



November 19, 2009

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Senator Rich Wardner, Chairman  
Energy Development and Transmission Committee  
North Dakota Legislature  
State Capitol Building  
1042 12<sup>th</sup> Ave. W.  
Bismarck, ND 58505-0360

Dear Senator Wardner,

On behalf of M-Power LLC, I am taking this opportunity to file our response to your input hearing held in Valley City on October 21, 2009. Because there were a number of concerned citizens who were anxious to explain their points of view and it was getting late in the day, we were happy to yield to others that day. However, based on our 11 years of experience in developing wind resources in Griggs and Steele Counties, we wish to express our concerns as well.

M-Power LLC is a locally owned, renewable resource development company. There are 150 unit holders including: private investors, economic development organizations, and 75 landowners within the Luverne Wind Farm footprint. As you may know, M-Power sold its interest in the North portion of the Luverne Wind Farm (49.5 MW) along with the collector substation and the 13-mile transmission outlet line to Otter Tail Power Company. More recently, we sold our interest in the South portion of the Luverne Wind Farm (120 MW) to Ashtabula II, a subsidiary of NextEra. Please see the accompanying 'fact sheet' for more details on our involvement with this wind farm.

In our role as project developer, and also in our negotiations and cooperative partnering with the project's ultimate owners and the utility off-takers, we employed several creative methods to ensure successful development of the complex enterprise. For example, we found ways to balance the interests of multiple stakeholders, including economic development interests, the many landowners who pledged their wind rights and land for turbines and transmission lines, and other individuals who invested cash to support the company's development efforts. We ensured that all landowners who participated in the land options received some economic benefit, regardless of whether or not they ultimately ended up with turbines on their land.

Based upon our experience in the Luverne Footprint, we believe we can further minimize the potential conflicts among those who may get turbines on their land and those who do

not. We will build on our experience gained in other ways as well. For example, we will likely strengthen our approach to providing equity among affected landowners within the footprint and those that are in the peripheral margins of the footprint.

We wish to stress that the current setback guidelines used by the North Dakota Public Service Commission were critical to our success. These guidelines provided the flexibility needed to accommodate the engineering and technological aspects of designing an economically viable wind farm. We strongly urge you to guard against developing regulations that eliminate this flexibility. Such changes might have the unintentional effect of restricting development of a variety of business models and engineering designs that are landowner-friendly AND economically viable. Most likely, the flexibility afforded by the current setback guidelines will be critical for future landowner-based developments as well as corporate developers, or for those approaches that cities, school districts, counties and other public entities will need to explore.

Finally, we wish to stress that the current setback guidelines protect the rights of landowners who wish to develop their wind resources, including the opportunity to sign wind right options, whether or not turbines are ultimately placed on their land. We are concerned that establishing formidable setback criteria will deny many of these landowners of their rights to develop their own wind resources.

In summary, we believe the current setback guidelines used by the North Dakota Public Service Commission allow full consideration of local community concerns while maintaining an economically viable turbine density in any given footprint.

Sincerely,



Warren Enyart, Secretary  
M-Power, LLC

**"We are an Equal Opportunity Provider"**

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## **FACTS PERTAINING TO THE LUVERNE WIND FARM**

**October 27, 2009**

### **PARTICIPATING LANDOWNERS AND INVESTORS**

1. The Luverne Footprint contains 27 Sections in Steele County, and 5 Sections in Griggs County, for a total of 32 contiguous sections. This footprint was selected, from among several others, by M-Power, LLC based upon its wind resource and proximity to a potential grid interconnection point. After the footprint was selected, but before any specific turbines sites had been determined, M-Power, LLC conducted a number of public meetings, explaining the potential opportunities and risks known at that time. Subsequent to those meetings, all landowners in the footprint were contacted personally and provided the opportunity to participate in the project by giving M-Power, LLC an option to develop a wind project within the footprint. If not completed in three years, the option would have expired.
2. Those landowners within the Luverne Footprint who granted wind right options to M-Power, LLC joined the project as "participating landowners."
3. Participating landowners hold ownership in M-Power, LLC on the basis of 50 units per quarter section of land under wind right option.
4. There are 60 participating landowners in Steele County and 15 participating landowners in Griggs County for a total of 75.
5. Those participating landowners with facilities on their land receive compensation through one-time payments for damages, and/or annual easement payments for turbine sites.
6. Not all participating landowners have facilities on their lands. However, all owners of M-Power, LLC, whether or not they have facilities on their land, share in the profits of the Company. Profits include those derived from the sale of the Luverne North and South Fields as well as potential future projects that may be developed by M-Power, LLC.



7. All participating landowners in Griggs and Steele Counties with facilities on their land have signed easements.
8. Besides the 75 landowner-participants who were awarded units of ownership in M-Power, LLC, 76 local residents, including some of the landowners, have invested cash in M-Power, LLC. In addition to the private investors, the Griggs/Steele Wind Development Group, which is made up of representatives of the Cooperstown/Griggs County Economic Development Corporation and the Steele County Jobs Development Authority, together with the Griggs-Steele Empowerment Zone, provided the initial capital and technical expertise for the project development. These private and public investors represent respectively, the terms "locally owned" and "community-based" in the original reference to the Luverne Wind Farm; a locally owned, community-based, wind farm.
9. M-Power, LLC has sold its interests in the Luverne North Field to Otter Tail Power Company as a "Construction Ready" project.
10. On July 9, 2009, M-Power, LLC has also sold its rights to the Luverne South Field to Ashtabula Wind II, LLC, a subsidiary of NextEra Energy Resources, LLC, formerly FPL Energy, as a "Construction Ready" project.

## **FACILITIES**

1. The Otter Tail Power Company Project in the Luverne North Field contains 33 turbines, all of which are located in Steele County.
2. The Ashtabula Wind II, LLC Project in the Luverne South Field contains 80 turbines, 31 of which are located in Griggs County and 49 in Steele County.
3. Each of the 113 turbines (General Electric XLE Models) in the Luverne Footprint is rated at 1.5 megawatts (MW). The turbines will begin to generate energy at wind speeds of 7.8 miles per hour and will reach their rated full output of 1.5 MW at a wind speed of 32.5 miles per hour. The turbines are designed to operate in wind speeds up to 56 miles per hour before shutting down automatically.
4. The North Field is rated to produce a maximum of 49.5 MW.
5. The South Field is rated to produce a maximum of 120 MW.
6. The annual output of the North and South Field is based upon a carefully calculated "net capacity factor" (NCF). This takes into account the times that the wind is not strong enough, or too strong, to turn the turbines. It also includes anticipated down times for scheduled and unscheduled

maintenance. The anticipated NCF for the Luverne Wind Farm is comparable to the Buffalo Ridge in Minnesota and the Langdon Wind Farm in Cavalier County.

7. The dimensions of the concrete base upon which the turbine tower is anchored are unique to each location, based upon geotechnical data at that particular site. On average, the bases are 48 feet in diameter and 8-9 feet deep. Each foundation contains 320-400 cubic yards of concrete and about 19,000 pounds of steel reinforcing rods.
8. The turbine towers are made of sections of rolled and welded steel. It is 262 feet from the top of the foundation to the center of the hub.
9. The Federal Aviation Administration requires a red navigation warning light to be affixed at the top of about 50% of the turbines. These navigation lights will blink on and off simultaneously.
10. The three-bladed rotor has a diameter of 268 feet.
11. The overall height of the turbine from the top of the base to the tip of the blade at its top dead center point is 396 feet.
12. All turbines are located a minimum of 1400 feet from all occupied dwellings, regardless of whether non-participating or participating landowners are involved and regardless of whether any landowner is either inside or outside of the footprint. In addition, all turbines are sited a minimum of 440 feet from existing transmission lines, roads and section lines.
13. About 1.5 acres of land is needed per turbine.
14. No turbines or other facilities are located in wetlands under the jurisdiction of the US Fish and Wildlife Service or the US Army Corps of Engineers.
15. Besides all of the landowner, cultural, and environmental setbacks that were factored into the complex facility layout, each turbine must be located such that its proximity to others will not affect its designed output. In addition, the challenge of siting a wind farm must also take into account prevailing winds, elevation, and many other parameters, with the goal of capturing the most wind from a given footprint, after all other constraints have been considered. Hundreds of millions of dollars of investment capital are dependent upon finding the best balance among these many limiting factors.
16. Several turbines in proximity are grouped together and connected electrically in "strings." Their generation is transmitted via 34.5kV heavily

insulated cable, buried to a minimum depth of 4 feet, to the Collector Substation located adjacent to the Vernon Johnson property, just north of Steele County road #5. This voltage is lower than the 41.6kV overhead transmission lines commonly used by utilities to transmit energy between substations serving rural communities in Griggs and Steele Counties.

17. By June 17, 2009, all Federal, State and Local permits had been secured by M-Power, LLC except the Griggs County Conditional Use Variance Permits and the Griggs County Building Permits. By that time, M-Power, LLC had met all of the conditions for issuance of a Certificate of Site Compatibility for the Luverne South Field by the ND Public Service Commission.
18. On June 30, 2009, the Griggs County Commission held a public input hearing in consideration of variances in the original Conditional Use Permits requested by M-Power for 32 turbine sites and associated access roads in Broadview Township. The Griggs County Commission voted unanimously to reclassify the land under the turbines and roads as "commercial property" and to grant the requested variances, contingent upon the issuance of a Certificate of Site Compatibility by the ND Public Service Commission, whereupon the Griggs County Zoning Administrator would be authorized to issue the Building Permits.
19. On July 7, 2009, the ND Public Service Commission issued its Certificate of Site Compatibility for the Luverne South Field to Ashtabula Wind II, LLC. The Certificate stipulates that turbine number 165, which was proposed to be located 2274 feet from a Bed and Breakfast establishment just outside of the Luverne Footprint in Griggs County, must be placed at an alternative site.
20. On July 9, representative of Ashtabula Wind II, LLC and its prime contract managers met with the ND Public Service Commission staff, reviewing the requirements of the Certificate of Site Compatibility, related regulations, and construction procedures. Having satisfactorily completed the pre-construction conference, the ND Public Service Commission authorized Ashtabula Wind II, LLC to begin construction on July 9, 2009.
21. Contractors for Ashtabula Wind II, LLC began construction on the Luverne South Field facilities on July 9, 2009.
22. All of the electrical energy generated in the Luverne North and South Fields will be transmitted by the 13-mile 230kV, wood pole "H" frame, Generation Outlet Transmission Line from the Collector Substation to the Pillsbury Substation. Most of the Luverne Generation Outlet Line is located in Steele County, with only 2 miles of it in Barnes County.

23. The noise standards adopted by the Griggs and Steele County Boards of County Commissioners provide for levels not greater than 50 dBA at the nearest occupied residence. Based upon the Acoustic Assessment conducted by Ashtabula Wind II, it was calculated that the 50-dBA standard would not be exceeded at distances of greater than 623 feet from the 1.5 MW turbines. Therefore, per the 1400-foot setback for occupied residences strictly adhered to by M-Power, LLC, the acoustic standard established by the respective Counties will not be exceeded
24. Ashtabula Wind II performed a shadow flicker impact study to determine potential impact on occupied residences located in or near the project. Shadows cast by moving blades were assessed for all wind turbines located within 1.5 kilometers (0.93 miles) of each occupied residence (receptor). The analysis was based on worst-case conditions for shadow flicker (full sunlight and blades perpendicular to incoming sunlight) so as to estimate the maximum potential for shadow impact (total hours per year). The generally acceptable shadow flicker maximum is 30-40 hours per year. The results of the Shadow Flicker Impact Analysis indicate there are no occupied residences, in or near the project, that have the potential for exposure to shadow flicker in excess of 23 hours per year.
25. The term "stray voltage" has been brought up in the context of the Luverne Wind Farm. On June 5, 2009, the ND Public Service Commission did not accept the testimony of witnesses alleging negative effects caused by this phenomenon on the basis that such claims are not relevant to wind farms.

## **ECONOMICS**

1. Based upon other wind farms in North Dakota of comparable size, the Luverne Wind Farm will cost about \$340,000,000 to build, or about \$2 Million per MW.
2. The 13-mile 230kV Generation Outlet Transmission Line together with the Collector Substation will cost about another \$10,000,000 to build.
3. Each turbine foundation and tower (not including the turbine, blades, nacelle, and operating electronics) will cost about \$500,000 to build, depending upon soil conditions and other factors that are site specific.
4. During construction, beginning in June 2009 and ending in December 2009, it is expected that there will be a peak construction force of over 250 individuals. Most will be making temporary living arrangements within a 30-mile radius of the Luverne Wind Farm, while some will be existing residents in the area.



5. In accordance with the provisions of the respective Building Permit Fees for Steele County Townships and Griggs County, Contractors will pay a one-time fee of \$1,200 per foundation and tower to cover the cost of the building permit, or \$135,000 total for all of the 113 turbine sites.
6. Based upon the experience in Langdon, a total of 12-15 full-time, well paid, employees will be hired to run and maintain the two projects in the Luverne Wind Farm for the next 20-25 years after the farms become operational.
7. Using the Langdon, Cavalier County experience again, and scaling the Luverne Wind Farm accordingly, Steele County could experience new tax revenue from the utility companies in the amount of \$765,000 per year for the next 20 to 25 years from the 81 turbines and associated facilities in Steele County. Griggs County could expect new tax revenues in the amount of \$214,000 per year as a result of the planned 32 turbines to be located in Griggs County.
8. As a result of early financial and technical assistance provided by the Griggs/Steele Wind Development Group and the Griggs Steele Empowerment Zone, these entities will receive dividends from M-Power, LLC that will be reinvested in economic development activities within the two Counties.
9. Landowners with turbines on their land will initially receive a total cumulative easement payment of \$678,000 per year from the 113 turbines in the Luverne Wind Farm. The easement payments are scheduled to escalate at the rate of 2% per year for the term of the wind farm contract.
10. Any damage to roads will be repaired to as good or better condition than they were initially. The Contractors have posted a bond stipulated by Steele County; in sufficient amount to assure that damage costs will be covered. By mutual agreement between the Griggs and Steele Counties, road conditions in Griggs County will also be overseen by the Steele County Superintendent of Roads.
11. The North Dakota Tax Department oversees the taxes on wind farms. The tax is applied to the facilities that have been constructed and operational on January 1 of any given year. None of the Luverne Wind Farm facility construction was complete on January 1, 2009.
12. All 113 turbines and all the major construction in the Luverne Wind Farm will be completed by the end of year 2009. The commissioning of all 113 turbines was completed by October 16, 2009. It is presumed that, according to the North Dakota Tax Department, taxing on the complete facilities will become effective January 1, 2010.



13. Based upon North Dakota State University economic research conducted on the Langdon Wind Farm, M-Power, LLC concluded that in addition to the direct economic benefit to the area and the state, it is reasonable to expect an indirect impact of nearly four times that of the direct benefits. After adjusting for original capital investment leakage (for example, payments to turbine manufacturers, depreciation, etc), the total direct and indirect impact to the local economy derived from the Luverne Wind Farm over the next 20 years is estimated as follows:

One-time Construction Impact.....	\$200 Million
Operations Impact.....	\$90 Million
New Tax Revenue.....	<u>\$13.5 Million</u>
Total Direct and Indirect Economic Impact.....	\$303.5 Million

**... or approximately \$15 Million per year.**

*This fact sheet was prepared for public distribution by M-Power, LLC on October 27, 2009.*

**Testimony of Warren Enyart, Secretary M-Power, LLC- June 5, 2009**  
**North Dakota Public Service Commission Hearing**  
**Luverne South Field Wind Farm**

My name is Warren C. Enyart, 703 1<sup>st</sup> St. NW, Cooperstown, ND 58425. I am a Governor on the Board of M-Power, LLC, and serve as the organization's Secretary.

Although the subject of the hearing today pertains to the Luverne South Field, for the benefit of those here today that did not attend the previous hearings on the Luverne Project, I will provide a brief account of the history of the entire project and the decisions that brought us to this point today.

M-Power, LLC was founded on April 12, 2007. That event was the formal culmination of nearly eight years and thousands of hours of research, planning, and development work contributed by a small cadre of determined volunteers... who, like everyone else in the two counties, had personally experienced "that annoying wind that seems to blow here most of the time."

With considerably more due diligence than the observations offered around the coffee table, these citizen-investigators learned that the Pembina Escarpment, on which the two counties are perched, inherently experiences relatively high and frequent "windy days." Early on, the Griggs/Steele Wind Development Group, which was motivated by economic development goals, had the foresight to begin documenting the velocity of the wind and its persistence. Several met towers were installed in strategic places within in the two counties.

As the anemometers began to demonstrate that the wind was even stronger than predicted, the Group explored many different approaches to get the attention of others to help develop the measured wind resources. In retrospect, at that time, this group was somewhat ahead of the wind development industry, at least in North Dakota. While there was some interest shown on the part of several major wind developers, none of these potential developers followed through.

At that time, it was already well known that electrical energy produced by wind in North Dakota needs to be exported. Furthermore, even then, available transmission line capacity was scarce and tightly guarded. However, elsewhere on the Pembina Escarpment, where rich wind resources were in close proximity to major transmission lines, viable wind generation projects began to emerge.

Generally, major out-of-state corporations in conjunction with major North Dakota electrical generation and transmission utilities were developing these wind farms. While this was good for North Dakota, the "corporate model" didn't get any traction in Griggs or Steele Counties. Although we had the wind, we did not have ready access to transmission lines or points at which we could interconnect to the electrical grid.

Early in 2005, our local group became aware of an alternative to the corporate model in the development of wind farms. Having attended a couple of major national wind development conferences, in which the “Minnesota Flip” model was discussed, the Group decided to investigate its potential application in our wind regime.

With the assistance of the Griggs-Steele Empowerment Zone, a feasibility study was commissioned. Upon evaluating the results of that study in the light of state and federal policies in addition to industrial trends at the time, the group decided it was time to bear down on the problems and exploit the opportunities... in pursuit of a community based, locally owned, wind farm.

With the help of experts in the industry, the group selected a viable footprint that provided the best use of our known wind resources and which was nearest to the most promising access to the market. We began immediately to secure that footprint by entering into wind right option agreements with willing landowners. In keeping with its operating principles, we had decided that every landowner who voluntarily signed a wind right option, would be awarded ownership in the company, regardless of whether or not any turbine or other facility would eventually be placed on their land.

After we had substantially secured the footprint through these voluntary wind right options, the next step involved finding local investors that were willing to take the financial risk inherent in exploring unfamiliar territory. After several local information meetings, a few community-minded individuals stepped up to the table. These individuals, along with the Griggs/Steele Wind Development Group and the Griggs-Steele Empowerment Zone, founded and provided the initial capitalization of M-Power, LLC.

The founding group elected a Board of Governors that, in turn, attempted to concisely articulate its purpose in the following statement:

***M-Power, LLC is a community-based, locally owned, wind resource development company, whose mission is to develop wind generation and associated renewable energy projects that offer landowners and local investors an opportunity to share in the economic benefits of such projects.***

In pursuit of its mission, M-Power initially dedicated its efforts exclusively toward securing a long-term Power Purchase Agreement with potential buyers, referred to as “off-takers.” As previously mentioned, M-Power wanted to apply the “Minnesota Flip” model. Under this approach, M-Power would conduct and bear the costs associated with the initial development of the footprint, including: proving the wind resource, securing the footprint, preliminary engineering, design and siting, securing a letter of intent from a qualified and motivated off-taker, identifying a viable transmission and interconnection solution, and permitting the planned development, among many other value-adding tasks.

Throughout the initial development phase, M-Power would own 100% of the assets. As the project nears the construction phase, a strategic equity partnership is forged



with a major equity investor. This partner would provide up to 50% of the capital costs of the project, with the remainder financed with debt capital, which is secured by the major equity partner and a long-term Power Purchase Agreement. Upon making this investment, the major equity partner would then own 99% of the assets with M-Power and its landowners and cash investors retaining only a 1% share.

After ten to eleven years of operation of the wind farm, at such time as the major equity partner achieved its targeted return on its investment, which is derived from Production Tax Credits, revenue from the project that is over and above operating costs and debt retirement, and leverage on their investment, up to 80% of the ownership would be returned, or “flipped” back to M-Power. The conditions of the flip would be stipulated in a contract between M-Power and the major equity partner, executed at the beginning of the relationship.

When we began planning toward this local-ownership goal, this approach to wind farm development was new to North Dakota. While Minnesota, Wisconsin, and Iowa have state incentives and policies that promote this type of business model, North Dakota did not.

Since it’s founding, M-Power spent these last two years in consultation with dozens of experts in the industry in an effort to bring the project to fruition. While we were developing the Luverne Footprint, we explored opportunities with the most viable potential off-takers, several prospective major investors, and a dozen developers. M-Power incurred costs amounting to several million dollars.

Since we started down the path toward developing a locally owned wind farm, the market conditions have changed dramatically. Turbine access became extremely limited. Equity investment capital as well as debt financing became scarce. Transmission and interconnection solutions became even more complicated and costly. Meanwhile, the line waiting to be evaluated in order to connect to the grid became longer and longer.

M-Power had no choice but to quickly respond to these abrupt market changes. Reluctantly, but we believe wisely, M-Power adjusted its business model to suit these new market dynamics. As an initial adjustment, we concluded that we would respond to Otter Tail’s preference to own the wind farm, rather than engage in a long term Power Purchase Agreement with M-Power.

Consequently, M-Power sold its interests in 49.5 MW to Otter Tail. This capacity is in the Northern portion of the Luverne Wind Farm, all of which is located in Steele County, North of Steele County Road 5. This was portion was sold as a “Construction Ready” project.

In order to provide Otter Tail with access to its customers, M-Power also sold its interest in the Luverne Wind Farm Collector Substation and the 13-mile Generation Outlet Transmission Line connecting to the Pillsbury Substation. These common facilities are located in Steele and Barnes Counties.

As required in our agreement with Otter Tail, we asked the PSC to reissue our Certificates covering these facilities under the North Dakota Energy Conversion and Transmission Facility Siting Act to Otter Tail. That transfer was completed on May 20, 2009.

All the while M-Power was negotiating this sale to Otter Tail, we continued to pursue options for a long-term Power Purchase Agreement to be met with generation from the remainder of the wind farm... referred to as the Luverne South Field. As our efforts to put together a credible team with expertise, financial strength, and turbine access, conditions continued to constrict around us. As is the case with all wind development projects in North Dakota, our options to export wind generation are severely constrained by the limited transmission capacity and the high costs of connecting to the grid.

Under these circumstances, coupled with the limited access to turbines, and inability to qualify for North Dakota's tax credits, our prospective equity partners could not compete for the limited opportunities that remained for a PPA.

Fortunately for the 75 landowners holding units of ownership in M-Power, other M-Power investors, and especially those landowners in the Luverne South Field who will have turbines on their land, M-Power has signed a Purchase-Sale Agreement with Ashtabula Wind II, LLC; a subsidiary of NextEra Energy. We are proud to make this first public announcement of this business transaction between M-Power and NextEra. It involves up to 120 MW of capacity in the Luverne South Field, all of which is in Griggs and Steele Counties, South of Steele County Road 5.

Like the Otter Tail deal, this will be a "Construction Ready" sale. M-Power intends to request the PSC to reissue to Ashtabula Wind, any and all permits issued to M-Power under the provisions of the Energy Conversion and Transmission Facility Siting Act.

In contemplation of this sale to Ashtabula Wind, for the past several months, M-Power has been working closely with NextEra management, its legal counsel, and its field personnel to achieve our mutual goals while at the same time complying strictly to all federal, state, and local regulations. Moreover, M-Power continues to work closely with participating landowners in the footprint to reflect their concerns in the facility layout and construction procedures. M-Power representatives are also securing all the turbine easements and infrastructure rights-of-way agreements with affected landowners in the South Field.

The M-Power Board of Governors believes that while its initial plans have not yet been achieved, this alternative business approach is sound and will result in great economic benefits to the area--- that otherwise might have been lost, if M-Power had not responded to this fleeting opportunity. Considering the entire Luverne Wind Farm, there will be a total capital investment in the two counties of over \$350 Million. It is estimated that collectively, the respective taxing entities will receive revenues of from \$600,000 to \$800,000 per year after the project is in service... for

the next 25 years! Landowners who accommodate the planned 113 turbines will receive market-rate annual turbine easement payments. M-Power owners and investors will be fairly compensated. Moreover, M-Power owners, whether or not they have turbines on their land, have the right to claim a significant personal contribution to this nation's renewable energy goals!

This concludes my prepared testimony.