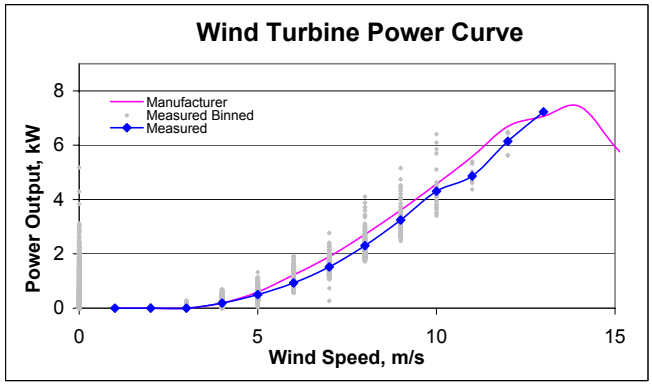
NYSERDA Sustainable Market Development For Small Wind Energy (#6443)
Summary of Performance Statistics
Wiemann Farm, NY
July 1 - October 30, 2004

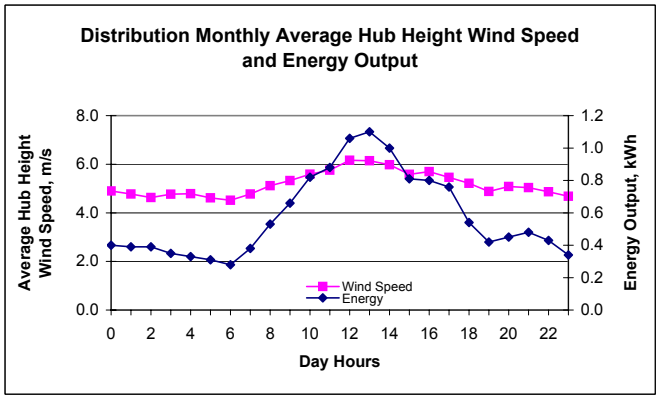
Site Information

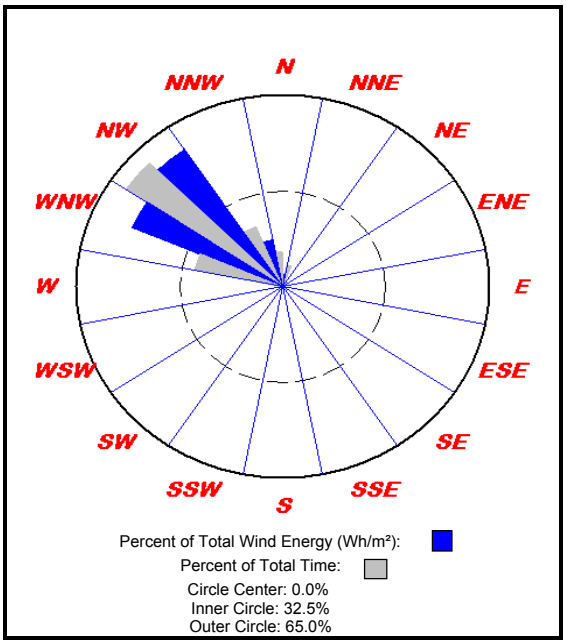
Project: Sustainable Market Development for Small Wind Energy
Site: Wiemann Farm, Locke, NY
Turbine: Bergey Excel-S
Rated Capacity / Speed: 10 kW / 31 mph
Turbine Hub Height: 100 ft (30 m)
Rotor Diameter: 23 ft
Date Turbine Commissioned: December 16, 2003
Data Sampling Interval: 1 second
Data Averaging Interval: 10 minutes

Performance Statistics

	Quarterly	*Cumulative*
Total Hours in the Quarter	2,868	7,592
Total Hours in Operation	2,866	7,592
Wind System Availability, %:	99.9%	100%
DAS Availability, %:	70%	82%
Total Wind System Energy, kWh:	1,136	4,496
Average Hub Height Wind Speed, m/s:	3.9	5.0
Average Temperature, C °:	13.9	5.0
Capacity Factor, %:	4.0%	6.8%
Turbulence Intensity	22.0%	18.6%







Calibration of Instruments

Instrument	Manufacturer	Model	Date
Anemometer, 24 m	NRG Systems	Max. 40H	Feb-03
Anemometer, 12 m	NRG Systems	Max. 40H	N/A
Power Transducer	Ohio Semitronics	PC5-059A	N/A
Voltage Transducer	Ohio Semitronics	VT-240A	N/A
Data Logger	Campbell Scientific	CR10X	Mar-03
Temperature Sensor	Campbell Scientific	107	N/A

Unusual Occurrence Report

The Wiemann datalogger experienced technical difficulty on May 24th.
This is most likely due to a lightning strike of some sort.
AWS will replace the data logger this August.

Notes

"Power Curve" and "Distribution of Quarterly Average Hub Height Wind Speed and Energy Output": 24 m wind speed data is adjusted to 30 m (100ft) hub height using the 24/12 shear.
"Power Curve": Manufacturer curve was calculated using the Bergey Windpower WinCad Turbine Performance Model for the Excel-S at site measured conditions for the quarter.