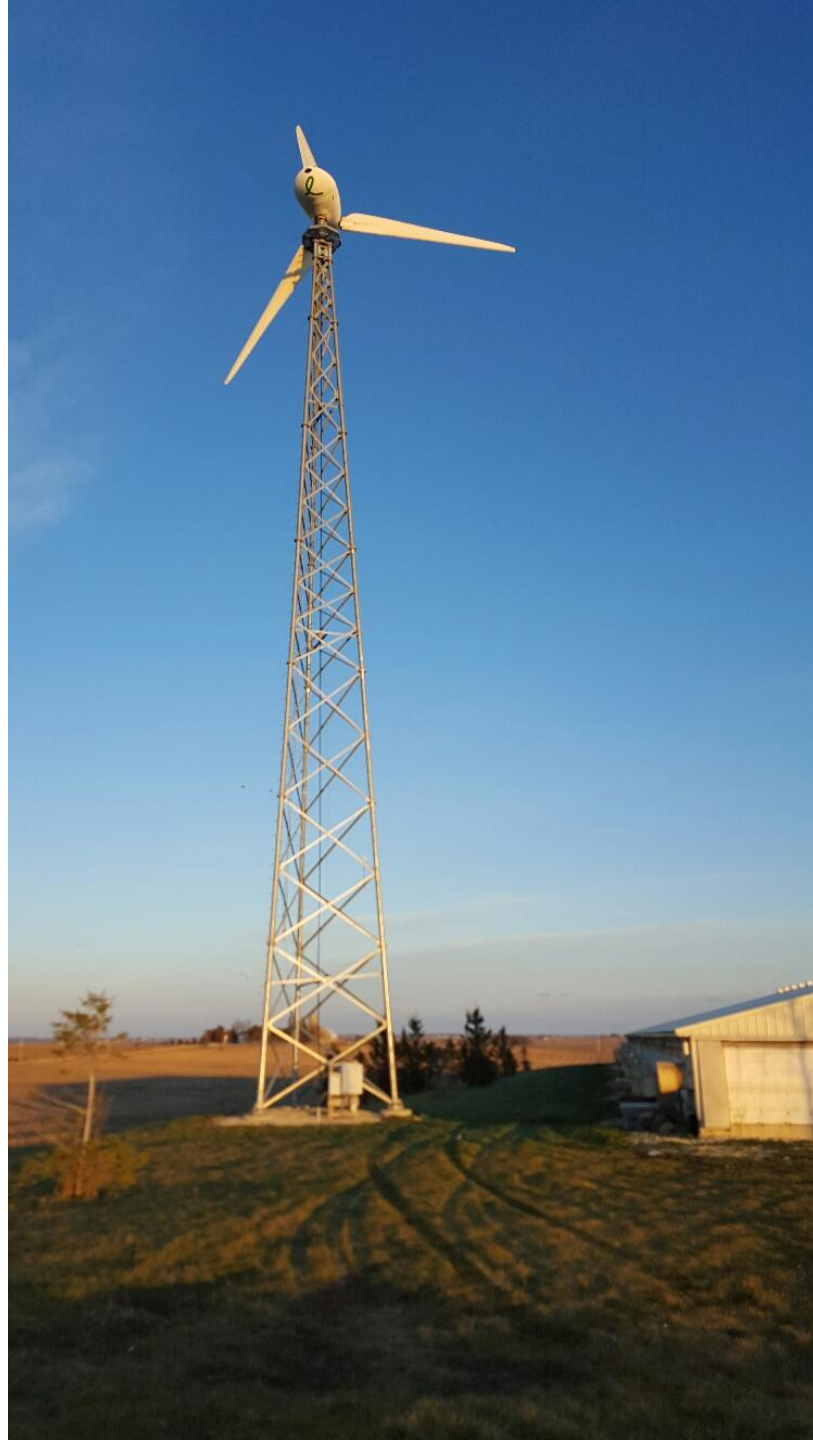


**Russell Brothers, LLC**  
**7200 head Wean to Finish Site**  
**Wind Turbine & Solar Projects**

Linn County, Iowa

50 kW Wind Turbine Generator

47.5 kW Solar Array





# 50 kW Endurance Wind Turbine

- Generates approximately 153,000 kWh single phase power per year.
- Sold and Serviced by Van Wall Energy, Perry, IA
- Construction Cost- \$300,000
- 140 foot Tower
- Commissioned March 8<sup>th</sup>, 2011.

# Economic Modeling

- Project cost less year 1 Grants and Incentives
- = \$132,738
- Annual cost savings \$19,259
- Seven year payback
- Project life 20 years
- Internal Rate of Return at 20 years = 17.14%

# Environmental Assessment (EA)

- HR Green, Cedar Rapids, IA provided the information and analysis for a Class II EA for USDA.
- Based on EPA's Equivalency Calculator reduced carbon dioxide emissions replacing fossil fuel generated power is an estimated 130 tons annually.

# Solar Array Economic Modeling

- Construction cost \$162,000
- Project cost after year 1 Rebates & Incentives
- =\$68,405
- Commissioned 10/22/14
- First years production = 46,640 kWh single phase power . Sold & Serviced by Nelson Electric Cedar Rapids, IA.
- Annual Cost savings =\$7,362
- 9.28 year payback (49 tons/ year reduced CO2)