:29 (405)	07:48	18:11 (404)	07:33	08:14
	21:45	21:17			20:23	27 19:56 (405)	19:23	24 18:35 (404)	17:27	16:58
5	05:57	06:30			07:10	19:31 (405)	07:50	18:10 (404)	07:34	08:15
	21:44	21:16			20:21	23 19:54 (405)	19:21	26 18:36 (404)	17:25	16:58
6	05:58	06:31			07:11	19:33 (405)	07:51	18:09 (404)	07:36	08:16
	21:44	21:14			20:19	19 19:52 (405)	19:19	27 18:36 (404)	17:24	16:58
7	05:59	06:32			07:13	19:35 (405)	07:52	18:08 (404)	07:37	08:17
	21:44	21:13			20:18	13 19:48 (405)	19:17	28 18:36 (404)	17:22	16:57
8	06:00	06:34			07:14		07:54	18:08 (404)	07:38	08:19
	21:43	21:11			20:16		19:15	28 18:36 (404)	17:21	16:57
9	06:00	06:35			07:15		07:55	18:07 (404)	07:40	08:20
	21:43	21:10			20:14		19:14	28 18:35 (404)	17:20	16:57
10	06:01	06:36			07:16		07:56	18:08 (404)	07:41	08:21
	21:42	21:08			20:12		19:12	28 18:36 (404)	17:18	16:57
11	06:02	06:37			07:18		07:58	18:08 (404)	07:43	08:21
	21:42	21:06			20:10		19:10	27 18:35 (404)	17:17	16:57
12	06:03	06:39		19:45 (405)	07:19		07:59	18:08 (404)	07:44	08:22
	21:41	21:05	9	19:54 (405)	20:08		19:08	26 18:34 (404)	17:16	16:57
13	06:04	06:40		19:41 (405)	07:20		08:01	18:08 (404)	07:46	08:23
	21:40	21:03	16	19:57 (405)	20:06		19:06	25 18:33 (404)	17:15	16:57
14	06:05	06:41		19:38 (405)	07:22		08:02	18:10 (404)	07:47	08:24
	21:40	21:02	21	19:59 (405)	20:04		19:04	22 18:32 (404)	17:14	16:57
15	06:06	06:43		19:36 (405)	07:23		08:03	18:10 (404)	07:49	08:25
	21:39	21:00	24	20:00 (405)	20:02		19:02	20 18:30 (404)	17:12	16:57
16	06:07	06:44		19:35 (405)	07:24		08:05	18:09 (403)	07:50	08:26
	21:38	20:58	27	20:02 (405)	20:00		19:00	19 18:28 (404)	17:11	16:58
17	06:08	06:45		19:34 (405)	07:26		08:06	18:08 (403)	07:52	08:26
	21:37	20:57	29	20:03 (405)	19:57		18:57	18 18:26 (404)	17:10	16:58
18	06:09	06:46		19:32 (405)	07:27		08:08	18:06 (403)	07:53	08:27
	21:37	20:55	31	20:03 (405)	19:55		18:55	17 18:23 (403)	17:09	16:58
19	06:10	06:48		19:31 (405)	07:28		08:09	18:06 (403)	07:55	08:28
	21:36	20:53	33	20:04 (405)	19:53		18:53	18 18:24 (403)	17:08	16:59
20	06:11	06:49		19:31 (405)	07:30		08:11	18:05 (403)	07:56	08:28
	21:35	20:51	34	20:05 (405)	19:51		18:51	19 18:24 (403)	17:07	16:59
21	06:12	06:50		19:29 (405)	07:31		08:12	18:05 (403)	07:57	08:29
	21:34	20:50	36	20:05 (405)	19:49		18:49	19 18:24 (403)	17:06	16:59
22	06:13	06:52		19:28 (405)	07:32		08:13	18:04 (403)	07:59	08:29
	21:33	20:48	37	20:05 (405)	19:47		18:48	18 18:22 (403)	17:05	17:00
23	06:14	06:53		19:28 (405)	07:33		08:15	18:05 (403)	08:00	08:30
	21:32	20:46	37	20:05 (405)	19:45		18:46	16 18:21 (403)	17:05	17:00
24	06:15	06:54		19:28 (405)	07:35		08:16	18:06 (403)	08:02	08:30
	21:31	20:44	37	20:05 (405)	19:43		18:44	13 18:19 (403)	17:04	17:01
25	06:16	06:56		19:27 (405)	07:36		08:18	18:06 (403)	08:03	08:31
	21:30	20:42	38	20:05 (405)	19:41		18:42	11 18:17 (403)	17:03	17:02
26	06:18	06:57		19:27 (405)	07:37		08:19	18:08 (403)	08:04	08:31
	21:28	20:41	37	20:04 (405)	19:39		18:41	8 18:16 (403)	17:02	17:02
27	06:19	06:58		19:26 (405)	07:39		08:21	18:10 (403)	08:06	08:31
	21:27	20:39	38	20:04 (405)	19:37		18:39	3 18:13 (403)	17:02	17:03
28	06:20	06:59		19:27 (405)	07:40		08:22		08:07	08:32
	21:26	20:37	37	20:04 (405)	19:35		18:37		17:01	17:04
29	06:21	07:01		19:26 (405)	07:41		08:24		08:08	08:32
	21:25	20:35	37	20:03 (405)	19:33		18:36		17:00	17:04
30	06:22	07:02		19:26 (405)	07:43	18:20 (404)	08:25		08:09	08:32
	21:24	20:33	36	20:02 (405)	19:31	10 18:30 (404)	18:34		17:00	17:05
31	06:23	07:03		19:26 (405)			08:27			08:32
	21:22	20:31	35	20:01 (405)			18:33			17:06
Potential sun hours	480	441			378		338		282	266
Total, worst case			629			187		545		
Sun reduction			0.73			0.69		0.52		
Oper. time red.			0.98			0.98		0.98		
Wind dir. red.			0.71			0.71		0.62		
Total reduction			0.51			0.47		0.31		
Total, real			318			89		172		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR002 - SR002

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February		March	April	May	June	July	August	September	October		November	December
1	08:32	08:12		07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:44		07:28	08:11
	17:08	17:48		18:29	20:13	20:55	21:32	21:45	21:21	20:29	19:29		17:31	17:00
2	08:32	08:11		07:26	07:25	06:30	05:55	05:55	06:26	07:06	07:46		07:30	08:12
	17:08	17:50		18:31	20:15	20:56	21:33	21:45	21:20	20:27	19:27		17:30	16:59
3	08:32	08:10		07:24	07:23	06:29	05:54	05:56	06:27	07:07	07:47		07:31	08:13
	17:09	17:51		18:32	20:16	20:57	21:34	21:45	21:18	20:25	19:25		17:28	16:59
4	08:32	08:08		07:22	07:21	06:27	05:54	05:57	06:29	07:09	07:48		07:33	08:14
	17:10	17:53		18:34	20:18	20:59	21:35	21:45	21:17	20:23	19:23		17:27	16:58
5	08:32	08:07		07:20	07:19	06:26	05:53	05:57	06:30	07:10	07:50		07:34	08:15
	17:12	17:54		18:35	20:19	21:00	21:36	21:44	21:16	20:22	19:21		17:25	16:58
6	08:32	08:06		07:18	07:17	06:24	05:53	05:58	06:31	07:11	07:51		07:36	08:16
	17:13	17:56		18:37	20:20	21:01	21:37	21:44	21:14	20:20	19:19		17:24	16:58
7	08:32	08:04		07:16	07:15	06:23	05:53	05:59	06:32	07:13	07:52		07:37	08:18
	17:14	17:58		18:38	20:22	21:03	21:37	21:44	21:13	20:18	19:18		17:23	16:58
8	08:31	08:03		08:14	07:13	06:21	05:52	06:00	06:34	07:14	07:54		07:39	08:19
	17:15	17:59		18:40	20:23	21:04	21:38	21:43	21:11	20:16	19:16		17:21	16:57
9	08:31	08:01		08:12	07:11	06:20	05:52	06:00	06:35	07:15	07:55		07:40	08:20
	17:16	18:01		19:41	20:25	21:05	21:39	21:43	21:10	20:14	19:14		17:20	16:57
10	08:31	08:00		08:10	07:09	06:18	05:52	06:01	06:36	07:17	07:57		07:41	08:21
	17:17	18:01		19:43	20:26	21:07	21:40	21:42	21:08	20:12	19:12		17:19	16:57
11	08:30	07:58		08:09	07:07	06:17	05:51	06:02	06:38	07:18	07:58		07:43	08:22
	17:18	18:02		19:44	20:27	21:08	21:40	21:42	21:07	20:10	19:10		17:17	16:57
12	08:30	07:57		08:07	07:06	06:16	05:51	06:03	06:39	07:19	07:59		07:44	08:22
	17:20	18:04		19:45	20:29	21:09	21:41	21:41	21:05	20:08	19:08		17:16	16:57
13	08:29	07:55		17:39 (T206)	08:05	07:04	06:14	05:51	06:04	06:40	07:20	08:01	07:46	08:23
	17:21	18:05	3	17:42 (T206)	19:47	20:30	21:11	21:41	21:40	21:03	20:06	19:06	17:15	16:57
14	08:29	07:54		17:37 (T206)	08:03	07:02	06:13	05:51	06:05	06:41	07:22	08:02	18:14 (T206)	07:47	08:24
	17:22	18:07	6	17:43 (T206)	19:48	20:31	21:12	21:42	21:40	21:02	20:04	19:04	9	18:23 (T206)	17:14	16:57
15	08:28	07:52		17:35 (T206)	08:01	07:00	06:12	05:51	06:06	06:43	07:23	08:03		18:10 (T206)	07:49	08:25
	17:24	18:08	9	17:44 (T206)	19:50	20:33	21:13	21:42	21:39	21:00	20:02	19:02	15	18:25 (T206)	17:13	16:58
16	08:28	07:50		17:35 (T206)	07:59	06:58	06:11	05:51	06:07	06:44	07:24	08:05		18:09 (T206)	07:50	08:26
	17:25	18:10	12	17:47 (T206)	19:51	20:34	21:14	21:43	21:38	20:58	20:00	19:00	18	18:27 (T206)	17:11	16:58
17	08:27	07:49		17:34 (T206)	07:57	06:56	06:09	05:51	06:08	06:45	07:26	08:06		18:07 (T206)	07:52	08:26
	17:26	18:11	14	17:48 (T206)	19:53	20:36	21:16	21:43	21:37	20:57	19:58	18:57	21	18:28 (T206)	17:10	16:58
18	08:26	07:47		17:34 (T206)	07:55	06:54	06:08	05:51	06:09	06:47	07:27	08:08		18:05 (T206)	07:53	08:27
	17:28	18:13	15	17:49 (T206)	19:54	20:37	21:17	21:44	21:37	20:55	19:56	18:55	23	18:28 (T206)	17:09	16:58
19	08:25	07:45		17:33 (T206)	07:53	06:53	06:07	05:51	06:10	06:48	07:28	08:09		18:05 (T206)	07:55	08:28
	17:29	18:14	18	17:51 (T206)	19:55	20:38	21:18	21:44	21:36	20:53	19:54	18:53	23	18:28 (T206)	17:08	16:59
20	08:25	07:44		17:34 (T206)	07:51	06:51	06:06	05:51	06:11	06:49	07:30	08:11		18:04 (T206)	07:56	08:28
	17:31	18:16	19	17:53 (T206)	19:57	20:40	21:19	21:44	21:35	20:51	19:52	18:51	22	18:26 (T206)	17:07	16:59
21	08:24	07:42		17:34 (T206)	07:49	06:49	06:05	05:51	06:12	06:50	07:31	08:12		18:04 (T206)	07:57	08:29
	17:32	18:18	20	17:54 (T206)	19:58	20:41	21:20	21:45	21:34	20:50	19:49	18:49	20	18:24 (T206)	17:06	17:00
22	08:23	07:40		17:34 (T206)	07:47	06:47	06:04	05:51	06:13	06:52	07:32	08:13		18:04 (T206)	07:59	08:29
	17:33	18:19	22	17:56 (T206)	20:00	20:42	21:22	21:45	21:33	20:48	19:47	18:48	19	18:23 (T206)	17:06	17:00
23	08:22	07:38		17:34 (T206)	07:45	06:45	06:03	05:52	06:14	06:53	07:34	08:15		18:04 (T206)	08:00	08:30
	17:35	18:21	23	17:57 (T206)	20:01	20:44	21:23	21:45	21:32	20:46	19:45	18:46	17	18:21 (T206)	17:05	17:01
24	08:21	07:37		17:35 (T206)	07:43	06:44	06:02	05:52	06:15	06:54	07:35	08:16		18:04 (T206)	08:02	08:30
	17:36	18:22	22	17:57 (T206)	20:02	20:45	21:24	21:45	21:31	20:44	19:43	18:44	15	18:19 (T206)	17:04	17:01
25	08:20	07:35		17:36 (T206)	07:41	06:42	06:01	05:52	06:17	06:56	07:36	08:18		18:04 (T206)	08:03	08:31
	17:38	18:24	20	17:56 (T206)	20:04	20:47	21:25	21:45	21:30	20:42	19:41	18:43	13	18:17 (T206)	17:03	17:02
26	08:19	07:33		17:37 (T206)	07:39	06:40	06:00	05:53	06:18	06:57	07:38	08:19		18:05 (T206)	08:04	08:31
	17:39	18:25	17	17:54 (T206)	20:05	20:48	21:26	21:46	21:29	20:41	19:39	18:41	11	18:16 (T206)	17:03	17:02
27	08:18	07:31		17:39 (T206)	07:37	06:39	05:59	05:53	06:19	06:58	07:39	08:21		18:05 (T206)	08:06	08:31
	17:41	18:27	13	17:52 (T206)	20:07	20:49	21:27	21:46	21:27	20:39	19:37	18:39	8	18:13 (T206)	17:02	17:03
28	08:17	07:29		17:42 (T206)	07:35	06:37	05:59	05:53	06:20	07:00	07:40	08:22		18:07 (T206)	08:07	08:32
	17:42	18:28	6	17:48 (T206)	20:08	20:51	21:28	21:46	21:26	20:37	19:35	18:38	5	18:12 (T206)	17:01	17:04
29	08:16				07:33	06:35	05:58	05:54	06:21	07:01	07:42	08:24		18:08 (T206)	08:08	08:32
	17:44				20:09	20:52	21:29	21:45	21:25	20:35	19:33	18:36	2	18:10 (T206)	17:01	17:05
30	08:15				07:31	06:34	05:57	05:54	06:22	07:02	07:43	08:25			08:09	08:32
	17:45				20:11	20:53	21:30	21:45	21:24	20:33	19:31	18:34			17:00	17:05
31	08:13				07:29		05:56		06:24	07:04		08:27				08:32
	17:47				20:12		21:31		21:22	20:31		18:33				17:06
Potential sun hours	279	287			368	407	466	475	480	441	378	338			282	266
Total, worst case			239										241			
Sun reduction			0.50										0.52			
Oper. time red.			0.98										0.98			
Wind dir. red.			0.62										0.62			
Total reduction			0.30										0.31			
Total, real			72										76			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:

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Licensed user:

EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net

Calculated:

7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR003 - SR003

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February		March	April	May	June	July	August	September	October		November	December
1	08:32	08:12		07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:44		07:28	08:11
	17:07	17:48		18:29	20:14	20:55	21:32	21:45	21:21	20:29	19:29		17:31	17:00
2	08:32	08:11		07:26	07:25	06:30	05:55	05:55	06:26	07:06	07:46		07:30	08:12
	17:08	17:50		18:31	20:15	20:56	21:33	21:45	21:20	20:27	19:27		17:30	16:59
3	08:32	08:10		07:24	07:23	06:29	05:54	05:56	06:27	07:07	07:47		07:31	08:13
	17:09	17:51		18:32	20:16	20:57	21:34	21:45	21:19	20:25	19:25		17:28	16:59
4	08:32	08:08		07:22	07:21	06:27	05:54	05:57	06:29	07:09	07:48		07:33	08:14
	17:10	17:53		18:34	20:18	20:59	21:35	21:45	21:17	20:24	19:23		17:27	16:58
5	08:32	08:07		07:20	07:19	06:26	05:53	05:57	06:30	07:10	07:50		07:34	08:15
	17:11	17:54		18:35	20:19	21:00	21:36	21:44	21:16	20:22	19:21		17:25	16:58
6	08:32	08:06		07:18	07:17	06:24	05:53	05:58	06:31	07:11	07:51		07:36	08:17
	17:13	17:56		18:37	20:20	21:02	21:37	21:44	21:14	20:20	19:19		17:24	16:58
7	08:32	08:04		07:16	07:15	06:23	05:52	05:59	06:32	07:13	07:52		07:37	08:18
	17:14	17:58		18:38	20:22	21:03	21:37	21:44	21:13	20:18	19:18		17:22	16:58
8	08:32	08:03		08:14	07:13	06:21	05:52	06:00	06:34	07:14	07:54		07:39	08:19
	17:15	17:59		18:40	20:23	21:04	21:38	21:43	21:11	20:16	19:16		17:21	16:57
9	08:31	08:01		08:12	07:11	06:20	05:52	06:00	06:35	07:15	07:55		07:40	08:20
	17:16	18:01		19:41	20:25	21:05	21:39	21:43	21:10	20:14	19:14		17:20	16:57
10	08:31	08:00		08:11	07:09	06:18	05:51	06:01	06:36	07:17	07:57		07:42	08:21
	17:17	18:01		19:43	20:26	21:07	21:40	21:42	21:08	20:12	19:12		17:18	16:57
11	08:30	07:58		08:09	07:07	06:17	05:51	06:02	06:37	07:18	07:58		07:43	08:22
	17:18	18:02		19:44	20:27	21:08	21:40	21:42	21:07	20:10	19:10		17:17	16:57
12	08:30	07:57	08:19 (406)	08:07	07:06	06:16	05:51	06:03	06:39	07:19	07:59		07:45	08:23
	17:20	18:04	4 08:23 (406)	19:45	20:29	21:09	21:41	21:41	21:05	20:08	19:08		17:16	16:57
13	08:29	07:55	08:18 (406)	08:05	07:04	06:14	05:51	06:04	06:40	07:20	08:01		07:46	08:23
	17:21	18:05	8 08:26 (406)	19:47	20:30	21:11	21:42	21:40	21:03	20:06	19:06		17:15	16:57
14	08:29	07:54	08:16 (406)	08:03	07:02	06:13	05:51	06:05	06:41	07:22	08:02		07:47	08:24
	17:22	18:07	11 08:27 (406)	19:48	20:31	21:12	21:42	21:40	21:02	20:04	19:04		17:14	16:57
15	08:28	07:52	08:14 (406)	08:01	07:00	06:12	05:51	06:06	06:43	07:23	08:04		07:49	08:25
	17:24	18:08	14 08:28 (406)	19:50	20:33	21:13	21:43	21:39	21:00	20:02	19:02		17:12	16:57
16	08:28	07:50	08:13 (406)	07:59	06:58	06:11	05:51	06:07	06:44	07:24	08:05	08:45 (406)	07:50	08:26
	17:25	18:10	16 08:29 (406)	19:51	20:34	21:14	21:43	21:38	20:58	20:00	19:00	11 08:56 (406)	17:11	16:58
17	08:27	07:49	08:11 (406)	07:57	06:56	06:09	05:51	06:08	06:45	07:26	08:06	08:43 (406)	07:52	08:27
	17:26	18:11	19 08:30 (406)	19:53	20:36	21:16	21:43	21:37	20:57	19:58	18:57	15 08:58 (406)	17:10	16:58
18	08:26	07:47	08:09 (406)	07:55	06:54	06:08	05:51	06:09	06:47	07:27	08:08	08:42 (406)	07:53	08:27
	17:28	18:13	21 08:30 (406)	19:54	20:37	21:17	21:44	21:37	20:55	19:56	18:55	17 08:59 (406)	17:09	16:58
19	08:26	07:45	08:09 (406)	07:53	06:53	06:07	05:51	06:10	06:48	07:28	08:09	08:40 (406)	07:55	08:28
	17:29	18:14	22 08:31 (406)	19:55	20:38	21:18	21:44	21:36	20:53	19:54	18:53	19 08:59 (406)	17:08	16:59
20	08:25	07:44	08:08 (406)	07:51	06:51	06:06	05:51	06:11	06:49	07:30	08:11	08:40 (406)	07:56	08:29
	17:30	18:16	22 08:30 (406)	19:57	20:40	21:19	21:45	21:35	20:52	19:52	18:51	20 09:00 (406)	17:07	16:59
21	08:24	07:42	08:08 (406)	07:49	06:49	06:05	05:51	06:12	06:50	07:31	08:12	08:39 (406)	07:57	08:29
	17:32	18:17	22 08:30 (406)	19:58	20:41	21:21	21:45	21:34	20:50	19:50	18:49	21 09:00 (406)	17:06	16:59
22	08:23	07:40	08:09 (406)	07:47	06:47	06:04	05:51	06:13	06:52	07:32	08:14	08:39 (406)	07:59	08:30
	17:33	18:19	20 08:29 (406)	20:00	20:42	21:22	21:45	21:33	20:48	19:47	18:48	22 09:01 (406)	17:06	17:00
23	08:22	07:38	08:09 (406)	07:45	06:45	06:03	05:51	06:14	06:53	07:34	08:15	08:38 (406)	08:00	08:30
	17:35	18:21	19 08:28 (406)	20:01	20:44	21:23	21:45	21:32	20:46	19:45	18:46	22 09:00 (406)	17:05	17:00
24	08:21	07:37	08:11 (406)	07:43	06:44	06:02	05:52	06:15	06:54	07:35	08:16	08:40 (406)	08:02	08:31
	17:36	18:22	16 08:27 (406)	20:02	20:45	21:24	21:45	21:31	20:44	19:43	18:44	20 09:00 (406)	17:04	17:01
25	08:20	07:35	08:12 (406)	07:41	06:42	06:01	05:52	06:16	06:56	07:36	08:18	08:41 (406)	08:03	08:31
	17:38	18:24	13 08:25 (406)	20:04	20:47	21:25	21:46	21:30	20:42	19:41	18:43	18 08:59 (406)	17:03	17:02
26	08:19	07:33	08:14 (406)	07:39	06:40	06:00	05:52	06:18	06:57	07:38	08:19	08:43 (406)	08:04	08:31
	17:39	18:25	9 08:23 (406)	20:05	20:48	21:26	21:46	21:29	20:41	19:39	18:41	16 08:59 (406)	17:02	17:02
27	08:18	07:31		07:37	06:38	05:59	05:53	06:19	06:58	07:39	08:21	08:44 (406)	08:06	08:32
	17:41	18:26		20:07	20:49	21:27	21:46	21:27	20:39	19:37	18:39	13 08:57 (406)	17:02	17:03
28	08:17	07:29		07:35	06:37	05:58	05:53	06:20	07:00	07:40	08:22	08:46 (406)	08:07	08:32
	17:42	18:28		20:08	20:51	21:28	21:46	21:26	20:37	19:35	18:38	11 08:57 (406)	17:01	17:04
29	08:16			07:33	06:35	05:58	05:54	06:21	07:01	07:42	08:24	08:47 (406)	08:08	08:32
	17:44			20:09	20:52	21:29	21:46	21:25	20:35	19:33	18:36	7 08:54 (406)	17:01	17:05
30	08:15			07:31	06:34	05:57	05:54	06:22	07:02	07:43	08:25	08:49 (406)	08:09	08:32
	17:45			20:11	20:53	21:30	21:46	21:24	20:33	19:31	18:34	3 08:52 (406)	17:00	17:05
31	08:14			07:29		05:56		06:24	07:04		08:27			08:32
	17:47			20:12		21:31		21:23	20:31		18:33			17:06
Potential sun hours	279	287		368	407	466	475	480	441	378	338		282	266
Total, worst case			236									235		
Sun reduction			0.50									0.52		
Oper. time red.			0.98									0.98		
Wind dir. red.			0.74									0.74		
Total reduction			0.36									0.38		
Total, real			86									89		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 5820
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Shadow receptor:** SR004 - SR004

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:12	07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:44	07:28	08:11
	17:07	17:48	18:30	20:14	20:55	21:32	21:46	21:21	20:29	19:29	17:31	17:00
2	08:33	08:11	07:26	07:25	06:30	05:55	05:55	06:26	07:06	07:46	07:30	08:12
	17:08	17:50	18:31	20:15	20:56	21:33	21:45	21:20	20:27	19:27	17:30	16:59
3	08:33	08:10	07:24	07:23	06:29	05:54	05:56	06:27	07:07	07:47	07:31	08:13
	17:09	17:51	18:32	20:16	20:58	21:34	21:45	21:19	20:26	19:25	17:28	16:59
4	08:32	08:09	07:22	07:21	06:27	05:54	05:57	06:29	07:09	07:48	07:33	08:14
	17:10	17:53	18:34	20:18	20:59	21:35	21:45	21:17	20:24	19:23	17:27	16:58
5	08:32	08:07	07:20	07:19	06:26	05:53	05:57	06:30	07:10	07:50	07:34	08:16
	17:11	17:54	18:35	20:19	21:00	21:36	21:45	21:16	20:22	19:22	17:25	16:58
6	08:32	08:06	07:18	07:17	06:24	05:53	05:58	06:31	07:11	07:51	07:36	08:17
	17:12	17:56	18:37	20:21	21:02	21:37	21:44	21:14	20:20	19:20	17:24	16:58
7	08:32	08:04	07:16	07:15	06:23	05:52	05:59	06:32	07:13	07:52	07:37	08:18
	17:14	17:58	18:38	20:22	21:03	21:38	21:44	21:13	20:18	19:18	17:22	16:57
8	08:32	08:03	08:14	07:13	06:21	05:52	06:00	06:34	07:14	07:54	07:39	08:19
	17:15	17:59	18:40	20:23	21:04	21:38	21:43	21:11	20:16	19:16	17:21	16:57
9	08:31	08:01	08:13	07:11	06:20	05:52	06:00	06:35	07:15	07:55	07:40	08:20
	17:16	18:01	19:41	20:25	21:06	21:39	21:43	21:10	20:14	19:14	17:20	16:57
10	08:31	08:00	08:11	07:09	06:18	05:51	06:01	06:36	07:17	07:57	07:42	08:21
	17:17	18:01	19:43	20:26	21:07	21:40	21:42	21:08	20:12	19:12	17:19	16:57
11	08:31	07:58	08:09	07:07	06:17	05:51	06:02	06:37	07:18	07:58	07:43	08:22
	17:18	18:02	19:44	20:27	21:08	21:40	21:42	21:07	20:10	19:10	17:17	16:57
12	08:30	07:57	08:07	07:06	06:16	05:51	06:03	06:39	07:19	07:59	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:41	21:41	21:05	20:08	19:08	17:16	16:57
13	08:30	07:55	08:05	07:04	06:14	05:51	06:04	06:40	07:21	08:01	07:46	08:24
	17:21	18:05	19:47	20:30	21:11	21:42	21:41	21:04	20:06	19:06	17:15	16:57
14	08:29	07:54	08:03	07:02	06:13	05:51	06:05	06:41	07:22	08:02	07:48	08:24
	17:22	18:07	19:48	20:32	21:12	21:42	21:40	21:02	20:04	19:04	17:14	16:57
15	08:29	07:52	08:01	07:00	06:12	05:51	06:06	06:43	07:23	08:04	07:49	08:25
	17:24	18:08	19:50	20:33	21:13	21:43	21:39	21:00	20:02	19:02	17:12	16:57
16	08:28	07:51	07:59	06:58	06:11	05:51	06:07	06:44	07:24	08:05	07:50	08:26
	17:25	18:10	19:51	20:34	21:15	21:43	21:38	20:59	20:00	19:00	17:11	16:58
17	08:27	07:49	07:57	06:56	06:09	05:51	06:08	06:45	07:26	08:06	07:52	08:27
	17:26	18:11	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:10	16:58
18	08:26	07:47	07:55	06:54	06:08	05:51	06:09	06:47	07:27	08:08	07:53	08:27
	17:28	18:13	19:54	20:37	21:17	21:44	21:37	20:55	19:56	18:55	17:09	16:58
19	08:26	07:46	07:53	06:53	06:07	05:51	06:10	06:48	07:28	08:09	07:55	08:28
	17:29	18:14	19:55	20:38	21:18	21:44	21:36	20:53	19:54	18:53	17:08	16:59
20	08:25	07:44	07:51	06:51	06:06	05:51	06:11	06:49	07:30	08:11	07:56	08:29
	17:30	18:16	19:57	20:40	21:19	21:45	21:35	20:52	19:52	18:51	17:07	16:59
21	08:24	07:42	07:49	06:49	06:05	05:51	06:12	06:50	07:31	08:12	07:58	08:29
	17:32	18:18	19:58	20:41	21:21	21:45	21:34	20:50	19:50	18:49	17:06	16:59
22	08:23	07:40	07:47	06:47	06:04	05:51	06:13	06:52	07:32	08:14	07:59	08:30
	17:33	18:19	20:00	20:43	21:22	21:45	21:33	20:48	19:48	18:48	17:06	17:00
23	08:22	07:39	07:45	06:45	06:03	05:51	06:14	06:53	07:34	08:15	08:00	08:30
	17:35	18:21	20:01	20:44	21:23	21:45	21:32	20:46	19:46	18:46	17:05	17:00
24	08:21	07:37	07:43	06:44	06:02	05:52	06:15	06:54	07:35	08:17	08:02	08:31
	17:36	18:22	20:02	20:45	21:24	21:46	21:31	20:44	19:44	18:44	17:04	17:01
25	08:20	07:35	07:41	06:42	06:01	05:52	06:16	06:56	07:36	08:18	08:03	08:31
	17:38	18:24	20:04	20:47	21:25	21:46	21:30	20:43	19:41	18:43	17:03	17:02
26	08:19	07:33	07:39	06:40	06:00	05:52	06:18	06:57	07:38	08:19	08:04	08:31
	17:39	18:25	20:05	20:48	21:26	21:46	21:29	20:41	19:39	18:41	17:02	17:02
27	08:18	07:31	07:37	06:38	05:59	05:53	06:19	06:58	07:39	08:21	08:06	08:32
	17:41	18:27	20:07	20:49	21:27	21:46	21:28	20:39	19:37	18:39	17:02	17:03
28	08:17	07:30	07:35	06:37	05:58	05:53	06:20	07:00	07:40	08:22	08:07	08:32
	17:42	18:28	20:08	20:51	21:28	21:46	21:26	20:37	19:35	18:38	17:01	17:04
29	08:16		07:33	06:35	05:58	05:54	06:21	07:01	07:42	08:24	08:08	08:32
	17:44		20:09	20:52	21:29	21:46	21:25	20:35	19:33	18:36	17:01	17:05
30	08:15		07:31	06:34	05:57	05:54	06:22	07:02	07:43	08:25	08:10	08:32
	17:45		20:11	20:54	21:30	21:46	21:24	20:33	19:31	18:34	17:00	17:05
31	08:14		07:29		05:56		06:24	07:04		08:27		08:32
	17:47		20:12		21:31		21:23	20:31		18:33		17:06
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR005 - SR005

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April			May	June
1	08:33			08:12		17:00 (410)	07:28	07:27			06:32	05:55
	17:07			17:48	19	17:19 (410)	18:30	20:14			20:55	21:33
2	08:33			08:11		16:59 (410)	07:26	07:25			06:30	05:55
	17:08			17:50	19	17:18 (410)	18:31	20:15			20:56	21:33
3	08:33			08:10		17:01 (410)	07:24	07:23			06:29	05:54
	17:09			17:51	17	17:18 (410)	18:32	20:16			20:58	21:34
4	08:33			08:09		17:02 (410)	07:22	07:21			06:27	05:54
	17:10			17:53	16	17:18 (410)	18:34	20:18			20:59	21:35
5	08:32			08:07		17:03 (410)	07:20	07:19			06:26	05:53
	17:11			17:54	13	17:16 (410)	18:35	20:19			21:00	21:36
6	08:32			08:06		17:05 (410)	07:18	07:17			06:24	05:53
	17:12			17:56	10	17:15 (410)	18:37	20:21			21:02	21:37
7	08:32			08:04			07:16	07:15		19:52 (412)	06:23	05:52
	17:14			17:58			18:38	20:22	7	19:59 (412)	21:03	21:38
8	08:32			08:03			08:14	07:13		19:49 (412)	06:21	05:52
	17:15			17:59			18:40	20:23	11	20:00 (412)	21:04	21:38
9	08:31			08:02			08:13	07:11		19:47 (412)	06:20	05:52
	17:16			18:01			19:41	20:25	14	20:01 (412)	21:06	21:39
10	08:31			08:00		17:30 (411)	08:11	07:09		19:46 (412)	06:18	05:51
	17:17			18:01	6	17:36 (411)	19:43	20:26	18	20:04 (412)	21:07	21:40
11	08:31			07:59		17:26 (411)	08:09	07:07		19:45 (412)	06:17	05:51
	17:18			18:02	12	17:38 (411)	19:44	20:27	20	20:05 (412)	21:08	21:41
12	08:30			07:57		17:24 (411)	08:07	07:06		19:43 (412)	06:16	05:51
	17:20			18:04	15	17:39 (411)	19:46	20:29	23	20:06 (412)	21:10	21:41
13	08:30			07:55		17:23 (411)	08:05	07:04		19:43 (412)	06:14	05:51
	17:21			18:05	18	17:41 (411)	19:47	20:30	24	20:07 (412)	21:11	21:42
14	08:29			07:54		17:22 (411)	08:03	07:02		19:42 (412)	06:13	05:51
	17:22			18:07	21	17:43 (411)	19:48	20:32	26	20:08 (412)	21:12	21:42
15	08:29			07:52		17:22 (411)	08:01	07:00		19:41 (412)	06:12	05:51
	17:23			18:08	23	17:45 (411)	19:50	20:33	26	20:07 (412)	21:13	21:43
16	08:28			07:51		17:21 (411)	07:59	06:58		19:41 (412)	06:11	05:50
	17:25			18:10	25	17:46 (411)	19:51	20:34	26	20:07 (412)	21:15	21:43
17	08:27			07:49		17:20 (411)	07:57	06:56		19:42 (412)	06:09	05:50
	17:26			18:11	26	17:46 (411)	19:53	20:36	25	20:07 (412)	21:16	21:44
18	08:27			07:47		17:19 (411)	07:55	06:54		19:42 (412)	06:08	05:51
	17:28			18:13	27	17:46 (411)	19:54	20:37	24	20:06 (412)	21:17	21:44
19	08:26			07:46		17:20 (411)	07:53	06:53		19:42 (412)	06:07	05:51
	17:29			18:14	27	17:47 (411)	19:56	20:39	23	20:05 (412)	21:18	21:45
20	08:25			07:44		17:20 (411)	07:51	06:51		19:42 (412)	06:06	05:51
	17:30			18:16	27	17:47 (411)	19:57	20:40	22	20:04 (412)	21:20	21:45
21	08:24		17:01 (410)	07:42		17:20 (411)	07:49	06:49		19:43 (412)	06:05	05:51
	17:32	2	17:03 (410)	18:18	26	17:46 (411)	19:58	20:41	19	20:02 (412)	21:21	21:45
22	08:23		17:00 (410)	07:40		17:20 (411)	07:47	06:47		19:45 (412)	06:04	05:51
	17:33	4	17:04 (410)	18:19	26	17:46 (411)	20:00	20:43	17	20:02 (412)	21:22	21:45
23	08:22		16:59 (410)	07:39		17:21 (411)	07:45	06:45		19:46 (412)	06:03	05:51
	17:35	7	17:06 (410)	18:21	25	17:46 (411)	20:01	20:44	13	19:59 (412)	21:23	21:46
24	08:21		16:59 (410)	07:37		17:21 (411)	07:43	06:44		19:49 (412)	06:02	05:52
	17:36	9	17:08 (410)	18:22	24	17:45 (411)	20:03	20:45	7	19:56 (412)	21:24	21:46
25	08:20		16:58 (410)	07:35		17:22 (411)	07:41	06:42			06:01	05:52
	17:38	11	17:09 (410)	18:24	21	17:43 (411)	20:04	20:47			21:25	21:46
26	08:19		16:58 (410)	07:33		17:23 (411)	07:39	06:40			06:00	05:52
	17:39	13	17:11 (410)	18:25	19	17:42 (411)	20:05	20:48			21:26	21:46
27	08:18		16:58 (410)	07:31		17:25 (411)	07:37	06:38			05:59	05:53
	17:41	15	17:13 (410)	18:27	15	17:40 (411)	20:07	20:49			21:27	21:46
28	08:17		16:58 (410)	07:30		17:28 (411)	07:35	06:37			05:58	05:53
	17:42	17	17:15 (410)	18:28	8	17:36 (411)	20:08	20:51			21:29	21:46
29	08:16		16:59 (410)				07:33	06:35			05:58	05:54
	17:44	17	17:16 (410)				20:09	20:52			21:30	21:46
30	08:15		16:58 (410)				07:31	06:33			05:57	05:54
	17:45	19	17:17 (410)				20:11	20:54			21:31	21:46
31	08:14		16:59 (410)				07:29				05:56	
	17:47	20	17:19 (410)				20:12				21:32	
Potential sun hours	279			287			368	407			466	475
Total, worst case		134			485				345			
Sun reduction		0.55			0.50				0.59			
Oper. time red.		0.98			0.98				0.98			
Wind dir. red.		0.59			0.61				0.71			
Total reduction		0.31			0.29				0.41			
Total, real		42			143				141			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR005 - SR005

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	July	August		September		October		November		December
1	05:55	06:25		07:05	19:44 (412)	07:44		07:28		17:00 (411) 08:11
	21:46	21:21		20:29	20 20:04 (412)	19:29		17:31	5	17:05 (411) 16:59
2	05:55	06:26		07:06	19:44 (412)	07:46		07:30		08:12
	21:45	21:20		20:28	18 20:02 (412)	19:27		17:30		16:59
3	05:56	06:27		07:07	19:45 (412)	07:47		07:31		08:13
	21:45	21:19		20:26	14 19:59 (412)	19:25		17:28		16:59
4	05:57	06:28		07:09	19:47 (412)	07:48		07:33		16:38 (410) 08:15
	21:45	21:17		20:24	11 19:58 (412)	19:23		17:27	3	16:41 (410) 16:58
5	05:57	06:30		07:10	19:49 (412)	07:50		07:34		16:35 (410) 08:16
	21:45	21:16		20:22	7 19:56 (412)	19:22		17:25	10	16:45 (410) 16:58
6	05:58	06:31		07:11		07:51		07:36		16:32 (410) 08:17
	21:44	21:14		20:20		19:20		17:24	14	16:46 (410) 16:58
7	05:59	06:32		07:13		07:53		07:37		16:32 (410) 08:18
	21:44	21:13		20:18		19:18		17:22	16	16:48 (410) 16:57
8	05:59	06:34		07:14		07:54		07:39		16:31 (410) 08:19
	21:43	21:11		20:16		19:16		17:21	18	16:49 (410) 16:57
9	06:00	06:35		07:15		07:55		07:40		16:30 (410) 08:20
	21:43	21:10		20:14		19:14		17:20	19	16:49 (410) 16:57
10	06:01	06:36		07:17		07:57		07:42		16:30 (410) 08:21
	21:43	21:08		20:12		19:12		17:18	20	16:50 (410) 16:57
11	06:02	06:37		07:18		07:58		07:43		16:30 (410) 08:22
	21:42	21:07		20:10		19:10		17:17	20	16:50 (410) 16:57
12	06:03	06:39		07:19		07:59		07:45		16:30 (410) 08:23
	21:41	21:05		20:08		19:08		17:16	19	16:49 (410) 16:57
13	06:04	06:40		07:21		08:01		07:46		16:31 (410) 08:24
	21:41	21:04		20:06		19:06		17:15	17	16:48 (410) 16:57
14	06:05	06:41		07:22		08:02	18:00 (411)	07:48		16:30 (410) 08:25
	21:40	21:02		20:04		19:04	11 18:11 (411)	17:14	16	16:46 (410) 16:57
15	06:06	06:43		07:23		08:04	17:56 (411)	07:49		16:31 (410) 08:25
	21:39	21:00		20:02		19:02	17 18:13 (411)	17:12	15	16:46 (410) 16:57
16	06:07	06:44		07:24		08:05	17:55 (411)	07:51		16:31 (410) 08:26
	21:39	20:59		20:00		19:00	20 18:15 (411)	17:11	13	16:44 (410) 16:58
17	06:08	06:45		07:26		08:06	17:53 (411)	07:52		16:32 (410) 08:27
	21:38	20:57		19:58		18:57	22 18:15 (411)	17:10	11	16:43 (410) 16:58
18	06:09	06:47		07:27		08:08	17:52 (411)	07:53		16:33 (410) 08:28
	21:37	20:55		19:56		18:55	24 18:16 (411)	17:09	9	16:42 (410) 16:58
19	06:10	06:48	19:55 (412)	07:28		08:09	17:51 (411)	07:55		16:34 (410) 08:28
	21:36	20:53	8 20:03 (412)	19:54		18:53	25 18:16 (411)	17:08	7	16:41 (410) 16:59
20	06:11	06:49	19:52 (412)	07:30		08:11	17:51 (411)	07:56		16:35 (410) 08:29
	21:35	20:52	13 20:05 (412)	19:52		18:51	26 18:17 (411)	17:07	4	16:39 (410) 16:59
21	06:12	06:50	19:49 (412)	07:31		08:12	17:50 (411)	07:58		16:37 (410) 08:29
	21:34	20:50	18 20:07 (412)	19:50		18:49	27 18:17 (411)	17:06	2	16:39 (410) 16:59
22	06:13	06:52	19:48 (412)	07:32		08:14	17:50 (411)	07:59		08:30
	21:33	20:48	19 20:07 (412)	19:48		18:48	27 18:17 (411)	17:05		17:00
23	06:14	06:53	19:47 (412)	07:34		08:15	17:49 (411)	08:00		08:30
	21:32	20:46	22 20:09 (412)	19:46		18:46	28 18:17 (411)	17:05		17:00
24	06:15	06:54	19:46 (412)	07:35		08:17	17:50 (411)	08:02		08:31
	21:31	20:44	23 20:09 (412)	19:44		18:44	27 18:17 (411)	17:04		17:01
25	06:16	06:56	19:45 (412)	07:36		08:18	17:50 (411)	08:03		08:31
	21:30	20:43	24 20:09 (412)	19:42		18:43	26 18:16 (411)	17:03		17:02
26	06:18	06:57	19:44 (412)	07:38		08:20	17:50 (411)	08:05		08:32
	21:29	20:41	25 20:09 (412)	19:39		18:41	25 18:15 (411)	17:02		17:02
27	06:19	06:58	19:44 (412)	07:39		08:21	17:51 (411)	08:06		08:32
	21:28	20:39	26 20:10 (412)	19:37		18:39	23 18:14 (411)	17:02		17:03
28	06:20	07:00	19:43 (412)	07:40		08:22	17:52 (411)	08:07		08:32
	21:27	20:37	26 20:09 (412)	19:35		18:38	20 18:12 (411)	17:01		17:04
29	06:21	07:01	19:43 (412)	07:42		08:24	17:53 (411)	08:08		08:32
	21:25	20:35	25 20:08 (412)	19:33		18:36	18 18:11 (411)	17:00		17:04
30	06:22	07:02	19:43 (412)	07:43		08:25	17:54 (411)	08:10		08:32
	21:24	20:33	24 20:07 (412)	19:31		18:34	14 18:08 (411)	17:00		17:05
31	06:24	07:04	19:43 (412)			08:27	17:57 (411)			08:33
	21:23	20:31	23 20:06 (412)			18:33	10 18:07 (411)			17:06
Potential sun hours	480	441		378		338		282		266
Total, worst case		276		70		390		238		
Sun reduction		0.73		0.69		0.52		0.43		
Oper. time red.		0.98		0.98		0.98		0.98		
Wind dir. red.		0.71		0.71		0.61		0.59		
Total reduction		0.50		0.48		0.31		0.24		
Total, real		139		33		121		58		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR006 - SR006

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:12	07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:44	07:28	08:11
	17:07	17:48	18:30	20:14	20:55	21:32	21:46	21:21	20:29	19:29	17:31	17:00
2	08:33	08:11	07:26	07:25	06:30	05:55	05:55	06:26	07:06	07:46	07:30	08:12
	17:08	17:50	18:31	20:15	20:56	21:33	21:45	21:20	20:28	19:28	17:30	16:59
3	08:33	08:10	07:24	07:23	06:29	05:54	05:56	06:27	07:08	07:47	07:31	08:13
	17:09	17:51	18:33	20:16	20:58	21:34	21:45	21:19	20:26	19:26	17:28	16:59
4	08:33	08:09	07:22	07:21	06:27	05:54	05:57	06:29	07:09	07:48	07:33	08:14
	17:10	17:53	18:34	20:18	20:59	21:35	21:45	21:17	20:24	19:24	17:27	16:58
5	08:32	08:07	07:20	07:19	06:26	05:53	05:57	06:30	07:10	07:50	07:34	08:16
	17:11	17:55	18:35	20:19	21:00	21:36	21:45	21:16	20:22	19:22	17:25	16:58
6	08:32	08:06	07:18	07:17	06:24	05:53	05:58	06:31	07:11	07:51	07:36	08:17
	17:13	17:56	18:37	20:21	21:02	21:37	21:44	21:14	20:20	19:20	17:24	16:58
7	08:32	08:04	07:16	07:15	06:23	05:52	05:59	06:32	07:13	07:53	07:37	08:18
	17:14	17:58	18:38	20:22	21:03	21:38	21:44	21:13	20:18	19:18	17:23	16:58
8	08:32	08:03	08:14	07:13	06:21	05:52	06:00	06:34	07:14	07:54	07:39	08:19
	17:15	17:59	18:40	20:23	21:04	21:38	21:43	21:11	20:16	19:16	17:21	16:57
9	08:31	08:02	08:13	07:11	06:20	05:52	06:00	06:35	07:15	07:55	07:40	08:20
	17:16	18:01	19:41	20:25	21:06	21:39	21:43	21:10	20:14	19:14	17:20	16:57
10	08:31	08:00	08:11	07:09	06:18	05:51	06:01	06:36	07:17	07:57	07:42	08:21
	17:17	18:01	19:43	20:26	21:07	21:40	21:42	21:08	20:12	19:12	17:19	16:57
11	08:31	07:59	08:09	07:08	06:17	05:51	06:02	06:38	07:18	07:58	07:43	08:22
	17:18	18:02	19:44	20:27	21:08	21:40	21:42	21:07	20:10	19:10	17:17	16:57
12	08:30	07:57	08:07	07:06	06:16	05:51	06:03	06:39	07:19	07:59	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:41	21:41	21:05	20:08	19:08	17:16	16:57
13	08:30	07:55	08:05	07:04	06:14	05:51	06:04	06:40	07:21	08:01	07:46	08:24
	17:21	18:05	19:47	20:30	21:11	21:42	21:41	21:04	20:06	19:06	17:15	16:57
14	08:29	07:54	08:03	07:02	06:13	05:51	06:05	06:41	07:22	08:02	07:48	08:24
	17:22	18:07	19:48	20:32	21:12	21:42	21:40	21:02	20:04	19:04	17:14	16:57
15	08:29	07:52	08:01	07:00	06:12	05:51	06:06	06:43	07:23	08:04	07:49	08:25
	17:24	18:08	19:50	20:33	21:13	21:43	21:39	21:00	20:02	19:02	17:13	16:58
16	08:28	07:51	07:59	06:58	06:11	05:51	06:07	06:44	07:24	08:05	07:51	08:26
	17:25	18:10	19:51	20:34	21:15	21:43	21:38	20:59	20:00	19:00	17:11	16:58
17	08:27	07:49	07:57	06:56	06:09	05:51	06:08	06:45	07:26	08:06	07:52	08:27
	17:26	18:11	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:10	16:58
18	08:27	07:47	07:55	06:54	06:08	05:51	06:09	06:47	07:27	08:08	07:53	08:27
	17:28	18:13	19:54	20:37	21:17	21:44	21:37	20:55	19:56	18:55	17:09	16:58
19	08:26	07:46	07:53	06:53	06:07	05:51	06:10	06:48	07:28	08:09	07:55	08:28
	17:29	18:15	19:56	20:38	21:18	21:44	21:36	20:53	19:54	18:53	17:08	16:59
20	08:25	07:44	07:51	06:51	06:06	05:51	06:11	06:49	07:30	08:11	07:56	08:29
	17:30	18:16	19:57	20:40	21:20	21:45	21:35	20:52	19:52	18:51	17:07	16:59
21	08:24	07:42	07:49	06:49	06:05	05:51	06:12	06:51	07:31	08:12	07:58	08:29
	17:32	18:18	19:58	20:41	21:21	21:45	21:34	20:50	19:50	18:50	17:06	16:59
22	08:23	07:40	07:47	06:47	06:04	05:51	06:13	06:52	07:32	08:14	07:59	08:30
	17:33	18:19	20:00	20:43	21:22	21:45	21:33	20:48	19:48	18:48	17:06	17:00
23	08:22	07:39	07:45	06:45	06:03	05:51	06:14	06:53	07:34	08:15	08:00	08:30
	17:35	18:21	20:01	20:44	21:23	21:45	21:32	20:46	19:46	18:46	17:05	17:00
24	08:21	07:37	07:43	06:44	06:02	05:52	06:15	06:54	07:35	08:17	08:02	08:31
	17:36	18:22	20:03	20:45	21:24	21:46	21:31	20:44	19:44	18:44	17:04	17:01
25	08:20	07:35	07:41	06:42	06:01	05:52	06:16	06:56	07:36	08:18	08:03	08:31
	17:38	18:24	20:04	20:47	21:25	21:46	21:30	20:43	19:42	18:43	17:03	17:02
26	08:19	07:33	07:39	06:40	06:00	05:52	06:18	06:57	07:38	08:19	08:04	08:31
	17:39	18:25	20:05	20:48	21:26	21:46	21:29	20:41	19:40	18:41	17:02	17:02
27	08:18	07:31	07:37	06:39	05:59	05:53	06:19	06:58	07:39	08:21	08:06	08:32
	17:41	18:27	20:07	20:49	21:27	21:46	21:28	20:39	19:38	18:39	17:02	17:03
28	08:17	07:30	07:35	06:37	05:58	05:53	06:20	07:00	07:40	08:22	08:07	08:32
	17:42	18:28	20:08	20:51	21:28	21:46	21:26	20:37	19:36	18:38	17:01	17:04
29	08:16		07:33	06:35	05:58	05:54	06:21	07:01	07:42	08:24	08:08	08:32
	17:44		20:09	20:52	21:30	21:46	21:25	20:35	19:33	18:36	17:01	17:05
30	08:15		07:31	06:34	05:57	05:54	06:22	07:02	07:43	08:25	08:10	08:32
	17:45		20:11	20:54	21:31	21:46	21:24	20:33	19:31	18:34	17:00	17:05
31	08:14		07:29		05:56		06:24	07:04		08:27		08:33
	17:47		20:12		21:32		21:23	20:31		18:33		17:06
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR007 - SR007

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February		March		April		May	June	July	August	September		October		November	December
1	08:33	08:13		07:28		07:50 (412)	07:27	07:48 (413)	06:32	05:56	05:55	06:25	07:05		07:44		08:28 (412)	07:28	08:11
	17:07	17:48		18:30	13	08:03 (412)	20:14	18 08:06 (413)	20:55	21:33	21:46	21:22	20:30		19:30	7	08:35 (412)	17:31	17:00
2	08:33	08:11		07:26		07:48 (412)	07:25	07:49 (413)	06:30	05:55	05:55	06:26	07:06		07:46		08:25 (412)	07:30	08:12
	17:08	17:50		18:31	16	08:04 (412)	20:15	16 08:05 (413)	20:56	21:34	21:46	21:20	20:28		19:28	12	08:37 (412)	17:30	16:59
3	08:33	08:10		07:24		07:46 (412)	07:23	07:49 (413)	06:29	05:54	05:56	06:27	07:08		07:47		08:22 (412)	07:31	08:13
	17:09	17:51		18:33	18	08:04 (412)	20:17	15 08:04 (413)	20:58	21:35	21:45	21:19	20:26		19:26	16	08:38 (412)	17:28	16:59
4	08:33	08:09		07:22		07:44 (412)	07:21	07:50 (413)	06:27	05:54	05:57	06:29	07:09		07:49		08:21 (412)	07:33	08:15
	17:10	17:53		18:34	21	08:05 (412)	20:18	13 08:03 (413)	20:59	21:35	21:45	21:17	20:24		19:24	19	08:40 (412)	17:27	16:58
5	08:33	08:07		07:20		07:43 (412)	07:19	07:51 (413)	06:26	05:53	05:57	06:30	07:10		07:50		08:20 (412)	07:34	08:16
	17:11	17:55		18:36	22	08:05 (412)	20:19	9 08:00 (413)	21:00	21:36	21:45	21:16	20:22		19:22	20	08:40 (412)	17:25	16:58
6	08:32	08:06		07:18		07:43 (412)	07:17		06:24	05:53	05:58	06:31	07:11		07:51		08:19 (412)	07:36	08:17
	17:13	17:56		18:37	22	08:05 (412)	20:21		21:02	21:37	21:44	21:15	20:20		19:20	21	08:40 (412)	17:24	16:58
7	08:32	08:05		07:17		07:43 (412)	07:15		06:23	05:52	05:59	06:32	07:13		07:53		08:19 (412)	07:37	08:18
	17:14	17:58		18:38	21	08:04 (412)	20:22		21:03	21:38	21:44	21:13	20:18	8	07:55 (413)		19:18	21	08:40 (412)	17:23	16:58
8	08:32	08:03		08:15		08:43 (412)	07:13		06:21	05:52	06:00	06:34	07:14		07:45 (413)		07:54		08:18 (412)	07:39	08:19
	17:15	17:59		18:40	20	09:03 (412)	20:23		21:04	21:39	21:44	21:12	20:16	13	07:58 (413)		19:16	22	08:40 (412)	17:21	16:57
9	08:32	08:02		08:13		08:43 (412)	07:11		06:20	05:52	06:00	06:35	07:15		07:43 (413)		07:55		08:18 (412)	07:40	08:20
	17:16	18:01		19:41	19	09:02 (412)	20:25		21:06	21:39	21:43	21:10	20:14	15	07:58 (413)		19:14	22	08:40 (412)	17:20	16:57
10	08:31	08:00		08:11		08:44 (412)	07:10		06:18	05:51	06:01	06:36	07:17		07:42 (413)		07:57		08:19 (412)	07:42	08:21
	17:17	18:01		19:43	17	09:01 (412)	20:26		21:07	21:40	21:43	21:09	20:12	16	07:58 (413)		19:12	20	08:39 (412)	17:19	16:57
11	08:31	07:59		08:09		08:45 (412)	07:08		06:17	05:51	06:02	06:38	07:18		07:41 (413)		07:58		08:21 (412)	07:43	08:22
	17:18	18:02		19:44	14	08:59 (412)	20:28		21:08	21:41	21:42	21:07	20:10	17	07:58 (413)		19:10	17	08:38 (412)	17:17	16:57
12	08:30	07:57		08:07		08:47 (412)	07:06		06:16	05:51	06:03	06:39	07:19		07:42 (413)		08:00		08:22 (412)	07:45	08:23
	17:20	18:04		19:46	10	08:57 (412)	20:29		21:10	21:41	21:41	21:05	20:08	17	07:59 (413)		19:08	15	08:37 (412)	17:16	16:57
13	08:30	07:56		08:05			07:04		06:14	05:51	06:04	06:40	07:21		07:43 (413)		08:01		08:23 (412)	07:46	08:24
	17:21	18:05		19:47			20:30		21:11	21:42	21:41	21:04	20:06	15	07:58 (413)		19:06	12	08:35 (412)	17:15	16:57
14	08:29	07:54		08:03			07:02		06:13	05:51	06:05	06:41	07:22		07:44 (413)		08:02		08:25 (412)	07:48	08:25
	17:22	18:07		19:49			20:32		21:12	21:42	21:40	21:02	20:04	13	07:57 (413)		19:04	8	08:33 (412)	17:14	16:57
15	08:29	07:52		08:01			07:00		06:12	05:51	06:06	06:43	07:23		07:46 (413)		08:04			07:49	08:25
	17:24	18:08		19:50			20:33		21:14	21:43	21:39	21:00	20:02	11	07:57 (413)		19:02			17:13	16:
16	08:28	07:51		07:59			06:58		06:11	05:51	06:07	06:44	07:25		07:47 (413)		08:05			07:51	08:
	17:25	18:10		19:51			20:34		21:15	21:43	21:39	20:59	20:00	8	07:55 (413)		19:00			17:11	16:
17	08:27	07:49		07:57			06:56		06:09	05:51	06:08	06:45	07:26		07:48 (413)		08:07			07:52	08:
	17:26	18:12		19:53			20:36		21:16	21:44	21:38	20:57	19:58	5	07:53 (413)		18:57			17:10	16:
18	08:27	07:47		07:55			06:54		06:08	05:51	06:09	06:47	07:27				08:08			07:54	08:28
	17:28	18:13		19:54			20:37		21:17	21:44	21:37	20:55	19:56				18:55			17:09	16:58
19	08:26	07:46		07:53			06:53		06:07	05:51	06:10	06:48	07:28				08:09			07:55	08:28
	17:29	18:15		19:56			20:39		21:18	21:45	21:36	20:54	19:54				18:53			17:08	16:59
20	08:25	07:44		07:51			06:51		06:06	05:51	06:11	06:49	07:30				08:11			07:56	08:29
	17:30	18:16		19:57			20:40		21:20	21:45	21:35	20:52	19:52				18:51			17:07	16:59
21	08:24	07:42		07:49			06:49		06:05	05:51	06:12	06:51	07:31				08:12			07:58	08:29
	17:32	18:18		19:58			20:41		21:21	21:45	21:34	20:50	19:50				18:50			17:06	16:59
22	08:23	07:41		07:47			06:47		06:04	05:51	06:13	06:52	07:32				08:14			07:59	08:30
	17:33	18:19		20:00			20:43		21:22	21:45	21:33	20:48	19:48				18:48			17:06	17:00
23	08:22	07:39		07:45			06:45		06:03	05:51	06:14	06:53	07:34				08:15			08:01	08:30
	17:35	18:21		20:01			20:44		21:23	21:46	21:32	20:46	19:46				18:46			17:05	17:00
24	08:22	07:37		07:43			06:44		06:02	05:52	06:15	06:54	07:35				08:17			08:02	08:31
	17:36	18:22		20:03			20:46		21:24	21:46	21:31	20:45	19:44				18:44			17:04	17:01
25	08:21	07:35		07:41			06:42		06:01	05:52	06:16	06:56	07:36				08:18			08:03	08:31
	17:38	18:24		20:04			20:47		21:25	21:46	21:30	20:43	19:42				18:43			17:03	17:02
26	08:20	07:33		07:39		08:00 (413)	06:40		06:00	05:52	06:18	06:57	07:38				08:20			08:05	08:32
	17:39	18:25		20:05	4	08:04 (413)	20:48		21:27	21:46	21:29	20:41	19:40				18:41			17:02	17:02
27	08:18	07:32	07:53 (412)	07:37		07:58 (413)	06:39		05:59	05:53	06:19	06:58	07:39				08:21			08:06	08:32
	17:41	18:27	5 07:58 (412)	20:07	7	08:05 (413)	20:50		21:28	21:46	21:28	20:39	19:38				18:39			17:02	17:03
28	08:17	07:30	07:51 (412)	07:35		07:56 (413)	06:37		05:58	05:53	06:20	07:00	07:40				08:23			08:07	08:32
	17:42	18:28	10 08:01 (412)	20:08	10	08:06 (413)	20:51		21:29	21:46	21:27	20:37	19:36				18:38			17:01	17:04
29	08:16			07:33		07:54 (413)	06:35		05:58	05:54	06:21	07:01	07:42				08:24			08:09	08:32
	17:44			20:10	13	08:07 (413)	20:52		21:30	21:46	21:25	20:35	19:34				18:36			17:01	17:05
30	08:15			07:31		07:52 (413)	06:34		05:57	05:54	06:22	07:02	07:43				08:26			08:10	08:33
	17:45			20:11	15	08:07 (413)	20:54		21:31	21:46	21:24	20:33	19:32				18:34			17:00	17:05
31	08:14			07:29		07:50 (413)			05:56		06:24	07:04					08:27				08:33
	17:47			20:12	17	08:07 (413)			21:32		21:23	20:31					18:33				17:06
Potential sun hours	279	287		368			407		466	475	480	441	378		338			282		266	
Total, worst case			15			279		71						138		232					
Sun reduction			0.50			0.63		0.59						0.69		0.52					
Oper. time red.			0.98			0.98		0.98						0.98		0.98					
Wind dir. red.			0.72			0.71		0.69						0.69		0.72					
Total reduction			0.35			0.44		0.40						0.47		0.37					
Total, real			5			123		29						65		86					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR008 - SR008

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:44	07:28	08:11
	17:08	17:48	18:30	20:14	20:55	21:33	21:46	21:21	20:30	19:30	17:31	17:00
2	08:33	08:11	07:26	07:25	06:31	05:55	05:56	06:26	07:06	07:46	07:30	08:12
	17:09	17:50	18:31	20:15	20:56	21:33	21:45	21:20	20:28	19:28	17:30	16:59
3	08:33	08:10	07:24	07:23	06:29	05:55	05:56	06:27	07:08	07:47	07:31	08:13
	17:10	17:52	18:33	20:16	20:58	21:34	21:45	21:19	20:26	19:26	17:28	16:59
4	08:33	08:09	07:22	07:21	06:27	05:54	05:57	06:29	07:09	07:49	07:33	08:15
	17:11	17:53	18:34	20:18	20:59	21:35	21:45	21:17	20:24	19:24	17:27	16:59
5	08:32	08:07	07:20	07:19	06:26	05:54	05:58	06:30	07:10	07:50	07:34	08:16
	17:12	17:55	18:36	20:19	21:00	21:36	21:45	21:16	20:22	19:22	17:26	16:58
6	08:32	08:06	07:18	07:17	06:24	05:53	05:58	06:31	07:12	07:51	07:36	08:17
	17:13	17:56	18:37	20:21	21:02	21:37	21:44	21:14	20:20	19:20	17:24	16:58
7	08:32	08:04	07:17	07:15	06:23	05:53	05:59	06:33	07:13	07:53	07:37	08:18
	17:14	17:58	18:38	20:22	21:03	21:38	21:44	21:13	20:18	19:18	17:23	16:58
8	08:32	08:03	08:15	07:13	06:21	05:52	06:00	06:34	07:14	07:54	07:39	08:19
	17:15	17:59	18:40	20:23	21:04	21:38	21:43	21:11	20:16	19:16	17:21	16:58
9	08:31	08:02	08:13	07:11	06:20	05:52	06:01	06:35	07:15	07:55	07:40	08:20
	17:16	18:01	19:41	20:25	21:06	21:39	21:43	21:10	20:14	19:14	17:20	16:57
10	08:31	08:00	08:11	07:10	06:19	05:52	06:01	06:36	07:17	07:57	07:42	08:21
	17:17	18:01	19:43	20:26	21:07	21:40	21:42	21:08	20:12	19:12	17:19	16:57
11	08:31	07:59	08:09	07:08	06:17	05:51	06:02	06:38	07:18	07:58	07:43	08:22
	17:19	18:02	19:44	20:28	21:08	21:41	21:42	21:07	20:10	19:10	17:17	16:57
12	08:30	07:57	08:07	07:06	06:16	05:51	06:03	06:39	07:19	08:00	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:41	21:41	21:05	20:08	19:08	17:16	16:57
13	08:30	07:55	08:05	07:04	06:15	05:51	06:04	06:40	07:21	08:01	07:46	08:24
	17:21	18:05	19:47	20:30	21:11	21:42	21:41	21:04	20:06	19:06	17:15	16:57
14	08:29	07:54	08:03	07:02	06:13	05:51	06:05	06:42	07:22	08:02	07:48	08:24
	17:22	18:07	19:49	20:32	21:12	21:42	21:40	21:02	20:04	19:04	17:14	16:58
15	08:29	07:52	08:01	07:00	06:12	05:51	06:06	06:43	07:23	08:04	07:49	08:25
	17:24	18:09	19:50	20:33	21:13	21:43	21:39	21:00	20:02	19:02	17:13	16:58
16	08:28	07:51	07:59	06:58	06:11	05:51	06:07	06:44	07:25	08:05	07:51	08:26
	17:25	18:10	19:51	20:34	21:15	21:43	21:39	20:59	20:00	19:01	17:12	16:58
17	08:27	07:49	07:57	06:56	06:10	05:51	06:08	06:45	07:26	08:07	07:52	08:27
	17:26	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11	16:58
18	08:27	07:47	07:55	06:55	06:08	05:51	06:09	06:47	07:27	08:08	07:53	08:27
	17:28	18:13	19:54	20:37	21:17	21:44	21:37	20:55	19:56	18:55	17:09	16:58
19	08:26	07:46	07:53	06:53	06:07	05:51	06:10	06:48	07:29	08:09	07:55	08:28
	17:29	18:15	19:56	20:39	21:18	21:44	21:36	20:53	19:54	18:53	17:08	16:59
20	08:25	07:44	07:51	06:51	06:06	05:51	06:11	06:49	07:30	08:11	07:56	08:29
	17:31	18:16	19:57	20:40	21:20	21:45	21:35	20:52	19:52	18:51	17:08	16:59
21	08:24	07:42	07:49	06:49	06:05	05:51	06:12	06:51	07:31	08:12	07:58	08:29
	17:32	18:18	19:58	20:41	21:21	21:45	21:34	20:50	19:50	18:50	17:07	17:00
22	08:23	07:40	07:47	06:47	06:04	05:51	06:13	06:52	07:32	08:14	07:59	08:30
	17:33	18:19	20:00	20:43	21:22	21:45	21:33	20:48	19:48	18:48	17:06	17:00
23	08:22	07:39	07:45	06:46	06:03	05:52	06:14	06:53	07:34	08:15	08:00	08:30
	17:35	18:21	20:01	20:44	21:23	21:46	21:32	20:46	19:46	18:46	17:05	17:01
24	08:21	07:37	07:43	06:44	06:02	05:52	06:15	06:55	07:35	08:17	08:02	08:31
	17:36	18:22	20:03	20:45	21:24	21:46	21:31	20:45	19:44	18:44	17:04	17:01
25	08:20	07:35	07:41	06:42	06:01	05:52	06:17	06:56	07:36	08:18	08:03	08:31
	17:38	18:24	20:04	20:47	21:25	21:46	21:30	20:43	19:42	18:43	17:03	17:02
26	08:19	07:33	07:39	06:40	06:00	05:53	06:18	06:57	07:38	08:20	08:05	08:31
	17:39	18:25	20:05	20:48	21:26	21:46	21:29	20:41	19:40	18:41	17:03	17:03
27	08:18	07:32	07:37	06:39	05:59	05:53	06:19	06:58	07:39	08:21	08:06	08:32
	17:41	18:27	20:07	20:50	21:27	21:46	21:28	20:39	19:38	18:39	17:02	17:03
28	08:17	07:30	07:35	06:37	05:59	05:53	06:20	07:00	07:40	08:23	08:07	08:32
	17:42	18:28	20:08	20:51	21:29	21:46	21:27	20:37	19:36	18:38	17:01	17:04
29	08:16		07:33	06:35	05:58	05:54	06:21	07:01	07:42	08:24	08:08	08:32
	17:44		20:10	20:52	21:30	21:46	21:25	20:35	19:34	18:36	17:01	17:05
30	08:15		07:31	06:34	05:57	05:54	06:23	07:02	07:43	08:25	08:10	08:32
	17:45		20:11	20:54	21:31	21:46	21:24	20:33	19:32	18:35	17:00	17:06
31	08:14		07:29		05:56		06:24	07:04		08:27		08:33
	17:47		20:12		21:32		21:23	20:31		18:33		17:06
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR009 - SR009

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:45	07:29	08:11
	17:08	17:48	18:30	20:14	20:55	21:33	21:46	21:22	20:30	19:30	17:31	17:00
2	08:33	08:11	07:26	07:25	06:30	05:55	05:55	06:26	07:06	07:46	07:30	08:12
	17:08	17:50	18:31	20:15	20:56	21:34	21:46	21:20	20:28	19:28	17:30	16:59
3	08:33	08:10	07:24	07:23	06:29	05:54	05:56	06:27	07:08	07:47	07:32	08:14
	17:09	17:52	18:33	20:17	20:58	21:35	21:45	21:19	20:26	19:26	17:28	16:59
4	08:33	08:09	07:22	07:21	06:27	05:54	05:57	06:29	07:09	07:49	07:33	08:15
	17:10	17:53	18:34	20:18	20:59	21:35	21:45	21:17	20:24	19:24	17:27	16:58
5	08:33	08:07	07:20	07:19	06:26	05:53	05:57	06:30	07:10	07:50	07:34	08:16
	17:12	17:55	18:36	20:19	21:01	21:36	21:45	21:16	20:22	19:22	17:25	16:58
6	08:32	08:06	07:18	07:17	06:24	05:53	05:58	06:31	07:12	07:51	07:36	08:17
	17:13	17:56	18:37	20:21	21:02	21:37	21:44	21:15	20:20	19:20	17:24	16:58
7	08:32	08:05	07:17	07:15	06:23	05:53	05:59	06:32	07:13	07:53	07:37	08:18
	17:14	17:58	18:39	20:22	21:03	21:38	21:44	21:13	20:18	19:18	17:23	16:58
8	08:32	08:03	08:15	07:13	06:21	05:52	06:00	06:34	07:14	07:54	07:39	08:19
	17:15	17:59	18:40	20:23	21:05	21:39	21:44	21:12	20:16	19:16	17:21	16:57
9	08:32	08:02	08:13	07:11	06:20	05:52	06:00	06:35	07:15	07:55	07:40	08:20
	17:16	18:01	19:41	20:25	21:06	21:39	21:43	21:10	20:14	19:14	17:20	16:57
10	08:31	08:00	08:11	07:10	06:19	05:52	06:01	06:36	07:17	07:57	07:42	08:21
	17:17	18:01	19:43	20:26	21:07	21:40	21:43	21:09	20:12	19:12	17:19	16:57
11	08:31	07:59	08:09	07:08	06:17	05:51	06:02	06:38	07:18	07:58	07:43	08:22
	17:18	18:02	19:44	20:28	21:08	21:41	21:42	21:07	20:10	19:10	17:17	16:57
12	08:30	07:57	08:07	07:06	06:16	05:51	06:03	06:39	07:19	08:00	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:41	21:41	21:05	20:08	19:08	17:16	16:57
13	08:30	07:56	08:05	07:04	06:14	05:51	06:04	06:40	07:21	08:01	07:46	08:24
	17:21	18:05	19:47	20:30	21:11	21:42	21:41	21:04	20:06	19:06	17:15	16:57
14	08:29	07:54	08:03	07:02	06:13	05:51	06:05	06:41	07:22	08:02	07:48	08:25
	17:22	18:07	19:49	20:32	21:12	21:42	21:40	21:02	20:04	19:04	17:14	16:57
15	08:29	07:52	08:01	07:00	06:12	05:51	06:06	06:43	07:23	08:04	07:49	08:25
	17:24	18:09	19:50	20:33	21:14	21:43	21:39	21:00	20:02	19:02	17:13	16:58
16	08:28	07:51	07:59	06:58	06:11	05:51	06:07	06:44	07:25	08:05	07:51	08:26
	17:25	18:10	19:51	20:35	21:15	21:43	21:39	20:59	20:00	19:01	17:12	16:58
17	08:27	07:49	07:57	06:56	06:10	05:51	06:08	06:45	07:26	08:07	07:52	08:27
	17:26	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:10	16:58
18	08:27	07:47	07:55	06:55	06:08	05:51	06:09	06:47	07:27	08:08	07:54	08:28
	17:28	18:13	19:54	20:37	21:17	21:44	21:37	20:55	19:56	18:55	17:09	16:58
19	08:26	07:46	07:53	06:53	06:07	05:51	06:10	06:48	07:29	08:10	07:55	08:28
	17:29	18:15	19:56	20:39	21:19	21:45	21:36	20:54	19:54	18:53	17:08	16:59
20	08:25	07:44	07:51	06:51	06:06	05:51	06:11	06:49	07:30	08:11	07:56	08:29
	17:31	18:16	19:57	20:40	21:20	21:45	21:35	20:52	19:52	18:51	17:07	16:59
21	08:24	07:42	07:49	06:49	06:05	05:51	06:12	06:51	07:31	08:12	07:58	08:29
	17:32	18:18	19:58	20:41	21:21	21:45	21:34	20:50	19:50	18:50	17:07	17:00
22	08:23	07:41	07:47	06:47	06:04	05:51	06:13	06:52	07:33	08:14	07:59	08:30
	17:33	18:19	20:00	20:43	21:22	21:46	21:33	20:48	19:48	18:48	17:06	17:00
23	08:23	07:39	07:45	06:46	06:03	05:52	06:14	06:53	07:34	08:15	08:01	08:31
	17:35	18:21	20:01	20:44	21:23	21:46	21:32	20:46	19:46	18:46	17:05	17:01
24	08:22	07:37	07:43	06:44	06:02	05:52	06:15	06:55	07:35	08:17	08:02	08:31
	17:36	18:22	20:03	20:46	21:24	21:46	21:31	20:45	19:44	18:44	17:04	17:01
25	08:21	07:35	07:41	06:42	06:01	05:52	06:17	06:56	07:36	08:18	08:03	08:31
	17:38	18:24	20:04	20:47	21:25	21:46	21:30	20:43	19:42	18:43	17:03	17:02
26	08:20	07:33	07:39	06:40	06:00	05:53	06:18	06:57	07:38	08:20	08:05	08:32
	17:39	18:25	20:05	20:48	21:27	21:46	21:29	20:41	19:40	18:41	17:03	17:02
27	08:18	07:32	07:37	06:39	05:59	05:53	06:19	06:58	07:39	08:21	08:06	08:32
	17:41	18:27	20:07	20:50	21:28	21:46	21:28	20:39	19:38	18:39	17:02	17:03
28	08:17	07:30	07:35	06:37	05:59	05:53	06:20	07:00	07:40	08:23	08:07	08:32
	17:42	18:28	20:08	20:51	21:29	21:46	21:27	20:37	19:36	18:38	17:01	17:04
29	08:16		07:33	06:35	05:58	05:54	06:21	07:01	07:42	08:24	08:09	08:32
	17:44		20:10	20:52	21:30	21:46	21:25	20:35	19:34	18:36	17:01	17:05
30	08:15		07:31	06:34	05:57	05:54	06:22	07:02	07:43	08:26	08:10	08:33
	17:45		20:11	20:54	21:31	21:46	21:24	20:33	19:32	18:35	17:00	17:05
31	08:14		07:29		05:56		06:24	07:04		08:27		08:33
	17:47		20:12		21:32		21:23	20:32		18:33		17:06
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR010 - SR010

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June		
1	08:33		09:24 (T007)	08:13			07:28			07:27			06:32		19:46 (421)	05:56		19:55 (421)
	17:08	8	09:32 (T007)	17:49			18:30			20:14			20:55	26	20:12 (421)	21:33	11	20:06 (421)
2	08:33		09:26 (T007)	08:11			07:26			07:25			06:31		19:45 (421)	05:55		19:57 (421)
	17:09	5	09:31 (T007)	17:50			18:31			20:15			20:56	29	20:14 (421)	21:33	7	20:04 (421)
3	08:33			08:10			07:24			07:23			06:29		19:43 (421)	05:55		
	17:10			17:52			18:33			20:17			20:58	31	20:14 (421)	21:34		
4	08:33			08:09			07:22			07:21			06:28		19:43 (421)	05:54		
	17:11			17:53			18:34			20:18			20:59	32	20:15 (421)	21:35		
5	08:32			08:07			07:20			07:19			06:26		19:42 (421)	05:54		
	17:12			17:55			18:36			20:19			21:00	33	20:15 (421)	21:36		
6	08:32			08:06			07:19			07:17			06:25		19:42 (421)	05:53		
	17:13			17:56			18:37			20:21			21:02	34	20:16 (421)	21:37		
7	08:32			08:05			07:17			07:15			06:23		19:42 (421)	05:53		
	17:14			17:58			18:39			20:22			21:03	35	20:17 (421)	21:38		
8	08:32			08:03			08:15			07:14			06:22		19:41 (421)	05:52		
	17:15			17:59			18:40			20:24			21:04	35	20:16 (421)	21:38		
9	08:31			08:02			08:13		08:34 (T020)	07:12			06:20		19:41 (421)	05:52		
	17:16			18:01			19:42	5	08:39 (T020)	20:25			21:06	36	20:17 (421)	21:39		
10	08:31			08:00			08:11		08:32 (T020)	07:10			06:19		19:41 (421)	05:52		
	17:18			18:01			19:43	9	08:41 (T020)	20:26			21:07	36	20:17 (421)	21:40		
11	08:31			07:59			08:09		08:30 (T020)	07:08			06:17		19:40 (421)	05:52		
	17:19			18:03			19:44	12	08:42 (T020)	20:28			21:08	36	20:16 (421)	21:41		
12	08:30			07:57			08:07		08:28 (T020)	07:06			06:16		19:40 (421)	05:51		
	17:20			18:04			19:46	14	08:42 (T020)	20:29			21:10	37	20:17 (421)	21:41		
13	08:30			07:56			08:05		08:26 (T020)	07:04			06:15		19:41 (421)	05:51		
	17:21			18:06			19:47	16	08:42 (T020)	20:30			21:11	36	20:17 (421)	21:42		
14	08:29			07:54			08:03		08:24 (T020)	07:02			06:13		19:41 (421)	05:51		
	17:23			18:07			19:49	18	08:42 (T020)	20:32			21:12	36	20:17 (421)	21:42		
15	08:29			07:52			08:01		08:22 (T020)	07:00			06:12		19:40 (421)	05:51		
	17:24			18:09			19:50	20	08:42 (T020)	20:33			21:13	36	20:16 (421)	21:43		
16	08:28			07:51			07:59		08:20 (T020)	06:58			06:11		19:41 (421)	05:51		
	17:25			18:10			19:52	22	08:42 (T020)	20:35			21:15	35	20:16 (421)	21:43		
17	08:27			07:49			07:57		08:20 (T020)	06:57			06:10		19:41 (421)	05:51		
	17:27			18:12			19:53	21	08:41 (T020)	20:36			21:16	35	20:16 (421)	21:44		
18	08:27			07:47			07:55		08:20 (T020)	06:55			06:09		19:42 (421)	05:51		
	17:28			18:13			19:54	20	08:40 (T020)	20:37			21:17	33	20:15 (421)	21:44		
19	08:26			07:46			07:53		08:21 (T020)	06:53			06:07		19:42 (421)	05:51		
	17:29			18:15			19:56	18	08:39 (T020)	20:39			21:18	33	20:15 (421)	21:45		
20	08:25			07:44			07:51		08:22 (T020)	06:51			06:06		19:43 (421)	05:51		
	17:31			18:16			19:57	15	08:37 (T020)	20:40			21:20	32	20:15 (421)	21:45		
21	08:24			07:42			07:49		08:24 (T020)	06:49			06:05		19:43 (421)	05:51		
	17:32			18:18			19:59	11	08:35 (T020)	20:41			21:21	31	20:14 (421)	21:45		
22	08:23			07:41			07:47			06:47			06:04		19:44 (421)	05:52		
	17:34			18:19			20:00			20:43			21:22	30	20:14 (421)	21:45		
23	08:22			07:39			07:45			06:46			06:03		19:44 (421)	05:52		
	17:35			18:21			20:01			20:44			21:23	29	20:13 (421)	21:46		
24	08:21			07:37			07:43			06:44			06:02		19:45 (421)	05:52		
	17:37			18:22			20:03			20:46			21:24	28	20:13 (421)	21:46		
25	08:20			07:35			07:41			06:42			06:01		19:47 (421)	05:52		
	17:38			18:24			20:04			20:47			21:25	26	20:13 (421)	21:46		
26	08:19			07:33			07:39			06:41			06:00		19:47 (421)	05:53		
	17:40			18:25			20:06			20:48			21:26	25	20:12 (421)	21:46		
27	08:18			07:32			07:37			06:39		19:55 (421)	06:00		19:48 (421)	05:53		
	17:41			18:27			20:07			20:50	10	20:05 (421)	21:28	23	20:11 (421)	21:46		
28	08:17			07:30			07:35			06:37		19:51 (421)	05:59		19:49 (421)	05:54		
	17:43			18:28			20:08			20:51	17	20:08 (421)	21:29	21	20:10 (421)	21:46		
29	08:16						07:33			06:36		19:49 (421)	05:58		19:51 (421)	05:54		
	17:44						20:10			20:52	21	20:10 (421)	21:30	19	20:10 (421)	21:46		
30	08:15						07:31			06:34		19:47 (421)	05:57		19:52 (421)	05:55		
	17:46						20:11			20:54	25	20:12 (421)	21:31	17	20:09 (421)	21:46		
31	08:14						07:29						05:57		19:53 (421)			
	17:47						20:12						21:32	14	20:07 (421)			
Potential sun hours	279			287			368			407			466			475		
Total, worst case		13						201			73			939			18	
Sun reduction		0.55						0.63			0.59			0.68			0.71	
Oper. time red.		0.98						0.98			0.98			0.98			0.98	
Wind dir. red.		0.72						0.71			0.72			0.72			0.72	
Total reduction		0.39						0.44			0.42			0.48			0.50	
Total, real		5						88			31			453			9	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 5820
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR010 - SR010

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October		November	December
1	05:55		06:25		19:51 (421)	07:05			08:07 (T020)	07:28	08:11	
	21:46		21:21	36	20:27 (421)	20:30	19:30	15	08:22 (T020)	17:32	17:00	
2	05:56		06:26		19:51 (421)	07:06	07:46		08:08 (T020)	07:30	08:12	
	21:45		21:20	36	20:27 (421)	20:28	19:28	13	08:21 (T020)	17:30	16:59	
3	05:56		06:28		19:50 (421)	07:08	07:47		08:09 (T020)	07:31	08:13	
	21:45		21:19	37	20:27 (421)	20:26	19:26	10	08:19 (T020)	17:29	16:59	
4	05:57		06:29		19:50 (421)	07:09	07:49		08:11 (T020)	07:33	08:15	
	21:45		21:17	36	20:26 (421)	20:24	19:24	7	08:18 (T020)	17:27	16:59	
5	05:58		06:30		19:51 (421)	07:10	07:50		08:12 (T020)	07:34	08:16	
	21:45		21:16	36	20:27 (421)	20:22	19:22	3	08:15 (T020)	17:26	16:58	
6	05:58		06:31		19:51 (421)	07:12	07:51			07:36	08:17	
	21:44		21:15	35	20:26 (421)	20:20	19:20			17:24	16:58	
7	05:59		06:33		19:51 (421)	07:13	07:53			07:37	08:18	
	21:44		21:13	34	20:25 (421)	20:18	19:18			17:23	16:58	
8	06:00		06:34		19:52 (421)	07:14	07:54			07:39	08:19	
	21:44		21:12	32	20:24 (421)	20:16	19:16			17:21	16:58	
9	06:01		06:35		19:53 (421)	07:16	07:55			07:40	08:20	
	21:43		21:10	32	20:25 (421)	20:14	19:14			17:20	16:58	
10	06:02	20:05 (421)	06:37		19:53 (421)	07:17	07:57			07:42	08:21	09:15 (T007)
	21:43	5 20:10 (421)	21:08	30	20:23 (421)	20:12	19:12			17:19	16:58	5 09:20 (T007)
11	06:02	20:03 (421)	06:38		19:54 (421)	07:18	07:58			07:43	08:22	09:14 (T007)
	21:42	10 20:13 (421)	21:07	28	20:22 (421)	20:10	19:10			17:18	16:57	8 09:22 (T007)
12	06:03	20:02 (421)	06:39		19:55 (421)	07:19	08:00			07:45	08:23	09:14 (T007)
	21:41	13 20:15 (421)	21:05	26	20:21 (421)	20:08	19:08			17:16	16:58	9 09:23 (T007)
13	06:04	20:01 (421)	06:40		19:55 (421)	07:21	08:01			07:46	08:24	09:14 (T007)
	21:41	15 20:16 (421)	21:04	24	20:19 (421)	20:06	19:06			17:15	16:58	10 09:24 (T007)
14	06:05	20:00 (421)	06:42		19:58 (421)	07:22	08:02			07:48	08:25	09:14 (T007)
	21:40	18 20:18 (421)	21:02	20	20:18 (421)	20:04	19:04			17:14	16:58	12 09:26 (T007)
15	06:06	19:59 (421)	06:43		20:00 (421)	07:23	08:04			07:49	08:25	09:14 (T007)
	21:39	20 20:19 (421)	21:00	15	20:15 (421)	20:02	19:03			17:13	16:58	13 09:27 (T007)
16	06:07	19:58 (421)	06:44		20:03 (421)	07:25	08:05			07:51	08:26	09:13 (T007)
	21:39	22 20:20 (421)	20:59	8	20:11 (421)	20:00	19:01			17:12	16:58	14 09:27 (T007)
17	06:08	19:57 (421)	06:46			07:26	08:07			07:52	08:27	09:14 (T007)
	21:38	24 20:21 (421)	20:57			19:58	18:57			17:11	16:58	14 09:28 (T007)
18	06:09	19:57 (421)	06:47			07:27	08:08			07:54	08:28	09:15 (T007)
	21:37	25 20:22 (421)	20:55			19:56	18:55			17:10	16:59	14 09:29 (T007)
19	06:10	19:56 (421)	06:48			07:29	08:10			07:55	08:28	09:14 (T007)
	21:36	27 20:23 (421)	20:54			19:54	18:53			17:09	16:59	15 09:29 (T007)
20	06:11	19:55 (421)	06:49			07:30	08:11			07:56	08:29	09:15 (T007)
	21:35	28 20:23 (421)	20:52			19:52	18:52			17:08	16:59	15 09:30 (T007)
21	06:12	19:55 (421)	06:51			07:31	08:12			07:58	08:29	09:16 (T007)
	21:34	29 20:24 (421)	20:50			19:50	18:50			17:07	17:00	15 09:31 (T007)
22	06:13	19:54 (421)	06:52			07:33	08:10 (T020)	08:14		07:59	08:30	09:16 (T007)
	21:33	31 20:25 (421)	20:48			19:48	9 08:19 (T020)	18:48		17:06	17:00	15 09:31 (T007)
23	06:15	19:54 (421)	06:53			07:34	08:07 (T020)	08:15		08:01	08:30	09:16 (T007)
	21:32	31 20:25 (421)	20:46			19:46	14 08:21 (T020)	18:46		17:05	17:01	15 09:31 (T007)
24	06:16	19:53 (421)	06:55			07:35	08:05 (T020)	08:17		08:02	08:31	09:17 (T007)
	21:31	33 20:26 (421)	20:45			19:44	17 08:22 (T020)	18:45		17:04	17:01	15 09:32 (T007)
25	06:17	19:53 (421)	06:56			07:37	08:04 (T020)	08:18		08:03	08:31	09:17 (T007)
	21:30	33 20:26 (421)	20:43			19:42	19 08:23 (T020)	18:43		17:04	17:02	15 09:32 (T007)
26	06:18	19:52 (421)	06:57			07:38	08:03 (T020)	08:20		08:05	08:32	09:18 (T007)
	21:29	34 20:26 (421)	20:41			19:40	20 08:23 (T020)	18:41		17:03	17:03	14 09:32 (T007)
27	06:19	19:52 (421)	06:59			07:39	08:02 (T020)	08:21		08:06	08:32	09:19 (T007)
	21:28	34 20:26 (421)	20:39			19:38	21 08:23 (T020)	18:40		17:02	17:03	14 09:33 (T007)
28	06:20	19:51 (421)	07:00			07:41	08:03 (T020)	08:23		08:07	08:32	09:20 (T007)
	21:27	35 20:26 (421)	20:37			19:36	21 08:24 (T020)	18:38		17:02	17:04	13 09:33 (T007)
29	06:22	19:51 (421)	07:01			07:42	08:04 (T020)	08:24		08:08	08:32	09:21 (T007)
	21:25	36 20:27 (421)	20:35			19:34	19 08:23 (T020)	18:36		17:01	17:05	12 09:33 (T007)
30	06:23	19:51 (421)	07:03			07:43	08:05 (T020)	08:26		08:10	08:32	09:21 (T007)
	21:24	36 20:27 (421)	20:33			19:32	17 08:22 (T020)	18:35		17:00	17:06	12 09:33 (T007)
31	06:24	19:51 (421)	07:04					08:27			08:33	09:22 (T007)
	21:23	36 20:27 (421)	20:32					18:33			17:07	10 09:32 (T007)
Potential sun hours	480		441		378			338		282	266	
Total, worst case		575		465		157			48			279
Sun reduction		0.75		0.73		0.69			0.52			0.43
Oper. time red.		0.98		0.98		0.98			0.98			0.98
Wind dir. red.		0.72		0.72		0.71			0.71			0.72
Total reduction		0.54		0.52		0.48			0.37			0.31
Total, real		309		240		76			18			85

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:

EAPC does not warrant, guarantee, or make any such representations regarding the contents of this report. EAPC cannot be held liable for erroneous results caused by errors or omissions in the delivered data, or inaccuracy, limitations, or malfunctioning of models or software used. For any claim whatsoever related to the subject matter of this report, the liability of EAPC for actual damages, regardless of the form of action, shall be limited to the total amount paid to EAPC for the services provided as part of this consultancy service.

Licensed user:

EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net

Calculated:

7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR011 - SR011

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January		February		March	April	May	June	July	August	September	October		November		December		
1	08:33		09:16 (424)	08:13		07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:45		07:29		08:11		09:02 (424)
	17:08	28	09:44 (424)	17:49		18:30	20:14	20:55	21:33	21:46	21:22	20:30	19:30		17:32		17:00	29	09:31 (424)
2	08:33		09:16 (424)	08:11		07:26	07:25	06:31	05:55	05:56	06:26	07:06	07:46		07:30		08:12		09:02 (424)
	17:09	29	09:45 (424)	17:50		18:31	20:15	20:57	21:34	21:46	21:20	20:28	19:28		17:30		16:59	29	09:31 (424)
3	08:33		09:17 (424)	08:10		07:24	07:23	06:29	05:55	05:56	06:28	07:08	07:47		07:32		08:14		09:03 (424)
	17:10	28	09:45 (424)	17:52		18:33	20:17	20:58	21:35	21:45	21:19	20:26	19:26		17:29		16:59	29	09:32 (424)
4	08:33		09:18 (424)	08:09		07:22	07:21	06:28	05:54	05:57	06:29	07:09	07:49		07:33		08:15		09:03 (424)
	17:11	28	09:46 (424)	17:53		18:34	20:18	20:59	21:35	21:45	21:17	20:24	19:24		17:27		16:59	29	09:32 (424)
5	08:33		09:18 (424)	08:07		07:20	07:19	06:26	05:54	05:58	06:30	07:10	07:50		07:35		08:16		09:04 (424)
	17:12	29	09:47 (424)	17:55		18:36	20:19	21:01	21:36	21:45	21:16	20:22	19:22		17:26		16:58	28	09:32 (424)
6	08:32		09:18 (424)	08:06		07:19	07:17	06:24	05:53	05:58	06:31	07:12	07:51		07:36		08:17		09:04 (424)
	17:13	29	09:47 (424)	17:56		18:37	20:21	21:02	21:37	21:44	21:15	20:20	19:20		17:24		16:58	29	09:33 (424)
7	08:32		09:18 (424)	08:05		07:17	07:16	06:23	05:53	05:59	06:33	07:13	07:53		07:37		08:18		09:04 (424)
	17:14	29	09:47 (424)	17:58		18:39	20:22	21:03	21:38	21:44	21:13	20:18	19:18		17:23		16:58	29	09:33 (424)
8	08:32		09:19 (424)	08:03		08:15	07:14	06:22	05:52	06:00	06:34	07:14	07:54		07:39		08:19		09:05 (424)
	17:15	29	09:48 (424)	17:59		18:40	20:24	21:05	21:39	21:44	21:12	20:16	19:16		17:21		16:58	28	09:33 (424)
9	08:32		09:19 (424)	08:02		08:13	07:12	06:20	05:52	06:01	06:35	07:16	07:56		07:40		08:20		09:05 (424)
	17:16	29	09:48 (424)	18:01		19:42	20:25	21:06	21:39	21:43	21:10	20:14	19:14		17:20		16:58	28	09:33 (424)
10	08:31		09:20 (424)	08:00		08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57		07:42		08:21		09:06 (424)
	17:17	29	09:49 (424)	18:01		19:43	20:26	21:07	21:40	21:43	21:09	20:12	19:12		17:19		16:57	28	09:34 (424)
11	08:31		09:20 (424)	07:59		08:09	07:08	06:17	05:52	06:02	06:38	07:18	07:58		07:43		08:22		09:06 (424)
	17:19	29	09:49 (424)	18:03		19:44	20:28	21:08	21:41	21:42	21:07	20:10	19:10		17:18		16:57	28	09:34 (424)
12	08:30		09:21 (424)	07:57		08:07	07:06	06:16	05:51	06:03	06:39	07:20	08:00		07:45		08:23		09:07 (424)
	17:20	29	09:50 (424)	18:04		19:46	20:29	21:10	21:41	21:41	21:05	20:08	19:08		17:16		16:57	27	09:34 (424)
13	08:30		09:21 (424)	07:56	08:24 (425)	08:05	07:04	06:15	05:51	06:04	06:40	07:21	08:01		07:46		08:24		09:07 (424)
	17:21	28	09:49 (424)	18:06	4 08:28 (425)	19:47	20:30	21:11	21:42	21:41	21:04	20:06	19:06		17:15		16:58	28	09:35 (424)
14	08:29		09:21 (424)	07:54	08:20 (425)	08:03	07:02	06:13	05:51	06:05	06:42	07:22	08:02	08:52 (425)	07:48		08:25		09:08 (424)
	17:23	28	09:49 (424)	18:07	12 08:32 (425)	19:49	20:32	21:12	21:42	21:40	21:02	20:04	19:04	11 09:03 (425)	17:14		16:58	27	09:35 (424)
15	08:29		09:22 (424)	07:52	08:19 (425)	08:01	07:00	06:12	05:51	06:06	06:43	07:23	08:04	08:49 (425)	07:49		08:25		09:09 (424)
	17:24	28	09:50 (424)	18:09	15 08:34 (425)	19:50	20:33	21:14	21:43	21:39	21:00	20:02	19:03	15 09:04 (425)	17:13		16:58	27	09:36 (424)
16	08:28		09:23 (424)	07:51	08:17 (425)	07:59	06:58	06:11	05:51	06:07	06:44	07:25	08:05	08:48 (425)	07:51		08:26		09:10 (424)
	17:25	27	09:50 (424)	18:10	18 08:35 (425)	19:52	20:35	21:15	21:43	21:39	20:59	20:00	19:01	18 09:06 (425)	17:12		16:58	27	09:37 (424)
17	08:27		09:23 (424)	07:49	08:16 (425)	07:57	06:57	06:10	05:51	06:08	06:46	07:26	08:07	08:47 (425)	07:52	09:07 (424)	08:27		09:09 (424)
	17:27	27	09:50 (424)	18:12	20 08:36 (425)	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	19 09:06 (425)	17:11	10 09:17 (424)	16:58	27	09:36 (424)
18	08:27		09:24 (424)	07:47	08:16 (425)	07:55	06:55	06:09	05:51	06:09	06:47	07:27	08:08	08:46 (425)	07:54	09:06 (424)	08:28		09:10 (424)
	17:28	25	09:49 (424)	18:13	21 08:37 (425)	19:54	20:37	21:17	21:44	21:37	20:55	19:56	18:55	21 09:07 (425)	17:10	14 09:20 (424)	16:59	27	09:37 (424)
19	08:26		09:25 (424)	07:46	08:15 (425)	07:53	06:53	06:07	05:51	06:10	06:48	07:29	08:10	08:45 (425)	07:55	09:04 (424)	08:28		09:11 (424)
	17:29	24	09:49 (424)	18:15	22 08:37 (425)	19:56	20:39	21:19	21:45	21:36	20:54	19:54	18:53	22 09:07 (425)	17:09	17 09:21 (424)	16:59	27	09:38 (424)
20	08:25		09:26 (424)	07:44	08:14 (425)	07:51	06:51	06:06	05:51	06:11	06:49	07:30	08:11	08:45 (425)	07:56	09:04 (424)	08:29		09:11 (424)
	17:31	23	09:49 (424)	18:16	23 08:37 (425)	19:57	20:40	21:20	21:45	21:35	20:52	19:52	18:52	23 09:08 (425)	17:08	19 09:23 (424)	16:59	27	09:38 (424)
21	08:24		09:27 (424)	07:42	08:14 (425)	07:49	06:49	06:05	05:51	06:12	06:51	07:31	08:12	08:44 (425)	07:58	09:02 (424)	08:29		09:12 (424)
	17:32	22	09:49 (424)	18:18	23 08:37 (425)	19:59	20:41	21:21	21:45	21:34	20:50	19:50	18:50	23 09:07 (425)	17:07	22 09:24 (424)	17:00	27	09:39 (424)
22	08:23		09:29 (424)	07:41	08:15 (425)	07:47	06:47	06:04	05:52	06:13	06:52	07:33	08:14	08:45 (425)	07:59	09:02 (424)	08:30		09:12 (424)
	17:34	19	09:48 (424)	18:19	22 08:37 (425)	20:00	20:43	21:22	21:45	21:33	20:48	19:48	18:48	23 09:08 (425)	17:06	23 09:25 (424)	17:00	27	09:39 (424)
23	08:23		09:30 (424)	07:39	08:15 (425)	07:45	06:46	06:03	05:52	06:14	06:53	07:34	08:15	08:45 (425)	08:01	09:02 (424)	08:30		09:13 (424)
	17:35	17	09:47 (424)	18:21	22 08:37 (425)	20:01	20:44	21:23	21:46	21:32	20:47	19:46	18:46	22 09:07 (425)	17:05	24 09:26 (424)	17:01	27	09:40 (424)
24	08:22		09:32 (424)	07:37	08:15 (425)	07:43	06:44	06:02	05:52	06:16	06:55	07:35	08:17	08:45 (425)	08:02	09:01 (424)	08:31		09:13 (424)
	17:37	14	09:46 (424)	18:22	21 08:36 (425)	20:03	20:46	21:24	21:46	21:31	20:45	19:44	18:45	21 09:06 (425)	17:04	25 09:26 (424)	17:01	27	09:40 (424)
25	08:21		09:33 (424)	07:35	08:16 (425)	07:41	06:42	06:01	05:52	06:17	06:56	07:37	08:18	08:46 (425)	08:03	09:01 (424)	08:31		09:13 (424)
	17:38	10	09:43 (424)	18:24	19 08:35 (425)	20:04	20:47	21:25	21:46	21:30	20:43	19:42	18:43	20 09:06 (425)	17:03	27 09:28 (424)	17:02	27	09:40 (424)
26	08:20			07:33	08:16 (425)	07:39	06:41	06:00	05:53	06:18	06:57	07:38	08:20	08:47 (425)	08:05	09:01 (424)	08:32		09:14 (424)
	17:40			18:25	17 08:33 (425)	20:06	20:48	21:27	21:46	21:29	20:41	19:40	18:41	17 09:04 (425)	17:03	27 09:28 (424)	17:03	27	09:41 (424)
27	08:19			07:32	08:18 (425)	07:37	06:39	06:00	05:53	06:19	06:59	07:39	08:21	08:49 (425)	08:06	09:02 (424)	08:32		09:15 (424)
	17:41			18:27	13 08:31 (425)	20:07	20:50	21:28	21:46	21:28	20:39	19:38	18:40	14 09:03 (425)	17:02	27 09:29 (424)	17:03	27	09:42 (424)
28	08:17			07:30	08:21 (425)	07:35	06:37	05:59	05:54	06:20	07:00	07:41	08:23	08:50 (425)	08:07	09:01 (424)	08:32		09:15 (424)
	17:43			18:28	8 08:29 (425)	20:08	20:51	21:29	21:46	21:27	20:37	19:36	18:38	11 09:01 (425)	17:01	28 09:29 (424)	17:04	27	09:42 (424)
29	08:16					07:33	06:35	05:58	05:54	06:21	07:01	07:42	08:24		08:09	09:01 (424)	08:32		09:15 (424)
	17:44					20:10	20:52	21:30	21:46	21:25	20:35	19:34	18:36		17:01	28 09:29 (424)	17:05	27	09:42 (424)
30	08:15					07:31	06:34	05:57	05:55	06:23	07:03	07:43	08:26		08:10	09:02 (424)	08:33		09:15 (424)
	17:46					20:11	20:54	21:31	21:46	21:24	20:34	19:32	18:35		17:00	29 09:31 (424)	17:06	28	09:43 (424)
31	08:14					07:29		05:57		06:24	07:04		08:27				08:33		09:16 (424)
	17:47					20:13		21:32		21:23	20:32		18:33				17:07	27	09:43 (424)
Potential sun hours	279		287		368	407	466	475	480	441	378	338		282		266		
Total, worst case		637		280									280		320		856	
Sun reduction		0.55		0.50									0.52		0.43		0.43	
Oper. time red.		0.98		0.98									0.98		0.98		0.98	
Wind dir. red.		0.73		0.74									0.74		0.73		0.73	
Total reduction		0.39		0.36									0.38		0.30		0.31	
Total, real		248		102									106		97		262	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR012 - SR012

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January		February	March	April	May	June	July	August	September	October	November		December		
1	08:33	16:04 (432)	08:13	07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:45	07:29		08:11		15:53 (432)
	17:08 20	16:24 (432)	17:49	18:30	20:14	20:55	21:33	21:46	21:22	20:30	19:30	17:32		17:00	15	16:08 (432)
2	08:33	16:04 (432)	08:11	07:26	07:25	06:31	05:55	05:56	06:26	07:06	07:46	07:30		08:12		15:54 (432)
	17:09 21	16:25 (432)	17:50	18:31	20:15	20:57	21:34	21:46	21:20	20:28	19:28	17:30		16:59	15	16:09 (432)
3	08:33	16:05 (432)	08:10	07:24	07:23	06:29	05:55	05:56	06:28	07:08	07:47	07:32		08:14		15:53 (432)
	17:10 20	16:25 (432)	17:52	18:33	20:17	20:58	21:35	21:45	21:19	20:26	19:26	17:29		16:59	17	16:10 (432)
4	08:33	16:06 (432)	08:09	07:22	07:21	06:27	05:54	05:57	06:29	07:09	07:49	07:33		08:15		15:53 (432)
	17:11 20	16:26 (432)	17:53	18:34	20:18	20:59	21:36	21:45	21:18	20:24	19:24	17:27		16:59	18	16:11 (432)
5	08:33	16:07 (432)	08:08	07:21	07:19	06:26	05:54	05:58	06:30	07:10	07:50	07:35		08:16		15:53 (432)
	17:12 19	16:26 (432)	17:55	18:36	20:19	21:01	21:36	21:45	21:16	20:22	19:22	17:26		16:58	18	16:11 (432)
6	08:33	16:07 (432)	08:06	07:19	07:17	06:24	05:53	05:58	06:31	07:12	07:51	07:36		08:17		15:53 (432)
	17:13 19	16:26 (432)	17:56	18:37	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:24		16:58	19	16:12 (432)
7	08:32	16:08 (432)	08:05	07:17	07:15	06:23	05:53	05:59	06:33	07:13	07:53	07:38		08:18		15:53 (432)
	17:14 18	16:26 (432)	17:58	18:39	20:22	21:03	21:38	21:44	21:13	20:18	19:18	17:23		16:58	19	16:12 (432)
8	08:32	16:09 (432)	08:03	08:15	07:14	06:22	05:52	06:00	06:34	07:14	07:54	07:39		08:19		15:53 (432)
	17:15 18	16:27 (432)	17:59	18:40	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:21		16:58	20	16:13 (432)
9	08:32	16:09 (432)	08:02	08:13	07:12	06:20	05:52	06:01	06:35	07:16	07:56	07:41		08:20		15:54 (432)
	17:16 17	16:26 (432)	18:01	19:42	20:25	21:06	21:39	21:43	21:10	20:14	19:14	17:20		16:57	20	16:14 (432)
10	08:31	16:11 (432)	08:00	08:11	07:10	06:19	05:52	06:01	06:36	07:17	07:57	07:42		08:21		15:54 (432)
	17:17 15	16:26 (432)	18:01	19:43	20:26	21:07	21:40	21:43	21:09	20:12	19:12	17:19		16:57	21	16:15 (432)
11	08:31	16:11 (432)	07:59	08:09	07:08	06:17	05:51	06:02	06:38	07:18	07:58	07:43		08:22		15:55 (432)
	17:19 15	16:26 (432)	18:02	19:44	20:28	21:09	21:41	21:42	21:07	20:10	19:10	17:18		16:57	21	16:16 (432)
12	08:30	16:13 (432)	07:57	08:07	07:06	06:16	05:51	06:03	06:39	07:20	08:00	07:45		08:23		15:54 (432)
	17:20 13	16:26 (432)	18:04	19:46	20:29	21:10	21:41	21:42	21:05	20:08	19:08	17:16		16:57	21	16:15 (432)
13	08:30	16:14 (432)	07:56	08:05	07:04	06:15	05:51	06:04	06:40	07:21	08:01	07:46		08:24		15:55 (432)
	17:21 11	16:25 (432)	18:06	19:47	20:31	21:11	21:42	21:41	21:04	20:06	19:06	17:15		16:57	21	16:16
14	08:29	16:16 (432)	07:54	08:03	07:02	06:13	05:51	06:05	06:42	07:22	08:03	07:48		08:25		15:55
	17:22 7	16:23 (432)	18:07	19:49	20:32	21:12	21:43	21:40	21:02	20:04	19:04	17:14		16:58	21	16:16
15	08:29		07:53	08:01	07:00	06:12	05:51	06:06	06:43	07:23	08:04	07:49		08:26		15:56 (432)
	17:24		18:09	19:50	20:33	21:14	21:43	21:40	21:01	20:02	19:03	17:13		16:58	21	16:17 (432)
16	08:28		07:51	07:59	06:58	06:11	05:51	06:07	06:44	07:25	08:05	07:51		08:26		15:56 (432)
	17:25		18:10	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12		16:58	22	16:18 (432)
17	08:28		07:49	07:57	06:57	06:10	05:51	06:08	06:46	07:26	08:07	07:52		08:27		15:56 (432)
	17:27		18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11		16:58	22	16:18 (432)
18	08:27		07:48	07:55	06:55	06:08	05:51	06:09	06:47	07:27	08:08	07:54		08:28		15:57 (432)
	17:28		18:13	19:54	20:37	21:17	21:44	21:37	20:55	19:56	18:55	17:10		16:58	21	16:18 (432)
19	08:26		07:46	07:53	06:53	06:07	05:51	06:10	06:48	07:29	08:10	07:55		08:28		15:58 (432)
	17:29		18:15	19:56	20:39	21:19	21:45	21:36	20:54	19:54	18:53	17:09		16:59	21	16:19 (432)
20	08:25		07:44	07:51	06:51	06:06	05:51	06:11	06:49	07:30	08:11	07:57		08:29		15:58 (432)
	17:31		18:16	19:57	20:40	21:20	21:45	21:35	20:52	19:52	18:52	17:08		16:59	21	16:19 (432)
21	08:24		07:42	07:49	06:49	06:05	05:51	06:12	06:51	07:31	08:13	07:58		08:30		15:59 (432)
	17:32		18:18	19:59	20:42	21:21	21:45	21:34	20:50	19:50	18:50	17:07		17:00	21	16:20 (432)
22	08:24		07:41	07:47	06:47	06:04	05:51	06:13	06:52	07:33	08:14	07:59		08:30		15:59 (432)
	17:34		18:19	20:00	20:43	21:22	21:46	21:33	20:48	19:48	18:48	17:06		17:00	21	16:20 (432)
23	08:23		07:39	07:45	06:46	06:03	05:52	06:14	06:53	07:34	08:15	08:01		08:31		16:00 (432)
	17:35		18:21	20:01	20:44	21:23	21:46	21:32	20:47	19:46	18:46	17:05		17:01	21	16:21 (432)
24	08:22		07:37	07:43	06:44	06:02	05:52	06:16	06:55	07:35	08:17	08:02		08:31		16:00 (432)
	17:36		18:22	20:03	20:46	21:24	21:46	21:31	20:45	19:44	18:45	17:04		17:01	21	16:21 (432)
25	08:21		07:35	07:41	06:42	06:01	05:52	06:17	06:56	07:37	08:18	08:03		08:31		16:00 (432)
	17:38		18:24	20:04	20:47	21:26	21:46	21:30	20:43	19:42	18:43	17:03		17:02	21	16:21 (432)
26	08:20		07:34	07:39	06:40	06:00	05:53	06:18	06:57	07:38	08:20	08:05		08:32		16:01 (432)
	17:39		18:25	20:06	20:48	21:27	21:46	21:29	20:41	19:40	18:41	17:03		17:03	21	16:22 (432)
27	08:19		07:32	07:37	06:39	06:00	05:53	06:19	06:59	07:39	08:21	08:06		08:32		16:01 (432)
	17:41		18:27	20:07	20:50	21:28	21:46	21:28	20:39	19:38	18:40	17:02		17:03	22	16:23 (432)
28	08:17		07:30	07:35	06:37	05:59	05:54	06:20	07:00	07:41	08:23	08:07	15:56 (432)	08:32		16:02 (432)
	17:42		18:28	20:08	20:51	21:29	21:46	21:27	20:37	19:36	18:38	17:01 7	16:03 (432)	17:04	21	16:23 (432)
29	08:16			07:33	06:35	05:58	05:54	06:21	07:01	07:42	08:24	08:09	15:55 (432)	08:33		16:02 (432)
	17:44			20:10	20:52	21:30	21:46	21:26	20:35	19:34	18:36	17:01 11	16:06 (432)	17:05	21	16:23 (432)
30	08:15			07:31	06:34	05:57	05:55	06:23	07:03	07:43	08:26	08:10	15:54 (432)	08:33		16:02 (432)
	17:46			20:11	20:54	21:31	21:46	21:24	20:34	19:32	18:35	17:00 13	16:07 (432)	17:06	22	16:24 (432)
31	08:14			07:29		05:56		06:24	07:04		08:27			08:33		16:03 (432)
	17:47			20:13		21:32		21:23	20:32		18:33			17:06	21	16:24 (432)
Potential sun hours	279		287	368	407	466	475	480	441	378	338	282		266		
Total, worst case	233											31		627		
Sun reduction	0.55											0.43		0.43		
Oper. time red.	0.98											0.98		0.98		
Wind dir. red.	0.53											0.53		0.53		
Total reduction	0.29											0.22		0.22		
Total, real	67											7		141		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR014 - SR014

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June		
1	08:33			08:13		17:07 (416)	07:28			07:27		19:23 (417)	06:32			05:56		20:43 (418)
	17:08			17:49	13	17:20 (416)	18:30			20:14	24	19:47 (417)	20:55			21:33	22	21:05 (418)
2	08:33			08:11		17:05 (416)	07:26			07:25		19:22 (417)	06:31			05:55		20:42 (418)
	17:09			17:50	16	17:21 (416)	18:31			20:15	25	19:47 (417)	20:56			21:33	23	21:05 (418)
3	08:33			08:10		17:05 (416)	07:24			07:23		19:21 (417)	06:29			05:55		20:42 (418)
	17:10			17:52	18	17:23 (416)	18:33			20:17	26	19:47 (417)	20:58			21:34	24	21:06 (418)
4	08:33			08:09		17:04 (416)	07:22			07:21		19:21 (417)	06:28			05:54		20:41 (418)
	17:11			17:53	20	17:24 (416)	18:34			20:18	26	19:47 (417)	20:59			21:35	25	21:06 (418)
5	08:32			08:07		17:03 (416)	07:20			07:19		19:22 (417)	06:26			05:54		20:42 (418)
	17:12			17:55	22	17:25 (416)	18:36			20:19	26	19:48 (417)	21:00			21:36	25	21:07 (418)
6	08:32			08:06		17:03 (416)	07:19			07:18		19:22 (417)	06:25			05:53		20:42 (418)
	17:13			17:56	23	17:26 (416)	18:37			20:21	25	19:47 (417)	21:02			21:37	26	21:08 (418)
7	08:32			08:05		17:03 (416)	07:17			07:16		19:22 (417)	06:23			05:53		20:41 (418)
	17:14			17:58	23	17:26 (416)	18:39			20:22	24	19:46 (417)	21:03			21:38	26	21:07 (418)
8	08:32			08:03		17:03 (416)	08:15			07:14		19:22 (417)	06:22			05:53		20:41 (418)
	17:15			18:00	23	17:26 (416)	18:40			20:24	23	19:45 (417)	21:04			21:39	27	21:08 (418)
9	08:31			08:02		17:03 (416)	08:13			07:12		19:22 (417)	06:20			05:52		20:42 (418)
	17:16			18:00	23	17:26 (416)	19:42			20:25	22	19:44 (417)	21:06			21:39	27	21:09 (418)
10	08:31			08:00		17:03 (416)	08:11			07:10		19:23 (417)	06:19			05:52		20:41 (418)
	17:18			18:01	23	17:26 (416)	19:43			20:26	19	19:42 (417)	21:07			21:40	27	21:08 (418)
11	08:31			07:59		17:03 (416)	08:09			07:08		19:25 (417)	06:17			05:52		20:41 (418)
	17:19			18:03	23	17:26 (416)	19:44			20:28	15	19:40 (417)	21:08			21:41	28	21:09 (418)
12	08:30			07:57		17:04 (416)	08:07			07:06		19:27 (417)	06:16			05:51		20:41 (418)
	17:20			18:04	22	17:26 (416)	19:46			20:29	11	19:38 (417)	21:10			21:41	28	21:09 (418)
13	08:30			07:56		17:05 (416)	08:05			07:04			06:15			05:51		20:42 (418)
	17:21			18:06	20	17:25 (416)	19:47			20:30			21:11			21:42	28	21:10 (418)
14	08:29			07:54		17:05 (416)	08:03			07:02			06:14			05:51		20:42 (418)
	17:23			18:07	19	17:24 (416)	19:49			20:32			21:12			21:42	28	21:10 (418)
15	08:29			07:52		17:07 (416)	08:01			07:00			06:12			05:51		20:42 (418)
	17:24			18:09	16	17:23 (416)	19:50			20:33			21:14			21:43	29	21:11 (418)
16	08:28			07:51		17:09 (416)	07:59			06:58			06:11			05:51		20:42 (418)
	17:25			18:10	12	17:21 (416)	19:52			20:35			21:15			21:43	29	21:11 (418)
17	08:27			07:49		17:13 (416)	07:57			06:57			06:10			05:51		20:42 (418)
	17:27			18:12	3	17:16 (416)	19:53			20:36			21:16			21:44	29	21:11 (418)
18	08:27			07:47			07:55			06:55			06:09			05:51		20:42 (418)
	17:28			18:13			19:54			20:37			21:17			21:44	29	21:11 (418)
19	08:26			07:46			07:53			06:53			06:08			05:51		20:42 (418)
	17:29			18:15			19:56			20:39			21:18			21:45	29	21:11 (418)
20	08:25			07:44			07:51			06:51			06:06			05:51		20:42 (418)
	17:31			18:16			19:57			20:40			21:20			21:45	29	21:11 (418)
21	08:24			07:42			07:49			06:49			06:05			05:52		20:42 (418)
	17:32			18:18			19:59			20:41			21:21			21:45	29	21:11 (418)
22	08:23			07:41			07:47			06:48			06:04			05:52		20:43 (418)
	17:34			18:19			20:00			20:43			21:22			21:45	29	21:12 (418)
23	08:22			07:39			07:45			06:46			06:03			05:52		20:43 (418)
	17:35			18:21			20:01			20:44			21:23			21:46	29	21:12 (418)
24	08:22			07:37			07:43			06:44			06:02			05:52		20:43 (418)
	17:37			18:22			20:03			20:46			21:24			21:46	29	21:12 (418)
25	08:21			07:35			07:41			06:42			06:01			05:53		20:44 (418)
	17:38			18:24			20:04			20:47			21:25			21:46	29	21:13 (418)
26	08:19			07:33			07:39			06:41			06:01		20:48 (418)	05:53		20:44 (418)
	17:40			18:25			20:06			20:48			21:26	9	20:57 (418)	21:46	29	21:13 (418)
27	08:18			07:32			07:37		19:34 (417)	06:39			06:00		20:46 (418)	05:53		20:44 (418)
	17:41			18:27			20:07	5	19:39 (417)	20:50			21:28	13	20:59 (418)	21:46	29	21:13 (418)
28	08:17			07:30			07:35		19:30 (417)	06:37			05:59		20:45 (418)	05:54		20:45 (418)
	17:43			18:28			20:08	13	19:43 (417)	20:51			21:29	15	21:00 (418)	21:46	28	21:13 (418)
29	08:16						07:33		19:27 (417)	06:36			05:58		20:45 (418)	05:54		20:45 (418)
	17:44						20:10	18	19:45 (417)	20:52			21:30	17	21:02 (418)	21:46	28	21:13 (418)
30	08:15						07:31		19:25 (417)	06:34			05:57		20:43 (418)	05:55		20:45 (418)
	17:46						20:11	21	19:46 (417)	20:54			21:31	20	21:03 (418)	21:46	29	21:14 (418)
31	08:14		17:09 (416)				07:29		19:24 (417)				05:57		20:43 (418)			
	17:47	9	17:18 (416)				20:13	23	19:47 (417)				21:32	20	21:03 (418)			
Potential sun hours	279			287			368			407			466			475		
Total, worst case		9			319			80			266			94			826	
Sun reduction		0.55			0.50			0.63			0.59			0.68			0.71	
Oper. time red.		0.98			0.98			0.98			0.98			0.98			0.98	
Wind dir. red.		0.60			0.60			0.70			0.70			0.75			0.75	
Total reduction		0.32			0.29			0.43			0.40			0.49			0.51	
Total, real		3			92			34			107			46			423	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR014 - SR014

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October		November		December
1	05:55		20:45 (418)	06:25		07:05		19:23 (417)	07:45		16:33 (416)	08:11
	21:46	28	21:13 (418)	21:22		20:30	16	19:39 (417)	19:30		16:56 (416)	17:00
2	05:56		20:46 (418)	06:27		07:07		19:21 (417)	07:46		16:32 (416)	08:12
	21:45	28	21:14 (418)	21:20		20:28	19	19:40 (417)	19:28		16:56 (416)	17:00
3	05:57		20:46 (418)	06:28		07:08		19:20 (417)	07:47		16:33 (416)	08:13
	21:45	27	21:13 (418)	21:19		20:26	22	19:42 (417)	19:26		16:56 (416)	16:59
4	05:57		20:46 (418)	06:29		07:09		19:19 (417)	07:49		16:32 (416)	08:15
	21:45	27	21:13 (418)	21:17		20:24	23	19:42 (417)	19:24		16:55 (416)	16:59
5	05:58		20:47 (418)	06:30		07:10		19:18 (417)	07:50		16:33 (416)	08:16
	21:45	27	21:14 (418)	21:16		20:22	24	19:42 (417)	19:22		16:55 (416)	16:58
6	05:59		20:47 (418)	06:32		07:12		19:17 (417)	07:51		16:33 (416)	08:17
	21:44	26	21:13 (418)	21:15		20:20	25	19:42 (417)	19:20		16:54 (416)	16:58
7	05:59		20:48 (418)	06:33		07:13		19:17 (417)	07:53		16:34 (416)	08:18
	21:44	25	21:13 (418)	21:13		20:18	26	19:43 (417)	19:18		16:54 (416)	16:58
8	06:00		20:48 (418)	06:34		07:14		19:16 (417)	07:54		16:36 (416)	08:19
	21:44	25	21:13 (418)	21:12		20:16	26	19:42 (417)	19:16		16:54 (416)	16:58
9	06:01		20:49 (418)	06:35		07:16		19:16 (417)	07:56		16:36 (416)	08:20
	21:43	24	21:13 (418)	21:10		20:14	25	19:41 (417)	19:14		16:52 (416)	16:58
10	06:02		20:50 (418)	06:37		07:17		19:15 (417)	07:57		16:38 (416)	08:21
	21:43	23	21:13 (418)	21:09		20:12	25	19:40 (417)	19:12		16:51 (416)	16:58
11	06:03		20:50 (418)	06:38		07:18		19:16 (417)	07:58		16:40 (416)	08:22
	21:42	22	21:12 (418)	21:07		20:10	24	19:40 (417)	19:10		16:48 (416)	16:58
12	06:03		20:51 (418)	06:39		07:20		19:16 (417)	08:00			08:23
	21:41	21	21:12 (418)	21:05		20:08	23	19:39 (417)	19:08			16:58
13	06:04		20:51 (418)	06:40		07:21		19:17 (417)	08:01			08:24
	21:41	20	21:11 (418)	21:04		20:06	20	19:37 (417)	19:06			16:58
14	06:05		20:52 (418)	06:42		07:22		19:17 (417)	08:02			08:25
	21:40	19	21:11 (418)	21:02		20:04	18	19:35 (417)	19:04			16:58
15	06:06		20:54 (418)	06:43		07:23		19:19 (417)	08:04			08:25
	21:39	16	21:10 (418)	21:00		20:02	15	19:34 (417)	19:03			16:58
16	06:07		20:55 (418)	06:44		07:25		19:22 (417)	08:05			08:26
	21:39	14	21:09 (418)	20:59		20:00	8	19:30 (417)	19:01			16:58
17	06:08		20:57 (418)	06:46		07:26			08:07			08:27
	21:38	11	21:08 (418)	20:57		19:58			18:57			16:58
18	06:09		20:59 (418)	06:47		07:27			08:08			08:28
	21:37	7	21:06 (418)	20:55		19:56			18:55			16:59
19	06:10			06:48		07:29			08:10			08:28
	21:36			20:54		19:54			18:53			16:59
20	06:11			06:50		07:30			08:11			08:29
	21:35			20:52		19:52			18:52			16:59
21	06:12			06:51		07:31			08:12			08:29
	21:34			20:50		19:50			18:50			17:00
22	06:14			06:52		07:33			08:14			08:30
	21:33			20:48		19:48			18:48			17:00
23	06:15			06:53		07:34			08:15			08:30
	21:32			20:46		19:46			18:46			17:01
24	06:16			06:55		07:35			08:17			08:31
	21:31			20:45		19:44			18:45			17:02
25	06:17			06:56		07:37			08:18		17:42 (416)	08:31
	21:30			20:43		19:42			18:43	7	17:49 (416)	17:04
26	06:18			06:57		07:38			08:20		17:38 (416)	08:32
	21:29			20:41		19:40			18:41	13	17:51 (416)	17:03
27	06:19			06:59		07:39			08:21		17:37 (416)	08:32
	21:28			20:39		19:38			18:40	16	17:53 (416)	17:04
28	06:20			07:00		07:41			08:23		17:35 (416)	08:32
	21:27			20:37		19:36			18:38	18	17:53 (416)	17:04
29	06:22			07:01		07:42			08:24		17:34 (416)	08:32
	21:25			20:35		19:34			18:36	21	17:55 (416)	17:05
30	06:23			07:03		07:43			08:26		17:33 (416)	08:32
	21:24			20:33		19:32			18:35	22	17:55 (416)	17:06
31	06:24			07:04	19:26 (417)				08:27		17:33 (416)	08:33
	21:23			20:32	12 19:38 (417)				18:33	22	17:55 (416)	17:07
Potential sun hours	480			441		378			338		282	266
Total, worst case		390			12		339			119	211	
Sun reduction		0.76			0.73		0.69			0.52	0.43	
Oper. time red.		0.98			0.98		0.98			0.98	0.98	
Wind dir. red.		0.75			0.70		0.70			0.60	0.60	
Total reduction		0.55			0.49		0.47			0.30	0.25	
Total, real		213			6		158			36	52	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Shadow receptor:** SR015 - SR015

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:45	07:29	08:11
	17:08	17:49	18:30	20:14	20:55	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:26	07:25	06:31	05:55	05:56	06:26	07:07	07:46	07:30	08:13
	17:09	17:50	18:31	20:15	20:57	21:34	21:46	21:20	20:28	19:28	17:30	16:59
3	08:33	08:10	07:24	07:23	06:29	05:55	05:56	06:28	07:08	07:47	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	16:59
4	08:33	08:09	07:23	07:21	06:28	05:54	05:57	06:29	07:09	07:49	07:33	08:15
	17:11	17:53	18:34	20:18	20:59	21:36	21:45	21:18	20:24	19:24	17:27	16:59
5	08:33	08:08	07:21	07:19	06:26	05:54	05:58	06:30	07:10	07:50	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:37	21:45	21:16	20:22	19:22	17:26	16:58
6	08:33	08:06	07:19	07:18	06:24	05:53	05:58	06:31	07:12	07:52	07:36	08:17
	17:13	17:56	18:37	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:24	16:58
7	08:32	08:05	07:17	07:16	06:23	05:53	05:59	06:33	07:13	07:53	07:38	08:18
	17:14	17:58	18:39	20:22	21:03	21:38	21:44	21:13	20:18	19:18	17:23	16:58
8	08:32	08:03	08:15	07:14	06:22	05:52	06:00	06:34	07:14	07:54	07:39	08:19
	17:15	17:59	18:40	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:21	16:58
9	08:32	08:02	08:13	07:12	06:20	05:52	06:01	06:35	07:16	07:56	07:41	08:20
	17:16	18:01	19:42	20:25	21:06	21:40	21:43	21:10	20:14	19:14	17:20	16:58
10	08:31	08:00	08:11	07:10	06:19	05:52	06:01	06:37	07:17	07:57	07:42	08:21
	17:17	18:01	19:43	20:26	21:07	21:40	21:43	21:09	20:12	19:12	17:19	16:57
11	08:31	07:59	08:09	07:08	06:17	05:51	06:02	06:38	07:18	07:58	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:42	21:07	20:10	19:10	17:18	16:57
12	08:31	07:57	08:07	07:06	06:16	05:51	06:03	06:39	07:20	08:00	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:42	21:42	21:06	20:08	19:08	17:16	16:57
13	08:30	07:56	08:05	07:04	06:15	05:51	06:04	06:40	07:21	08:01	07:47	08:24
	17:21	18:06	19:47	20:31	21:11	21:42	21:41	21:04	20:06	19:06	17:15	16:57
14	08:30	07:54	08:03	07:02	06:13	05:51	06:05	06:42	07:22	08:03	07:48	08:25
	17:23	18:07	19:49	20:32	21:13	21:43	21:40	21:02	20:04	19:05	17:14	16:58
15	08:29	07:53	08:01	07:00	06:12	05:51	06:06	06:43	07:24	08:04	07:50	08:26
	17:24	18:09	19:50	20:33	21:14	21:43	21:40	21:01	20:02	19:03	17:13	16:58
16	08:28	07:51	07:59	06:58	06:11	05:51	06:07	06:44	07:25	08:05	07:51	08:27
	17:25	18:10	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12	16:58
17	08:28	07:49	07:57	06:57	06:10	05:51	06:08	06:46	07:26	08:07	07:52	08:27
	17:27	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11	16:58
18	08:27	07:48	07:55	06:55	06:09	05:51	06:09	06:47	07:27	08:08	07:54	08:28
	17:28	18:13	19:54	20:38	21:18	21:45	21:37	20:56	19:56	18:55	17:10	16:59
19	08:26	07:46	07:53	06:53	06:07	05:51	06:10	06:48	07:29	08:10	07:55	08:29
	17:29	18:15	19:56	20:39	21:19	21:45	21:36	20:54	19:54	18:53	17:09	16:59
20	08:25	07:44	07:51	06:51	06:06	05:51	06:11	06:49	07:30	08:11	07:57	08:29
	17:31	18:16	19:57	20:40	21:20	21:45	21:35	20:52	19:52	18:52	17:08	16:59
21	08:25	07:43	07:49	06:49	06:05	05:51	06:12	06:51	07:31	08:13	07:58	08:30
	17:32	18:18	19:59	20:42	21:21	21:46	21:35	20:50	19:50	18:50	17:07	17:00
22	08:24	07:41	07:47	06:48	06:04	05:51	06:13	06:52	07:33	08:14	08:00	08:30
	17:34	18:19	20:00	20:43	21:22	21:46	21:34	20:49	19:48	18:48	17:06	17:00
23	08:23	07:39	07:45	06:46	06:03	05:52	06:14	06:53	07:34	08:16	08:01	08:31
	17:35	18:21	20:02	20:44	21:23	21:46	21:33	20:47	19:46	18:46	17:05	17:01
24	08:22	07:37	07:43	06:44	06:02	05:52	06:16	06:55	07:35	08:17	08:02	08:31
	17:37	18:22	20:03	20:46	21:25	21:46	21:31	20:45	19:44	18:45	17:04	17:01
25	08:21	07:35	07:41	06:42	06:01	05:52	06:17	06:56	07:37	08:18	08:04	08:32
	17:38	18:24	20:04	20:47	21:26	21:46	21:30	20:43	19:42	18:43	17:03	17:02
26	08:20	07:34	07:39	06:41	06:00	05:53	06:18	06:57	07:38	08:20	08:05	08:32
	17:40	18:25	20:06	20:49	21:27	21:46	21:29	20:41	19:40	18:41	17:03	17:03
27	08:19	07:32	07:37	06:39	06:00	05:53	06:19	06:59	07:39	08:21	08:06	08:32
	17:41	18:27	20:07	20:50	21:28	21:46	21:28	20:39	19:38	18:40	17:02	17:03
28	08:18	07:30	07:35	06:37	05:59	05:54	06:20	07:00	07:41	08:23	08:08	08:32
	17:43	18:28	20:08	20:51	21:29	21:46	21:27	20:37	19:36	18:38	17:01	17:04
29	08:16		07:33	06:36	05:58	05:54	06:21	07:01	07:42	08:24	08:09	08:33
	17:44		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:36	17:01	17:05
30	08:15		07:31	06:34	05:57	05:55	06:23	07:03	07:43	08:26	08:10	08:33
	17:46		20:11	20:54	21:31	21:46	21:24	20:34	19:32	18:35	17:00	17:06
31	08:14		07:29		05:57		06:24	07:04		08:27		08:33
	17:47		20:13		21:32		21:23	20:32		18:33		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 5820
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Shadow receptor:** SR016 - SR016

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:45	07:29	08:11
	17:08	17:49	18:30	20:14	20:55	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:26	07:25	06:31	05:55	05:56	06:26	07:07	07:46	07:30	08:13
	17:09	17:50	18:31	20:15	20:57	21:34	21:46	21:21	20:28	19:28	17:30	16:59
3	08:33	08:10	07:24	07:23	06:29	05:55	05:56	06:28	07:08	07:48	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	16:59
4	08:33	08:09	07:23	07:21	06:28	05:54	05:57	06:29	07:09	07:49	07:33	08:15
	17:11	17:53	18:34	20:18	21:00	21:36	21:45	21:18	20:24	19:24	17:27	16:59
5	08:33	08:08	07:21	07:20	06:26	05:54	05:58	06:30	07:10	07:50	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:37	21:45	21:16	20:22	19:22	17:26	16:58
6	08:33	08:06	07:19	07:18	06:25	05:53	05:58	06:31	07:12	07:52	07:36	08:17
	17:13	17:56	18:37	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:24	16:58
7	08:33	08:05	07:17	07:16	06:23	05:53	05:59	06:33	07:13	07:53	07:38	08:18
	17:14	17:58	18:39	20:22	21:04	21:38	21:44	21:13	20:18	19:18	17:23	16:58
8	08:32	08:03	08:15	07:14	06:22	05:52	06:00	06:34	07:14	07:54	07:39	08:19
	17:15	17:59	18:40	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:22	16:58
9	08:32	08:02	08:13	07:12	06:20	05:52	06:01	06:35	07:16	07:56	07:41	08:20
	17:16	18:01	19:42	20:25	21:06	21:40	21:44	21:10	20:14	19:14	17:20	16:58
10	08:32	08:01	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57	07:42	08:21
	17:17	18:01	19:43	20:27	21:07	21:40	21:43	21:09	20:12	19:12	17:19	16:57
11	08:31	07:59	08:09	07:08	06:17	05:51	06:02	06:38	07:18	07:59	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:42	21:07	20:10	19:10	17:18	16:57
12	08:31	07:57	08:07	07:06	06:16	05:51	06:03	06:39	07:20	08:00	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:42	21:42	21:06	20:08	19:08	17:16	16:57
13	08:30	07:56	08:05	07:04	06:15	05:51	06:04	06:40	07:21	08:01	07:47	08:24
	17:21	18:06	19:47	20:31	21:11	21:42	21:41	21:04	20:06	19:06	17:15	16:57
14	08:30	07:54	08:03	07:02	06:13	05:51	06:05	06:42	07:22	08:03	07:48	08:25
	17:23	18:07	19:49	20:32	21:13	21:43	21:41	21:02	20:04	19:05	17:14	16:58
15	08:29	07:53	08:01	07:00	06:12	05:51	06:06	06:43	07:24	08:04	07:50	08:26
	17:24	18:09	19:50	20:33	21:14	21:43	21:40	21:01	20:02	19:03	17:13	16:58
16	08:28	07:51	07:59	06:58	06:11	05:51	06:07	06:44	07:25	08:06	07:51	08:27
	17:25	18:10	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12	16:58
17	08:28	07:49	07:57	06:57	06:10	05:51	06:08	06:46	07:26	08:07	07:52	08:27
	17:27	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11	16:58
18	08:27	07:48	07:55	06:55	06:09	05:51	06:09	06:47	07:28	08:08	07:54	08:28
	17:28	18:13	19:55	20:38	21:18	21:45	21:37	20:56	19:56	18:55	17:10	16:59
19	08:26	07:46	07:53	06:53	06:07	05:51	06:10	06:48	07:29	08:10	07:55	08:29
	17:29	18:15	19:56	20:39	21:19	21:45	21:37	20:54	19:54	18:53	17:09	16:59
20	08:26	07:44	07:51	06:51	06:06	05:51	06:11	06:50	07:30	08:11	07:57	08:29
	17:31	18:16	19:57	20:40	21:20	21:45	21:36	20:52	19:52	18:52	17:08	16:59
21	08:25	07:43	07:49	06:49	06:05	05:51	06:12	06:51	07:31	08:13	07:58	08:30
	17:32	18:18	19:59	20:42	21:21	21:46	21:35	20:50	19:50	18:50	17:07	17:00
22	08:24	07:41	07:47	06:48	06:04	05:51	06:13	06:52	07:33	08:14	08:00	08:30
	17:34	18:19	20:00	20:43	21:22	21:46	21:34	20:49	19:48	18:48	17:06	17:00
23	08:23	07:39	07:45	06:46	06:03	05:52	06:14	06:53	07:34	08:16	08:01	08:31
	17:35	18:21	20:02	20:44	21:24	21:46	21:33	20:47	19:46	18:46	17:05	17:01
24	08:22	07:37	07:43	06:44	06:02	05:52	06:16	06:55	07:35	08:17	08:02	08:31
	17:37	18:22	20:03	20:46	21:25	21:46	21:32	20:45	19:44	18:45	17:04	17:01
25	08:21	07:36	07:41	06:42	06:01	05:52	06:17	06:56	07:37	08:19	08:04	08:32
	17:38	18:24	20:04	20:47	21:26	21:46	21:30	20:43	19:42	18:43	17:03	17:02
26	08:20	07:34	07:39	06:41	06:00	05:53	06:18	06:57	07:38	08:20	08:05	08:32
	17:40	18:25	20:06	20:49	21:27	21:46	21:29	20:41	19:40	18:41	17:03	17:03
27	08:19	07:32	07:37	06:39	06:00	05:53	06:19	06:59	07:39	08:21	08:06	08:32
	17:41	18:27	20:07	20:50	21:28	21:46	21:28	20:39	19:38	18:40	17:02	17:03
28	08:18	07:30	07:35	06:37	05:59	05:54	06:20	07:00	07:41	08:23	08:08	08:33
	17:43	18:28	20:09	20:51	21:29	21:46	21:27	20:38	19:36	18:38	17:01	17:04
29	08:17		07:33	06:36	05:58	05:54	06:21	07:01	07:42	08:24	08:09	08:33
	17:44		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:36	17:01	17:05
30	08:15		07:31	06:34	05:57	05:55	06:23	07:03	07:43	08:26	08:10	08:33
	17:46		20:11	20:54	21:31	21:46	21:25	20:34	19:32	18:35	17:00	17:06
31	08:14		07:29		05:57		06:24	07:04		08:27		08:33
	17:47		20:13		21:32		21:23	20:32		18:33		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:
EAPC does not warrant, guarantee, or make any such representations regarding the contents of this report. EAPC cannot be held liable for erroneous results caused by errors or omissions in the delivered data, or inaccuracy, limitations, or malfunctioning of models or software used. For any claim whatsoever related to the subject matter of this report, the liability of EAPC for actual damages, regardless of the form of action, shall be limited to the total amount paid to EAPC for the services provided as part of this consultancy service.

Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Shadow receptor:** SR017 - SR017

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:45	07:29	08:11
	17:08	17:49	18:30	20:14	20:55	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:26	07:25	06:31	05:55	05:56	06:26	07:07	07:46	07:30	08:13
	17:09	17:50	18:31	20:15	20:57	21:34	21:46	21:21	20:28	19:28	17:30	16:59
3	08:33	08:10	07:24	07:23	06:29	05:55	05:56	06:28	07:08	07:48	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	16:59
4	08:33	08:09	07:23	07:22	06:28	05:54	05:57	06:29	07:09	07:49	07:33	08:15
	17:11	17:53	18:34	20:18	20:59	21:36	21:45	21:18	20:24	19:24	17:27	16:59
5	08:33	08:08	07:21	07:20	06:26	05:54	05:58	06:30	07:11	07:50	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:37	21:45	21:16	20:22	19:22	17:26	16:58
6	08:33	08:06	07:19	07:18	06:25	05:53	05:58	06:31	07:12	07:52	07:36	08:17
	17:13	17:56	18:37	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:24	16:58
7	08:32	08:05	07:17	07:16	06:23	05:53	05:59	06:33	07:13	07:53	07:38	08:18
	17:14	17:58	18:39	20:22	21:03	21:38	21:44	21:13	20:18	19:18	17:23	16:58
8	08:32	08:03	08:15	07:14	06:22	05:52	06:00	06:34	07:14	07:54	07:39	08:19
	17:15	18:00	18:40	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:22	16:58
9	08:32	08:02	08:13	07:12	06:20	05:52	06:01	06:35	07:16	07:56	07:41	08:20
	17:16	18:00	19:42	20:25	21:06	21:40	21:43	21:10	20:14	19:14	17:20	16:58
10	08:32	08:00	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57	07:42	08:21
	17:18	18:01	19:43	20:27	21:07	21:40	21:43	21:09	20:12	19:12	17:19	16:58
11	08:31	07:59	08:09	07:08	06:17	05:52	06:02	06:38	07:18	07:59	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:42	21:07	20:10	19:10	17:18	16:58
12	08:31	07:57	08:07	07:06	06:16	05:51	06:03	06:39	07:20	08:00	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:42	21:42	21:06	20:08	19:08	17:16	16:58
13	08:30	07:56	08:05	07:04	06:15	05:51	06:04	06:40	07:21	08:01	07:47	08:24
	17:21	18:06	19:47	20:31	21:11	21:42	21:41	21:04	20:06	19:06	17:15	16:58
14	08:30	07:54	08:03	07:02	06:13	05:51	06:05	06:42	07:22	08:03	07:48	08:25
	17:23	18:07	19:49	20:32	21:13	21:43	21:40	21:02	20:04	19:05	17:14	16:58
15	08:29	07:53	08:01	07:00	06:12	05:51	06:06	06:43	07:24	08:04	07:50	08:26
	17:24	18:09	19:50	20:33	21:14	21:43	21:40	21:01	20:02	19:03	17:13	16:58
16	08:28	07:51	07:59	06:59	06:11	05:51	06:07	06:44	07:25	08:06	07:51	08:27
	17:25	18:10	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12	16:58
17	08:28	07:49	07:57	06:57	06:10	05:51	06:08	06:46	07:26	08:07	07:52	08:27
	17:27	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11	16:58
18	08:27	07:48	07:55	06:55	06:09	05:51	06:09	06:47	07:28	08:08	07:54	08:28
	17:28	18:13	19:55	20:38	21:18	21:45	21:37	20:56	19:56	18:55	17:10	16:59
19	08:26	07:46	07:53	06:53	06:08	05:51	06:10	06:48	07:29	08:10	07:55	08:29
	17:29	18:15	19:56	20:39	21:19	21:45	21:36	20:54	19:54	18:54	17:09	16:59
20	08:25	07:44	07:51	06:51	06:06	05:51	06:11	06:50	07:30	08:11	07:57	08:29
	17:31	18:16	19:57	20:40	21:20	21:45	21:36	20:52	19:52	18:52	17:08	16:59
21	08:25	07:43	07:49	06:49	06:05	05:51	06:12	06:51	07:31	08:13	07:58	08:30
	17:32	18:18	19:59	20:42	21:21	21:46	21:35	20:50	19:50	18:50	17:07	17:00
22	08:24	07:41	07:47	06:48	06:04	05:52	06:13	06:52	07:33	08:14	08:00	08:30
	17:34	18:19	20:00	20:43	21:22	21:46	21:34	20:49	19:48	18:48	17:06	17:00
23	08:23	07:39	07:45	06:46	06:03	05:52	06:15	06:54	07:34	08:16	08:01	08:31
	17:35	18:21	20:02	20:44	21:23	21:46	21:33	20:47	19:46	18:46	17:05	17:01
24	08:22	07:37	07:43	06:44	06:02	05:52	06:16	06:55	07:35	08:17	08:02	08:31
	17:37	18:23	20:03	20:46	21:25	21:46	21:31	20:45	19:44	18:45	17:04	17:01
25	08:21	07:36	07:41	06:42	06:01	05:52	06:17	06:56	07:37	08:18	08:04	08:32
	17:38	18:24	20:04	20:47	21:26	21:46	21:30	20:43	19:42	18:43	17:04	17:02
26	08:20	07:34	07:39	06:41	06:01	05:53	06:18	06:57	07:38	08:20	08:05	08:32
	17:40	18:26	20:06	20:49	21:27	21:46	21:29	20:41	19:40	18:41	17:03	17:03
27	08:19	07:32	07:37	06:39	06:00	05:53	06:19	06:59	07:39	08:21	08:06	08:32
	17:41	18:27	20:07	20:50	21:28	21:46	21:28	20:39	19:38	18:40	17:02	17:03
28	08:18	07:30	07:35	06:37	05:59	05:54	06:20	07:00	07:41	08:23	08:08	08:32
	17:43	18:28	20:09	20:51	21:29	21:46	21:27	20:38	19:36	18:38	17:02	17:04
29	08:17		07:33	06:36	05:58	05:54	06:22	07:01	07:42	08:24	08:09	08:33
	17:44		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:36	17:01	17:05
30	08:15		07:31	06:34	05:57	05:55	06:23	07:03	07:43	08:26	08:10	08:33
	17:46		20:11	20:54	21:31	21:46	21:24	20:34	19:32	18:35	17:00	17:06
31	08:14		07:29		05:57		06:24	07:04		08:27		08:33
	17:47		20:13		21:32		21:23	20:32		18:33		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR018 - SR018

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:45	07:29	08:11
	17:08	17:49	18:30	20:14	20:55	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:26	07:25	06:31	05:56	05:56	06:27	07:07	07:46	07:30	08:12
	17:09	17:50	18:32	20:15	20:57	21:34	21:46	21:20	20:28	19:28	17:30	17:00
3	08:33	08:10	07:24	07:24	06:29	05:55	05:57	06:28	07:08	07:47	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:45	21:19	20:26	19:26	17:29	16:59
4	08:33	08:09	07:23	07:22	06:28	05:54	05:57	06:29	07:09	07:49	07:33	08:15
	17:11	17:53	18:34	20:18	20:59	21:36	21:45	21:18	20:24	19:24	17:27	16:59
5	08:33	08:08	07:21	07:20	06:26	05:54	05:58	06:30	07:11	07:50	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:36	21:45	21:16	20:22	19:22	17:26	16:59
6	08:33	08:06	07:19	07:18	06:25	05:53	05:59	06:32	07:12	07:52	07:36	08:17
	17:13	17:57	18:37	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:24	16:58
7	08:32	08:05	07:17	07:16	06:23	05:53	05:59	06:33	07:13	07:53	07:38	08:18
	17:14	17:58	18:39	20:22	21:03	21:38	21:44	21:13	20:18	19:18	17:23	16:58
8	08:32	08:03	08:15	07:14	06:22	05:53	06:00	06:34	07:14	07:54	07:39	08:19
	17:15	18:00	18:40	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:22	16:58
9	08:32	08:02	08:13	07:12	06:20	05:52	06:01	06:35	07:16	07:56	07:41	08:20
	17:17	18:00	19:42	20:25	21:06	21:39	21:43	21:10	20:14	19:14	17:20	16:58
10	08:31	08:00	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57	07:42	08:21
	17:18	18:01	19:43	20:26	21:07	21:40	21:43	21:09	20:12	19:12	17:19	16:58
11	08:31	07:59	08:09	07:08	06:18	05:52	06:03	06:38	07:18	07:58	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:42	21:07	20:10	19:10	17:18	16:58
12	08:30	07:57	08:07	07:06	06:16	05:52	06:04	06:39	07:20	08:00	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:41	21:42	21:06	20:08	19:08	17:17	16:58
13	08:30	07:56	08:05	07:04	06:15	05:51	06:04	06:41	07:21	08:01	07:46	08:24
	17:21	18:06	19:47	20:31	21:11	21:42	21:41	21:04	20:06	19:07	17:15	16:58
14	08:29	07:54	08:03	07:02	06:14	05:51	06:05	06:42	07:22	08:03	07:48	08:25
	17:23	18:07	19:49	20:32	21:12	21:43	21:40	21:02	20:04	19:05	17:14	16:58
15	08:29	07:53	08:01	07:00	06:12	05:51	06:06	06:43	07:24	08:04	07:49	08:26
	17:24	18:09	19:50	20:33	21:14	21:43	21:40	21:01	20:02	19:03	17:13	16:58
16	08:28	07:51	07:59	06:59	06:11	05:51	06:07	06:44	07:25	08:05	07:51	08:26
	17:25	18:10	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12	16:58
17	08:28	07:49	07:57	06:57	06:10	05:51	06:08	06:46	07:26	08:07	07:52	08:27
	17:27	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11	16:59
18	08:27	07:48	07:55	06:55	06:09	05:51	06:09	06:47	07:28	08:08	07:54	08:28
	17:28	18:13	19:55	20:38	21:17	21:44	21:37	20:56	19:56	18:55	17:10	16:59
19	08:26	07:46	07:53	06:53	06:08	05:51	06:10	06:48	07:29	08:10	07:55	08:28
	17:30	18:15	19:56	20:39	21:19	21:45	21:36	20:54	19:54	18:54	17:09	16:59
20	08:25	07:44	07:51	06:51	06:07	05:51	06:11	06:50	07:30	08:11	07:57	08:29
	17:31	18:17	19:57	20:40	21:20	21:45	21:35	20:52	19:52	18:52	17:08	17:00
21	08:24	07:43	07:49	06:49	06:05	05:52	06:13	06:51	07:31	08:13	07:58	08:30
	17:32	18:18	19:59	20:42	21:21	21:45	21:34	20:50	19:50	18:50	17:07	17:00
22	08:24	07:41	07:47	06:48	06:04	05:52	06:14	06:52	07:33	08:14	07:59	08:30
	17:34	18:20	20:00	20:43	21:22	21:46	21:33	20:48	19:48	18:48	17:06	17:00
23	08:23	07:39	07:45	06:46	06:03	05:52	06:15	06:54	07:34	08:15	08:01	08:31
	17:35	18:21	20:02	20:44	21:23	21:46	21:32	20:47	19:46	18:47	17:05	17:01
24	08:22	07:37	07:43	06:44	06:02	05:52	06:16	06:55	07:35	08:17	08:02	08:31
	17:37	18:23	20:03	20:46	21:24	21:46	21:31	20:45	19:44	18:45	17:04	17:02
25	08:21	07:35	07:41	06:42	06:02	05:53	06:17	06:56	07:37	08:18	08:03	08:31
	17:38	18:24	20:04	20:47	21:26	21:46	21:30	20:43	19:42	18:43	17:04	17:02
26	08:20	07:34	07:39	06:41	06:01	05:53	06:18	06:58	07:38	08:20	08:05	08:32
	17:40	18:26	20:06	20:48	21:27	21:46	21:29	20:41	19:40	18:41	17:03	17:03
27	08:19	07:32	07:37	06:39	06:00	05:53	06:19	06:59	07:39	08:21	08:06	08:32
	17:41	18:27	20:07	20:50	21:28	21:46	21:28	20:39	19:38	18:40	17:02	17:04
28	08:18	07:30	07:35	06:37	05:59	05:54	06:21	07:00	07:41	08:23	08:07	08:32
	17:43	18:29	20:09	20:51	21:29	21:46	21:27	20:37	19:36	18:38	17:02	17:04
29	08:16		07:33	06:36	05:58	05:54	06:22	07:01	07:42	08:24	08:09	08:33
	17:44		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:37	17:01	17:05
30	08:15		07:31	06:34	05:57	05:55	06:23	07:03	07:43	08:26	08:10	08:33
	17:46		20:11	20:54	21:31	21:46	21:24	20:34	19:32	18:35	17:01	17:06
31	08:14		07:29		05:57		06:24	07:04		08:27		08:33
	17:47		20:13		21:32		21:23	20:32		18:33		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Shadow receptor:** SR019 - SR019

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:45	07:29	08:11
	17:08	17:49	18:30	20:14	20:55	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:26	07:26	06:31	05:56	05:56	06:27	07:07	07:46	07:30	08:12
	17:09	17:50	18:32	20:15	20:57	21:34	21:46	21:20	20:28	19:28	17:30	17:00
3	08:33	08:10	07:24	07:24	06:29	05:55	05:57	06:28	07:08	07:48	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	16:59
4	08:33	08:09	07:23	07:22	06:28	05:54	05:57	06:29	07:09	07:49	07:33	08:15
	17:11	17:53	18:34	20:18	20:59	21:36	21:45	21:18	20:24	19:24	17:27	16:59
5	08:33	08:08	07:21	07:20	06:26	05:54	05:58	06:30	07:11	07:50	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:36	21:45	21:16	20:22	19:22	17:26	16:59
6	08:33	08:06	07:19	07:18	06:25	05:53	05:59	06:32	07:12	07:52	07:36	08:17
	17:13	17:57	18:37	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:24	16:58
7	08:32	08:05	07:17	07:16	06:23	05:53	05:59	06:33	07:13	07:53	07:38	08:18
	17:14	17:58	18:39	20:22	21:03	21:38	21:44	21:13	20:18	19:18	17:23	16:58
8	08:32	08:03	08:15	07:14	06:22	05:53	06:00	06:34	07:15	07:54	07:39	08:19
	17:15	18:00	18:40	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:22	16:58
9	08:32	08:02	08:13	07:12	06:20	05:52	06:01	06:35	07:16	07:56	07:41	08:20
	17:17	18:00	19:42	20:25	21:06	21:39	21:43	21:10	20:14	19:14	17:20	16:58
10	08:31	08:00	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57	07:42	08:21
	17:18	18:01	19:43	20:26	21:07	21:40	21:43	21:09	20:12	19:12	17:19	16:58
11	08:31	07:59	08:09	07:08	06:18	05:52	06:03	06:38	07:18	07:58	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:42	21:07	20:10	19:10	17:18	16:58
12	08:31	07:57	08:07	07:06	06:16	05:52	06:04	06:39	07:20	08:00	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:41	21:42	21:06	20:08	19:08	17:17	16:58
13	08:30	07:56	08:05	07:04	06:15	05:51	06:04	06:41	07:21	08:01	07:47	08:24
	17:21	18:06	19:47	20:31	21:11	21:42	21:41	21:04	20:06	19:07	17:15	16:58
14	08:29	07:54	08:03	07:02	06:14	05:51	06:05	06:42	07:22	08:03	07:48	08:25
	17:23	18:07	19:49	20:32	21:12	21:43	21:40	21:02	20:04	19:05	17:14	16:58
15	08:29	07:53	08:01	07:00	06:12	05:51	06:06	06:43	07:24	08:04	07:49	08:26
	17:24	18:09	19:50	20:33	21:14	21:43	21:40	21:01	20:02	19:03	17:13	16:58
16	08:28	07:51	07:59	06:59	06:11	05:51	06:07	06:44	07:25	08:05	07:51	08:26
	17:25	18:10	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12	16:58
17	08:28	07:49	07:57	06:57	06:10	05:51	06:08	06:46	07:26	08:07	07:52	08:27
	17:27	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11	16:59
18	08:27	07:48	07:55	06:55	06:09	05:51	06:09	06:47	07:28	08:08	07:54	08:28
	17:28	18:13	19:55	20:38	21:17	21:44	21:37	20:56	19:56	18:55	17:10	16:59
19	08:26	07:46	07:53	06:53	06:08	05:51	06:10	06:48	07:29	08:10	07:55	08:28
	17:30	18:15	19:56	20:39	21:19	21:45	21:36	20:54	19:54	18:54	17:09	16:59
20	08:25	07:44	07:51	06:51	06:07	05:51	06:11	06:50	07:30	08:11	07:57	08:29
	17:31	18:17	19:57	20:40	21:20	21:45	21:35	20:52	19:52	18:52	17:08	17:00
21	08:24	07:43	07:49	06:49	06:05	05:52	06:13	06:51	07:31	08:13	07:58	08:30
	17:32	18:18	19:59	20:42	21:21	21:45	21:34	20:50	19:50	18:50	17:07	17:00
22	08:24	07:41	07:47	06:48	06:04	05:52	06:14	06:52	07:33	08:14	07:59	08:30
	17:34	18:20	20:00	20:43	21:22	21:46	21:33	20:48	19:48	18:48	17:06	17:00
23	08:23	07:39	07:45	06:46	06:03	05:52	06:15	06:54	07:34	08:16	08:01	08:31
	17:35	18:21	20:02	20:44	21:23	21:46	21:32	20:47	19:46	18:47	17:05	17:01
24	08:22	07:37	07:43	06:44	06:02	05:52	06:16	06:55	07:35	08:17	08:02	08:31
	17:37	18:23	20:03	20:46	21:24	21:46	21:31	20:45	19:44	18:45	17:04	17:02
25	08:21	07:35	07:41	06:42	06:02	05:53	06:17	06:56	07:37	08:18	08:04	08:31
	17:38	18:24	20:04	20:47	21:26	21:46	21:30	20:43	19:42	18:43	17:04	17:02
26	08:20	07:34	07:39	06:41	06:01	05:53	06:18	06:58	07:38	08:20	08:05	08:32
	17:40	18:26	20:06	20:48	21:27	21:46	21:29	20:41	19:40	18:41	17:03	17:03
27	08:19	07:32	07:37	06:39	06:00	05:53	06:19	06:59	07:39	08:21	08:06	08:32
	17:41	18:27	20:07	20:50	21:28	21:46	21:28	20:39	19:38	18:40	17:02	17:04
28	08:18	07:30	07:35	06:37	05:59	05:54	06:21	07:00	07:41	08:23	08:07	08:32
	17:43	18:29	20:09	20:51	21:29	21:46	21:27	20:37	19:36	18:38	17:02	17:04
29	08:16		07:33	06:36	05:58	05:54	06:22	07:01	07:42	08:24	08:09	08:33
	17:44		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:37	17:01	17:05
30	08:15		07:31	06:34	05:57	05:55	06:23	07:03	07:43	08:26	08:10	08:33
	17:46		20:11	20:54	21:31	21:46	21:24	20:34	19:32	18:35	17:01	17:06
31	08:14		07:29		05:57		06:24	07:04		08:27		08:33
	17:47		20:13		21:32		21:23	20:32		18:33		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 5820
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR020 - SR020

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:27	06:32	05:56	05:55	06:25	07:05	07:45	07:29	08:11
	17:08	17:49	18:30	20:14	20:55	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:26	07:25	06:31	05:55	05:56	06:26	07:07	07:46	07:30	08:13
	17:09	17:50	18:31	20:16	20:57	21:34	21:46	21:21	20:28	19:28	17:30	16:59
3	08:33	08:10	07:25	07:23	06:29	05:55	05:56	06:28	07:08	07:48	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	16:59
4	08:33	08:09	07:23	07:22	06:28	05:54	05:57	06:29	07:09	07:49	07:33	08:15
	17:11	17:53	18:34	20:18	21:00	21:36	21:46	21:18	20:24	19:24	17:27	16:59
5	08:33	08:08	07:21	07:20	06:26	05:54	05:58	06:30	07:11	07:50	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:37	21:45	21:16	20:22	19:22	17:26	16:58
6	08:33	08:06	07:19	07:18	06:25	05:53	05:58	06:31	07:12	07:52	07:36	08:17
	17:13	17:56	18:37	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:24	16:58
7	08:33	08:05	07:17	07:16	06:23	05:53	05:59	06:33	07:13	07:53	07:38	08:18
	17:14	17:58	18:39	20:22	21:04	21:38	21:44	21:13	20:18	19:18	17:23	16:58
8	08:32	08:04	08:15	07:14	06:22	05:52	06:00	06:34	07:14	07:54	07:39	08:19
	17:15	18:00	18:40	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:22	16:58
9	08:32	08:02	08:13	07:12	06:20	05:52	06:01	06:35	07:16	07:56	07:41	08:20
	17:16	18:00	19:42	20:25	21:06	21:40	21:44	21:10	20:14	19:14	17:20	16:58
10	08:32	08:01	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57	07:42	08:21
	17:18	18:01	19:43	20:27	21:08	21:40	21:43	21:09	20:12	19:12	17:19	16:57
11	08:31	07:59	08:09	07:08	06:17	05:52	06:02	06:38	07:18	07:59	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:42	21:07	20:10	19:10	17:18	16:57
12	08:31	07:58	08:07	07:06	06:16	05:51	06:03	06:39	07:20	08:00	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:42	21:42	21:06	20:08	19:08	17:16	16:57
13	08:30	07:56	08:05	07:04	06:15	05:51	06:04	06:40	07:21	08:01	07:47	08:24
	17:21	18:06	19:47	20:31	21:11	21:42	21:41	21:04	20:06	19:06	17:15	16:58
14	08:30	07:54	08:03	07:02	06:13	05:51	06:05	06:42	07:22	08:03	07:48	08:25
	17:23	18:07	19:49	20:32	21:13	21:43	21:41	21:02	20:04	19:05	17:14	16:58
15	08:29	07:53	08:01	07:00	06:12	05:51	06:06	06:43	07:24	08:04	07:50	08:26
	17:24	18:09	19:50	20:33	21:14	21:43	21:40	21:01	20:02	19:03	17:13	16:58
16	08:28	07:51	07:59	06:59	06:11	05:51	06:07	06:44	07:25	08:06	07:51	08:27
	17:25	18:10	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12	16:58
17	08:28	07:49	07:57	06:57	06:10	05:51	06:08	06:46	07:26	08:07	07:53	08:27
	17:27	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11	16:58
18	08:27	07:48	07:55	06:55	06:09	05:51	06:09	06:47	07:28	08:08	07:54	08:28
	17:28	18:13	19:55	20:38	21:18	21:45	21:37	20:56	19:56	18:55	17:10	16:59
19	08:26	07:46	07:53	06:53	06:07	05:51	06:10	06:48	07:29	08:10	07:55	08:29
	17:29	18:15	19:56	20:39	21:19	21:45	21:37	20:54	19:54	18:54	17:09	16:59
20	08:26	07:44	07:51	06:51	06:06	05:51	06:11	06:50	07:30	08:11	07:57	08:29
	17:31	18:16	19:57	20:40	21:20	21:45	21:36	20:52	19:52	18:52	17:08	16:59
21	08:25	07:43	07:49	06:49	06:05	05:51	06:12	06:51	07:31	08:13	07:58	08:30
	17:32	18:18	19:59	20:42	21:21	21:46	21:35	20:50	19:50	18:50	17:07	17:00
22	08:24	07:41	07:47	06:48	06:04	05:52	06:13	06:52	07:33	08:14	08:00	08:30
	17:34	18:19	20:00	20:43	21:22	21:46	21:34	20:49	19:48	18:48	17:06	17:00
23	08:23	07:39	07:45	06:46	06:03	05:52	06:15	06:54	07:34	08:16	08:01	08:31
	17:35	18:21	20:02	20:45	21:24	21:46	21:33	20:47	19:46	18:46	17:05	17:01
24	08:22	07:37	07:43	06:44	06:02	05:52	06:16	06:55	07:35	08:17	08:02	08:31
	17:37	18:23	20:03	20:46	21:25	21:46	21:32	20:45	19:44	18:45	17:04	17:01
25	08:21	07:36	07:41	06:42	06:01	05:52	06:17	06:56	07:37	08:19	08:04	08:32
	17:38	18:24	20:04	20:47	21:26	21:46	21:31	20:43	19:42	18:43	17:04	17:02
26	08:20	07:34	07:39	06:41	06:00	05:53	06:18	06:57	07:38	08:20	08:05	08:32
	17:40	18:26	20:06	20:49	21:27	21:46	21:29	20:41	19:40	18:41	17:03	17:03
27	08:19	07:32	07:37	06:39	06:00	05:53	06:19	06:59	07:39	08:21	08:06	08:32
	17:41	18:27	20:07	20:50	21:28	21:46	21:28	20:39	19:38	18:40	17:02	17:03
28	08:18	07:30	07:35	06:37	05:59	05:54	06:20	07:00	07:41	08:23	08:08	08:33
	17:43	18:28	20:09	20:51	21:29	21:46	21:27	20:38	19:36	18:38	17:02	17:04
29	08:17		07:33	06:36	05:58	05:54	06:22	07:01	07:42	08:24	08:09	08:33
	17:44		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:36	17:01	17:05
30	08:15		07:31	06:34	05:57	05:55	06:23	07:03	07:43	08:26	08:10	08:33
	17:46		20:11	20:54	21:31	21:46	21:25	20:34	19:32	18:35	17:00	17:06
31	08:14		07:29		05:57		06:24	07:04		08:27		08:33
	17:47		20:13		21:32		21:23	20:32		18:33		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Shadow receptor:** SR021 - SR021

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:28	06:33	05:56	05:55	06:25	07:05	07:45	07:29	08:11
	17:08	17:49	18:30	20:14	20:55	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:26	07:26	06:31	05:56	05:56	06:27	07:07	07:46	07:30	08:13
	17:09	17:50	18:32	20:16	20:57	21:34	21:46	21:21	20:28	19:28	17:30	17:00
3	08:33	08:10	07:25	07:24	06:29	05:55	05:57	06:28	07:08	07:48	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	16:59
4	08:33	08:09	07:23	07:22	06:28	05:54	05:57	06:29	07:09	07:49	07:33	08:15
	17:11	17:54	18:35	20:18	20:59	21:36	21:45	21:18	20:24	19:24	17:27	16:59
5	08:33	08:08	07:21	07:20	06:26	05:54	05:58	06:30	07:11	07:50	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:37	21:45	21:16	20:22	19:22	17:26	16:59
6	08:33	08:06	07:19	07:18	06:25	05:53	05:59	06:32	07:12	07:52	07:36	08:17
	17:13	17:57	18:37	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:25	16:58
7	08:32	08:05	07:17	07:16	06:23	05:53	05:59	06:33	07:13	07:53	07:38	08:18
	17:14	17:58	18:39	20:22	21:04	21:38	21:44	21:13	20:18	19:18	17:23	16:58
8	08:32	08:03	08:15	07:14	06:22	05:53	06:00	06:34	07:15	07:54	07:39	08:19
	17:15	18:00	18:40	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:22	16:58
9	08:32	08:02	08:13	07:12	06:20	05:52	06:01	06:36	07:16	07:56	07:41	08:20
	17:17	18:00	19:42	20:25	21:06	21:40	21:43	21:10	20:14	19:14	17:20	16:58
10	08:32	08:01	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57	07:42	08:21
	17:18	18:01	19:43	20:27	21:07	21:40	21:43	21:09	20:12	19:12	17:19	16:58
11	08:31	07:59	08:09	07:08	06:18	05:52	06:03	06:38	07:19	07:59	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:42	21:07	20:10	19:10	17:18	16:58
12	08:31	07:57	08:07	07:06	06:16	05:52	06:04	06:39	07:20	08:00	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:42	21:42	21:06	20:08	19:09	17:17	16:58
13	08:30	07:56	08:05	07:04	06:15	05:51	06:04	06:41	07:21	08:01	07:47	08:24
	17:22	18:06	19:48	20:31	21:11	21:42	21:41	21:04	20:06	19:07	17:15	16:58
14	08:30	07:54	08:03	07:02	06:14	05:51	06:05	06:42	07:22	08:03	07:48	08:25
	17:23	18:07	19:49	20:32	21:13	21:43	21:40	21:02	20:04	19:05	17:14	16:58
15	08:29	07:53	08:01	07:01	06:12	05:51	06:06	06:43	07:24	08:04	07:50	08:26
	17:24	18:09	19:50	20:34	21:14	21:43	21:40	21:01	20:02	19:03	17:13	16:58
16	08:28	07:51	07:59	06:59	06:11	05:51	06:07	06:45	07:25	08:06	07:51	08:27
	17:26	18:11	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12	16:58
17	08:28	07:49	07:57	06:57	06:10	05:51	06:08	06:46	07:26	08:07	07:52	08:27
	17:27	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11	16:59
18	08:27	07:48	07:55	06:55	06:09	05:51	06:09	06:47	07:28	08:08	07:54	08:28
	17:28	18:14	19:55	20:38	21:18	21:45	21:37	20:56	19:56	18:55	17:10	16:59
19	08:26	07:46	07:53	06:53	06:08	05:51	06:10	06:48	07:29	08:10	07:55	08:29
	17:30	18:15	19:56	20:39	21:19	21:45	21:36	20:54	19:54	18:54	17:09	16:59
20	08:25	07:44	07:51	06:51	06:07	05:51	06:11	06:50	07:30	08:11	07:57	08:29
	17:31	18:17	19:57	20:40	21:20	21:45	21:36	20:52	19:52	18:52	17:08	17:00
21	08:25	07:43	07:49	06:50	06:06	05:52	06:13	06:51	07:32	08:13	07:58	08:30
	17:32	18:18	19:59	20:42	21:21	21:46	21:35	20:50	19:50	18:50	17:07	17:00
22	08:24	07:41	07:47	06:48	06:04	05:52	06:14	06:52	07:33	08:14	08:00	08:30
	17:34	18:20	20:00	20:43	21:22	21:46	21:34	20:49	19:48	18:48	17:06	17:01
23	08:23	07:39	07:45	06:46	06:03	05:52	06:15	06:54	07:34	08:16	08:01	08:31
	17:35	18:21	20:02	20:45	21:24	21:46	21:33	20:47	19:46	18:47	17:05	17:01
24	08:22	07:37	07:43	06:44	06:03	05:52	06:16	06:55	07:36	08:17	08:02	08:31
	17:37	18:23	20:03	20:46	21:25	21:46	21:32	20:45	19:44	18:45	17:05	17:02
25	08:21	07:36	07:41	06:43	06:02	05:53	06:17	06:56	07:37	08:19	08:04	08:32
	17:38	18:24	20:04	20:47	21:26	21:46	21:30	20:43	19:42	18:43	17:04	17:02
26	08:20	07:34	07:39	06:41	06:01	05:53	06:18	06:58	07:38	08:20	08:05	08:32
	17:40	18:26	20:06	20:49	21:27	21:46	21:29	20:41	19:40	18:42	17:03	17:03
27	08:19	07:32	07:37	06:39	06:00	05:53	06:19	06:59	07:40	08:21	08:06	08:32
	17:41	18:27	20:07	20:50	21:28	21:46	21:28	20:39	19:38	18:40	17:02	17:04
28	08:18	07:30	07:35	06:37	05:59	05:54	06:21	07:00	07:41	08:23	08:08	08:33
	17:43	18:29	20:09	20:51	21:29	21:46	21:27	20:38	19:36	18:38	17:02	17:04
29	08:17		07:34	06:36	05:58	05:54	06:22	07:02	07:42	08:24	08:09	08:33
	17:44		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:37	17:01	17:05
30	08:15		07:32	06:34	05:58	05:55	06:23	07:03	07:44	08:26	08:10	08:33
	17:46		20:11	20:54	21:31	21:46	21:24	20:34	19:32	18:35	17:01	17:06
31	08:14		07:30		05:57		06:24	07:04		08:27		08:33
	17:47		20:13		21:32		21:23	20:32		18:33		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 5820
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR022 - SR022

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:28	06:32	05:56	05:55	06:25	07:05	07:45	07:29	08:12
	17:08	17:49	18:30	20:14	20:56	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:26	07:26	06:31	05:55	05:56	06:27	07:07	07:46	07:30	08:13
	17:09	17:50	18:32	20:16	20:57	21:34	21:46	21:21	20:28	19:28	17:30	17:00
3	08:33	08:10	07:25	07:24	06:29	05:55	05:57	06:28	07:08	07:48	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	16:59
4	08:33	08:09	07:23	07:22	06:28	05:54	05:57	06:29	07:09	07:49	07:33	08:15
	17:11	17:53	18:35	20:18	21:00	21:36	21:46	21:18	20:24	19:24	17:27	16:59
5	08:33	08:08	07:21	07:20	06:26	05:54	05:58	06:30	07:11	07:50	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:37	21:45	21:16	20:22	19:22	17:26	16:59
6	08:33	08:06	07:19	07:18	06:25	05:53	05:59	06:32	07:12	07:52	07:36	08:17
	17:13	17:57	18:37	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:24	16:58
7	08:33	08:05	07:17	07:16	06:23	05:53	05:59	06:33	07:13	07:53	07:38	08:18
	17:14	17:58	18:39	20:23	21:04	21:38	21:44	21:14	20:18	19:18	17:23	16:58
8	08:32	08:04	08:15	07:14	06:22	05:53	06:00	06:34	07:15	07:54	07:39	08:19
	17:15	18:00	18:40	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:22	16:58
9	08:32	08:02	08:13	07:12	06:20	05:52	06:01	06:35	07:16	07:56	07:41	08:20
	17:16	18:00	19:42	20:25	21:06	21:40	21:44	21:10	20:14	19:14	17:20	16:58
10	08:32	08:01	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57	07:42	08:21
	17:18	18:01	19:43	20:27	21:08	21:40	21:43	21:09	20:12	19:12	17:19	16:58
11	08:31	07:59	08:09	07:08	06:18	05:52	06:03	06:38	07:18	07:59	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:42	21:07	20:10	19:10	17:18	16:58
12	08:31	07:58	08:07	07:06	06:16	05:52	06:03	06:39	07:20	08:00	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:42	21:42	21:06	20:08	19:08	17:17	16:58
13	08:30	07:56	08:05	07:04	06:15	05:51	06:04	06:41	07:21	08:01	07:47	08:24
	17:21	18:06	19:48	20:31	21:11	21:42	21:41	21:04	20:06	19:07	17:15	16:58
14	08:30	07:54	08:03	07:02	06:14	05:51	06:05	06:42	07:22	08:03	07:48	08:25
	17:23	18:07	19:49	20:32	21:13	21:43	21:41	21:02	20:04	19:05	17:14	16:58
15	08:29	07:53	08:01	07:00	06:12	05:51	06:06	06:43	07:24	08:04	07:50	08:26
	17:24	18:09	19:50	20:34	21:14	21:43	21:40	21:01	20:02	19:03	17:13	16:58
16	08:29	07:51	07:59	06:59	06:11	05:51	06:07	06:44	07:25	08:06	07:51	08:27
	17:25	18:10	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12	16:58
17	08:28	07:50	07:57	06:57	06:10	05:51	06:08	06:46	07:26	08:07	07:53	08:27
	17:27	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11	16:58
18	08:27	07:48	07:55	06:55	06:09	05:51	06:09	06:47	07:28	08:08	07:54	08:28
	17:28	18:14	19:55	20:38	21:18	21:45	21:37	20:56	19:56	18:55	17:10	16:59
19	08:26	07:46	07:53	06:53	06:08	05:51	06:10	06:48	07:29	08:10	07:55	08:29
	17:30	18:15	19:56	20:39	21:19	21:45	21:37	20:54	19:54	18:54	17:09	16:59
20	08:26	07:44	07:51	06:51	06:07	05:51	06:11	06:50	07:30	08:11	07:57	08:29
	17:31	18:17	19:57	20:40	21:20	21:45	21:36	20:52	19:52	18:52	17:08	16:59
21	08:25	07:43	07:49	06:50	06:05	05:52	06:12	06:51	07:32	08:13	07:58	08:30
	17:32	18:18	19:59	20:42	21:21	21:46	21:35	20:50	19:50	18:50	17:07	17:00
22	08:24	07:41	07:47	06:48	06:04	05:52	06:14	06:52	07:33	08:14	08:00	08:30
	17:34	18:20	20:00	20:43	21:22	21:46	21:34	20:49	19:48	18:48	17:06	17:00
23	08:23	07:39	07:45	06:46	06:03	05:52	06:15	06:54	07:34	08:16	08:01	08:31
	17:35	18:21	20:02	20:45	21:24	21:46	21:33	20:47	19:46	18:47	17:05	17:01
24	08:22	07:37	07:43	06:44	06:02	05:52	06:16	06:55	07:36	08:17	08:02	08:31
	17:37	18:23	20:03	20:46	21:25	21:46	21:32	20:45	19:44	18:45	17:04	17:02
25	08:21	07:36	07:41	06:42	06:02	05:53	06:17	06:56	07:37	08:19	08:04	08:32
	17:38	18:24	20:04	20:47	21:26	21:46	21:31	20:43	19:42	18:43	17:04	17:02
26	08:20	07:34	07:39	06:41	06:01	05:53	06:18	06:58	07:38	08:20	08:05	08:32
	17:40	18:26	20:06	20:49	21:27	21:46	21:29	20:41	19:40	18:41	17:03	17:03
27	08:19	07:32	07:37	06:39	06:00	05:53	06:19	06:59	07:40	08:22	08:06	08:32
	17:41	18:27	20:07	20:50	21:28	21:46	21:28	20:40	19:38	18:40	17:02	17:04
28	08:18	07:30	07:35	06:37	05:59	05:54	06:20	07:00	07:41	08:23	08:08	08:33
	17:43	18:29	20:09	20:51	21:29	21:46	21:27	20:38	19:36	18:38	17:02	17:04
29	08:17		07:34	06:36	05:58	05:54	06:22	07:01	07:42	08:24	08:09	08:33
	17:44		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:37	17:01	17:05
30	08:15		07:32	06:34	05:57	05:55	06:23	07:03	07:44	08:26	08:10	08:33
	17:46		20:11	20:54	21:31	21:46	21:25	20:34	19:32	18:35	17:01	17:06
31	08:14		07:30		05:57		06:24	07:04		08:27		08:33
	17:47		20:13		21:32		21:23	20:32		18:33		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR023 - SR023

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:28	06:33	05:56	05:55	06:25	07:05	07:45	07:29	08:12
	17:08	17:49	18:30	20:14	20:56	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:26	07:26	06:31	05:55	05:56	06:27	07:07	07:46	07:30	08:13
	17:09	17:50	18:32	20:16	20:57	21:34	21:46	21:21	20:28	19:28	17:30	17:00
3	08:33	08:11	07:25	07:24	06:29	05:55	05:57	06:28	07:08	07:48	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	16:59
4	08:33	08:09	07:23	07:22	06:28	05:54	05:57	06:29	07:09	07:49	07:33	08:15
	17:11	17:54	18:35	20:18	21:00	21:36	21:46	21:18	20:24	19:24	17:27	16:59
5	08:33	08:08	07:21	07:20	06:26	05:54	05:58	06:30	07:11	07:50	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:37	21:45	21:16	20:22	19:22	17:26	16:59
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	17:13	17:57	18:37	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:24	16:58
7	08:33	08:05	07:17	07:16	06:23	05:53	05:59	06:33	07:13	07:53	07:38	08:18
	17:14	17:58	18:39	20:23	21:04	21:38	21:45	21:14	20:18	19:18	17:23	16:58
8	08:32	08:04	08:15	07:14	06:22	05:53	06:00	06:34	07:15	07:55	07:39	08:19
	17:15	18:00	18:40	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:22	16:58
9	08:32	08:02	08:13	07:12	06:20	05:52	06:01	06:35	07:16	07:56	07:41	08:21
	17:17	18:00	19:42	20:25	21:06	21:40	21:44	21:11	20:14	19:14	17:20	16:58
10	08:32	08:01	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57	07:42	08:21
	17:18	18:01	19:43	20:27	21:08	21:40	21:43	21:09	20:12	19:12	17:19	16:58
11	08:31	07:59	08:09	07:08	06:18	05:52	06:03	06:38	07:19	07:59	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:43	21:07	20:10	19:10	17:18	16:58
12	08:31	07:58	08:07	07:06	06:16	05:52	06:04	06:39	07:20	08:00	07:45	08:23
	17:20	18:04	19:46	20:29	21:10	21:42	21:42	21:06	20:08	19:09	17:17	16:58
13	08:30	07:56	08:05	07:04	06:15	05:51	06:04	06:41	07:21	08:01	07:47	08:24
	17:21	18:06	19:48	20:31	21:11	21:42	21:41	21:04	20:06	19:07	17:15	16:58
14	08:30	07:54	08:03	07:02	06:14	05:51	06:05	06:42	07:22	08:03	07:48	08:25
	17:23	18:07	19:49	20:32	21:13	21:43	21:41	21:03	20:04	19:05	17:14	16:58
15	08:29	07:53	08:01	07:01	06:12	05:51	06:06	06:43	07:24	08:04	07:50	08:26
	17:24	18:09	19:50	20:34	21:14	21:43	21:40	21:01	20:02	19:03	17:13	16:58
16	08:29	07:51	07:59	06:59	06:11	05:51	06:07	06:45	07:25	08:06	07:51	08:27
	17:25	18:10	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12	16:58
17	08:28	07:50	07:57	06:57	06:10	05:51	06:08	06:46	07:26	08:07	07:53	08:27
	17:27	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11	16:58
18	08:27	07:48	07:55	06:55	06:09	05:51	06:09	06:47	07:28	08:09	07:54	08:28
	17:28	18:14	19:55	20:38	21:18	21:45	21:37	20:56	19:56	18:55	17:10	16:59
19	08:26	07:46	07:53	06:53	06:08	05:51	06:10	06:48	07:29	08:10	07:55	08:29
	17:30	18:15	19:56	20:39	21:19	21:45	21:37	20:54	19:54	18:54	17:09	16:59
20	08:26	07:44	07:51	06:51	06:07	05:51	06:11	06:50	07:30	08:11	07:57	08:29
	17:31	18:17	19:58	20:40	21:20	21:45	21:36	20:52	19:52	18:52	17:08	17:00
21	08:25	07:43	07:49	06:50	06:05	05:52	06:13	06:51	07:32	08:13	07:58	08:30
	17:32	18:18	19:59	20:42	21:21	21:46	21:35	20:50	19:50	18:50	17:07	17:00
22	08:24	07:41	07:47	06:48	06:04	05:52	06:14	06:52	07:33	08:14	08:00	08:30
	17:34	18:20	20:00	20:43	21:22	21:46	21:34	20:49	19:48	18:48	17:06	17:00
23	08:23	07:39	07:45	06:46	06:03	05:52	06:15	06:54	07:34	08:16	08:01	08:31
	17:35	18:21	20:02	20:45	21:24	21:46	21:33	20:47	19:46	18:47	17:05	17:01
24	08:22	07:37	07:44	06:44	06:02	05:52	06:16	06:55	07:36	08:17	08:02	08:31
	17:37	18:23	20:03	20:46	21:25	21:46	21:32	20:45	19:44	18:45	17:04	17:02
25	08:21	07:36	07:42	06:43	06:02	05:53	06:17	06:56	07:37	08:19	08:04	08:32
	17:38	18:24	20:05	20:47	21:26	21:46	21:31	20:43	19:42	18:43	17:04	17:02
26	08:20	07:34	07:40	06:41	06:01	05:53	06:18	06:58	07:38	08:20	08:05	08:32
	17:40	18:26	20:06	20:49	21:27	21:46	21:29	20:41	19:40	18:41	17:03	17:03
27	08:19	07:32	07:38	06:39	06:00	05:53	06:19	06:59	07:40	08:22	08:06	08:32
	17:41	18:27	20:07	20:50	21:28	21:47	21:28	20:40	19:38	18:40	17:02	17:04
28	08:18	07:30	07:36	06:37	05:59	05:54	06:21	07:00	07:41	08:23	08:08	08:33
	17:43	18:29	20:09	20:51	21:29	21:46	21:27	20:38	19:36	18:38	17:02	17:04
29	08:17		07:34	06:36	05:58	05:54	06:22	07:02	07:42	08:25	08:09	08:33
	17:44		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:37	17:01	17:05
30	08:16		07:32	06:34	05:57	05:55	06:23	07:03	07:44	08:26	08:10	08:33
	17:46		20:11	20:54	21:31	21:46	21:25	20:34	19:32	18:35	17:01	17:06
31	08:14		07:30		05:57		06:24	07:04		08:27		08:33
	17:47		20:13		21:32		21:23	20:32		18:33		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case			-									
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 5820
+1 701 775 3000
Jay Haley / jhaley@eapc.net

Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Shadow receptor:** SR024 - SR024

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:28	06:33	05:56	05:56	06:26	07:06	07:45	07:29	08:11
	17:08	17:49	18:30	20:14	20:56	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:27	07:26	06:31	05:56	05:56	06:27	07:07	07:46	07:30	08:13
	17:09	17:51	18:32	20:16	20:57	21:34	21:46	21:21	20:28	19:28	17:31	17:00
3	08:33	08:10	07:25	07:24	06:30	05:55	05:57	06:28	07:08	07:48	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	17:00
4	08:33	08:09	07:23	07:22	06:28	05:55	05:58	06:29	07:10	07:49	07:33	08:15
	17:11	17:54	18:35	20:18	21:00	21:36	21:45	21:18	20:24	19:24	17:28	16:59
5	08:33	08:08	07:21	07:20	06:27	05:54	05:58	06:31	07:11	07:50	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:37	21:45	21:16	20:22	19:22	17:26	16:59
6	08:33	08:06	07:19	07:18	06:25	05:54	05:59	06:32	07:12	07:52	07:36	08:17
	17:13	17:57	18:38	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:25	16:59
7	08:33	08:05	07:17	07:16	06:24	05:53	06:00	06:33	07:13	07:53	07:38	08:18
	17:15	17:58	18:39	20:23	21:04	21:38	21:44	21:14	20:18	19:18	17:23	16:58
8	08:32	08:04	08:15	07:14	06:22	05:53	06:00	06:34	07:15	07:55	07:39	08:19
	17:16	18:00	18:41	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:22	16:58
9	08:32	08:02	08:13	07:12	06:21	05:53	06:01	06:36	07:16	07:56	07:41	08:20
	17:17	18:00	19:42	20:25	21:06	21:40	21:43	21:10	20:14	19:14	17:21	16:58
10	08:32	08:01	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57	07:42	08:21
	17:18	18:01	19:43	20:27	21:08	21:40	21:43	21:09	20:12	19:13	17:19	16:58
11	08:31	07:59	08:09	07:08	06:18	05:52	06:03	06:38	07:19	07:59	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:42	21:07	20:10	19:11	17:18	16:58
12	08:31	07:58	08:07	07:06	06:17	05:52	06:04	06:40	07:20	08:00	07:45	08:23
	17:21	18:05	19:46	20:29	21:10	21:42	21:42	21:06	20:08	19:09	17:17	16:58
13	08:30	07:56	08:05	07:04	06:15	05:52	06:05	06:41	07:21	08:02	07:47	08:24
	17:22	18:06	19:48	20:31	21:11	21:42	21:41	21:04	20:06	19:07	17:16	16:58
14	08:30	07:54	08:03	07:03	06:14	05:52	06:06	06:42	07:23	08:03	07:48	08:25
	17:23	18:08	19:49	20:32	21:13	21:43	21:40	21:03	20:04	19:05	17:14	16:58
15	08:29	07:53	08:02	07:01	06:13	05:52	06:07	06:43	07:24	08:04	07:50	08:26
	17:24	18:09	19:51	20:34	21:14	21:43	21:40	21:01	20:02	19:03	17:13	16:58
16	08:28	07:51	08:00	06:59	06:11	05:51	06:08	06:45	07:25	08:06	07:51	08:27
	17:26	18:11	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12	16:59
17	08:28	07:50	07:58	06:57	06:10	05:51	06:09	06:46	07:27	08:07	07:53	08:27
	17:27	18:12	19:53	20:36	21:16	21:44	21:38	20:57	19:58	18:57	17:11	16:59
18	08:27	07:48	07:56	06:55	06:09	05:52	06:10	06:47	07:28	08:09	07:54	08:28
	17:28	18:14	19:55	20:38	21:18	21:45	21:37	20:56	19:56	18:56	17:10	16:59
19	08:26	07:46	07:54	06:53	06:08	05:52	06:11	06:49	07:29	08:10	07:55	08:29
	17:30	18:15	19:56	20:39	21:19	21:45	21:36	20:54	19:54	18:54	17:09	16:59
20	08:26	07:44	07:52	06:52	06:07	05:52	06:12	06:50	07:30	08:11	07:57	08:29
	17:31	18:17	19:58	20:40	21:20	21:45	21:36	20:52	19:52	18:52	17:08	17:00
21	08:25	07:43	07:50	06:50	06:06	05:52	06:13	06:51	07:32	08:13	07:58	08:30
	17:33	18:18	19:59	20:42	21:21	21:46	21:35	20:50	19:50	18:50	17:07	17:00
22	08:24	07:41	07:48	06:48	06:05	05:52	06:14	06:53	07:33	08:14	08:00	08:30
	17:34	18:20	20:00	20:43	21:22	21:46	21:34	20:49	19:48	18:49	17:06	17:01
23	08:23	07:39	07:46	06:46	06:04	05:52	06:15	06:54	07:34	08:16	08:01	08:31
	17:36	18:21	20:02	20:45	21:24	21:46	21:33	20:47	19:46	18:47	17:06	17:01
24	08:22	07:37	07:44	06:44	06:03	05:53	06:16	06:55	07:36	08:17	08:02	08:31
	17:37	18:23	20:03	20:46	21:25	21:46	21:32	20:45	19:44	18:45	17:05	17:02
25	08:21	07:36	07:42	06:43	06:02	05:53	06:17	06:56	07:37	08:19	08:04	08:32
	17:39	18:24	20:05	20:47	21:26	21:46	21:30	20:43	19:42	18:43	17:04	17:03
26	08:20	07:34	07:40	06:41	06:01	05:53	06:18	06:58	07:38	08:20	08:05	08:32
	17:40	18:26	20:06	20:49	21:27	21:46	21:29	20:41	19:40	18:42	17:03	17:03
27	08:19	07:32	07:38	06:39	06:00	05:54	06:20	06:59	07:40	08:22	08:06	08:32
	17:42	18:27	20:07	20:50	21:28	21:46	21:28	20:40	19:38	18:40	17:03	17:04
28	08:18	07:30	07:36	06:38	05:59	05:54	06:21	07:00	07:41	08:23	08:08	08:33
	17:43	18:29	20:09	20:51	21:29	21:46	21:27	20:38	19:36	18:38	17:02	17:05
29	08:17		07:34	06:36	05:59	05:55	06:22	07:02	07:42	08:25	08:09	08:33
	17:45		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:37	17:01	17:05
30	08:15		07:32	06:34	05:58	05:55	06:23	07:03	07:44	08:26	08:10	08:33
	17:46		20:12	20:54	21:31	21:46	21:25	20:34	19:32	18:35	17:01	17:06
31	08:14		07:30		05:57		06:24	07:04		08:27		08:33
	17:48		20:13		21:32		21:23	20:32		18:34		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Shadow receptor:** SR025 - SR025

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:28	07:28	06:33	05:56	05:56	06:26	07:06	07:45	07:29	08:12
	17:08	17:49	18:30	20:14	20:56	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:27	07:26	06:31	05:56	05:56	06:27	07:07	07:46	07:30	08:13
	17:09	17:51	18:32	20:16	20:57	21:34	21:46	21:21	20:28	19:28	17:31	17:00
3	08:33	08:11	07:25	07:24	06:30	05:55	05:57	06:28	07:08	07:48	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	17:00
4	08:33	08:09	07:23	07:22	06:28	05:55	05:58	06:29	07:10	07:49	07:33	08:15
	17:11	17:54	18:35	20:19	21:00	21:36	21:45	21:18	20:24	19:24	17:28	16:59
5	08:33	08:08	07:21	07:20	06:27	05:54	05:58	06:31	07:11	07:51	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:37	21:45	21:16	20:22	19:22	17:26	16:59
6	08:33	08:06	07:19	07:18	06:25	05:54	05:59	06:32	07:12	07:52	07:36	08:17
	17:13	17:57	18:38	20:21	21:02	21:37	21:45	21:15	20:20	19:20	17:25	16:59
7	08:33	08:05	07:17	07:16	06:24	05:53	06:00	06:33	07:14	07:53	07:38	08:18
	17:15	17:58	18:39	20:23	21:04	21:38	21:44	21:14	20:18	19:18	17:23	16:58
8	08:32	08:04	08:15	07:14	06:22	05:53	06:01	06:35	07:15	07:55	07:39	08:19
	17:16	18:00	18:41	20:24	21:05	21:39	21:44	21:12	20:16	19:16	17:22	16:58
9	08:32	08:02	08:13	07:12	06:21	05:53	06:01	06:36	07:16	07:56	07:41	08:20
	17:17	18:00	19:42	20:25	21:06	21:40	21:44	21:11	20:14	19:15	17:21	16:58
10	08:32	08:01	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57	07:42	08:21
	17:18	18:02	19:43	20:27	21:08	21:40	21:43	21:09	20:12	19:13	17:19	16:58
11	08:31	07:59	08:09	07:08	06:18	05:52	06:03	06:38	07:19	07:59	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:42	21:07	20:10	19:11	17:18	16:58
12	08:31	07:58	08:07	07:06	06:17	05:52	06:04	06:40	07:20	08:00	07:45	08:23
	17:21	18:05	19:46	20:30	21:10	21:42	21:42	21:06	20:08	19:09	17:17	16:58
13	08:30	07:56	08:05	07:05	06:15	05:52	06:05	06:41	07:21	08:02	07:47	08:24
	17:22	18:06	19:48	20:31	21:11	21:42	21:41	21:04	20:06	19:07	17:16	16:58
14	08:30	07:54	08:04	07:03	06:14	05:52	06:06	06:42	07:23	08:03	07:48	08:25
	17:23	18:08	19:49	20:32	21:13	21:43	21:41	21:03	20:04	19:05	17:15	16:58
15	08:29	07:53	08:02	07:01	06:13	05:52	06:07	06:44	07:24	08:04	07:50	08:26
	17:24	18:09	19:51	20:34	21:14	21:43	21:40	21:01	20:02	19:03	17:13	16:58
16	08:29	07:51	08:00	06:59	06:12	05:52	06:08	06:45	07:25	08:06	07:51	08:27
	17:26	18:11	19:52	20:35	21:15	21:44	21:39	20:59	20:00	19:01	17:12	16:59
17	08:28	07:50	07:58	06:57	06:10	05:52	06:09	06:46	07:27	08:07	07:53	08:27
	17:27	18:12	19:53	20:36	21:16	21:44	21:38	20:58	19:58	18:58	17:11	16:59
18	08:27	07:48	07:56	06:55	06:09	05:52	06:10	06:47	07:28	08:09	07:54	08:28
	17:29	18:14	19:55	20:38	21:18	21:45	21:37	20:56	19:56	18:56	17:10	16:59
19	08:26	07:46	07:54	06:53	06:08	05:52	06:11	06:49	07:29	08:10	07:55	08:29
	17:30	18:15	19:56	20:39	21:19	21:45	21:37	20:54	19:54	18:54	17:09	17:00
20	08:26	07:45	07:52	06:52	06:07	05:52	06:12	06:50	07:30	08:11	07:57	08:29
	17:31	18:17	19:58	20:41	21:20	21:45	21:36	20:52	19:52	18:52	17:08	17:00
21	08:25	07:43	07:50	06:50	06:06	05:52	06:13	06:51	07:32	08:13	07:58	08:30
	17:33	18:18	19:59	20:42	21:21	21:46	21:35	20:51	19:50	18:50	17:07	17:00
22	08:24	07:41	07:48	06:48	06:05	05:52	06:14	06:53	07:33	08:14	08:00	08:30
	17:34	18:20	20:00	20:43	21:22	21:46	21:34	20:49	19:48	18:49	17:06	17:01
23	08:23	07:39	07:46	06:46	06:04	05:52	06:15	06:54	07:34	08:16	08:01	08:31
	17:36	18:21	20:02	20:45	21:24	21:46	21:33	20:47	19:46	18:47	17:06	17:01
24	08:22	07:38	07:44	06:45	06:03	05:53	06:16	06:55	07:36	08:17	08:02	08:31
	17:37	18:23	20:03	20:46	21:25	21:46	21:32	20:45	19:44	18:45	17:05	17:02
25	08:21	07:36	07:42	06:43	06:02	05:53	06:17	06:57	07:37	08:19	08:04	08:32
	17:39	18:24	20:05	20:47	21:26	21:46	21:31	20:43	19:42	18:43	17:04	17:03
26	08:20	07:34	07:40	06:41	06:01	05:53	06:19	06:58	07:38	08:20	08:05	08:32
	17:40	18:26	20:06	20:49	21:27	21:46	21:29	20:41	19:40	18:42	17:03	17:03
27	08:19	07:32	07:38	06:39	06:00	05:54	06:20	06:59	07:40	08:22	08:06	08:32
	17:42	18:27	20:07	20:50	21:28	21:46	21:28	20:40	19:38	18:40	17:03	17:04
28	08:18	07:30	07:36	06:38	05:59	05:54	06:21	07:00	07:41	08:23	08:08	08:33
	17:43	18:29	20:09	20:51	21:29	21:46	21:27	20:38	19:36	18:38	17:02	17:05
29	08:17		07:34	06:36	05:59	05:55	06:22	07:02	07:42	08:25	08:09	08:33
	17:45		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:37	17:01	17:05
30	08:16		07:32	06:34	05:58	05:55	06:23	07:03	07:44	08:26	08:10	08:33
	17:46		20:12	20:54	21:31	21:46	21:25	20:34	19:32	18:35	17:01	17:06
31	08:14		07:30		05:57		06:24	07:04		08:28		08:33
	17:48		20:13		21:32		21:23	20:32		18:34		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 5820
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Shadow receptor:** SR026 - SR026

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:29	07:28	06:33	05:56	05:56	06:26	07:06	07:45	07:29	08:12
	17:08	17:49	18:30	20:14	20:56	21:33	21:46	21:22	20:30	19:30	17:32	17:00
2	08:33	08:12	07:27	07:26	06:31	05:56	05:56	06:27	07:07	07:47	07:31	08:13
	17:09	17:51	18:32	20:16	20:57	21:34	21:46	21:21	20:28	19:28	17:31	17:00
3	08:33	08:11	07:25	07:24	06:30	05:55	05:57	06:28	07:08	07:48	07:32	08:14
	17:10	17:52	18:33	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	17:00
4	08:33	08:09	07:23	07:22	06:28	05:55	05:58	06:29	07:10	07:49	07:34	08:15
	17:11	17:54	18:35	20:19	21:00	21:36	21:46	21:18	20:24	19:24	17:28	16:59
5	08:33	08:08	07:21	07:20	06:27	05:54	05:58	06:31	07:11	07:51	07:35	08:16
	17:12	17:55	18:36	20:20	21:01	21:37	21:45	21:17	20:22	19:22	17:26	16:59
6	08:33	08:07	07:19	07:18	06:25	05:54	05:59	06:32	07:12	07:52	07:37	08:17
	17:13	17:57	18:38	20:21	21:02	21:38	21:45	21:15	20:20	19:20	17:25	16:59
7	08:33	08:05	07:17	07:16	06:24	05:53	06:00	06:33	07:14	07:53	07:38	08:18
	17:15	17:58	18:39	20:23	21:04	21:38	21:45	21:14	20:19	19:18	17:23	16:58
8	08:32	08:04	08:15	07:14	06:22	05:53	06:01	06:35	07:15	07:55	07:39	08:20
	17:16	18:00	18:41	20:24	21:05	21:39	21:44	21:12	20:17	19:16	17:22	16:58
9	08:32	08:02	08:13	07:12	06:21	05:53	06:01	06:36	07:16	07:56	07:41	08:21
	17:17	18:00	19:42	20:25	21:06	21:40	21:44	21:11	20:15	19:15	17:21	16:58
10	08:32	08:01	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:57	07:42	08:22
	17:18	18:02	19:44	20:27	21:08	21:41	21:43	21:09	20:13	19:13	17:19	16:58
11	08:31	07:59	08:09	07:08	06:18	05:52	06:03	06:38	07:19	07:59	07:44	08:22
	17:19	18:03	19:45	20:28	21:09	21:41	21:43	21:07	20:11	19:11	17:18	16:58
12	08:31	07:58	08:08	07:06	06:17	05:52	06:04	06:40	07:20	08:00	07:45	08:23
	17:21	18:05	19:46	20:30	21:10	21:42	21:42	21:06	20:09	19:09	17:17	16:58
13	08:30	07:56	08:06	07:05	06:15	05:52	06:05	06:41	07:21	08:02	07:47	08:24
	17:22	18:06	19:48	20:31	21:12	21:42	21:41	21:04	20:07	19:07	17:16	16:58
14	08:30	07:55	08:04	07:03	06:14	05:52	06:06	06:42	07:23	08:03	07:48	08:25
	17:23	18:08	19:49	20:32	21:13	21:43	21:41	21:03	20:05	19:05	17:15	16:58
15	08:29	07:53	08:02	07:01	06:13	05:52	06:07	06:44	07:24	08:04	07:50	08:26
	17:24	18:09	19:51	20:34	21:14	21:43	21:40	21:01	20:03	19:03	17:13	16:58
16	08:29	07:51	08:00	06:59	06:12	05:52	06:08	06:45	07:25	08:06	07:51	08:27
	17:26	18:11	19:52	20:35	21:15	21:44	21:39	20:59	20:01	19:01	17:12	16:59
17	08:28	07:50	07:58	06:57	06:10	05:52	06:09	06:46	07:27	08:07	07:53	08:27
	17:27	18:12	19:54	20:36	21:17	21:44	21:38	20:58	19:58	18:58	17:11	16:59
18	08:27	07:48	07:56	06:55	06:09	05:52	06:10	06:47	07:28	08:09	07:54	08:28
	17:29	18:14	19:55	20:38	21:18	21:45	21:38	20:56	19:56	18:56	17:10	16:59
19	08:26	07:46	07:54	06:53	06:08	05:52	06:11	06:49	07:29	08:10	07:56	08:29
	17:30	18:15	19:56	20:39	21:19	21:45	21:37	20:54	19:54	18:54	17:09	17:00
20	08:26	07:45	07:52	06:52	06:07	05:52	06:12	06:50	07:31	08:12	07:57	08:29
	17:31	18:17	19:58	20:41	21:20	21:45	21:36	20:52	19:52	18:52	17:08	17:00
21	08:25	07:43	07:50	06:50	06:06	05:52	06:13	06:51	07:32	08:13	07:58	08:30
	17:33	18:18	19:59	20:42	21:21	21:46	21:35	20:51	19:50	18:50	17:07	17:00
22	08:24	07:41	07:48	06:48	06:05	05:52	06:14	06:53	07:33	08:14	08:00	08:30
	17:34	18:20	20:01	20:43	21:23	21:46	21:34	20:49	19:48	18:49	17:06	17:01
23	08:23	07:39	07:46	06:46	06:04	05:52	06:15	06:54	07:34	08:16	08:01	08:31
	17:36	18:21	20:02	20:45	21:24	21:46	21:33	20:47	19:46	18:47	17:06	17:01
24	08:22	07:38	07:44	06:45	06:03	05:53	06:16	06:55	07:36	08:17	08:03	08:31
	17:37	18:23	20:03	20:46	21:25	21:46	21:32	20:45	19:44	18:45	17:05	17:02
25	08:21	07:36	07:42	06:43	06:02	05:53	06:17	06:57	07:37	08:19	08:04	08:32
	17:39	18:24	20:05	20:47	21:26	21:46	21:31	20:43	19:42	18:43	17:04	17:03
26	08:20	07:34	07:40	06:41	06:01	05:53	06:19	06:58	07:38	08:20	08:05	08:32
	17:40	18:26	20:06	20:49	21:27	21:47	21:29	20:42	19:40	18:42	17:03	17:03
27	08:19	07:32	07:38	06:39	06:00	05:54	06:20	06:59	07:40	08:22	08:07	08:32
	17:42	18:27	20:07	20:50	21:28	21:47	21:28	20:40	19:38	18:40	17:03	17:04
28	08:18	07:30	07:36	06:38	05:59	05:54	06:21	07:01	07:41	08:23	08:08	08:33
	17:43	18:29	20:09	20:52	21:29	21:47	21:27	20:38	19:36	18:38	17:02	17:05
29	08:17		07:34	06:36	05:59	05:55	06:22	07:02	07:42	08:25	08:09	08:33
	17:45		20:10	20:53	21:30	21:46	21:26	20:36	19:34	18:37	17:01	17:05
30	08:16		07:32	06:34	05:58	05:55	06:23	07:03	07:44	08:26	08:10	08:33
	17:46		20:12	20:54	21:31	21:46	21:25	20:34	19:32	18:35	17:01	17:06
31	08:14		07:30		05:57		06:25	07:04		08:28		08:33
	17:48		20:13		21:32		21:23	20:32		18:34		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR027 - SR027

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January			February	March	April	May	June	July	August	September	October	November			December		
1	08:34		15:58 (457)	08:13	07:29	07:28	06:33	05:56	05:56	06:26	07:06	07:45	07:29			08:12		15:48 (457)
	17:08	25	16:23 (457)	17:49	18:30	20:14	20:56	21:33	21:46	21:22	20:30	19:30	17:32			17:00	17	16:05 (457)
2	08:34		15:59 (457)	08:12	07:27	07:26	06:31	05:56	05:56	06:27	07:07	07:47	07:31			08:13		15:48 (457)
	17:09	24	16:23 (457)	17:51	18:32	20:16	20:57	21:34	21:46	21:21	20:28	19:28	17:31			17:00	18	16:06 (457)
3	08:34		16:00 (457)	08:11	07:25	07:24	06:30	05:55	05:57	06:28	07:08	07:48	07:32			08:14		15:47 (457)
	17:10	23	16:23 (457)	17:52	18:33	20:17	20:59	21:35	21:46	21:20	20:26	19:26	17:29			16:59	20	16:07 (457)
4	08:33		15:59 (457)	08:09	07:23	07:22	06:28	05:55	05:57	06:29	07:10	07:49	07:34			08:15		15:48 (457)
	17:11	24	16:23 (457)	17:54	18:35	20:19	21:00	21:36	21:46	21:18	20:24	19:24	17:28			16:59	20	16:08 (457)
5	08:33		16:00 (457)	08:08	07:21	07:20	06:26	05:54	05:58	06:31	07:11	07:51	07:35			08:17		15:48 (457)
	17:12	23	16:23 (457)	17:55	18:36	20:20	21:01	21:37	21:46	21:17	20:23	19:22	17:26			16:59	21	16:09 (457)
6	08:33		16:01 (457)	08:07	07:19	07:18	06:25	05:54	05:59	06:32	07:12	07:52	07:37			08:18		15:47 (457)
	17:13	23	16:24 (457)	17:57	18:38	20:21	21:03	21:38	21:45	21:15	20:21	19:20	17:25			16:59	23	16:10 (457)
7	08:33		16:02 (457)	08:05	07:17	07:16	06:23	05:53	06:00	06:33	07:14	07:53	07:38			08:19		15:47 (457)
	17:14	22	16:24 (457)	17:58	18:39	20:23	21:04	21:39	21:45	21:14	20:19	19:18	17:23			16:58	23	16:10 (457)
8	08:33		16:03 (457)	08:04	08:15	07:14	06:22	05:53	06:00	06:34	07:15	07:55	07:40			08:20		15:47 (457)
	17:16	20	16:23 (457)	18:00	18:41	20:24	21:05	21:39	21:44	21:12	20:17	19:16	17:22			16:58	24	16:11 (457)
9	08:32		16:04 (457)	08:02	08:13	07:12	06:21	05:53	06:01	06:36	07:16	07:56	07:41			08:21		15:48 (457)
	17:17	20	16:24 (457)	18:00	19:42	20:26	21:07	21:40	21:44	21:11	20:15	19:15	17:21			16:58	23	16:11 (457)
10	08:32		16:04 (457)	08:01	08:11	07:10	06:19	05:52	06:02	06:37	07:17	07:58	07:43			08:22		15:48 (457)
	17:18	19	16:23 (457)	18:01	19:44	20:27	21:08	21:41	21:43	21:09	20:13	19:13	17:19			16:58	24	16:12 (457)
11	08:32		16:06 (457)	07:59	08:10	07:08	06:18	05:52	06:03	06:38	07:19	07:59	07:44			08:23		15:48 (457)
	17:19	17	16:23 (457)	18:03	19:45	20:28	21:09	21:41	21:43	21:08	20:11	19:11	17:18			16:58	25	16:13 (457)
12	08:31		16:07 (457)	07:58	08:08	07:06	06:16	05:52	06:04	06:40	07:20	08:00	07:46			08:24		15:49 (457)
	17:20	15	16:22 (457)	18:05	19:46	20:30	21:10	21:42	21:42	21:06	20:09	19:09	17:17			16:58	24	16:13 (457)
13	08:31		16:09 (457)	07:56	08:06	07:05	06:15	05:52	06:05	06:41	07:21	08:02	07:47			08:25		15:49 (457)
	17:22	13	16:22 (457)	18:06	19:48	20:31	21:12	21:43	21:42	21:04	20:07	19:07	17:16			16:58	25	16:14 (457)
14	08:30		16:10 (457)	07:55	08:04	07:03	06:14	05:51	06:06	06:42	07:23	08:03	07:48			08:25		15:49 (457)
	17:23	11	16:21 (457)	18:08	19:49	20:32	21:13	21:43	21:41	21:03	20:05	19:05	17:14			16:58	26	16:15 (457)
15	08:29		16:13 (457)	07:53	08:02	07:01	06:13	05:51	06:07	06:43	07:24	08:05	07:50			08:26		15:50 (457)
	17:24	6	16:19 (457)	18:09	19:51	20:34	21:14	21:44	21:40	21:01	20:03	19:03	17:13			16:58	25	16:15 (457)
16	08:29			07:51	08:00	06:59	06:11	05:51	06:08	06:45	07:25	08:06	07:51			08:27		15:50 (457)
	17:26			18:11	19:52	20:35	21:16	21:44	21:39	20:59	20:01	19:01	17:12			16:58	25	16:15 (457)
17	08:28			07:50	07:58	06:57	06:10	05:51	06:09	06:46	07:27	08:07	07:53			08:28		15:50 (457)
	17:27			18:12	19:54	20:37	21:17	21:45	21:39	20:58	19:59	18:58	17:11			16:59	26	16:16 (457)
18	08:27			07:48	07:56	06:55	06:09	05:51	06:10	06:47	07:28	08:09	07:54			08:28		15:51 (457)
	17:28			18:14	19:55	20:38	21:18	21:45	21:38	20:56	19:57	18:56	17:10			16:59	26	16:17 (457)
19	08:27			07:46	07:54	06:53	06:08	05:51	06:11	06:49	07:29	08:10	07:56			08:29		15:51 (457)
	17:30			18:15	19:56	20:39	21:19	21:45	21:37	20:54	19:55	18:54	17:09			16:59	26	16:17 (457)
20	08:26			07:45	07:52	06:52	06:07	05:52	06:12	06:50	07:31	08:12	07:57			08:30		15:52 (457)
	17:31			18:17	19:58	20:41	21:20	21:46	21:36	20:53	19:52	18:52	17:08			17:00	25	16:17 (457)
21	08:25			07:43	07:50	06:50	06:06	05:52	06:13	06:51	07:32	08:13	07:59			08:30		15:52 (457)
	17:33			18:18	19:59	20:42	21:22	21:46	21:35	20:51	19:50	18:50	17:07			17:00	25	16:17 (457)
22	08:24			07:41	07:48	06:48	06:05	05:52	06:14	06:53	07:33	08:15	08:00			08:31		15:53 (457)
	17:34			18:20	20:01	20:43	21:23	21:46	21:34	20:49	19:48	18:49	17:06			17:01	25	16:18 (457)
23	08:23			07:39	07:46	06:46	06:04	05:52	06:15	06:54	07:35	08:16	08:01			08:31		15:53 (457)
	17:36			18:21	20:02	20:45	21:24	21:46	21:33	20:47	19:46	18:47	17:06			17:01	25	16:18 (457)
24	08:22			07:38	07:44	06:44	06:03	05:52	06:16	06:55	07:36	08:17	08:03			08:32		15:54 (457)
	17:37			18:23	20:03	20:46	21:25	21:47	21:32	20:45	19:44	18:45	17:05			17:02	26	16:20 (457)
25	08:21			07:36	07:42	06:43	06:02	05:53	06:17	06:57	07:37	08:19	08:04			08:32		15:54 (457)
	17:39			18:24	20:05	20:48	21:26	21:47	21:31	20:44	19:42	18:43	17:04			17:02	26	16:20 (457)
26	08:20			07:34	07:40	06:41	06:01	05:53	06:18	06:58	07:38	08:20	08:05			08:32		15:54 (457)
	17:40			18:26	20:06	20:49	21:27	21:47	21:30	20:42	19:40	18:42	17:03			17:03	26	16:20 (457)
27	08:19			07:32	07:38	06:39	06:00	05:54	06:20	06:59	07:40	08:22	08:07	15:52 (457)		08:33		15:56 (457)
	17:42			18:27	20:08	20:50	21:28	21:47	21:29	20:40	19:38	18:40	17:03	5	15:57 (457)	17:04	25	16:21 (457)
28	08:18			07:30	07:36	06:38	05:59	05:54	06:21	07:00	07:41	08:23	08:08		15:51 (457)	08:33		15:56 (457)
	17:43			18:29	20:09	20:52	21:29	21:47	21:27	20:38	19:36	18:38	17:02	10	16:01 (457)	17:05	25	16:21 (457)
29	08:17				07:34	06:36	05:58	05:55	06:22	07:02	07:43	08:25	08:09		15:49 (457)	08:33		15:56 (457)
	17:45				20:10	20:53	21:30	21:47	21:26	20:36	19:34	18:37	17:01	13	16:02 (457)	17:05	25	16:21 (457)
30	08:16				07:32	06:34	05:58	05:55	06:23	07:03	07:44	08:26	08:11		15:49 (457)	08:33		15:57 (457)
	17:46				20:12	20:54	21:31	21:47	21:25	20:34	19:32	18:35	17:01	15	16:04 (457)	17:06	25	16:22 (457)
31	08:15				07:30		05:57		06:24	07:04		08:28				08:33		15:57 (457)
	17:48				20:13		21:32		21:24	20:32		18:34				17:07	25	16:22 (457)
Potential sun hours	279			287	368	407	466	475	480	441	378	338	282			266		
Total, worst case		285												43			744	
Sun reduction		0.55												0.43			0.43	
Oper. time red.		0.98												0.98			0.98	
Wind dir. red.		0.53												0.53			0.53	
Total reduction		0.28												0.22			0.22	
Total, real		81												10			165	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR028 - SR028

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April		May	June	July	August		September	October	November	December
1	08:33	08:13	07:29	07:28		06:33	05:57	05:56	06:26		07:06	07:45	07:29	08:12
	17:09	17:49	18:31	20:15		20:56	21:33	21:46	21:22		20:30	19:30	17:32	17:01
2	08:33	08:12	07:27	07:26		06:31	05:56	05:56	06:27		07:07	07:47	07:31	08:13
	17:09	17:51	18:32	20:16		20:57	21:34	21:46	21:21		20:28	19:28	17:31	17:00
3	08:33	08:11	07:25	07:24		06:30	05:55	05:57	06:28		07:08	07:48	07:32	08:14
	17:10	17:52	18:33	20:17		20:58	21:35	21:46	21:20		20:26	19:26	17:29	17:00
4	08:33	08:09	07:23	07:22		06:28	05:55	05:58	06:30		07:10	07:49	07:34	08:15
	17:11	17:54	18:35	20:19		21:00	21:36	21:46	21:18		20:25	19:24	17:28	16:59
5	08:33	08:08	07:21	07:20		06:27	05:54	05:58	06:31		07:11	07:51	07:35	08:16
	17:13	17:56	18:36	20:20		21:01	21:37	21:45	21:17		20:23	19:23	17:26	16:59
6	08:33	08:07	07:19	07:18		06:25	05:54	05:59	06:32		07:12	07:52	07:37	08:18
	17:14	17:57	18:38	20:21		21:03	21:38	21:45	21:15		20:21	19:21	17:25	16:59
7	08:33	08:05	07:17	07:16		06:24	05:54	06:00	06:33		07:14	07:53	07:38	08:19
	17:15	17:59	18:39	20:23		21:04	21:38	21:45	21:14		20:19	19:19	17:24	16:59
8	08:33	08:04	08:15	07:14		06:22	05:53	06:01	06:35		07:15	07:55	07:40	08:20
	17:16	18:00	18:41	20:24		21:05	21:39	21:44	21:12		20:17	19:17	17:22	16:58
9	08:32	08:02	08:13	07:12		06:21	05:53	06:01	06:36		07:16	07:56	07:41	08:21
	17:17	18:00	19:42	20:26		21:06	21:40	21:44	21:11		20:15	19:15	17:21	16:58
10	08:32	08:01	08:12	07:10		06:19	05:53	06:02	06:37		07:18	07:58	07:43	08:22
	17:18	18:02	19:44	20:27		21:08	21:41	21:43	21:09		20:13	19:13	17:20	16:58
11	08:31	07:59	08:10	07:09		06:18	05:52	06:03	06:39		07:19	07:59	07:44	08:23
	17:19	18:03	19:45	20:28		21:09	21:41	21:43	21:08		20:11	19:11	17:18	16:58
12	08:31	07:58	08:08	07:07		06:17	05:52	06:04	06:40	20:12 (463)	07:20	08:00	07:46	08:24
	17:21	18:05	19:47	20:30		21:10	21:42	21:42	21:06	3 20:15 (463)	20:09	19:09	17:17	16:58
13	08:30	07:56	08:06	07:05		06:15	05:52	06:05	06:41	20:08 (463)	07:22	08:02	07:47	08:24
	17:22	18:06	19:48	20:31		21:12	21:43	21:41	21:04	10 20:18 (463)	20:07	19:07	17:16	16:58
14	08:30	07:55	08:04	07:03		06:14	05:52	06:06	06:42	20:06 (463)	07:23	08:03	07:48	08:25
	17:23	18:08	19:49	20:33		21:13	21:43	21:41	21:03	13 20:19 (463)	20:05	19:05	17:15	16:58
15	08:29	07:53	08:02	07:01		06:13	05:52	06:07	06:44	20:05 (463)	07:24	08:05	07:50	08:26
	17:25	18:09	19:51	20:34		21:14	21:44	21:40	21:01	16 20:21 (463)	20:03	19:03	17:14	16:59
16	08:29	07:51	08:00	06:59	20:03 (463)	06:12	05:52	06:08	06:45	20:04 (463)	07:25	08:06	07:51	08:27
	17:26	18:11	19:52	20:35	8 20:11 (463)	21:15	21:44	21:39	20:59	18 20:22 (463)	20:01	19:01	17:12	16:59
17	08:28	07:50	07:58	06:57	20:01 (463)	06:10	05:52	06:09	06:46	20:03 (463)	07:27	08:07	07:53	08:28
	17:27	18:12	19:54	20:37	13 20:14 (463)	21:17	21:44	21:38	20:58	19 20:22 (463)	19:59	19:00	17:11	16:59
18	08:27	07:48	07:56	06:55	20:00 (463)	06:09	05:52	06:10	06:48	20:02 (463)	07:28	08:09	07:54	08:28
	17:29	18:14	19:55	20:38	15 20:15 (463)	21:18	21:45	21:38	20:56	20 20:22 (463)	19:57	18:56	17:10	16:59
19	08:27	07:46	07:54	06:54	19:58 (463)	06:08	05:52	06:11	06:49	20:02 (463)	07:29	08:10	07:56	08:29
	17:30	18:16	19:56	20:39	18 20:16 (463)	21:19	21:45	21:37	20:54	21 20:23 (463)	19:55	18:54	17:09	17:00
20	08:26	07:45	07:52	06:52	19:57 (463)	06:07	05:52	06:12	06:50	20:01 (463)	07:31	08:12	07:57	08:30
	17:32	18:17	19:58	20:41	19 20:16 (463)	21:20	21:46	21:36	20:53	21 20:22 (463)	19:53	18:52	17:08	17:00
21	08:25	07:43	07:50	06:50	19:56 (463)	06:06	05:52	06:13	06:51	20:01 (463)	07:32	08:13	07:58	08:30
	17:33	18:19	19:59	20:42	20 20:16 (463)	21:22	21:46	21:35	20:51	21 20:22 (463)	19:51	18:51	17:07	17:01
22	08:24	07:41	07:48	06:48	19:56 (463)	06:05	05:52	06:14	06:53	20:01 (463)	07:33	08:15	08:00	08:31
	17:34	18:20	20:01	20:43	21 20:17 (463)	21:23	21:46	21:34	20:49	20 20:21 (463)	19:49	18:49	17:07	17:01
23	08:23	07:40	07:46	06:46	19:56 (463)	06:04	05:53	06:15	06:54	20:02 (463)	07:35	08:16	08:01	08:31
	17:36	18:22	20:02	20:45	21 20:17 (463)	21:24	21:46	21:33	20:47	19 20:21 (463)	19:47	18:47	17:06	17:02
24	08:22	07:38	07:44	06:45	19:55 (463)	06:03	05:53	06:16	06:55	20:02 (463)	07:36	08:17	08:03	08:32
	17:37	18:23	20:03	20:46	21 20:16 (463)	21:25	21:46	21:32	20:45	17 20:19 (463)	19:44	18:45	17:05	17:02
25	08:21	07:36	07:42	06:43	19:56 (463)	06:02	05:53	06:18	06:57	20:03 (463)	07:37	08:19	08:04	08:32
	17:39	18:25	20:05	20:48	20 20:16 (463)	21:26	21:47	21:31	20:44	14 20:17 (463)	19:42	18:44	17:04	17:03
26	08:20	07:34	07:40	06:41	19:56 (463)	06:01	05:54	06:19	06:58	20:03 (463)	07:39	08:20	08:05	08:32
	17:40	18:26	20:06	20:49	19 20:15 (463)	21:27	21:47	21:30	20:42	12 20:15 (463)	19:40	18:42	17:04	17:03
27	08:19	07:32	07:38	06:40	19:56 (463)	06:00	05:54	06:20	06:59	20:06 (463)	07:40	08:22	08:07	08:33
	17:42	18:28	20:08	20:50	18 20:14 (463)	21:28	21:47	21:28	20:40	8 20:14 (463)	19:38	18:40	17:03	17:04
28	08:18	07:30	07:36	06:38	19:58 (463)	06:00	05:54	06:21	07:01		07:41	08:23	08:08	08:33
	17:43	18:29	20:09	20:52	15 20:13 (463)	21:29	21:47	21:27	20:38		19:36	18:39	17:02	17:05
29	08:17		07:34	06:36	19:59 (463)	05:59	05:55	06:22	07:02		07:43	08:25	08:09	08:33
	17:45		20:10	20:53	12 20:11 (463)	21:30	21:47	21:26	20:36		19:34	18:37	17:02	17:06
30	08:16		07:32	06:35	20:01 (463)	05:58	05:55	06:23	07:03		07:44	08:26	08:10	08:33
	17:46		20:12	20:54	9 20:10 (463)	21:31	21:47	21:25	20:34		19:32	18:35	17:01	17:06
31	08:15		07:30			05:57		06:25	07:05			08:28		08:33
	17:48		20:13			21:32		21:24	20:32			18:34		17:07
Potential sun hours	279	287	368	407		466	475	480	441		378	338	282	266
Total, worst case					249					252				
Sun reduction					0.59					0.73				
Oper. time red.					0.98					0.98				
Wind dir. red.					0.72					0.72				
Total reduction					0.42					0.51				
Total, real					104					129				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR029 - SR029

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:33	08:13	07:29	07:28	06:33	05:57	05:56	06:26	07:06	07:45	07:29	08:12
	17:09	17:49	18:31	20:15	20:56	21:33	21:46	21:22	20:30	19:30	17:32	17:01
2	08:33	08:12	07:27	07:26	06:31	05:56	05:57	06:27	07:07	07:47	07:31	08:13
	17:10	17:51	18:32	20:16	20:57	21:34	21:46	21:21	20:28	19:28	17:31	17:00
3	08:33	08:11	07:25	07:24	06:30	05:56	05:57	06:28	07:09	07:48	07:32	08:14
	17:11	17:53	18:34	20:17	20:58	21:35	21:46	21:19	20:26	19:26	17:29	17:00
4	08:33	08:09	07:23	07:22	06:28	05:55	05:58	06:30	07:10	07:49	07:34	08:15
	17:12	17:54	18:35	20:19	21:00	21:36	21:46	21:18	20:25	19:25	17:28	17:00
5	08:33	08:08	07:21	07:20	06:27	05:55	05:59	06:31	07:11	07:51	07:35	08:16
	17:13	17:56	18:36	20:20	21:01	21:37	21:45	21:17	20:23	19:23	17:26	16:59
6	08:33	08:07	07:19	07:18	06:25	05:54	05:59	06:32	07:12	07:52	07:37	08:17
	17:14	17:57	18:38	20:21	21:02	21:38	21:45	21:15	20:21	19:21	17:25	16:59
7	08:33	08:05	07:17	07:16	06:24	05:54	06:00	06:34	07:14	07:53	07:38	08:19
	17:15	17:59	18:39	20:23	21:04	21:38	21:45	21:14	20:19	19:19	17:24	16:59
8	08:32	08:04	08:15	07:14	06:22	05:53	06:01	06:35	07:15	07:55	07:40	08:20
	17:16	18:00	18:41	20:24	21:05	21:39	21:44	21:12	20:17	19:17	17:22	16:59
9	08:32	08:02	08:13	07:12	06:21	05:53	06:02	06:36	07:16	07:56	07:41	08:21
	17:17	18:00	19:42	20:26	21:06	21:40	21:44	21:11	20:15	19:15	17:21	16:58
10	08:32	08:01	08:12	07:10	06:20	05:53	06:02	06:37	07:18	07:58	07:43	08:22
	17:18	18:02	19:44	20:27	21:08	21:41	21:43	21:09	20:13	19:13	17:20	16:58
11	08:31	07:59	08:10	07:09	06:18	05:52	06:03	06:39	07:19	07:59	07:44	08:23
	17:20	18:03	19:45	20:28	21:09	21:41	21:43	21:08	20:11	19:11	17:18	16:58
12	08:31	07:58	08:08	07:07	06:17	05:52	06:04	06:40	07:20	08:00	07:45	08:23
	17:21	18:05	19:47	20:30	21:10	21:42	21:42	21:06	20:09	19:09	17:17	16:58
13	08:30	07:56	08:06	07:05	06:16	05:52	06:05	06:41	07:22	08:02	07:47	08:24
	17:22	18:06	19:48	20:31	21:12	21:42	21:41	21:04	20:07	19:07	17:16	16:58
14	08:30	07:55	08:04	07:03	06:14	05:52	06:06	06:42	07:23	08:03	07:48	08:25
	17:23	18:08	19:49	20:32	21:13	21:43	21:41	21:03	20:05	19:05	17:15	16:59
15	08:29	07:53	08:02	07:01	06:13	05:52	06:07	06:44	07:24	08:05	07:50	08:26
	17:25	18:09	19:51	20:34	21:14	21:43	21:40	21:01	20:03	19:03	17:14	16:59
16	08:29	07:51	08:00	06:59	06:12	05:52	06:08	06:45	07:25	08:06	07:51	08:27
	17:26	18:11	19:52	20:35	21:15	21:44	21:39	20:59	20:01	19:01	17:13	16:59
17	08:28	07:50	07:58	06:57	06:11	05:52	06:09	06:46	07:27	08:07	07:53	08:27
	17:27	18:13	19:54	20:37	21:17	21:44	21:38	20:58	19:59	19:00	17:12	16:59
18	08:27	07:48	07:56	06:55	06:09	05:52	06:10	06:48	07:28	08:09	07:54	08:28
	17:29	18:14	19:55	20:38	21:18	21:45	21:38	20:56	19:57	18:56	17:10	16:59
19	08:27	07:46	07:54	06:54	06:08	05:52	06:11	06:49	07:29	08:10	07:56	08:29
	17:30	18:16	19:56	20:39	21:19	21:45	21:37	20:54	19:55	18:54	17:09	17:00
20	08:26	07:45	07:52	06:52	06:07	05:52	06:12	06:50	07:31	08:12	07:57	08:29
	17:32	18:17	19:58	20:41	21:20	21:45	21:36	20:52	19:53	18:52	17:09	17:00
21	08:25	07:43	07:50	06:50	06:06	05:52	06:13	06:52	07:32	08:13	07:58	08:30
	17:33	18:19	19:59	20:42	21:21	21:46	21:35	20:51	19:51	18:51	17:08	17:01
22	08:24	07:41	07:48	06:48	06:05	05:52	06:14	06:53	07:33	08:15	08:00	08:31
	17:35	18:20	20:01	20:43	21:23	21:46	21:34	20:49	19:49	18:49	17:07	17:01
23	08:23	07:40	07:46	06:47	06:04	05:53	06:15	06:54	07:35	08:16	08:01	08:31
	17:36	18:22	20:02	20:45	21:24	21:46	21:33	20:47	19:47	18:47	17:06	17:02
24	08:22	07:38	07:44	06:45	06:03	05:53	06:17	06:55	07:36	08:17	08:03	08:31
	17:37	18:23	20:03	20:46	21:25	21:46	21:32	20:45	19:45	18:45	17:05	17:02
25	08:21	07:36	07:42	06:43	06:02	05:53	06:18	06:57	07:37	08:19	08:04	08:32
	17:39	18:25	20:05	20:48	21:26	21:46	21:31	20:43	19:43	18:44	17:04	17:03
26	08:20	07:34	07:40	06:41	06:01	05:54	06:19	06:58	07:39	08:20	08:05	08:32
	17:40	18:26	20:06	20:49	21:27	21:47	21:30	20:42	19:40	18:42	17:04	17:04
27	08:19	07:32	07:38	06:40	06:00	05:54	06:20	06:59	07:40	08:22	08:07	08:32
	17:42	18:28	20:08	20:50	21:28	21:47	21:28	20:40	19:38	18:40	17:03	17:04
28	08:18	07:30	07:36	06:38	06:00	05:55	06:21	07:01	07:41	08:23	08:08	08:33
	17:43	18:29	20:09	20:52	21:29	21:47	21:27	20:38	19:36	18:39	17:02	17:05
29	08:17		07:34	06:36	05:59	05:55	06:22	07:02	07:43	08:25	08:09	08:33
	17:45		20:10	20:53	21:30	21:47	21:26	20:36	19:34	18:37	17:02	17:06
30	08:16		07:32	06:35	05:58	05:56	06:24	07:03	07:44	08:26	08:10	08:33
	17:46		20:12	20:54	21:31	21:46	21:25	20:34	19:32	18:36	17:01	17:07
31	08:14		07:30		05:57		06:25	07:05		08:28		08:33
	17:48		20:13		21:32		21:23	20:32		18:34		17:07
Potential sun hours	279	287	368	407	466	474	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR030 - SR030

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May	June
1	08:34	15:29 (463)	08:13		08:37 (447)	07:29	07:28	19:11 (464)	06:33	05:57
	17:09	27 16:32 (462)	17:49	17	08:54 (447)	18:31	20:15	26 19:37 (464)	20:56	21:33
2	08:34	15:32 (463)	08:12		08:35 (447)	07:27	07:26	19:09 (464)	06:31	05:56
	17:09	20 16:32 (462)	17:51	19	08:54 (447)	18:32	20:16	30 19:39 (464)	20:57	21:34
3	08:33	16:13 (462)	08:11		08:35 (447)	07:25	07:24	19:07 (464)	06:30	05:55
	17:10	20 16:33 (462)	17:52	20	08:55 (447)	18:34	20:17	33 19:40 (464)	20:59	21:35
4	08:33	16:12 (462)	08:09		08:34 (447)	07:23	07:22	19:06 (464)	06:28	05:55
	17:11	21 16:33 (462)	17:54	21	08:55 (447)	18:35	20:19	35 19:41 (464)	21:00	21:36
5	08:33	16:13 (462)	08:08		08:35 (447)	07:21	07:20	19:04 (464)	06:27	05:54
	17:13	21 16:34 (462)	17:56	20	08:55 (447)	18:36	20:20	37 19:41 (464)	21:01	21:37
6	08:33	16:14 (462)	08:07		08:36 (447)	07:19	07:18	19:03 (464)	06:25	05:54
	17:14	21 16:35 (462)	17:57	20	08:56 (447)	18:38	20:22	39 19:42 (464)	21:03	21:38
7	08:33	16:14 (462)	08:05		08:36 (447)	07:17	07:16	19:02 (464)	06:24	05:54
	17:15	21 16:35 (462)	17:59	19	08:55 (447)	18:39	20:23	40 19:42 (464)	21:04	21:39
8	08:33	16:14 (462)	08:04		08:37 (447)	08:15	07:14	19:01 (464)	06:22	05:53
	17:16	21 16:35 (462)	18:00	18	08:55 (447)	18:41	20:24	42 19:43 (464)	21:05	21:39
9	08:32	16:15 (462)	08:02		08:37 (447)	08:14	07:12	19:00 (464)	06:21	05:53
	17:17	21 16:36 (462)	18:00	17	08:54 (447)	19:42	20:26	43 19:43 (464)	21:07	21:40
10	08:32	16:15 (462)	08:01		08:39 (447)	08:12	07:10	19:00 (464)	06:19	05:53
	17:18	21 16:36 (462)	18:02	14	08:53 (447)	19:44	20:27	44 19:44 (464)	21:08	21:41
11	08:32	16:15 (462)	07:59		08:40 (447)	08:10	07:09	19:00 (464)	06:18	05:52
	17:19	22 16:37 (462)	18:03	11	08:51 (447)	19:45	20:28	43 19:43 (464)	21:09	21:41
12	08:31	16:15 (462)	07:58		08:42 (447)	08:08	07:07	18:59 (464)	06:17	05:52
	17:21	22 16:37 (462)	18:05	6	08:48 (447)	19:47	20:30	44 19:43 (464)	21:10	21:42
13	08:31	16:17 (462)	07:56			08:06	07:05	18:59 (464)	06:15	05:52
	17:22	21 16:38 (462)	18:06			19:48	20:31	44 19:43 (464)	21:12	21:43
14	08:30	16:17 (462)	07:55			08:04	07:03	18:59 (464)	06:14	05:52
	17:23	21 16:38 (462)	18:08			19:49	20:33	43 19:42 (464)	21:13	21:43
15	08:29	16:17 (462)	07:53			08:02	07:01	18:58 (464)	06:13	05:52
	17:25	20 16:37 (462)	18:09			19:51	20:34	44 19:42 (464)	21:14	21:44
16	08:29	16:18 (462)	07:52			08:00	06:59	18:58 (464)	06:12	05:52
	17:26	20 16:38 (462)	18:11			19:52	20:35	43 19:41 (464)	21:16	21:44
17	08:28	16:19 (462)	07:50			07:58	06:57	18:59 (464)	06:10	05:52
	17:27	19 16:38 (462)	18:12			19:54	20:37	42 19:41 (464)	21:17	21:45
18	08:27	16:20 (462)	07:48			07:56	06:55	18:59 (464)	06:09	05:52
	17:29	18 16:38 (462)	18:14			19:55	20:38	41 19:40 (464)	21:18	21:45
19	08:27	16:21 (462)	07:47			07:54	06:54	19:00 (464)	06:08	05:52
	17:30	16 16:37 (462)	18:16			19:57	20:39	39 19:39 (464)	21:19	21:45
20	08:26	16:22 (462)	07:45			07:52	06:52	19:00 (464)	06:07	05:52
	17:32	15 16:37 (462)	18:17			19:58	20:41	38 19:38 (464)	21:20	21:46
21	08:25	16:23 (462)	07:43			07:50	06:50	19:01 (464)	06:06	05:52
	17:33	13 16:36 (462)	18:19			19:59	20:42	37 19:38 (464)	21:22	21:46
22	08:24	16:25 (462)	07:41			07:48	06:48	19:02 (464)	06:05	05:52
	17:34	9 16:34 (462)	18:20			20:01	20:44	35 19:37 (464)	21:23	21:46
23	08:23	16:28 (462)	07:40			07:46	06:46	19:03 (464)	06:04	05:53
	17:36	4 16:32 (462)	18:22			20:02	20:45	32 19:35 (464)	21:24	21:46
24	08:22		07:38			07:44	06:45	19:03 (464)	06:03	05:53
	17:37		18:23			20:04	20:46	30 19:33 (464)	21:25	21:47
25	08:21		07:36			07:42	06:43	19:06 (464)	06:02	05:53
	17:39		18:25			20:05	20:48	26 19:32 (464)	21:26	21:47
26	08:20		07:34			07:40	06:41	19:07 (464)	06:01	05:54
	17:40		18:26			20:06	20:49	23 19:30 (464)	21:27	21:47
27	08:19		07:32			07:38	06:40	19:09 (464)	06:00	05:54
	17:42		18:28			20:08	20:50	18 19:27 (464)	21:28	21:47
28	08:18	08:42 (447)	07:31			07:36	06:38	19:13 (464)	06:00	05:54
	17:43	6 08:48 (447)	18:29			20:09	20:52	11 19:24 (464)	21:29	21:47
29	08:17	08:40 (447)				07:34	06:36		05:59	05:55
	17:45	10 08:50 (447)				20:10	20:53		21:30	21:47
30	08:16	08:39 (447)				07:32	06:35	19:18 (464)	05:58	05:55
	17:46	12 08:51 (447)				20:12	14 20:54	19:32 (464)	21:31	21:47
31	08:15	08:38 (447)				07:30		19:14 (464)	05:57	
	17:48	15 08:53 (447)				20:13	21	19:35 (464)	21:32	
Potential sun hours	279		287			368	407		466	475
Total, worst case		477		202		35		1002		
Sun reduction		0.55		0.50		0.63		0.59		
Oper. time red.		0.98		0.98		0.98		0.98		
Wind dir. red.		0.56		0.75		0.70		0.70		
Total reduction		0.30		0.36		0.43		0.40		
Total, real		142		73		15		403		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR030 - SR030

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October		November		December	
1	05:56		06:26		07:06		18:59 (464)		07:45		08:12	15:58 (462)
	21:46		21:22		20:30	43	19:42 (464)		19:30		17:32	15 08:22 (447) 17:01 21 16:19 (462)
2	05:56		06:27		07:07		18:58 (464)		07:47		07:31	08:07 (447) 08:13 15:58 (462)
	21:46		21:21		20:28	44	19:42 (464)		19:28		17:31	17 08:24 (447) 17:00 21 16:19 (462)
3	05:57		06:28		07:09		18:58 (464)		07:48		07:32	08:05 (447) 08:14 15:58 (462)
	21:46		21:20		20:27	43	19:41 (464)		19:26		17:29	19 08:24 (447) 17:00 21 16:19 (462)
4	05:58		06:30		07:10		18:59 (464)		07:49		07:34	08:05 (447) 08:15 15:59 (462)
	21:46		21:18		20:25	42	19:41 (464)		19:25		17:28	20 08:25 (447) 16:59 21 16:20 (462)
5	05:58		06:31		07:11		18:59 (464)		07:51		07:35	08:05 (447) 08:17 15:59 (462)
	21:45		21:17		20:23	40	19:39 (464)		19:23		17:26	20 08:25 (447) 16:59 22 16:21 (462)
6	05:59		06:32		07:12		18:59 (464)		07:52		07:37	08:05 (447) 08:18 16:00 (462)
	21:45		21:15		20:21	39	19:38 (464)		19:21		17:25	20 08:25 (447) 16:59 21 16:21 (462)
7	06:00		06:33		07:14		18:59 (464)		07:53		07:38	08:05 (447) 08:19 16:00 (462)
	21:45		21:14		20:19	38	19:37 (464)		19:19		17:24	20 08:25 (447) 16:59 21 16:21 (462)
8	06:01		06:35		07:15		19:01 (464)		07:55		07:40	08:05 (447) 08:20 16:01 (462)
	21:44		21:12		20:17	35	19:36 (464)		19:17		17:22	20 08:25 (447) 16:58 20 16:21 (462)
9	06:01		06:36		07:16		19:01 (464)		07:56		07:41	08:06 (447) 08:21 16:01 (462)
	21:44		21:11		20:15	33	19:34 (464)		19:15		17:21	19 08:25 (447) 16:58 20 16:21 (462)
10	06:02		06:37		07:18		19:02 (464)		07:58		07:43	08:08 (447) 08:22 16:02 (462)
	21:43		21:09		20:13	30	19:32 (464)		19:13		17:20	17 08:25 (447) 16:58 20 16:22 (462)
11	06:03		06:39		07:19		19:03 (464)		07:59		07:44	08:09 (447) 08:23 15:19 (463)
	21:43		21:08		20:11	26	19:29 (464)		19:11		17:18	15 08:24 (447) 16:58 26 16:22 (462)
12	06:04		06:40		07:20		19:06 (464)		08:00		07:46	08:11 (447) 08:24 15:18 (463)
	21:42		21:06		20:09	21	19:27 (464)		19:09		17:17	12 08:23 (447) 16:58 28 16:22 (462)
13	06:05		06:41		07:22		19:09 (464)		08:02		07:47	08:12 (447) 08:25 15:18 (463)
	21:42		21:04		20:07	14	19:23 (464)		19:07		17:16	9 08:21 (447) 16:58 30 16:23 (462)
14	06:06		06:42		07:23				08:03		07:49	08:14 (447) 08:25 15:17 (463)
	21:41		21:03		20:05				19:05		17:15	6 08:20 (447) 16:58 32 16:23 (462)
15	06:07		06:44		19:19 (464)		07:24		08:05		07:50	08:26 15:18 (463)
	21:40		21:01	14	19:33 (464)		20:03		19:03		17:14	16:59 31 16:23 (462)
16	06:08		06:45		19:16 (464)		07:25		08:06		07:51	08:27 15:17 (463)
	21:39		20:59	19	19:35 (464)		20:01		19:01		17:12	16:59 32 16:23 (462)
17	06:09		06:46		19:13 (464)		07:27		08:07		07:53	08:28 15:17 (463)
	21:39		20:58	24	19:37 (464)		19:59		19:00		17:11	16:59 33 16:24 (462)
18	06:10		06:48		19:11 (464)		07:28		08:09		07:54	08:28 15:18 (463)
	21:38		20:56	27	19:38 (464)		19:57		18:56		17:10	16:59 32 16:24 (462)
19	06:11		06:49		19:10 (464)		07:29		08:10		07:56	16:03 (462) 08:29 15:17 (463)
	21:37		20:54	30	19:40 (464)		19:55		18:54		17:09	4 16:07 (462) 17:00 34 16:24 (462)
20	06:12		06:50		19:08 (464)		07:31		08:12		07:57	16:00 (462) 08:30 15:18 (463)
	21:36		20:53	33	19:41 (464)		19:53		18:52		17:08	9 16:09 (462) 17:00 34 16:25 (462)
21	06:13		06:52		19:06 (464)		07:32		08:13		07:59	15:59 (462) 08:30 15:18 (463)
	21:35		20:51	35	19:41 (464)		19:51		18:51		17:07	13 16:12 (462) 17:01 34 16:25 (462)
22	06:14		06:53		19:05 (464)		07:33		08:15		08:00	15:58 (462) 08:31 15:19 (463)
	21:34		20:49	37	19:42 (464)		19:49		18:49		17:07	15 16:13 (462) 17:01 34 16:26 (462)
23	06:15		06:54		19:05 (464)		07:35		08:16		08:01	15:58 (462) 08:31 15:19 (463)
	21:33		20:47	38	19:43 (464)		19:47		18:47		17:06	16 16:14 (462) 17:02 34 16:26 (462)
24	06:16		06:55		19:03 (464)		07:36		08:18		08:03	15:57 (462) 08:32 15:20 (463)
	21:32		20:45	40	19:43 (464)		19:45		18:45		17:05	18 16:15 (462) 17:02 34 16:27 (462)
25	06:18		06:57		19:02 (464)		07:37		08:19		08:04	15:57 (462) 08:32 15:21 (463)
	21:31		20:44	41	19:43 (464)		19:43		18:44		17:04	19 16:16 (462) 17:03 33 16:27 (462)
26	06:19		06:58		19:01 (464)		07:39		08:20		08:05	15:57 (462) 08:32 15:21 (463)
	21:30		20:42	42	19:43 (464)		19:40		18:42		17:04	19 16:16 (462) 17:03 33 16:28 (462)
27	06:20		06:59		19:01 (464)		07:40		08:22		08:07	15:56 (462) 08:33 15:22 (463)
	21:29		20:40	43	19:44 (464)		19:38		18:40		17:03	21 16:17 (462) 17:04 32 16:28 (462)
28	06:21		07:01		19:00 (464)		07:41		08:23		08:08	15:57 (462) 08:33 15:23 (463)
	21:27		20:38	44	19:44 (464)		19:36		18:39		17:02	21 16:18 (462) 17:05 32 16:29 (462)
29	06:22		07:02		19:00 (464)		07:43		08:25		08:09	15:57 (462) 08:33 15:24 (463)
	21:26		20:36	43	19:43 (464)		19:34		18:37		17:02	21 16:18 (462) 17:06 32 16:30 (462)
30	06:23		07:03		18:59 (464)		07:44		08:26	09:11 (447)	08:11	15:58 (462) 08:33 15:25 (463)
	21:25		20:34	44	19:43 (464)		19:32		18:35	8 09:19 (447)	17:01	21 16:19 (462) 17:06 30 16:30 (462)
31	06:25		07:05		18:59 (464)				08:28	09:09 (447)		08:33 15:26 (463)
	21:24		20:32	44	19:43 (464)				18:34	12 09:21 (447)		17:07 29 16:31 (462)
Potential sun hours	480		441		378		338		282		266	
Total, worst case			598		448		20		426		877	
Sun reduction			0.73		0.69		0.52		0.43		0.43	
Oper. time red.			0.98		0.98		0.98		0.98		0.98	
Wind dir. red.			0.70		0.70		0.75		0.65		0.54	
Total reduction			0.49		0.47		0.38		0.27		0.22	
Total, real			295		209		8		115		197	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR031 - SR031

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April		May	June	July	August		September		October	November	December
1	08:33	08:13	07:29	07:28		19:49 (433)	06:33	05:57	05:56	06:26		07:06		19:47 (433)	07:45	07:29	08:12
	17:09	17:49	18:31	20:15	3	19:52 (433)	20:56	21:33	21:46	21:22		20:30	11	19:58 (433)	19:30	17:32	17:01
2	08:33	08:12	07:27	07:26		19:47 (433)	06:31	05:56	05:57	06:27		07:07		19:45 (433)	07:47	07:31	08:13
	17:10	17:51	18:32	20:16	6	19:53 (433)	20:57	21:34	21:46	21:21		20:28	14	19:59 (433)	19:28	17:31	17:00
3	08:33	08:11	07:25	07:24		19:46 (433)	06:30	05:56	05:57	06:28		07:09		19:43 (433)	07:48	07:32	08:14
	17:11	17:53	18:34	20:17	9	19:55 (433)	20:58	21:35	21:46	21:19		20:26	16	19:59 (433)	19:27	17:29	17:00
4	08:33	08:09	07:23	07:22		19:45 (433)	06:28	05:55	05:58	06:30		07:10		19:42 (433)	07:49	07:34	08:15
	17:12	17:54	18:35	20:19	11	19:56 (433)	21:00	21:36	21:46	21:18		20:25	17	19:59 (433)	19:25	17:28	17:00
5	08:33	08:08	07:21	07:20		19:45 (433)	06:27	05:55	05:59	06:31		07:11		19:41 (433)	07:51	07:35	08:16
	17:13	17:56	18:36	20:20	12	19:57 (433)	21:01	21:37	21:45	21:17		20:23	16	19:57 (433)	19:23	17:26	16:59
6	08:33	08:07	07:19	07:18		19:44 (433)	06:25	05:54	05:59	06:32		07:12		19:40 (433)	07:52	07:37	08:17
	17:14	17:57	18:38	20:21	15	19:59 (433)	21:02	21:38	21:45	21:15		20:21	15	19:55 (433)	19:21	17:25	16:59
7	08:33	08:05	07:17	07:16		19:44 (433)	06:24	05:54	06:00	06:34		07:14		19:40 (433)	07:53	07:38	08:19
	17:15	17:59	18:39	20:23	16	20:00 (433)	21:04	21:38	21:45	21:14		20:19	12	19:52 (433)	19:19	17:24	16:59
8	08:32	08:04	08:15	07:14		19:44 (433)	06:22	05:53	06:01	06:35		07:15		19:40 (433)	07:55	07:40	08:20
	17:16	18:00	18:41	20:24	17	20:01 (433)	21:05	21:39	21:44	21:12		20:17	11	19:51 (433)	19:17	17:22	16:59
9	08:32	08:02	08:14	07:12		19:46 (433)	06:21	05:53	06:02	06:36		07:16		19:40 (433)	07:56	07:41	08:21
	17:17	18:00	19:42	20:26	16	20:02 (433)	21:06	21:40	21:44	21:11		20:15	9	19:49 (433)	19:15	17:21	16:58
10	08:32	08:01	08:12	07:10		19:47 (433)	06:20	05:53	06:02	06:37		07:18		19:40 (433)	07:58	07:43	08:22
	17:18	18:02	19:44	20:27	14	20:01 (433)	21:08	21:41	21:43	21:09		20:13	7	19:47 (433)	19:13	17:20	16:58
11	08:31	07:59	08:10	07:09		19:48 (433)	06:18	05:52	06:03	06:39		07:19		19:41 (433)	07:59	07:44	08:23
	17:20	18:03	19:45	20:28	11	19:59 (433)	21:09	21:41	21:43	21:08		20:11	4	19:45 (433)	19:11	17:18	16:58
12	08:31	07:58	08:08	07:07		19:52 (433)	06:17	05:52	06:04	06:40		07:20			08:00	07:45	08:23
	17:21	18:05	19:47	20:30	2	19:54 (433)	21:10	21:42	21:42	21:06		20:09			19:09	17:17	16:58
13	08:30	07:56	08:06	07:05			06:16	05:52	06:05	06:41		07:22			08:02	07:47	08:24
	17:22	18:06	19:48	20:31			21:12	21:42	21:41	21:04		20:07			19:07	17:16	16:5
14	08:30	07:55	08:04	07:03			06:14	05:52	06:06	06:42		07:23			08:03	07:48	08:2
	17:23	18:08	19:49	20:32			21:13	21:43	21:41	21:03		20:05			19:05	17:15	16:5
15	08:29	07:53	08:02	07:01			06:13	05:52	06:07	06:44		07:24			08:05	07:50	08:2
	17:25	18:09	19:51	20:34			21:14	21:43	21:40	21:01		20:03			19:03	17:14	16:59
16	08:29	07:51	08:00	06:59			06:12	05:52	06:08	06:45		07:25			08:06	07:51	08:27
	17:26	18:11	19:52	20:35			21:15	21:44	21:39	20:59		20:01			19:01	17:13	16:59
17	08:28	07:50	07:58	06:57			06:11	05:52	06:09	06:46		07:27			08:07	07:53	08:28
	17:27	18:13	19:54	20:37			21:17	21:44	21:38	20:58		19:59			19:00	17:12	16:59
18	08:27	07:48	07:56	06:55			06:09	05:52	06:10	06:48		07:28			08:09	07:54	08:28
	17:29	18:14	19:55	20:38			21:18	21:45	21:38	20:56		19:57			18:56	17:10	16:59
19	08:27	07:46	07:54	06:54			06:08	05:52	06:11	06:49		07:29			08:10	07:56	08:29
	17:30	18:16	19:57	20:39			21:19	21:45	21:37	20:54		19:55			18:54	17:09	17:00
20	08:26	07:45	07:52	06:52			06:07	05:52	06:12	06:50		07:31			08:12	07:57	08:29
	17:32	18:17	19:58	20:41			21:20	21:45	21:36	20:53		19:53			18:52	17:09	17:00
21	08:25	07:43	07:50	06:50			06:06	05:52	06:13	06:52		07:32			08:13	07:58	08:30
	17:33	18:19	19:59	20:42			21:21	21:46	21:35	20:51		19:51			18:51	17:08	17:01
22	08:24	07:41	07:48	06:48			06:05	05:52	06:14	06:53		07:33			08:15	08:00	08:31
	17:35	18:20	20:01	20:43			21:23	21:46	21:34	20:49		19:49			18:49	17:07	17:01
23	08:23	07:40	07:46	06:47			06:04	05:53	06:15	06:54		07:35			08:16	08:01	08:31
	17:36	18:22	20:02	20:45			21:24	21:46	21:33	20:47		19:47			18:47	17:06	17:02
24	08:22	07:38	07:44	06:45			06:03	05:53	06:16	06:56		07:36			08:17	08:03	08:31
	17:37	18:23	20:03	20:46			21:25	21:46	21:32	20:45		19:45			18:45	17:05	17:02
25	08:21	07:36	07:42	06:43			06:02	05:53	06:18	06:57		07:37			08:19	08:04	08:32
	17:39	18:25	20:05	20:48			21:26	21:46	21:31	20:44		19:43			18:44	17:04	17:03
26	08:20	07:34	07:40	06:41			06:01	05:54	06:19	06:58		07:39			08:20	08:05	08:32
	17:40	18:26	20:06	20:49			21:27	21:47	21:30	20:42		19:40			18:42	17:04	17:04
27	08:19	07:32	07:38	06:40			06:00	05:54	06:20	06:59		07:40			08:22	08:07	08:33
	17:42	18:28	20:08	20:50			21:28	21:47	21:28	20:40		19:38			18:40	17:03	17:04
28	08:18	07:30	07:36	06:38			06:00	05:55	06:21	07:01		07:41			08:23	08:08	08:33
	17:43	18:29	20:09	20:52			21:29	21:47	21:27	20:38		19:36			18:39	17:02	17:05
29	08:17		07:34	06:36			05:59	05:55	06:22	07:02		07:43			08:25	08:09	08:33
	17:45		20:10	20:53			21:30	21:47	21:26	20:36		19:34			18:37	17:02	17:06
30	08:16		07:32	06:35			05:58	05:56	06:24	07:03		07:44			08:26	08:10	08:33
	17:46		20:12	20:54			21:31	21:46	21:25	20:34		19:32			18:36	17:01	17:07
31	08:14		07:30				05:57		06:25	07:05	19:51 (433)				08:28		08:33
	17:48		20:13				21:32		21:23	20:32	19:55 (433)				18:34		17:07
Potential sun hours	279	287	368	407		466	474	480	441		378		338	282	266
Total, worst case					132					4		132			
Sun reduction					0.59					0.73		0.69			
Oper. time red.					0.98					0.98		0.98			
Wind dir. red.					0.71					0.71		0.71			
Total reduction					0.41					0.51		0.48			
Total, real					54					2		63			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR032 - SR032

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May		June	
1	08:33		08:13		07:29		17:44 (461)	07:28			05:57	20:30 (463)
	17:09		17:49		18:31	24	18:08 (461)	20:15	20:56		21:33	18 20:48 (463)
2	08:34		08:12		07:27		17:43 (461)	07:26	06:31		05:56	20:28 (463)
	17:10		17:51		18:32	25	18:08 (461)	20:16	20:57		21:34	21 20:49 (463)
3	08:33		08:11		07:25		17:44 (461)	07:24	19:37 (462)	06:30	05:55	20:26 (463)
	17:10		17:52		18:34	24	18:08 (461)	20:17	12 19:49 (462)	20:59	21:35	25 20:51 (463)
4	08:33		08:09		07:23		17:45 (461)	07:22	19:34 (462)	06:28	05:55	20:26 (463)
	17:12		17:54		18:35	23	18:08 (461)	20:19	18 19:52 (462)	21:00	21:36	27 20:53 (463)
5	08:33		08:08		07:21		17:45 (461)	07:20	19:32 (462)	06:27	05:54	20:25 (463)
	17:13		17:56		18:36	22	18:07 (461)	20:20	21 19:53 (462)	21:01	21:37	29 20:54 (463)
6	08:33		08:07		07:19		17:46 (461)	07:18	19:30 (462)	06:25	05:54	20:24 (463)
	17:14		17:57		18:38	19	18:05 (461)	20:22	24 19:54 (462)	21:03	21:38	31 20:55 (463)
7	08:33		08:05		07:17		17:47 (461)	07:16	19:28 (462)	06:24	05:54	20:23 (463)
	17:15		17:59		18:39	17	18:04 (461)	20:23	27 19:55 (462)	21:04	21:39	33 20:56 (463)
8	08:33		08:04		08:15		18:49 (461)	07:14	19:27 (462)	06:22	05:53	20:23 (463)
	17:16		18:00		18:41	12	19:01 (461)	20:24	29 19:56 (462)	21:05	21:39	34 20:57 (463)
9	08:32		08:02		08:14		18:53 (461)	07:12	19:26 (462)	06:21	05:53	20:22 (463)
	17:17		18:00		19:42	3	18:56 (461)	20:26	30 19:56 (462)	21:07	21:40	35 20:57 (463)
10	08:32		08:01		08:12			07:10	19:26 (462)	06:20	05:53	20:22 (463)
	17:18		18:02		19:44			20:27	31 19:57 (462)	21:08	21:41	36 20:58 (463)
11	08:31		07:59		08:10			07:09	07:30 (447)	06:18	05:52	20:22 (463)
	17:20		18:03		19:45			20:28	33 19:57 (462)	21:09	21:41	37 20:59 (463)
12	08:31		07:58		08:08			07:07	07:28 (447)	06:17	05:52	20:22 (463)
	17:21		18:05		19:47			20:30	36 19:57 (462)	21:10	21:42	38 21:00 (463)
13	08:31		07:56		08:06			07:05	07:26 (447)	06:15	05:52	20:22 (463)
	17:22		18:06		19:48			20:31	39 19:56 (462)	21:12	21:43	39 21:01 (463)
14	08:30		07:55		08:04			07:03	07:24 (447)	06:14	05:52	20:22 (463)
	17:23		18:08		19:49			20:33	41 19:56 (462)	21:13	21:43	39 21:01 (463)
15	08:29		07:53		08:02			07:01	07:22 (447)	06:13	05:52	20:21 (463)
	17:25		18:09		19:51			20:34	43 19:55 (462)	21:14	21:44	40 21:01 (463)
16	08:29		07:52		08:00			06:59	07:20 (447)	06:12	05:52	20:21 (463)
	17:26		18:11		19:52			20:35	43 19:54 (462)	21:16	21:44	40 21:01 (463)
17	08:28		07:50		07:58			06:57	07:19 (447)	06:11	05:52	20:22 (463)
	17:27		18:13		19:54			20:37	45 19:55 (462)	21:17	21:45	41 21:03 (463)
18	08:27		07:48		07:56			06:55	07:17 (447)	06:09	05:52	20:22 (463)
	17:29		18:14		19:55			20:38	45 19:53 (462)	21:18	21:45	41 21:03 (463)
19	08:27		07:47		07:54			06:54	07:15 (447)	06:08	05:52	20:22 (463)
	17:30		18:16		19:57			20:39	44 19:52 (462)	21:19	21:45	41 21:03 (463)
20	08:26		07:45		07:52			06:52	07:14 (447)	06:07	05:52	20:22 (463)
	17:32		18:17		19:58			20:41	43 19:51 (462)	21:20	21:46	41 21:03 (463)
21	08:25		07:43		07:50			06:50	07:15 (447)	06:06	05:52	20:22 (463)
	17:33		18:19		19:59			20:42	38 19:50 (462)	21:22	21:46	41 21:03 (463)
22	08:24		07:41		17:51 (461)	07:48		06:48	07:16 (447)	06:05	05:52	20:22 (463)
	17:34		18:20	6	17:57 (461)	20:01		20:44	32 19:48 (462)	21:23	21:46	41 21:03 (463)
23	08:23		07:40		17:49 (461)	07:46		06:46	07:17 (447)	06:04	05:53	20:23 (463)
	17:36		18:22	9	17:58 (461)	20:02		20:45	23 19:45 (462)	21:24	21:46	41 21:04 (463)
24	08:22		07:38		17:48 (461)	07:44		06:45	07:21 (447)	06:03	05:53	20:23 (463)
	17:37		18:23	12	18:00 (461)	20:04		20:46	5 19:39 (462)	21:25	21:47	41 21:04 (463)
25	08:21		07:36		17:47 (461)	07:42		06:43		06:02	05:53	20:23 (463)
	17:39		18:25	15	18:02 (461)	20:05		20:48		21:26	21:47	41 21:04 (463)
26	08:20		07:34		17:45 (461)	07:40		06:41		06:01	05:54	20:24 (463)
	17:40		18:26	18	18:03 (461)	20:06		20:49		21:27	21:47	40 21:04 (463)
27	08:19		07:32		17:45 (461)	07:38		06:40		06:00	05:54	20:24 (463)
	17:42		18:28	20	18:05 (461)	20:08		20:50		21:28	21:47	40 21:04 (463)
28	08:18		07:31		17:44 (461)	07:36		06:38		06:00	05:54	20:24 (463)
	17:43		18:29	22	18:06 (461)	20:09		20:52		21:29	21:47	40 21:04 (463)
29	08:17					07:34		06:36		05:59	05:55	20:25 (463)
	17:45					20:10		20:53		21:30	21:47	39 21:04 (463)
30	08:16					07:32		06:35		05:58	05:55	20:25 (463)
	17:46					20:12		20:54		21:31	21:47	38 21:03 (463)
31	08:15					07:30				05:57	20:32 (463)	
	17:48					20:13				21:32	12 20:44 (463)	
Potential sun hours	279		287		368		407		466		475	
Total, worst case			102		169		702		12		1088	
Sun reduction			0.50		0.63		0.59		0.68		0.71	
Oper. time red.			0.98		0.98		0.98		0.98		0.98	
Wind dir. red.			0.62		0.62		0.70		0.75		0.75	
Total reduction			0.30		0.38		0.40		0.49		0.52	
Total, real			31		64		283		6		562	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR032 - SR032

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October		November	December
1	05:56	20:26 (463)	06:26		07:06	19:24 (462)	07:45		07:29	08:12
	21:46	38 21:04 (463)	21:22		20:30	32 19:56 (462)	19:30		17:32	17:01
2	05:57	20:27 (463)	06:27		07:07	19:24 (462)	07:47		07:31	08:13
	21:46	37 21:04 (463)	21:21		20:28	31 19:55 (462)	19:28		17:31	17:00
3	05:57	20:27 (463)	06:28		07:09	19:24 (462)	07:48		07:32	08:14
	21:46	36 21:03 (463)	21:20		20:27	30 19:54 (462)	19:27		17:29	17:00
4	05:58	20:28 (463)	06:30		07:10	19:25 (462)	07:49		07:34	08:15
	21:46	35 21:03 (463)	21:18		20:25	29 19:54 (462)	19:25		17:28	16:59
5	05:58	20:28 (463)	06:31		07:11	19:25 (462)	07:51	18:27 (461)	07:35	08:16
	21:45	34 21:02 (463)	21:17		20:23	27 19:52 (462)	19:23	10 18:37 (461)	17:26	16:59
6	05:59	20:30 (463)	06:32		07:12	19:26 (462)	07:52	18:24 (461)	07:37	08:18
	21:45	31 21:01 (463)	21:15		20:21	25 19:51 (462)	19:21	14 18:38 (461)	17:25	16:59
7	06:00	20:31 (463)	06:33		07:14	19:27 (462)	07:54	18:22 (461)	07:38	08:19
	21:45	30 21:01 (463)	21:14		20:19	22 19:49 (462)	19:19	18 18:40 (461)	17:24	16:59
8	06:01	20:32 (463)	06:35		07:15	19:29 (462)	07:55	18:20 (461)	07:40	08:20
	21:44	28 21:00 (463)	21:12		20:17	18 19:47 (462)	19:17	21 18:41 (461)	17:22	16:58
9	06:02	20:33 (463)	06:36		07:16	19:31 (462)	07:56	18:19 (461)	07:41	08:21
	21:44	26 20:59 (463)	21:11		20:15	13 19:44 (462)	19:15	22 18:41 (461)	17:21	16:58
10	06:02	20:35 (463)	06:37		07:18		07:58	18:19 (461)	07:43	08:22
	21:43	22 20:57 (463)	21:09		20:13		19:13	23 18:42 (461)	17:20	16:58
11	06:03	20:37 (463)	06:39		07:19		07:59	18:17 (461)	07:44	08:23
	21:43	19 20:56 (463)	21:08		20:11		19:11	25 18:42 (461)	17:18	16:58
12	06:04	20:39 (463)	06:40		07:20		08:00	18:18 (461)	07:46	08:24
	21:42	15 20:54 (463)	21:06		20:09		19:09	24 18:42 (461)	17:17	16:58
13	06:05	20:43 (463)	06:41		07:22		08:02	18:17 (461)	07:47	08:24
	21:41	8 20:51 (463)	21:04		20:07		19:07	23 18:40 (461)	17:16	16:58
14	06:06		06:42		07:23		08:03	18:17 (461)	07:49	08:25
	21:41		21:03		20:05		19:05	22 18:39 (461)	17:15	16:58
15	06:07		06:44		07:24		08:05	18:17 (461)	07:50	08:26
	21:40		21:01		20:03		19:03	19 18:36 (461)	17:14	16:59
16	06:08		06:45		07:25		08:06	18:18 (461)	07:51	08:27
	21:39		20:59		20:01		19:01	17 18:35 (461)	17:12	16:59
17	06:09		06:46		07:27		08:07	18:18 (461)	07:53	08:28
	21:39		20:58		19:59		19:00	15 18:33 (461)	17:11	16:59
18	06:10		06:48		07:28		08:09	18:20 (461)	07:54	08:28
	21:38		20:56		19:57		18:56	11 18:31 (461)	17:10	16:59
19	06:11		06:49	07:26 (447)	07:29		08:10	18:21 (461)	07:56	08:29
	21:37		20:54	12 19:48 (462)	19:55		18:54	8 18:29 (461)	17:09	17:00
20	06:12		06:50	07:23 (447)	07:31		08:12	18:24 (461)	07:57	08:30
	21:36		20:53	24 19:51 (462)	19:53		18:52	4 18:28 (461)	17:08	17:00
21	06:13		06:52	07:21 (447)	07:32		08:13		07:59	08:30
	21:35		20:51	33 19:53 (462)	19:51		18:51		17:08	17:01
22	06:14		06:53	07:19 (447)	07:33		08:15		08:00	08:31
	21:34		20:49	38 19:54 (462)	19:49		18:49		17:07	17:01
23	06:15		06:54	07:19 (447)	07:35		08:16		08:01	08:31
	21:33		20:47	42 19:55 (462)	19:47		18:47		17:06	17:02
24	06:16		06:55	07:19 (447)	07:36		08:18		08:03	08:32
	21:32		20:45	44 19:56 (462)	19:45		18:45		17:05	17:02
25	06:18		06:57	07:20 (447)	07:37		08:19		08:04	08:32
	21:31		20:44	44 19:56 (462)	19:43		18:44		17:04	17:03
26	06:19		06:58	07:21 (447)	07:39		08:20		08:05	08:32
	21:30		20:42	44 19:56 (462)	19:41		18:42		17:04	17:03
27	06:20		06:59	07:23 (447)	07:40		08:22		08:07	08:33
	21:29		20:40	43 19:57 (462)	19:38		18:40		17:03	17:04
28	06:21		07:01	07:24 (447)	07:41		08:23		08:08	08:33
	21:27		20:38	42 19:57 (462)	19:36		18:39		17:02	17:05
29	06:22		07:02	07:25 (447)	07:43		08:25		08:09	08:33
	21:26		20:36	41 19:57 (462)	19:34		18:37		17:02	17:06
30	06:23		07:03	07:26 (447)	07:44		08:26		08:11	08:33
	21:25		20:34	39 19:56 (462)	19:32		18:35		17:01	17:07
31	06:25		07:05	07:28 (447)			08:28			08:33
	21:24		20:32	36 19:57 (462)			18:34			17:07
Potential sun hours	480		441		378		338		282	266
Total, worst case		359		482		227		276		
Sun reduction		0.75		0.73		0.69		0.52		
Oper. time red.		0.98		0.98		0.98		0.98		
Wind dir. red.		0.75		0.69		0.71		0.62		
Total reduction		0.55		0.49		0.48		0.32		
Total, real		198		237		108		87		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR033 - SR033

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:34	08:13	07:29	07:28	06:33	05:57	05:56	06:26	07:06	07:45	07:29	08:12
	17:09	17:49	18:31	20:15	20:56	21:33	21:47	21:22	20:30	19:30	17:32	17:01
2	08:34	08:12	07:27	07:26	06:31	05:56	05:56	06:27	07:07	07:47	07:31	08:13
	17:09	17:51	18:32	20:16	20:57	21:34	21:46	21:21	20:29	19:29	17:31	17:00
3	08:34	08:11	07:25	07:24	06:30	05:55	05:57	06:28	07:09	07:48	07:32	08:14
	17:10	17:52	18:34	20:17	20:59	21:35	21:46	21:20	20:27	19:27	17:29	17:00
4	08:33	08:10	07:23	07:22	06:28	05:55	05:58	06:30	07:10	07:49	07:34	08:15
	17:11	17:54	18:35	20:19	21:00	21:36	21:46	21:18	20:25	19:25	17:28	16:59
5	08:33	08:08	07:21	07:20	06:27	05:54	05:58	06:31	07:11	07:51	07:35	08:17
	17:13	17:56	18:36	20:20	21:01	21:37	21:46	21:17	20:23	19:23	17:26	16:59
6	08:33	08:07	07:19	07:18	06:25	05:54	05:59	06:32	07:12	07:52	07:37	08:18
	17:14	17:57	18:38	20:22	21:03	21:38	21:45	21:15	20:21	19:21	17:25	16:59
7	08:33	08:05	07:17	07:16	06:24	05:54	06:00	06:33	07:14	07:54	07:38	08:19
	17:15	17:59	18:39	20:23	21:04	21:39	21:45	21:14	20:19	19:19	17:24	16:59
8	08:33	08:04	08:15	07:14	06:22	05:53	06:01	06:35	07:15	07:55	07:40	08:20
	17:16	18:00	18:41	20:24	21:05	21:39	21:44	21:12	20:17	19:17	17:22	16:58
9	08:32	08:03	08:14	07:12	06:21	05:53	06:01	06:36	07:16	07:56	07:41	08:21
	17:17	18:00	19:42	20:26	21:07	21:40	21:44	21:11	20:15	19:15	17:21	16:58
10	08:32	08:01	08:12	07:10	06:19	05:53	06:02	06:37	07:18	07:58	07:43	08:22
	17:18	18:02	19:44	20:27	21:08	21:41	21:43	21:09	20:13	19:13	17:20	16:58
11	08:32	08:00	08:10	07:09	06:18	05:52	06:03	06:39	07:19	07:59	07:44	08:23
	17:19	18:03	19:45	20:28	21:09	21:41	21:43	21:08	20:11	19:11	17:18	16:58
12	08:31	07:58	08:08	07:07	06:17	05:52	06:04	06:40	07:20	08:00	07:46	08:24
	17:21	18:05	19:47	20:30	21:11	21:42	21:42	21:06	20:09	19:09	17:17	16:58
13	08:31	07:56	08:06	07:05	06:15	05:52	06:05	06:41	07:22	08:02	07:47	08:25
	17:22	18:06	19:48	20:31	21:12	21:43	21:42	21:05	20:07	19:07	17:16	16:58
14	08:30	07:55	08:04	07:03	06:14	05:52	06:06	06:42	07:23	08:03	07:49	08:25
	17:23	18:08	19:49	20:33	21:13	21:43	21:41	21:03	20:05	19:05	17:15	16:58
15	08:30	07:53	08:02	07:01	06:13	05:52	06:07	06:44	07:24	08:05	07:50	08:26
	17:25	18:09	19:51	20:34	21:14	21:44	21:40	21:01	20:03	19:03	17:14	16:59
16	08:29	07:52	08:00	06:59	06:12	05:52	06:08	06:45	07:25	08:06	07:51	08:27
	17:26	18:11	19:52	20:35	21:16	21:44	21:39	21:00	20:01	19:01	17:12	16:59
17	08:28	07:50	07:58	06:57	06:10	05:52	06:09	06:46	07:27	08:07	07:53	08:28
	17:27	18:13	19:54	20:37	21:17	21:45	21:39	20:58	19:59	19:00	17:11	16:59
18	08:27	07:48	07:56	06:55	06:09	05:52	06:10	06:48	07:28	08:09	07:54	08:28
	17:29	18:14	19:55	20:38	21:18	21:45	21:38	20:56	19:57	18:56	17:10	16:59
19	08:27	07:47	07:54	06:54	06:08	05:52	06:11	06:49	07:29	08:10	07:56	08:29
	17:30	18:16	19:57	20:39	21:19	21:45	21:37	20:54	19:55	18:54	17:09	17:00
20	08:26	07:45	07:52	06:52	06:07	05:52	06:12	06:50	07:31	08:12	07:57	08:30
	17:32	18:17	19:58	20:41	21:20	21:46	21:36	20:53	19:53	18:52	17:08	17:00
21	08:25	07:43	07:50	06:50	06:06	05:52	06:13	06:52	07:32	08:13	07:59	08:30
	17:33	18:19	19:59	20:42	21:22	21:46	21:35	20:51	19:51	18:51	17:07	17:01
22	08:24	07:41	07:48	06:48	06:05	05:52	06:14	06:53	07:33	08:15	08:00	08:31
	17:34	18:20	20:01	20:44	21:23	21:46	21:34	20:49	19:49	18:49	17:07	17:01
23	08:23	07:40	07:46	06:46	06:04	05:53	06:15	06:54	07:35	08:16	08:01	08:31
	17:36	18:22	20:02	20:45	21:24	21:46	21:33	20:47	19:47	18:47	17:06	17:02
24	08:22	07:38	07:44	06:45	06:03	05:53	06:16	06:55	07:36	08:18	08:03	08:32
	17:37	18:23	20:04	20:46	21:25	21:47	21:32	20:45	19:45	18:45	17:05	17:02
25	08:21	07:36	07:42	06:43	06:02	05:53	06:18	06:57	07:37	08:19	08:04	08:32
	17:39	18:25	20:05	20:48	21:26	21:47	21:31	20:44	19:43	18:44	17:04	17:03
26	08:20	07:34	07:40	06:41	06:01	05:53	06:19	06:58	07:39	08:20	08:05	08:32
	17:40	18:26	20:06	20:49	21:27	21:47	21:30	20:42	19:41	18:42	17:04	17:03
27	08:19	07:32	07:38	06:40	06:00	05:54	06:20	06:59	07:40	08:22	08:07	08:33
	17:42	18:28	20:08	20:50	21:28	21:47	21:29	20:40	19:39	18:40	17:03	17:04
28	08:18	07:31	07:36	06:38	06:00	05:54	06:21	07:01	07:41	08:23	08:08	08:33
	17:43	18:29	20:09	20:52	21:29	21:47	21:27	20:38	19:37	18:39	17:02	17:05
29	08:17		07:34	06:36	05:59	05:55	06:22	07:02	07:43	08:25	08:09	08:33
	17:45		20:10	20:53	21:30	21:47	21:26	20:36	19:34	18:37	17:02	17:06
30	08:16		07:32	06:35	05:58	05:55	06:23	07:03	07:44	08:26	08:11	08:33
	17:46		20:12	20:55	21:31	21:47	21:25	20:34	19:32	18:35	17:01	17:06
31	08:15		07:30		05:57		06:25	07:05		08:28		08:33
	17:48		20:13		21:32		21:24	20:32		18:34		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 5820!
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR034 - SR034

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:34	08:14	07:29	07:28	06:33	05:57	05:56	06:26	07:06	07:45	07:29	08:12
	17:08	17:49	18:31	20:15	20:56	21:34	21:47	21:22	20:30	19:31	17:32	17:01
2	08:34	08:12	07:27	07:26	06:31	05:56	05:56	06:27	07:07	07:47	07:31	08:13
	17:09	17:51	18:32	20:16	20:57	21:35	21:47	21:21	20:29	19:29	17:31	17:00
3	08:34	08:11	07:25	07:24	06:30	05:55	05:57	06:28	07:09	07:48	07:32	08:14
	17:10	17:52	18:34	20:17	20:59	21:35	21:46	21:20	20:27	19:27	17:29	17:00
4	08:34	08:10	07:23	07:22	06:28	05:55	05:58	06:30	07:10	07:49	07:34	08:16
	17:11	17:54	18:35	20:19	21:00	21:36	21:46	21:18	20:25	19:25	17:28	16:59
5	08:33	08:08	07:21	07:20	06:27	05:54	05:58	06:31	07:11	07:51	07:35	08:17
	17:12	17:55	18:36	20:20	21:01	21:37	21:46	21:17	20:23	19:23	17:26	16:59
6	08:33	08:07	07:19	07:18	06:25	05:54	05:59	06:32	07:12	07:52	07:37	08:18
	17:13	17:57	18:38	20:22	21:03	21:38	21:45	21:15	20:21	19:21	17:25	16:59
7	08:33	08:05	07:17	07:16	06:24	05:53	06:00	06:33	07:14	07:54	07:38	08:19
	17:15	17:59	18:39	20:23	21:04	21:39	21:45	21:14	20:19	19:19	17:24	16:58
8	08:33	08:04	08:16	07:14	06:22	05:53	06:01	06:35	07:15	07:55	07:40	08:20
	17:16	18:00	18:41	20:24	21:05	21:40	21:45	21:13	20:17	19:17	17:22	16:58
9	08:32	08:03	08:14	07:12	06:21	05:53	06:01	06:36	07:16	07:56	07:41	08:21
	17:17	18:00	19:42	20:26	21:07	21:40	21:44	21:11	20:15	19:15	17:21	16:58
10	08:32	08:01	08:12	07:10	06:19	05:52	06:02	06:37	07:18	07:58	07:43	08:22
	17:18	18:02	19:44	20:27	21:08	21:41	21:44	21:09	20:13	19:13	17:20	16:58
11	08:32	08:00	08:10	07:09	06:18	05:52	06:03	06:38	07:19	07:59	07:44	08:23
	17:19	18:03	19:45	20:29	21:09	21:42	21:43	21:08	20:11	19:11	17:18	16:58
12	08:31	07:58	08:08	07:07	06:17	05:52	06:04	06:40	07:20	08:00	07:46	08:24
	17:21	18:05	19:47	20:30	21:11	21:42	21:42	21:06	20:09	19:09	17:17	16:58
13	08:31	07:56	08:06	07:05	06:15	05:52	06:05	06:41	07:22	08:02	07:47	08:25
	17:22	18:06	19:48	20:31	21:12	21:43	21:42	21:05	20:07	19:07	17:16	16:58
14	08:30	07:55	08:04	07:03	06:14	05:52	06:06	06:42	07:23	08:03	07:49	08:26
	17:23	18:08	19:49	20:33	21:13	21:43	21:41	21:03	20:05	19:05	17:15	16:58
15	08:30	07:53	08:02	07:01	06:13	05:52	06:07	06:44	07:24	08:05	07:50	08:26
	17:25	18:09	19:51	20:34	21:14	21:44	21:40	21:01	20:03	19:03	17:13	16:58
16	08:29	07:52	08:00	06:59	06:12	05:52	06:08	06:45	07:25	08:06	07:52	08:27
	17:26	18:11	19:52	20:35	21:16	21:44	21:40	21:00	20:01	19:01	17:12	16:59
17	08:28	07:50	07:58	06:57	06:10	05:52	06:09	06:46	07:27	08:08	07:53	08:28
	17:27	18:12	19:54	20:37	21:17	21:45	21:39	20:58	19:59	19:00	17:11	16:59
18	08:28	07:48	07:56	06:55	06:09	05:52	06:10	06:48	07:28	08:09	07:54	08:29
	17:29	18:14	19:55	20:38	21:18	21:45	21:38	20:56	19:57	18:56	17:10	16:59
19	08:27	07:47	07:54	06:54	06:08	05:52	06:11	06:49	07:29	08:10	07:56	08:29
	17:30	18:16	19:57	20:40	21:19	21:46	21:37	20:54	19:55	18:54	17:09	17:00
20	08:26	07:45	07:52	06:52	06:07	05:52	06:12	06:50	07:31	08:12	07:57	08:30
	17:31	18:17	19:58	20:41	21:21	21:46	21:36	20:53	19:53	18:52	17:08	17:00
21	08:25	07:43	07:50	06:50	06:06	05:52	06:13	06:51	07:32	08:13	07:59	08:30
	17:33	18:19	19:59	20:42	21:22	21:46	21:35	20:51	19:51	18:51	17:07	17:00
22	08:24	07:41	07:48	06:48	06:05	05:52	06:14	06:53	07:33	08:15	08:00	08:31
	17:34	18:20	20:01	20:44	21:23	21:46	21:34	20:49	19:49	18:49	17:07	17:01
23	08:23	07:40	07:46	06:46	06:04	05:52	06:15	06:54	07:35	08:16	08:02	08:31
	17:36	18:22	20:02	20:45	21:24	21:47	21:33	20:47	19:47	18:47	17:06	17:01
24	08:22	07:38	07:44	06:45	06:03	05:53	06:16	06:55	07:36	08:18	08:03	08:32
	17:37	18:23	20:04	20:46	21:25	21:47	21:32	20:46	19:45	18:45	17:05	17:02
25	08:21	07:36	07:42	06:43	06:02	05:53	06:17	06:57	07:37	08:19	08:04	08:32
	17:39	18:25	20:05	20:48	21:26	21:47	21:31	20:44	19:43	18:44	17:04	17:03
26	08:20	07:34	07:40	06:41	06:01	05:53	06:19	06:58	07:39	08:21	08:06	08:33
	17:40	18:26	20:06	20:49	21:27	21:47	21:30	20:42	19:41	18:42	17:03	17:03
27	08:19	07:32	07:38	06:40	06:00	05:54	06:20	06:59	07:40	08:22	08:07	08:33
	17:42	18:28	20:08	20:51	21:29	21:47	21:29	20:40	19:39	18:40	17:03	17:04
28	08:18	07:31	07:36	06:38	05:59	05:54	06:21	07:01	07:41	08:23	08:08	08:33
	17:43	18:29	20:09	20:52	21:30	21:47	21:28	20:38	19:37	18:39	17:02	17:05
29	08:17		07:34	06:36	05:59	05:55	06:22	07:02	07:43	08:25	08:09	08:33
	17:45		20:11	20:53	21:31	21:47	21:26	20:36	19:35	18:37	17:02	17:06
30	08:16		07:32	06:35	05:58	05:55	06:23	07:03	07:44	08:26	08:11	08:33
	17:46		20:12	20:55	21:32	21:47	21:25	20:34	19:33	18:35	17:01	17:06
31	08:15		07:30		05:57		06:25	07:05		08:28		08:34
	17:48		20:13		21:33		21:24	20:32		18:34		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR035 - SR035

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:34	08:14	07:29	07:28	06:33	05:57	05:56	06:26	07:06	07:45	07:29	08:12
	17:09	17:49	18:31	20:15	20:56	21:34	21:47	21:22	20:31	19:31	17:32	17:01
2	08:34	08:12	07:27	07:26	06:31	05:56	05:56	06:27	07:07	07:47	07:31	08:13
	17:09	17:51	18:32	20:16	20:57	21:34	21:46	21:21	20:29	19:29	17:31	17:00
3	08:34	08:11	07:25	07:24	06:30	05:55	05:57	06:28	07:09	07:48	07:32	08:14
	17:10	17:52	18:34	20:17	20:59	21:35	21:46	21:20	20:27	19:27	17:29	17:00
4	08:34	08:10	07:23	07:22	06:28	05:55	05:58	06:30	07:10	07:50	07:34	08:16
	17:11	17:54	18:35	20:19	21:00	21:36	21:46	21:18	20:25	19:25	17:28	16:59
5	08:33	08:08	07:21	07:20	06:27	05:54	05:58	06:31	07:11	07:51	07:35	08:17
	17:13	17:56	18:37	20:20	21:01	21:37	21:46	21:17	20:23	19:23	17:26	16:59
6	08:33	08:07	07:19	07:18	06:25	05:54	05:59	06:32	07:12	07:52	07:37	08:18
	17:14	17:57	18:38	20:22	21:03	21:38	21:45	21:15	20:21	19:21	17:25	16:59
7	08:33	08:06	07:17	07:16	06:24	05:54	06:00	06:33	07:14	07:54	07:38	08:19
	17:15	17:59	18:39	20:23	21:04	21:39	21:45	21:14	20:19	19:19	17:24	16:59
8	08:33	08:04	08:16	07:14	06:22	05:53	06:01	06:35	07:15	07:55	07:40	08:20
	17:16	18:00	18:41	20:24	21:05	21:40	21:45	21:13	20:17	19:17	17:22	16:58
9	08:32	08:03	08:14	07:12	06:21	05:53	06:01	06:36	07:16	07:56	07:41	08:21
	17:17	18:00	19:42	20:26	21:07	21:40	21:44	21:11	20:15	19:15	17:21	16:58
10	08:32	08:01	08:12	07:11	06:20	05:53	06:02	06:37	07:18	07:58	07:43	08:22
	17:18	18:02	19:44	20:27	21:08	21:41	21:44	21:09	20:13	19:13	17:20	16:58
11	08:32	08:00	08:10	07:09	06:18	05:52	06:03	06:39	07:19	07:59	07:44	08:23
	17:19	18:03	19:45	20:29	21:09	21:42	21:43	21:08	20:11	19:11	17:18	16:58
12	08:31	07:58	08:08	07:07	06:17	05:52	06:04	06:40	07:20	08:01	07:46	08:24
	17:21	18:05	19:47	20:30	21:11	21:42	21:42	21:06	20:09	19:09	17:17	16:58
13	08:31	07:56	08:06	07:05	06:15	05:52	06:05	06:41	07:22	08:02	07:47	08:25
	17:22	18:06	19:48	20:31	21:12	21:43	21:42	21:05	20:07	19:07	17:16	16:58
14	08:30	07:55	08:04	07:03	06:14	05:52	06:06	06:42	07:23	08:03	07:49	08:26
	17:23	18:08	19:50	20:33	21:13	21:43	21:41	21:03	20:05	19:05	17:15	16:58
15	08:30	07:53	08:02	07:01	06:13	05:52	06:07	06:44	07:24	08:05	07:50	08:26
	17:25	18:09	19:51	20:34	21:14	21:44	21:40	21:01	20:03	19:03	17:14	16:59
16	08:29	07:52	08:00	06:59	06:12	05:52	06:08	06:45	07:26	08:06	07:52	08:27
	17:26	18:11	19:52	20:35	21:16	21:44	21:40	21:00	20:01	19:01	17:12	16:59
17	08:28	07:50	07:58	06:57	06:10	05:52	06:09	06:46	07:27	08:08	07:53	08:28
	17:27	18:13	19:54	20:37	21:17	21:45	21:39	20:58	19:59	19:00	17:11	16:59
18	08:28	07:48	07:56	06:55	06:09	05:52	06:10	06:48	07:28	08:09	07:54	08:29
	17:29	18:14	19:55	20:38	21:18	21:45	21:38	20:56	19:57	18:56	17:10	16:59
19	08:27	07:47	07:54	06:54	06:08	05:52	06:11	06:49	07:29	08:10	07:56	08:29
	17:30	18:16	19:57	20:40	21:19	21:46	21:37	20:54	19:55	18:54	17:09	17:00
20	08:26	07:45	07:52	06:52	06:07	05:52	06:12	06:50	07:31	08:12	07:57	08:30
	17:32	18:17	19:58	20:41	21:21	21:46	21:36	20:53	19:53	18:52	17:08	17:00
21	08:25	07:43	07:50	06:50	06:06	05:52	06:13	06:52	07:32	08:13	07:59	08:30
	17:33	18:19	19:59	20:42	21:22	21:46	21:35	20:51	19:51	18:51	17:08	17:01
22	08:24	07:41	07:48	06:48	06:05	05:52	06:14	06:53	07:33	08:15	08:00	08:31
	17:34	18:20	20:01	20:44	21:23	21:46	21:34	20:49	19:49	18:49	17:07	17:01
23	08:23	07:40	07:46	06:47	06:04	05:53	06:15	06:54	07:35	08:16	08:02	08:31
	17:36	18:22	20:02	20:45	21:24	21:47	21:33	20:47	19:47	18:47	17:06	17:02
24	08:22	07:38	07:44	06:45	06:03	05:53	06:16	06:55	07:36	08:18	08:03	08:32
	17:37	18:23	20:04	20:46	21:25	21:47	21:32	20:46	19:45	18:45	17:05	17:02
25	08:21	07:36	07:42	06:43	06:02	05:53	06:18	06:57	07:37	08:19	08:04	08:32
	17:39	18:25	20:05	20:48	21:26	21:47	21:31	20:44	19:43	18:44	17:04	17:03
26	08:20	07:34	07:40	06:41	06:01	05:54	06:19	06:58	07:39	08:21	08:06	08:33
	17:40	18:26	20:06	20:49	21:27	21:47	21:30	20:42	19:41	18:42	17:04	17:03
27	08:19	07:33	07:38	06:40	06:00	05:54	06:20	06:59	07:40	08:22	08:07	08:33
	17:42	18:28	20:08	20:51	21:29	21:47	21:29	20:40	19:39	18:40	17:03	17:04
28	08:18	07:31	07:36	06:38	06:00	05:54	06:21	07:01	07:41	08:24	08:08	08:33
	17:43	18:29	20:09	20:52	21:30	21:47	21:28	20:38	19:37	18:39	17:02	17:05
29	08:17		07:34	06:36	05:59	05:55	06:22	07:02	07:43	08:25	08:09	08:33
	17:45		20:11	20:53	21:31	21:47	21:26	20:36	19:35	18:37	17:02	17:06
30	08:16		07:32	06:35	05:58	05:55	06:23	07:03	07:44	08:26	08:11	08:33
	17:46		20:12	20:55	21:32	21:47	21:25	20:34	19:33	18:35	17:01	17:06
31	08:15		07:30		05:57		06:25	07:05		08:28		08:34
	17:48		20:13		21:33		21:24	20:32		18:34		17:07
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 5820
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR036 - SR036

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May	June
1	08:34		09:04 (460)	08:13		07:29	08:05 (461)	07:28	08:03 (462)	06:33	05:57
	17:09	28	09:32 (460)	17:50		18:31	15 08:20 (461)	20:15	14 08:17 (462)	20:56	21:33
2	08:34		09:04 (460)	08:12		07:27	08:08 (461)	07:26	08:04 (462)	06:32	05:56
	17:10	29	09:33 (460)	17:51		18:32	11 08:19 (461)	20:16	11 08:15 (462)	20:57	21:34
3	08:34		09:05 (460)	08:11		07:25		07:24	08:08 (462)	06:30	05:56
	17:11	28	09:33 (460)	17:53		18:34		20:17	2 08:10 (462)	20:59	21:35
4	08:34		09:05 (460)	08:10		07:23		07:22		06:28	05:55
	17:12	29	09:34 (460)	17:54		18:35		20:19		21:00	21:36
5	08:33		09:05 (460)	08:08		07:21		07:20		06:27	05:55
	17:13	29	09:34 (460)	17:56		18:37		20:20		21:01	21:37
6	08:33		09:06 (460)	08:07		07:19		07:18		06:25	05:54
	17:14	29	09:35 (460)	17:57		18:38		20:22		21:03	21:38
7	08:33		09:06 (460)	08:05		07:17		07:16		06:24	05:54
	17:15	30	09:36 (460)	17:59		18:39		20:23		21:04	21:39
8	08:33		09:06 (460)	08:04		08:16		07:14		06:22	05:53
	17:16	29	09:35 (460)	18:00		18:41		20:24		21:05	21:39
9	08:32		09:07 (460)	08:03		08:14		07:13		06:21	05:53
	17:17	29	09:36 (460)	18:00		19:42		20:26		21:07	21:40
10	08:32		09:07 (460)	08:01		08:12		07:11		06:20	05:53
	17:18	29	09:36 (460)	18:02		19:44		20:27		21:08	21:41
11	08:32		09:08 (460)	08:00		08:10		07:09		06:18	05:52
	17:20	29	09:37 (460)	18:03		19:45		20:29		21:09	21:41
12	08:31		09:08 (460)	07:58		08:08		07:07		06:17	05:52
	17:21	29	09:37 (460)	18:05		19:47		20:30		21:11	21:42
13	08:31		09:09 (460)	07:56		08:06		07:05		06:16	05:52
	17:22	29	09:38 (460)	18:06		19:48		20:31		21:12	21:43
14	08:30		09:09 (460)	07:55		08:04		07:03		06:14	05:52
	17:23	29	09:38 (460)	18:08		19:50		20:33		21:13	21:43
15	08:30		09:09 (460)	07:53		08:02		07:01		06:13	05:52
	17:25	29	09:38 (460)	18:10		19:51		20:34		21:14	21:44
16	08:29		09:10 (460)	07:52		08:00		06:59		06:12	05:52
	17:26	28	09:38 (460)	18:11		19:52		20:35		21:16	21:44
17	08:28		09:11 (460)	07:50	08:12 (461)	07:58		06:57		06:11	05:52
	17:27	27	09:38 (460)	18:13	7 08:19 (461)	19:54		20:37		21:17	21:45
18	08:28		09:11 (460)	07:48	08:10 (461)	07:56		06:56		06:09	05:52
	17:29	27	09:38 (460)	18:14	11 08:21 (461)	19:55		20:38		21:18	21:45
19	08:27		09:12 (460)	07:47	08:09 (461)	07:54		06:54		06:08	05:52
	17:30	26	09:38 (460)	18:16	14 08:23 (461)	19:57		20:40		21:19	21:45
20	08:26		09:13 (460)	07:45	08:07 (461)	07:52		06:52		06:07	05:52
	17:32	24	09:37 (460)	18:17	17 08:24 (461)	19:58		20:41		21:21	21:46
21	08:25		09:14 (460)	07:43	08:05 (461)	07:50		06:50		06:06	05:52
	17:33	23	09:37 (460)	18:19	19 08:24 (461)	19:59		20:42		21:22	21:46
22	08:24		09:15 (460)	07:41	08:03 (461)	07:48	08:10 (462)	06:48		06:05	05:52
	17:35	21	09:36 (460)	18:20	21 08:24 (461)	20:01	6 08:16 (462)	20:44		21:23	21:46
23	08:23		09:16 (460)	07:40	08:03 (461)	07:46	08:07 (462)	06:47		06:04	05:53
	17:36	20	09:36 (460)	18:22	22 08:25 (461)	20:02	12 08:19 (462)	20:45		21:24	21:46
24	08:22		09:17 (460)	07:38	08:03 (461)	07:44	08:05 (462)	06:45		06:03	05:53
	17:37	18	09:35 (460)	18:23	22 08:25 (461)	20:04	15 08:20 (462)	20:46		21:25	21:47
25	08:21		09:19 (460)	07:36	08:03 (461)	07:42	08:03 (462)	06:43		06:02	05:53
	17:39	15	09:34 (460)	18:25	21 08:24 (461)	20:05	18 08:21 (462)	20:48		21:26	21:47
26	08:20		09:22 (460)	07:34	08:03 (461)	07:40	08:02 (462)	06:41		06:01	05:54
	17:40	10	09:32 (460)	18:26	21 08:24 (461)	20:06	19 08:21 (462)	20:49		21:27	21:47
27	08:19			07:32	08:03 (461)	07:38	08:02 (462)	06:40		06:00	05:54
	17:42			18:28	20 08:23 (461)	20:08	19 08:21 (462)	20:51		21:28	21:47
28	08:18			07:31	08:04 (461)	07:36	08:01 (462)	06:38		06:00	05:55
	17:43			18:29	18 08:22 (461)	20:09	20 08:21 (462)	20:52		21:29	21:47
29	08:17					07:34	08:01 (462)	06:36		05:59	05:55
	17:45					20:11	19 08:20 (462)	20:53		21:31	21:47
30	08:16					07:32	08:01 (462)	06:35		05:58	05:55
	17:46					20:12	18 08:19 (462)	20:55		21:32	21:47
31	08:15					07:30	08:02 (462)			05:57	
	17:48					20:13	16 08:18 (462)			21:32	
Potential sun hours	279		287			368		407		466	475
Total, worst case		673		213			188		27		
Sun reduction		0.55		0.50			0.63		0.59		
Oper. time red.		0.98		0.98			0.98		0.98		
Wind dir. red.		0.73		0.74			0.71		0.70		
Total reduction		0.39		0.36			0.44		0.41		
Total, real		264		77			82		11		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:
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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR036 - SR036
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	July		August		September			October			November			December		
1	05:56		06:26		07:06			07:45			07:29			08:12		08:50 (460)
	21:47		21:22		20:31			19:31			17:32			17:01	29	09:19 (460)
2	05:57		06:27		07:07			07:47			07:31			08:13		08:50 (460)
	21:46		21:21		20:29			19:29			17:31			17:00	29	09:19 (460)
3	05:57		06:29		07:09			07:48			07:32			08:14		08:50 (460)
	21:46		21:20		20:27			19:27			17:29			17:00	29	09:19 (460)
4	05:58		06:30		07:10			07:50			07:34			08:15		08:51 (460)
	21:46		21:18		20:25			19:25			17:28			17:00	30	09:21 (460)
5	05:59		06:31		07:11			07:51			07:35			08:17		08:51 (460)
	21:46		21:17		20:23			19:23			17:27			16:59	30	09:21 (460)
6	05:59		06:32		07:13			07:52			07:37			08:18		08:52 (460)
	21:45		21:15		20:21			19:21			17:25			16:59	29	09:21 (460)
7	06:00		06:34		07:14			07:54			07:38			08:19		08:52 (460)
	21:45		21:14		20:19			19:19			17:24			16:59	29	09:21 (460)
8	06:01		06:35		07:15			07:55			07:40			08:20		08:53 (460)
	21:44		21:12		20:17			19:17			17:22			16:59	28	09:21 (460)
9	06:02		06:36		07:16			07:56			07:41			08:21		08:53 (460)
	21:44		21:11		20:15			19:15			17:21			16:58	29	09:22 (460)
10	06:02		06:37		07:18		07:57 (462)	07:58			07:43			08:22		08:54 (460)
	21:43		21:09		20:13	11	08:08 (462)	19:13			17:20			16:58	28	09:22 (460)
11	06:03		06:39		07:19		07:55 (462)	07:59		08:43 (461)	07:44			08:23		08:54 (460)
	21:43		21:08		20:11	14	08:09 (462)	19:11	7	08:50 (461)	17:18			16:58	28	09:22 (460)
12	06:04		06:40		07:20		07:54 (462)	08:01		08:40 (461)	07:46			08:24		08:55 (460)
	21:42		21:06		20:09	16	08:10 (462)	19:09	13	08:53 (461)	17:17			16:58	28	09:23 (460)
13	06:05		06:41		07:22		07:53 (462)	08:02		08:38 (461)	07:47			08:25		08:55 (460)
	21:42		21:05		20:07	18	08:11 (462)	19:07	16	08:54 (461)	17:16			16:58	28	09:23 (460)
14	06:06		06:43		07:23		07:52 (462)	08:03		08:37 (461)	07:49			08:25		08:56 (460)
	21:41		21:03		20:05	18	08:10 (462)	19:05	18	08:55 (461)	17:15			16:59	28	09:24 (460)
15	06:07		06:44		07:24		07:52 (462)	08:05		08:35 (461)	07:50			08:26		08:57 (460)
	21:40		21:01		20:03	19	08:11 (462)	19:03	20	08:55 (461)	17:14			16:59	27	09:24 (460)
16	06:08		06:45		07:26		07:51 (462)	08:06		08:35 (461)	07:52		08:55 (460)	08:27		08:57 (460)
	21:39		21:00		20:01	19	08:10 (462)	19:02	21	08:56 (461)	17:13	10	09:05 (460)	16:59	27	09:24 (460)
17	06:09		06:46		07:27		07:51 (462)	08:08		08:34 (461)	07:53		08:53 (460)	08:28		08:57 (460)
	21:39		20:58		19:59	19	08:10 (462)	19:00	22	08:56 (461)	17:12	15	09:08 (460)	16:59	27	09:24 (460)
18	06:10		06:48		07:28		07:51 (462)	08:09		08:34 (461)	07:54		08:51 (460)	08:28		08:58 (460)
	21:38		20:56		19:57	17	08:08 (462)	18:56	22	08:56 (461)	17:11	18	09:09 (460)	16:59	27	09:25 (460)
19	06:11		06:49		07:30		07:52 (462)	08:10		08:34 (461)	07:56		08:51 (460)	08:29		08:58 (460)
	21:37		20:54		19:55	16	08:08 (462)	18:54	22	08:56 (461)	17:10	20	09:11 (460)	17:00	27	09:25 (460)
20	06:12		06:50		07:31		07:53 (462)	08:12		08:35 (461)	07:57		08:50 (460)	08:30		08:59 (460)
	21:36		20:53		19:53	13	08:06 (462)	18:52	21	08:56 (461)	17:09	21	09:11 (460)	17:00	27	09:26 (460)
21	06:13		06:52		07:32		07:54 (462)	08:13		08:36 (461)	07:59		08:50 (460)	08:30		08:59 (460)
	21:35		20:51		19:51	9	08:03 (462)	18:51	18	08:54 (461)	17:08	23	09:13 (460)	17:01	27	09:26 (460)
22	06:14		06:53		07:33			08:15		08:38 (461)	08:00		08:49 (460)	08:31		09:00 (460)
	21:34		20:49		19:49			18:49	16	08:54 (461)	17:07	24	09:13 (460)	17:01	27	09:27 (460)
23	06:15		06:54		07:35			08:16		08:39 (461)	08:01		08:49 (460)	08:31		09:00 (460)
	21:33		20:47		19:47			18:47	13	08:52 (461)	17:06	26	09:15 (460)	17:02	27	09:27 (460)
24	06:17		06:56		07:36			08:18		08:41 (461)	08:03		08:48 (460)	08:32		09:01 (460)
	21:32		20:46		19:45			18:45	10	08:51 (461)	17:05	27	09:15 (460)	17:02	27	09:28 (460)
25	06:18		06:57		07:37			08:19		08:42 (461)	08:04		08:49 (460)	08:32		09:01 (460)
	21:31		20:44		19:43			18:44	6	08:48 (461)	17:04	27	09:16 (460)	17:03	27	09:28 (460)
26	06:19		06:58		07:39			08:21			08:06		08:48 (460)	08:32		09:01 (460)
	21:30		20:42		19:41			18:42			17:04	29	09:17 (460)	17:04	27	09:28 (460)
27	06:20		06:59		07:40			08:22			08:07		08:49 (460)	08:33		09:03 (460)
	21:29		20:40		19:39			18:40			17:03	29	09:18 (460)	17:04	27	09:30 (460)
28	06:21		07:01		07:41			08:23			08:08		08:49 (460)	08:33		09:03 (460)
	21:27		20:38		19:37			18:39			17:02	29	09:18 (460)	17:05	27	09:30 (460)
29	06:22		07:02		07:43			08:25			08:09		08:49 (460)	08:33		09:03 (460)
	21:26		20:36		19:35			18:37			17:02	29	09:18 (460)	17:06	27	09:30 (460)
30	06:24		07:03		07:44			08:26			08:11		08:50 (460)	08:33		09:03 (460)
	21:25		20:34		19:33			18:36			17:01	29	09:19 (460)	17:07	28	09:31 (460)
31	06:25		07:05					08:28						08:33		09:04 (460)
	21:24		20:32					18:34						17:07	27	09:31 (460)
Potential sun hours	480		441		378			338			282			266		
Total, worst case						189			245			356			862	
Sun reduction						0.69			0.52			0.43			0.43	
Oper. time red.						0.98			0.98			0.98			0.98	
Wind dir. red.						0.70			0.74			0.73			0.73	
Total reduction						0.48			0.38			0.31			0.31	
Total, real						90			92			109			265	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:

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Licensed user:

EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net

Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701 **Shadow receptor:** SR037 - SR037

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:34	08:14	07:29	07:28	06:33	05:57	05:56	06:26	07:06	07:46	07:29	08:12
	17:09	17:50	18:31	20:15	20:56	21:33	21:47	21:22	20:31	19:31	17:33	17:01
2	08:34	08:12	07:27	07:26	06:32	05:56	05:57	06:27	07:07	07:47	07:31	08:13
	17:10	17:51	18:32	20:16	20:57	21:34	21:46	21:21	20:29	19:29	17:31	17:00
3	08:34	08:11	07:25	07:24	06:30	05:56	05:57	06:29	07:09	07:48	07:32	08:14
	17:11	17:53	18:34	20:18	20:59	21:35	21:46	21:20	20:27	19:27	17:30	17:00
4	08:34	08:10	07:23	07:22	06:28	05:55	05:58	06:30	07:10	07:50	07:34	08:16
	17:12	17:54	18:35	20:19	21:00	21:36	21:46	21:18	20:25	19:25	17:28	17:00
5	08:33	08:08	07:21	07:20	06:27	05:55	05:59	06:31	07:11	07:51	07:35	08:17
	17:13	17:56	18:37	20:20	21:01	21:37	21:46	21:17	20:23	19:23	17:27	16:59
6	08:33	08:07	07:19	07:18	06:25	05:54	05:59	06:32	07:13	07:52	07:37	08:18
	17:14	17:57	18:38	20:22	21:03	21:38	21:45	21:15	20:21	19:21	17:25	16:59
7	08:33	08:05	07:18	07:16	06:24	05:54	06:00	06:34	07:14	07:54	07:38	08:19
	17:15	17:59	18:40	20:23	21:04	21:39	21:45	21:14	20:19	19:19	17:24	16:59
8	08:33	08:04	08:16	07:15	06:23	05:53	06:01	06:35	07:15	07:55	07:40	08:20
	17:16	18:00	18:41	20:24	21:05	21:39	21:44	21:12	20:17	19:17	17:22	16:59
9	08:32	08:03	08:14	07:13	06:21	05:53	06:02	06:36	07:17	07:56	07:41	08:21
	17:17	18:00	19:42	20:26	21:07	21:40	21:44	21:11	20:15	19:15	17:21	16:59
10	08:32	08:01	08:12	07:11	06:20	05:53	06:03	06:37	07:18	07:58	07:43	08:22
	17:18	18:02	19:44	20:27	21:08	21:41	21:43	21:09	20:13	19:13	17:20	16:58
11	08:32	08:00	08:10	07:09	06:18	05:53	06:03	06:39	07:19	07:59	07:44	08:23
	17:20	18:03	19:45	20:29	21:09	21:42	21:43	21:08	20:11	19:11	17:19	16:58
12	08:31	07:58	08:08	07:07	06:17	05:52	06:04	06:40	07:20	08:01	07:46	08:24
	17:21	18:05	19:47	20:30	21:11	21:42	21:42	21:06	20:09	19:09	17:17	16:58
13	08:31	07:57	08:06	07:05	06:16	05:52	06:05	06:41	07:22	08:02	07:47	08:25
	17:22	18:07	19:48	20:31	21:12	21:43	21:42	21:05	20:07	19:07	17:16	16:59
14	08:30	07:55	08:04	07:03	06:14	05:52	06:06	06:43	07:23	08:03	07:49	08:25
	17:24	18:08	19:50	20:33	21:13	21:43	21:41	21:03	20:05	19:05	17:15	16:59
15	08:30	07:53	08:02	07:01	06:13	05:52	06:07	06:44	07:24	08:05	07:50	08:26
	17:25	18:10	19:51	20:34	21:14	21:44	21:40	21:01	20:03	19:03	17:14	16:59
16	08:29	07:52	08:00	06:59	06:12	05:52	06:08	06:45	07:26	08:06	07:52	08:27
	17:26	18:11	19:52	20:35	21:16	21:44	21:39	21:00	20:01	19:02	17:13	16:59
17	08:28	07:50	07:58	06:57	06:11	05:52	06:09	06:47	07:27	08:08	07:53	08:28
	17:28	18:13	19:54	20:37	21:17	21:45	21:39	20:58	19:59	19:00	17:12	16:59
18	08:28	07:48	07:56	06:56	06:10	05:52	06:10	06:48	07:28	08:09	07:54	08:28
	17:29	18:14	19:55	20:38	21:18	21:45	21:38	20:56	19:57	18:56	17:11	17:00
19	08:27	07:47	07:54	06:54	06:08	05:52	06:11	06:49	07:30	08:10	07:56	08:29
	17:30	18:16	19:57	20:40	21:19	21:45	21:37	20:54	19:55	18:54	17:10	17:00
20	08:26	07:45	07:52	06:52	06:07	05:52	06:12	06:50	07:31	08:12	07:57	08:30
	17:32	18:17	19:58	20:41	21:21	21:46	21:36	20:53	19:53	18:53	17:09	17:00
21	08:25	07:43	07:50	06:50	06:06	05:52	06:13	06:52	07:32	08:13	07:59	08:30
	17:33	18:19	19:59	20:42	21:22	21:46	21:35	20:51	19:51	18:51	17:08	17:01
22	08:24	07:41	07:48	06:48	06:05	05:53	06:14	06:53	07:34	08:15	08:00	08:31
	17:35	18:20	20:01	20:44	21:23	21:46	21:34	20:49	19:49	18:49	17:07	17:01
23	08:23	07:40	07:46	06:47	06:04	05:53	06:15	06:54	07:35	08:16	08:01	08:31
	17:36	18:22	20:02	20:45	21:24	21:46	21:33	20:47	19:47	18:47	17:06	17:02
24	08:22	07:38	07:44	06:45	06:03	05:53	06:17	06:56	07:36	08:18	08:03	08:32
	17:38	18:23	20:04	20:46	21:25	21:47	21:32	20:46	19:45	18:46	17:05	17:02
25	08:21	07:36	07:42	06:43	06:02	05:53	06:18	06:57	07:37	08:19	08:04	08:32
	17:39	18:25	20:05	20:48	21:26	21:47	21:31	20:44	19:43	18:44	17:04	17:03
26	08:20	07:34	07:40	06:41	06:01	05:54	06:19	06:58	07:39	08:21	08:06	08:32
	17:40	18:26	20:06	20:49	21:27	21:47	21:30	20:42	19:41	18:42	17:04	17:04
27	08:19	07:33	07:38	06:40	06:01	05:54	06:20	07:00	07:40	08:22	08:07	08:33
	17:42	18:28	20:08	20:51	21:28	21:47	21:29	20:40	19:39	18:41	17:03	17:04
28	08:18	07:31	07:36	06:38	06:00	05:55	06:21	07:01	07:41	08:24	08:08	08:33
	17:43	18:29	20:09	20:52	21:30	21:47	21:27	20:38	19:37	18:39	17:02	17:05
29	08:17		07:34	06:36	05:59	05:55	06:22	07:02	07:43	08:25	08:09	08:33
	17:45		20:11	20:53	21:31	21:47	21:26	20:36	19:35	18:37	17:02	17:06
30	08:16		07:32	06:35	05:58	05:56	06:24	07:03	07:44	08:26	08:11	08:33
	17:47		20:12	20:55	21:32	21:47	21:25	20:34	19:33	18:36	17:01	17:07
31	08:15		07:30		05:58		06:25	07:05		08:28		08:34
	17:48		20:13		21:33		21:24	20:32		18:34		17:08
Potential sun hours	279	287	368	407	466	475	480	441	378	338	282	266
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:

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Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR038 - SR038

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January	February		March		April		May	June
1	08:32	08:12		07:28		17:02 (404)	07:27	18:56 (405)	06:32	05:56
	17:07	17:48		18:29	19	17:21 (404)	20:13	40	19:36 (405)	20:55	21:32
2	08:32	08:11		17:16 (403)		07:26	17:04 (404)	07:25	18:54 (405)	06:30	05:55
	17:08	17:50	6	17:22 (403)	14	18:31	17:18 (404)	20:15	43	19:37 (405)	20:56	21:33
3	08:32	08:10		17:14 (403)		07:24		07:23	18:53 (405)	06:29	05:54
	17:09	17:51	11	17:25 (403)		18:32		20:16	45	19:38 (405)	20:57	21:34
4	08:32	08:08		17:12 (403)		07:22		07:21	18:52 (405)	06:27	05:54
	17:10	17:53	14	17:26 (403)		18:34		20:18	46	19:38 (405)	20:59	21:35
5	08:32	08:07		17:11 (403)		07:20		07:19	18:50 (405)	06:26	05:53
	17:11	17:54	17	17:28 (403)		18:35		20:19	48	19:38 (405)	21:00	21:36
6	08:32	08:06		17:10 (403)		07:18		07:17	18:50 (405)	06:24	05:53
	17:12	17:56	19	17:29 (403)		18:37		20:20	49	19:39 (405)	21:01	21:37
7	08:32	08:04		17:10 (403)		07:16		07:15	18:49 (405)	06:23	05:52
	17:14	17:57	20	17:30 (403)		18:38		20:22	50	19:39 (405)	21:03	21:37
8	08:31	08:03		17:08 (404)		08:14		07:13	18:48 (405)	06:21	05:52
	17:15	17:59	22	17:30 (403)		18:40		20:23	51	19:39 (405)	21:04	21:38
9	08:31	08:01		17:05 (404)		08:12		07:11	18:47 (405)	06:20	05:52
	17:16	18:01	26	17:31 (403)		19:41		20:24	52	19:39 (405)	21:05	21:39
10	08:31	08:00		17:02 (404)		08:10		07:09	18:47 (405)	06:18	05:51
	17:17	18:01	29	17:31 (403)		19:43		20:26	52	19:39 (405)	21:07	21:40
11	08:30	07:58		17:01 (404)		08:08		07:07	18:47 (405)	06:17	05:51
	17:18	18:02	30	17:31 (403)		19:44		20:27	52	19:39 (405)	21:08	21:40
12	08:30	07:57		16:59 (404)		08:07		07:05	18:47 (405)	06:16	05:51
	17:20	18:04	32	17:31 (403)		19:45		20:29	52	19:39 (405)	21:09	21:41
13	08:29	07:55		16:59 (404)		08:05		07:04	18:47 (405)	06:14	05:51
	17:21	18:05	32	17:31 (403)		19:47		20:30	52	19:39 (405)	21:11	21:41
14	08:29	07:54		16:58 (404)		08:03		07:02	18:47 (405)	06:13	05:51
	17:22	18:07	32	17:30 (403)		19:48		20:31	51	19:38 (405)	21:12	21:42
15	08:28	07:52		16:57 (404)		08:01		07:00	18:46 (405)	06:12	05:51
	17:23	18:08	31	17:28 (403)		19:50		20:33	51	19:37 (405)	21:13	21:42
16	08:28	07:50		16:57 (404)		07:59		06:58	18:46 (405)	06:11	05:51
	17:25	18:10	32	17:29 (404)		19:51		20:34	51	19:37 (405)	21:14	21:43
17	08:27	07:49		16:56 (404)		07:57		06:56	18:46 (405)	06:09	05:51
	17:26	18:11	33	17:29 (404)		19:53		20:35	50	19:36 (405)	21:16	21:43
18	08:26	07:47		16:55 (404)		07:55		06:54	18:48 (405)	06:08	05:51
	17:28	18:13	34	17:29 (404)		19:54		20:37	48	19:36 (405)	21:17	21:44
19	08:25	07:45		16:55 (404)		07:53		06:52	18:48 (405)	06:07	05:51
	17:29	18:14	34	17:29 (404)		19:55		20:38	47	19:35 (405)	21:18	21:44
20	08:25	07:44		16:56 (404)		07:51		06:51	18:48 (405)	06:06	05:51
	17:30	18:16	33	17:29 (404)		19:57		20:40	46	19:34 (405)	21:19	21:44
21	08:24	07:42		16:56 (404)		07:49		06:49	18:48 (405)	06:05	05:51
	17:32	18:17	33	17:29 (404)		19:58		20:41	45	19:33 (405)	21:20	21:45
22	08:23	07:40		16:55 (404)		07:47		06:47	18:50 (405)	06:04	05:51
	17:33	18:19	33	17:28 (404)		20:00		20:42	42	19:32 (405)	21:22	21:45
23	08:22	07:38		16:56 (404)		07:45		06:45	18:50 (405)	06:03	05:51
	17:35	18:20	32	17:28 (404)		20:01		20:44	41	19:31 (405)	21:23	21:45
24	08:21	07:37		16:56 (404)		07:43		06:44	18:51 (405)	06:02	05:52
	17:36	18:22	31	17:27 (404)		20:02		20:45	38	19:29 (405)	21:24	21:45
25	08:20	07:35		16:57 (404)		07:41		06:42	18:53 (405)	06:01	05:52
	17:38	18:23	30	17:27 (404)		20:04		20:46	35	19:28 (405)	21:25	21:45
26	08:19	07:33		16:58 (404)		07:39	19:14 (405)	06:40	18:54 (405)	06:00	05:52
	17:39	18:25	28	17:26 (404)		20:05	7	19:21 (405)	20:48	33	19:27 (405)	21:26	21:46
27	08:18	07:31		16:59 (404)		07:37		19:08 (405)	06:38	18:55 (405)	05:59	05:53
	17:41	18:26	25	17:24 (404)		20:06	19	19:27 (405)	20:49	29	19:24 (405)	21:27	21:46
28	08:17	07:29		17:00 (404)		07:35		19:04 (405)	06:37	18:58 (405)	05:58	05:53
	17:42	18:28	23	17:23 (404)		20:08	26	19:30 (405)	20:51	25	19:23 (405)	21:28	21:46
29	08:16					07:33		19:02 (405)	06:35		19:00 (405)	05:58	05:54
	17:44					20:09	30	19:32 (405)	20:52	20	19:20 (405)	21:29	21:45
30	08:15					07:31		18:59 (405)	06:33		19:04 (405)	05:57	05:54
	17:45					20:11	35	19:34 (405)	20:53	13	19:17 (405)	21:30	21:45
31	08:13					07:29		18:57 (405)				05:56	
	17:47					20:12	38	19:35 (405)				21:31	
Potential sun hours	279	287				368			407			466	475
Total, worst case			722				188			1297			
Sun reduction			0.50				0.63			0.59			
Oper. time red.			0.98				0.98			0.98			
Wind dir. red.			0.60				0.68			0.70			
Total reduction			0.29				0.42			0.40			
Total, real			211				78			521			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR038 - SR038
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October		November		December	
1	05:55		06:25		07:05		18:46 (405)	07:44		07:28		16:32 (404)	08:11
	21:45		21:21		20:29	52	19:38 (405)	19:29		17:31	28	17:00 (403)	16:59
2	05:55		06:26		07:06		18:46 (405)	07:46		07:30		16:35 (404)	08:12
	21:45		21:20		20:27	52	19:38 (405)	19:27		17:30	26	17:01 (403)	16:59
3	05:56		06:27		07:07		18:45 (405)	07:47		07:31		16:39 (404)	08:13
	21:45		21:18		20:25	52	19:37 (405)	19:25		17:28	21	17:00 (403)	16:59
4	05:57		06:28		07:09		18:45 (405)	07:48		07:33		16:40 (403)	08:14
	21:45		21:17		20:23	51	19:36 (405)	19:23		17:27	20	17:00 (403)	16:58
5	05:57		06:30		07:10		18:46 (405)	07:50		07:34		16:40 (403)	08:15
	21:44		21:16		20:21	50	19:36 (405)	19:21		17:25	18	16:58 (403)	16:58
6	05:58		06:31		07:11		18:46 (405)	07:51		07:36		16:41 (403)	08:16
	21:44		21:14		20:19	49	19:35 (405)	19:19		17:24	16	16:57 (403)	16:58
7	05:59		06:32		07:13		18:46 (405)	07:52		07:37		16:43 (403)	08:18
	21:44		21:13		20:18	48	19:34 (405)	19:17		17:22	13	16:56 (403)	16:57
8	06:00		06:34		07:14		18:46 (405)	07:54		07:38		16:44 (403)	08:19
	21:43		21:11		20:16	46	19:32 (405)	19:15		17:21	10	16:54 (403)	16:57
9	06:00		06:35		07:15		18:47 (405)	07:55		07:40		16:47 (403)	08:20
	21:43		21:10		20:14	45	19:32 (405)	19:14		17:20	6	16:53 (403)	16:57
10	06:01		06:36		07:16		18:47 (405)	07:56		07:41			08:21
	21:42		21:08		20:12	43	19:30 (405)	19:12		17:18			16:57
11	06:02		06:37		07:18		18:48 (405)	07:58	17:41 (404)	07:43			08:22
	21:42		21:07		20:10	40	19:28 (405)	19:10	8	17:49 (404)	17:17		16:57
12	06:03		06:39		07:19		18:48 (405)	07:59	17:37 (404)	07:44			08:22
	21:41		21:05		20:08	38	19:26 (405)	19:08	16	17:53 (404)	17:16		16:57
13	06:04		06:40		19:10 (405)	07:20	18:50 (405)	08:01	17:34 (404)	07:46			08:23
	21:40		21:03	15	19:25 (405)	20:06	19:25 (405)	19:06	21	17:55 (404)	17:15		16:57
14	06:05		06:41		19:07 (405)	07:22	18:51 (405)	08:02	17:33 (404)	07:47			08:24
	21:40		21:02	21	19:28 (405)	20:04	19:23 (405)	19:04	24	17:57 (404)	17:14		16:57
15	06:06		06:43		19:04 (405)	07:23	18:53 (405)	08:03	17:31 (404)	07:49			08:25
	21:39		21:00	26	19:30 (405)	20:02	19:20 (405)	19:02	26	17:57 (404)	17:12		16:57
16	06:07		06:44		19:02 (405)	07:24	18:56 (405)	08:05	17:29 (404)	07:50			08:26
	21:38		20:58	30	19:32 (405)	20:00	19:17 (405)	19:00	29	17:58 (404)	17:11		16:58
17	06:08		06:45		19:00 (405)	07:26	19:01 (405)	08:06	17:28 (404)	07:52			08:26
	21:37		20:57	34	19:34 (405)	19:58	19:12 (405)	18:57	31	17:59 (404)	17:10		16:58
18	06:09		06:46		18:58 (405)	07:27		08:08	17:27 (404)	07:53			08:27
	21:37		20:55	36	19:34 (405)	19:55		18:55	32	17:59 (404)	17:09		16:58
19	06:10		06:48		18:57 (405)	07:28		08:09	17:27 (404)	07:55			08:28
	21:36		20:53	38	19:35 (405)	19:53		18:53	32	17:59 (404)	17:08		16:59
20	06:11		06:49		18:56 (405)	07:30		08:11	17:26 (404)	07:56			08:28
	21:35		20:51	41	19:37 (405)	19:51		18:51	33	17:59 (404)	17:07		16:59
21	06:12		06:50		18:54 (405)	07:31		08:12	17:26 (404)	07:57			08:29
	21:34		20:50	43	19:37 (405)	19:49		18:49	33	17:59 (404)	17:06		16:59
22	06:13		06:52		18:53 (405)	07:32		08:13	17:25 (404)	07:59			08:29
	21:33		20:48	44	19:37 (405)	19:47		18:48	34	17:59 (404)	17:05		17:00
23	06:14		06:53		18:52 (405)	07:33		08:15	17:26 (404)	08:00			08:30
	21:32		20:46	46	19:38 (405)	19:45		18:46	33	17:59 (404)	17:05		17:00
24	06:15		06:54		18:51 (405)	07:35		08:16	17:26 (404)	08:02			08:30
	21:31		20:44	48	19:39 (405)	19:43		18:44	33	17:59 (404)	17:04		17:01
25	06:16		06:56		18:50 (405)	07:36		08:18	17:26 (404)	08:03			08:31
	21:30		20:42	49	19:39 (405)	19:41		18:42	32	17:58 (404)	17:03		17:02
26	06:18		06:57		18:49 (405)	07:37		08:19	17:27 (404)	08:04			08:31
	21:29		20:41	50	19:39 (405)	19:39		18:41	31	17:58 (404)	17:02		17:02
27	06:19		06:58		18:48 (405)	07:39		08:21	17:26 (404)	08:06			08:31
	21:27		20:39	51	19:39 (405)	19:37		18:39	32	17:58 (403)	17:02		17:03
28	06:20		07:00		18:48 (405)	07:40		08:22	17:28 (404)	08:07			08:32
	21:26		20:37	51	19:39 (405)	19:35		18:37	32	18:00 (403)	17:01		17:04
29	06:21		07:01		18:47 (405)	07:41		08:24	17:28 (404)	08:08			08:32
	21:25		20:35	52	19:39 (405)	19:33		18:36	31	17:59 (403)	17:00		17:04
30	06:22		07:02		18:47 (405)	07:43		08:25	17:29 (404)	08:09			08:32
	21:24		20:33	51	19:38 (405)	19:31		18:34	31	18:00 (403)	17:00		17:05
31	06:24		07:03		18:46 (405)			08:27	17:31 (404)				08:32
	21:22		20:31	52	19:38 (405)			18:33	30	18:01 (403)			17:06
Potential sun hours	480		441			378		338		282			266
Total, worst case				778			692		604		158		
Sun reduction				0.73			0.69		0.52		0.43		
Oper. time red.				0.98			0.98		0.98		0.98		
Wind dir. red.				0.70			0.70		0.60		0.60		
Total reduction				0.49			0.47		0.31		0.25		
Total, real				384			323		184		40		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:

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Licensed user:

EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net

Calculated:

7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR039 - SR039

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May		June			
1	08:33		09:48 (441)	08:13		09:55 (441)	07:29		07:28		08:38 (442)	06:33		06:56 (443)	05:56	
	17:08	69	10:57 (441)	17:49	73	11:08 (441)	18:30		20:14	18	08:56 (442)	20:56	27	07:23 (443)	21:33	
2	08:33		09:49 (441)	08:12		09:56 (441)	07:27		07:26		08:41 (442)	06:31		06:55 (443)	05:56	
	17:09	69	10:58 (441)	17:51	72	11:08 (441)	18:32		20:16	11	08:52 (442)	20:57	28	07:23 (443)	21:34	
3	08:33		09:48 (441)	08:11		09:57 (441)	07:25		07:24			06:30		06:56 (443)	05:55	
	17:10	69	10:57 (441)	17:52	71	11:08 (441)	18:33		20:17			20:58	27	07:23 (443)	21:35	
4	08:33		09:49 (441)	08:09		09:57 (441)	07:23		07:22			06:28		06:55 (443)	05:55	
	17:11	69	10:58 (441)	17:54	70	11:07 (441)	18:35		20:19			21:00	27	07:22 (443)	21:36	
5	08:33		09:49 (441)	08:08		09:58 (441)	07:21		07:20			06:27		06:56 (443)	05:54	
	17:12	70	10:59 (441)	17:55	69	11:07 (441)	18:36		20:20			21:01	26	07:22 (443)	21:37	
6	08:33		09:50 (441)	08:07		09:58 (441)	07:19		07:18			06:25		06:56 (443)	05:54	06:19 (444)
	17:13	70	11:00 (441)	17:57	68	11:06 (441)	18:38		20:21			21:02	27	07:23 (443)	21:38	1 06:20 (444)
7	08:33		09:49 (441)	08:05		09:59 (441)	07:17		07:16			06:24		06:56 (443)	05:53	06:19 (444)
	17:14	71	11:00 (441)	17:58	67	11:06 (441)	18:39		20:23			21:04	26	07:22 (443)	21:38	3 06:22 (444)
8	08:32		09:50 (441)	08:04		09:59 (441)	08:15		07:14			06:22		06:57 (443)	05:53	06:18 (444)
	17:16	71	11:01 (441)	18:00	66	11:05 (441)	18:41		20:24			21:05	24	07:21 (443)	21:39	4 06:22 (444)
9	08:32		09:50 (441)	08:02		10:01 (441)	08:13		08:47 (442)			06:21		06:56 (443)	05:53	06:18 (444)
	17:17	72	11:02 (441)	18:00	63	11:04 (441)	19:42	15	09:02 (442)			21:06	24	07:20 (443)	21:40	5 06:23 (444)
10	08:32		09:50 (441)	08:01		10:01 (441)	08:11		08:44 (442)			06:19		06:57 (443)	05:52	06:18 (444)
	17:18	72	11:02 (441)	18:01	62	11:03 (441)	19:44	20	09:04 (442)			21:08	23	07:20 (443)	21:41	6 06:24 (444)
11	08:31		09:51 (441)	07:59		10:03 (441)	08:09		08:41 (442)			06:18		06:58 (443)	05:52	06:18 (444)
	17:19	72	11:03 (441)	18:03	59	11:02 (441)	19:45	25	09:06 (442)			21:09	21	07:19 (443)	21:41	7 06:25 (444)
12	08:31		09:50 (441)	07:58		10:03 (441)	08:07		08:39 (442)			06:17		07:00 (443)	05:52	06:17 (444)
	17:20	73	11:03 (441)	18:05	58	11:01 (441)	19:46	29	09:08 (442)			21:10	18	07:18 (443)	21:42	8 06:25 (444)
13	08:30		09:51 (441)	07:56		10:05 (441)	08:06		08:37 (442)			06:15		07:00 (443)	05:52	06:17 (444)
	17:22	74	11:05 (441)	18:06	55	11:00 (441)	19:48	32	09:09 (442)			21:12	16	07:16 (443)	21:42	8 06:25 (444)
14	08:30		09:51 (441)	07:55		10:06 (441)	08:04		08:36 (442)			06:14		07:02 (443)	05:52	06:17 (444)
	17:23	74	11:05 (441)	18:08	52	10:58 (441)	19:49	34	09:10 (442)			21:13	12	07:14 (443)	21:43	9 06:26 (444)
15	08:29		09:51 (441)	07:53		10:07 (441)	08:02		08:35 (442)			06:13		07:05 (443)	05:51	06:17 (444)
	17:24	74	11:05 (441)	18:09	49	10:56 (441)	19:51	35	09:10 (442)			21:14	7	07:12 (443)	21:44	9 06:26 (444)
16	08:29		09:51 (441)	07:51		10:09 (441)	08:00		08:34 (442)			06:11			05:51	06:17 (444)
	17:26	74	11:05 (441)	18:11	45	10:54 (441)	19:52	37	09:11 (442)			21:15			21:44	10 06:27 (444)
17	08:28		09:52 (441)	07:50		10:11 (441)	07:58		08:33 (442)			06:10			05:51	06:17 (444)
	17:27	74	11:06 (441)	18:12	40	10:51 (441)	19:53	38	09:11 (442)			21:17			21:44	10 06:27 (444)
18	08:27		09:52 (441)	07:48		10:13 (441)	07:56		08:32 (442)			06:09			05:51	06:17 (444)
	17:28	75	11:07 (441)	18:14	35	10:48 (441)	19:55	39	09:11 (442)			21:18			21:45	10 06:27 (444)
19	08:27		09:52 (441)	07:46		10:15 (441)	07:54		08:32 (442)			06:08			05:52	06:17 (444)
	17:30	75	11:07 (441)	18:15	30	10:45 (441)	19:56	39	09:11 (442)			21:19			21:45	10 06:27 (444)
20	08:26		09:52 (441)	07:45		10:20 (441)	07:52		08:31 (442)			06:07			05:52	06:18 (444)
	17:31	75	11:07 (441)	18:17	21	10:41 (441)	19:58	40	09:11 (442)			21:20			21:46	10 06:28 (444)
21	08:25		09:52 (441)	07:43			07:50		08:31 (442)			06:06			05:52	06:18 (444)
	17:33	76	11:08 (441)	18:18			19:59	40	09:11 (442)			21:21			21:46	10 06:28 (444)
22	08:24		09:52 (441)	07:41			07:48		08:31 (442)			06:05			05:52	06:18 (444)
	17:34	76	11:08 (441)	18:20			20:01	39	09:10 (442)			21:23			21:46	10 06:28 (444)
23	08:23		09:53 (441)	07:39			07:46		08:30 (442)		07:08 (443)	06:04			05:52	06:18 (444)
	17:36	75	11:08 (441)	18:21			20:02	40	09:10 (442)		07:14 (443)	21:24			21:46	10 06:28 (444)
24	08:22		09:53 (441)	07:38			07:44		08:30 (442)		07:06 (443)	06:03			05:53	06:19 (444)
	17:37	76	11:09 (441)	18:23			20:03	39	09:09 (442)		07:17 (443)	21:25			21:46	10 06:29 (444)
25	08:21		09:53 (441)	07:36			07:42		08:31 (442)		07:04 (443)	06:02			05:53	06:19 (444)
	17:39	76	11:09 (441)	18:24			20:05	37	09:08 (442)		07:19 (443)	21:26			21:47	10 06:29 (444)
26	08:20		09:54 (441)	07:34			07:40		08:31 (442)		07:03 (443)	06:01			05:53	06:19 (444)
	17:40	75	11:09 (441)	18:26			20:06	36	09:07 (442)		07:20 (443)	21:27			21:47	10 06:29 (444)
27	08:19		09:54 (441)	07:32			07:38		08:31 (442)		07:01 (443)	06:00			05:54	06:20 (444)
	17:42	75	11:09 (441)	18:27			20:07	35	09:06 (442)		07:21 (443)	21:28			21:47	9 06:29 (444)
28	08:18		09:55 (441)	07:30			07:36		08:32 (442)		07:00 (443)	05:59			05:54	06:20 (444)
	17:43	75	11:10 (441)	18:29			20:09	33	09:05 (442)		07:22 (443)	21:29			21:47	9 06:29 (444)
29	08:17		09:54 (441)				07:34		08:33 (442)		06:58 (443)	05:58			05:55	06:21 (444)
	17:45	75	11:09 (441)				20:10	30	09:03 (442)		07:22 (443)	21:30			21:47	9 06:30 (444)
30	08:16		09:55 (441)				07:32		08:34 (442)		06:56 (443)	05:58			05:55	06:21 (444)
	17:46	74	11:09 (441)				20:12	27	09:01 (442)		07:22 (443)	21:31			21:46	8 06:29 (444)
31	08:14		09:56 (441)				07:30		08:35 (442)			05:57				
	17:48	73	11:09 (441)				20:13	24	08:59 (442)			21:32				
Potential sun hours	279			287			368			407		466			475	
Total, worst case		2268			1125			763			170			333		205
Sun reduction		0.55			0.50			0.63			0.59			0.68		0.71
Oper. time red.		0.98			0.98			0.98			0.98			0.98		0.98
Wind dir. red.		0.71			0.71			0.72			0.64			0.62		0.59
Total reduction		0.38			0.35			0.44			0.37			0.42		0.41
Total, real		872			395			338			63			138		84

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:

MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:

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Licensed user:

EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 5820
+1 701 775 3000
Jay Haley / jhaley@eapc.net

Calculated:

7/15/2020 8:12 AM/3.1.633

SHADOW - Calendar

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701**Shadow receptor:** SR039 - SR039

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [BISMARCK]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4.92	5.13	7.45	8.03	10.20	11.21	11.69	10.35	8.68	5.69	4.02	3.69

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
642	411	336	467	673	983	712	487	436	890	1,384	1,171	8,594

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November			December		
1	05:56		06:22 (444)	06:26		07:09 (443)	07:06			07:45		08:17 (442)	07:29		09:31 (441)	08:12		09:33 (441)
	21:46	7	06:29 (444)	21:22	19	07:28 (443)	20:30			19:30	30	08:47 (442)	17:32	62	10:33 (441)	17:00	72	10:45 (441)
2	05:56		06:22 (444)	06:27		07:09 (443)	07:07			07:46		08:19 (442)	07:31		09:30 (441)	08:13		09:33 (441)
	21:46	7	06:29 (444)	21:21	21	07:30 (443)	20:28			19:28	27	08:46 (442)	17:31	64	10:34 (441)	17:00	72	10:45 (441)
3	05:57		06:23 (444)	06:28		07:08 (443)	07:08			07:48		08:20 (442)	07:32		09:29 (441)	08:14		09:33 (441)
	21:46	6	06:29 (444)	21:19	22	07:30 (443)	20:26			19:26	23	08:43 (442)	17:29	66	10:35 (441)	17:00	72	10:45 (441)
4	05:57		06:23 (444)	06:29		07:07 (443)	07:10			07:49		08:22 (442)	07:34		09:29 (441)	08:15		09:34 (441)
	21:46	5	06:28 (444)	21:18	24	07:31 (443)	20:24			19:24	18	08:40 (442)	17:28	67	10:36 (441)	16:59	71	10:45 (441)
5	05:58		06:24 (444)	06:31		07:06 (443)	07:11			07:51		08:27 (442)	07:35		09:29 (441)	08:16		09:35 (441)
	21:45	4	06:28 (444)	21:17	25	07:31 (443)	20:22			19:22	9	08:36 (442)	17:26	68	10:37 (441)	16:59	71	10:46 (441)
6	05:59		06:25 (444)	06:32		07:05 (443)	07:12			07:52			07:37		09:28 (441)	08:17		09:36 (441)
	21:45	2	06:27 (444)	21:15	26	07:31 (443)	20:20			19:20			17:25	69	10:37 (441)	16:59	70	10:46 (441)
7	06:00			06:33		07:06 (443)	07:14			07:53			07:38		09:28 (441)	08:19		09:36 (441)
	21:45			21:14	26	07:32 (443)	20:19			19:18			17:23	70	10:38 (441)	16:58	70	10:46 (441)
8	06:00			06:34		07:05 (443)	07:15			07:55			07:40		09:27 (441)	08:20		09:37 (441)
	21:44			21:12	27	07:32 (443)	20:17			19:16			17:22	71	10:38 (441)	16:58	69	10:46 (441)
9	06:01			06:36		07:05 (443)	07:16			07:56			07:41		09:27 (441)	08:21		09:37 (441)
	21:44			21:11	27	07:32 (443)	20:15			19:15			17:21	72	10:39 (441)	16:58	69	10:46 (441)
10	06:02			06:37		07:04 (443)	07:17		08:35 (442)	07:57			07:42		09:26 (441)	08:22		09:38 (441)
	21:43			21:09	28	07:32 (443)	20:13	9	08:44 (442)	19:13			17:19	73	10:39 (441)	16:58	69	10:47 (441)
11	06:03			06:38		07:04 (443)	07:19		08:30 (442)	07:59			07:44		09:26 (441)	08:23		09:39 (441)
	21:43			21:08	27	07:31 (443)	20:11	18	08:48 (442)	19:11			17:18	74	10:40 (441)	16:58	68	10:47 (441)
12	06:04			06:40		07:05 (443)	07:20		08:27 (442)	08:00			07:45		09:27 (441)	08:23		09:39 (441)
	21:42			21:06	26	07:31 (443)	20:09	23	08:50 (442)	19:09			17:17	74	10:41 (441)	16:58	68	10:47 (441)
13	06:05			06:41		07:05 (443)	07:21		08:26 (442)	08:02			07:47		09:26 (441)	08:24		09:40 (441)
	21:41			21:04	26	07:31 (443)	20:07	26	08:52 (442)	19:07			17:16	75	10:41 (441)	16:58	68	10:48 (441)
14	06:06			06:42		07:06 (443)	07:23		08:23 (442)	08:03			07:48		09:27 (441)	08:25		09:41 (441)
	21:41			21:03	24	07:30 (443)	20:05	30	08:53 (442)	19:05			17:14	75	10:42 (441)	16:58	67	10:48 (441)
15	06:07			06:43		07:07 (443)	07:24		08:22 (442)	08:04			07:50		09:26 (441)	08:26		09:40 (441)
	21:40			21:01	22	07:29 (443)	20:03	32	08:54 (442)	19:03			17:13	75	10:41 (441)	16:58	68	10:48 (441)
16	06:08			06:45		07:09 (443)	07:25		08:21 (442)	08:06			07:51		09:27 (441)	08:27		09:41 (441)
	21:39			20:59	19	07:28 (443)	20:01	34	08:55 (442)	19:01			17:12	75	10:42 (441)	16:59	67	10:48 (441)
17	06:09			06:46		07:10 (443)	07:27		08:19 (442)	08:07			07:53		09:27 (441)	08:28		09:42 (441)
	21:38			20:58	17	07:27 (443)	19:58	36	08:55 (442)	18:58			17:11	76	10:43 (441)	16:59	67	10:49 (441)
18	06:10			06:47		07:11 (443)	07:28		08:18 (442)	08:09			07:54		09:27 (441)	08:28		09:43 (441)
	21:38			20:56	14	07:25 (443)	19:56	37	08:55 (442)	18:56			17:10	76	10:43 (441)	16:59	67	10:50 (441)
19	06:11			06:49		07:12 (443)	07:29		08:17 (442)	08:10			07:56		09:28 (441)	08:29		09:43 (441)
	21:37			20:54	10	07:22 (443)	19:54	38	08:55 (442)	18:54			17:09	75	10:43 (441)	16:59	67	10:50 (441)
20	06:12			06:50		07:14 (443)	07:31		08:17 (442)	08:12			07:57		09:27 (441)	08:29		09:44 (441)
	21:36			20:52	5	07:19 (443)	19:52	39	08:56 (442)	18:52			17:08	76	10:43 (441)	17:00	66	10:50 (441)
21	06:13			06:51			07:32		08:16 (442)	08:13		10:55 (441)	07:58		09:28 (441)	08:30		09:44 (441)
	21:35			20:51			19:50	40	08:56 (442)	18:50	11	11:06 (441)	17:07	76	10:44 (441)	17:00	66	10:50 (441)
22	06:14			06:53			07:33		08:15 (442)	08:14		10:49 (441)	08:00		09:28 (441)	08:31		09:45 (441)
	21:34			20:49			19:48	40	08:55 (442)	18:49	24	11:13 (441)	17:06	75	10:43 (441)	17:01	66	10:51 (441)
23	06:15			06:54			07:34		08:16 (442)	08:16		10:45 (441)	08:01		09:29 (441)	08:31		09:45 (441)
	21:33			20:47			19:46	40	08:56 (442)	18:47	31	11:16 (441)	17:06	75	10:44 (441)	17:01	66	10:51 (441)
24	06:16			06:55			07:36		08:15 (442)	08:17		10:43 (441)	08:03		09:29 (441)	08:31		09:46 (441)
	21:32			20:45			19:44	40	08:55 (442)	18:45	37	11:20 (441)	17:05	75	10:44 (441)	17:02	66	10:52 (441)
25	06:17			06:57			07:37		08:15 (442)	08:19		10:40 (441)	08:04		09:29 (441)	08:32		09:46 (441)
	21:31			20:43			19:42	39	08:54 (442)	18:43	42	11:22 (441)	17:04	75	10:44 (441)	17:02	67	10:53 (441)
26	06:18			06:58			07:38		08:15 (442)	08:20		10:38 (441)	08:05		09:30 (441)	08:32		09:46 (441)
	21:30			20:42			19:40	39	08:54 (442)	18:42	46	11:24 (441)	17:03	74	10:44 (441)	17:03	67	10:53 (441)
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	21:28			20:40			19:38	38	08:53 (442)	18:40	50	11:26 (441)	17:03	74	10:44 (441)	17:04	67	10:53 (441)
28	06:21			07:00			07:41		08:15 (442)	08:23		10:35 (441)	08:08		09:31 (441)	08:33		09:47 (441)
	21:27			20:38			19:36	36	08:51 (442)	18:38	53	11:28 (441)	17:02	74	10:45 (441)	17:05	68	10:55 (441)
29	06:22		07:14 (443)	07:02			07:42		08:16 (442)	08:25		10:33 (441)	08:09		09:31 (441)	08:33		09:48 (441)
	21:26	10	07:24 (443)	20:36			19:34	35	08:51 (442)	18:37	56	11:29 (441)	17:01	74	10:45 (441)	17:05	67	10:55 (441)
30	06:23		07:12 (443)	07:03			07:44		08:17 (442)	08:26		10:33 (441)	08:10		09:32 (441)	08:33		09:48 (441)
	21:25	14	07:26 (443)	20:34			19:32	32	08:49 (442)	18:35	58	11:31 (441)	17:01	72	10:44 (441)	17:06	68	10:56 (441)
31	06:24		07:10 (443)	07:04						08:28		10:32 (441)				08:33		09:48 (441)
	21:23	17	07:27 (443)	20:32						18:34	60	11:32 (441)				17:07	68	10:56 (441)
Potential sun hours	480			441			378			338			282			266		
Total, worst case		72			435			701			575			2177			2114	
Sun reduction		0.75			0.73			0.69			0.52			0.43			0.43	
Oper. time red.		0.98			0.98			0.98			0.98			0.98			0.98	
Wind dir. red.		0.61			0.62			0.72			0.71			0.71			0.71	
Total reduction		0.45			0.45			0.49			0.37			0.30			0.30	
Total, real		32			194			341			211			655			639	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
MN Power BISON 4 - current project

Minnesota Power
Barry Gartner
30 West Superior Street
Duluth, Minnesota 55802

Description:
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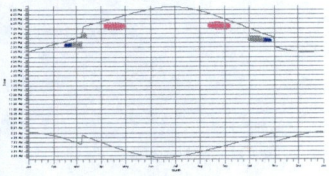
Licensed user:
EAPC Wind Energy
3100 DeMers Avenue
US-GRAND FORKS, ND 58201
+1 701 775 3000
Jay Haley / jhaley@eapc.net
Calculated:
7/15/2020 8:12 AM/3.1.633

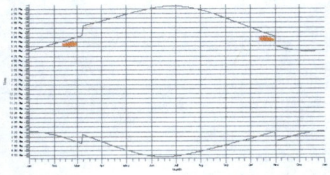
SHADOW - Calendar, graphical

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

SR001: SR001



SR002: SR002



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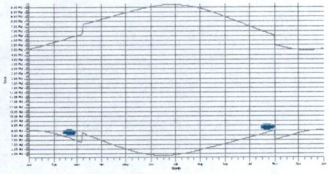
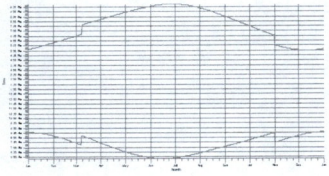
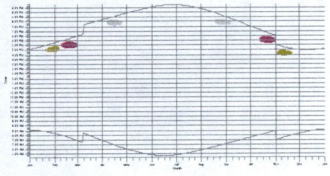


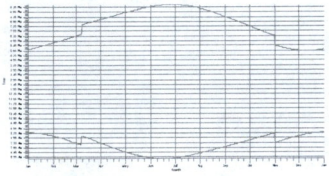
SR004: SR004



SR005: SR005



SR006: SR006



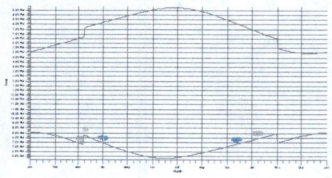
WTGs

403: 8641 404: 8641 405: 8641 406: 8641 410: 8641 411: 8641 412: 8641 T206: 8642

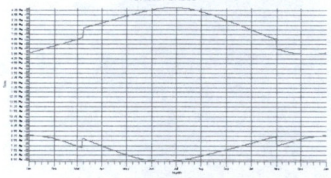
SHADOW - Calendar, graphical

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

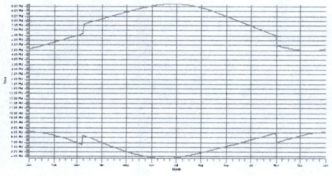
SR007: SR007



SR008: SR008



SR009: SR009



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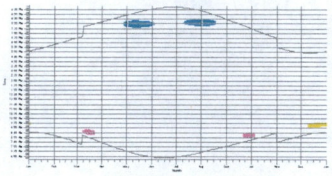
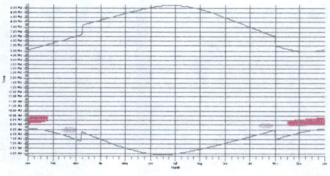
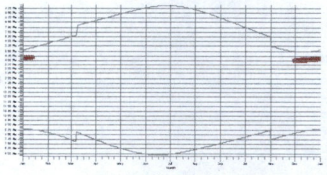


SR011: SR011



SR012: SR012



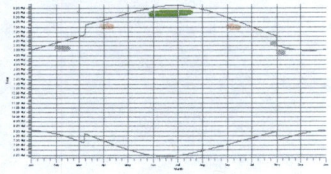
WTGs

412: 8641 413: 8641 421: 8641 424: 8641 425: 8641 432: 8641 T007: 8641 T020: 8641

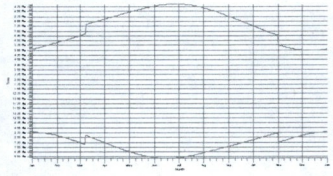
SHADOW - Calendar, graphical

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

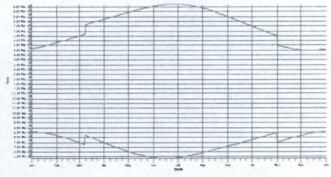
SR014: SR014



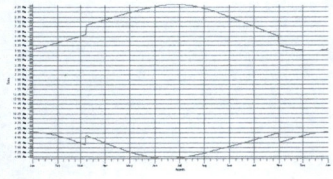
SR015: SR015



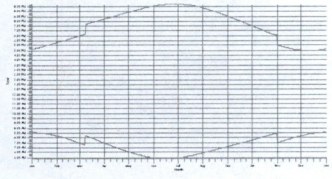
SR016: SR016



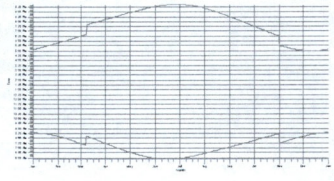
SR017: SR017



SR018: SR018



SR019: SR019



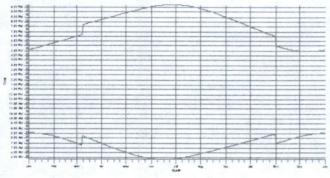
WTGs

416: 8641 417: 8641 418: 8641

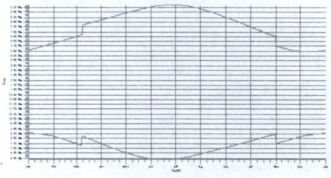
SHADOW - Calendar, graphical

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

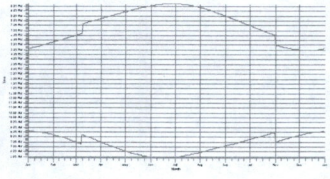
SR020: SR020



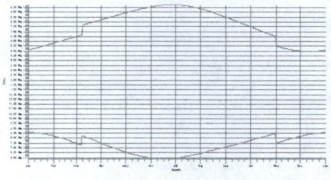
SR021: SR021



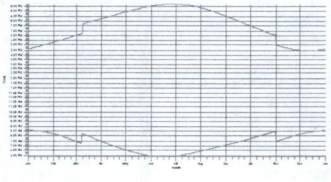
SR022: SR022



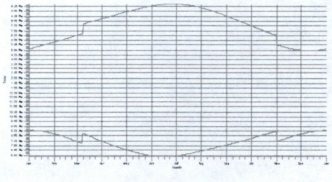
SR023: SR023



SR024: SR024



SR025: SR025

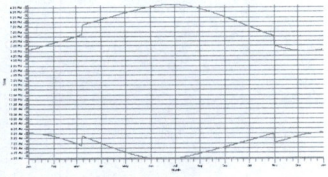


WTGs

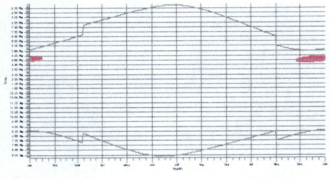
SHADOW - Calendar, graphical

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

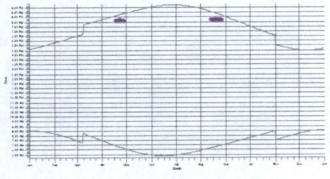
SR026: SR026



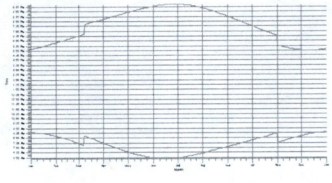
SR027: SR027



SR028: SR028



SR029: SR029



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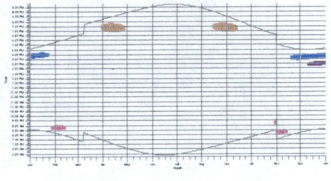
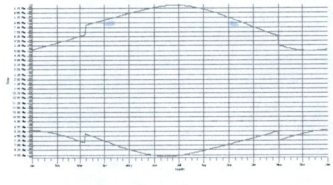


SR031: SR031



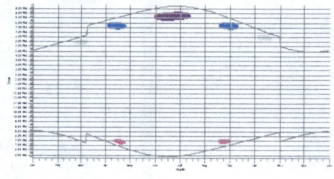
WTGs

433: BW1 447: BW5 457: BW1 462: BW5 463: BW5 464: BW1

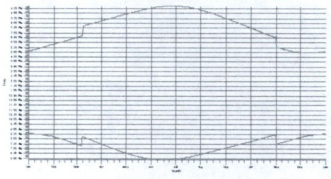
SHADOW - Calendar, graphical

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

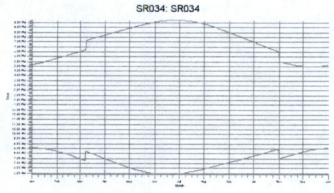
SR032: SR032



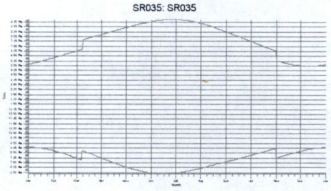
SR033: SR033



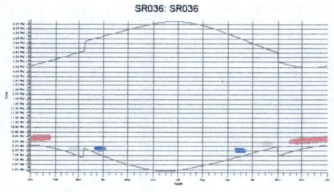
SR034: SR034



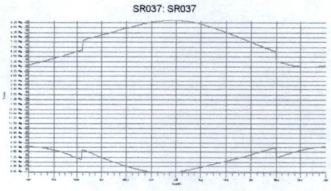
SR035: SR035



SR036: SR036



SR037: SR037



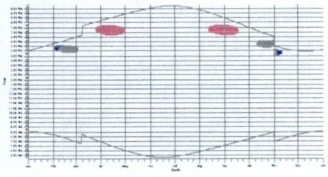
WTGs

447: BW5 460: BW1 461: BW5 462: BW5 463: BW5

SHADOW - Calendar, graphical

Calculation: Copy of BISON 4 - SWT-3.2-113 - 204.8 MW Layout - valid 130701

SR038: SR038



SR039: SR039

