



### **Overview**

WindVision has an operating 900kW wind turbine project near St Ansgar, Iowa and wanted to expand the project by adding a new 1.5MW direct drive wind turbine from Goldwind. This new turbine employs a permanent magnet generator with no gearbox, 85m tall tower and 82m rotor, all providing for high efficiency and low maintenance. WES Engineering prepared the USDA REAP program grant application technical requirements and wind resource analysis; the project was awarded the maximum \$500,000 grant. WES also assisted with project permits, including FAA filings.

### **WES Engineering's Solutions**

WES Engineering used existing wind measurement information and long term airport data to model long term average wind speeds and turbine energy production at the site. WES Engineering provided a 20 year financial pro forma and payback analysis for the project based on the expected power production, operating costs, construction costs and power sales agreement.



**Buffalo Center Wind Turbine installed in Fall 2011**

**Delivered to Buffalo Center Wind LLC:**

- Project Feasibility Study
- Wind Resource Assessment Report based on 2 years met tower data and 10 years airport data
- Technical reports for USDA REAP grant, awarded \$500,000
- Permitting Documentation:
  - ♦ site plan and setback maps
  - ♦ FAA filings
- Turbine Site Qualification- Complete wind forms required to qualify site by wind turbine manufacturer

*WES Engineering assisted a small wind developer in Iowa to obtain grants and financing to install a 1.5MW wind turbine.*



**Crane installing the compact generator unit of the Goldwind 1.5MW turbine**