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*Dakota Wind Energy, LLC, Marshall, Day, and Roberts Counties' 750 megawatt utility-scale community-owned wind development, has completed a one-year wind study, a crucial milestone for the project. The one-year wind study opens the door for the project to progress further, helping demonstrate the productivity of the wind farm for financing and utility sources. Studies indicate that the project area has some of the best wind speeds in the country.*

*Kevin Romuld, president of National Wind Assessments, talks about the benefits of a one-year study for this project in the following editorial.*

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## **What Wind Assessments Mean For Dakota Wind Energy's Development**

***Kevin Romuld, President, National Wind Assessments***

**Eden, South Dakota - October 19th, 2009** - Wind assessments are one of the most fundamental components of wind farm development. They are essential to determining overall wind facility profitability and providing an accurate estimation of energy production.

The industry recommends collecting at least one year of on-site wind data for commercial development in order to accurately predict the potential benefits of a wind power installation. Dakota Wind Energy has recently reached this crucial milestone, opening up the door for the project to progress further. The studies indicate that the Dakota Wind Energy project has some of the best wind speeds in the country.

Financing sources and utilities require validated energy production and revenue estimates before they even consider participating in a wind project, so having this information readily available is important for Dakota Wind Energy. In fact, it has been documented that a 10% difference in wind speed makes about a 33% change in power outputs. Accuracy, therefore, is essential!

Collecting on-site data requires the installation of measuring equipment designed to amass wind data at the height of at least 40-60 meters, in what is referred to as a wind data acquisition program. National Wind Assessments, a well-recognized and experienced wind resource analysis firm, is conducting the wind acquisition program for Dakota Wind Energy

and many other projects across the country.

This equipment, known as meteorological towers, are temporary, monopole towers supported by guy wires that are sited and installed near the spots of the proposed turbines. Multiple towers are usually needed for larger projects in order to design the optimal wind turbine layout.

Dakota Wind Energy has three meteorological towers installed two in Marshall County and one in Roberts County. The National Wind Assessment team installed all three meteorological towers in 2008.

The met towers are equipped with high-tech measurement instruments which include anemometers and direction vanes. These instruments measure wind speed and wind direction. It is recommended to have anemometers at three different heights on the tower. Two anemometers located at the same height document a good cross section of the wind and provide some redundancy just in case one anemometer stops working.

The instruments report this wind information to a data logger, located at the base of the tower. This data is sent via a low-voltage electrical signal that records to memory ten-minute averages of speed and direction. In the case of the National Wind Assessment met towers, the loggers are equipped with the most advanced transmitting capabilities. This means that the towers have internal cell phones that send this data to a computer modem, hence making the information available instantly to the National Wind Assessment team.

One year of data is a healthy representation of the on-site wind speeds and direction across seasonal changes. Now, a comparison with long-term weather over the course of ten years is needed. This comparison helps determine whether the short-term data represents a low, medium, or high wind year, and allows for the appropriate energy production adjustments.

At this point, all data is entered into sophisticated, 3-D modeling software that helps design the optimal wind turbine layout. The assessment team is currently working on a 3-D model of Dakota Wind's development. The model identifies noise sensitive areas, taking into account topography contours, differences in elevation, documented yearly wind speeds, and locations of residences relative to the wind farm's location. From this analysis, turbine setbacks from homes are calculated at the appropriate distance to ensure health and safety. Shadow flicker impact is also calculated and turbine placement adjustments are made to ensure the impact level is very minimal or non-existent.

This information also helps create a detailed site profile of validated production and revenue estimates from the sale of the project's electricity. These projections provide the necessary incentive for financing sources because from this, they will know if the project will be able to cover debt and generate required returns.

Our overall goal is to not only utilize the wind data to ensure the financial productivity of the wind farm, but to use it appropriately to design a wind farm that meets the needs of landowners in Day, Roberts and Marshall Counties. We want to be as honest and open and possible so you understand this process.

After all, this is your community-owned wind farm development and we want to do it right.

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**About Dakota Wind Energy:**

About Dakota Wind Energy, LLC: Dakota Wind Energy is a community-owned wind farm development company located in Roberts, Marshall, and Day counties, South Dakota. Our company exists to develop and produce over 750 megawatts of wind energy projects which are sustainable, generational and environmentally responsible. The company's financial commitment is to assure a majority of the development proceeds are shared with the surrounding community. Please visit <http://www.dakotawindenergy.com> for more information.

**About National Wind Assessments:**

National Wind, LLC, acquired National Wind Assessments, formerly Romuld Wind Consulting, in 2007. Kevin Romuld, President of National Wind Assessments, and founder of Romuld Wind Consulting, supervises this division. Their expert consultants provide comprehensive wind assessments. They provide meteorological tower sales, meteorological tower installation, wind data acquisition, site analysis and modeling, wind farm design and layout, projected energy production and turbine recommendations. Their wind consulting team has worked on over 100 wind projects, primarily in Minnesota, North Dakota, South Dakota, Nebraska, Montana, Colorado, Iowa and Ohio. Please visit <http://www.nationalwindassessments.com> for more information.

**About National Wind, LLC:**

National Wind is the leader in developing utility-scale (50 megawatts or larger) community wind energy projects. National Wind and its subsidiary, Wind Energy Developers, LLC, have 12 families of projects in development or operation, with an aggregate nameplate capacity of more than 4,000 megawatts. National Wind projects are located across the Midwest and Plains states, and the company is exploring expansion opportunities in other parts of the United States. Please visit [www.nationalwind.com](http://www.nationalwind.com) for more information.