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To Foxtail Wind, LLC

Subject Foxtail Wind Energy Center
Acoustic and Shadow Flicker Assessment Results
Dickey County, North Dakota

From AECOM

Date September 22, 2017

Foxtail Wind, a wholly-owned, indirect subsidiary of NextEra Energy Resources, LLC (NEER) is proposing to develop the Foxtail Wind Energy Center (Project) in Dickey County, in southeastern North Dakota. The Project will be constructed and operated by Northern States Power Company (NSP), a subsidiary of Xcel Energy (Xcel). NEER and NSP/Xcel are collaborating on development of the Project to reflect the engineering and design inputs necessary to transfer ownership of the Project to NSP/Xcel at the end of 2017 according to the executed Purchase & Sale Agreement (PSA). NSP/Xcel currently proposes to construct the Project in two phases between 2018 and 2019. Both the NEER and NSP/Xcel teams will be involved in the engineering design of the Project to be constructed, although NSP/Xcel will ultimately construct the Project.

AECOM was contracted by Foxtail Wind to analyze predicted operational noise levels and shadow flicker hours/year at receptors identified for the proposed Project. Results are shown in the tables below for the site layout dated July 14, 2017. **Table 1** provides results of the acoustic assessment, and **Table 2** provides results of the shadow flicker assessment. There is no new information contained within these tables. The original data was contained in the PSC filings - Acoustics Assessment for the Foxtail Wind Energy Center, Dickey County, North Dakota, August 2017 and the Shadow Flicker Assessment for the Foxtail Wind Energy Center, Dickey County, North Dakota, August 2017.

70 **PU-17-284** Filed: 11/20/2017 Pages: 5
Exhibit 13 - Acoustic & Shadow Flicker Assessment Results

Foxtail Wind, LLC

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Acoustic and Shadow Flicker Assessment Results
Foxtail Wind, LLC

Table 1

Foxtail Wind Energy Center

| Receiver ID | Occupation Status | Receptor Located on Participating Land? | Nearest WTG ID | Distance to Nearest WTG (m) | Modeled Receiver Coordinates (UTM Zone 14, NAD 83) | | Cut-In | Predicted Operation Noise Levels (Leq, dBA) Per Scenario | | | | | |
|-------------|-------------------|---|----------------|-----------------------------|--|--------------|--------|--|----------------|--------|--------------------|----------------|--------|
| | | | | | Easting (m) | Northing (m) | | No Alternates | | | With Alternates | | |
| | | | | | | | | Maximum Rotational | CMET Anomalous | Cut-In | Maximum Rotational | CMET Anomalous | Cut-In |
| R04 | Occupied | No | 4 | 1198 | 504717.7 | 5110063.6 | 30.5 | 41.6 | 43.2 | 30.5 | 41.6 | 43.2 | |
| R05 | Occupied | No | 4 | 2353 | 503233.5 | 5109794.4 | 24.4 | 34.6 | 35.5 | 24.4 | 34.6 | 35.5 | |
| R07 | Occupied | Yes | 10 | 415 | 506665.7 | 5109352.1 | 40.9 | 52.9 | 55.7 | 40.9 | 52.9 | 55.7 | |
| R09 | Occupied | No | 20 | 1140 | 506262.4 | 5105925.4 | 32.5 | 43.5 | 45.2 | 32.5 | 43.6 | 45.2 | |
| R14 | Occupied | No | 38 | 2142 | 513814.5 | 5109359.4 | 20.8 | 32.7 | 33.6 | 21.1 | 32.9 | 33.8 | |
| R16 | Occupied | No | 59 | 2832 | 506810.5 | 5102390.2 | 23.7 | 33.6 | 34.3 | 23.7 | 33.6 | 34.3 | |
| R18 | Occupied | No | 68 | 2059 | 507342.8 | 5100282.6 | 24.9 | 35.3 | 36.2 | 24.9 | 35.3 | 36.2 | |
| R20 | Occupied | No | 69 | 1051 | 508485.3 | 5099326.5 | 32.0 | 43.2 | 45.1 | 32.0 | 43.2 | 45.1 | |
| R21 | Occupied | No | 74 | 2328 | 507781.6 | 5096670.6 | 22.0 | 32.2 | 33.0 | 22.0 | 32.2 | 33.0 | |
| R22 | Occupied | Yes | 75 | 1925 | 511103.7 | 5096921.4 | 19.5 | 29.8 | 30.8 | 19.5 | 29.8 | 30.8 | |
| R25 | Occupied | No | 67 | 1812 | 513250.1 | 5100181.3 | 26.3 | 36.7 | 37.8 | 26.3 | 36.7 | 37.8 | |
| R26 | Occupied | No | 63 | 785 | 512552.8 | 5101399.5 | 30.6 | 42.1 | 44.6 | 30.6 | 42.1 | 44.6 | |
| R28 | Occupied | No | 63 | 2252 | 513886.4 | 5102327.3 | 24.2 | 34.3 | 35.2 | 24.3 | 34.4 | 35.3 | |
| R32 | Occupied | Yes | 51 | 413 | 509570.5 | 5104838.3 | 39.1 | 51.0 | 53.7 | 39.2 | 51.1 | 53.8 | |
| R34 | Occupied | No | 38 | 3651 | 514856.4 | 5110460.9 | 13.8 | 26.0 | 26.6 | 13.8 | 26.0 | 26.6 | |
| R39 | Occupied | No | 6 | 1137 | 506420.7 | 5110789.2 | 31.5 | 42.5 | 44.1 | 31.5 | 42.5 | 44.1 | |
| R45 | Occupied | No | 38 | 3318 | 515480.6 | 5108010.1 | 18.8 | 30.0 | 30.6 | 18.8 | 30.0 | 30.6 | |
| R47 | Occupied | No | 63 | 3185 | 514719.7 | 5100307.6 | 19.9 | 29.8 | 30.4 | 19.9 | 29.8 | 30.4 | |
| R48 | Occupied | No | 73 | 3106 | 512740.0 | 5096870.9 | 20.9 | 30.8 | 31.5 | 20.9 | 30.8 | 31.5 | |
| R50 | Occupied | No | 20 | 3294 | 505944.2 | 5103638.2 | 22.2 | 32.0 | 32.6 | 22.2 | 32.0 | 32.6 | |
| R51 | Occupied | No | 3 | 2174 | 503289.2 | 5108223.5 | 26.0 | 36.4 | 37.3 | 26.0 | 36.4 | 37.3 | |
| R53 | Occupied | No | 68 | 1906 | 507480.5 | 5100151.8 | 26.6 | 37.1 | 38.1 | 26.6 | 37.1 | 38.1 | |
| R3 | Possibly Occupied | No | 73 | 2231 | 512328.6 | 5097789.4 | 24.4 | 34.7 | 35.6 | 24.4 | 34.7 | 35.6 | |
| R29 | Possibly Occupied | Yes | 57 | 1373 | 513646.8 | 5103418.3 | 26.1 | 36.9 | 38.3 | 26.2 | 36.9 | 38.3 | |

Table 1

Foxtail Wind Energy Center

| Receiver ID | Occupation Status | Receptor Located on Participating Land? | Nearest WTG ID | Distance to Nearest WTG (m) | Modeled Receiver Coordinates (UTM Zone 14, NAD 83) | | Predicted Operation Noise Levels (Leq, dBA) Per Scenario | | | | | |
|-------------|-------------------|---|----------------|-----------------------------|--|--------------|--|----------------|--------|--------------------|----------------|--------|
| | | | | | Easting (m) | Northing (m) | No Alternates | | | With Alternates | | |
| | | | | | | | Maximum Rotational | CMET Anomalous | Cut-In | Maximum Rotational | CMET Anomalous | Cut-In |
| R01 | Not occupied | No | 12 | 688 | 507697.7 | 5110344.3 | 35.2 | 46.8 | 49.3 | 35.2 | 46.8 | 49.3 |
| R02 | Not occupied | No | 13 | 2234 | 508912.5 | 5111767.4 | 25.4 | 35.8 | 36.6 | 25.4 | 35.8 | 36.6 |
| R03 | Not occupied | No | 6 | 394 | 506010.0 | 5109981.6 | 38.1 | 50.1 | 52.9 | 38.1 | 50.1 | 52.9 |
| R08 | Not occupied | No | 1 | 482 | 505968.0 | 5107901.4 | 39.9 | 51.8 | 54.6 | 39.9 | 51.8 | 54.6 |
| R10 | Not occupied | No | 1 | 2236 | 503408.5 | 5107052.9 | 25.6 | 35.8 | 36.7 | 25.6 | 35.8 | 36.7 |
| R11 | Not occupied | Yes | 25 | 102 | 507418.8 | 5107433.3 | 47.2 | 59.7 | 62.7 | 47.2 | 59.7 | 62.7 |
| R12 | Not occupied | Yes | 27 | 1067 | 507669.1 | 5105894.4 | 33.5 | 44.5 | 46.0 | 33.6 | 44.6 | 46.1 |
| R13 | Not occupied | Yes | 19 | 373 | 511094.7 | 5108819.4 | 37.0 | 49.2 | 51.8 | 37.0 | 49.2 | 51.8 |
| R15 | Not occupied | No | 38 | 863 | 513010.8 | 5107838.3 | 31.2 | 43.2 | 45.3 | 31.4 | 43.3 | 45.4 |
| R17 | Not occupied | Yes | 59 | 2018 | 507812.6 | 5102648.2 | 26.3 | 36.7 | 37.6 | 26.4 | 36.7 | 37.7 |
| R19 | Not occupied | No | 68 | 1020 | 508392.8 | 5100230.1 | 31.7 | 42.8 | 44.6 | 31.7 | 42.8 | 44.6 |
| R24 | Not occupied | No | 73 | 1315 | 511472.3 | 5098151.1 | 24.9 | 36.1 | 37.6 | 24.9 | 36.1 | 37.6 |
| R27 | Not occupied | No | 62 | 384 | 510923.7 | 5101884.5 | 38.9 | 50.9 | 53.7 | 38.9 | 50.9 | 53.7 |
| R30 | Not occupied | Yes | 53 | 477 | 510765.4 | 5104220.7 | 38.5 | 50.4 | 53.2 | 38.8 | 50.6 | 53.3 |
| R31 | Not occupied | No | 45 | 368 | 509172.5 | 5105641.4 | 38.6 | 50.5 | 53.2 | 38.8 | 50.7 | 53.3 |
| R33 | Not occupied | Yes | 47 | 243 | 510490.7 | 5105095.1 | 42.3 | 54.6 | 57.4 | 42.9 | 55.1 | 58.0 |
| R35 | Not occupied | No | 24 | 1121 | 506744.0 | 5105637.2 | 31.3 | 42.1 | 43.5 | 31.3 | 42.1 | 43.5 |
| R36 | Not occupied | No | 63 | 2238 | 513971.4 | 5101082.2 | 24.0 | 34.0 | 34.9 | 24.0 | 34.0 | 34.9 |
| R38 | Not occupied | No | 4 | 1202 | 504511.0 | 5109840.9 | 30.5 | 41.4 | 43.0 | 30.5 | 41.4 | 43.0 |
| R40 | Not occupied | No | 73 | 2760 | 512365.2 | 5096975.8 | 22.2 | 32.2 | 32.9 | 22.2 | 32.2 | 32.9 |
| R41 | Not occupied | Yes | 75 | 1313 | 510484.5 | 5097230.6 | 28.0 | 39.0 | 40.6 | 28.0 | 39.0 | 40.6 |
| R42 | Not occupied | Yes | 57 | 1444 | 513953.6 | 5105695.0 | 25.3 | 36.3 | 37.7 | 25.5 | 36.4 | 37.8 |
| R43 | Not occupied | Yes | 19 | 2773 | 511566.8 | 5111384.1 | 20.2 | 31.3 | 32.1 | 20.2 | 31.4 | 32.1 |
| R46 | Not occupied | No | 57 | 3171 | 516052.0 | 5103810.2 | 16.0 | 25.8 | 26.5 | 16.0 | 25.8 | 26.5 |
| R49 | Not occupied | Yes | 18 | 436 | 510752.1 | 5108630.0 | 37.5 | 49.6 | 52.2 | 37.5 | 49.6 | 52.3 |
| R52 | Not occupied | Yes | 63 | 437 | 512011.0 | 5101161.6 | 35.4 | 47.6 | 50.5 | 35.4 | 47.6 | 50.5 |

Scenario A and B Shadow Flicker Results

| WindFarm ID | Receptor ID | Receptor Status | | Nearest Turbine ID | Distance to Nearest Turbine (m) | Modeled Receiver Coordinates (UTM Zone 14, NAD 83) | | Total Adjusted Hours per Year |
|-------------|-------------|-------------------|---|--------------------|---------------------------------|--|--------------|-------------------------------|
| | | Occupation Status | Receptor Located on Participating Land? | | | Easting (m) | Northing (m) | |
| H4 | R04 | Occupied | No | 4 | 1,198 | 504718 | 5110064 | 9.0 |
| H5 | R05 | Occupied | No | 4 | 2,353 | 503234 | 5109794 | 0.0 |
| H6 | R07 | Occupied | Yes | 10 | 415 | 506666 | 5109352 | 98.0 |
| H8 | R09 | Occupied | No | 20 | 1,140 | 506262 | 5105925 | 0.0 |
| H13 | R14 | Occupied | No | 38 | 2,142 | 513814 | 5109359 | 0.0 |
| H15 | R16 | Occupied | No | 59 | 2,832 | 506811 | 5102390 | 0.0 |
| H17 | R18 | Occupied | No | 68 | 2,059 | 507343 | 5100283 | 0.0 |
| H19 | R20 | Occupied | No | 69 | 1,051 | 508485 | 5099326 | 7.3 |
| H20 | R21 | Occupied | No | 74 | 2,328 | 507782 | 5096671 | 0.0 |
| H21 | R22 | Occupied | Yes | 75 | 1,925 | 511104 | 5096921 | 0.0 |
| H24 | R25 | Occupied | No | 67 | 1,812 | 513250 | 5100181 | 0.0 |
| H25 | R26 | Occupied | No | 63 | 785 | 512553 | 5101399 | 10.8 |
| H27 | R28 | Occupied | No | 63 | 2,252 | 513886 | 5102327 | 0.0 |
| H31 | R32 | Occupied | Yes | 51 | 413 | 509571 | 5104838 | 19.5 |
| H33 | R34 | Occupied | No | 38 | 3,651 | 514856 | 5110461 | 0.0 |
| H37 | R39 | Occupied | No | 6 | 1,137 | 506421 | 5110789 | 0.0 |
| H42 | R45 | Occupied | No | 38 | 3,318 | 515481 | 5108010 | 0.0 |
| H44 | R47 | Occupied | No | 63 | 3,185 | 514720 | 5100308 | 0.0 |
| H45 | R48 | Occupied | No | 73 | 3,106 | 512740 | 5096871 | 0.0 |
| H47 | R50 | Occupied | No | 20 | 3,294 | 505944 | 5103638 | 0.0 |
| H48 | R51 | Occupied | No | 3 | 2,174 | 503289 | 5108224 | 0.0 |
| H50 | R53 | Occupied | No | 68 | 1,906 | 507481 | 5100152 | 0.0 |
| H22 | R23 | Possibly Occupied | No | 73 | 2,231 | 512329 | 5097789 | 0.0 |
| H28 | R29 | Possibly Occupied | Yes | 57 | 1,373 | 513647 | 5103418 | 0.0 |

Scenario A and B Shadow Flicker Results

| Wind Farm ID | Receptor ID | Receptor Status | | Nearest Turbine ID | Distance to Nearest Turbine (m) | Modeled Receiver Coordinates (UTM Zone 14, NAD 83) | | Total Adjusted Hours per Year |
|--------------|-------------|-------------------|---|--------------------|---------------------------------|--|--------------|-------------------------------|
| | | Occupation Status | Receptor Located on Participating Land? | | | Easting (m) | Northing (m) | |
| H1 | R01 | Not occupied | No | 12 | 688 | 507698 | 5110344 | 5.7 |
| H2 | R02 | Not occupied | No | 13 | 2,234 | 508912 | 5111767 | 0.0 |
| H3 | R03 | Not occupied | No | 6 | 394 | 506010 | 5109982 | 57.5 |
| H7 | R08 | Not occupied | No | 1 | 482 | 505968 | 5107901 | 108.5 |
| H9 | R10 | Not occupied | No | 1 | 2,236 | 503409 | 5107053 | 0.0 |
| H10 | R11 | Not occupied | Yes | 25 | 102 | 507419 | 5107433 | 430.0 |
| H11 | R12 | Not occupied | Yes | 27 | 1,067 | 507669 | 5105894 | 0.0 |
| H12 | R13 | Not occupied | Yes | 19 | 373 | 511095 | 5108819 | 61.7 |
| H14 | R15 | Not occupied | No | 38 | 863 | 513011 | 5107838 | 23.7 |
| H16 | R17 | Not occupied | Yes | 59 | 2,018 | 507813 | 5102648 | 0.0 |
| H18 | R19 | Not occupied | No | 68 | 1,020 | 508393 | 5100230 | 11.1 |
| H23 | R24 | Not occupied | No | 73 | 1,315 | 511472 | 5098151 | 0.0 |
| H26 | R27 | Not occupied | No | 62 | 384 | 510924 | 5101885 | 43.5 |
| H29 | R30 | Not occupied | Yes | 53 | 477 | 510765 | 5104221 | 37.0 |
| H30 | R31 | Not occupied | No | 45 | 368 | 509172 | 5105641 | 66.1 |
| H32 | R33 | Not occupied | Yes | 47 | 243 | 510491 | 5105095 | 41.7 |
| H34 | R35 | Not occupied | No | 24 | 1,121 | 506744 | 5105637 | 0.0 |
| H35 | R36 | Not occupied | No | 63 | 2,238 | 513971 | 5101082 | 0.0 |
| H36 | R38 | Not occupied | No | 4 | 1,202 | 504511 | 5109841 | 10.3 |
| H38 | R40 | Not occupied | No | 73 | 2,760 | 512365 | 5096976 | 0.0 |
| H39 | R41 | Not occupied | Yes | 75 | 1,313 | 510484 | 5097231 | 0.0 |
| H40 | R42 | Not occupied | Yes | 57 | 1,444 | 513954 | 5105695 | 0.0 |
| H41 | R43 | Not occupied | Yes | 19 | 2,773 | 511567 | 5111384 | 0.0 |
| H43 | R46 | Not occupied | No | 57 | 3,171 | 516052 | 5103810 | 0.0 |
| H46 | R49 | Not occupied | Yes | 18 | 436 | 510752 | 5108630 | 52.1 |
| H49 | R52 | Not occupied | Yes | 63 | 437 | 512011 | 5101162 | 7.8 |