

# Tree & Shrub Survival Report

## Oliver II Wind Project Transmission Line

### Annual Report 4 of 4

*Prepared for:*

## NEXTERA ENERGY RESOURCES OLIVER COUNTY WIND, LLC

ND PSC Case Number: PU-06-312 (Transmission Line)



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## 1.0 Introduction & Background

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In 2007, Oliver County Wind, LLC (Oliver Wind), a subsidiary of NextEra Energy Resources, LLC, constructed a 542-foot long, 230 kV electric transmission line and associated substation facility in Section 33 of Township 142N, Range 83W in Oliver County, North Dakota. The transmission line was built to connect the Oliver II Wind Energy Center to the existing Square Butte Electric Cooperative Center Substation, owned by Minnkota Power Cooperative, Inc. (Minnkota). Its construction required the removal of trees and shrubs within Project rights-of-way. At the time of permitting and construction of the Project, there were no length thresholds for jurisdiction of transmission lines, so this Project is considered to be under the jurisdiction of the PSC (Case No. PU-06-312).

A Tree and Shrub Replacement Plan for this Project, which discussed the approach that Oliver Wind would follow, was submitted in 2011 and the PSC approved the plan April 2011. The plan was implemented in June 2011. Survival monitoring was required for three years and was completed in 2014 with a survival rate of 77%.

In October 2015, the PSC requested that NextEra conduct survival monitoring in 2015 since a portion of the trees had been replanted in 2012. This survival report documents the number of trees and shrubs surviving in the fall of 2015.

Oliver Wind retained Wenck Associates, Inc. (Wenck) to assist in field checks and documentation of tree and shrub survival.

## 2.0 Survival Report

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### 2.1 SURVIVAL REQUIREMENTS

The total number of trees and shrubs removed for the Project in 2007 was 103; the total number to be replaced is 206 based on the 2:1 replacement requirement. At the end of the PSC's requested three-year monitoring of the replantings that occurred in 2012, 75% of these planted trees, or 155, will be required to have survived to meet the obligations of the PSC.

### 2.2 PLANTING REVIEW

Minnkota requested tree replacement on their property. The plantings were installed in early June 2011 by the Oliver County SCD in the SW $\frac{1}{4}$  of Section 32, Township 142N, Range 83W on the upland along Nelson Lake. A total of 224 trees were planted.

Within a month after the trees were planted, a heavy rainstorm washed out a large portion of the planting. An interim survival count in fall 2011 concluded 92 trees remained, which was below the required 75% survival rate.

A second planting was installed in May 2012 of 99 additional trees: 8 Black Hills Spruce, 8 Blue Spruce, 20 Siberian Crabapple, 21 Midwest Crabapple, 21 Plum, and 21 Apricot.

According to Tony Aman, Manager at the Minnkota Plant, additional plantings were installed in 2013 and 2014. Records of these plantings were unavailable.

### 2.3 2015 SURVIVAL

The planting was visited in November 2015. Trees or shrubs which had any portion of living plant material were considered alive. Wenck consulted Joel Nichols, Community Forestry Specialist at the North Dakota Forest Service (November 10, 2015) for indicators of living material for deciduous plants that have lost their leaves. Nichols suggested using any of the following three indicators: 1) pliable, non-brittle smaller branches and twigs, 2) presence of new buds, and 3) green color underneath the bark.

Of the 323 trees planted for this Project, including both 2011 and 2012 plantings and the additional Minnkota plantings in 2013 and 2014, 71 were alive in the fall of 2015 (Table 2-1). The current survival rate is below the required 75% at 46%.

According to discussion with Tony Aman, Manager at the Minnkota Plant, young geese residing on the shores of Nelson Lake nip the saplings that have been replanted each year. Deer browsing has also been a problem for the plantings. These factors account for the low survival rates at this site.

**Table 2-1: Survival Counts**

<b>Landowner</b>	<b>Number of Trees/Shrubs Planted</b>	<b>2012 Count</b>	<b>2013 Count</b>	<b>2014 Count</b>	<b>2015 Count</b>	<b>Comments</b>
Minnkota Power Coop., Inc.	224 original in 2011 99 additional in 2012	186	178	159	71	Survival counts based on combined 2011 surviving trees/shrubs and 2012 replacement planting which totaled 323 trees/shrubs.
<b>TOTAL</b>	<b>323</b>	<b>186</b>	<b>178</b>	<b>159</b>	<b>71</b>	<b>This count is below the required 155.</b>



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