

Final Project Site Report

Rockwood, PA

Project Summary

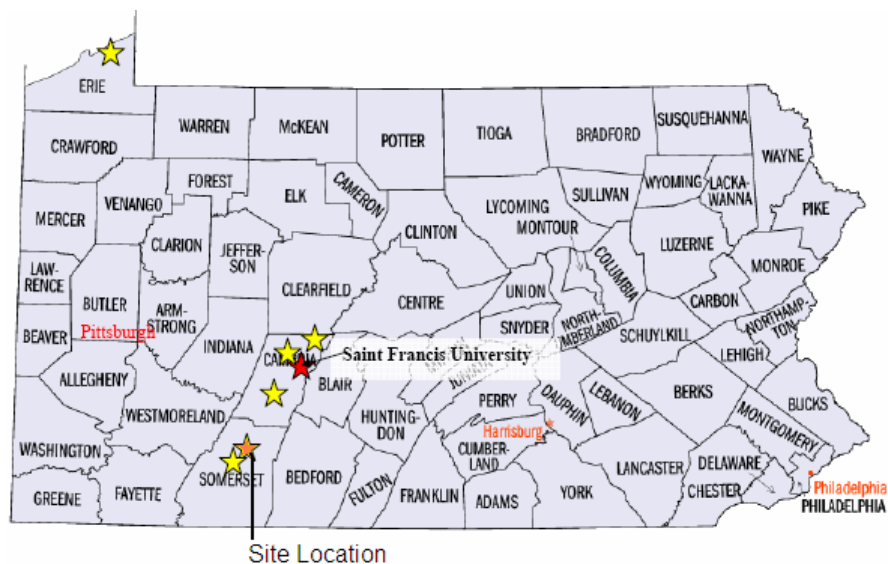
The Saint Francis University Renewable Energy Center's Community Wind Project installed a meteorological tower at a site near Rockwood, PA, Somerset County, to assess the site's wind energy potential. The mean monthly wind speed was recorded from June 2006 through July 2007 at 3 different levels, 15m (49 feet), 30m (98 feet) and 50m (164 feet). At the highest level 50m (164 feet) the mean average wind speed was 10.8 mph. * Other summary data, graphs and tables can be found on the pages to follow. A 115kV line is located 4 miles to the South East of the met tower.

Project Location

The monitoring equipment was installed 212 acres of private agricultural land near Rockwood, PA at an elevation of 2,174 feet. The site is located at N 39° 57' 23.81", W 79° 11' 35.08".

Monitoring Equipment

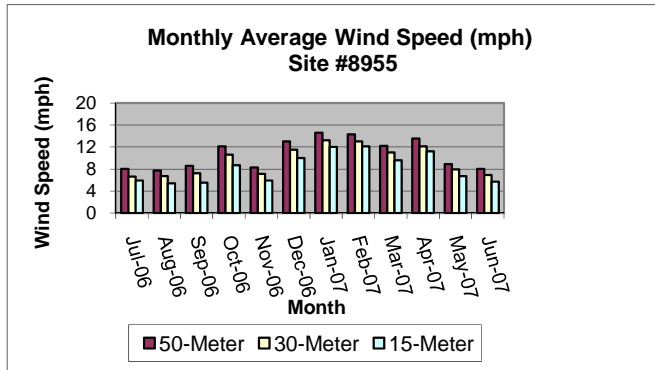
NRG Symphonie System including one 50m tower, a NRG Symphonie data logger with shelter box, 6 #40C anemometers, 2 #200P wind direction vanes, 1 temperature sensor, sensor cabling, 1 lightning spike with 2 grounding rods and copper grounding wire.



* If you would like more information on the wind data for this site please contact our office at 814-472-2872 or at renewable@francis.edu. The Community Wind project recognizes the vision and generosity of our funders: The Pennsylvania Department of Environmental Protection, MetEd/Penelec Sustainable Energy Funds, U.S. Department of Energy Wind Powering America Program and the Heinz Endowments.

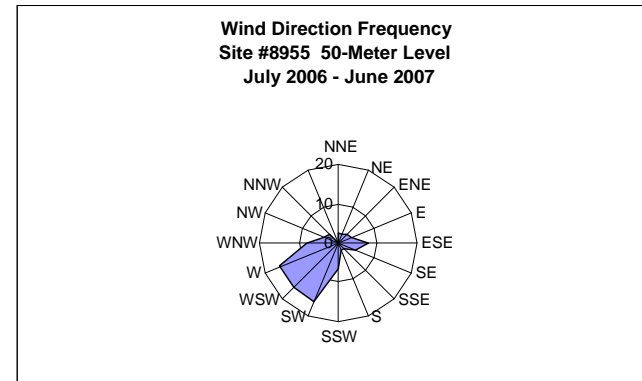
Monthly Variation

The chart below shows the average monthly wind speed throughout the recorded year. Below average months occurred during the testing period with slightly stronger winds occurring in the winter and early spring.



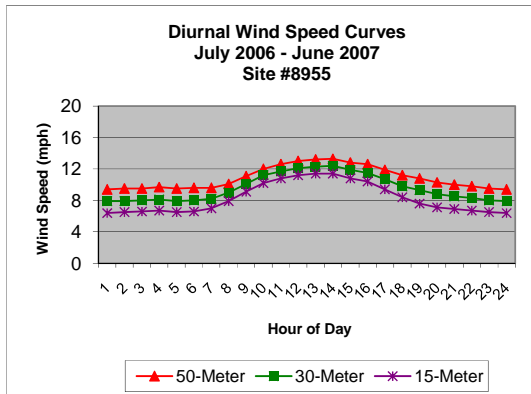
Wind Direction

The chart below displays a frequency wind rose. The majority of the wind comes from the south west, west south west and west.



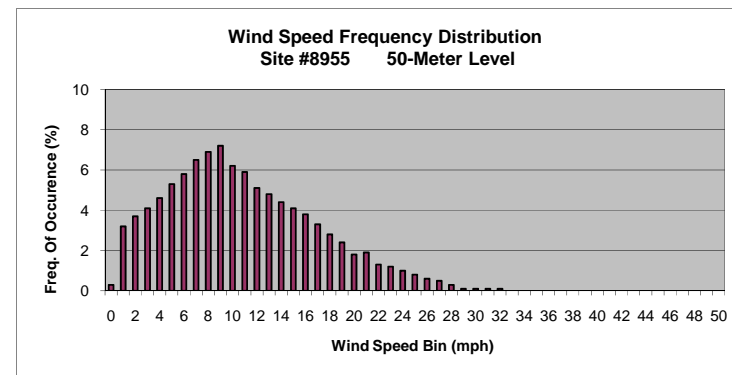
Diurnal Curves

The chart below shows how wind speeds vary on an hourly basis. The winds fluctuate greatly with stronger winds occurring in the afternoon and early evening hours and tapering off in the late evening and early morning hours.



Wind Speed Frequency

The chart below shows the frequency distribution of the wind speed. The graph shows what percentage of time the wind speed was at a certain miles per hour (mph).



Somerset County Site #8955

Mean Monthly Average Wind Speed (mph)

Month	50-Meter	30-Meter	15-Meter
Jul-06	8.0	6.6	5.9
Aug-06	7.7	6.7	5.4
Sep-06	8.6	7.2	5.5
Oct-06	12.1	10.6	8.7
Nov-06	8.3	7.1	5.9
Dec-06	13.0	11.5	10.0
Jan-07	14.6	13.2	12.0
Feb-07	14.3	13.0	12.1
Mar-07	12.2	11.0	9.6
Apr-07	13.5	12.1	11.2
May-07	8.9	7.9	6.7
Jun-07	8.0	6.9	5.7

	Percent of Time Wind Blows Comes the Direction
Direction	Direction
N	1.9
NNE	2.7
NE	2.6
ENE	3.1
E	3.7
ESE	7.8
SE	4.7
SSE	1.7
S	1.8
SSW	6.7
SW	16.1
WSW	16.1
W	16.1
WNW	7.9
NW	3.9
NNW	3.2

Mean Wind Speed By Hour of the Day

Hour	50-Meter	30-Meter	15-Meter
1	9.4	7.9	6.4
2	9.5	7.9	6.5
3	9.5	8	6.6
4	9.7	8.1	6.7
5	9.5	7.9	6.5
6	9.6	8	6.6
7	9.6	8.2	7
8	10.1	9	7.9
9	11.1	10.1	9.1
10	12	11.2	10.2
11	12.6	11.7	10.8
12	13	12.1	11.2
13	13.2	12.3	11.4
14	13.3	12.4	11.4
15	12.8	11.9	10.8
16	12.6	11.5	10.4
17	11.9	10.7	9.4
18	11.2	9.8	8.4
19	10.8	9.3	7.6
20	10.3	8.8	7.1
21	10	8.5	6.9
22	9.8	8.3	6.7
23	9.5	8	6.5
24	9.4	7.9	6.4

Wind Speed Bin (mph)	Percent of Time Wind Speed Occurs in Each Bin	Wind Speed Bin (mph)	Percent of Time Wind Speed Occurs in Each Bin
0	0.3		
1	3.2	26	0.6
2	3.7	27	0.5
3	4.1	28	0.3
4	4.6	29	0.1
5	5.3	30	0.1
6	5.8	31	0.1
7	6.5	32	0.1
8	6.9	33	0
9	7.2	34	0
10	6.2	35	0
11	5.9	36	0
12	5.1	37	0
13	4.8	38	0
14	4.4	39	0
15	4.1	40	0
16	3.8	41	0
17	3.3	42	0
18	2.8	43	0
19	2.4	44	0
20	1.8	45	0
21	1.9	46	0
22	1.3	47	0
23	1.2	48	0
24	1	49	0
25	0.8	50	0