

STATEWIDE AIR EMISSIONS CALCULATIONS FROM WIND AND OTHER RENEWABLES

SUMMARY REPORT

A Report to the
Texas Commission on Environmental Quality
For the Period September 2012 – July 2013



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August 2013



ENERGY SYSTEMS LABORATORY
TEXAS A&M ENGINEERING EXPERIMENT STATION



**TEXAS A&M ENGINEERING
EXPERIMENT STATION**

ENERGY SYSTEMS LABORATORY

July 15, 2013

Chairman Bryan W. Shaw, Ph.D.
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, TX 78711-3087

Dear Chairman Shaw:

The Energy Systems Laboratory (ESL) at the Texas Engineering Experiment Station of The Texas A&M University System is pleased to provide its eighth annual report, "Statewide Emissions Calculations From Wind and Other Renewables," as required by the 79th Legislature. This work has been performed through a contract with the Texas Environmental Research Consortium (TERC).

In this work the ESL is required to obtain input from public/private stakeholders, and develop and use a methodology to annually report the energy savings from wind and other renewables. This report summarizes the work performed by the ESL on this project from September 2012 to July 2013.

Please contact me at (979) 862-8471 should you or any of the TCEQ staff have questions concerning this report or the work presently being done to quantify emissions reductions from energy efficiency and renewable energy measures as a result of the TERP implementation.

Sincerely,

A handwritten signature in black ink that reads "David E. Claridge". The signature is written in a cursive style.

David E. Claridge, Ph.D., P.E.
Director

Enclosure

cc: Commissioner Toby Baker
Commissioner Carlos Rubinstein
Executive Director Zak Covar

Disclaimer

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ACKNOWLEDGMENT

This report cannot be accomplished without many people's help. Special thanks to Yih-huei Wan, senior engineer working in National Renewable Energy Laboratory (NREL) for providing 2011 ERCOT wind farm power generation data used to build daily model, and to Kevin Hansen for providing 2012 ERCOT wind farm power generation data.

SUMMARY REPORT

Statewide Air Emissions Calculations from Wind and Other Renewables

1 EXECUTIVE SUMMARY

The 79th Legislature, through Senate Bill 20, House Bill 2481 and House Bill 2129, amended Senate Bill 5 to enhance its effectiveness by adding 5,880 MW of generating capacity from renewable energy technologies by 2015 and 500 MW from non-wind renewables.

This legislation also requires the Public Utilities Commission of Texas (PUCT) to establish a target of 10,000 megawatts of installed renewable capacity by 2025, and requires the Texas Commission on Environmental Quality (TCEQ) to develop methodology for computing emissions reductions from renewable energy initiatives and the associated credits. Table 1-1 lists the statutory mandates and total wind power generation capacity (including installed and announced) in Texas from 2001 to 2025. It shows that Texas has achieved its milestone of 10,000 MW by the end of 2010 and will reach 14,971 MW by August 2015 according to the information from PUCT¹.

Table 1-1: Installed/Announced Wind Power Capacity and the Statutory Mandates

ERCOT Wind Summary			SB20 Plan	
Month-Yr	Installed MW	Announced MW	Month-Year	MW
Dec-2001	1,012	-		
Jan-2002	1,091	-		
Dec-2003	1,292	-		
Dec-2005	1,965	-		
Dec-2006	2,786	-	Jan-2007	2,280
Dec-2007	4,438	-		
Dec-2008	8,285	-	Jan-2009	3,272
Dec-2009	9,652	-		
Dec-2010	10,222	-	Jan-2011	4,264
Dec-2011	10,380	-		
Dec-2012	11,373	-		
Dec-2013		1,569	Jan-2013	5,256
Dec-2014		3,079	Jan-2015	5,880
Aug-2015		3,448	Jan-2025	10,000

In this Legislation, the Energy Systems Laboratory (ESL) is to assist the TCEQ in quantifying emissions reductions credits from energy efficiency and renewable energy programs, through a contract with the Texas Environmental Research Consortium (TERC) to develop and annually calculate creditable emissions reductions from wind and other renewable energy resources for the State Implementation Plan (SIP).

The Energy Systems Laboratory, in fulfillment of its responsibilities under this Legislation, submits its fifth annual report, "Statewide Air Emissions Calculations from Wind and Other Renewables," to the Texas Commission on Environmental Quality.

The report is organized in several deliverables:

1. a summary report, which details the key areas of work
2. supporting documentation

¹ The service date for some announced wind farms is from PUCT, which is ignored in the summary table.

3. supporting data files, including weather data, and wind production data, which have been assembled as part of the seventh year's effort

This executive summary provides key areas of accomplishment this year, including:

- continuation of stakeholder's meetings
- analysis of power generation from wind farms using improved method and 2011 data
- analysis of emissions reduction from wind farms
- updates on degradation analysis
- analysis of other renewables, including PV, solar thermal, hydroelectric, geothermal and landfill gas
- review of electricity generation by renewable sources and transmission planning study reported by ERCOT

1.1 Development of Stakeholder's meetings

Legislation passed during the regular session of the 79th Legislature directed the Energy Systems Laboratory to work with the TCEQ to develop a methodology for computing emissions reductions attributable to renewable energy and for the ESL to quantify the emissions reductions attributable to renewables for inclusion in the State Implementation Plan annually. HB 2921 directed the Texas Environmental Research Consortium (TERC) to engage the Texas Engineering Experiment Station for the development of this methodology.

During the 2012-2013 period, Texas A&M held continuing stakeholder's meetings and made several presentations to EPA, TCEQ and other interested parties regarding the analysis and the results.

1.2 Texas wind power generation (ERCOT and PUCT)

For several years now Texas has been the largest producer of wind energy in the United States. As of January 2013, the capacity of installed wind turbine totals was 11,523 MW with another 6,593 MW announced for new projects by 2015. Figure 1-1 shows the growth pattern of the installed wind power capacity in Texas and their power generation in the ERCOT region from September 2001 to December 2012.

In the last six years, the electricity generated has been shown progressive and substantial increases, however the wind electricity generation contains a significant seasonal response, which can be observed during Ozone Season Periods when dramatic reduction in the power generation can be observed. This reduction is mainly due to the fact that the wind speed in those periods is lower than other times during the year. On the other hand is also observed that the peaks of wind electricity generation occur more often during the winter season, between February and November, when the wind speed also has a higher overall average value.

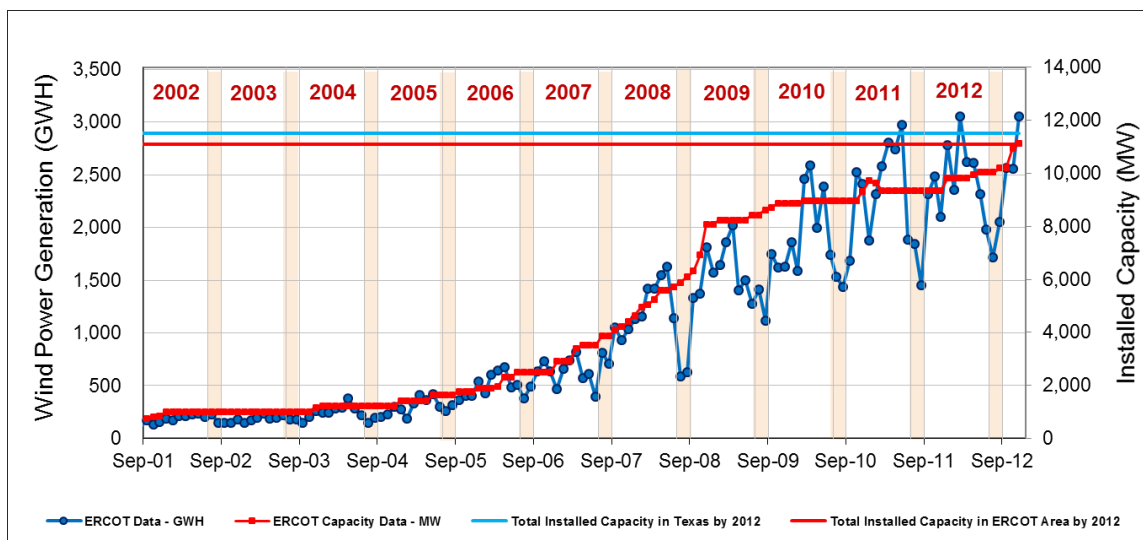


Figure 1-1: Installed Wind Power Capacity and Power Generation in the ERCOT Region from 2001 to December 2012

1.3 Analysis of wind farms using an improved method and 2011 data

In this report, the weather normalization procedures, developed together with the Stakeholders, were presented and applied to all the wind farms that reported their data to ERCOT during the 2011 measurement period, together with wind data from the nearby NOAA weather stations. In the 2010 Wind and Renewables report to the TCEQ (Haberl et al. 2010), weather normalization analysis methods were reviewed.

This report used the same analysis method as the previous 2010 report (Sweetwater III as an example) to present the same weather normalization procedure, including:

- the processing of weather and power generation data, modeling of daily power generation versus daily wind speed using the ASHRAE Inverse Model Toolkit (IMT) for two separate periods, i.e., Ozone Season Period (OSP), from July 15 to September 15, and Non-Ozone Season Period (Non-OSP);
- predicting 2008 wind power generation as a baseline, using developed coefficients from 2011 daily OSP and Non-OSP models for all the wind farms; and
- the analysis on monthly capacity factors generated using the models

A summary of total wind power production in the base year (2008) for all of the wind farms in the ERCOT region using the developed procedure is presented, and the new wind farms which started operation in 2011 were added, including Cedro Hill Wind, Loraine Windpark III and Papalote Creek Phase II. Figure 1-2 shows the measured annual wind power generation in 2011 and the estimated wind power generation in 2008 using the developed method for those wind farms in the ERCOT region. The total measured wind power generation in 2011 is 27,970,096 MWh/yr., which is 1.98% less than what the same wind farms would have produced in 2008. Figure 1-3 shows the same comparison but for the Ozone Season Period. The measured wind power generation in the OSP of 2011 is 57,928 MWh/day, which is 15.65% higher than the 2008 OSP baseline wind production. Especially for wind farms named BUFF_GAP_UNIT2 and SWEETWN3_WND3, there are missing data period from January to June. Only six month wind power data available result in the huge difference between measured 2011 ERCOT wind power production and estimated 2008 wind power production.

This report also includes an uncertainty analysis that was performed on all the daily regression models for the entire year and Ozone Season Period. The detailed analysis for each wind farm is provided in the

Appendix B to this report. The original data used in the analysis is included in the accompanying CD-ROM with this report.

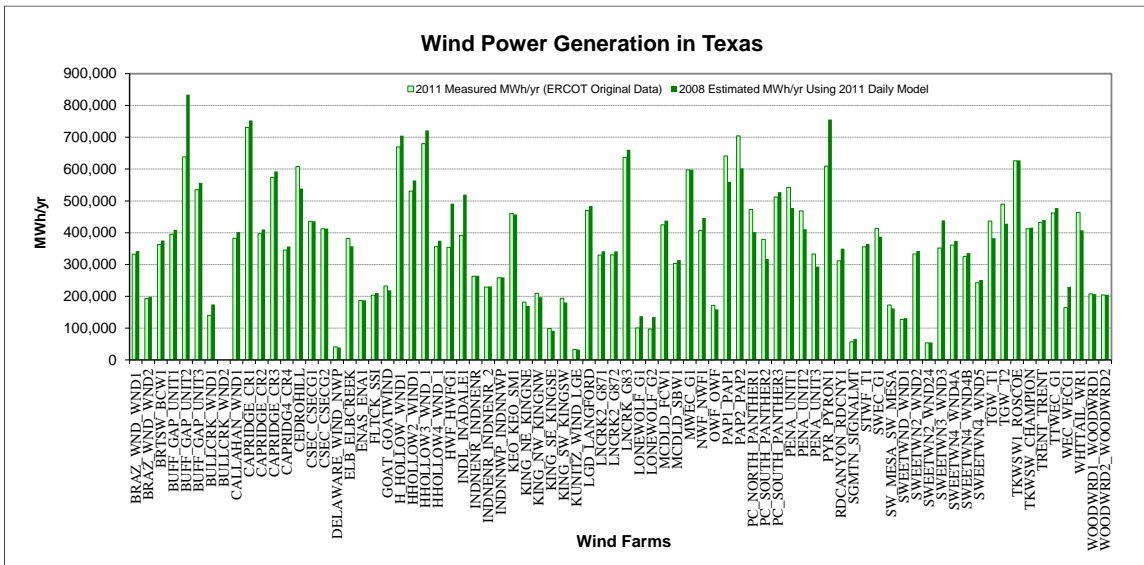


Figure 1-2: Comparison of 2011 Measured and 2008 Estimated Wind Power Production for Each Wind Farm

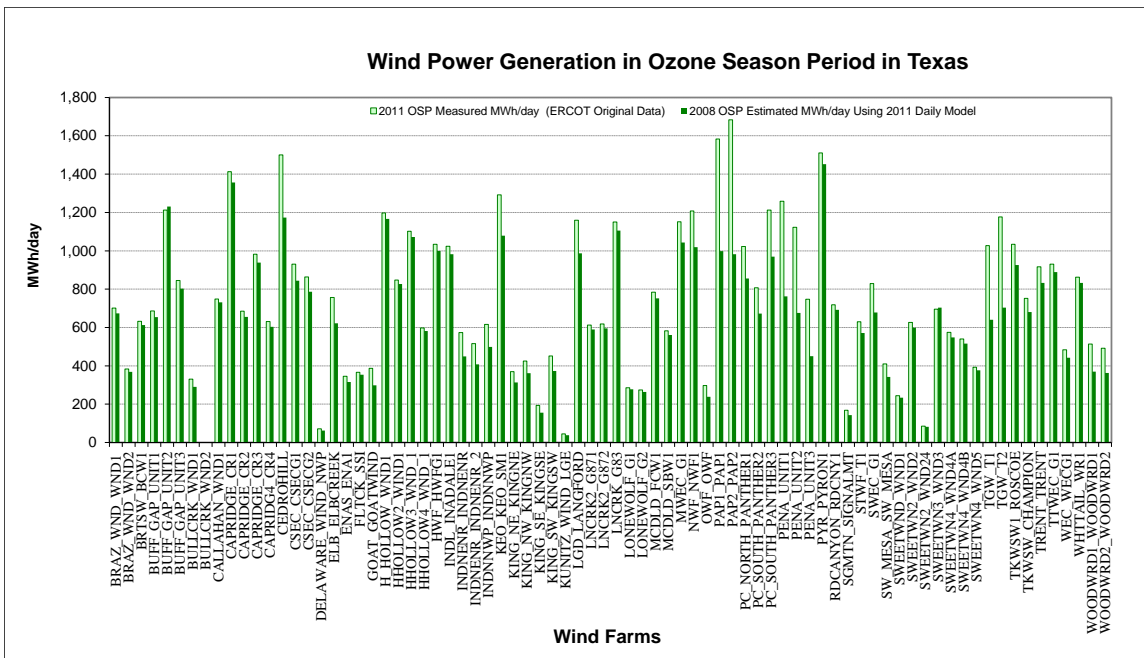


Figure 1-3: Comparison of 2011 OSP Measured and 2008 OSP Estimated Wind Power Production for Each Wind Farm

1.4 Analysis of emissions reduction from wind farms

In this report, the procedure for calculating annual and peak-day, county-wide NO_x reductions from electricity savings from wind projects implemented in the congestion management (CM) zones in ERCOT was presented and, calculating the NO_x emission reductions based on the special version of 2010 eGRID, developed by the ESL and EPA for the TCEQ. According to the developed models, the total MWh savings for all the wind farms in the base year 2008 within the ERCOT region are 28,535,794 MWh and 50,088 MWh/day in the Ozone Season Period. The total NO_x emissions reductions across all the counties amount to 7825.89 tons/yr. and 13.73 tons/day for the Ozone Season Period. Based on the 2011 measured ERCOT data, the total MWh savings for all the wind farms within the ERCOT region are 27,970,096 MWh and 57,928 MWh/day in the Ozone Season Period. The total NO_x emissions reductions in 2011 across all the counties amount to 7718.08 tons/yr. and 16.09 tons/day for the Ozone Season Period. Compared to the base year 2008, the total annual NO_x emissions reductions decreased by 1.38%, and the total NO_x emissions reductions increase 17.24% for the Ozone Season Period.

Figure 1-4 and Figure 1-6 show the estimated annual and OSP NO_x emissions reductions from wind power in each county of Texas in the base year 2008. Figure 1-5 and Figure 1-7 show the measured annual and OSP NO_x emissions reductions from wind power in each county of Texas in 2011.

Estimated 2008 Annual NO_x Reduction From Wind Power (tons/yr)

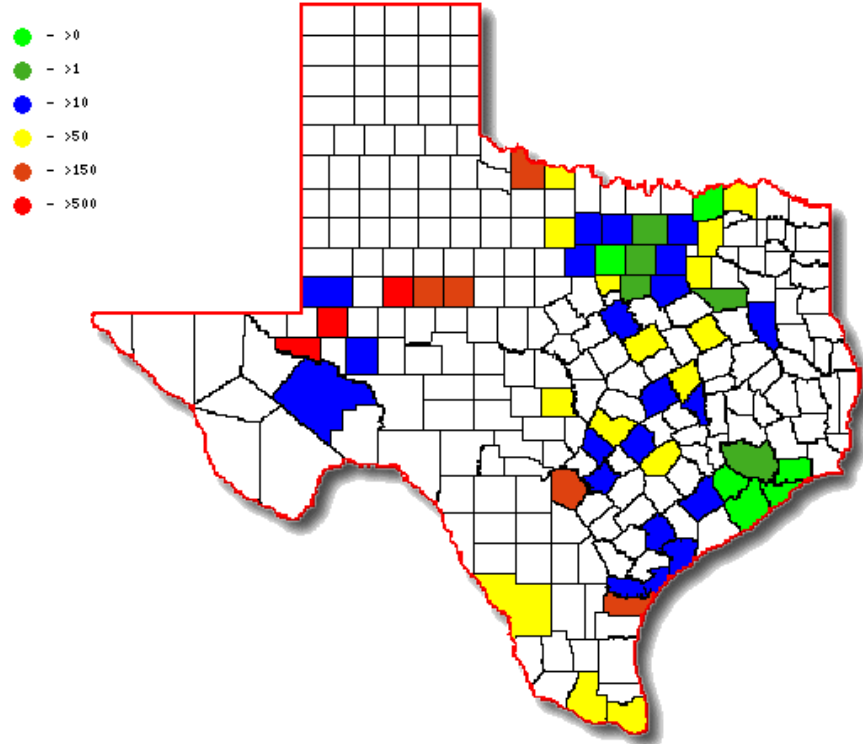


Figure 1-4: Estimated 2008 Annual NO_x Reductions from Wind Power in Texas Map

Measured 2011 Annual NOx Reductions From Wind Power (tons/yr)

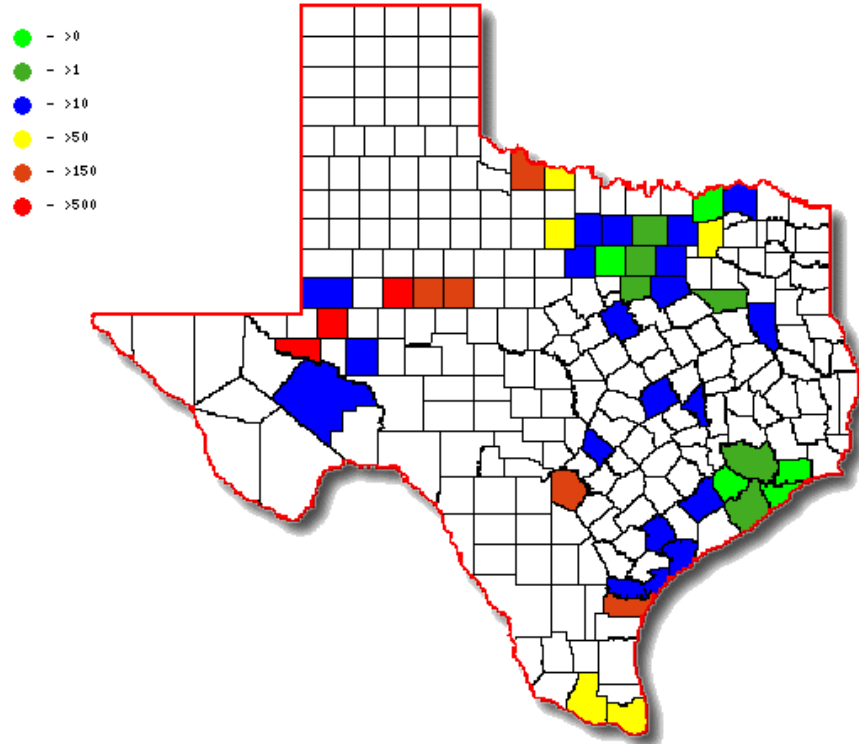


Figure 1-5: Measured 2011 Annual NOx Reductions from Wind Power in Texas Map

Estimated 2008 OSP NOx Reductions From Wind Power (tons/day)

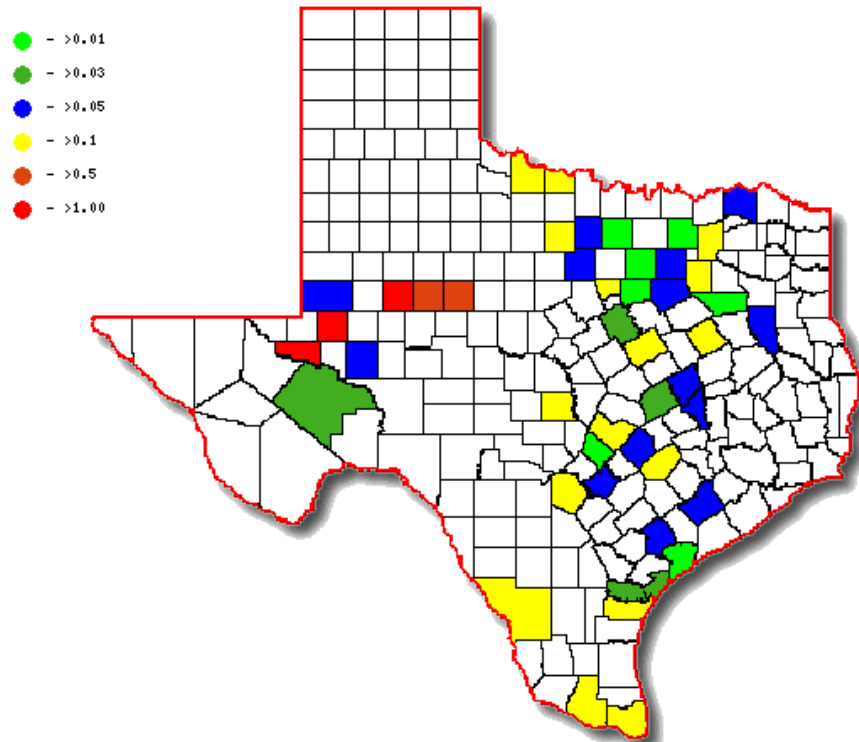


Figure 1-6: Estimated 2008 OSP NOx Reductions from Wind Power in Texas Map

Measured 2011 OSP NO_x Reductions From Wind Power (tons/day)

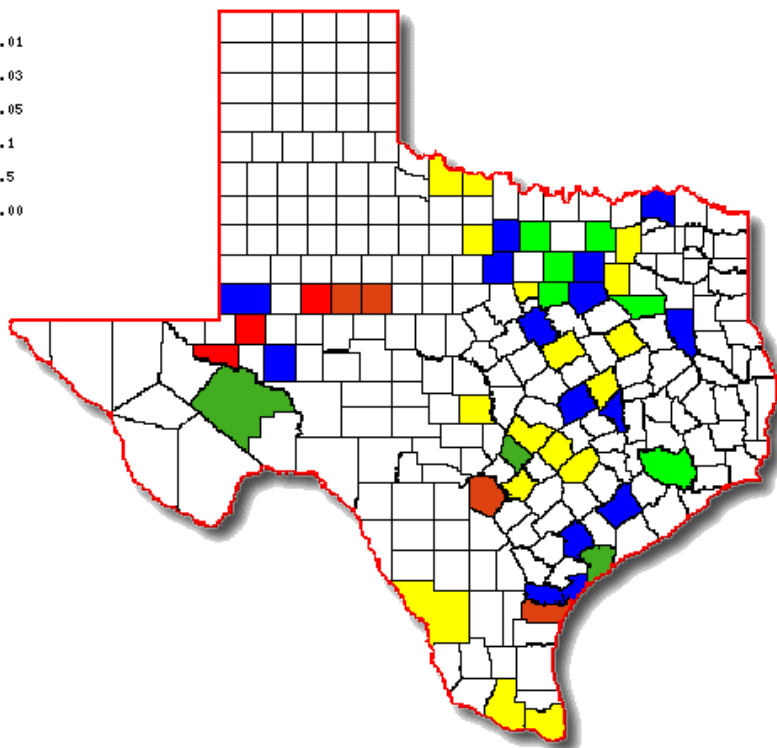


Figure 1-7: Measured 2011 OSP NO_x Reductions from Wind Power in Texas Map

1.5 Development of a degradation analysis

This report contains an updated analysis to determine what amount of degradation could be observed in the measured power from Texas wind farms. Currently, the TCEQ uses a very conservative 5% degradation per year for the power output from a wind farm when making future projections from existing wind farms. Accordingly, the TCEQ asked the ESL to evaluate any observed degradation from the measured data for Texas wind farms. To accomplish this, forty three wind farms (38 sites) built from 2001 to 2011 were evaluated with a total capacity of 4,664.1 MW in this report. This year, twenty two qualified wind farms were added for the analysis because at least four- year measured data were required for the analysis.

In this analysis, a sliding statistical index was established for each site that used the 10th, 25th, 50th, 75th, 90th, and 99th percentiles of the hourly power generation over a 12-month sliding period, as well as mean, minimum and maximum hourly power generation of the same 12-month period. These indices were then displayed using one data symbol for each 12-month slide, beginning from the first 12-month period until the last 12-month period for each of the wind farms.

As shown in Table 1-2, of the thirty eight sites analyzed, nineteen sites showed an increase when one compares the 90th percentile of the whole period to the 90th percentile of the first 12-month period, ranging from 0.1 % to 68%. The remaining nineteen sites showed a decrease from -0.5% to -32.6%. The weighted average of this increase across all wind farms studied is 5% (positive), which indicates that no degradation was observed from the aggregate energy production from these wind farms over the studied operation period. Based on the observations, special attentions need to be paid to site Buffalo Gap 1 (-17.9%), Big Spring Wind Power (-11.7%), Capricorn Ridge Wind (-10.4%), Snyder Wind Project (-17.1%), Texas Wind Power Project (-32.6%) and Whirlwind (-14.7). Those wind farms have comparison percentage larger than 10%, which may be caused by wind farm operations issues, the meter problems or other issues that have not been aware of.

Table 1-2: Summary of 90th Percentile Hourly Wind Power Analysis for Forty Three Wind Farms (38 Sites) in Texas

Wind Farm	First 12-mo 90th Percentile Hourly Wind Power		Average of the Sliding 12-mo 90th Percentile Hourly Wind Power		Minimum of the Sliding 12-mo 90th Percentile Hourly Wind Power		Maximum of the Sliding 12-mo 90th Percentile Hourly Wind Power		No. of Months of Data	Capacity (MW)
	First 12-mo Ending Mo.	MW	MW	% Diff. vs. First 12-mo	MW	% Diff. vs. First 12-mo	MW	% Diff. vs. First 12-mo		
Brazos Wind Ranch	Dec-04	127.5	124.9	-2.0%	93.5	-26.7%	139.3	9.2%	85	160
Barton Chapel Wind 1	Apr-09	60.0	76.9	28.1%	60.0	0.0%	87.7	46.2%	33	120
Buffalo Gap 1	Nov-06	100.9	95.3	-5.5%	75.4	-25.2%	104.6	3.7%	62	120
Buffalo Gap 2	Apr-08	183.4	150.5	-17.9%	104.9	-42.8%	194.6	6.1%	45	233
Big Spring Wind Power	Dec-02	27.2	24.0	-11.7%	16.3	-40.1%	27.2	0.0%	109	41
Callahan Divide Wind	Feb-06	93.3	97.4	4.4%	89.0	-4.6%	101.5	8.8%	71	114
Capricorn Ridge Wind	Aug-08	258.0	231.3	-10.4%	174.5	-32.4%	278.2	7.8%	41	364
Camp Springs Wind Energy Center	Apr-08	111.3	102.2	-8.2%	95.0	-14.6%	114.6	2.9%	45	130
Camp Springs Energy Expension	Jan-09	94.0	92.0	-2.0%	88.9	-5.4%	97.9	4.2%	36	120
Champion Wind Farm	Jan-09	89.4	97.0	8.4%	87.7	-1.9%	109.3	22.2%	36	126.5
Delaware Mountain Wind	Dec-02	18.5	17.1	-7.6%	10.3	-44.3%	21.5	16.1%	109	28.5
Desert Sky	Dec-02	89.0	117.1	31.5%	83.1	-6.7%	134.4	50.9%	109	160
Forest Creek Wind Farm	Dec-07	105.2	105.3	0.1%	97.3	-7.5%	110.6	5.2%	49	124.2
Horse Hollow Phase 1	Jun-06	157.0	162.0	3.2%	141.3	-10.0%	177.3	12.9%	67	213
Horse Hollow Phase 2	Aug-07	145.7	133.6	-8.3%	99.0	-32.1%	151.5	4.0%	53	184
Horse Hollow Phase 3	May-07	169.2	160.4	-5.2%	123.9	-26.8%	187.4	10.8%	56	223.5
Horse Hollow Phase 4	Jun-07	88.6	87.8	-0.9%	80.9	-8.7%	93.5	5.5%	55	115
Indian Mesa	Dec-02	48.0	59.9	24.9%	42.1	-12.2%	72.2	50.5%	109	82.5
King Mountain Wind Ranch-NE	Dec-02	41.8	47.1	12.6%	36.3	-13.2%	56.4	34.8%	109	79.3
King Mountain Wind Ranch-NW	Dec-02	44.7	55.2	23.5%	40.2	-10.1%	65.3	46.1%	109	79.3
King Mountain Wind Ranch-SE	Dec-02	21.6	23.8	10.0%	18.4	-15.0%	28.1	29.8%	109	40.3
King Mountain Wind Ranch-SW	Dec-02	41.6	47.4	14.0%	38.4	-7.6%	53.7	29.1%	109	79.3
Lone Star - Post Oak Wind	Dec-08	126.5	152.5	20.5%	126.5	0.0%	168.5	33.2%	37	200
Lone-Star Mesquite Wind	Feb-08	106.1	146.1	37.7%	106.1	0.0%	165.7	56.2%	47	200
Red Canyon 1	Aug-07	75.8	76.8	1.2%	72.7	-4.1%	79.1	4.4%	53	84
Sand Bluff Wind Farm	Dec-07	39.5	66.4	68.0%	39.5	0.0%	74.3	88.0%	49	90
Southwest Mesa Wind	Dec-02	51.1	49.1	-3.9%	38.5	-24.6%	56.5	10.6%	109	74.6
Sweetwater Wind 1	Dec-04	34.1	32.5	-4.5%	29.9	-12.2%	34.2	0.4%	85	37.5
Sweetwater Wind 2 (unit1)	Jan-06	71.4	80.2	12.5%	71.4	0.0%	85.3	19.5%	72	100.3
Sweetwater Wind 2 (unit 2)	May-08	13.8	13.7	-0.5%	12.0	-13.1%	14.8	7.8%	44	16
Sweetwater Wind 3	Dec-06	99.6	98.2	-1.5%	67.1	-32.7%	107.3	7.7%	61	135
Sweetwater Wind 4	Mar-08	161.0	168.9	4.9%	156.5	-2.8%	179.0	11.2%	46	240.8
Sweetwater Wind 5	Dec-08	66.5	63.1	-5.1%	56.3	-15.3%	69.3	4.3%	37	80.5
Snyder Wind Project	Dec-08	52.9	43.9	-17.1%	36.1	-31.8%	52.9	0.0%	37	63
Texas Wind Power Project	Dec-02	25.2	16.9	-32.6%	10.6	-57.9%	25.2	0.0%	109	35
Trent Mesa	Dec-02	108.8	120.3	10.5%	90.7	-16.7%	132.8	22.0%	109	150
Whirlwind	Dec-08	54.0	46.0	-14.7%	39.8	-26.3%	54.0	0.0%	37	60
Woodward Mountain Ranch	Dec-02	85.3	97.5	14.4%	80.4	-5.7%	112.4	31.8%	109	160
Weighted Average:				5.0%		-16.0%		18.8%	Total:	4664.1

1.6 Analysis of other renewable source

Other renewable energy projects throughout the state of Texas were located to determine annual energy savings. Searches were conducted on five specific categories which include solar photovoltaic, solar thermal, geothermal, hydroelectric, and landfill gas-fired power plants. Many newly located renewable energy projects are assembled for inclusion in this report (Table 1-3). NOx emissions reduction were calculated for only the solar photovoltaic and solar thermal projects.

County-wide NOx reductions from electricity savings from solar photovoltaic and solar thermal projects based on the special version of Texas 2010 eGRID. According to the developed models, the total energy savings for all the solar photovoltaic within the ERCOT region for the year 2012 were 176,311 MWh and 527 MWh/day in the Ozone Season Period. The total annual NOx emissions reductions across all the counties amount to 59.42 tons/yr and 0.178 tons/day for the Ozone Season Period. Similarly, the total MWh savings for all the solar thermal projects for year 2012 were 232 MWh and 1.0 MWh/day in the

Ozone Season Period and the total NOx emissions reductions across all the counties amount to 0.072 tons/yr. and 0.00019 tons/day for the Ozone Season Period.

Table 1-3: New Projects Reported in July 2013

Renewable Energy Source	No.of New Projects Reported in July 2013
Solar Photo-Voltaic	153
Solar Thermal	1
Landfill Gas	0
Hydro-Electric	0
Geothermal	6

1.7 Review of electricity savings and transmission planning study reported by ERCOT

In this report, the information posted on ERCOT's Renewable Energy Credit Program site www.texasrenewables.com is reviewed. In particular, information posted under the "Public Reports" tab was downloaded and assembled into an appropriate format for review. This includes ERCOT's 2001 through 2012 reports to the Legislature and information from ERCOT's listing of REC generators.

Each year ERCOT is required to compile a list of grid-connected sources that generate electricity from renewable energy and report them to the Legislature. Table 1-4 contains the data reported by ERCOT from 2001- 2012. Figure 1-8 is included to better illustrate the annual data collected by ERCOT.

Table 1-4: Annual Electricity Generation by Renewable Resources (MWh, ERCOT: 2001 - 2012)

Technology Type	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Biomass	0	0	39,496	36,940	58,637	60,569	54,101	70,833	73,364	97,535	137,004	288,988
Hydro	30,639	312,093	239,684	234,791	310,302	210,077	382,882	445,428	507,507	609,257	267,113	389,197
Landfill gas	0	29,412	154,206	203,443	213,777	306,087	356,339	387,110	412,923	464,904	497,645	537,966
Solar	0	87	220	211	227	470	1,844	3,338	4,492	14,449	36,580	133,642
Wind	565,597	2,451,484	2,515,482	3,209,630	4,221,568	6,530,928	9,351,168	16,286,440	20,596,105	26,828,660	30,769,674	32,746,534
Total (MWh)	596,236	2,793,076	2,949,087	3,685,014	4,804,512	7,108,131	10,146,333	17,193,150	21,594,390	28,014,805	31,708,016	34,096,328

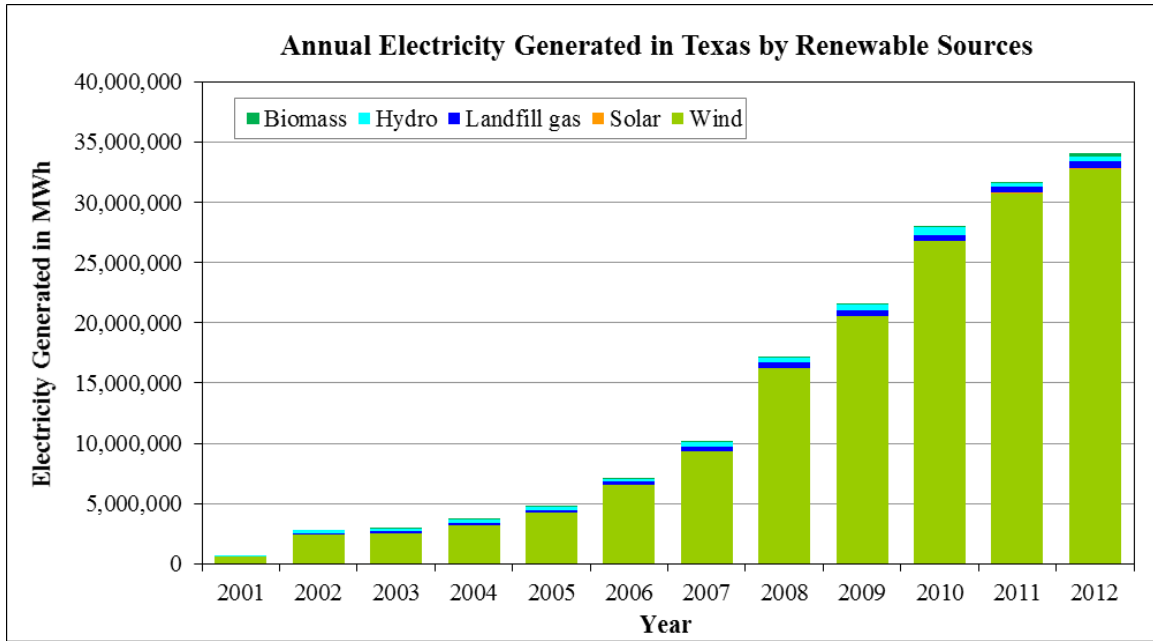


Figure 1-8: Electricity Generation by Renewable Resources (ERCOT: 2001–2012 Annual)

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2 INTRODUCTION

2.1 Statement of Work for Calculations of Emissions from Wind and Other Renewables

This summary report covers the Energy Systems Laboratory's work from September 2012 through July 2013. This work is intended to cover the basic work outline included below:

Task 1: Obtain input from public/private stakeholders

Task 2: Develop a methodology in cooperation with the Texas Commission on Environmental Quality (TCEQ) and the U.S. Environmental Protection Agency (US EPA) for calculating emissions reductions obtained through wind and other renewable energy resources in Texas

Task 3: Calculate annual, creditable emissions reductions for wind and other renewable energy resources for inclusion in the State SIP

Task 4: Include emissions reductions by county from wind and renewable energy resources in the ESL's annual report to the TCEQ

Task 5: Incorporate wind and renewable energy emissions reductions as a component of the ESL's annual *Clean Air Through Energy Efficiency Conference (CATEE)* to facilitate technical transfer

2.2 Summary of Progress

The progress toward completing each task is provided in the following section and throughout this report.

Task 1: Obtain input from public/private stakeholders.

Legislation passed during the regular session of the 79th Legislature directed the Energy Systems Laboratory to work with the TCEQ to develop a methodology for computing emissions reductions attributable to renewable energy and for the ESL to quantify the emissions reductions attributable to renewables for inclusion in the State Implementation Plan (SIP) annually. HB 2921 directed the Texas Environmental Research Consortium (TERC) to engage the Texas Engineering Experiment Station for the development of this methodology.

During the period from September 2012 to July 2013, several presentations were done to report the analysis methodology and the results with TCEQ, EPA, TCEQ, and other interested parties. Appendix A shows the slides that were presented in those meetings.

- October 2012 – Presentation at the CATEE Conference about Emissions Reduction Impact of Renewables, Galveston, Texas.

Task 2: Develop a methodology in cooperation with the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency for calculating emissions reductions obtained through wind and other renewable energy resources in Texas.

This task is composed of the following subtasks:

- review existing methodologies for calculating emissions reductions from wind energy and other renewable energy systems with US EPA, TCEQ and stakeholders.
- develop acceptable methodologies for wind and renewables.
- determine how to implement methodologies for Texas, including accounting of current installations, future sites, degradation, discounting/uncertainty, grid constraints, etc.
- review methodologies for verifying wind energy production and renewable energy installations with TCEQ, US EPA and stakeholders.

- develop acceptable methodologies for verifying installations, including documentation, EPA QAPP, etc.
- develop draft State Guidelines for the TCEQ for EE/RE SIP credits

Task 3: Calculate annual, creditable emissions reductions for wind and other renewable energy resources for inclusion in the State SIP.

This task is composed of the following subtasks:

- calculate annual emissions from wind and other renewable energy projects; verify annual installations of wind and renewable energy systems in Texas;
- verify ERCOT historical data for wind production and other renewables

Task 4: Include emissions reductions by county from wind and renewable energy resources in the ESL's annual report to the TCEQ.

This task is composed of the following subtasks:

- report annual emissions from wind and other renewable energy projects;
- report on verification of installations of wind and renewable energy systems in Texas;
- develop documentation for all methods developed

Task 5: Incorporate wind and renewable energy emissions reductions as a component of the ESL's annual Clean Air Through Energy Efficiency Conference (CATEE) to facilitate technical transfer.

Additional information regarding the ESL's efforts on Tasks 2, 3, 4 and 5 are listed below and presented in detail in the following sections. This work was performed during the period September 2012 through July 2013.

- analysis of wind farms using 2011 data
- analysis of emissions reduction from wind farms
- updates of the degradation analysis to include more wind farms
- analysis of other renewables
- review of electricity savings and transmission planning study reported by ERCOT

3 ANALYSIS ON POWER PRODUCTION FROM WIND FARMS USING 2011 DATA

3.1 Introduction

Texas can now take its place as the largest producer of wind energy in the United States. As of January 2013², the capacity of installed wind turbine totals was 11,523 MW with another 6,593 MW announced for new projects by 2015. Figure 3-1 shows the total installed wind power capacity in Texas and power generation in the ERCOT region from 2001 to December 2012. Figure 3-2 shows the location of the wind farms completed, announced and retired based on the information from the PUCT.

Following the analysis, a summary of total wind power production in the base year (2008) for all wind farms in the ERCOT region is presented. Then, a comparison between the estimated wind power in 2008 and the 2008 Ozone Season Period from previous reports and the results from this year's modeling are also included in this section to show the performance the modeling procedure.

An uncertainty analysis was also performed on all the daily regression models and included in this report to show the accuracy of applying the OSP and Non-OSP linear regression models to predict the wind power generation that the wind farms would have had in the base year of 2008. The detailed analysis for each wind farm is provided in the Appendix to this report. The original data used in the analysis is included in the accompanying CD-ROM with this report.

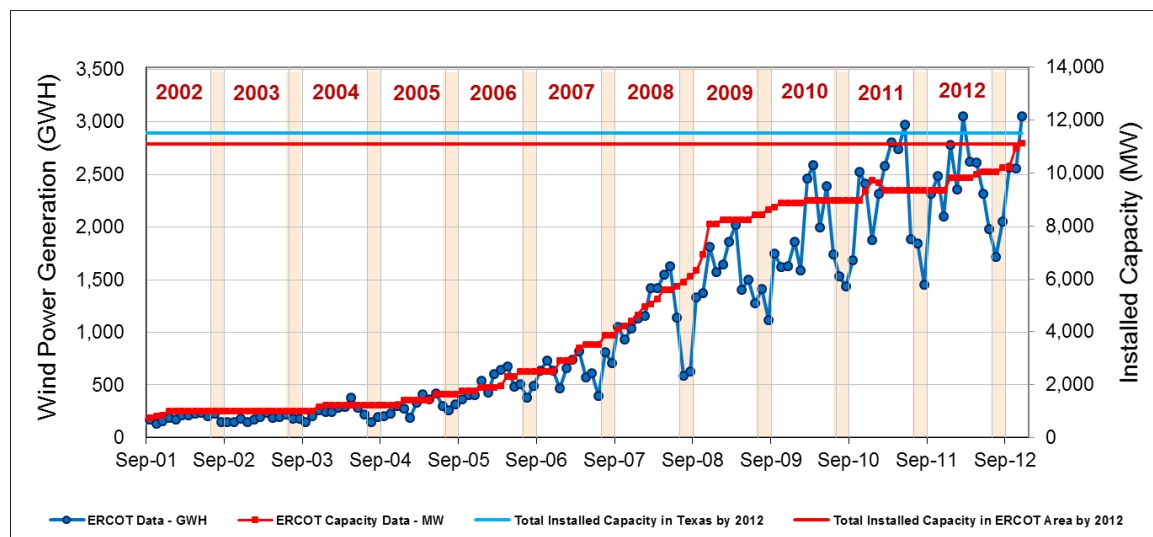


Figure 3-1: Installed Wind Power Capacity and Power Generation in the ERCOT Region from 2001 to December 2012

² Wind project information obtained from the Public Utility Commission of Texas (www.puc.state.tx.us) as of 1/23/2013 and the Electric Reliability Council of Texas (ERCOT) as of May 2013.

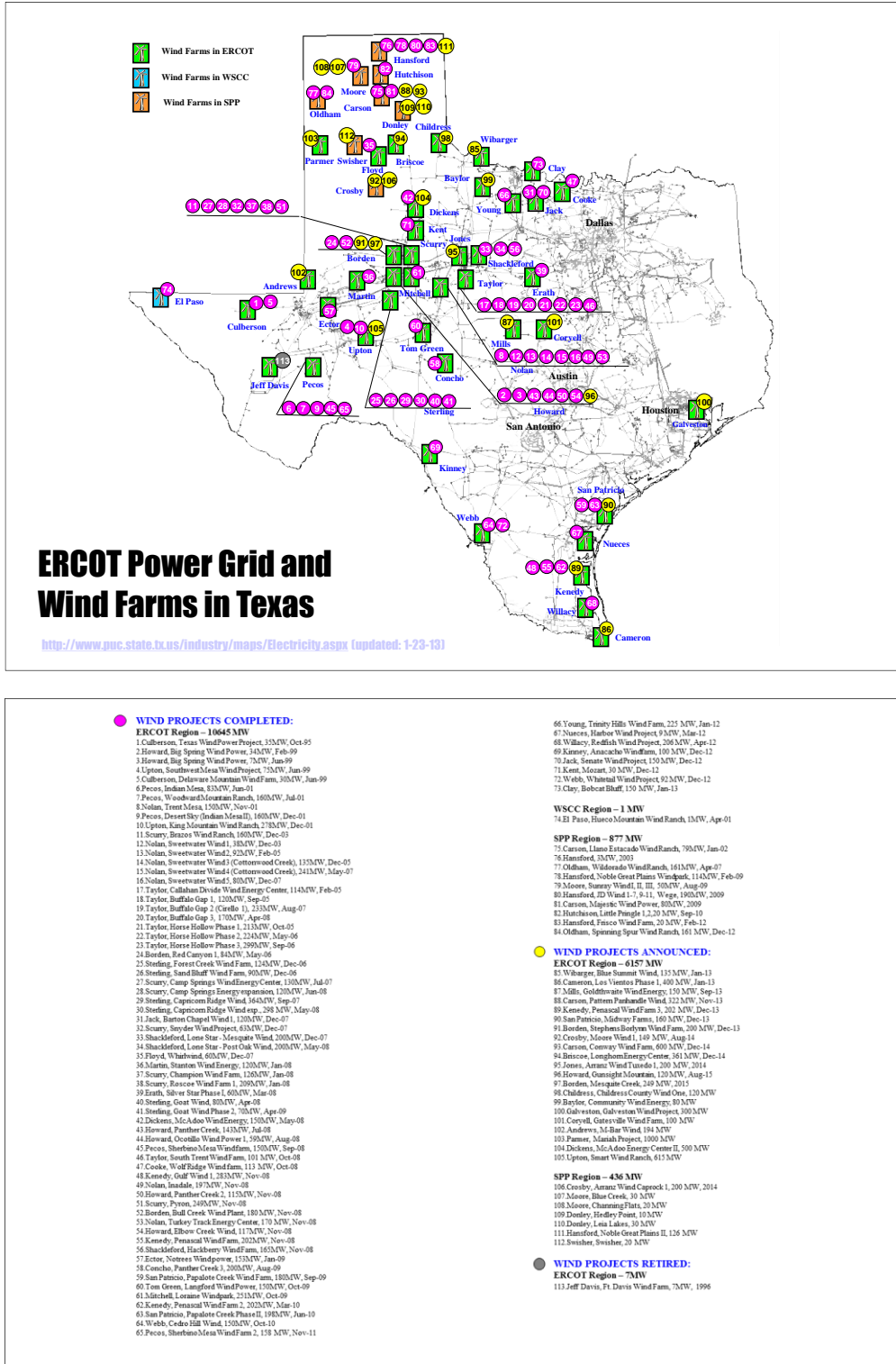


Figure 3-2: Completed, Announced and Retired Wind Projects in Texas up to January 2013

3.2 Summary of Wind Power Production for All Wind Farms in the Texas ERCOT Region

Table 3-1 shows the summary of the 2011 measured power production for the wind farms that were operating in 2011 in the Texas ERCOT region and the estimated 2008 wind power production using daily regression models (Appendix B).

Table 3-2 shows the monthly average wind speed across six weather stations used in the modeling. As shown in Figure 3-3 and Figure 3-4, the estimated annual wind power production in 2008 (28,535,794 MWh/yr) increased about 1.98% when compared to what was measured in 2011 (27,970,096 MWh/yr). For the Ozone Season Period, the estimated average daily power production in 2008 is 50,088 MWh/day, a 15.65% decrease from that measured in 2011 (57,928 MWh/day). This is because most wind farms involved in the modeling use the wind speed data downloaded from NOAA ABI weather station. The annual average wind speed in 2008 for ABI is larger than that in 2011 and the average ABI wind speed during Ozone Season Period is smaller than that in 2011.

Figure 3-5 presents the comparison of the 2011 measured annual wind power production against the 2008 estimated annual wind power production for each wind farm. Figure 3-6 shows the difference between the 2011 measured average daily power production and the 2008 estimated average daily wind power production during the Ozone Season Period for each wind farm.

From this analysis it can be concluded that the use of weather normalization procedures for predicting the 2008 base year production based on 2011 measured power production is more accurate than simply using the measured 2011 power production as the base year power production. Therefore, it is recommended to the TCEQ that the current discount factor be reduced to take the more accurate modeling into account.

Table 3-1: Summary of Power Production for All Wind Farms

Wind Unit Name	County	Capacity (MW)	CM Zone	Wind Power for 2008 Predicted		Wind Power for 2011 Measured	
				Annual (MWh/yr)	OSD (MWh/day)	Annual (MWh/yr)	OSD (MWh/day)
BRAZ_WND_WND1	SCURRY	99.0	W	341,880	674	332,581	701
BRAZ_WND_WND2	SCURRY	61.0	W	198,356	368	192,806	384
BRTSW_BCW1	JACK	120.0	N	375,164	612	363,072	632
BUFF_GAP_UNIT1	TAYLOR	120.0	W	408,613	654	394,476	686
BUFF_GAP_UNIT2	TAYLOR	233.0	W	834,051	1,231	638,751	1,213
BUFF_GAP_UNIT3	TAYLOR	170.0	W	556,899	803	535,352	845
BULLCRK_WND1	BORDEN	91.0	W	173,952	290	140,142	331
CALLAHAN_WND1	TAYLOR	114.0	W	401,599	731	382,239	748
CAFRIDGE_CR1	STERLING	214.5	W	753,252	1,356	730,805	1,413
CAFRIDGE_CR2	STERLING	149.5	W	409,863	655	397,166	685
CAFRIDGE_CR3	STERLING	186.0	W	592,580	939	574,300	982
CAFRIDGE_CR4	STERLING	112.5	W	356,633	603	345,566	631
CEDROHILL	WEBB	150.0	S	538,891	1,173	608,123	1,500
CSEC_CSEC01	SCURRY	130.0	W	435,464	844	435,480	930
CSEC_CSEC02	SCURRY	120.0	W	412,609	787	412,368	864
DELAWARE_WIND_NWP	CULBERSON	28.5	W	38,312	62	40,440	71
ELB_ELBECREEK	HOWARD	121.9	W	357,568	622	381,646	757
ENAS_ENA1	SCURRY	63.0	W	187,471	315	186,709	346
FLTCK_SSI	ERATH	60.0	N	210,167	354	203,490	366
GOAT_GOATWIND	STERLING	150.0	W	218,697	298	232,273	387
H_HOLLOW_WND1	TAYLOR	213.0	W	705,339	1,166	670,068	1,197
HHOLLOW2_WND1	TAYLOR	184.0	W	564,512	827	531,220	848
HHOLLOW3_WND_1	TAYLOR	223.5	W	721,799	1,072	680,156	1,102
HHOLLOW4_WND_1	TAYLOR	115.0	W	374,975	582	355,790	598
HWF_HWFG1	SHACKLEFORD	165.5	N	491,133	1,000	353,555	1,034
INDL_INADALE1	NOLAN	197.0	W	519,729	982	392,297	1,024
INDNENR_INDENR	PECOS	80.0	W	264,243	449	262,903	573
INDNENR_INDENR_2	PECOS	80.0	W	230,950	408	229,183	516
INDNENR_INDENR_NWP	PECOS	82.5	W	259,723	498	258,253	616
KEO_KEO_SM1	PECOS	150.0	W	457,074	1,079	459,942	1,292
KING_NE_KINGNE	UPTON	79.3	W	169,509	313	181,782	370
KING_NW_KINGNW	UPTON	79.3	W	196,624	361	209,729	425
KING_SE_KINGSE	UPTON	40.3	W	91,057	155	98,527	194
KING_SW_KINGSW	UPTON	79.3	W	180,048	373	193,344	451
KUNITZ_WIND_LGE	CULBERSON	35.0	W	32,093	38	32,202	45
LGD_LANGFORD	TOM GREEN	150.0	W	483,788	987	469,960	1,160
LNCRK2_G871	SHACKLEFORD	100.0	N	341,554	590	329,669	612
LNCRK2_G872	SHACKLEFORD	100.0	N	341,615	595	329,985	618
LNCRK_G83	SHACKLEFORD	200.0	N	661,021	1,105	636,640	1,150
LONEWOLF_G1	MITCHELL	126.0	W	137,500	277	100,330	286
LONEWOLF_G2	MITCHELL	124.5	W	134,488	264	97,214	274
MCOLD_FCW1	STERLING	124.2	W	437,754	752	424,968	784
MCOLD_SBW1	STERLING	90.0	W	313,738	561	303,238	583
MWEC_G1	DICKENS	150.0	W	598,154	1,043	597,332	1,151
NWF_NWF1	ECTOR	153.0	W	446,392	1,019	406,510	1,208
OWF_OW	HOWARD	58.8	W	158,530	238	170,988	297
PAP1_PA1	SAN PATRICIO	180.0	S	559,755	998	641,600	1,583
PAP2_PA2	SAN PATRICIO	198.0	S	602,386	982	704,333	1,683
PC_NORTH_PANTHER1	HOWARD	142.5	W	401,556	856	473,198	1,023
PC_SOUTH_PANTHER2	HOWARD	115.5	W	317,188	673	379,185	807
PC_SOUTH_PANTHER3	CONCHO	199.5	W	527,569	969	512,319	1,213
PENA_UNIT1	KENEDY	100.8	S	477,244	762	542,730	1,258
PENA_UNIT2	KENEDY	100.8	S	410,801	676	468,080	1,123
PENA_UNIT3	KENEDY	202.0	S	293,431	450	333,341	747
PYR_PYRON1	SCURRY	249.0	W	755,901	1,452	609,111	1,511
RDCANYON_RDCNY1	BORDEN	84.0	W	349,999	692	311,636	718
SGMTN_SIGNALMT	HOWARD	41.0	W	65,508	143	56,850	168
STWF_T1	TAYLOR	101.2	W	364,433	571	355,213	630
SWEC_G1	MARTIN	123.6	W	386,942	678	413,895	829
SW_MESA_SW_MESA	UPTON	74.6	W	161,256	342	172,309	410
SWEETWIND_WND1	NOLAN	37.5	W	130,913	234	126,958	244
SWEETWIND_WND2	NOLAN	100.3	W	343,007	599	332,910	626
SWEETWIND_WND24	NOLAN	16.0	W	54,851	82	52,935	85
SWEETWIND_WND3	NOLAN	135.0	W	438,666	704	352,030	695
SWEETWIND_WND4A	NOLAN	135.0	W	373,646	548	361,007	574
SWEETWIND_WND4B	NOLAN	105.8	W	336,030	516	325,220	540
SWEETWIND_WND5	NOLAN	80.5	W	250,970	377	242,948	393
TGW_T1	KENEDY	141.6	S	382,359	640	436,399	1,027
TGW_T2	KENEDY	141.6	S	427,972	703	490,206	1,177
TKWSW1_ROSCOE	SCURRY	220.0	W	627,100	926	625,919	1,034
TKWSW_CHAMPION	SCURRY	126.5	W	415,658	681	411,945	752
TRENT_TRENT	NOLAN	150.0	W	440,084	832	432,098	916
TTWEC_G1	NOLAN	170.0	W	477,566	889	462,358	930
WEC_WECG1	FLOYD	60.0	W	229,290	442	164,209	484
WHITAIL_WR1	COOKE	112.5	N	407,158	833	463,865	863
WOODWRD1_WOODWRD1	PECOS	80.0	W	206,832	370	207,515	513
WOODWRD2_WOODWRD2	PECOS	80.0	W	204,360	363	204,204	492
Total		9479		28,535,794	50,088	27,970,096	57,928

Table 3-2: Summary of 2008 and 2011 Monthly Average Wind Speed for Six NOAA Weather Stations

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average	OSP Average	
Wind Speed ABI (mph)	2008	12.1	12.3	13.4	13.9	12.8	13.7	10.6	7.4	8.0	10.5	10.2	12.2	11.4	8.7
	2011	9.0	11.3	12.3	13.9	13.9	14.6	10.1	9.2	7.4	10.6	11.7	9.5	11.1	9.0
Wind Speed FST (mph)	2008	10.3	11.0	12.1	11.9	12.7	13.5	11.3	8.1	8.2	10.5	9.2	9.7	10.7	8.6
	2011	9.6	10.9	10.7	12.3	11.9	13.8	11.5	10.3	8.9	10.6	10.8	8.6	9.7	10.2
Wind Speed GDP (mph)	2008	20.2	25.1	16.8	22.6	20.1	18.0	9.8	14.0	10.6	15.0	17.8	24.3	17.8	13.9
	2011	20.8	20.7	20.4	23.1	23.1	15.4	14.6	14.3	12.8	15.8	21.8	21.6	18.7	15.1
Wind Speed LBB (mph)	2008	12.8	12.7	15.0	14.4	13.0	14.2	10.5	8.7	7.7	10.5	10.6	12.1	11.8	8.9
	2011	10.1	12.5	12.2	15.0	14.4	15.7	10.6	9.8	9.0	11.2	11.9	10.8	11.9	9.7
Wind Speed MAF (mph)	2008	9.3	10.8	12.4	12.0	12.8	13.9	11.2	8.1	6.7	9.1	8.3	10.0	10.4	8.7
	2011	8.6	10.8	11.4	13.8	13.1	14.1	10.6	9.6	8.9	10.4	10.8	10.4	11.0	9.9
Wind Speed SJT (mph)	2008	9.0	10.6	11.5	11.0	10.3	11.9	8.6	6.3	5.3	7.8	8.2	10.5	9.2	7.0
	2011	7.9	10.4	10.4	12.5	11.6	12.3	9.0	7.9	7.5	8.7	9.6	8.5	9.7	8.2

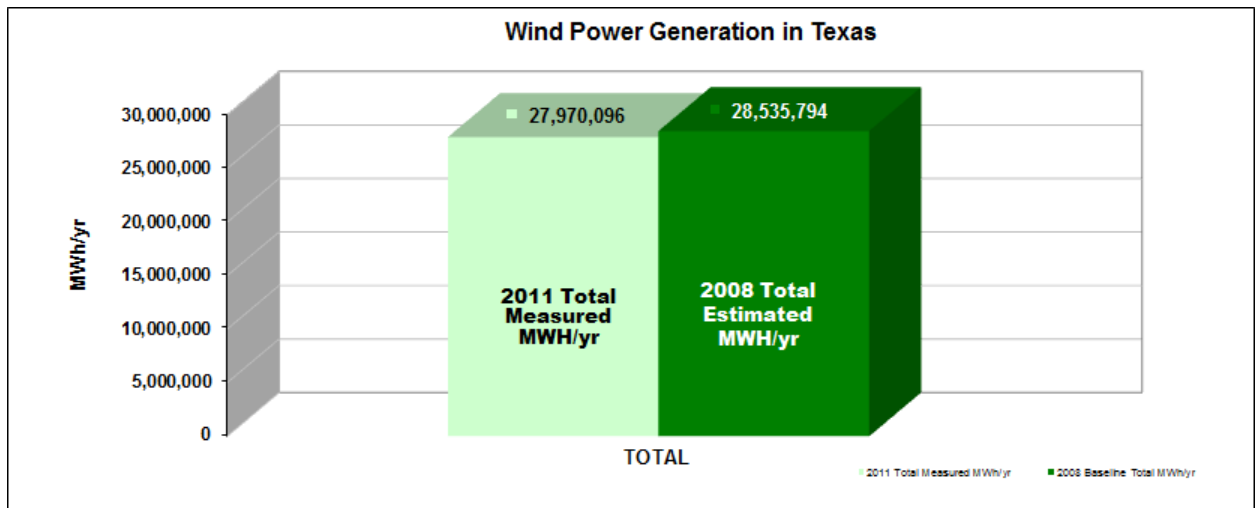


Figure 3-3: Comparison of Total 2011 Measured and 2008 Estimated Power Production

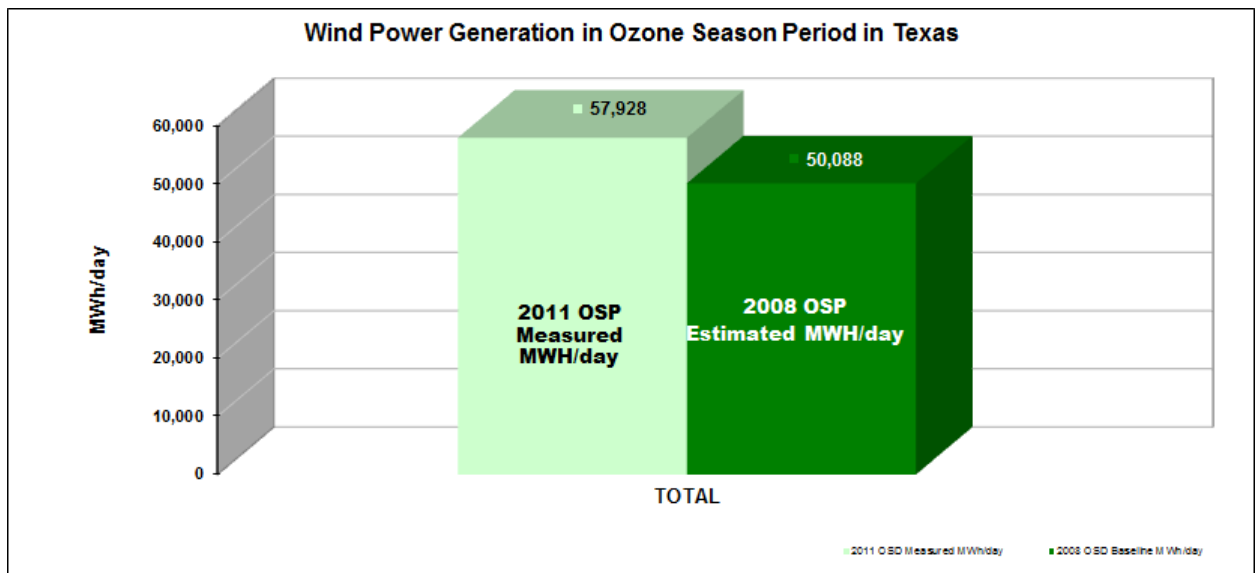


Figure 3-4: Comparison of Total 2011 OSP Measured and 2008 OSP Estimated Power Production

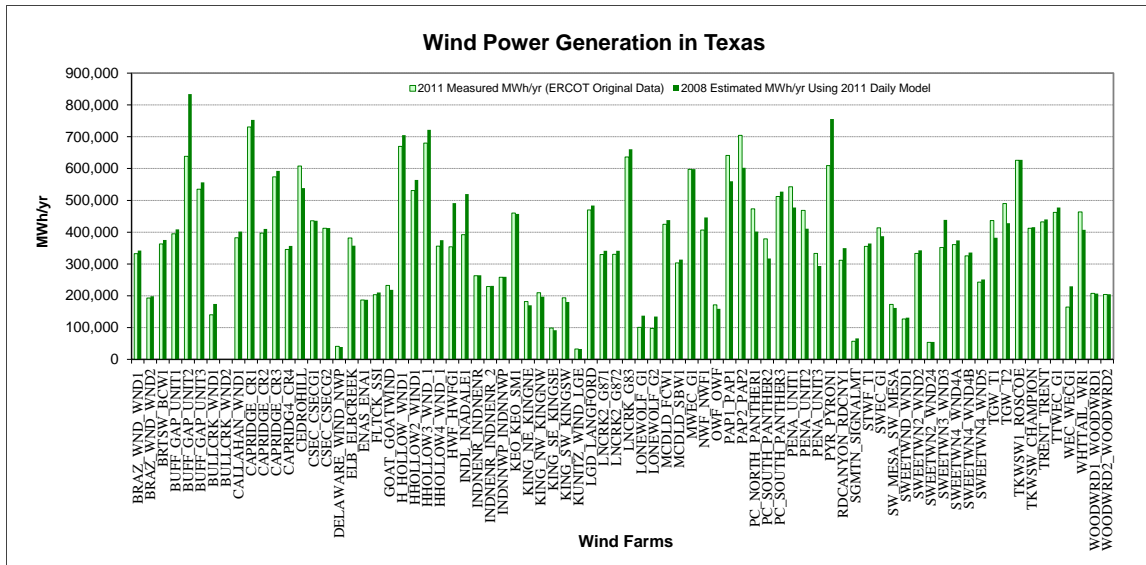


Figure 3-5: Comparison of 2011 Measured and 2008 Estimated Wind Power Production for Each Wind Farm

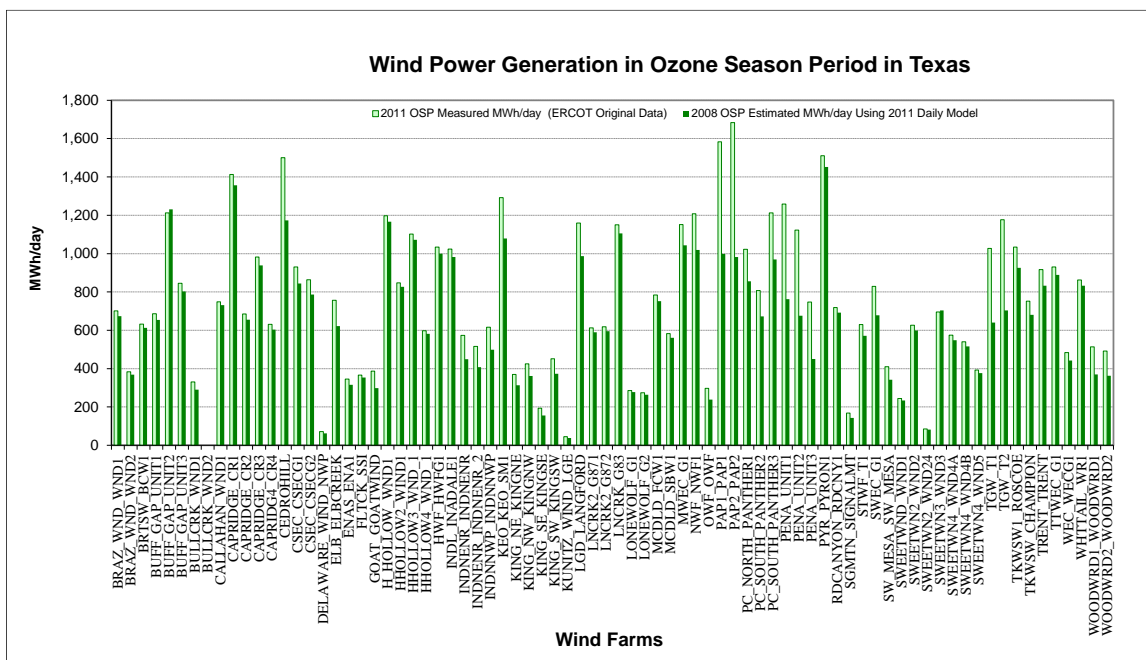


Figure 3-6: Comparison of 2011 OSP Measured and 2008 OSP Estimated Wind Power Production for Each Wind Farm

3.3 Comparison of Measured Wind Power in Previous Reports and 2013 Report

Different from the 2010 and the 2011 annual reports, the 2012 and the 2013 reports shifted the analyzed base year to 2008, instead of 1999. The daily model is used for predicting the annual and OSP wind power productions. Due to the different base year analysis, this section only compares the ERCOT measured annual and OSP wind power productions. Compared to what was reported in the 2012 annual report, an increase of 16.72% on measured annual wind production was observed, from 23,962,433 MWh/yr in 2010 to 27,970,096 MWh/yr in 2011. The average daily wind power production during the Ozone Season Period showed an increase of 8.18%, from 53,189 MWh/day to 57,928 MWh/day. Two wind farms are added to the analysis, including Cedro Hill Wind and Papalote Creek Phase II which contributed 150 MW and 198 MW, respectively.

Table 3-3 shows the average monthly wind speed for the main six weather stations used in the analysis. In general, most of the wind farms operated at a similar output level from 2008-2011. The total annual wind power production in 2008 for most wind farms was a little higher than in 2011.

Figure 3-7 shows the measured annual wind power comparison of 2008, 2009, 2010 and 2011 for all the wind farms. Figure 3-8 shows the wind power comparison of 2008, 2009, 2010 and 2011 during the ozone season. The annual wind power difference percentages are compared for 2008, 2009, 2010 and 2011, shown in Figure 3-9. It has been observed that Bull Creek Wind Plant unit 2 shows a large difference in percentage between 2011 and 2010. This is due to the missing wind farm data in 2011. No analysis was performed for this wind farm in 2011. In addition, Penascal Wind Farm unit 2 showed a great increase of annual wind power generation in 2010, compared to that in 2009.

Figure 3-10 shows the difference comparison of 2008, 2009, 2010 and 2011 measured data during the ozone season. Again, Bull Creek Wind Plant unit 2 showed a 100% percentage difference due to the missing data in 2011. An increase of wind power generation during ozone season is observed for Silver Star wind farm.

Table 3-3: Comparisons of NOAA Wind Speeds for 2008, 2009, 2010 and 2011

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average	OSP Average	
Wind Speed ABI (mph)	2008	12.1	12.3	13.4	13.9	12.8	13.7	10.6	7.4	8	10.5	10.2	11.4	8.7	
	2009	10.6	12.9	13.3	14.9	10.1	11.3	8.9	9.6	8.6	10.7	8.4	8.9	10.7	8.9
	2010	10.5	9.9	13.2	13.7	10.7	11.5	9.2	8.3	8.9	8.3	11.8	10	10.5	8.9
	2011	9.0	11.3	12.3	13.9	13.9	14.6	10.1	9.2	7.4	10.6	11.7	9.5	11.1	9.0
Wind Speed FST (mph)	2008	10.3	11	12.1	11.9	12.7	13.5	11.3	8.1	8.2	10.5	9.2	9.7	10.7	8.6
	2009	9.5	11.3	9.6	12.5	10.1	8.4	9.3	9.4	8.1	10.5	9	8.6	9.7	8.7
	2010	10.3	10.9	12.7	12.5	12.8	11.8	11.1	9	8.9	9.2	9.8	9.1	10.7	9.7
	2011	9.6	10.9	10.7	12.3	11.9	13.8	11.5	10.3	8.9	10.6	10.8	8.6	9.7	10.2
Wind Speed GDP (mph)	2008	20.2	25.1	16.8	22.6	20.1	18	9.8	14	10.6	15	17.8	24.3	17.8	13.9
	2009	20	21.3	21.8	22.7	16.8	15.7	10	12.5	16.3	20	17.6	18.8	17.8	11.9
	2010	18.5	20.6	20.1	22.6	20.7	16.3	15.7	13.8	13.8	18.7	19.9	22.2	18.6	14.1
	2011	20.8	20.7	20.4	23.1	23.1	15.4	14.6	14.3	12.8	15.8	21.8	21.6	18.7	15.1
Wind Speed LBB (mph)	2008	12.8	12.7	15	14.4	13	14.2	10.5	8.7	7.7	10.5	10.6	12.1	11.8	8.9
	2009	11.3	12.8	14.1	15.5	11.7	11.2	9.8	10.4	9.2	11.5	9.7	9.4	11.4	9.4
	2010	10.6	10.5	14.2	15.4	13.6	13.1	9.9	8.9	9.6	9.3	11.4	10.6	11.4	9.6
	2011	10.1	12.5	12.2	15.0	14.4	15.7	10.6	9.8	9.0	11.2	11.9	10.8	11.9	9.7
Wind Speed MAF (mph)	2008	9.3	10.8	12.4	12	12.8	13.9	11.2	8.1	6.7	9.1	8.3	10	10.4	8.7
	2009	9.5	11.3	11	13.4	10.6	10.2	8.2	8.3	8.1	10.1	7.5	8.4	9.7	8
	2010	9.1	9.9	13	13	12.2	12	10.4	9.3	9.1	8.8	10	9.3	10.5	9.7
	2011	8.6	10.8	11.4	13.8	13.1	14.1	10.6	9.6	8.9	10.4	10.8	10.4	11.0	9.9
Wind Speed SJT (mph)	2008	9	10.6	11.5	11	10.3	11.9	8.6	6.3	5.3	7.8	8.2	10.5	9.2	7
	2009	9.1	10.1	10.9	12	8.7	9	7.7	7.4	7.2	9.3	7	7.6	8.8	7.3
	2010	8.4	9.2	11.1	10.6	9.2	10.3	8.2	7.4	7.7	6.3	9.1	8.8	8.9	7.9
	2011	7.9	10.4	10.4	12.5	11.6	12.3	9.0	7.9	7.5	8.7	9.6	8.5	9.7	8.2

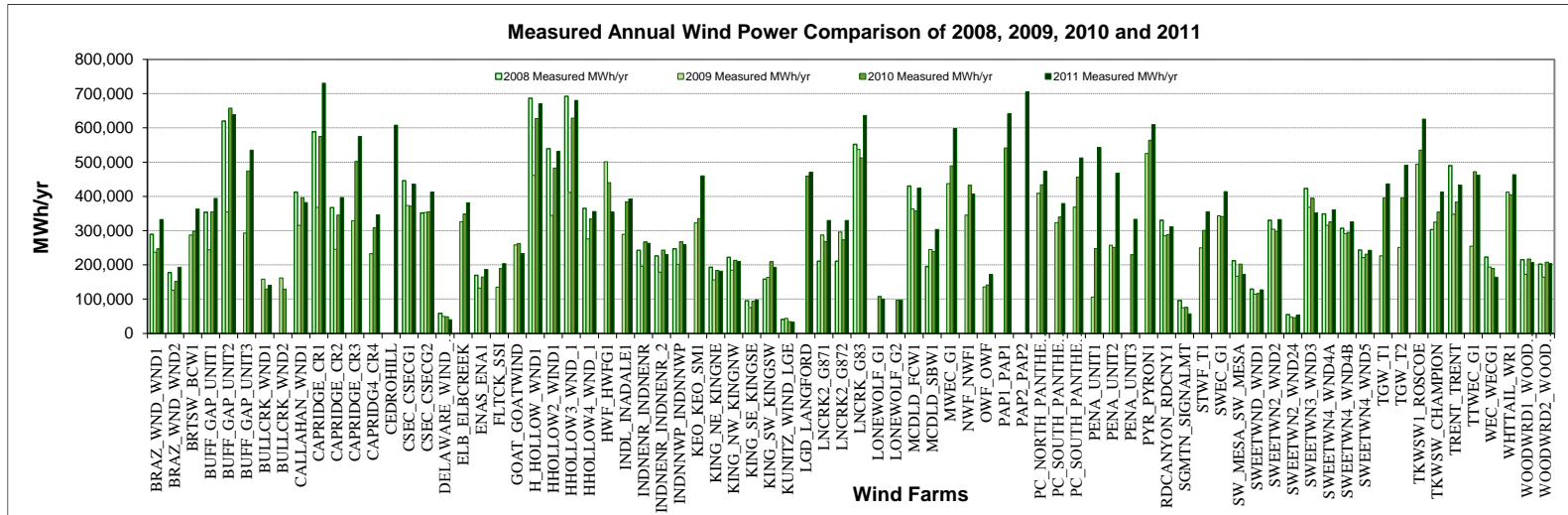


Figure 3-7: Measured Annual Wind Power Comparison of 2008, 2009, 2010 and 2011

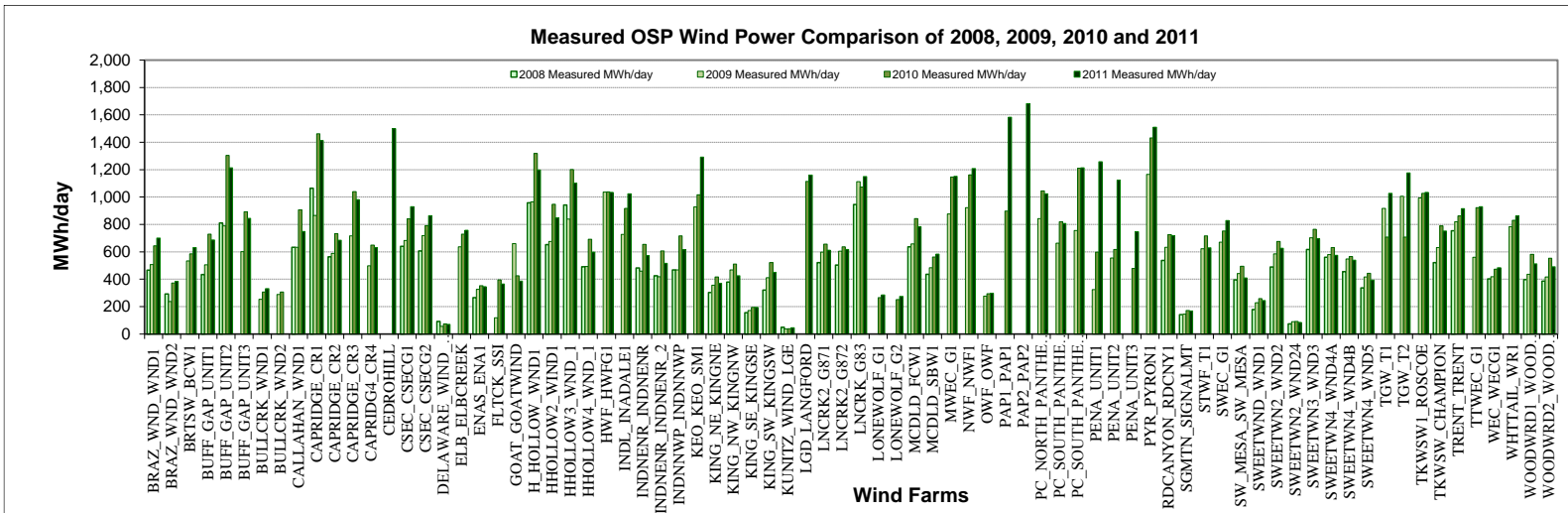


Figure 3-8: Measured OSP Wind Power Comparison of 2008, 2009, 2010 and 2011

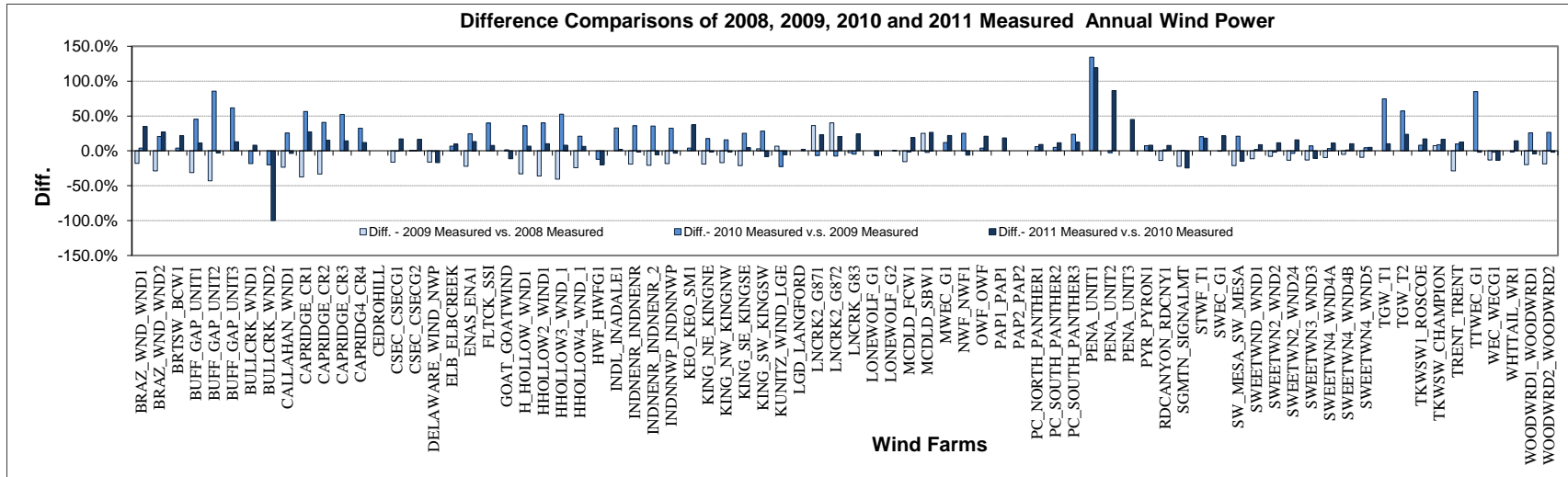


Figure 3-9: Difference Comparison of 2008, 2009, 2010 and 2011 Measured Annual Wind Power

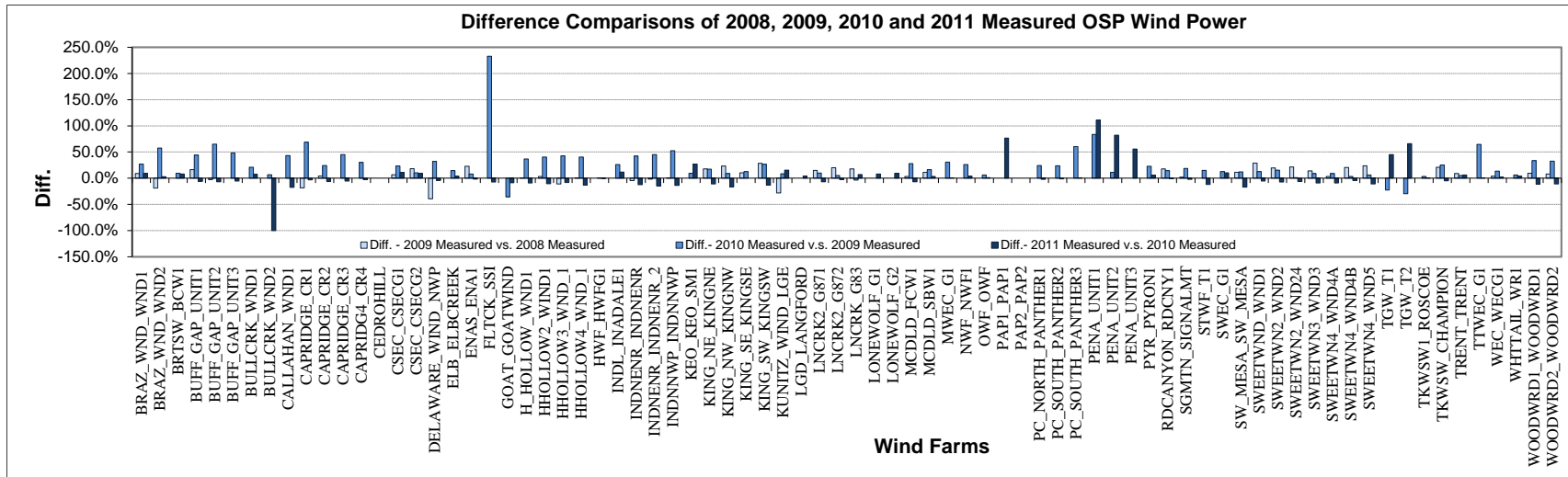


Figure 3-10: Difference Comparison of 2008, 2009, 2010 and 2011 Measured OSP Wind Power

3.4 Uncertainty Analysis on the 2011 Daily Regression Models

One of the advantages of using regression models is that it allows for an uncertainty analysis to be calculated, which can be used to assess the accuracy of the model. This section of the report presents an updated uncertainty analysis for the daily regressions that were applied to the 2011 data.

Assuming that the daily energy production of wind farm data can be related linearly with the daily average wind speed (see Figure 3-11) and expressed as

$$\hat{E}_i = c_o + c_1 V_i \quad (1)$$

Where V is the daily average wind speed, \hat{E} is the daily total energy production, and c_o and c_1 are the resultant coefficients of a linear regression. The subscript i presents any day over the modeling period.

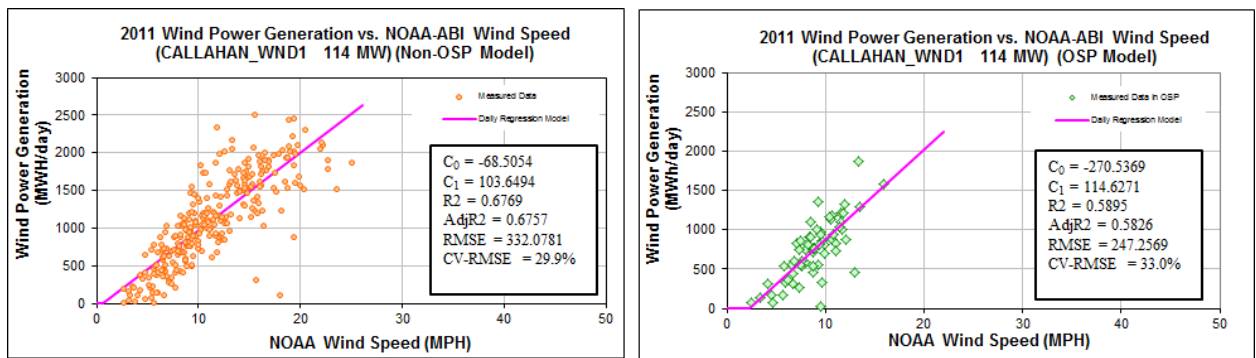


Figure 3-11: Linear Model Presentation of the Daily Wind Power Generation on the Year 2011 for Callahan Wind Farm

The primary purpose of modeling in this analysis is to back-cast the wind power production, or predict the power production in another year that would have occurred if the turbines had been installed and operating. This allows for the evaluation of the NOx reductions during the base-year weather conditions. Unfortunately, any prediction intrinsically contains an uncertainty, which is related to the prediction variance. Thus, the prediction uncertainty, $\sigma^2(\hat{E}_{pred,j})$, assuming no autocorrelation effects in the data used to generate the linear model, can be presented for a particular observation, j , during any time a particular condition is presented as follows:

$$\sigma^2(\hat{E}_{pred,j}) = MSE(\hat{E}_i) \cdot \left[1 + \frac{1}{n} + \frac{(V_j - \bar{V}_n)^2}{\sum_{i=1}^n (V_i - \bar{V}_n)^2} \right] \quad (2)$$

The mean square error, $MSE(\hat{E}_i)$, during the period of the development of the linear model can be computed by:

$$MSE(\hat{E}_i) = \left[\frac{1}{n - (k + 1)} \right] \sum_{i=1}^n (E_i - \hat{E}_i)^2 \quad (3)$$

Where n is the number of days in the period used for the developed model, k is the number of regressor variables in the linear model, and \bar{V}_n is the mean value of the velocity on the modeling period.

The last term in the brackets of the equation 2 accounts for the increase in the variance of the energy prediction for any particular observation, j , which is different from the centroid of the modeling data. On the other hand, the second term accounts for the variance in predicting the mean energy predicted for the observation, j .

The total uncertainty for a period of interest, of m days, is then the sum of all the wind energy predicted $\hat{E}_{pred,j}$ in each individual observation.

Assuming that

$$\sum_{j=1}^m \sigma^2(\hat{E}_{pred,j}) = \sigma^2\left(\sum_{j=1}^m (\hat{E}_{pred,j})\right) = \sigma^2(\hat{E}_{pred,total}) \quad (4)$$

And the total prediction variance or uncertainty is obtained through

$$\sigma^2(\hat{E}_{pred,total}) = MSE(\hat{E}_i) \cdot m \cdot \left[1 + \frac{1}{n} + \frac{\sum_{j=1}^m (V_j - \bar{V}_n)^2}{m \sum_{i=1}^n (V_i - \bar{V}_n)^2} \right] \quad (5)$$

Thus, it is observable that the last equation is affected by the number of days that the wind energy will be predicted, the number of days used for the modeling development and the uncertainty due to the distances between the data predicted and the centroid of the modeling data. Therefore, increasing n and m yields an effective relative decrease in the uncertainty—which is expected.

Table 3-4 presents all the statistical parameters for the daily linear models of all the wind farms in the ERCOT region.

Table 3-5 and Figure 3-12 show the uncertainty of applying the linear models to predict the energy generation that they would have had in the year 2008, ranging from 1.76% to 6.73%. It has been observed that the uncertainty for Ozone Season Period is higher than the uncertainty for Non-Ozone Season Period. The maximum uncertainty comes from a wind farm named KUNITZ_WIND_LGE. One reason for this may be the meter problems suspected when measuring the ERCOT data. Also, wind speed can change significantly due to the elevation, wind mills distances, etc. In the current modeling, NOAA wind speed measured from the local airport is selected. Therefore, the downloaded NOAA wind speed may not well represent the real wind speed where the wind farms locate. The model uncertainty can come from the wind speed. Other than that, most of the results indicate that the daily models are reasonably reliable for predicting the performance of the wind farm in the base year within the same range of wind conditions.

In addition, the same table and figure include the uncertainty related to the predicted wind generated for the same wind farms in the 2008 Ozone Season Period using the OSP model, which considers the period of July 15 through September 15 – about 63 days. The uncertainty of using OSP models for predicting wind power in the 2008 OSP varies from 4.72 % to 10.95% for all the wind farms. The reason for this large uncertainty value (10.95%), which comes from wind the farms named DELAWARE_WIND_NWP , INDNNWP_INDNNWP , KUNITZ_WIND_LGE , TKWSW_CHAMPION , TKWSW1_ROSCOE and WOODWRD1_WOODWRD1, is the same as that discussed above.

Table 3-4: Statistical Parameters of the Determined 2011 Daily Power Production Linear Models

Wind Farm	Statistical Parameters of 2011 Non-OSP Daily Models						Statistical Parameters of 2011 OSP Daily Models					
	c_0	c_1	AdjR ²	RMSE	CV-RMSE	# Days	c_0	c_1	AdjR ²	RMSE	CV-RMSE	# Days
BRAZ_WND_WND1	-84.71	89.55	0.59	347.31	36.3%	295	-250.78	105.81	0.62	215.00	30.7%	63
BRAZ_WND_WND2	-58.18	53.11	0.63	190.97	34.2%	295	-174.17	62.01	0.68	109.28	28.5%	63
BRTSW_BCW1	-105.97	101.56	0.67	334.48	31.3%	297	-118.03	83.52	0.63	177.49	28.5%	64
BUFFALO_GAP_1	-372.09	132.26	0.82	290.09	24.9%	295	-485.13	130.19	0.79	172.40	25.1%	63
BUFFALO_GAP_2	-950.04	287.65	0.85	571.00	28.8%	105	-870.28	240.28	0.74	394.85	32.6%	46
BUFFALO_GAP_3	-596.12	189.20	0.82	420.79	26.3%	296	-706.08	172.42	0.75	258.67	30.6%	63
BULLCRK_WND1	-304.01	65.62	0.68	112.04	33.8%	298	-304.01	65.62	0.68	112.04	33.8%	63
CALLAHAN_WND1	-68.51	103.65	0.68	332.08	29.9%	280	-270.54	114.63	0.58	247.26	33.0%	61
CAPRIDGE_CR1	-203.67	200.95	0.66	684.16	32.2%	296	-551.25	218.28	0.66	408.66	28.9%	63
CAPRIDGE_CR2	-125.95	112.04	0.66	379.83	32.4%	296	-362.84	116.48	0.60	243.14	35.5%	63
CAPRIDGE_CR3	-165.86	160.77	0.67	533.50	31.4%	296	-498.45	164.51	0.66	304.49	31.0%	63
CAPRIDGE_CR4	-131.47	98.73	0.69	312.51	30.8%	296	-314.96	105.11	0.71	173.97	27.6%	63
CEDROHILL	10.14	128.68	0.61	327.09	21.8%	301	10.14	128.68	0.61	327.09	21.8%	63
CSEC_CSEC1	-133.76	111.97	0.54	411.19	32.9%	302	-344.17	131.62	0.53	311.16	33.5%	63
CSEC_CSEC2	-128.62	106.46	0.56	376.93	31.8%	302	-288.94	119.14	0.52	287.90	33.3%	63
DELAWARE_WIND_NWP	-59.37	8.48	0.71	24.73	34.8%	275	-59.37	8.48	0.71	24.73	34.8%	63
ELB_ELBCREEK	-102.15	107.32	0.52	408.90	37.0%	302	-364.34	113.67	0.64	215.06	28.4%	63
ENAS_ENA1	-166.43	57.74	0.56	205.88	37.7%	302	-110.66	47.14	0.52	112.31	32.5%	63
FLTCK_SSI	-61.71	56.89	0.71	170.46	28.5%	296	-29.64	43.92	0.53	106.18	29.0%	63
GOAT_GOATWIND	-225.43	91.19	0.58	288.75	41.9%	300	-262.17	79.51	0.64	131.13	33.9%	63
H_HOLLOW_WND1	-161.91	187.56	0.70	572.10	29.0%	280	-693.84	212.76	0.57	467.07	39.0%	61
HHOLLOW2_WND1	-454.32	179.05	0.75	475.00	30.0%	280	-556.27	158.21	0.56	363.42	42.9%	60
HHOLLOW3_WND_1	-454.32	179.05	0.75	475.00	30.0%	280	-556.27	158.21	0.56	363.42	42.9%	60
HHOLLOW4_WND_1	-95.29	101.13	0.68	317.89	30.1%	280	-335.09	104.97	0.46	286.52	47.9%	61
HWF_HWFG1	-109.93	127.09	0.63	253.04	24.5%	296	-109.93	127.09	0.63	253.04	24.5%	63
INDL_INADALE1	-443.03	163.09	0.66	305.51	29.8%	291	-443.03	163.09	0.66	305.51	29.8%	63
INDNENR_INDENR	-221.80	89.07	0.44	326.13	43.4%	302	-399.90	95.80	0.50	189.85	33.1%	63
INDNENR_INDENR_2	-269.47	84.30	0.47	290.84	44.7%	302	-332.73	83.55	0.45	182.75	35.4%	63
INDNENR_INDENR_NWP	-275.59	91.65	0.43	340.25	46.8%	301	-312.09	91.41	0.43	209.11	33.9%	63
KEO_KEO_SM1	-95.44	128.41	0.36	606.69	47.9%	302	-630.43	197.01	0.32	284.20	17.2%	25
KING_NE_KINGNE	-133.85	58.46	0.59	195.57	37.3%	302	-132.25	51.31	0.54	116.63	31.5%	62
KING_NW_KINGNW	-95.62	62.32	0.46	269.98	44.6%	302	-106.05	53.81	0.51	131.00	30.8%	63
KING_SE_KINGSE	-94.01	33.71	0.62	104.79	36.6%	301	-128.83	32.69	0.68	55.93	28.9%	63
KING_SW_KINGSW	-93.71	56.80	0.50	228.44	41.8%	301	-190.50	65.00	0.73	99.07	22.0%	63
KUNTZ_WIND_LGE	-44.95	7.02	0.39	63.10	64.2%	274	-100.93	9.46	0.78	23.15	51.9%	63
LGD_LANGFORD	-66.83	150.23	0.61	267.90	23.1%	287	-66.83	150.23	0.61	267.90	23.1%	63
LNCRK_G83	-609.18	213.74	0.85	418.69	22.4%	296	-422.98	174.88	0.74	269.57	23.4%	63
LNCRK2_G871	-238.37	103.74	0.80	240.06	24.9%	296	-157.60	85.52	0.69	147.93	24.2%	63
LNCRK2_G872	-211.80	101.44	0.80	239.52	24.8%	296	-142.49	84.47	0.65	159.03	25.8%	63
LONEWOLF_G1	-45.44	36.86	0.63	72.47	25.3%	293	-45.44	36.86	0.63	72.47	25.3%	63
LONEWOLF_G2	-73.04	38.56	0.66	71.87	26.2%	295	-73.04	38.56	0.66	71.87	26.2%	63
MCDLD_FCW1	-72.81	113.60	0.66	378.66	30.4%	296	-328.47	123.69	0.59	265.00	33.8%	63
MCDLD_SBW1	-25.65	78.83	0.66	259.87	29.4%	292	-188.77	85.79	0.61	177.79	30.5%	63
MWEC_G1	-199.17	156.97	0.57	541.97	31.2%	302	-458.36	166.22	0.59	349.45	30.4%	63
NWF_NWF1	3.94	117.03	0.51	313.10	26.0%	302	3.94	117.03	0.51	313.10	26.0%	48
OWF_OW	-152.78	58.28	0.67	164.25	32.6%	300	-195.78	50.01	0.67	87.41	29.4%	63
PC_NORTH_PANTHER1	-364.03	140.61	0.64	266.82	26.1%	302	-364.03	140.61	0.64	266.82	26.1%	63
PC_SOUTH_PANTHER2	-306.40	112.88	0.57	244.85	30.3%	302	-306.40	112.88	0.57	244.85	30.3%	63
PC_SOUTH_PANTHER3	-517.88	211.97	0.67	326.68	26.9%	300	-517.88	211.97	0.67	326.68	26.9%	63
PAP1_PAP1	-922.39	216.25	0.82	443.23	24.7%	299	-1083.55	230.33	0.93	194.68	12.3%	63
PAP2_PAP2	-1046.24	238.84	0.79	537.89	27.1%	289	-1546.06	278.92	0.93	247.66	14.7%	63
PENA_UNIT1	-650.29	174.47	0.65	563.15	36.7%	302	-1010.39	195.96	0.84	272.35	21.6%	63
PENA_UNIT2	-693.28	161.07	0.72	441.02	33.5%	300	-922.32	176.70	0.82	264.22	23.5%	63
PENA_UNIT3	-520.77	117.77	0.79	268.37	28.3%	300	-609.96	117.19	0.82	174.09	23.3%	63
PYR_PYRON1	-543.27	228.35	0.62	456.90	30.2%	293	-543.27	228.35	0.62	456.90	30.2%	63
RDCANYON_RDCNY1	-166.48	98.29	0.66	183.93	25.6%	293	-166.48	98.29	0.66	183.93	25.6%	63
STWF_T1	-250.12	111.34	0.73	318.30	30.6%	292	-318.39	101.78	0.43	276.32	43.9%	58
SWEC_G1	-148.52	119.58	0.64	361.05	30.1%	302	-431.69	127.85	0.69	213.75	25.8%	63
SWEETW2_WND2	-82.02	90.94	0.68	293.35	30.1%	296	-317.15	104.80	0.77	149.25	23.8%	63
SWEETW2_WND24	-50.74	17.93	0.78	44.48	28.2%	293	-46.36	14.64	0.74	22.57	26.4%	63
SWEETW3_WND3	-173.52	123.08	0.74	344.75	31.8%	105	-435.90	130.45	0.69	240.85	34.6%	46
SWEETW4_WND4A	-263.14	115.37	0.76	303.09	28.1%	295	-348.08	102.49	0.66	190.76	33.2%	63
SWEETW4_WND4B	-129.24	94.38	0.75	255.38	26.4%	296	-270.41	90.04	0.66	167.41	31.0%	63
SWEETW4_WND4C	-42.76	35.57	0.67	117.16	31.7%	296	-110.65	39.40	0.74	60.10	24.7%	63
SWEETW4_WND4D	-99.04	70.85	0.75	194.31	26.8%	295	-167.75	62.35	0.65	118.30	30.1%	63
SGMTN_SIGNALMIT	-41.38	21.21	0.50	52.95	31.6%	301	-41.38	21.21	0.50	52.95	31.6%	63
SW_MESA_SW_MESA	-42.16	46.83	0.42	216.56	44.6%	279	-151.87	56.97	0.59	119.22	29.1%	63
TGW_T1	-668.19	151.64	0.76	377.55	30.7%	302	-734.90	152.16	0.77	261.68	25.5%	63
TGW_T2	-691.28	165.22	0.72	456.00	33.1%	302	-991.83	187.30	0.78	314.37	26.7%	63
TKWSW_CHAMPION	-285.85	121.64	0.52	467.15	38.6%	295	-305.67	109.24	0.41	324.68	43.2%	63
TKWSW1_ROSCOE	-796.33	214.50	0.56	760.41	40.9%	297	-575.03	166.19	0.42	489.47	47.3%	63
TRENT_TRENT	-111.62	116.10	0.56	483.75	39.2%	296	-416.61	142.88	0.67	243.00	26.5%	57
TTWEC_G1	-461.07	154.58	0.70	262.01	28.2%	292	-461.07	154.58	0.70	262.01	28.2%	63
WEC_WECG1	-143.37	64.85	0.47	172.31	35.6%	301	-143.37	64.85	0.47	172.31	35.6%	63
WHTTAIL_WR1	-150.27	111.40	0.60	270.36	31.3%	302	-150.27	111.40	0.60	270.36	31.3%	63
WOODWRD1_WOODWRD1	-353.82	85.39	0.52	261.98	45.2%	301	-600.76	109.34	0.62	171.54	33.4%	62
WOODWRD2_WOODWRD2	-373.56	86.54	0.58	234.95	41.0%	300	-531.39	100.80	0.68	137.63	28.0%	63

Table 3-5: 2008 Uncertainty of the Power Generation Prediction using the Linear Daily Models

Wind Farm	2008 Non Ozone Season Period				2008 Ozone Season Period (OSP)			
	Predicted days	Total Variance	Total Estimated	Relative Uncertainty	Predicted Days	Total Variance	Total Estimated	Relative uncertainty
BRAZ_WND_WND1	303	11,867.23	341,880	3.47%	63	3,380.63	43,949.5	7.69%
BRAZ_WND_WND2	303	6,525.26	198,356	3.29%	63	1,718.35	25,567.4	6.72%
BRTSW_BCW1	303	11,428.65	375,164	3.05%	63	2,790.96	49,224.9	5.67%
BUFFALO_GAP_1	303	9,912.05	408,613	2.43%	63	2,710.81	49,352.2	5.49%
BUFFALO_GAP_2	303	19,562.48	834,051	2.35%	62	6,218.28	98,557.3	6.31%
BUFFALO_GAP_3	303	14,377.73	556,899	2.58%	62	4,035.88	66,610.1	6.06%
BULLCRK_WND1	303	3,829.95	173,952	2.20%	61	1,735.14	17,951.8	9.67%
CALLAHAN_WND1	303	11,348.15	401,599	2.83%	63	3,891.68	52,732.8	7.38%
CAPRIDGE_CR1	303	23,376.71	753,252	3.10%	63	6,426.07	97,769.4	6.57%
CAPRIDGE_CR2	303	12,978.17	409,863	3.17%	63	3,823.33	53,730.5	7.12%
CAPRIDGE_CR3	303	18,229.10	592,580	3.08%	63	4,788.14	78,037.5	6.14%
CAPRIDGE_CR4	303	10,677.94	356,633	2.99%	63	2,735.60	46,059.9	5.94%
CEPROHILL	303	11,179.80	538,891	2.07%	63	5,156.91	73,898.1	6.98%
CSEC_CSEC1	303	14,056.45	435,464	3.23%	62	4,858.12	54,398.0	8.93%
CSEC_CSEC2	303	12,885.11	412,609	3.12%	62	4,494.89	51,632.7	8.71%
DELAWARE_WIND_NWP	303	846.39	38,312	2.21%	61	382.29	3,789.1	10.09%
ELB_ELBREEK	303	13,976.76	357,568	3.91%	63	3,376.30	52,223.0	6.47%
ENAS_ENA1	303	7,037.84	187,471	3.75%	62	1,753.44	22,011.2	7.97%
FLTCK_SSI	303	5,824.22	210,167	2.77%	63	1,669.64	27,426.8	6.09%
GOAT_GOATWIND	303	9,869.77	218,697	4.51%	63	2,065.10	26,083.8	7.92%
H_HOLLOW_WND1	303	19,550.55	705,339	2.77%	63	7,351.36	93,032.4	7.90%
HHOLLOW2_WND1	303	16,232.22	564,512	2.88%	63	5,720.32	69,926.7	8.18%
HHOLLOW3_WND_1	303	16,232.22	564,512	2.88%	63	5,720.32	69,926.7	8.18%
HHOLLOW4_WND_1	303	10,863.41	374,975	2.90%	63	4,509.64	49,658.9	9.08%
HWF_HWFG1	303	8,645.89	491,133	1.76%	63	3,978.98	63,025.4	6.31%
INDL_INADALE1	303	10,439.17	519,729	2.01%	63	4,804.25	61,853.7	7.77%
INDNENR_INDENR	303	11,151.16	264,243	4.22%	61	2,978.55	34,628.1	8.60%
INDNENR_INDENR_2	303	9,944.67	230,950	4.31%	61	2,867.15	29,143.9	9.84%
INDNWP_INDNNWP	303	11,634.20	259,723	4.48%	61	3,280.45	32,743.0	10.02%
KEO_KEO_SM1	303	20,737.71	457,074	4.54%	63	4,462.52	64,178.3	6.95%
KING_NE_KINGNE	303	6,684.73	169,509	3.94%	63	1,831.19	23,521.4	7.79%
KING_NW_KINGNW	303	9,228.16	196,624	4.69%	63	2,056.63	28,038.9	7.33%
KING_SE_KINGSE	303	3,581.76	91,057	3.93%	63	878.04	12,501.9	7.02%
KING_SW_KINGSW	303	7,808.48	180,048	4.34%	63	1,555.22	25,143.6	6.19%
KUNTZ_WIND_LGE	303	2,159.39	32,093	6.73%	61	361.79	3,397.4	10.65%
LGD_LANGFORD	303	9,158.44	483,788	1.89%	63	4,254.34	62,161.9	6.84%
LNCRK_G83	303	14,306.07	661,021	2.16%	63	4,284.24	79,262.9	5.41%
LNCRK2_G871	303	8,202.58	341,554	2.40%	63	2,326.12	42,081.1	5.53%
LNCRK2_G872	303	8,184.19	341,615	2.40%	63	2,500.69	42,487.1	5.89%
LONEWOLF_G1	303	2,476.38	137,500	1.80%	63	1,139.77	17,427.6	6.54%
LONEWOLF_G2	303	2,455.72	134,488	1.83%	63	1,130.26	16,622.0	6.80%
MCDLD_FCW1	303	12,938.14	437,754	2.96%	63	4,167.15	57,937.1	7.19%
MCDLD_SBW1	303	8,879.99	313,738	2.83%	63	2,796.48	41,769.7	6.69%
MWEC_G1	303	18,527.13	598,154	3.10%	62	5,525.38	75,536.9	7.31%
NWF_NWF1	303	10,702.04	446,392	2.40%	63	4,915.57	64,218.8	7.65%
OWF_OWF	303	5,614.31	158,530	3.54%	63	1,372.25	22,232.4	6.17%
PC_NORTH_PANTHER1	303	9,120.17	401,556	2.27%	63	4,188.84	53,925.2	7.77%
PC_SOUTH_PANTHER2	303	8,369.36	317,188	2.64%	63	3,843.99	42,395.2	9.07%
PC_SOUTH_PANTHER3	303	11,166.28	527,569	2.12%	63	5,144.56	61,020.4	8.43%
PAP1_PAP1	303	15,149.80	559,755	2.71%	63	3,069.06	65,002.5	4.72%
PAP2_PAP2	303	18,386.49	602,386	3.05%	63	3,903.11	70,057.3	5.57%
PENA_UNIT1	303	19,248.58	477,244	4.03%	63	4,293.93	58,357.6	7.36%
PENA_UNIT2	303	15,074.61	410,801	3.67%	63	4,166.17	48,018.4	8.68%
PENA_UNIT3	303	9,173.24	293,431	3.13%	63	2,745.09	34,235.7	8.02%
PYR_PYRON1	303	15,612.13	755,901	2.07%	63	7,185.64	91,458.8	7.86%
RDCANYON_RDCNY1	303	6,284.48	349,999	1.80%	63	2,892.22	43,607.9	6.63%
STWF_T1	303	10,875.97	364,433	2.98%	63	4,360.40	45,525.8	9.58%
SWEC_G1	303	12,341.17	386,942	3.19%	63	3,355.67	56,003.8	5.99%
SWEETW2_WND2	303	10,023.30	343,007	2.92%	63	2,346.95	44,883.9	5.23%
SWEETW2_WND24	303	1,519.67	54,851	2.77%	63	354.87	6,670.0	5.32%
SWEETW3_WND3	303	11,779.32	438,666	2.69%	63	3,787.11	56,812.5	6.67%
SWEETW4_WND4A	303	10,356.16	373,646	2.77%	63	2,999.47	46,920.9	6.39%
SWEETW4_WND4B	303	8,725.83	336,030	2.60%	63	2,632.51	43,806.0	6.01%
SWEETWIND_WND1	303	4,003.32	130,913	3.06%	63	945.08	16,886.2	5.60%
SWEETWIND4_WND5	303	6,639.20	250,970	2.65%	63	1,860.11	32,756.3	5.68%
SGMTN_SIGNALMT	303	1,809.86	65,508	2.76%	63	831.19	8,987.1	9.25%
SW_MESA_SW_MESA	303	7,403.61	161,256	4.59%	63	1,871.55	22,943.3	8.16%
TGW_T1	303	12,904.70	382,359	3.38%	63	4,125.69	44,234.0	9.33%
TGW_T2	303	15,586.21	427,972	3.64%	63	4,956.42	50,507.1	9.81%
TKWSW_CHAMPION	303	15,970.90	415,658	3.84%	62	5,070.30	50,381.5	10.06%
TKWSW1_ROSCOE	303	25,994.82	627,100	4.15%	61	7,580.08	70,726.9	10.72%
TRENT_TRENT	303	16,529.00	440,084	3.76%	63	3,835.39	56,869.5	6.74%
TTWEC_G1	303	8,953.38	477,566	1.87%	63	4,122.23	56,035.9	7.36%
WEC_WECG1	303	5,890.39	229,290	2.57%	62	2,690.47	27,422.1	9.81%
WHTAIL_WR1	303	9,239.57	407,158	2.27%	63	4,257.54	52,502.3	8.11%
WOODWRD1_WOODWRD1	303	8,957.84	206,832	4.33%	61	2,692.76	24,585.8	10.95%
WOODWRD2_WOODWRD2	303	8,033.68	204,360	3.93%	61	2,158.92	24,006.8	8.99%

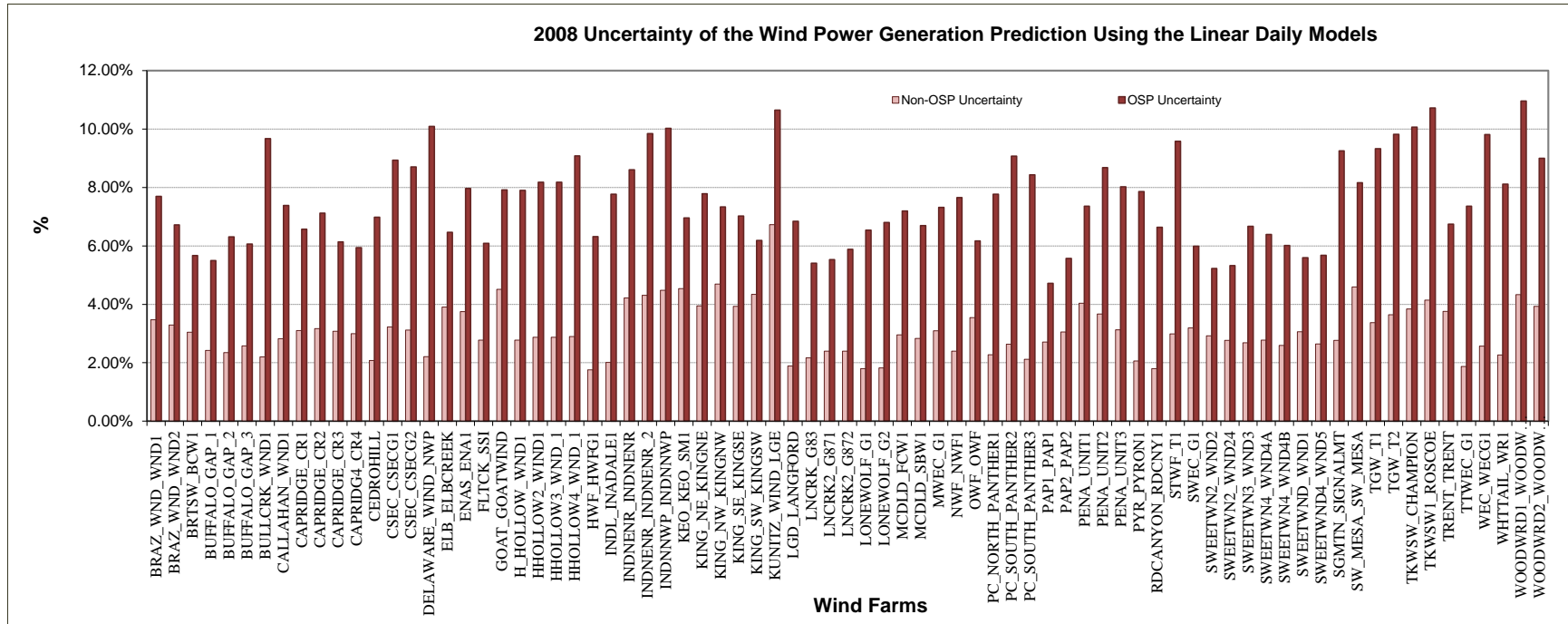


Figure 3-12: Uncertainty of the Wind Power generation Prediction Using the Linear Daily Models for Base Year 2008

4 DEGRADATION ANALYSIS FOR WIND FARMS

This report contains an updated analysis to determine what amount of degradation could be observed in the measured power from Texas wind farms. Currently, the TCEQ uses a very conservative 5% degradation per year for the power output from a wind farm when making future projections from existing wind farms. Accordingly, the TCEQ asked the ESL to evaluate any observed degradation from the measured data for Texas wind farms. To accomplish this, forty three wind farms (38 sites) built from 2001 to 2011 were evaluated with a total capacity of 4,664.1 MW in this report. This year, twenty two qualified wind farms were added for the analysis because at least four- year measured data were required for the analysis.

In this analysis, a sliding statistical index was established for each site that used the 10th, 25th, 50th, 75th, 90th, and 99th percentiles of the hourly power generation over a 12-month sliding period, as well as mean, minimum and maximum hourly power generation of the same 12-month period. These indices were then displayed using one data symbol for each 12-month slide, beginning from the first 12-month period until the last 12-month period for each of the wind farms.

Table 4-1 presents the summary of the degradation analysis for the forty three wind farms (38 sites). Of the thirty eight sites analyzed, nineteen sites showed an increase when one compares the 90th percentile of the whole period to the 90th percentile of the first 12-month period, ranging from 0.1 % to 68%. The remaining nineteen sites showed a decrease from -0.5% to -32.6%. The weighted average of this increase across all wind farms studied is 5% (positive), which indicates that no degradation was observed from the aggregate energy production from these wind farms over the studied operation period. Based on the observations, special attentions need to be paid to site Buffalo Gap 1 (-17.9%), Big Spring Wind Power (-11.7%), Capricorn Ridge Wind (-10.4%), Snyder Wind Project (-17.1%), Texas Wind Power Project (-32.6%) and Whirlwind (-14.7). Those wind farms have comparison percentage larger than 10%, which may be caused by wind farm operations issues, the meter problems or other issues that have not been aware of.

Table 4-2 and Figure 4-39 show the design capacity, the maximum and minimum of the observed maximum hourly wind power over the sliding 12-month period, and the observed maximum hourly wind power for the last 12-month period for the studied wind farms. It is interesting to note that the observed maximum hourly wind power generation is equal, or slightly lower, than the design/announced capacity for all the sites except for the Desert Sky wind farm.

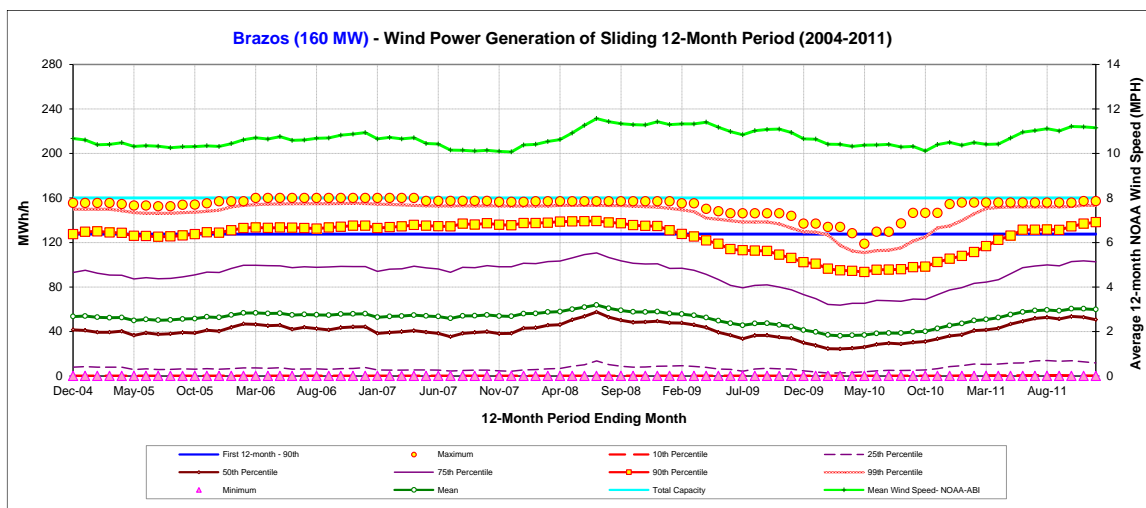


Figure 4-1: Sliding 12-month Hourly Wind Power Generation for Brazos Wind Ranch

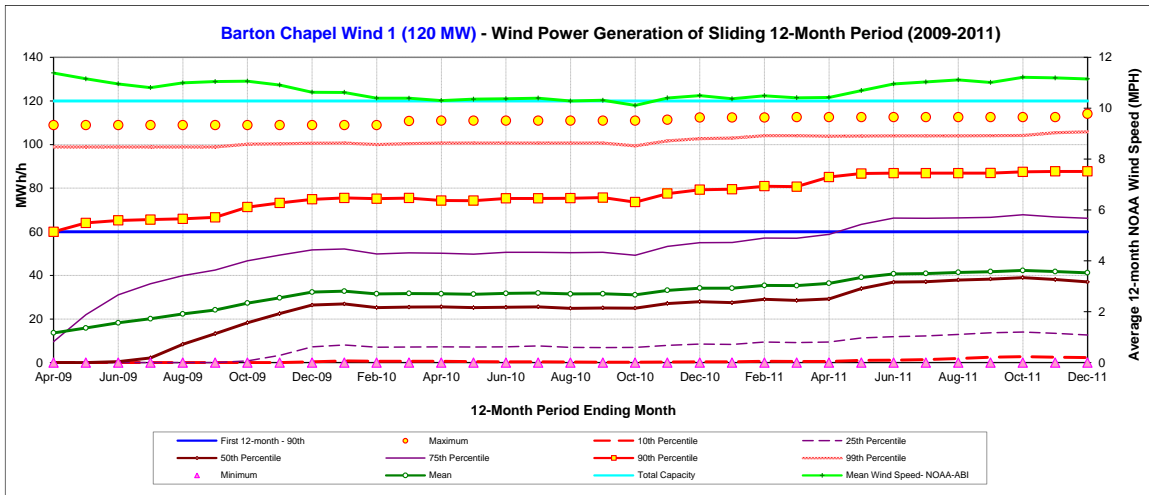


Figure 4-2: Sliding 12-month Hourly Wind Power Generation for Barton Chapel Wind 1

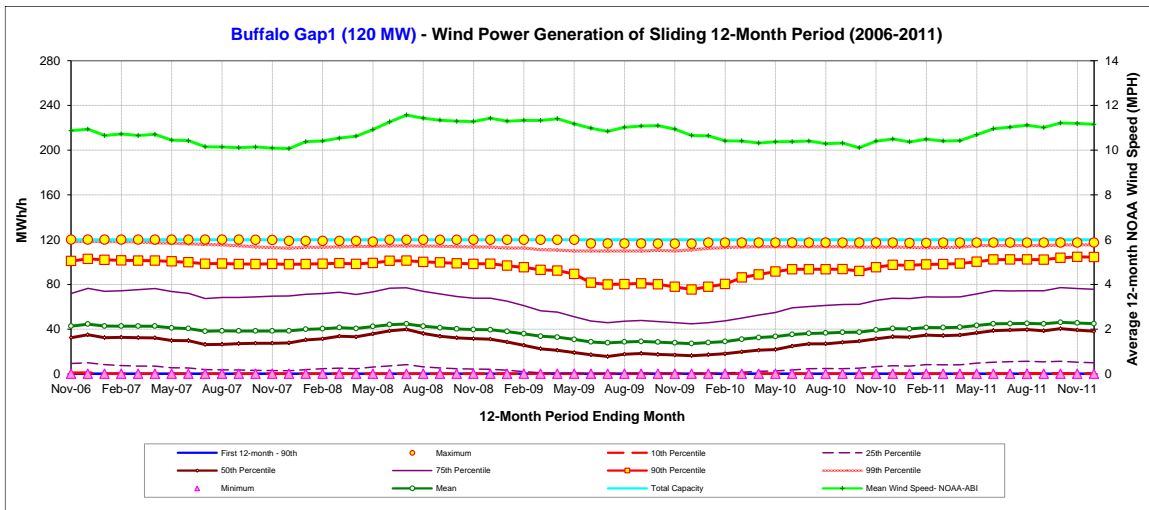


Figure 4-3: Sliding 12-month Hourly Wind Power Generation for Buffalo Gap 1

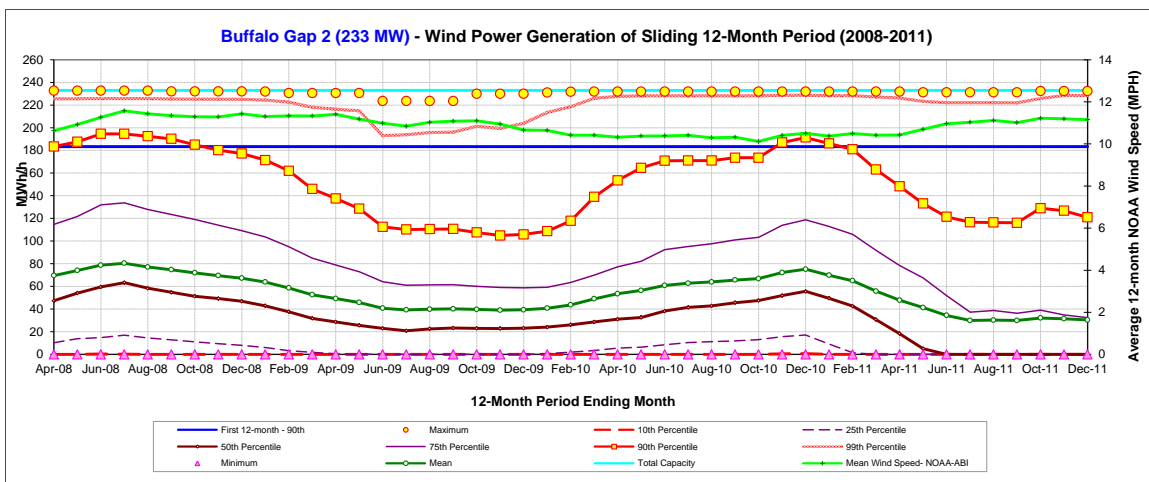


Figure 4-4: Sliding 12-month Hourly Wind Power Generation for Buffalo Gap 2

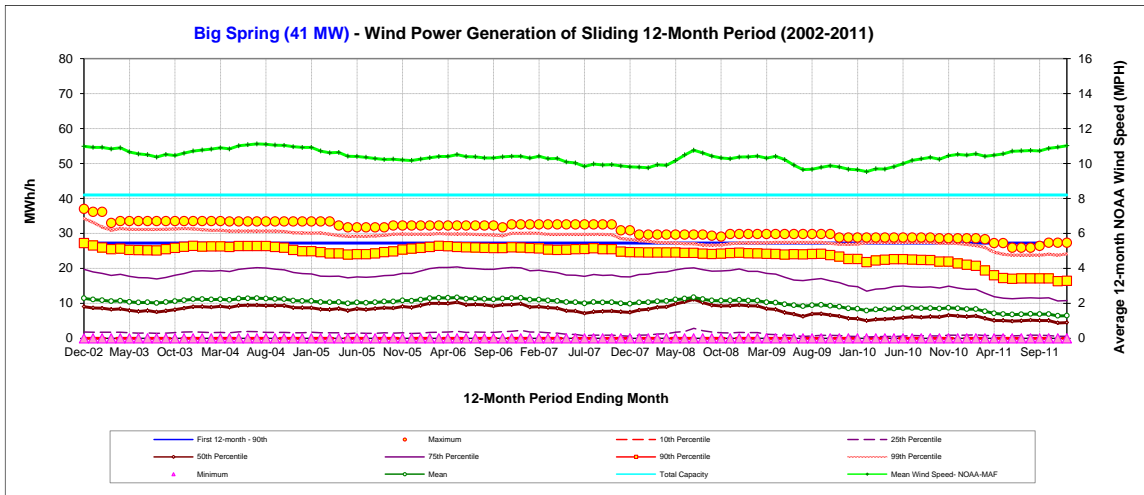


Figure 4-5: Sliding 12-month Hourly Wind Power Generation for Big Spring Wind Power

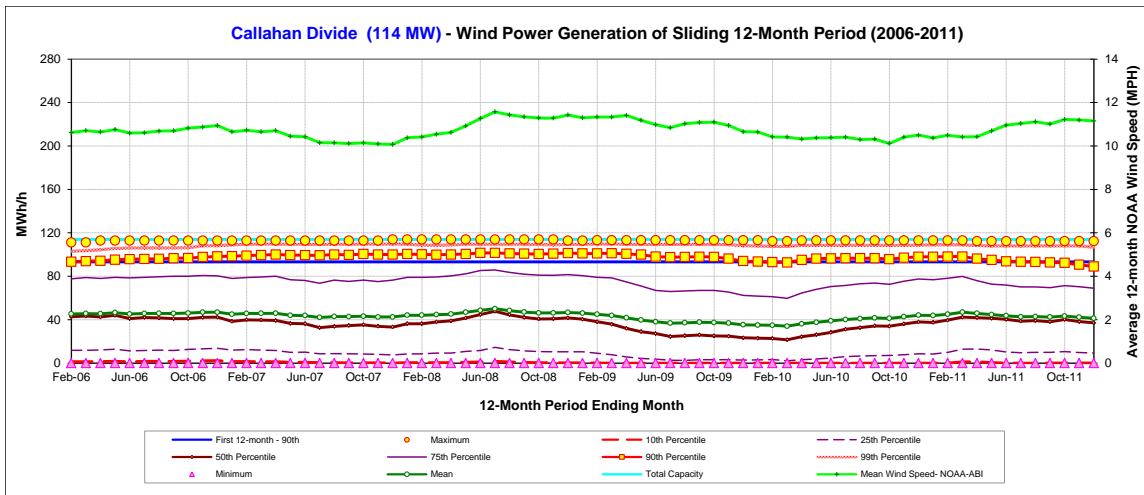


Figure 4-6: Sliding 12-month Hourly Wind Power Generation for Callahan Divide Wind

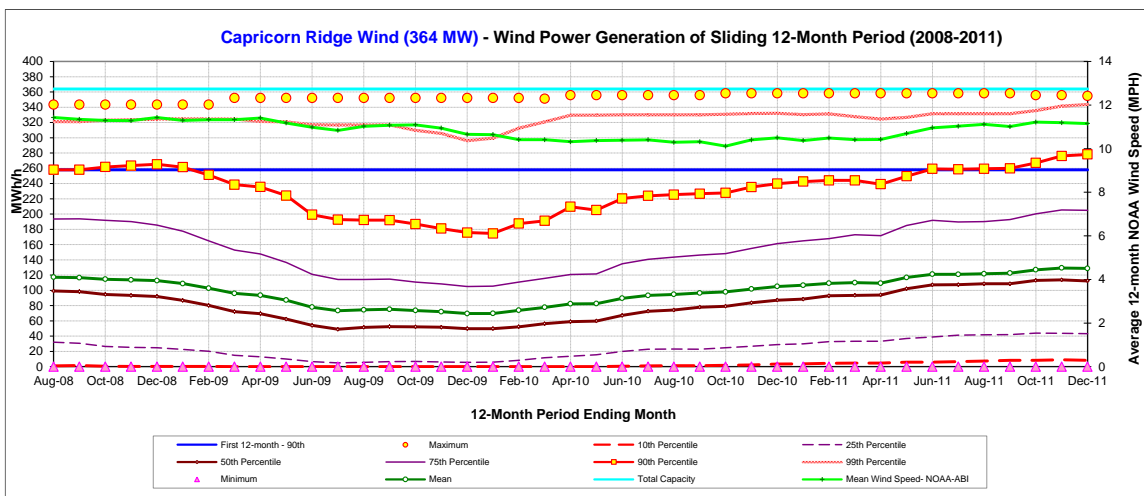


Figure 4-7: Sliding 12-month Hourly Wind Power Generation for Capricorn Ridge Wind

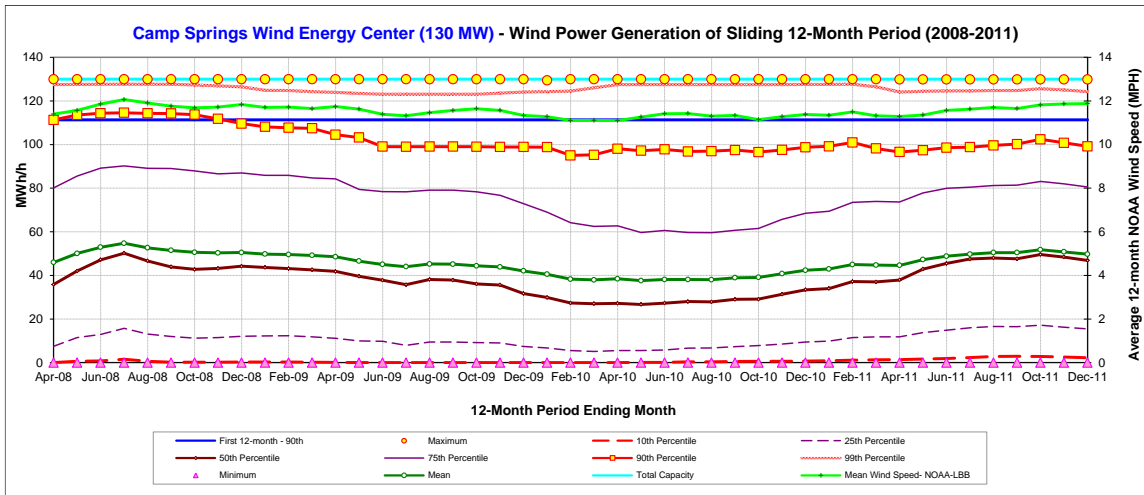


Figure 4-8: Sliding 12-month Hourly Wind Power Generation for Camp Springs Wind Energy Center

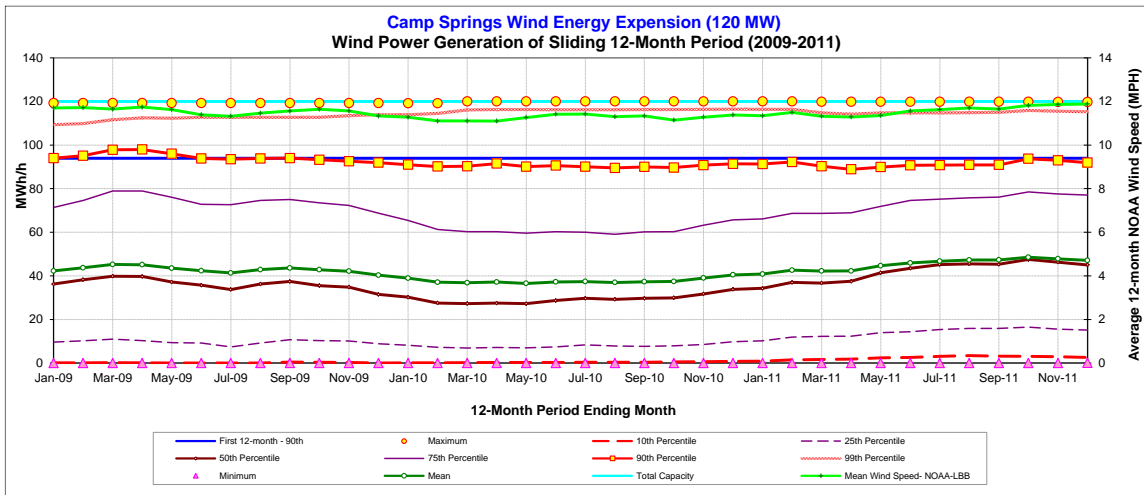


Figure 4-9: Sliding 12-month Hourly Wind Power Generation for Camp Springs Energy Expansion

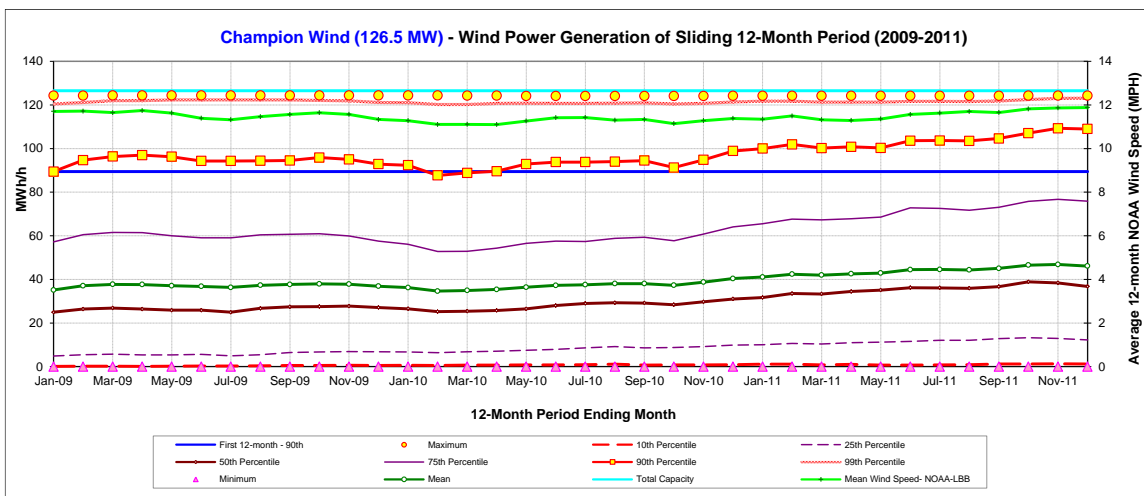


Figure 4-10: Sliding 12-month Hourly Wind Power Generation for Champion Wind Farm

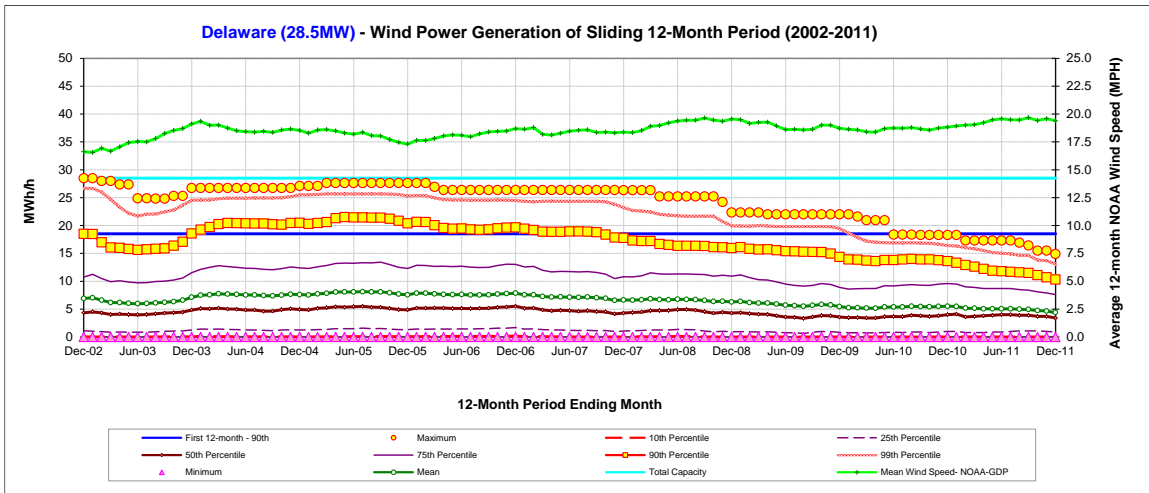


Figure 4-11: Sliding 12-month Hourly Wind Power Generation for Delaware Mountain Wind

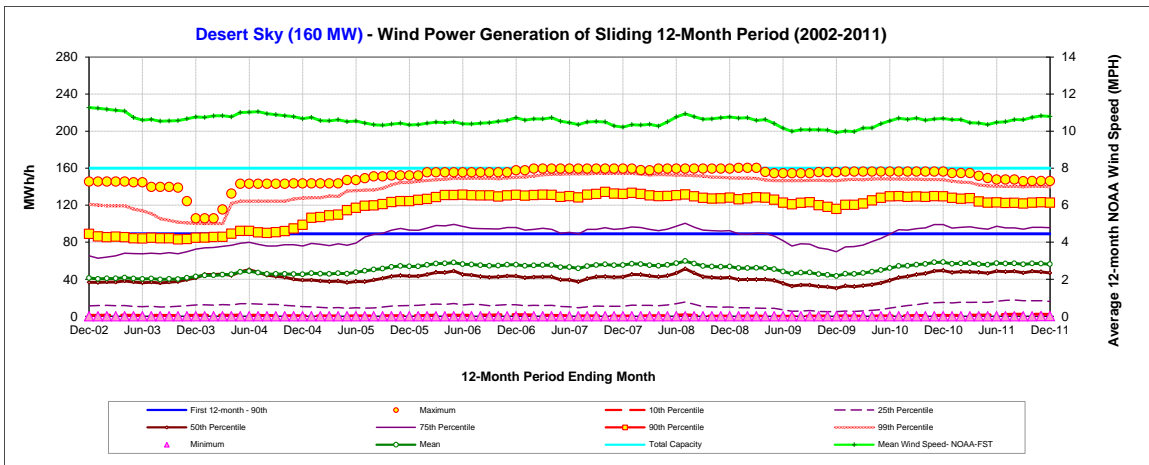


Figure 4-12: Sliding 12-month Hourly Wind Power Generation for Desert Sky

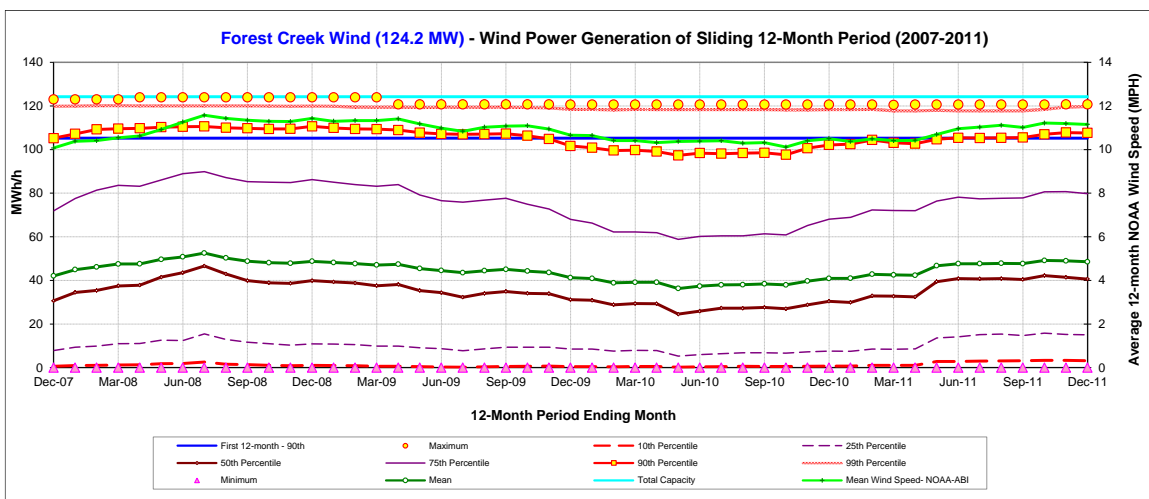


Figure 4-13: Sliding 12-month Hourly Wind Power Generation for Forest Creek Wind Farm

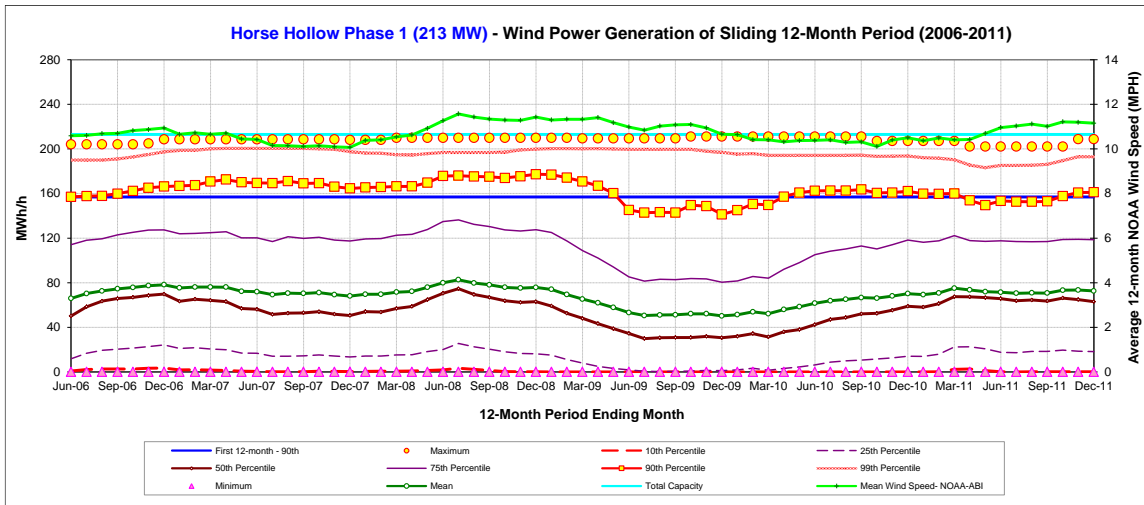


Figure 4-14: Sliding 12-month Hourly Wind Power Generation for Horse Hollow Phase 1

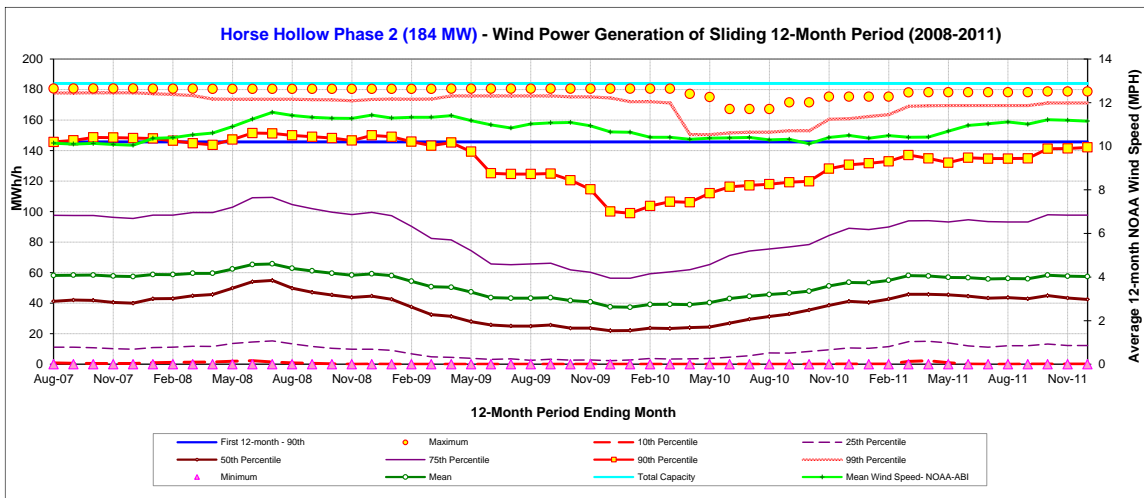


Figure 4-15: Sliding 12-month Hourly Wind Power Generation for Horse Hollow Phase 2

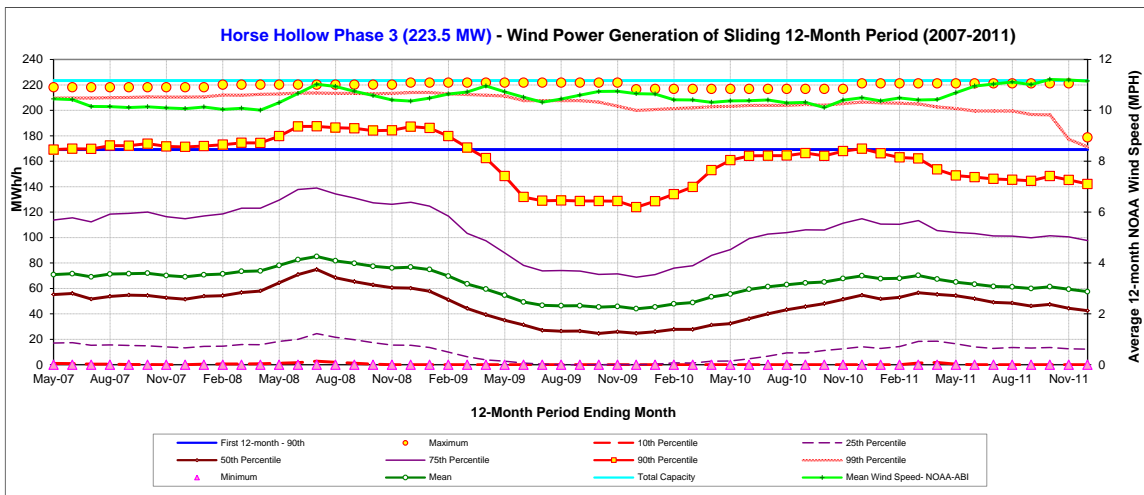


Figure 4-16: Sliding 12-month Hourly Wind Power Generation for Horse Hollow Phase 3

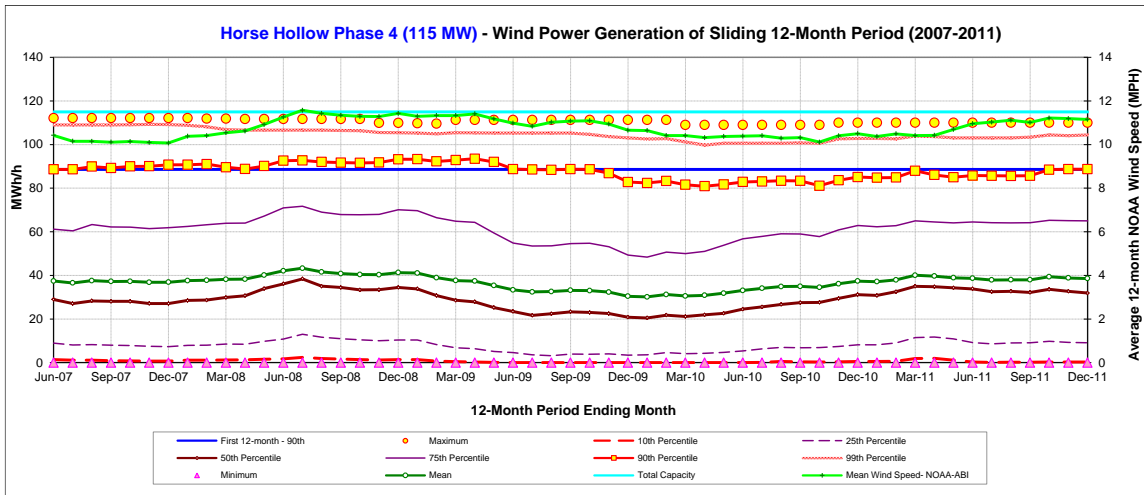


Figure 4-17: Sliding 12-month Hourly Wind Power Generation for Horse Hollow Phase 4

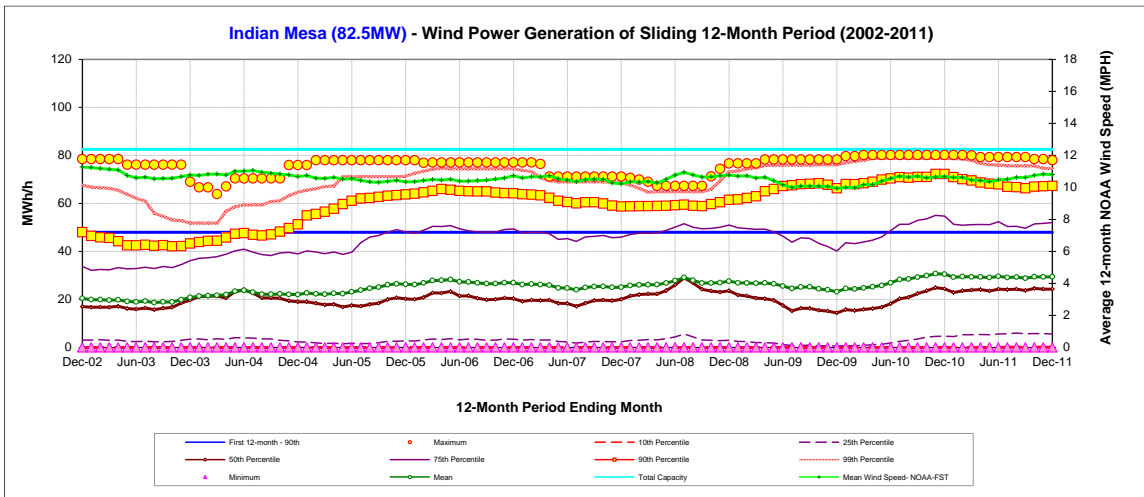


Figure 4-18: Sliding 12-month Hourly Wind Power Generation for Indian Mesa

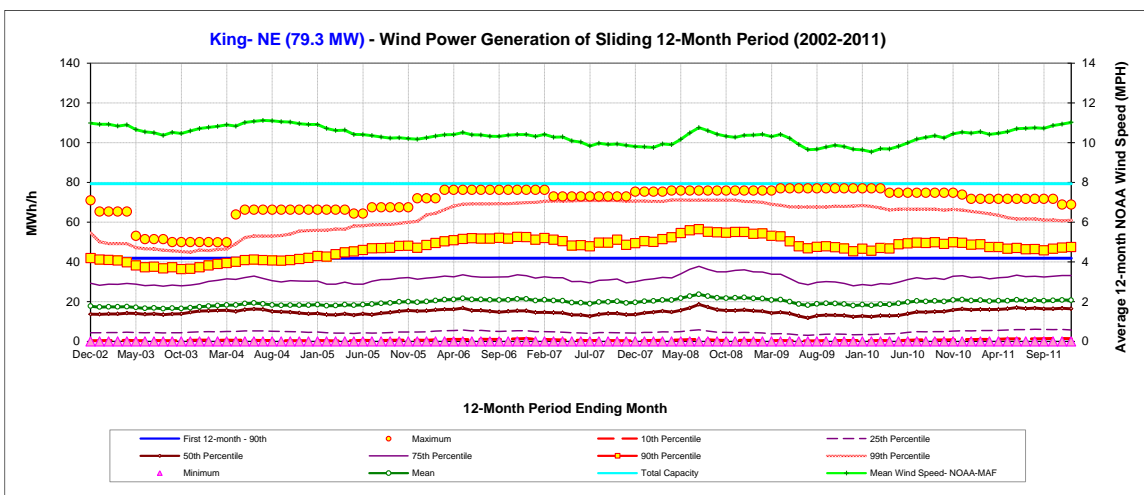


Figure 4-19: Sliding 12-month Hourly Wind Power Generation for King Mountain Wind Ranch-NE

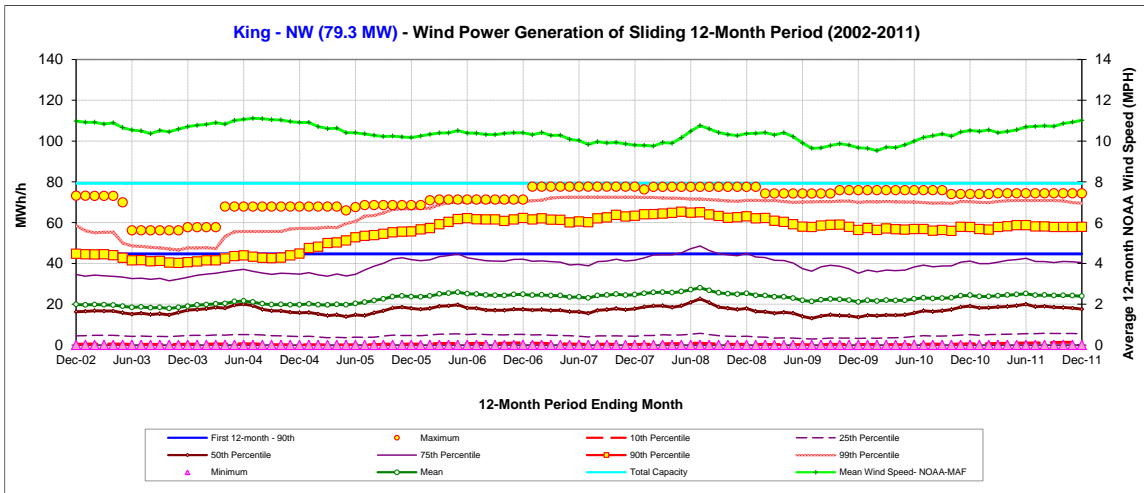


Figure 4-20: Sliding 12-month Hourly Wind Power Generation for King Mountain Wind Ranch-NW

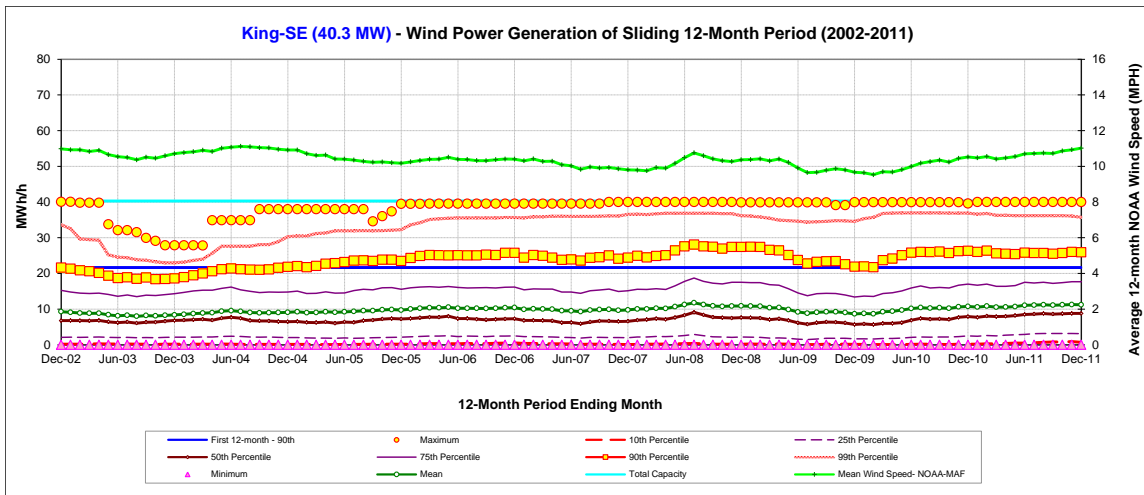


Figure 4-21: Sliding 12-month Hourly Wind Power Generation for King Mountain Wind Ranch-SE

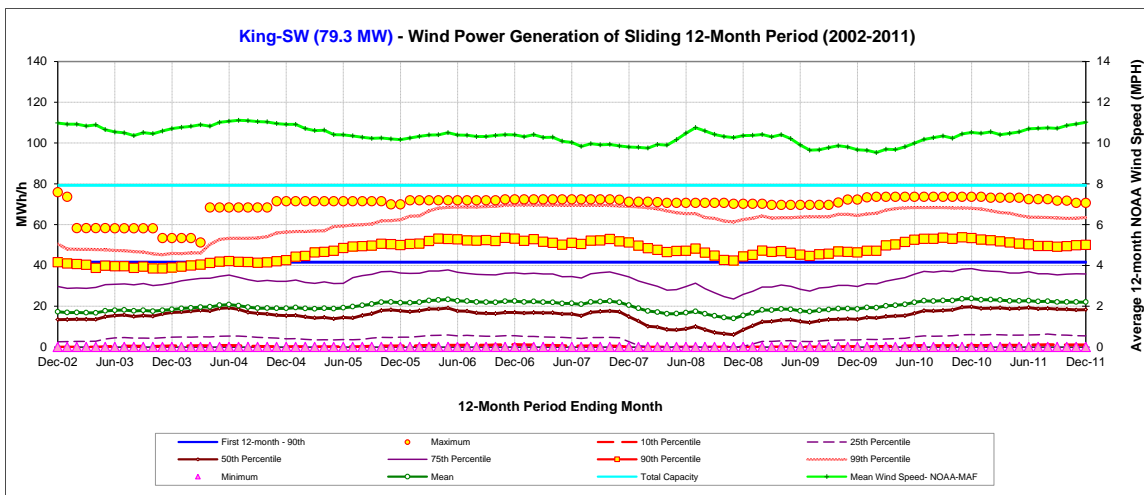


Figure 4-22: Sliding 12-month Hourly Wind Power Generation for King Mountain Wind Ranch-SW

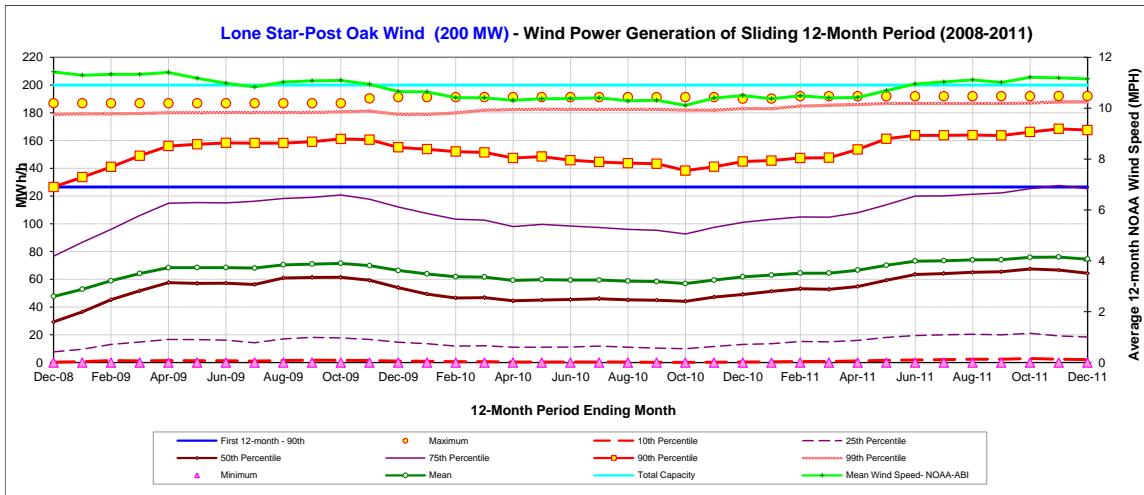


Figure 4-23: Sliding 12-month Hourly Wind Power Generation for Lone Star - Post Oak Wind

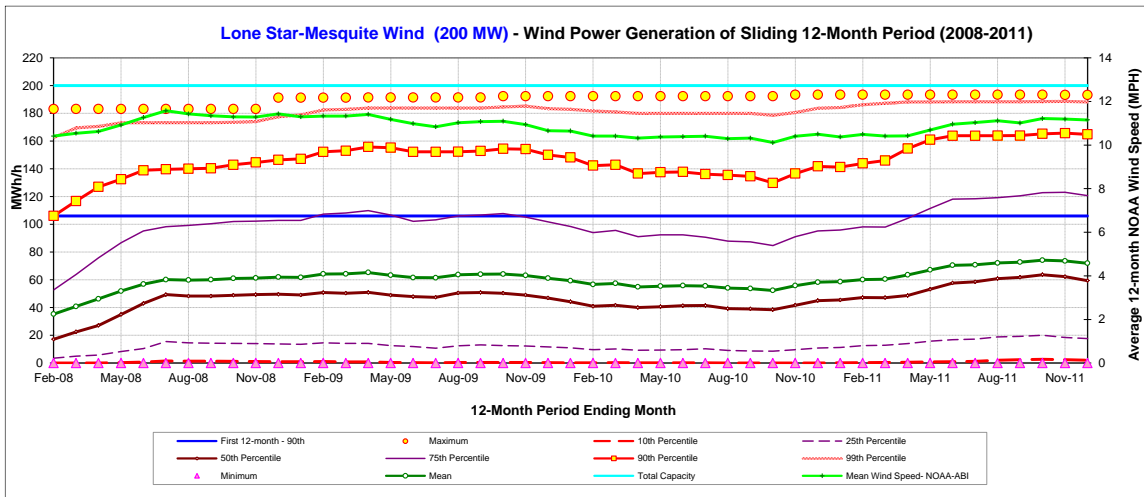


Figure 4-24: Sliding 12-month Hourly Wind Power Generation for Lone-Star Mesquite Wind

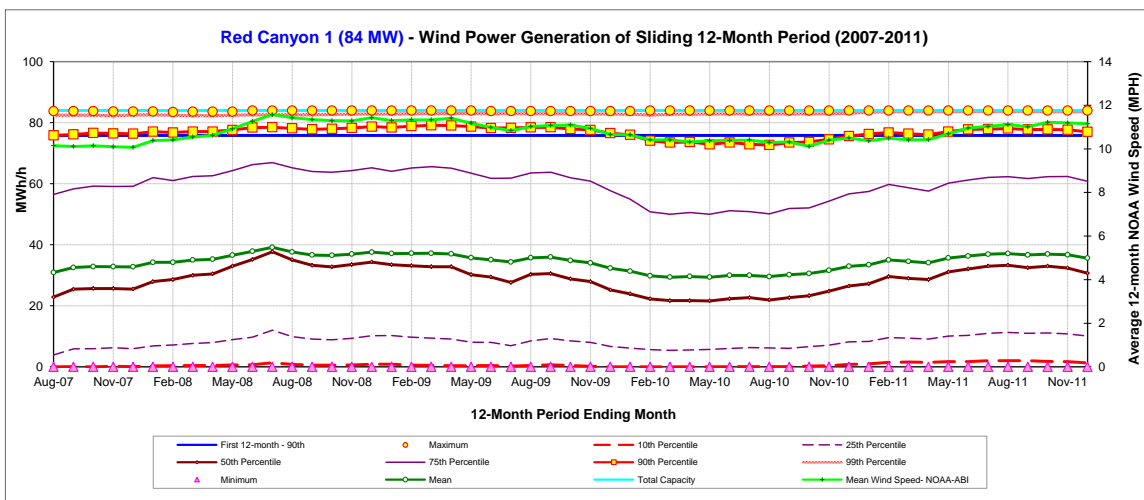


Figure 4-25: Sliding 12-month Hourly Wind Power Generation for Red Canyon 1

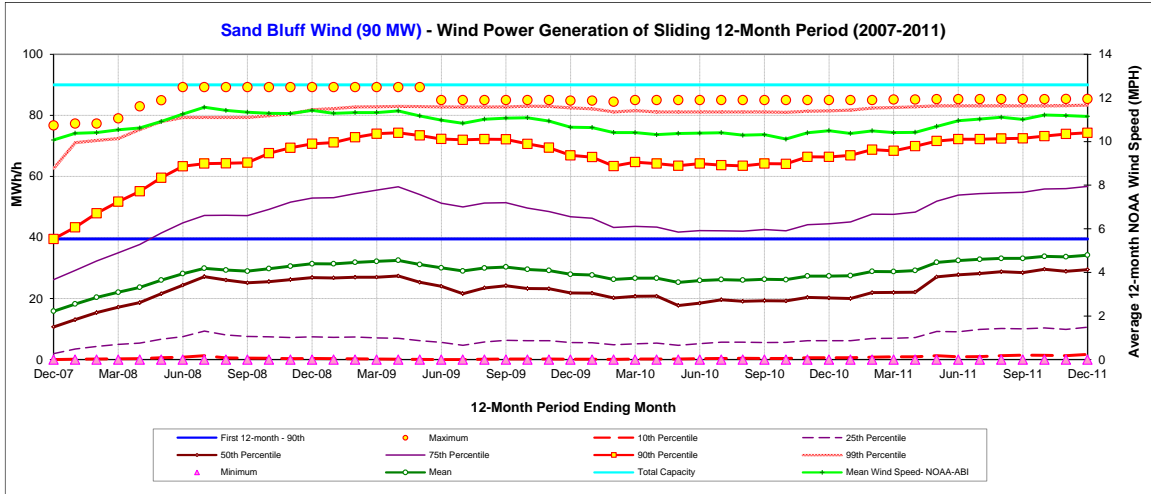


Figure 4-26: Sliding 12-month Hourly Wind Power Generation for Sand Bluff Wind Farm

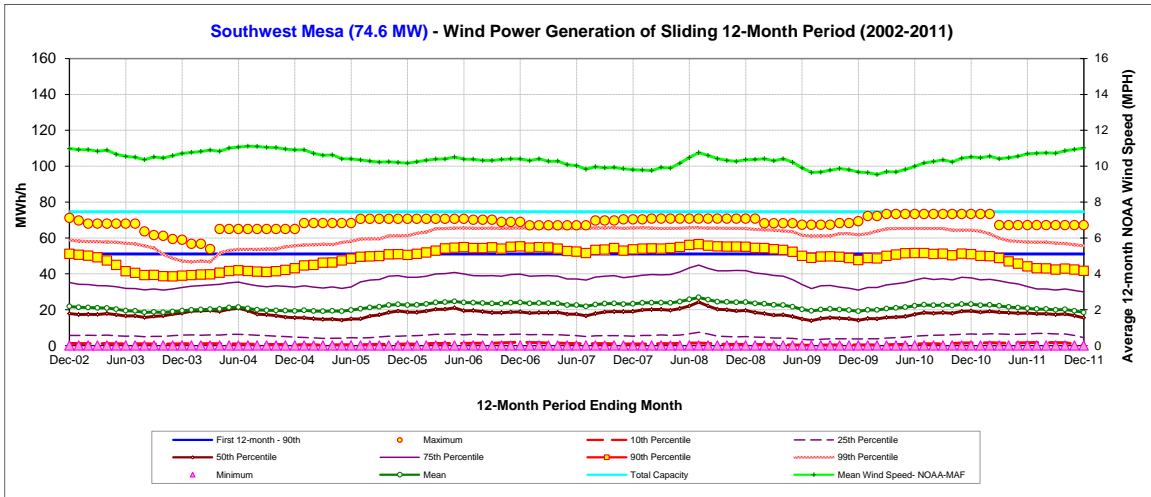


Figure 4-27: Sliding 12-month Hourly Wind Power Generation for Southwest Mesa Wind

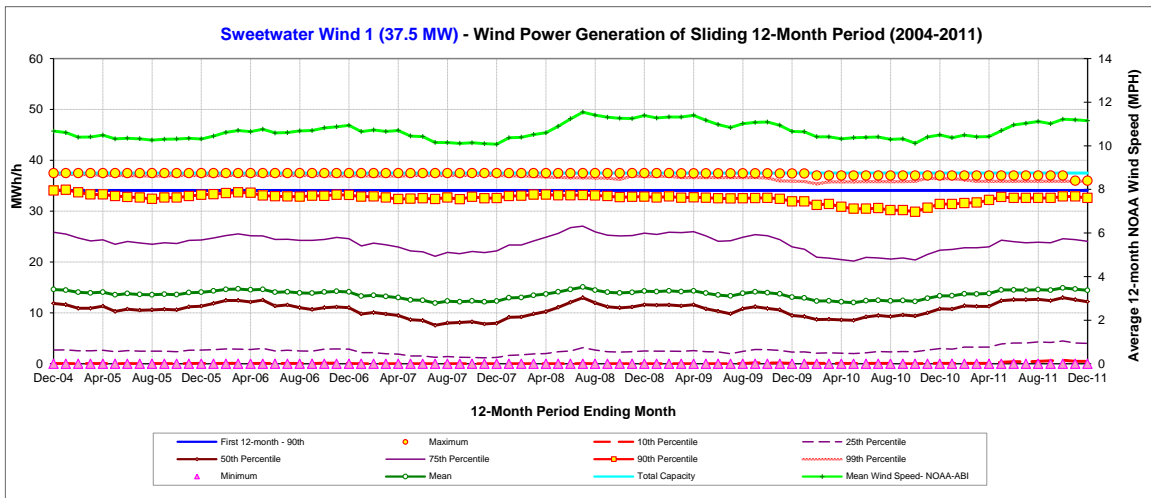


Figure 4-28: Sliding 12-month Hourly Wind Power Generation for Sweetwater Wind 1

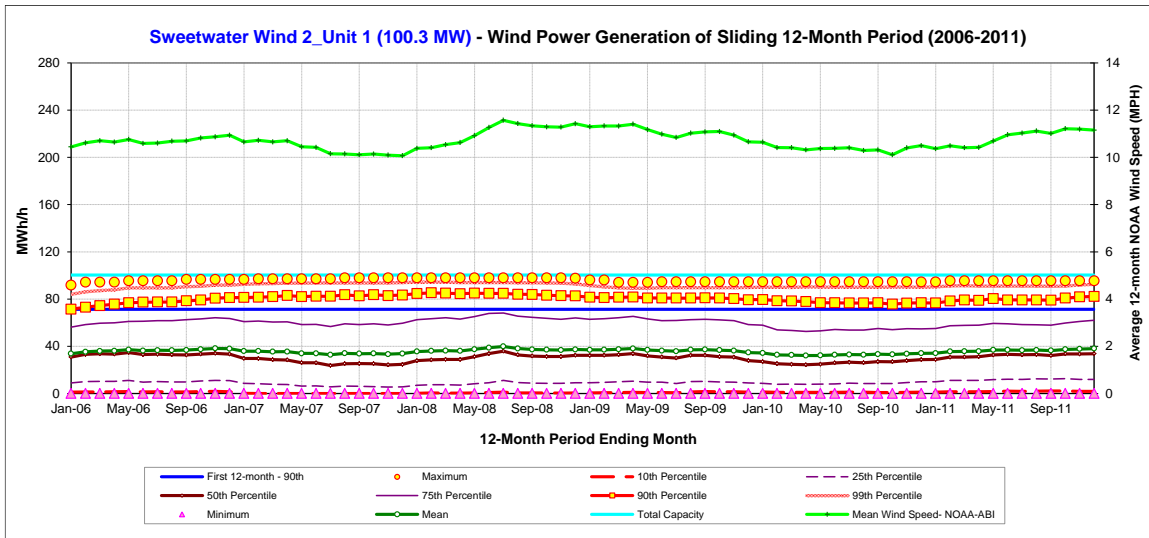


Figure 4-29: Sliding 12-month Hourly Wind Power Generation for Sweetwater Wind 2 (Unit 1)

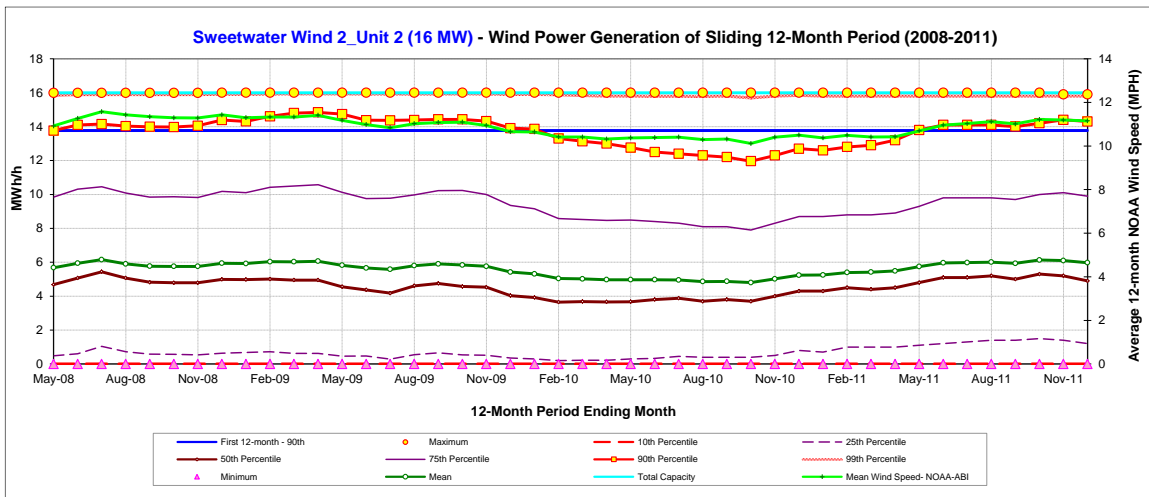


Figure 4-30: Sliding 12-month Hourly Wind Power Generation for Sweetwater Wind 2 (Unit 2)

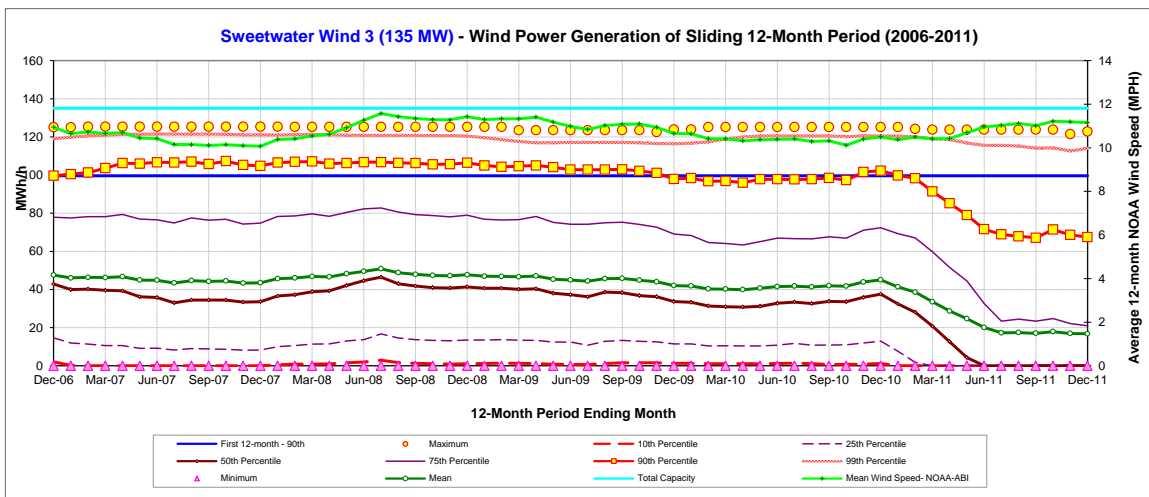


Figure 4-31: Sliding 12-month Hourly Wind Power Generation for Sweetwater Wind 3

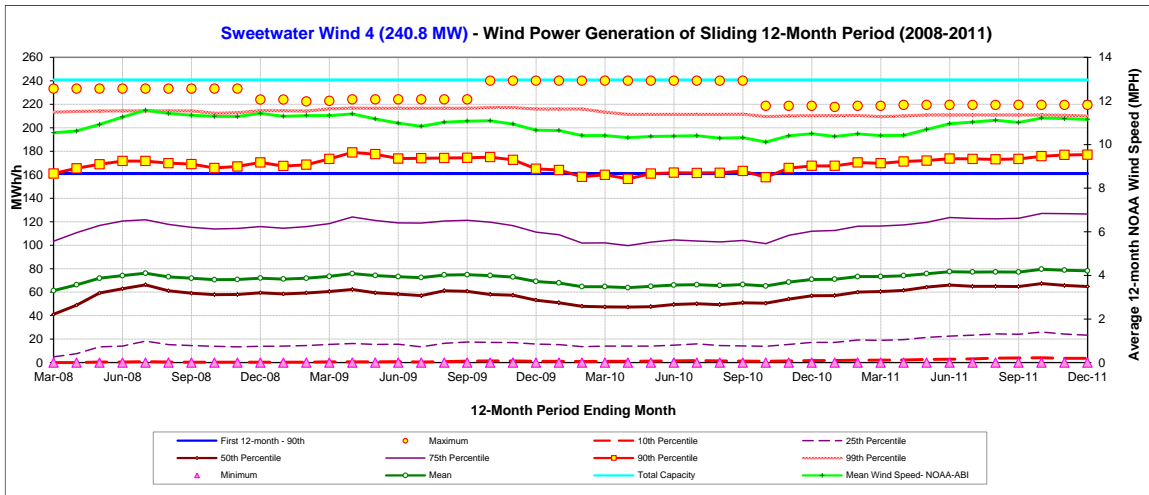


Figure 4-32: Sliding 12-month Hourly Wind Power Generation for Sweetwater Wind 4

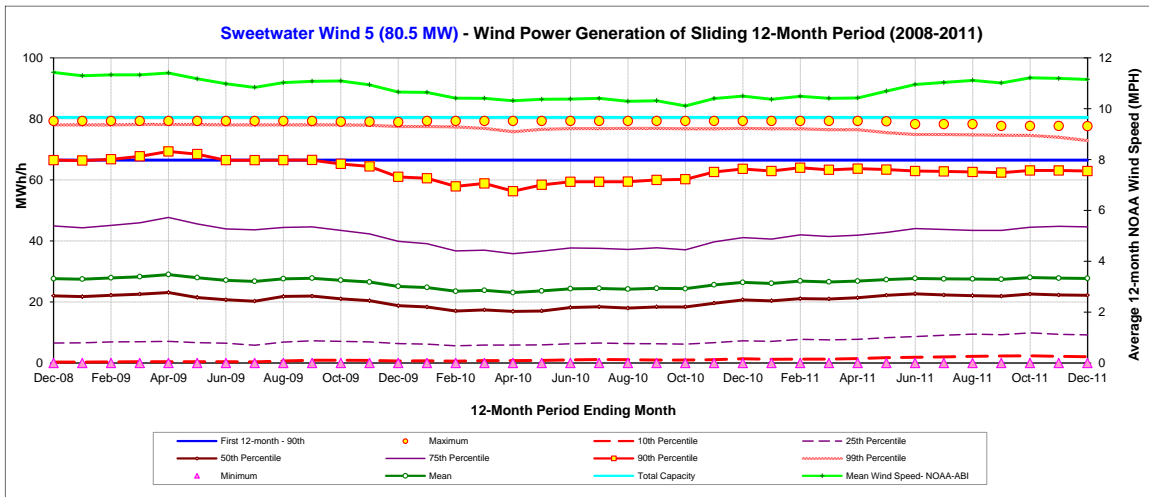


Figure 4-33: Sliding 12-month Hourly Wind Power Generation for Sweetwater Wind 5

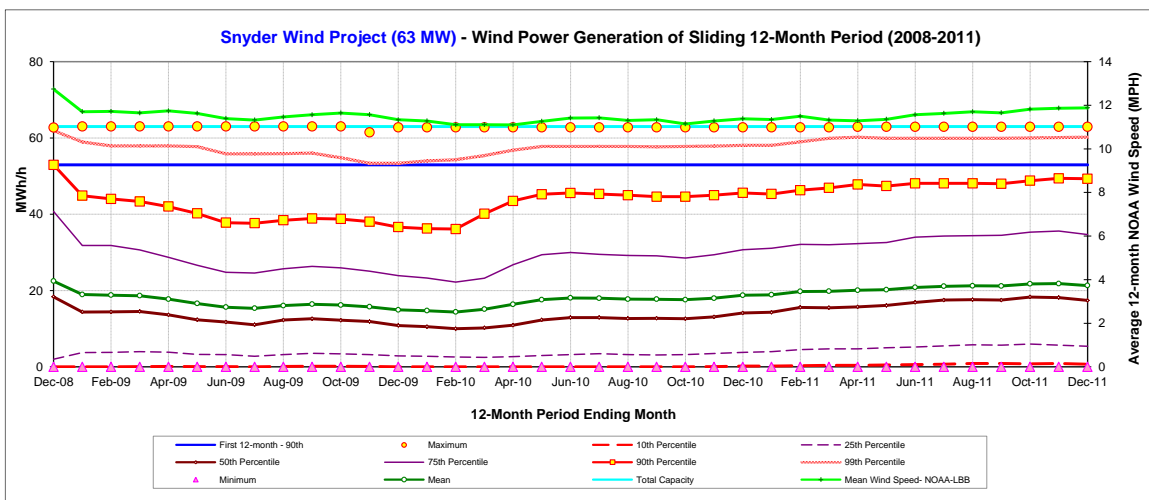


Figure 4-34: Sliding 12-month Hourly Wind Power Generation for Snyder Wind Project

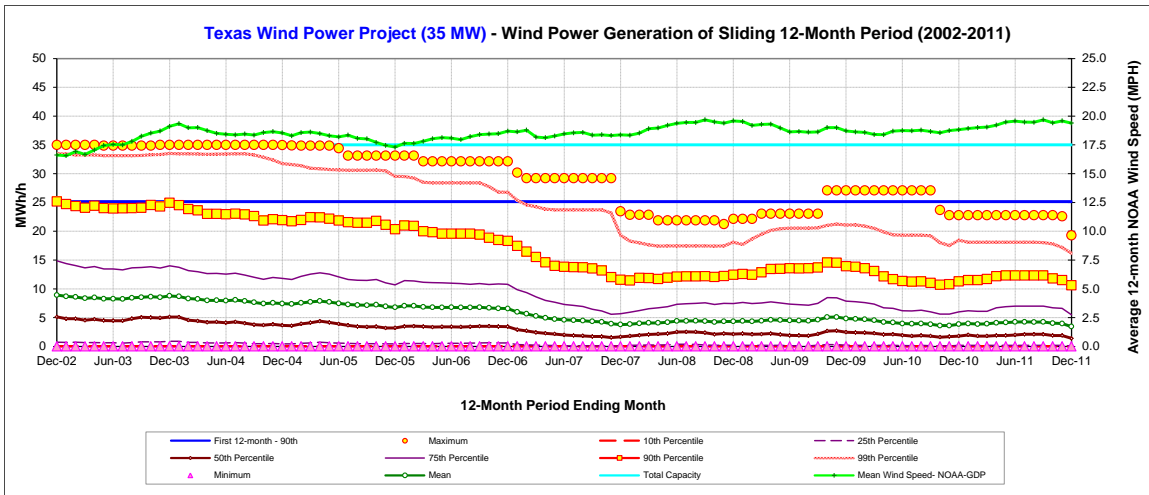


Figure 4-35: Sliding 12-month Hourly Wind Power Generation for Texas Wind Power Project

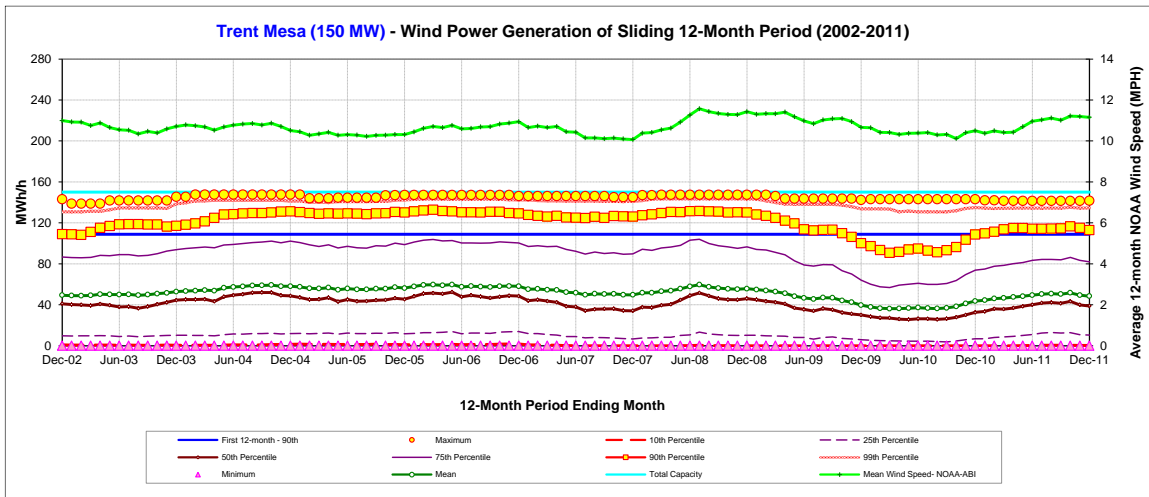


Figure 4-36: Sliding 12-month Hourly Wind Power Generation for Trent Mesa

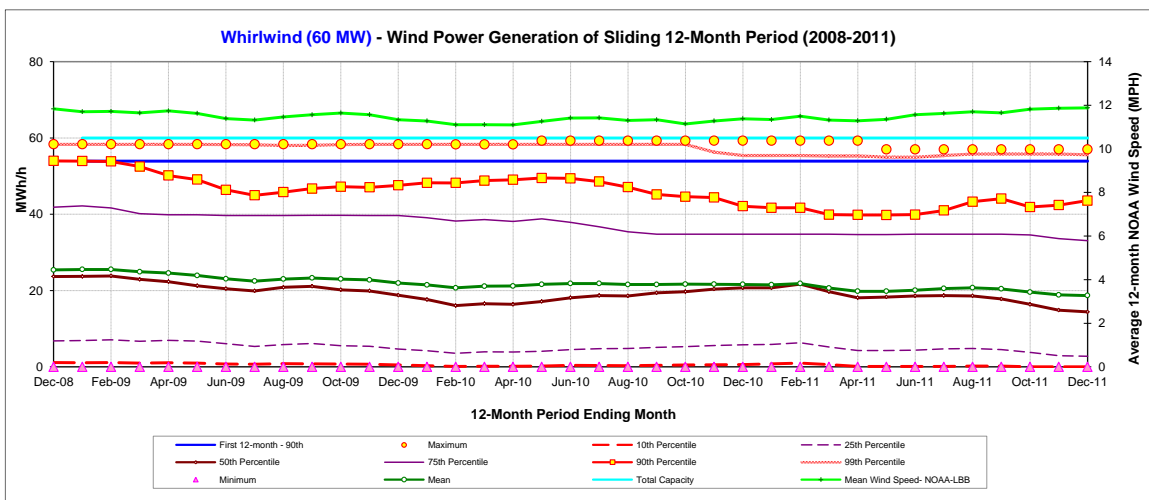


Figure 4-37: Sliding 12-month Hourly Wind Power Generation for Whirlwind

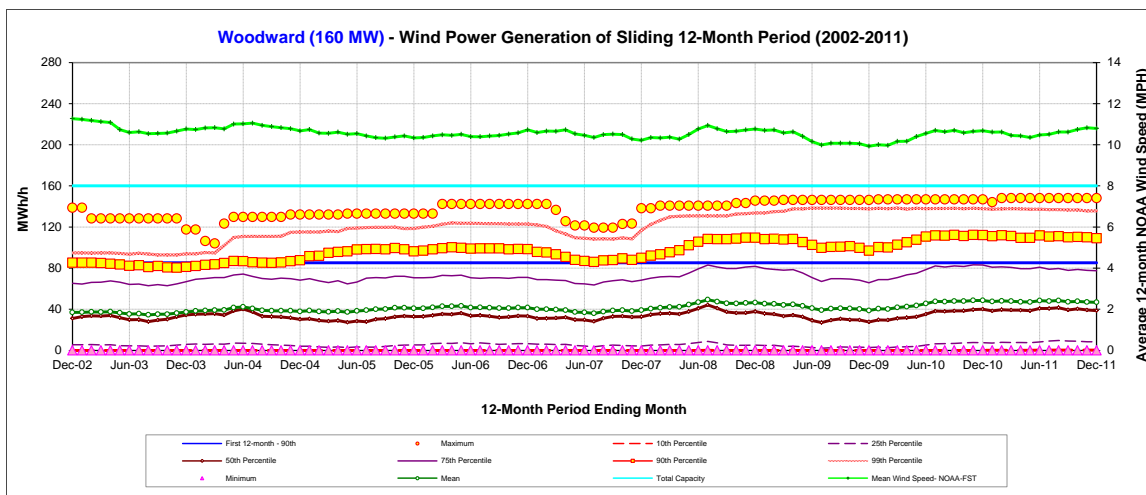


Figure 4-38: Sliding 12-month Hourly Wind Power Generation for Woodward Mountain Ranch

Table 4-1: Summary of 90th Percentile Hourly Wind Power Analysis for Forty Three Wind Farms (38 Sites) in Texas

Wind Farm	First 12-mo 90th Percentile Hourly Wind Power		Average of the Sliding 12-mo 90th Percentile Hourly Wind Power		Minimum of the Sliding 12-mo 90th Percentile Hourly Wind Power		Maximum of the Sliding 12-mo 90th Percentile Hourly Wind Power		No. of Months of Data	Capacity (MW)
	First 12-mo Ending Mo.	MW	MW	% Diff. vs. First 12-mo	MW	% Diff. vs. First 12-mo	MW	% Diff. vs. First 12-mo		
Brazos Wind Ranch	Dec-04	127.5	124.9	-2.0%	93.5	-26.7%	139.3	9.2%	85	160
Barton Chapel Wind 1	Apr-09	60.0	76.9	28.1%	60.0	0.0%	87.7	46.2%	33	120
Buffalo Gap 1	Nov-06	100.9	95.3	-5.5%	75.4	-25.2%	104.6	3.7%	62	120
Buffalo Gap 2	Apr-08	183.4	150.5	-17.9%	104.9	-42.8%	194.6	6.1%	45	233
Big Spring Wind Power	Dec-02	27.2	24.0	-11.7%	16.3	-40.1%	27.2	0.0%	109	41
Callahan Divide Wind	Feb-06	93.3	97.4	4.4%	89.0	-4.6%	101.5	8.8%	71	114
Capricorn Ridge Wind	Aug-08	258.0	231.3	-10.4%	174.5	-32.4%	278.2	7.8%	41	364
Camp Springs Wind Energy Center	Apr-08	111.3	102.2	-8.2%	95.0	-14.6%	114.6	2.9%	45	130
Camp Springs Energy Expansion	Jan-09	94.0	92.0	-2.0%	88.9	-5.4%	97.9	4.2%	36	120
Champion Wind Farm	Jan-09	89.4	97.0	8.4%	87.7	-1.9%	109.3	22.2%	36	126.5
Delaware Mountain Wind	Dec-02	18.5	17.1	-7.6%	10.3	-44.3%	21.5	16.1%	109	28.5
Desert Sky	Dec-02	89.0	117.1	31.5%	83.1	-6.7%	134.4	50.9%	109	160
Forest Creek Wind Farm	Dec-07	105.2	105.3	0.1%	97.3	-7.5%	110.6	5.2%	49	124.2
Horse Hollow Phase 1	Jun-06	157.0	162.0	3.2%	141.3	-10.0%	177.3	12.9%	67	213
Horse Hollow Phase 2	Aug-07	145.7	133.6	-8.3%	99.0	-32.1%	151.5	4.0%	53	184
Horse Hollow Phase 3	May-07	169.2	160.4	-5.2%	123.9	-26.8%	187.4	10.8%	56	223.5
Horse Hollow Phase 4	Jun-07	88.6	87.8	-0.9%	80.9	-8.7%	93.5	5.5%	55	115
Indian Mesa	Dec-02	48.0	59.9	24.9%	42.1	-12.2%	72.2	50.5%	109	82.5
King Mountain Wind Ranch-NE	Dec-02	41.8	47.1	12.6%	36.3	-13.2%	56.4	34.8%	109	79.3
King Mountain Wind Ranch-NW	Dec-02	44.7	55.2	23.5%	40.2	-10.1%	65.3	46.1%	109	79.3
King Mountain Wind Ranch-SE	Dec-02	21.6	23.8	10.0%	18.4	-15.0%	28.1	29.8%	109	40.3
King Mountain Wind Ranch-SW	Dec-02	41.6	47.4	14.0%	38.4	-7.6%	53.7	29.1%	109	79.3
Lone Star - Post Oak Wind	Dec-08	126.5	152.5	20.5%	126.5	0.0%	168.5	33.2%	37	200
Lone-Star Mesquite Wind	Feb-08	106.1	146.1	37.7%	106.1	0.0%	165.7	56.2%	47	200
Red Canyon 1	Aug-07	75.8	76.8	1.2%	72.7	-4.1%	79.1	4.4%	53	84
Sand Bluff Wind Farm	Dec-07	39.5	66.4	68.0%	39.5	0.0%	74.3	88.0%	49	90
Southwest Mesa Wind	Dec-02	51.1	49.1	-3.9%	38.5	-24.6%	56.5	10.6%	109	74.6
Sweetwater Wind 1	Dec-04	34.1	32.5	-4.5%	29.9	-12.2%	34.2	0.4%	85	37.5
Sweetwater Wind 2 (unit 1)	Jan-06	71.4	80.2	12.5%	71.4	0.0%	85.3	19.5%	72	100.3
Sweetwater Wind 2 (unit 2)	May-08	13.8	13.7	-0.5%	12.0	-13.1%	14.8	7.8%	44	16
Sweetwater Wind 3	Dec-06	99.6	98.2	-1.5%	67.1	-32.7%	107.3	7.7%	61	135
Sweetwater Wind 4	Mar-08	161.0	168.9	4.9%	156.5	-2.8%	179.0	11.2%	46	240.8
Sweetwater Wind 5	Dec-08	66.5	63.1	-5.1%	56.3	-15.3%	69.3	4.3%	37	80.5
Snyder Wind Project	Dec-08	52.9	43.9	-17.1%	36.1	-31.8%	52.9	0.0%	37	63
Texas Wind Power Project	Dec-02	25.2	16.9	-32.6%	10.6	-57.9%	25.2	0.0%	109	35
Trent Mesa	Dec-02	108.8	120.3	10.5%	90.7	-16.7%	132.8	22.0%	109	150
Whirlwind	Dec-08	54.0	46.0	-14.7%	39.8	-26.3%	54.0	0.0%	37	60
Woodward Mountain Ranch	Dec-02	85.3	97.5	14.4%	80.4	-5.7%	112.4	31.8%	109	160
Weighted Average:				5.0%		-16.0%		18.8%	Total:	4664.1

Table 4-2: Summary of Maximum Hourly Wind Power Analysis for Forty Three Wind Farms (38 Sites) in Texas

Wind Farm	Design Capacity (A)	Maximum of the Sliding 12-mo Maximum MW - Measured (B)	Minimum of the Sliding 12-mo Maximum MW - Measured (C)	Maximum MW in Last 12-mo - Measured (D)	Difference (A-B)	Difference (B-D)
Brazos Wind Ranch	160	160.0	118.9	157.2	0.0	2.8
Barton Chapel Wind 1	120	114.1	108.9	114.1	5.9	0.0
Buffalo Gap 1	120	120.0	116.3	117.3	0.0	2.7
Buffalo Gap 2	233	232.6	223.7	232.4	0.4	0.2
Big Spring Wind Power	41	37.0	25.9	27.3	4.0	9.7
Callahan Divide Wind	114	113.9	111.2	112.4	0.1	1.5
Capricorn Ridge Wind	364	358.3	343.5	354.8	5.7	3.5
Camp Springs Wind Energy Center	130	130.0	129.5	129.9	0.0	0.1
Camp Springs Energy Expansion	120	120.0	119.2	119.8	0.0	0.2
Champion Wind Farm	126.5	124.3	124.1	124.3	2.2	0.0
Delaware Mountain Wind	28.5	28.5	14.9	14.9	0.0	13.6
Desert Sky	160	160.2	105.8	146.1	-0.2	14.1
Forest Creek Wind Farm	124.2	123.9	120.5	120.7	0.3	3.2
Horse Hollow Phase 1	213	211.1	202.2	208.7	1.9	2.4
Horse Hollow Phase 2	184	180.7	167.2	178.7	3.3	2.0
Horse Hollow Phase 3	223.5	221.8	178.7	178.7	1.7	43.1
Horse Hollow Phase 4	115	112.2	109.0	110.0	2.8	2.2
Indian Mesa	82.5	80.1	63.9	78.0	2.4	2.1
King Mountain Wind Ranch-NE	79.3	77.0	49.8	68.8	2.3	8.2
King Mountain Wind Ranch-NW	79.3	77.6	56.2	74.4	1.7	3.2
King Mountain Wind Ranch-SE	40.3	40.0	27.8	40.0	0.3	0.0
King Mountain Wind Ranch-SW	79.3	75.9	51.2	70.6	3.4	5.3
Lone Star - Post Oak Wind	200	192.1	186.9	192.1	7.9	0.0
Lone-Star Mesquite Wind	200	193.4	183.2	193.3	6.6	0.1
Red Canyon 1	84	84.0	83.5	84.0	0.0	0.0
Sand Bluff Wind Farm	90	89.3	76.7	85.4	0.7	3.9
Southwest Mesa Wind	74.6	73.3	53.8	67.1	1.3	6.2
Sweetwater Wind 1	37.5	37.5	36.0	36.0	0.0	1.5
Sweetwater Wind 2 (unit 1)	100.3	98.0	91.8	95.5	2.3	2.5
Sweetwater Wind 2 (unit 2)	16	16.0	15.9	15.9	0.0	0.1
Sweetwater Wind 3	135	125.4	121.5	122.8	9.6	2.6
Sweetwater Wind 4	240.8	240.2	217.7	219.5	0.6	20.7
Sweetwater Wind 5	80.5	79.3	77.6	77.6	1.2	1.7
Snyder Wind Project	63	63.0	61.5	62.9	0.0	0.1
Texas Wind Power Project	35	35.0	19.3	19.3	0.0	15.7
Trent Mesa	150	147.6	138.8	141.7	2.4	5.9
Whirlwind	60	59.3	57.0	57.0	0.7	2.3
Woodward Mountain Ranch	160	148.2	104.1	148.2	11.8	0.0
Total:	4664.1	4580.8	4093.7	4397.4	83.3	183.4

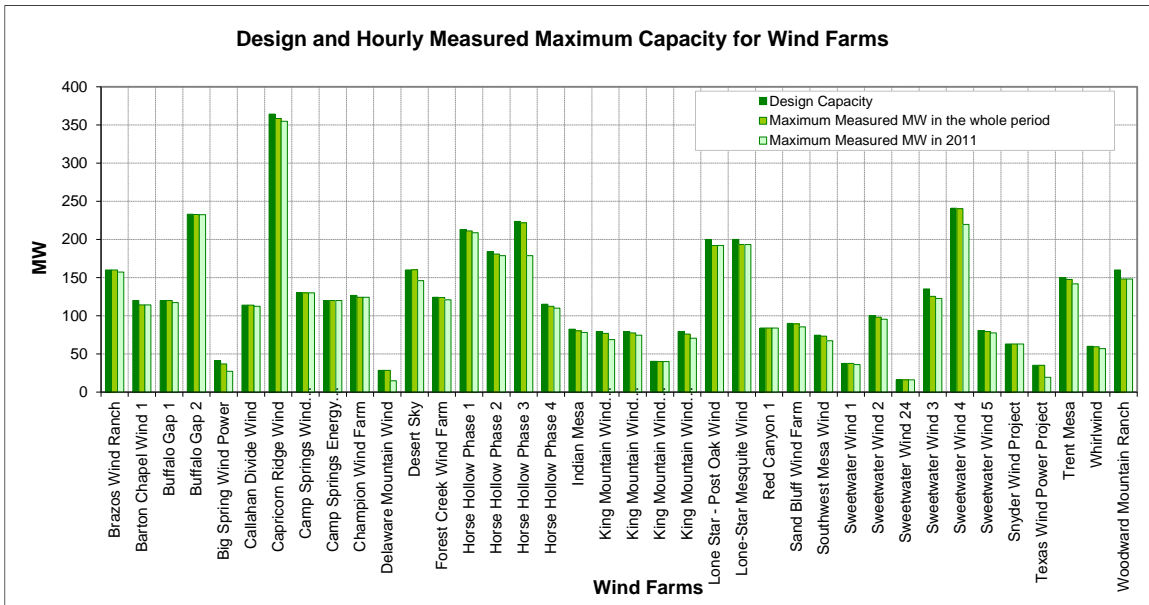


Figure 4-39: Design and Hourly Measured Maximum Capacity for Forty Three Wind Farms (38 sites)

5 CALCULATING NO_x EMISSIONS REDUCTION FROM WIND POWER

5.1 Calculation of NO_x Emissions from Wind Power Using 2010 eGRID

The Energy Systems Laboratory has worked closely with the TCEQ and EPA to develop creditable procedures for calculating NO_x reductions from electricity savings using the 2010 EPA's Emissions and Generation Resource Integrated Database (eGRID). The calculation uses a simplified dispatch approach of the ERCOT grid to estimate NO_x emission reductions across the ERCOT region in Texas. ERCOT is currently divided into four congestion management (CM) zones: Houston (H), North (N), South (S), and West (W). The 2010 eGrid table, which describes distribution of the NO_x emission reductions per CM zone for each county in Texas, has four developed steps (EPA and ESL 2008):

1. assign energy savings to CM Zones
2. assign generation reductions within each CM Zone to individual plants
3. determine plant-specific NO_x emission rates
4. assemble all CM Zones for total savings

The procedure presented in this section calculates annual and peak-day, county-wide NO_x reductions from electricity savings from wind projects implemented in the Congestion Management Zones (CM Zones) in ERCOT listed in the EPA's eGRID. For this purpose, a special version of eGRID³ was developed by the EPA for the TCEQ that reflects the 2010 electricity and pollution from electric utilities in ERCOT. The NO_x production for each power plant is provided from the 2010 eGRID database for four CM zones – Houston, North, West and South. This eGRID matrix was utilized to assign the power plant used by CM zones, once a CM zone had been chosen for a given county. Figure 5-1 shows a snapshot of the NO_x emission distribution among Texas counties from generating one mega-watt-hour of electricity in the CM zone - Houston, which was derived from the 2010 Annual eGRID table. For example, the counties marked in red show higher NO_x emissions of above 0.1 lbs./MWh. The counties marked in green were least impacted by the NO_x emissions (less than 0.0005 lbs./MWh) from Houston. Figure 5-2, Figure 5-3 and Figure 5-4 show the same county-wide NO_x emissions distribution from North, West and South, respectively.

To calculate the NO_x emissions reduction from the wind projects within the ERCOT region, the total MWh wind power for each CM zone is summarized in Table 5-2 and Table 5-3 for 2008 baseline and 2011. Both annual wind power and Ozone Season Period wind power are presented. Table 5-1 shows the latest wind farm information from PUCT, updated in January 2013. Only the completed projects are shown in the ERCOT, WSCC and SPP regions, with total generation capacity of 11,523 MW by wind resource. The total MWh production in each CM zone was input in the corresponding cells in the eGRID table to calculate the total annual and OSP emissions reductions for the entire ERCOT region in 2008 and 2011, as shown from Table 5-4 and Table 5-7.

According to the developed models, the total MWh savings in the base year 2008 for the wind farms within the ERCOT region are 28,535,794 MWh/yr and 50,088 MWh/day in the Ozone Season Period, compared with total 27,970,096 MWh/yr savings and 57,928 MWh/day in Ozone Season Period in 2011 within ERCOT. The total NO_x emissions reductions for 2008 base year across all the counties amount to 7825.89 tons/yr. and 13.73 tons/day for the Ozone Season Period. Compared to the base year 2008, the total NO_x emissions reductions in 2011 decreased 1.38% from 7825.89 tons/yr to 7718.08 tons/year. For the Ozone Season Period, the total NO_x emissions reductions increased by 17.24%, from 13.73 tons/day to 16.09 tons/day. The distribution of the NO_x emissions reduction in the counties within the ERCOT region is shown in Figure 5-5 through Figure 5-10. The 2010 eGRID shows that the counties named Ector, Howard and Ward will get the most emissions benefit from the wind farms. Figure 5-11 shows the average modeled power flows during 2010 for each of the Commercially Significant Constraints from ERCOT⁴. Based on modeled flows, Houston is a significant importer from the 'North Zone' and the 'South Zone,' while the 'South Zone' and the 'Northeast Zone' export significant amounts of power. In addition, any modifications on the generation patterns in the North area could affect the generation in the South area (Gulf Coast) which has a larger emissions rate than its northern counterpart. Thus, it gives a major emissions reduction impact.

³ This 2010 eGRID table for Texas was provided by Art Diem of the US EPA and includes emissions values

⁴ ERCOT, "2010 State of the Market Report for the ERCOT Wholesale Electricity Markets" Available at: http://www.puc.state.tx.us/industry/electric/reports/ERCOT_annual_reports/

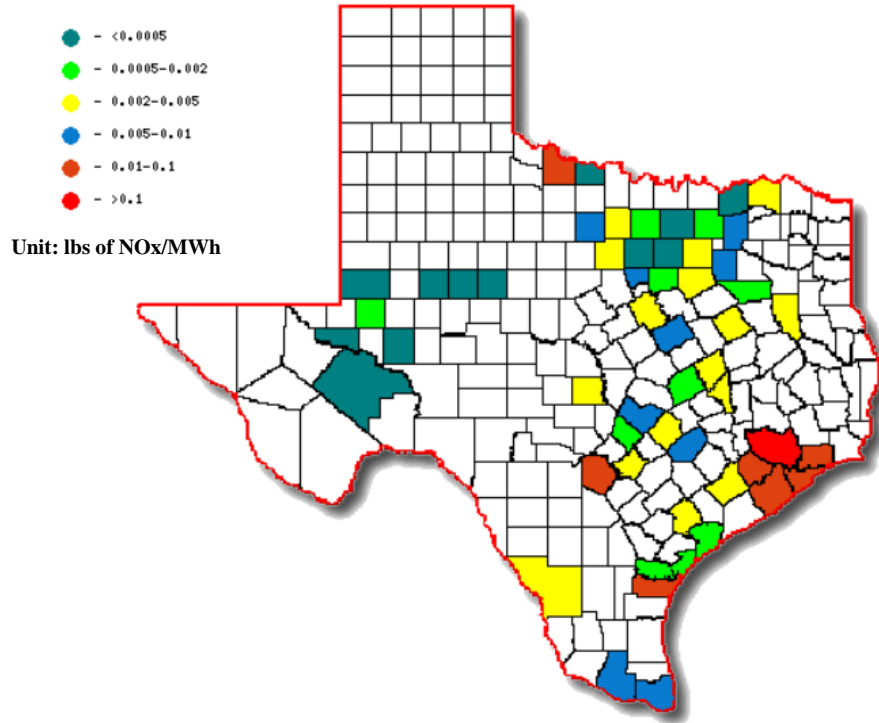


Figure 5-1: NOx Emissions from CM Zone - Houston in the 2010 Annual eGRID

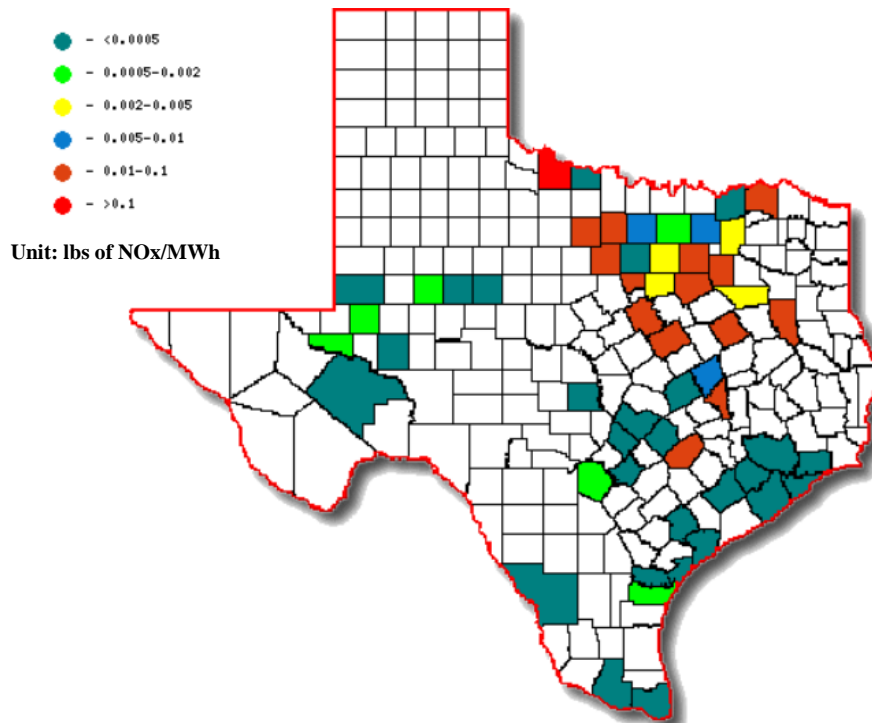


Figure 5-2: NOx Emissions from CM Zone - North in the 2010 Annual eGRID

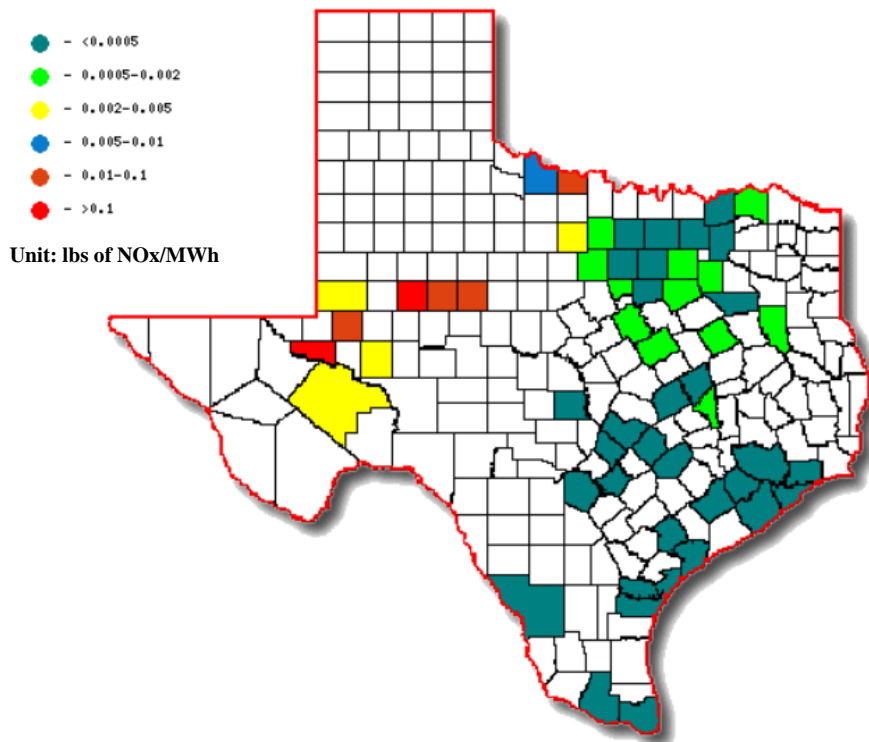


Figure 5-3: NOx Emissions from CM Zone - West in the 2010 Annual eGRID

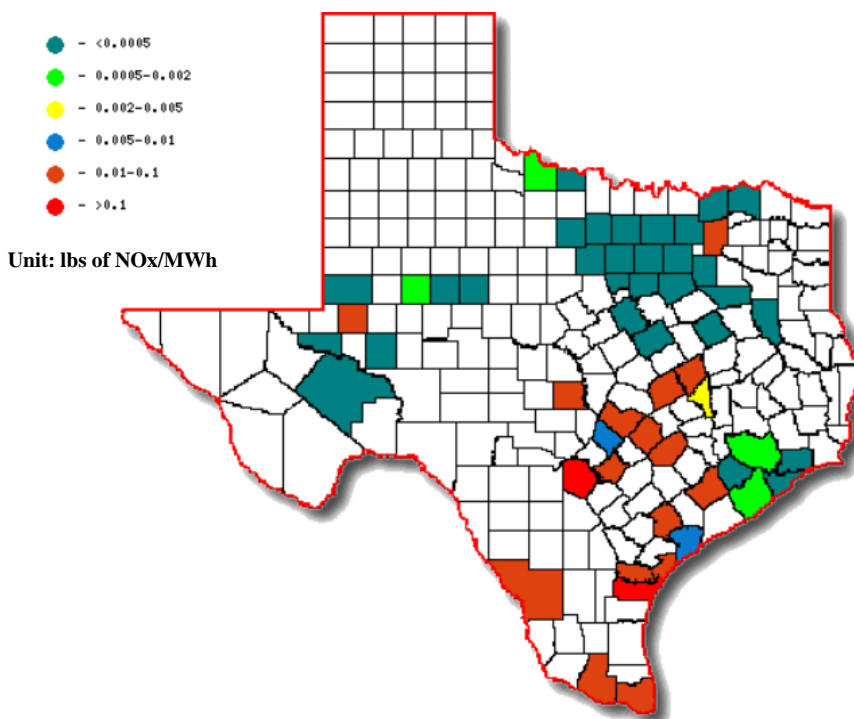


Figure 5-4: NOx Emissions from CM Zone - South in the 2010 Annual eGRID

Table 5-1: Wind Farm Information from the PUCT (Updated January 23rd, 2013)

Company	Facility	City	County	Resource	Capacity (MW)	Status	In Service	Region
Project Completed								
LG&E	Texas Wind Power Project		Culberson	Wind	35	Completed	Oct-95	ERCOT
York Research	Big Spring Wind Power	Big Spring	Howard	Wind	34	Completed	Feb-99	ERCOT
York Research	Big Spring Wind Power	Big Spring	Howard	Wind	7	Completed	Jun-99	ERCOT
FPL Energy	Southwest Mesa Wind Project	McCarney	Upton	Wind	75	Completed	Jun-99	ERCOT
American National Wind Power	Delaware Mountain Wind Farm		Culberson	Wind	30	Completed	Jun-99	ERCOT
Cielo/E Paso Electric	Huaco Mountain Wind Ranch	Huaco Mtn.	El Paso	Wind	1	Completed	Apr-01	WSCO
Orion Energy/American National Wind Power	Indian Mesa		Pecos	Wind	83	Completed	Jun-01	ERCOT
FPL/Cielo/TXU	Woodward Mountain Ranch	McCarney	Pecos	Wind	160	Completed	Jul-01	ERCOT
AEP	Trent Mesa	Sw eetwater	Nolan	Wind	150	Completed	Nov-01	ERCOT
AEP	Desert Sky (Indian Mesa II)	Iraan	Pecos	Wind	160	Completed	Dec-01	ERCOT
FPL/Cielo	King Mountain Wind Ranch	McCarney	Upton	Wind	278	Completed	Dec-01	ERCOT
Shell Wind Energy	Llano Estacado Wind Ranch	White Deer	Carson	Wind	79	Completed	Jan-02	SPP
Cielo/Orion/Green Mountain	Brazos Wind Ranch	Fluvana	Scurry	Wind	160	Completed	Dec-03	ERCOT
Aeolus Wind			Hansford	Wind	3	Completed	2003	SPP
DKR Development	Sw eetwater Wind 1	Sw eetwater	Nolan	Wind	38	Completed	Dec-03	ERCOT
DKRW Development	Sw eetwater Wind 2	Sw eetwater	Nolan	Wind	92	Completed	Feb-05	ERCOT
DKRW Energy	Sw eetwater Wind 3 (Cottonwood Creek)	Sw eetwater	Nolan	Wind	135	Completed	Dec-05	ERCOT
DKRW/BabcockBrown	Sw eetwater Wind 4 (Cottonwood Creek)	Sw eetwater	Nolan	Wind	241	Completed	May-07	ERCOT
DKRW/BabcockBrown	Sw eetwater Wind 5	Sw eetwater	Nolan	Wind	80	Completed	Dec-07	ERCOT
FPL Energy	Callahan Divide Wind Energy Center	Abilene	Taylor	Wind	114	Completed	Feb-05	ERCOT
AES Seawest	Buffalo Gap 1	Abilene	Taylor	Wind	120	Completed	Sep-05	ERCOT
AES	Buffalo Gap 2 (Crelle 1)	Abilene	Taylor	Wind	233	Completed	Aug-07	ERCOT
AES	Buffalo Gap 3		Taylor	Wind	170	Completed	Apr-08	ERCOT
FPL Energy	Horse Hollow Phase 1	Abilene	Taylor	Wind	213	Completed	Oct-05	ERCOT
FPL Energy	Horse Hollow Phase 2	Abilene	Taylor	Wind	224	Completed	May-06	ERCOT
FPL Energy	Horse Hollow Phase 3	Abilene	Taylor	Wind	258	Completed	Sep-06	ERCOT
FPL Energy	Red Canyon 1		Borden	Wind	84	Completed	May-06	ERCOT
Airtricity	Forest Creek Wind Farm		Sterling	Wind	124	Completed	Dec-06	ERCOT
Airtricity	Sand Bluff Wind Farm		Sterling	Wind	90	Completed	Dec-06	ERCOT
Edison Mission Group	Widorado Wind Ranch	Widorado	Oldham	Wind	161	Completed	Apr-07	SPP
Invergy	Camp Springs I		Scurry	Wind	130	Completed	Jul-07	ERCOT
Invergy	Camp Springs II		Scurry	Wind	120	Completed	Jun-08	ERCOT
FPL Energy	Capricorn Ridge Wind		Sterling	Wind	364	Completed	Sep-07	ERCOT
FPL Energy	Capricorn Ridge Wind exp.		Sterling	Wind	298	Completed	May-08	ERCOT
Gamesa Energy	Barton Chapel Wind 1		Jack	Wind	120	Completed	Dec-07	ERCOT
Enel North America/WKN USA	Snyder Wind Project	Snyder	Scurry	Wind	63	Completed	Dec-07	ERCOT
Horizon Wind Energy	Lone Star - Mesquite Wind		Shackelford	Wind	200	Completed	Dec-07	ERCOT
Horizon Wind Energy	Lone Star - Post Oak Wind		Shackelford	Wind	200	Completed	May-08	ERCOT
Renewable Energy Systems	Whirlwind	Floydada	Floyd	Wind	60	Completed	Dec-07	ERCOT
Invergy	Stanton Wind Energy		Martin	Wind	120	Completed	Jan-08	ERCOT
Airtricity	Champion Wind Farm		Scurry	Wind	126	Completed	Jan-08	ERCOT
Airtricity	Roscoe Wind Farm 1		Scurry	Wind	209	Completed	Jan-08	ERCOT
BP/Clipper Windpower	Silver Star Phase I		Erath	Wind	60	Completed	Mar-08	ERCOT
Edison Mission Group	Goat Wind		Sterling	Wind	80	Completed	Apr-08	ERCOT
Edison Mission Group	Goat Wind Phase 2		Sterling	Wind	70	Completed	Apr-09	ERCOT
Invergy	McAdoo Wind Energy		Dickens	Wind	150	Completed	May-08	ERCOT
Airtricity	Panther Creek		Howard	Wind	143	Completed	Jul-08	ERCOT
Duke Energy	Ocotillo Windpower 1		Howard	Wind	59	Completed	Aug-08	ERCOT
BP AL Energy - NRG	Sherbino Mesa Wind Farm		Pecos	Wind	150	Completed	Sep-08	ERCOT
Babcock & Brown	South Trent Wind Farm		Taylor	Wind	101	Completed	Oct-08	ERCOT
FPL Energy	Wolf Ridge Windfarm		Cooke	Wind	113	Completed	Oct-08	ERCOT
Babcock & Brown	Gulf Wind 1		Kenedy	Wind	283	Completed	Nov-08	ERCOT
E.ON Climate & Renewables	Hadale		Nolan	Wind	197	Completed	Nov-08	ERCOT
E.ON Climate & Renewables	Panther Creek 2		Howard	Wind	115	Completed	Nov-08	ERCOT
E.ON Climate & Renewables	Pyron		Scurry	Wind	249	Completed	Nov-08	ERCOT
Eurus Energy Holdings	Bull Creek Wind Plant		Borden	Wind	180	Completed	Nov-08	ERCOT
Invergy	Turkey Track Energy Center		Nolan	Wind	170	Completed	Nov-08	ERCOT
NRG Padoma Wind	Ebow Creek Wind		Howard	Wind	117	Completed	Nov-08	ERCOT
PFM Energy	Penascal Wind Farm		Kenedy	Wind	202	Completed	Nov-08	ERCOT
Renewable Energy Systems	Hackberry Wind Farm		Shackelford	Wind	165	Completed	Nov-08	ERCOT
Duke Energy	Notreess Windpower		Ector	Wind	153	Completed	Jan-09	ERCOT
Noble Environmental	Noble Great Plains Windpark		Hansford	Wind	114	Completed	Feb-09	SPP
E.ON Climate & Renewables	Panther Creek 3		Concho	Wind	200	Completed	Aug-09	ERCOT
Valero Energy	Sunray Wind I, II, III		Moore	Wind	50	Completed	Aug-09	SPP
E.ON Climate & Renewables	Papalote Creek Wind Farm		San Patricio	Wind	180	Completed	Sep-09	ERCOT
Padoma Wind	Langford Wind Power		Tom Green	Wind	150	Completed	Oct-09	ERCOT
Third Planet Windpower	Loraine Windpark		Mitchell	Wind	251	Completed	Oct-09	ERCOT
Deere & Company	JD Wind 1-7, 9-11, Wege	Gruver	Hansford	Wind	190	Completed	2009	SPP
Babcock & Brown	Majestic Wind Power		Carson	Wind	80	Completed	2009	SPP
Iberdrola	Penascal Wind Farm 2		Kenedy	Wind	202	Completed	Mar-10	ERCOT
E.ON Climate & Renewables	Papalote Creek Phase II		San Patricio	Wind	198	Completed	Jun-10	ERCOT
DeWind/Perpetual/highPower	Little Pringle 1,2		Hutchison	Wind	20	Completed	Sep-10	SPP
Edison Mission Group	Cedro Hill Wind	Bruni	Webb	Wind	150	Completed	Oct-10	ERCOT
BP Alternative Energy	Sherbino Mesa Wind Farm 2		Pecos	Wind	158	Completed	Nov-11	ERCOT
BP Wind Power	Trinity Hills Wind Farm		Young	Wind	225	Completed	Jan-12	ERCOT
DeWind	Frisco Wind Farm		Hansford	Wind	20	Completed	Feb-12	SPP
Revolution Energy	Harbor Wind Project		Nueces	Wind	9	Completed	Mar-12	ERCOT
E.ON Climate & Renewables	Redfish Wind Project		Willacy	Wind	206	Completed	Apr-12	ERCOT
E.ON Climate & Renewables	Anaachacho Windfarm		Kinney	Wind	100	Completed	Dec-12	ERCOT
Gamesa Energy	Senate Wind Project		Jack	Wind	150	Completed	Dec-12	ERCOT
WKN USA	Mozart		Kent	Wind	30	Completed	Dec-12	ERCOT
EDF Renewable	Spinning Spur Wind Ranch		Oldham	Wind	161	Completed	Dec-12	SPP
Exelon	Whitetail Wind Project		Webb	Wind	92	Completed	Dec-12	ERCOT
EDF Renewable	Bobcat Bluff		Clay	Wind	150	Completed	Jan-13	ERCOT

Table 5-2: 2008 Wind Power Production Assigned to Each CM Zone in the ERCOT Region

CM Zones	Annual Wind Power (MWh/yr)	OSP Wind Power (MWh/day)
Houston	0	0
North	2,827,812	5,089
West	22,015,143	38,615
South	3,692,839	6,384
Total	28,535,794	50,088

Table 5-3: 2011 Wind Power Production Assigned to Each CM Zone in the ERCOT Region

CM Zones	Annual Wind Power (MWh/yr)	OSP Wind Power (MWh/day)
Houston	0	0
North	2,680,276	5,275
West	21,065,008	42,555
South	4,224,812	10,098
Total	27,970,096	57,928

Estimated 2008 Annual NOx Reduction From Wind Power (tons/yr)

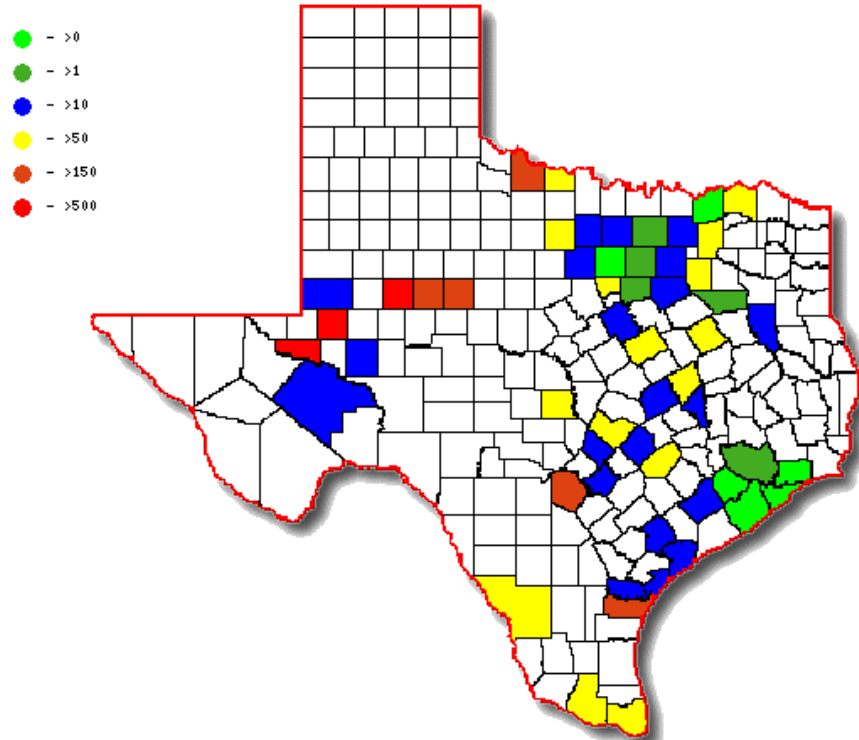


Figure 5-5: Estimated 2008 Annual NOx Reductions from Wind Power in Texas Map

Measured 2011 Annual NOx Reductions From Wind Power (tons/yr)

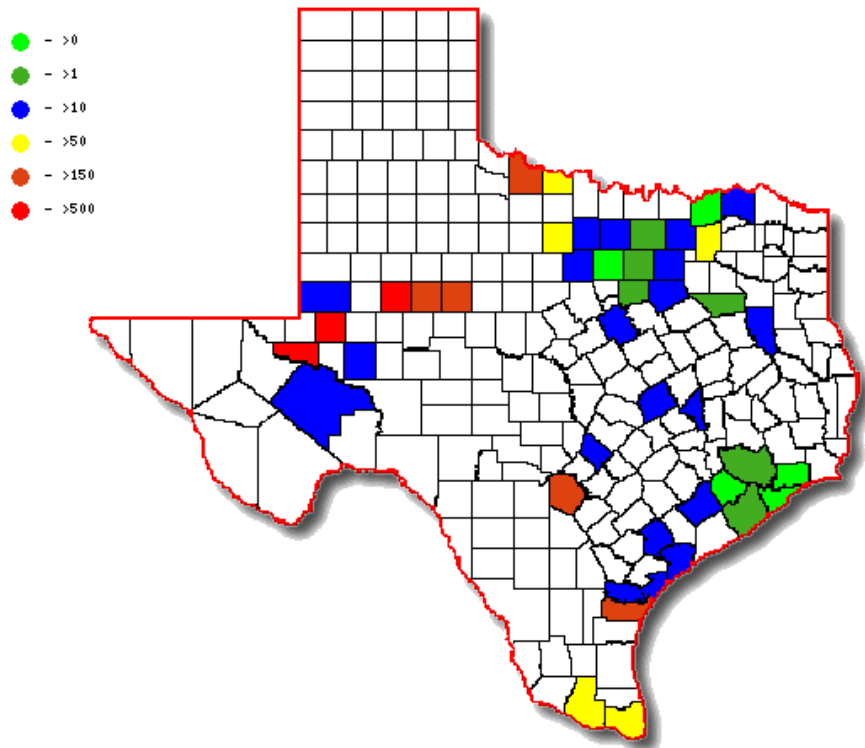


Figure 5-6: Measured 2011 Annual NOx Reductions from Wind Power in Texas Map

Estimated 2008 Annual NOx Reduction From Wind Power (tons/yr)

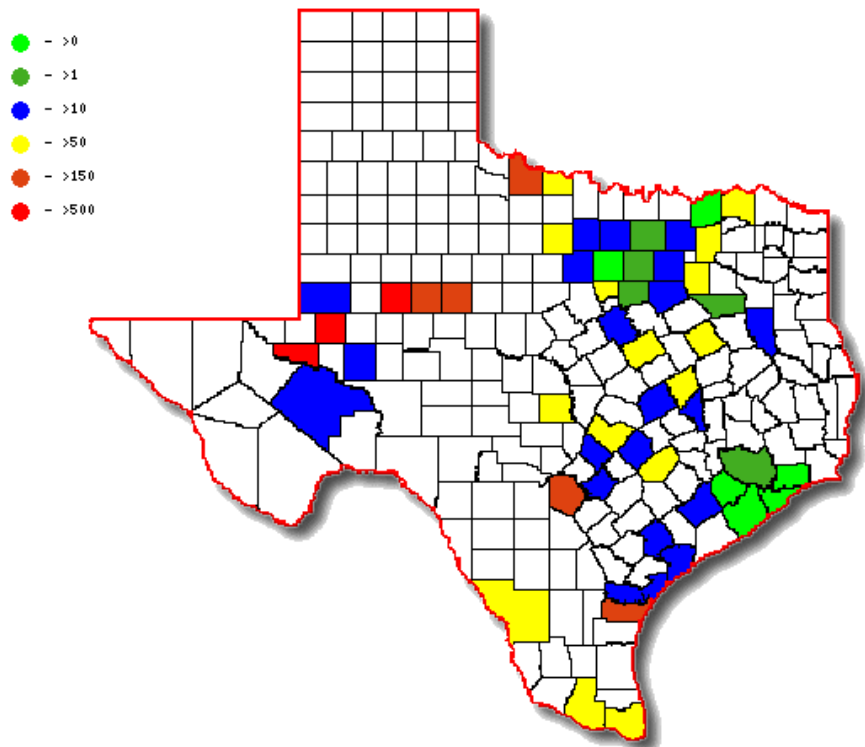


Figure 5-7: Estimated 2008 OSP NOx Reductions from Wind Power in Texas Map

Measured 2011 OSP NOx Reductions From Wind Power (tons/day)

- - >0.01
- - >0.03
- - >0.05
- - >0.1
- - >0.5
- - >1.00

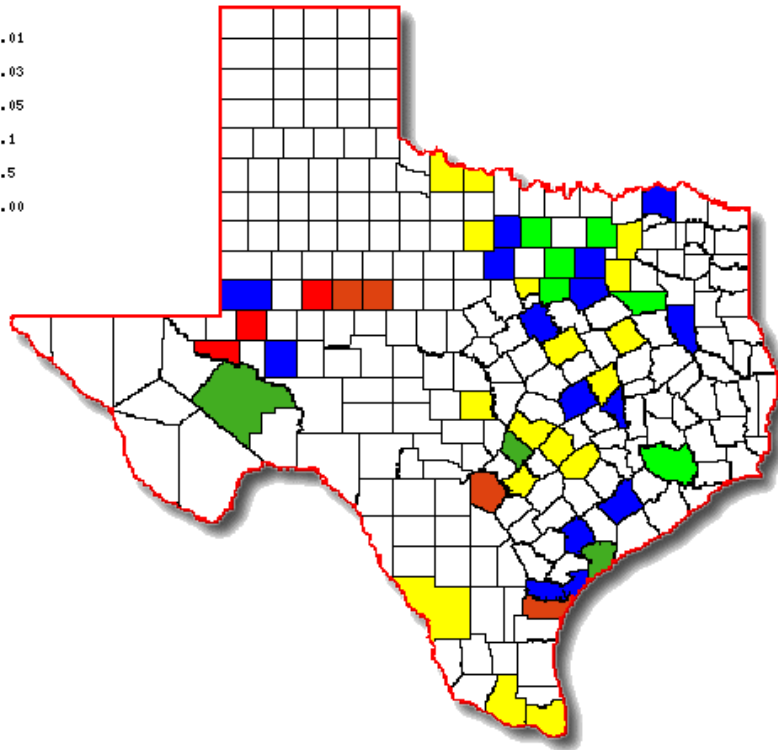


Figure 5-8: Measured 2011 OSP NOx Reductions from Wind Power in Texas Map

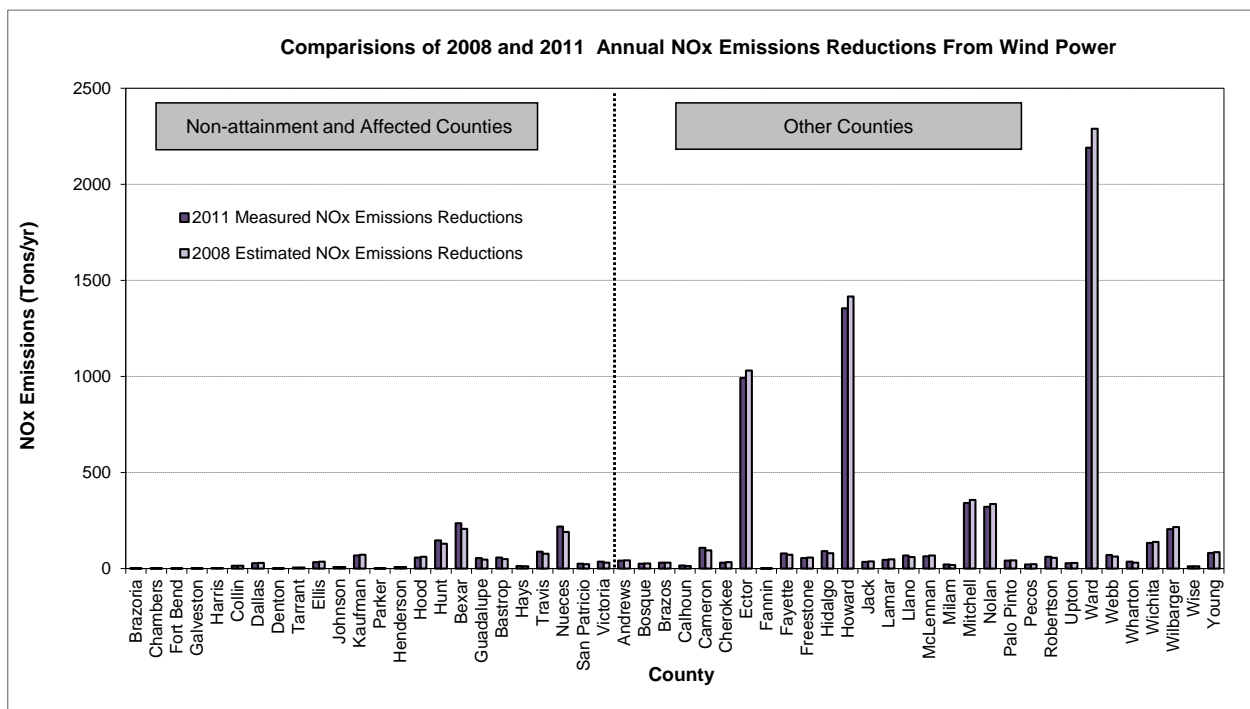


Figure 5-9: Comparisons of 2008 and 2011 Annual NOx Emissions Reductions from Wind Power

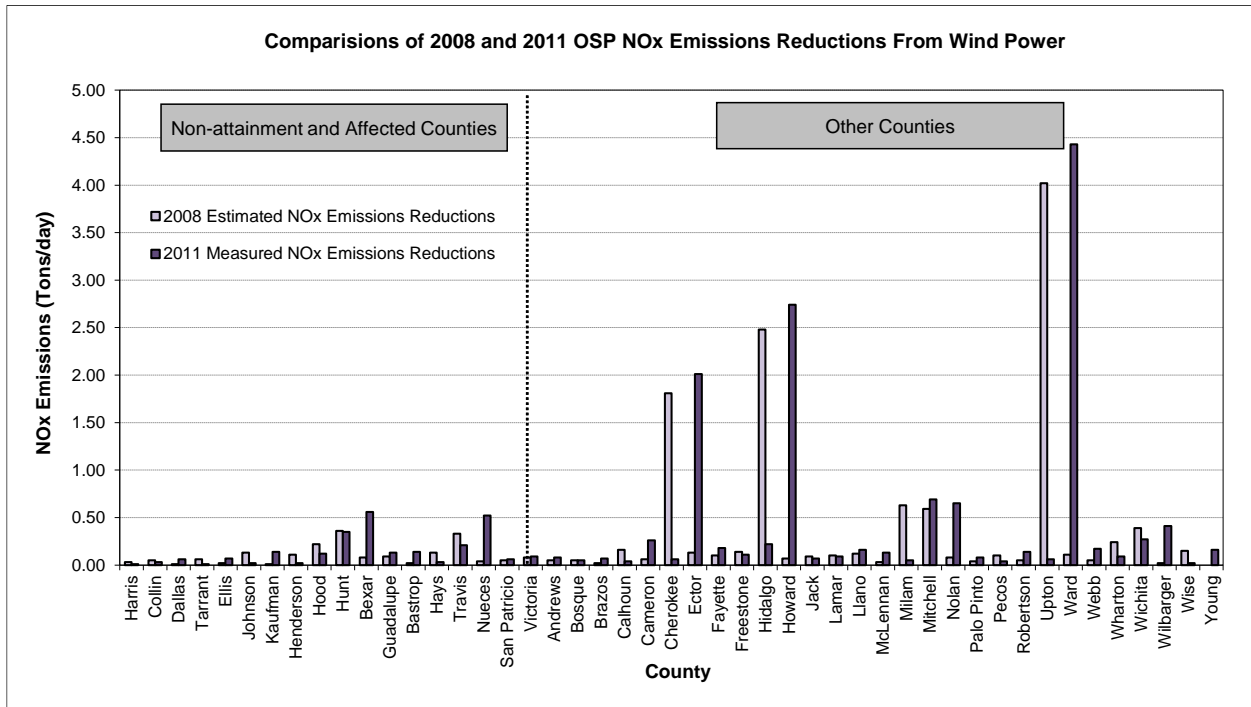


Figure 5-10: Comparisons of 2008 and 2011 OSP NOx Emissions Reductions from Wind Power

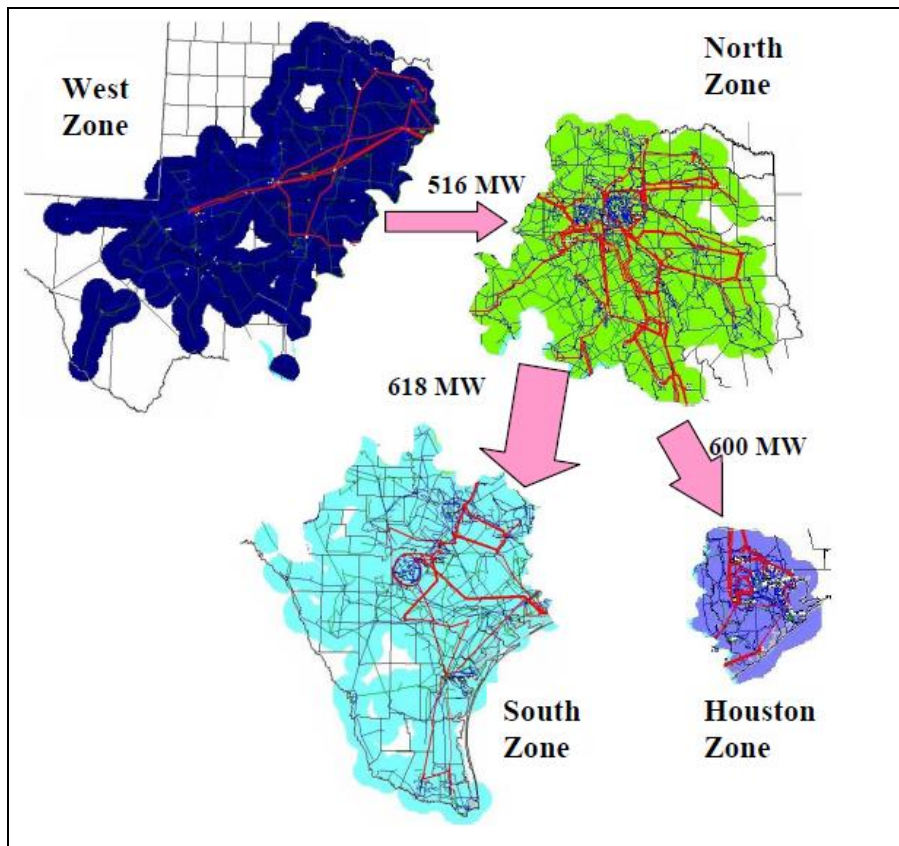


Figure 5-11: Average SPD-Modeled Flows on Commercially Significant Constraints for 2010

Table 5-4: Distribution of the Annual Emission Reductions per CM Zone for each County (Base Year 2008)

Area	County	CM Zones				Total Nox Reductions (lbs)	Total Nox Reductions (Tons)					
		H	N	W	S							
Houston-Galveston Area	Brazoria	0.0562032	0.0000	0.0000071	20.1639	0.0000003	7.5824	0.0005265	1944.4351	1972.18	0.99	
	Chambers	0.0204500	0.0000	0.0000026	7.3368	0.0000001	2.7589	0.0001916	707.4990	717.59	0.36	
	Fort Bend	0.0313463	0.0000	0.0000040	11.2460	0.0000002	4.2289	0.0002937	1084.4737	1099.95	0.55	
	Galveston	0.0228620	0.0000	0.0000029	8.1304	0.0000001	3.0673	0.0002123	784.0252	795.21	0.40	
	Harris	0.1486911	0.0000	0.0000189	53.3455	0.0000009	20.0600	0.0013930	5144.1955	5217.60	2.61	
	Liberty	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
	Montgomery	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
	Waller	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
	Hardin	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
Beaumont/Port Arthur Area	Jefferson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Orange	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
Dallas/Fort Worth Area	Collin	0.0012932	0.0000	0.0079329	22432.8311	0.0003832	8435.6253	0.0000809	298.8787	31167.34	15.58	
	Dallas	0.0024826	0.0000	0.0152295	43066.2783	0.0007356	16194.6117	0.0001554	573.7838	59834.67	29.92	
	Denton	0.0001267	0.0000	0.0007770	2197.2564	0.0000375	826.2547	0.0000079	29.2746	3052.79	1.53	
	Tarrant	0.0004742	0.0000	0.0029089	8225.7367	0.0001405	3093.2000	0.0000297	109.5937	11428.53	5.71	
	Ellis	0.0029920	0.0000	0.0183544	51902.6556	0.0008865	19517.4365	0.0001873	691.5133	72111.61	36.06	
	Johnson	0.0007256	0.0000	0.0044512	12587.1023	0.0002150	4733.2447	0.0000454	167.7014	17488.05	8.74	
	Kaufman	0.0059718	0.0000	0.0366343	103594.7853	0.0017695	38955.7070	0.0003738	1380.2216	143930.71	71.97	
	Parker	0.0000012	0.0000	0.0000075	21.3287	0.0000004	8.0204	0.0000001	0.2842	29.63	0.01	
	Rockwall	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
	Henderson	0.0006908	0.0000	0.0042376	11983.0261	0.0002047	4506.0883	0.0000432	159.6531	16648.77	8.32	
	Hood	0.0050771	0.0000	0.0311454	88073.3385	0.0015044	33119.0335	0.0003178	1173.4252	122365.80	61.18	
	Hunt	0.0088463	0.0000	0.0047066	13309.4848	0.0002273	5004.8889	0.0002823	241077.0024	259391.38	129.70	
El Paso Area	El Paso	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Big Bend	0.0138906	0.0000	0.0009368	2649.1335	0.0000452	996.1782	0.1109355	409667.0874	413312.40	206.66	
San Antonio Area	Comal	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Guadalupe	0.0032029	0.0000	0.0002160	610.8360	0.0000104	229.6983	0.0255795	94460.8444	95301.38	47.65	
	Wilson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
Austin Area	Bastrop	0.0033782	0.0000	0.0002278	644.2748	0.0000110	242.2726	0.0269798	99631.8859	100518.43	50.26	
	Caldwell	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Hays	0.0008331	0.0000	0.0005622	158.8894	0.0000027	59.7486	0.0066537	24570.9579	24789.60	12.39	
	Travis	0.0051785	0.0000	0.0003493	987.6194	0.0000169	371.3837	0.0413577	152727.3600	154086.36	77.04	
	Williamson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Gregg	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
North East Texas Area	Harrison	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Rusk	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Smith	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Upshur	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
Corpus Christi Area	Nueces	0.0128578	0.0000	0.0008672	2452.1590	0.0000419	922.1081	0.1026870	379206.5707	382580.84	191.29	
	San Patricio	0.0015100	0.0000	0.0001018	287.9694	0.0000049	108.2878	0.0120591	44532.1353	44928.39	22.46	
Victoria Area	Victoria	0.0021192	0.0000	0.0001429	404.1528	0.0000069	151.9773	0.0189244	62498.9606	63055.09	31.53	
	Andrews	0.0000037	0.0000	0.0000230	64.9521	0.0000003	85865.1155	0.0000002	0.8654	85930.93	42.97	
Other ERCOT counties	Angelina	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Bosque	0.0022204	0.0000	0.0136212	38518.1173	0.0006579	14484.3245	0.0001390	513.1874	53515.63	26.76	
	Brazos	0.0024089	0.0000	0.0112305	31757.7912	0.0005425	11942.1765	0.0047829	17662.5117	61362.48	30.68	
	Calhoun	0.0009466	0.0000	0.0000638	180.5266	0.0000031	67.8851	0.0075598	27916.9860	28165.40	14.08	
	Cameron	0.0063536	0.0000	0.0004285	1211.7266	0.0000207	455.6568	0.0507425	187383.7262	189051.11	94.53	
	Cherokee	0.0027392	0.0000	0.0168033	47516.6451	0.0008116	17868.1243	0.0001714	633.0773	66017.85	33.01	
	Coke	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
	Coleman	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
	Crockett	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
	Ector	0.0018215	0.0000	0.0006604	1867.3598	0.0011346	2006342.2067	0.0146527	54110.0022	2062319.57	1031.16	
	Fannin	0.0000041	0.0000	0.0000249	70.3414	0.0000012	26.4511	0.0000003	0.9372	97.73	0.05	
	Fayette	0.0051867	0.0000	0.0103217	29187.7629	0.0004986	10975.7449	0.0283983	104874.0636	145037.57	72.52	
	Freestone	0.0047643	0.0000	0.0292268	82647.8874	0.0014117	31078.8509	0.0002982	1101.1404	114827.88	57.41	
	Frio	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
	Grimes	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
	Hardeman	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
	Haskell	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	
	Hidalgo	0.0053716	0.0000	0.0003623	1024.4349	0.0000175	385.2278	0.0428994	158420.5792	159830.24	79.92	
	Howard	0.0002411	0.0000	0.0007641	2160.6471	0.1283942	2826615.9939	0.0009490	3504.4712	2832281.11	1416.14	
	Jack	0.0030783	0.0000	0.0188839	53400.0848	0.0009121	20080.5287	0.0001927	711.4639	74192.06	37.10	
	Jones	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	0.00
	Lamar	0.0040001	0.0000	0.0245388	69391.2171	0.0011853	26093.8223	0.0002504	924.5182	96409.56	48.20	
	Limestone	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	0.00
	Llano	0.0040314	0.0000	0.0002719	768.8537	0.0000131	289.1192	0.0321966	118897.0043	119954.98	59.98	
	McLennan	0.0056576	0.0000	0.0347066	98143.8452	0.0016764	36905.9395	0.0003541	1307.5973	136357.38	68.18	
	Milam	0.0012686	0.0000	0.0000856	241.9410	0.0000041	90.9793	0.0101316	37414.2250	37747.15	18.87	
	Mitchell	0.0000311	0.0000	0.0001910	539.9967	0.0324260	713862.3463	0.0000019	7.1945	714409.54	357.20	
	Nolan	0.0000293	0.0000	0.0001795	507.4981	0.0304745	670900.0257	0.0000018	6.7615	671414.29	335.71	
	Palo Pinto	0.0036129	0.0000	0.0221635	62674.3298	0.0010705	23568.0096	0.0002281	835.0272	87077.36	43.54	
	Pecos	0.0000020	0.0000	0.0000121	34.1729	0.0002620	45175.7404	0.0000001	0.4553	45210.37	22.61	
	Presidio	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	0.00
	Red River	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	0.00
	Robertson	0.0039506	0.0000	0.0055755	15766.3925	0.0002693	5928.7827	0.0246170	90906.4610	112601.64	56.30	
	Taylor	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	0.00
	Teus	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	0.00
	Tom Green	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000	0.00	0.00
	Upton	0.0000025	0.0000	0.0000156	44.1215	0.0026494	58327.5782	0.0000002	0.5878	58372.29	29.19	
	Ward	0.0001995	0.0000	0.0012239	3461.0969	0.2078335	4575485.0497	0.0000125	46.1131	4578992.26	2289.50	
	Webb	0.0042017	0.0000	0.0002834	801.3282	0.0000137	301.3309	0.0335565	123918.9272	125021.59	62.51	
	Wharton	0.0021095	0.0000	0.0001423	402.3138	0.0000069	151.2858	0.0168474	62214.5755	62768.18	31.38	
	Wichita	0.0000121	0.0000	0.0000743	210.1467	0.00126190	277808.8154	0.0000008	2.7998	278021.76	139.01	
	Wilbarger	0.0179710	0.0000	0.1102430	311746.4865	0.0053249	117228.9198	0.0011247	4153.4837	433128.89	216.56	
	Wise	0.0010202	0.0000	0.0062583	17697.2653	0.0003023	6654.8667	0.0000638	235.7855	24587.92	12.29	
	Young	0.0071054	0.0000	0.0435880	123258.7399	0.0021054	46350.1260	0.0004447	1642.2099	171251.08	85.63	

Table 5-5: Distribution of the Annual Emission Reductions per CM Zone for each County (Year 2011)

Area	County	CM Zones				Total Nox Reductions (lbs)	Total Nox Reductions (Tons)				
		H	N	W	S						
Houston- Galveston Area	Brazoria	0.0562032	0.0000	0.0000071	19.1118	0.0000003	7.2552	0.0005265	2224.5413	2250.91	1.13
	Chambers	0.0204500	0.0000	0.0000026	6.9540	0.0000001	2.6399	0.0001916	809.4180	819.01	0.41
	Fort Bend	0.0313463	0.0000	0.0000040	10.6593	0.0000002	4.0464	0.0002937	1240.6979	1255.40	0.63
	Galveston	0.0226620	0.0000	0.0000029	7.7062	0.0000001	2.9254	0.0002123	896.9682	907.60	0.45
	Harris	0.1486911	0.0000	0.0000189	50.5623	0.0000009	19.1942	0.0013930	5885.2441	5955.00	2.98
	Liberty	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Montgomery	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Waller	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Hardin	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Jefferson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
Beaumont/ Port Arthur Area	Orange	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Colin	0.0012932	0.0000	0.0079329	21262.4385	0.0003832	8071.5585	0.0000809	341.9338	29675.93	14.84
	Dallas	0.0024826	0.0000	0.0152295	40819.3728	0.0007356	15495.6806	0.0001554	656.4404	56971.49	28.49
Dallas/ Fort Worth Area	Denton	0.0001267	0.0000	0.0007770	2082.6185	0.0000375	790.5950	0.0000079	33.4918	2906.71	1.45
	Tarrant	0.0004742	0.0000	0.0029089	7796.5737	0.0001405	2959.7029	0.0000297	125.3813	10881.66	5.44
	Ellis	0.0029920	0.0000	0.0183544	49194.7280	0.0008865	18675.0981	0.0001873	791.1294	68660.96	34.33
	Johnson	0.0007256	0.0000	0.0044512	11930.3929	0.0002150	4528.9662	0.0000454	191.8597	16651.22	8.33
	Kaufman	0.0059718	0.0000	0.0366343	98189.9139	0.0017695	37274.4469	0.0003738	1579.0499	137043.41	68.52
	Parker	0.0000012	0.0000	0.0000075	20.2159	0.0000004	7.6743	0.0000001	0.3251	28.22	0.01
	Rockwall	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Henderson	0.0006908	0.0000	0.0042376	11357.8333	0.0002047	4311.6135	0.0000432	182.6520	15852.10	7.93
	Hood	0.0050771	0.0000	0.0311454	83478.2706	0.0015044	31689.6741	0.0003178	1342.4633	116510.41	58.26
	Hunt	0.0088463	0.0000	0.0047066	12615.0864	0.0002273	4788.8866	0.0002823	275805.4204	293209.39	146.60
El Paso Area	El Paso	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Bexar	0.0138906	0.0000	0.0009368	2510.9198	0.0000452	953.1849	0.01109355	466881.7993	472145.90	236.07
San Antonio Area	Comal	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Guadalupe	0.0032029	0.0000	0.0002160	578.9667	0.0000104	219.7849	0.0255795	108068.4289	108867.18	54.43
	Wilson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
Austin Area	Bastrop	0.0033782	0.0000	0.0002278	610.6609	0.0000110	231.8166	0.0269798	113984.3863	114826.86	57.41
	Caldwell	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Hays	0.0008331	0.0000	0.0000562	150.5996	0.0000027	57.1700	0.0066537	28110.5345	28318.30	14.16
	Travis	0.0051785	0.0000	0.0003493	936.0922	0.0000169	355.3554	0.0413577	174728.5445	176019.99	88.01
	Williamson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
North East Texas Area	Gregg	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Harrison	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Rusk	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Smith	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Upshur	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
Corpus Christi Area	Nueces	0.0128578	0.0000	0.0008672	2324.2220	0.0000419	882.3115	0.1026870	433833.2839	437039.82	218.52
	San Patricio	0.0015100	0.0000	0.0001018	272.9451	0.0000049	103.8143	0.0120591	50947.2251	51323.78	25.66
Victoria Area	Victoria	0.0021192	0.0000	0.0001429	383.0668	0.0000069	145.4182	0.0189244	71502.2666	72030.75	36.02
Other ERCOT counties	Andrews	0.0000037	0.0000	0.0000230	61.5634	0.0000003	82159.3275	0.0000002	0.9900	82221.88	41.11
	Angelina	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Bosque	0.0022204	0.0000	0.0136212	36508.5039	0.0006579	13859.2065	0.0001390	587.1148	50954.83	25.48
	Brazos	0.0024089	0.0000	0.0112305	30100.8856	0.0005425	11426.7730	0.0047829	20206.8900	61734.55	30.87
	Calhoun	0.0009466	0.0000	0.0000638	171.1080	0.0000031	64.9553	0.0075598	31938.5755	32174.64	16.09
	Cameron	0.0063536	0.0000	0.0004285	1148.5070	0.0000207	435.9914	0.0507425	214377.3435	215961.84	107.98
	Cherokee	0.0027392	0.0000	0.0168033	45037.5497	0.0008116	17096.9674	0.0001714	724.2754	62858.79	31.43
	Coke	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Coleman	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Crockett	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Ector	0.0018215	0.0000	0.0006604	1769.9337	0.0911346	1919751.9923	0.0146527	61904.8344	1983426.76	991.71
	Fannin	0.0000041	0.0000	0.0000249	66.6715	0.0000012	25.3095	0.0000003	1.0722	93.05	0.05
	Fayette	0.0051867	0.0000	0.0103217	27664.9439	0.0004986	10502.0510	0.0283993	119981.7274	158148.72	79.07
	Freestone	0.0047643	0.0000	0.0292268	78335.8827	0.0014117	29737.5421	0.0002982	1259.7655	109333.19	54.67
	Frio	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Grimes	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Hardeman	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Haskell	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Hidalgo	0.0053716	0.0000	0.0003623	970.9869	0.0000175	368.6020	0.0428994	181241.9019	182581.49	91.29
	Howard	0.0002411	0.0000	0.0007641	2047.9192	0.1283942	2704624.2001	0.0009490	4009.3088	2710681.43	1355.34
	Jack	0.0030783	0.0000	0.0188839	50614.0315	0.0009121	19213.8882	0.0001927	813.9541	70641.87	35.32
	Jones	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Lamar	0.0040001	0.0000	0.0245388	65770.8552	0.0011853	24967.6586	0.0002504	1057.6999	91796.21	45.90
	Limestone	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Llano	0.0040314	0.0000	0.0002719	728.7401	0.0000131	276.6413	0.0321966	136024.7470	137030.13	68.52
	McLennan	0.0056576	0.0000	0.0347066	93023.3668	0.0016764	35313.1438	0.0003541	1495.9636	129832.47	64.92
	Milam	0.0012686	0.0000	0.0000856	229.3182	0.0000041	87.0528	0.0101316	42803.9421	43120.31	21.56
	Mitchell	0.0000311	0.0000	0.0001910	511.8233	0.0324260	683053.2982	0.0000019	8.2309	683573.35	341.79
	Nolan	0.0000293	0.0000	0.0001795	481.0203	0.0304745	641945.1561	0.0000018	7.7356	642433.91	321.22
	Palo Pinto	0.0036129	0.0000	0.0221635	59404.4085	0.0010705	22550.8546	0.0002281	955.3173	82910.58	41.46
	Pecos	0.0000020	0.0000	0.0000121	32.3900	0.0020520	43226.0346	0.0000001	0.5209	43258.95	21.63
	Presidio	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Red River	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Robertson	0.0039506	0.0000	0.0055755	14943.8094	0.0002693	5672.9068	0.0246170	104002.0178	124618.73	62.31
	Taylor	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Teus	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Tom Green	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Upton	0.0000025	0.0000	0.0000156	41.8196	0.0026494	55810.2621	0.0000002	0.6725	55852.75	27.93
	Ward	0.0001995	0.0000	0.0012239	3280.52						

Table 5-6: Distribution of the OSP Emission Reductions per CM Zone for each County (Base Year 2008)

Area	County	CM Zones				Total Nox Reductions (lbs)	Total Nox Reductions (Tons)					
		H	N	W	S							
Houston-Galveston Area	Brazoria	0.0562032	0.0000	0.0000071	0.0363	0.0000003	0.0133	0.0005265	3.3614	3.41	0.00	
	Chambers	0.0204500	0.0000	0.0000026	0.0132	0.0000001	0.0048	0.0001916	1.2231	1.24	0.00	
	Fort Bend	0.0313463	0.0000	0.0000040	0.0202	0.0000002	0.0074	0.0002937	1.8748	1.90	0.00	
	Galveston	0.0226620	0.0000	0.0000029	0.0146	0.0000001	0.0054	0.0002123	1.3554	1.38	0.00	
	Harris	0.1486911	0.0000	0.0000189	0.0960	0.0000009	0.0352	0.0013930	8.8930	9.02	0.00	
	Liberty	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Montgomery	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
Beaumont/Port Arthur Area	Waller	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Hardin	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Jefferson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Orange	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
Dallas/Fort Worth Area	Collin	0.0012932	0.0000	0.0079329	40.3707	0.0003832	14.7963	0.0008009	0.5167	55.68	0.03	
	Dallas	0.0024826	0.0000	0.0152295	77.5031	0.0007356	28.4057	0.0001554	0.9919	106.90	0.05	
	Denton	0.0001267	0.0000	0.0007770	3.9542	0.0000375	1.4493	0.0000079	0.0506	5.45	0.00	
	Tarrant	0.0004742	0.0000	0.0029089	14.8032	0.0001405	5.4255	0.0000297	0.1895	20.42	0.01	
	Ellis	0.0029920	0.0000	0.0183544	93.4053	0.0008865	34.2340	0.0001873	1.1955	128.83	0.06	
	Johnson	0.0007256	0.0000	0.0044512	22.6521	0.0002150	8.3022	0.0000454	0.2899	31.24	0.02	
	Kaufman	0.0059718	0.0000	0.0366343	186.4317	0.0017695	68.3291	0.0003738	2.3861	257.15	0.13	
	Parker	0.0000012	0.0000	0.0000075	0.0384	0.0000004	0.0141	0.0000001	0.0005	0.05	0.00	
	Rockwall	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Henderson	0.0006908	0.0000	0.0042376	21.5649	0.0002047	7.9038	0.0000432	0.2780	29.74	0.01	
	Hood	0.0050771	0.0000	0.0311454	158.4989	0.0015044	58.0914	0.0003178	2.0286	218.62	0.11	
	Hunt	0.0088463	0.0000	0.0047066	23.9521	0.0002273	8.7787	0.0052823	416.7622	449.49	0.22	
	El Paso Area	El Paso	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
Bexar		0.0138906	0.0000	0.0009368	4.7674	0.0000452	1.7473	0.1109355	708.2125	714.73	0.36	
San Antonio Area	Cornal	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Guadalupe	0.0032029	0.0000	0.0002160	1.0993	0.0000104	0.4029	0.0257995	163.2993	164.80	0.08	
	Wilson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
Austin Area	Bastrop	0.0033782	0.0000	0.0002278	1.1595	0.0000110	0.4250	0.0289798	172.2387	173.82	0.09	
	Caldwell	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Hays	0.0008331	0.0000	0.0000562	0.2859	0.0000027	0.1048	0.0066537	42.4771	42.87	0.02	
	Travis	0.0051785	0.0000	0.0003493	1.7773	0.0000169	0.6514	0.0413577	264.0276	266.46	0.13	
	Williamson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
North East Texas Area	Gregg	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Harrison	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Rusk	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Smith	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
Corpus Christi Area	Upshur	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Nueces	0.0128578	0.0000	0.0008672	4.4130	0.0000419	1.6174	0.1026870	655.5538	661.58	0.33	
Victoria Area	San Patricio	0.0015100	0.0000	0.0001018	0.5182	0.0000049	0.1899	0.0120591	76.9850	77.69	0.04	
	Victoria	0.0021192	0.0000	0.0001429	0.7273	0.0000069	0.2666	0.0169244	108.0452	109.04	0.05	
Other ERCOT counties	Andrews	0.0000037	0.0000	0.0000230	0.1169	0.0039003	150.6091	0.0000002	0.0015	150.73	0.08	
	Angelina	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Bosque	0.0022204	0.0000	0.0136212	69.3182	0.0006579	25.4058	0.0001390	0.8872	95.61	0.05	
	Brazos	0.0024089	0.0000	0.0112305	57.1521	0.0005425	20.9468	0.0047829	30.5341	108.63	0.05	
	Calhoun	0.0009466	0.0000	0.0000638	0.3249	0.0000031	0.1191	0.0075998	48.2615	48.71	0.02	
	Cameron	0.0063536	0.0000	0.0004285	2.1807	0.0000207	0.7992	0.0507425	323.9398	326.92	0.16	
	Cherokee	0.0027392	0.0000	0.0168033	85.5121	0.0008116	31.3410	0.0001714	1.0944	117.95	0.06	
	Coke	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Coleman	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Crockett	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Ector	0.0019215	0.0000	0.0006604	3.3605	0.0911346	3519.1643	0.0146527	93.5427	3616.07	1.81	
	Fannin	0.0000041	0.0000	0.0000249	0.1266	0.0000012	0.0464	0.0000003	0.0016	0.17	0.00	
	Fayette	0.0051867	0.0000	0.0103217	52.5270	0.0004986	19.2517	0.0283993	181.3012	253.08	0.13	
	Freestone	0.0047643	0.0000	0.0292268	148.7352	0.0014117	54.5129	0.0002982	1.9036	205.15	0.10	
	Frio	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Grimes	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Hardeman	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Haskell	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Hidalgo	0.0053716	0.0000	0.0003623	1.8436	0.0000175	0.6757	0.0428994	273.8698	276.39	0.14	
	Howard	0.0002411	0.0000	0.0007641	3.8884	0.1283942	4957.9408	0.0009490	6.0584	4967.89	2.48	
	Jack	0.0030783	0.0000	0.0188839	96.1001	0.0009121	35.2216	0.0001927	1.2299	132.55	0.07	
	Jones	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Lamar	0.0040001	0.0000	0.0245388	124.8781	0.0011853	45.7691	0.0002504	1.5983	172.25	0.09	
	Limestone	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Llano	0.0040314	0.0000	0.0002719	1.3836	0.0000131	0.5071	0.0321966	205.5433	207.43	0.10	
	McLennan	0.0056576	0.0000	0.0347066	176.6221	0.0016764	64.7338	0.0003541	2.2605	243.62	0.12	
	Milam	0.0012686	0.0000	0.0000856	0.4354	0.0000041	0.1596	0.0101316	64.6799	65.27	0.03	
	Mitchell	0.0000311	0.0000	0.0001910	0.9718	0.0324260	1252.1288	0.0000019	0.0124	1253.11	0.63	
	Notan	0.0000293	0.0000	0.0001795	0.9133	0.0304745	1176.7720	0.0000018	0.0117	1177.70	0.59	
	Palo Pinto	0.0036129	0.0000	0.0221635	112.7903	0.0010705	41.3388	0.0002261	1.4436	155.57	0.08	
	Pecos	0.0000020	0.0000	0.0000121	0.0615	0.0020520	79.2391	0.0000001	0.0008	79.30	0.04	
	Presidio	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Red River	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Robertson	0.0039506	0.0000	0.0055755	28.3736	0.0002693	10.3992	0.0246170	157.1547	195.93	0.10	
	Taylor	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Titus	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Tom Green	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00	
	Upton	0.0000025	0.0000	0.0000156	0.0794	0.0026494	102.3077	0.0000002	0.0010	102.39	0.05	
	Ward	0.0001995	0.0000	0.0012239	6.2287	0.2078335	8025.4921	0.0000125	0.0797	8031.80	4.02	
	Webb	0.0040217	0.0000	0.0002834	1.4421	0.0000137	0.5285	0.0335665	214.2250	216.20	0.11	
	Wharton	0.0021095	0.0000	0.0001423	0.7240	0.0000069	0.2654	0.0168474	107.5535	108.54	0.05	
	Wichita	0.0000121	0.0000	0.0000743	0.3782	0.0126190	487.2822	0.0000008	0.0048	487.67	0.24	
	Wilbarger	0.0179710	0.0000	0.1102430	561.0266	0.0053249	205.6219	0.0011247	7.1803	773.83	0.39	
	Wise	0.0010202	0.0000	0.0062583	31.8484	0.0003023	11.6728	0.0000638	0.4076	43.93	0.02	
	Young	0.0071054	0.0000	0.0435880	221.8195	0.0021054	81.2990	0.0004447	2.8390	305.96	0.15	
	Total	0.4414501	0.0000	0.4812863	2449.2659	0.5345786	20642.7529	0.6829349	4359.8562	27451.87	13.73	
	Energy Savings (MWh)	0		5,089		38,615		6,384				

Table 5-7: Distribution of the OSP Emission Reductions per CM Zone for each County (Year 2011)

Area	County	CM Zones				Total Nox Reductions (lbs)	Total Nox Reductions (Tons)				
		H	N	W	S						
Houston-Galveston Area	Brazoria	0.0562032	0.0000	0.0000071	0.0376	0.0000003	0.0147	0.0005265	5.3170	5.37	0.00
	Chambers	0.0204500	0.0000	0.0000026	0.0137	0.0000001	0.0053	0.0001916	1.9346	1.95	0.00
	Fort Bend	0.0313463	0.0000	0.0000040	0.0210	0.0000002	0.0092	0.0002937	2.9655	2.99	0.00
	Galveston	0.0226620	0.0000	0.0000029	0.0152	0.0000001	0.0059	0.0002123	2.1439	2.16	0.00
	Harris	0.1486911	0.0000	0.0000189	0.0995	0.0000009	0.0388	0.0013930	14.0667	14.20	0.01
	Liberty	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Montgomery	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Waller	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Hardin	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
Beaumont/Port Arthur Area	Jefferson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Orange	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
Dallas/ Fort Worth Area	Collin	0.0012932	0.0000	0.0079329	41.8462	0.0003832	16.3060	0.0000809	0.8173	58.97	0.03
	Dallas	0.0024826	0.0000	0.0152295	80.3358	0.0007356	31.3040	0.0001554	1.5690	113.21	0.06
	Denton	0.0001267	0.0000	0.0007770	4.0988	0.0000375	1.5971	0.0000079	0.0801	5.78	0.00
	Tarrant	0.0004742	0.0000	0.0029089	15.3443	0.0001405	5.9791	0.0000297	0.2997	21.62	0.01
	Ellis	0.0029920	0.0000	0.0183544	96.8192	0.0008865	37.7270	0.0001873	1.8909	136.44	0.07
	Johnson	0.0007256	0.0000	0.0044512	23.4800	0.0002150	9.1493	0.0000454	0.4586	33.09	0.02
	Kaufman	0.0059718	0.0000	0.0366343	193.2457	0.0017695	75.3099	0.0003738	3.7742	272.32	0.14
	Parker	0.0000012	0.0000	0.0000075	0.0398	0.0000004	0.0155	0.0000001	0.0008	0.06	0.00
	Rockwall	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Henderson	0.0006908	0.0000	0.0042376	22.3531	0.0002047	8.7102	0.0000432	0.4366	31.50	0.02
	Hood	0.0050771	0.0000	0.0311454	164.2920	0.0015044	64.0187	0.0003178	3.2087	231.52	0.12
El Paso Area	Hunt	0.0088463	0.0000	0.0047066	24.8275	0.0002273	9.6744	0.0652823	659.2206	693.72	0.35
	El Paso	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
San Antonio Area	Bexar	0.0138906	0.0000	0.0009368	4.9417	0.0000452	1.9256	0.1109355	1120.2271	1127.09	0.56
	Comal	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Guadalupe	0.0032029	0.0000	0.0002160	1.1395	0.0000104	0.4440	0.0255795	258.3014	259.88	0.13
Austin Area	Wilson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Bastrop	0.0033782	0.0000	0.0002278	1.2018	0.0000110	0.4683	0.0269796	272.4416	274.11	0.14
	Calhoun	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Hays	0.0008331	0.0000	0.0000562	0.2964	0.0000027	0.1155	0.0066537	67.1888	67.60	0.03
	Travis	0.0051785	0.0000	0.0003493	1.8423	0.0000169	0.7179	0.0413577	417.6301	420.19	0.21
	Williamson	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
North East Texas Area	Gregg	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Harrison	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Rusk	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Smith	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Upshur	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
Corpus Christi Area	Nueces	0.0128578	0.0000	0.0008672	4.5743	0.0000419	1.7824	0.1026870	1036.9334	1043.29	0.52
	San Patricio	0.0015100	0.0000	0.0001018	0.5372	0.0000049	0.2093	0.0120591	121.7723	122.52	0.06
Victoria Area	Victoria	0.0021192	0.0000	0.0001429	0.7539	0.0000069	0.2938	0.0169244	170.9023	171.95	0.09
	Andrews	0.0000037	0.0000	0.0000230	0.1212	0.0039003	165.9762	0.0000002	0.0024	166.10	0.08
	Angelina	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Bosque	0.0022204	0.0000	0.0136212	71.8517	0.0006579	27.9980	0.0001390	1.4033	101.25	0.05
	Brazos	0.0024089	0.0000	0.0112305	59.2410	0.0005425	23.0841	0.0047829	48.2978	130.62	0.07
	Calhoun	0.0009466	0.0000	0.0000638	0.3368	0.0000031	0.1312	0.0075598	76.3385	76.81	0.04
	Cameron	0.0063536	0.0000	0.0004285	2.2604	0.0000207	0.8808	0.0507425	512.3973	515.54	0.26
	Cherokee	0.0027392	0.0000	0.0168033	88.6375	0.0008116	34.5389	0.0001714	1.7311	124.91	0.06
	Coke	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Coleman	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
Other ERCOT counties	Crockett	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Ector	0.0019215	0.0000	0.0000604	3.4834	0.0911346	3878.2347	0.0146527	147.9628	4029.68	2.01
	Fannin	0.0000041	0.0000	0.0000249	0.1312	0.0000012	0.0511	0.0000003	0.0026	0.18	0.00
	Fayette	0.0051867	0.0000	0.0103217	54.4468	0.0004986	21.2160	0.0283993	286.7762	362.44	0.18
	Freestone	0.0047643	0.0000	0.0292268	154.1714	0.0014117	60.0750	0.0002982	3.0110	217.26	0.11
	Frio	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Grimes	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Hardeman	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Haskell	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Hidalgo	0.0053716	0.0000	0.0003623	1.9110	0.0000175	0.7446	0.0428994	433.1981	435.85	0.22
Other ERCOT counties	Howard	0.0002411	0.0000	0.0007641	4.0305	0.1283942	5463.8139	0.0009490	9.5829	5477.43	2.74
	Jack	0.0030783	0.0000	0.0188839	99.6125	0.0009121	38.8154	0.0001927	1.9455	140.37	0.07
	Jones	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Lamar	0.0040001	0.0000	0.0245388	129.4424	0.0011853	50.4390	0.0002504	2.5281	182.41	0.09
	Limestone	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Llano	0.0040314	0.0000	0.0002719	1.4342	0.0000131	0.5589	0.0321966	325.1217	327.11	0.16
	McLennan	0.0056576	0.0000	0.0347066	183.0775	0.0016764	71.3387	0.0003541	3.5756	257.99	0.13
	Miami	0.0012686	0.0000	0.0000856	0.4513	0.0000041	0.1759	0.0101316	102.3085	102.94	0.05
	Michell	0.0000311	0.0000	0.0001910	1.0073	0.0324260	1379.8871	0.0000019	0.0197	1380.91	0.69
	Nolan	0.0000293	0.0000	0.0001795	0.9467	0.0304745	1296.8415	0.0000018	0.0185	1297.81	0.65
Other ERCOT counties	Palo Pinto	0.0036129	0.0000	0.0221635	116.9127	0.0010705	45.5567	0.0002261	2.2834	164.75	0.08
	Pecos	0.0000020	0.0000	0.0000121	0.0637	0.0020520	87.3241	0.0000001	0.0012	87.39	0.04
	Presidio	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Red River	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Robertson	0.0003956	0.0000	0.0055755	29.4106	0.0002693	11.4603	0.0246170	248.5820	289.45	0.14
	Taylor	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Titus	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Tom Green	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.0000000	0.0000	0.00	0.00
	Upton	0.0000025	0.0000	0.0000156	0.0823	0.0028494	112.7465	0.0000002	0.0016	112.83	0.06
	Ward	0.0001995	0.0000	0.0012239	6.4563	0.2078335	8844.3562	0.0000125	0.1261	8850.94	4.43
Webb	0.0042017	0.0000	0.0002834	1.4948	0.0000137	0.5825	0.0335565	338.8540	340.93	0.17	
Other ERCOT counties	Wharton	0.0021095	0.0000	0.0001423	0.7505	0.0000069	0.2924	0.0168474	170.1246	171.17	0.09
	Wichita	0.0000121	0.0000	0.0000743							

6 OTHER RENEWABLE SOURCES

Renewable energy projects throughout the state of Texas were found to determine NO_x emissions reduction. Five specific categories were determined to search within: solar photovoltaic, solar thermal, geothermal, hydroelectric, and landfill gas-fired power plants. The criteria for each project to be included in the data collection were that the installation date was after the year 2000 and the project was installed within the state of Texas. However, projects installed before the year 2000 were also included in order to provide a complete record.

6.1 Implementation

This report included a lot of newly located renewable energy projects in three of the five main categories as already discussed.

The information was collected using the following modes:

- information from the websites of manufacturers, distributors, and consultants related with renewable energy products
- some information was collected by personally emailing individuals, who were either manufacturers, distributors or consultants
- information from the internet - websites of environmental agencies like ERCOT, EIA, NREL publish information which is available to the general public

It was mainly the same methodology/protocol followed for data collection used in the previous report. Almost all of the information collected was sourced from websites of manufacturers, distributors, consultants etc. Most of the project descriptions did not include system specifications data. In most cases the information obtained was very limited.

To collect more information, we emailed manufacturers, consultants, distributors or officers in environmental agencies. Unfortunately, we were not able to elicit a response from the people whom we contacted.

6.2 Renewable Energy Projects

6.2.1 Solar Photovoltaic

In the previous report (2012) a total of 3,033 projects were reported. This data was collected from various websites (e.g., Meridian Solar and others, described in the previous report) and the Open PV project database of National Renewable Energy Laboratory (NREL) (<https://openpv.nrel.gov/>). The Open PV projects from data base were implemented from 2004 to 2011 in the database. The database contains information about the projects such as: zip code, size (kW DC), cost, date installed, latitude, and longitude. It is assume that the data from the Open PV project from the NREL data base is reliable and authentic. For the present report, new projects were identified from websites and also from the Open PV database. A total of 153 new projects were reported which includes 141 projects from the Open PV NREL database and 12 reported in various websites, which are commissioned between 2011-2012.

A summary of the different projects and their outputs of ECALC can be found in Table 6-2 and Table 6-3, respectively. This annual electric savings per county due to these projects are presented in Figure 6-6 and the respective emission reductions are shown in Figure 6-8. This Ozone Season Day (OSD) electric savings per county due to these projects are presented in Figure 6-7. Figure 6-1 show the map of number of projects PV installation for each county.

6.2.2 Solar Thermal

Figure 6-2 shows the number of solar thermal projects in each county, in this report only one new solar thermal project was identified from available sources. The summary of all the projects is found in Table 6-4. The generated energy— estimated by ECALC and the amount of NO_x reduction from all the projects is presented in Table 6-5. Table 6-6 shows the details of a special project at Fort Sam Houston, San Antonio, TX and its generated energy. Figure 6-9 and Figure 6-11 show annual electric savings from all the projects and their respective emission reductions per each county, respectively. Figure 6-10 shows OSD electric savings per county from all the projects.

6.2.3 Hydroelectric

No new hydroelectric projects were installed in the State of Texas after the year 2000. All hydroelectric projects located and their information are found in Table 6-7. Figure 6-3 show number of hydroelectric projects present in each county.

6.2.4 Geothermal

In the previous report, a total of 21 new projects were identified for the year of 2011. For the present report, only 6 new projects were identified from websites. Four of the projects were found from the Redding Linden Burr associates website (<http://www.rlbengineers.com/>) and the other 2 from other web searches. The resulting information can be found in Table 6-8 with a corresponding map in Figure 6-4, which shows the number of projects in different counties.

6.2.5 Landfill Gas-Fired Power Plants

The information for the landfill gas-fired power plant section was provided by the Environmental Protection Agency's (EPA's) project data base for Landfill Methane Outreach Program (LMOP). The information includes operational, candidate, potential, construction, and shutdown projects. The EPA updated the projects information and this report located the updated project information, as of June 2012.

The operational, candidates, potential, construction, and shutdown projects are listed in Table 6-9 through Table 6-13, respectively. Figure 6-5 shows the map of number of landfilling projects in each count which are operational.

6.3 Results

We were able to considerably increase the number of renewable energy projects identified in the State of Texas to date. Some 160 new projects were identified, located and included in the new report (which was not a part of the report published in June 2012). The details of the new project can be found in Table 6-1.

Table 6-1: The Comparison of Projects Reported between March 2011 and July 2012

Renewable Energy Source	No. of Projects in 2012 Report, (a)	No. of New Projects in 2013 Report, (b)	Total No. of Projects in 2013 Report, (a+b)
Solar Photo-Voltaic*	3,033	153	3,186
Solar Thermal	37	1	38
Landfill Gas	121	0	121
Hydro-Electric	45	0	45
Geothermal	273	6	279

Note:

* The NREL open PV project database was used for this report, instead of web-search conducted in the previous report. The number of new projects includes projects from 2004 to 2012 reported in the database.

This report also presents annual/OSD energy savings and NOx emission reductions for solar photovoltaic and solar thermal projects included in this report. The annual/OSD energy savings calculation was conducted by the eCalc tool and the NOx emission reductions calculation was conducted with 2010 eGrid. The annual/OSD energy savings from renewable projects results:

- solar photovoltaic projects with 7% T&D loss: 188,653 MWh/yr, and 563.70 MWh/day
- solar thermal projects with 7% T&D loss: 248 MWh/yr, and 0.67 MWh/day

The annual NOx emission reductions from renewable projects results:

- solar photovoltaic projects: 59.416 tons/yr
- solar thermal projects: 0.072 tons/yr

These savings and reductions do not represent all of the solar photovoltaic and solar thermal projects in the state of Texas. They only reflect the projects based on the investigated resources.

6.4 References

Haberl, J.; Baltazar-Cervantes; J.C.; Gilman, D.; Culp, C.; Yazdani, B.; Claridge, D.; Mao, C.; Sun, Y.; Narayanaswamy, A.. "Statewide Air Emissions Calculations from Wind and Other Renewable", December 2011, Energy Systems Laboratory Report No. ESL-TR-11-08-01.

Useful information was obtained from the following websites:

- <http://www.soltrex.com/systems.cfm?state=tx>
- <http://www.meridiansolar.com/portfolio/>
- <http://www.sre3.com/>
- <http://www.apowersolutions.com/solar-power-case-studies.aspx>
- <http://205.254.135.7/cneaf/electricity/page/eia860.html>
- http://www.ieg ltd.com/project_refer_geo_master.pdf
- <http://www.ieg ltd.com/html/information.html>
- <http://geoheat.oit.edu/state/tx/tx.htm>
- http://data.memberclicks.com/site/treia/Maria_RichardsSchools.pdf
- <http://www.southwestpv.com/SolarSite/SolarSiteMain.aspx>
- <http://www.fhp-mfg.com/>
- <http://www.solarsanantonio.org/>
- <http://www.txspc.com/renewable-energy-links.html>
- <http://www.cincosolar.com/>

- <http://www.solarcommunity.com/our-work>
- <http://www.sunrisesolartx.com/commercial/>
- http://apps1.eere.energy.gov/buildings/publications/pdfs/building_america/ba_bc_imagine_hot-humid.pdf
- <http://www.abengoasolar.com/corp/web/en/index.html>
- http://geo-energy.org/plants_dev.aspx#Texas
- http://www.woodheatandair.com/trane/ground-source_design.pdf
- <http://www.energyhomes.org/projects.html>
- http://www.acq.osd.mil/ie/energy/library/GSHP-Report_JAN242007.pdf
- <http://greenteamacgeothermal.com/commercial-geothermal-installation/>
- <http://www.imperialelectricinc.com/products/installations-map.html>
- <http://www.amerescosolar.com/page/case-studies>
- <http://www.lighthousesolar.com/node/186>
- <http://www.gocamsolar.com/solar-panels-installer-san-antonio-installations-power-electricity-projects-texas>
- <http://www.juwisolar.com/blue-wing-solar/>
- <http://www.aashe.org/resources/campus-solar-photovoltaic-installations/search/?csrfmiddlewaretoken=8421721492263db299795d88ca3171f4&q=texas>
- <http://www.greenmountain.com/images/PDF/factsheetrenewablefacilities.pdf>
- <http://www.solar-estimate.org/index.php?page=casestudies>

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1	Travis	Travis	78704	TX	1.264	7611.06	6/9/2004	30.24	-97.77
2	Travis	Travis	78756	TX	2.505	15667	8/2/2004	30.32	-97.74
3	Travis	Travis	78746	TX	3.006	18456	8/4/2004	30.31	-97.82
4	Travis	Travis	78704	TX	3.36	22172.52	8/9/2004	30.24	-97.77
5	Travis	Travis	78756	TX	2.672	14348	8/25/2004	30.32	-97.74
6	Travis	Travis	78745	TX	2.97	18930	8/27/2004	30.21	-97.80
7	Travis	Travis	78704	TX	2.88	20252.2	9/13/2004	30.24	-97.77
8	Travis	Travis	78753	TX	3	19800	9/20/2004	30.39	-97.67
9	Travis	Travis	78751	TX	2.97	19528.3	9/20/2004	30.31	-97.73
10	Travis	Travis	78731	TX	3	20457.59	9/27/2004	30.35	-97.77
11	Travis	Travis	78753	TX	2.97	19315	10/1/2004	30.39	-97.67
12	Travis	Travis	78704	TX	3.15	20350	10/4/2004	30.24	-97.77
13	Travis	Travis	78746	TX	3.34	19824.99	10/4/2004	30.31	-97.82
14	Travis	Travis	78751	TX	3	19200	10/6/2004	30.31	-97.73
15	Travis	Travis	78731	TX	3.006	18972.98	10/8/2004	30.35	-97.77
16	Travis	Travis	78722	TX	2.88	20794.16	10/9/2004	30.30	-97.70
17	Travis	Travis	78704	TX	3	19800	10/13/2004	30.24	-97.77
18	Travis	Travis	78757	TX	3.3	21455	10/13/2004	30.35	-97.74
19	Travis	Travis	78731	TX	3.34	23704.41	10/22/2004	30.35	-97.77
20	Travis	Travis	78746	TX	3.006	19323	10/22/2004	30.31	-97.82
21	Travis	Travis	78751	TX	3	18253.01	10/22/2004	30.31	-97.73
22	Travis	Travis	78704	TX	3	18283	10/25/2004	30.24	-97.77
23	Travis	Travis	78754	TX	3.2	21000	10/25/2004	30.36	-97.65
24	Travis	Travis	78703	TX	2.88	20496.71	10/26/2004	30.29	-97.77
25	Travis	Travis	78756	TX	2.97	19875	10/27/2004	30.32	-97.74
26	Travis	Travis	78703	TX	3.006	18972.98	10/28/2004	30.29	-97.77
27	Travis	Travis	78704	TX	3.24	19800	11/1/2004	30.24	-97.77
28	Travis	Travis	78746	TX	3	18981.1	11/2/2004	30.31	-97.82
29	Travis	Travis	78723	TX	2.97	19529	11/4/2004	30.31	-97.68
30	Travis	Travis	78703	TX	3.006	18253.01	11/10/2004	30.29	-97.77
31	Travis	Travis	78750	TX	3.006	18972.98	11/10/2004	30.43	-97.80
32	Travis	Travis	78731	TX	3	20163.75	11/19/2004	30.35	-97.77
33	Travis	Travis	78759	TX	2.97	19490	11/22/2004	30.40	-97.75
34	Travis	Travis	78702	TX	3.3	20923	11/22/2004	30.26	-97.71
35	Travis	Travis	78731	TX	6.32	35530.63	11/29/2004	30.35	-97.77
36	Travis	Travis	78751	TX	3.006	19000	11/29/2004	30.31	-97.73
37	Travis	Travis	78703	TX	2.55	19577.63	12/3/2004	30.29	-97.77
38	Travis	Travis	78727	TX	2.97	19578	12/3/2004	30.43	-97.71
39	Travis	Travis	78745	TX	3.006	18972.98	12/10/2004	30.21	-97.80
40	Travis	Travis	78704	TX	2.04	14300	12/15/2004	30.24	-97.77

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
41	Travis	Travis	78704	TX	3	19000	12/15/2004	30.24	-97.77
42	Travis	Travis	78704	TX	2.97	20600	12/16/2004	30.24	-97.77
43	Travis	Travis	78704	TX	2.97	22780	12/16/2004	30.24	-97.77
44	Travis	Travis	78746	TX	1.36	12447.12	12/22/2004	30.31	-97.82
45	Travis	Travis	78723	TX	11.52	69684	12/22/2004	30.31	-97.68
46	Travis	Travis	78702	TX	4.8	29008	12/22/2004	30.26	-97.71
47	Travis	Travis	78701	TX	2.97	20404.5	12/27/2004	30.27	-97.74
48	Travis	Travis	78759	TX	3.36	22529.58	12/28/2004	30.40	-97.75
49	Travis	Travis	78703	TX	3	18469.51	12/29/2004	30.29	-97.77
50	Travis	Travis	78745	TX	2.97	20000.5	12/29/2004	30.21	-97.80
51	Travis	Travis	78703	TX	1.264	6962.06	1/4/2005	30.29	-97.77
52	Travis	Travis	78751	TX	3.006	18972.98	1/4/2005	30.31	-97.73
53	Travis	Travis	78756	TX	3	18981.1	1/13/2005	30.32	-97.74
54	Travis	Travis	78703	TX	1.98	15000	1/19/2005	30.29	-97.77
55	Travis	Travis	78731	TX	2.04	14300	1/21/2005	30.35	-97.77
56	Travis	Travis	78701	TX	3.006	18253.01	1/21/2005	30.27	-97.74
57	Travis	Travis	78750	TX	3	18981.1	1/24/2005	30.43	-97.80
58	Travis	Travis	78704	TX	3	18972.98	1/24/2005	30.24	-97.77
59	Travis	Travis	78746	TX	3.006	19583	1/26/2005	30.31	-97.82
60	Travis	Travis	78745	TX	21.12	125022	1/28/2005	30.21	-97.80
61	Travis	Travis	78746	TX	3.006	18972.98	1/31/2005	30.31	-97.82
62	Travis	Travis	78734	TX	3.15	21000	2/11/2005	30.37	-97.95
63	Travis	Travis	78731	TX	3.006	18253.01	2/11/2005	30.35	-97.77
64	Travis	Travis	78703	TX	3.006	18253.01	2/16/2005	30.29	-97.77
65	Travis	Travis	78703	TX	3	18253.01	2/16/2005	30.29	-97.77
66	Travis	Travis	78759	TX	3	18600	2/17/2005	30.40	-97.75
67	Travis	Travis	78748	TX	2.992	18492	2/24/2005	30.17	-97.82
68	Travis	Travis	78744	TX	24	136162	2/25/2005	30.20	-97.73
69	Travis	Travis	78732	TX	3.006	18253.01	3/1/2005	30.38	-97.90
70	Travis	Travis	78734	TX	3.15	21322.96	3/8/2005	30.37	-97.95
71	Travis	Travis	78752	TX	17.28	129612	3/9/2005	30.33	-97.70
72	Travis	Travis	78745	TX	21.12	125022	3/11/2005	30.20	-97.79
73	Travis	Travis	78756	TX	3	18972.98	3/15/2005	30.32	-97.74
74	Travis	Travis	78731	TX	3.15	22190	3/16/2005	30.35	-97.77
75	Travis	Travis	78731	TX	3.15	19000	3/16/2005	30.35	-97.77
76	Travis	Travis	78704	TX	0.7	9989.06	3/17/2005	30.24	-97.77
77	Travis	Travis	78704	TX	3.15	20528.31	3/17/2005	30.24	-97.77
78	Travis	Travis	78731	TX	3	18253.01	3/18/2005	30.35	-97.77
79	Travis	Travis	78738	TX	3.06	21667.83	3/24/2005	30.31	-97.98
80	Travis	Travis	78722	TX	3.34	20964.41	3/24/2005	30.30	-97.70

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
81	Travis	Travis	78731	TX	2.88	19706.78	3/24/2005	30.35	-97.77
82	Travis	Travis	78738	TX	3.15	20534.52	3/24/2005	30.31	-97.98
83	Travis	Travis	78734	TX	3.15	19805	3/30/2005	30.37	-97.95
84	Travis	Travis	78746	TX	2.97	19300	4/4/2005	30.31	-97.82
85	Travis	Travis	78730	TX	2.24	15792	4/4/2005	30.37	-97.84
86	Travis	Travis	78751	TX	3.15	19886.42	4/18/2005	30.31	-97.73
87	Travis	Travis	78704	TX	3.15	20662.57	4/21/2005	30.24	-97.77
88	Travis	Travis	78745	TX	3.15	20895	4/22/2005	30.21	-97.80
89	Travis	Travis	78704	TX	3.006	22374	4/22/2005	30.24	-97.77
90	Travis	Travis	78723	TX	3.34	21249.6	5/3/2005	30.31	-97.68
91	Travis	Travis	78731	TX	3.173	20615.06	5/6/2005	30.35	-97.77
92	Travis	Travis	78703	TX	3.006	19379.05	5/6/2005	30.29	-97.77
93	Travis	Travis	78703	TX	2.8	16450	5/11/2005	30.29	-97.77
94	Travis	Travis	78731	TX	3	21002.9	5/13/2005	30.35	-97.77
95	Travis	Travis	78757	TX	3	18972.98	5/31/2005	30.35	-97.74
96	Travis	Travis	78746	TX	3	19235.28	5/31/2005	30.31	-97.82
97	Travis	Travis	78733	TX	3.15	24276.46	6/1/2005	30.33	-97.87
98	Travis	Travis	78702	TX	2.88	22800	6/10/2005	30.26	-97.71
99	Travis	Travis	78723	TX	3	18046.75	6/15/2005	30.31	-97.68
100	Williamson	Williamson	78729	TX	2	14208	6/16/2005	30.45	-97.76
101	Travis	Travis	78704	TX	2.992	21000	6/17/2005	30.24	-97.77
102	Travis	Travis	78738	TX	3.06	19084.95	6/17/2005	30.31	-97.98
103	Travis	Travis	78756	TX	3.15	21202	6/17/2005	30.32	-97.74
104	Travis	Travis	78653	TX	3.006	18972.98	6/17/2005	30.34	-97.50
105	Travis	Travis	78703	TX	3.006	18973.11	6/17/2005	30.29	-97.77
106	Williamson	Williamson	78729	TX	3.4	22899	6/20/2005	30.45	-97.76
107	Travis	Travis	78747	TX	3.34	20969.21	6/21/2005	30.13	-97.73
108	Travis	Travis	78704	TX	3.34	19507.63	6/30/2005	30.24	-97.77
109	Travis	Travis	78751	TX	2.171	15175.1	6/30/2005	30.31	-97.73
110	Travis	Travis	78704	TX	3.06	18500	7/7/2005	30.24	-97.77
111	Travis	Travis	78735	TX	21	124600	7/7/2005	30.26	-97.86
112	Williamson	Williamson	78729	TX	3	21002.8	7/8/2005	30.45	-97.76
113	Travis	Travis	78703	TX	3.006	18973.11	7/8/2005	30.29	-97.77
114	Travis	Travis	78704	TX	1.75	12899.2	7/15/2005	30.24	-97.77
115	Travis	Travis	78731	TX	2.505	16520.31	7/26/2005	30.35	-97.77
116	Travis	Travis	78705	TX	2.7	18358	7/27/2005	30.30	-97.74
117	Travis	Travis	78748	TX	2.338	15184	7/27/2005	30.17	-97.82
118	Travis	Travis	78746	TX	20.875	123650	7/28/2005	30.31	-97.82
119	Travis	Travis	78734	TX	3.15	20873	7/29/2005	30.37	-97.95
120	Travis	Travis	78746	TX	3.2	18951.44	8/3/2005	30.31	-97.82

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
121	Travis	Travis	78744	TX	21.78	144122	8/3/2005	30.20	-97.73
122	Travis	Travis	78746	TX	2.7	18190	8/8/2005	30.31	-97.82
123	Travis	Travis	78703	TX	3.34	21377.33	8/8/2005	30.29	-97.77
124	Travis	Travis	78758	TX	21.12	123398	8/10/2005	30.39	-97.70
125	Travis	Travis	78704	TX	3.34	18740.46	8/11/2005	30.24	-97.77
126	Travis	Travis	78705	TX	3.15	19088.56	8/12/2005	30.30	-97.74
127	Travis	Travis	78731	TX	3	18859	8/17/2005	30.35	-97.77
128	Travis	Travis	78735	TX	2.338	15816	8/17/2005	30.26	-97.86
129	Travis	Travis	78748	TX	3.2	18919.75	8/17/2005	30.17	-97.82
130	Travis	Travis	78745	TX	3.3	18962.16	8/23/2005	30.21	-97.80
131	Travis	Travis	78735	TX	3.2	19500	8/24/2005	30.26	-97.86
132	Travis	Travis	78752	TX	2.97	18500	8/24/2005	30.33	-97.70
133	Travis	Travis	78751	TX	3.06	20452.83	8/30/2005	30.31	-97.73
134	Travis	Travis	78703	TX	2.97	18500	8/30/2005	30.29	-97.77
135	Travis	Travis	78744	TX	18.036	127183	8/30/2005	30.20	-97.73
136	Travis	Travis	78660	TX	3.2	19026.51	8/31/2005	30.46	-97.60
137	Travis	Travis	78727	TX	3.006	18988.1	8/31/2005	30.43	-97.71
138	Travis	Travis	78734	TX	2.97	18500	8/31/2005	30.37	-97.95
139	Travis	Travis	78758	TX	21.78	130000	8/31/2005	30.39	-97.70
140	Travis	Travis	78759	TX	3.34	19426.44	9/6/2005	30.40	-97.75
141	Travis	Travis	78746	TX	3.34	21306.53	9/7/2005	30.31	-97.82
142	Travis	Travis	78723	TX	3.006	18500	9/12/2005	30.31	-97.68
143	Travis	Travis	78733	TX	3.125	19000	9/14/2005	30.33	-97.87
144	Travis	Travis	78745	TX	2.97	18500	9/16/2005	30.21	-97.80
145	Travis	Travis	78703	TX	3.006	19737.75	9/20/2005	30.29	-97.77
146	Williamson	Williamson	78729	TX	2.72	18021.88	9/20/2005	30.45	-97.76
147	Travis	Travis	78704	TX	2.88	18540.11	9/28/2005	30.24	-97.77
148	Travis	Travis	78757	TX	3	19097.6	9/28/2005	30.35	-97.74
149	Travis	Travis	78745	TX	16.7	93521.11	9/28/2005	30.21	-97.80
150	Travis	Travis	78704	TX	3.3	19771.49	9/29/2005	30.24	-97.77
151	Travis	Travis	78703	TX	3.34	20011	9/29/2005	30.29	-97.77
152	Travis	Travis	78746	TX	4.008	23900	10/6/2005	30.31	-97.82
153	Travis	Travis	78727	TX	3.4	19894.42	10/6/2005	30.43	-97.71
154	Travis	Travis	78745	TX	3.15	20870	10/6/2005	30.21	-97.80
155	Travis	Travis	78734	TX	3.34	18619.98	10/13/2005	30.37	-97.95
156	Travis	Travis	78703	TX	3.006	18540.11	10/14/2005	30.29	-97.77
157	Travis	Travis	78745	TX	3.006	19378.69	10/18/2005	30.21	-97.80
158	Travis	Travis	78734	TX	3.15	19884.89	10/18/2005	30.37	-97.95
159	Travis	Travis	78727	TX	3.2	18500	10/19/2005	30.43	-97.71
160	Travis	Travis	78753	TX	3.15	22385	10/20/2005	30.39	-97.67

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
161	Travis	Travis	78722	TX	3.006	21040.27	10/25/2005	30.30	-97.70
162	Travis	Travis	78734	TX	3.34	19551.76	10/28/2005	30.37	-97.95
163	Travis	Travis	78756	TX	0.501	2556	10/31/2005	30.32	-97.74
164	Travis	Travis	78731	TX	3.3	20881.2	11/3/2005	30.35	-97.77
165	Travis	Travis	78751	TX	3.34	20295.91	11/3/2005	30.31	-97.73
166	Travis	Travis	78704	TX	3.006	22701.35	11/3/2005	30.24	-97.77
167	Travis	Travis	78751	TX	3.4	19630.39	11/3/2005	30.31	-97.73
168	Travis	Travis	78703	TX	2.1	16837.05	11/5/2005	30.29	-97.77
169	Travis	Travis	78731	TX	3.06	18901.99	11/7/2005	30.35	-97.77
170	Travis	Travis	78702	TX	2.672	17750.17	11/8/2005	30.26	-97.71
171	Travis	Travis	78754	TX	3.006	20004.25	11/9/2005	30.36	-97.65
172	Travis	Travis	78704	TX	2.7	18834	11/11/2005	30.24	-97.77
173	Travis	Travis	78731	TX	3.15	23431.45	11/15/2005	30.35	-97.77
174	Travis	Travis	78705	TX	2.04	15291.29	11/17/2005	30.30	-97.74
175	Travis	Travis	78704	TX	3	20769.83	11/17/2005	30.24	-97.77
176	Travis	Travis	78749	TX	3.006	19470.35	11/23/2005	30.22	-97.86
177	Travis	Travis	78741	TX	3.06	20750.34	11/28/2005	30.23	-97.71
178	Travis	Travis	78732	TX	3.3	21646.65	11/30/2005	30.38	-97.90
179	Travis	Travis	78752	TX	3.06	19750.5	11/30/2005	30.33	-97.70
180	Travis	Travis	78731	TX	3.4	21795.19	12/2/2005	30.35	-97.77
181	Travis	Travis	78723	TX	2.04	14810	12/6/2005	30.31	-97.68
182	Travis	Travis	78732	TX	3.06	18500	12/6/2005	30.38	-97.90
183	Travis	Travis	78757	TX	2.88	18500	12/6/2005	30.35	-97.74
184	Travis	Travis	78727	TX	3.4	20567.29	12/9/2005	30.43	-97.71
185	Travis	Travis	78751	TX	3.4	21646.65	12/13/2005	30.31	-97.73
186	Travis	Travis	78733	TX	3.4	20091.28	12/13/2005	30.33	-97.87
187	Travis	Travis	78731	TX	3.006	19734.67	12/14/2005	30.35	-97.77
188	Travis	Travis	78746	TX	3.06	20225.64	12/14/2005	30.31	-97.82
189	Travis	Travis	78731	TX	4.59	28956.76	12/14/2005	30.35	-97.77
190	Travis	Travis	78756	TX	3.28	21486.03	12/14/2005	30.32	-97.74
191	Travis	Travis	78745	TX	3.06	20375.5	12/20/2005	30.21	-97.80
192	Travis	Travis	78722	TX	3.2	20570.16	12/21/2005	30.30	-97.70
193	Travis	Travis	78704	TX	1.65	12367.64	12/22/2005	30.24	-97.77
194	Travis	Travis	78746	TX	3.06	19603.09	12/22/2005	30.31	-97.82
195	Travis	Travis	78703	TX	3.06	20304.82	12/22/2005	30.29	-97.77
196	Travis	Travis	78730	TX	3.4	20817.25	1/4/2006	30.37	-97.84
197	Travis	Travis	78746	TX	3.4	21380.79	1/10/2006	30.31	-97.82
198	Travis	Travis	78705	TX	21.76	125000	1/10/2006	30.30	-97.74
199	Travis	Travis	78704	TX	3.04	18500	1/17/2006	30.24	-97.77
200	Travis	Travis	78733	TX	3.06	18500	1/17/2006	30.33	-97.87

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
201	Travis	Travis	78733	TX	3.06	19000	1/17/2006	30.33	-97.87
202	Travis	Travis	78757	TX	2.72	17073.31	1/18/2006	30.35	-97.74
203	Travis	Travis	78738	TX	3.4	21440.95	1/20/2006	30.31	-97.98
204	Travis	Travis	78750	TX	3.4	21789.99	1/20/2006	30.43	-97.80
205	Travis	Travis	78704	TX	3.06	20401.38	1/20/2006	30.24	-97.77
206	Travis	Travis	78733	TX	3.4	21180.85	1/24/2006	30.33	-97.87
207	Travis	Travis	78749	TX	1.7	13687	1/26/2006	30.22	-97.86
208	Travis	Travis	78723	TX	3.06	19910.14	1/30/2006	30.31	-97.68
209	Travis	Travis	78704	TX	1.7	14547.62	1/30/2006	30.24	-97.77
210	Travis	Travis	78758	TX	3.4	20910.09	1/31/2006	30.39	-97.70
211	Travis	Travis	78752	TX	17.85	109036	2/1/2006	30.33	-97.71
212	Travis	Travis	78728	TX	3.06	19538.59	2/3/2006	30.46	-97.68
213	Travis	Travis	78731	TX	3.4	24836.6	2/3/2006	30.35	-97.77
214	Travis	Travis	78756	TX	3.4	20929.16	2/3/2006	30.32	-97.74
215	Travis	Travis	78752	TX	1.8	12507	2/6/2006	30.33	-97.70
216	Travis	Travis	78734	TX	3.4	22409.62	2/6/2006	30.37	-97.95
217	Travis	Travis	78733	TX	3.06	18700	2/6/2006	30.33	-97.87
218	Travis	Travis	78746	TX	3.2	18956.11	2/7/2006	30.31	-97.82
219	Travis	Travis	78722	TX	3.2	21490.25	2/7/2006	30.30	-97.70
220	Travis	Travis	78705	TX	3.2	22514.48	2/8/2006	30.30	-97.74
221	Travis	Travis	78752	TX	17.85	109037	2/8/2006	30.33	-97.70
222	Travis	Travis	78723	TX	3.3	24281.07	2/18/2006	30.31	-97.68
223	Travis	Travis	78704	TX	3.06	20380	2/22/2006	30.24	-97.77
224	Travis	Travis	78746	TX	3	18700	2/22/2006	30.31	-97.82
225	Travis	Travis	78731	TX	3.4	20977.88	2/24/2006	30.35	-97.77
226	Travis	Travis	78733	TX	2.912	19523.03	2/24/2006	30.33	-97.87
227	Travis	Travis	78730	TX	3.34	20841.84	2/24/2006	30.37	-97.84
228	Travis	Travis	78705	TX	3	20184.95	2/24/2006	30.30	-97.74
229	Travis	Travis	78731	TX	2.72	19211.28	3/1/2006	30.35	-97.77
230	Travis	Travis	78759	TX	3.06	21366.8	3/3/2006	30.40	-97.75
231	Travis	Travis	78731	TX	3.4	22896.66	3/7/2006	30.35	-97.77
232	Travis	Travis	78746	TX	3	20800	3/7/2006	30.31	-97.82
233	Travis	Travis	78759	TX	3.06	18700	3/7/2006	30.40	-97.75
234	Travis	Travis	78758	TX	3.34	20567.5	3/8/2006	30.39	-97.70
235	Travis	Travis	78735	TX	3.4	21216.66	3/13/2006	30.26	-97.86
236	Travis	Travis	78704	TX	3.4	20929.16	3/13/2006	30.24	-97.77
237	Travis	Travis	78704	TX	3.006	19814.13	3/14/2006	30.24	-97.77
238	Travis	Travis	78746	TX	3.06	22705.59	3/14/2006	30.31	-97.82
239	Travis	Travis	78746	TX	2.4	19550	3/15/2006	30.31	-97.82
240	Travis	Travis	78702	TX	1.53	12117	3/15/2006	30.26	-97.71

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
241	Travis	Travis	78753	TX	3.06	21752	3/15/2006	30.39	-97.67
242	Travis	Travis	78759	TX	3.06	23329	3/15/2006	30.40	-97.75
243	Travis	Travis	78748	TX	3.06	20965	3/15/2006	30.17	-97.82
244	Travis	Travis	78746	TX	3.15	20997.5	3/15/2006	30.31	-97.82
245	Travis	Travis	78731	TX	3.06	20191.08	3/24/2006	30.35	-97.77
246	Travis	Travis	78704	TX	3.2	19494.85	3/27/2006	30.24	-97.77
247	Travis	Travis	78733	TX	2.04	15102.38	3/27/2006	30.33	-97.87
248	Travis	Travis	78761	TX	3.4	23390	3/31/2006	30.33	-97.70
249	Travis	Travis	78757	TX	1.7	13347.39	4/3/2006	30.35	-97.74
250	Travis	Travis	78745	TX	3.06	20150.43	4/3/2006	30.21	-97.80
251	Travis	Travis	78730	TX	3.4	20729.16	4/4/2006	30.37	-97.84
252	Travis	Travis	78730	TX	3.075	18700	4/4/2006	30.37	-97.84
253	Travis	Travis	78734	TX	3.6	22296.48	4/4/2006	30.37	-97.95
254	Travis	Travis	78732	TX	3.12	18500	4/14/2006	30.38	-97.90
255	Travis	Travis	78750	TX	3.12	18700	4/14/2006	30.43	-97.80
256	Travis	Travis	78758	TX	3.12	19800	4/14/2006	30.39	-97.70
257	Travis	Travis	78727	TX	3.2	20486.2	4/18/2006	30.43	-97.71
258	Travis	Travis	78734	TX	5.18	35406.15	4/18/2006	30.37	-97.95
259	Travis	Travis	78731	TX	3	19846.66	4/19/2006	30.35	-97.77
260	Travis	Travis	78746	TX	3.12	19800	4/19/2006	30.31	-97.82
261	Travis	Travis	78757	TX	3.12	22281	4/25/2006	30.35	-97.74
262	Travis	Travis	78746	TX	3.06	20192.36	4/26/2006	30.31	-97.82
263	Travis	Travis	78749	TX	3.06	19830.43	4/26/2006	30.22	-97.86
264	Travis	Travis	78727	TX	3.15	20931	4/27/2006	30.43	-97.71
265	Travis	Travis	78703	TX	2.04	18066	4/27/2006	30.29	-97.77
266	Williamson	Williamson	78729	TX	2.6	19897	4/27/2006	30.45	-97.76
267	Travis	Travis	78734	TX	3.12	18700	5/1/2006	30.37	-97.95
268	Travis	Travis	78731	TX	3.15	22922	5/3/2006	30.35	-97.77
269	Travis	Travis	78722	TX	2.8	21370.66	5/4/2006	30.30	-97.70
270	Travis	Travis	78746	TX	3.4	25112.52	5/9/2006	30.31	-97.82
271	Travis	Travis	78732	TX	3.2	23932.18	5/9/2006	30.38	-97.90
272	Travis	Travis	78730	TX	5.1	26188.62	5/9/2006	30.37	-97.84
273	Travis	Travis	78701	TX	4.5	60086	5/10/2006	30.27	-97.74
274	Travis	Travis	78746	TX	3.12	18700	5/12/2006	30.31	-97.82
275	Travis	Travis	78748	TX	3.12	18950	5/12/2006	30.17	-97.82
276	Travis	Travis	78704	TX	3.12	18270.5	5/12/2006	30.24	-97.77
277	Travis	Travis	78733	TX	3.328	21410.75	5/18/2006	30.33	-97.87
278	Travis	Travis	78733	TX	2.72	19018.13	5/18/2006	30.33	-97.87
279	Travis	Travis	78704	TX	3.2	19532.33	5/19/2006	30.24	-97.77
280	Travis	Travis	78731	TX	3.5	21188.96	5/19/2006	30.35	-97.77

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
281	Travis	Travis	78704	TX	3.328	21977.03	5/25/2006	30.24	-97.77
282	Travis	Travis	78730	TX	3.12	18700	5/30/2006	30.37	-97.84
283	Travis	Travis	78747	TX	3.12	20418	5/30/2006	30.13	-97.73
284	Travis	Travis	78704	TX	3.006	19682	5/31/2006	30.24	-97.77
285	Travis	Travis	78757	TX	3.12	18825.82	6/1/2006	30.35	-97.74
286	Travis	Travis	78730	TX	3.34	19972.69	6/2/2006	30.37	-97.84
287	Travis	Travis	78746	TX	3.15	20217.29	6/16/2006	30.31	-97.82
288	Travis	Travis	78731	TX	3.06	20600.87	6/16/2006	30.35	-97.77
289	Travis	Travis	78746	TX	1.872	13565.94	6/20/2006	30.31	-97.82
290	Travis	Travis	78702	TX	3.4	22350.95	6/22/2006	30.26	-97.71
291	Travis	Travis	78746	TX	3.64	25966.25	6/22/2006	30.31	-97.82
292	Travis	Travis	78704	TX	2.672	19582.34	6/22/2006	30.24	-97.77
293	Travis	Travis	78731	TX	3.006	20853.39	6/22/2006	30.35	-97.77
294	Travis	Travis	78746	TX	2.625	17779.22	6/29/2006	30.31	-97.82
295	Travis	Travis	78750	TX	3.06	21416.25	6/29/2006	30.43	-97.80
296	Travis	Travis	78748	TX	3.15	23903	7/20/2006	30.17	-97.82
297	Travis	Travis	78746	TX	12.04	105031.31	7/21/2006	30.31	-97.82
298	Travis	Travis	78702	TX	3.5	21819.91	7/25/2006	30.26	-97.71
299	Travis	Travis	78702	TX	3.15	20461.38	7/25/2006	30.26	-97.71
300	Travis	Travis	78702	TX	3.15	20461.38	7/25/2006	30.26	-97.71
301	Travis	Travis	78746	TX	3.34	22344.66	7/26/2006	30.31	-97.82
302	Travis	Travis	78746	TX	3.15	19142.39	8/6/2006	30.31	-97.82
303	Travis	Travis	78759	TX	3.4	19283.07	8/7/2006	30.40	-97.75
304	Travis	Travis	78727	TX	3.38	19283.07	8/7/2006	30.43	-97.71
305	Travis	Travis	78731	TX	23.296	166022.53	8/17/2006	30.35	-97.77
306	Travis	Travis	78704	TX	3.15	20015.8	8/18/2006	30.24	-97.77
307	Travis	Travis	78727	TX	3.12	19585.62	8/21/2006	30.43	-97.71
308	Travis	Travis	78704	TX	3.12	19500	8/21/2006	30.24	-97.77
309	Travis	Travis	78705	TX	3	18541.12	8/21/2006	30.30	-97.74
310	Travis	Travis	78722	TX	2.496	17124.22	8/22/2006	30.30	-97.70
311	Travis	Travis	78734	TX	3.15	20000	8/23/2006	30.37	-97.95
312	Travis	Travis	78759	TX	3.15	20366.53	8/23/2006	30.40	-97.75
313	Travis	Travis	78704	TX	2.04	15316.4	8/28/2006	30.24	-97.77
314	Travis	Travis	78746	TX	3.06	21557.22	8/31/2006	30.31	-97.82
315	Travis	Travis	78758	TX	3.15	20466.53	8/31/2006	30.39	-97.70
316	Travis	Travis	78757	TX	3.12	19280	9/5/2006	30.35	-97.74
317	Travis	Travis	78759	TX	3.12	19500	9/5/2006	30.40	-97.75
318	Travis	Travis	78727	TX	3.5	27851.68	9/8/2006	30.43	-97.71
319	Travis	Travis	78703	TX	8.4	51051.07	9/12/2006	30.29	-97.77
320	Travis	Travis	78703	TX	2.912	21377.75	10/3/2006	30.29	-97.77

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
321	Travis	Travis	78703	TX	2.912	21377.75	10/3/2006	30.29	-97.77
322	Travis	Travis	78704	TX	1.04	11115.3	10/4/2006	30.24	-97.77
323	Travis	Travis	78705	TX	3.744	26002.03	10/4/2006	30.30	-97.74
324	Travis	Travis	78757	TX	3.15	21104.12	10/13/2006	30.35	-97.74
325	Travis	Travis	78704	TX	2.912	19854.55	10/16/2006	30.24	-97.77
326	Travis	Travis	78759	TX	3.328	22470.54	10/20/2006	30.40	-97.75
327	Travis	Travis	78704	TX	3.06	20947.65	10/20/2006	30.24	-97.77
328	Williamson	Williamson	78729	TX	3.15	20473.69	10/23/2006	30.45	-97.76
329	Travis	Travis	78732	TX	3.2	20151.54	10/24/2006	30.38	-97.90
330	Travis	Travis	78747	TX	3.06	20877.45	10/30/2006	30.13	-97.73
331	Travis	Travis	78759	TX	3.15	21344.52	11/1/2006	30.40	-97.75
332	Travis	Travis	78746	TX	3.744	25919.37	11/8/2006	30.31	-97.82
333	Travis	Travis	78703	TX	3.15	21926.35	11/13/2006	30.29	-97.77
334	Travis	Travis	78704	TX	3.06	25082.26	11/14/2006	30.24	-97.77
335	Travis	Travis	78745	TX	3.15	21224.28	11/20/2006	30.21	-97.80
336	Travis	Travis	78704	TX	3.15	20524.98	11/20/2006	30.24	-97.77
337	Travis	Travis	78702	TX	3.12	22385	11/21/2006	30.26	-97.71
338	Travis	Travis	78750	TX	3.5	29135.61	11/21/2006	30.43	-97.80
339	Travis	Travis	78746	TX	3.2	21507.83	11/28/2006	30.31	-97.82
340	Travis	Travis	78704	TX	3.06	21331.01	12/4/2006	30.24	-97.77
341	Travis	Travis	78735	TX	3.15	21594.64	12/11/2006	30.26	-97.86
342	Travis	Travis	78723	TX	2.912	19818.87	1/12/2007	30.31	-97.68
343	Travis	Travis	78749	TX	2.912	19855	1/12/2007	30.22	-97.86
344	Travis	Travis	78759	TX	3.328	22459.52	1/12/2007	30.40	-97.75
345	Travis	Travis	78759	TX	2.912	19656.77	1/12/2007	30.40	-97.75
346	Travis	Travis	78703	TX	3.328	22064.44	1/23/2007	30.29	-97.77
347	Travis	Travis	78731	TX	3.328	21623.97	1/25/2007	30.35	-97.77
348	Travis	Travis	78759	TX	3.328	21440.2	1/25/2007	30.40	-97.75
349	Travis	Travis	78704	TX	3.12	20981.51	1/29/2007	30.24	-97.77
350	Travis	Travis	78759	TX	3.328	22475.24	1/31/2007	30.40	-97.75
351	Travis	Travis	78727	TX	3.15	19800	1/31/2007	30.43	-97.71
352	Travis	Travis	78704	TX	3.328	22504.46	1/31/2007	30.24	-97.77
353	Travis	Travis	78734	TX	3.328	21897.57	2/1/2007	30.37	-97.95
354	Travis	Travis	78759	TX	3.15	20132.5	2/2/2007	30.40	-97.75
355	Travis	Travis	78702	TX	3.4	22875.26	2/5/2007	30.26	-97.71
356	Travis	Travis	78750	TX	3.15	21827.64	2/8/2007	30.43	-97.80
357	Travis	Travis	78705	TX	9.52	68212.56	2/9/2007	30.30	-97.74
358	Travis	Travis	78754	TX	16.66	157848.77	2/9/2007	30.36	-97.65
359	Travis	Travis	78754	TX	3.36		2/9/2007	30.36	-97.65
360	Travis	Travis	78704	TX	3.15	20554.21	2/13/2007	30.24	-97.77

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
361	Travis	Travis	78748	TX	18.9	115864	2/13/2007	30.17	-97.82
362	Travis	Travis	78704	TX	3.12	22683	2/20/2007	30.24	-97.77
363	Travis	Travis	78704	TX	3.124	22017.35	2/21/2007	30.24	-97.77
364	Travis	Travis	78731	TX	2.414	19306.42	2/21/2007	30.35	-97.77
365	Travis	Travis	78751	TX	2.45	13024	2/21/2007	30.31	-97.73
366	Travis	Travis	78703	TX	3.15	21992.18	2/23/2007	30.29	-97.77
367	Travis	Travis	78746	TX	2.992	21247.84	2/26/2007	30.31	-97.82
368	Travis	Travis	78746	TX	5.1	57396	2/26/2007	30.31	-97.82
369	Travis	Travis	78746	TX	3.12	20507.83	3/1/2007	30.31	-97.82
370	Travis	Travis	78746	TX	3.15	21000	3/5/2007	30.31	-97.82
371	Travis	Travis	78746	TX	3.06	24168.66	3/9/2007	30.31	-97.82
372	Travis	Travis	78735	TX	2.38	17116.09	3/9/2007	30.26	-97.86
373	Travis	Travis	78754	TX	3.15	21250.82	3/12/2007	30.36	-97.65
374	Travis	Travis	78701	TX	23.296	166551.23	3/12/2007	30.27	-97.74
375	Travis	Travis	78703	TX	3.15	21906.25	3/13/2007	30.29	-97.77
376	Travis	Travis	78702	TX	8.236	66505.4	3/15/2007	30.26	-97.71
377	Travis	Travis	78746	TX	3.15	20324.5	3/19/2007	30.31	-97.82
378	Travis	Travis	78746	TX	2.13	17955.95	3/27/2007	30.31	-97.82
379	Travis	Travis	78703	TX	3.06	21249.12	3/27/2007	30.29	-97.77
380	Travis	Travis	78758	TX	3.328	22997.85	3/27/2007	30.39	-97.70
381	Travis	Travis	78724	TX	3.2	19800	3/28/2007	30.29	-97.62
382	Collin	Collin	75173	TX	2.5	23500	3/31/2007	33.05	-96.42
383	Travis	Travis	78756	TX	2.38	17258	4/5/2007	30.32	-97.74
384	Travis	Travis	78704	TX	3.01	24012.5	4/5/2007	30.24	-97.77
385	Travis	Travis	78732	TX	4.118	42245.07	4/5/2007	30.38	-97.90
386	Travis	Travis	78735	TX	3.87	27910.97	4/5/2007	30.26	-97.86
387	Travis	Travis	78704	TX	3.4	23968.96	4/6/2007	30.24	-97.77
388	Travis	Travis	78746	TX	3.15	19515.37	4/10/2007	30.31	-97.82
389	Travis	Travis	78749	TX	3.2	20453.65	4/13/2007	30.22	-97.86
390	Travis	Travis	78722	TX	3.12	23394	4/16/2007	30.30	-97.70
391	Travis	Travis	78704	TX	2.8	17216.7	4/19/2007	30.24	-97.77
392	Travis	Travis	78741	TX	3.15	19826.73	4/19/2007	30.23	-97.71
393	Travis	Travis	78704	TX	3.15	20507.83	4/20/2007	30.24	-97.77
394	Travis	Travis	78759	TX	3.34	22941.39	4/24/2007	30.40	-97.75
395	Travis	Travis	78734	TX	3.15	20121.73	4/27/2007	30.37	-97.95
396	Travis	Travis	78731	TX	3.15	21016.03	4/27/2007	30.35	-97.77
397	Travis	Travis	78731	TX	3.328	24261	5/15/2007	30.35	-97.77
398	Travis	Travis	78746	TX	3.325	21168.64	5/15/2007	30.31	-97.82
399	Travis	Travis	78724	TX	3.15	20021.73	5/15/2007	30.29	-97.62
400	Travis	Travis	78731	TX	3.06	24020.02	5/24/2007	30.35	-97.77

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
401	Travis	Travis	78745	TX	2.975	20534.31	5/29/2007	30.21	-97.80
402	Travis	Travis	78746	TX	22.44	164315	5/29/2007	30.31	-97.82
403	Harris	Harris	77058	TX	28	400000	6/4/2007	29.56	-95.09
404	Travis	Travis	78730	TX	3.06	36449.72182	6/5/2007	30.37	-97.84
405	Travis	Travis	78730	TX	2.55	30458.28	6/5/2007	30.37	-97.84
406	Travis	Travis	78703	TX	3.15	21740.78	6/12/2007	30.29	-97.77
407	Travis	Travis	78731	TX	3.5	27242.87	6/12/2007	30.35	-97.77
408	Travis	Travis	78705	TX	15.75	103357.02	6/14/2007	30.30	-97.74
409	Travis	Travis	78746	TX	3.006	22698	6/18/2007	30.31	-97.82
410	Travis	Travis	78733	TX	3.12	20761.26	6/19/2007	30.33	-97.87
411	Travis	Travis	78734	TX	3.15	19078.34	6/25/2007	30.37	-97.95
412	Travis	Travis	78723	TX	3.15	20582.29	6/29/2007	30.31	-97.68
413	Travis	Travis	78733	TX	3.15	20832	7/3/2007	30.33	-97.87
414	Travis	Travis	78758	TX	3.24	20179	7/9/2007	30.39	-97.70
415	Travis	Travis	78733	TX	2.496	19550.6	7/10/2007	30.33	-97.87
416	Travis	Travis	78759	TX	3.15	21172.08	7/11/2007	30.40	-97.75
417	Travis	Travis	78735	TX	3.328	23433.42	7/11/2007	30.26	-97.86
418	Williamson	Williamson	78729	TX	2.85	20071.39	7/12/2007	30.45	-97.76
419	Travis	Travis	78748	TX	5.61	43337.19	7/17/2007	30.17	-97.82
420	Travis	Travis	78746	TX	3.15	20331.48	7/18/2007	30.31	-97.82
421	Travis	Travis	78751	TX	3.5	22757.77	7/24/2007	30.31	-97.73
422	Travis	Travis	78759	TX	3.15	20770.57	7/24/2007	30.40	-97.75
423	Travis	Travis	78751	TX	3.4	23727.89	7/24/2007	30.31	-97.73
424	Travis	Travis	78704	TX	1.62	18219	7/31/2007	30.24	-97.77
425	Travis	Travis	78731	TX	1	7657.5	7/31/2007	30.35	-97.77
426	Travis	Travis	78731	TX	3	22972.5	8/1/2007	30.35	-97.77
427	Travis	Travis	78724	TX	11.4	242804.75	8/1/2007	30.29	-97.62
428	Travis	Travis	78758	TX	3.15	20620.2	8/6/2007	30.39	-97.70
429	Travis	Travis	78757	TX	3.15	19917.42	8/7/2007	30.35	-97.74
430	Travis	Travis	78730	TX	3.15	20010.56294	8/7/2007	30.37	-97.84
431	Travis	Travis	78730	TX	2.8	17787.16706	8/7/2007	30.37	-97.84
432	Travis	Travis	78703	TX	3.15	21116.03	8/7/2007	30.29	-97.77
433	Travis	Travis	78731	TX	3.12	21507.83	8/13/2007	30.35	-97.77
434	Travis	Travis	78748	TX	3.328	22500	8/13/2007	30.17	-97.82
435	Travis	Travis	78704	TX	3.1	20297.16	8/14/2007	30.24	-97.77
436	Travis	Travis	78704	TX	3.2	23778	8/14/2007	30.24	-97.77
437	Travis	Travis	78754	TX	3.42	21391.75	8/15/2007	30.36	-97.65
438	Travis	Travis	78703	TX	3.006	23460.57	8/21/2007	30.29	-97.77
439	Travis	Travis	78734	TX	3.15	21275.83	8/22/2007	30.37	-97.95
440	Travis	Travis	78746	TX	3.15	21088.96	8/22/2007	30.31	-97.82

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
441	Bexar	Bexar	78255	TX	4.55	32999	8/24/2007	29.67	-98.64
442	Travis	Travis	78734	TX	3.24	21961.04	8/28/2007	30.37	-97.95
443	Travis	Travis	78734	TX	3.15	22406.78	8/28/2007	30.37	-97.95
444	Travis	Travis	78746	TX	3.15	21429.95	8/28/2007	30.31	-97.82
445	Travis	Travis	78704	TX	3.5	28199.66	9/5/2007	30.24	-97.77
446	Travis	Travis	78746	TX	3.24	22061	9/11/2007	30.31	-97.82
447	Travis	Travis	78751	TX	3.15	21933.88	9/13/2007	30.31	-97.73
448	Travis	Travis	78759	TX	3.15	20936.79	9/13/2007	30.40	-97.75
449	Travis	Travis	78727	TX	3.15	21600.45	9/13/2007	30.43	-97.71
450	Bexar	Bexar	78231	TX	2.82		9/14/2007	29.58	-98.56
451	Travis	Travis	78722	TX	3.12	22701.62	9/18/2007	30.30	-97.70
452	Travis	Travis	78756	TX	3.15	23298.14	9/18/2007	30.32	-97.74
453	Travis	Travis	78704	TX	13.77	104652.08	9/18/2007	30.24	-97.77
454	Travis	Travis	78752	TX	3.15	21906.25	9/21/2007	30.33	-97.70
455	Travis	Travis	78733	TX	3.23	21554.5	9/25/2007	30.33	-97.87
456	Travis	Travis	78733	TX	3.04	20286.5	9/25/2007	30.33	-97.87
457	Travis	Travis	78732	TX	3.15	21507.83	9/25/2007	30.38	-97.90
458	Travis	Travis	78751	TX	3.12	20857.83	9/26/2007	30.31	-97.73
459	Travis	Travis	78746	TX	3.69	32307.85	9/27/2007	30.31	-97.82
460	Travis	Travis	78746	TX	3.15	20388.42	9/27/2007	30.31	-97.82
461	Travis	Travis	78747	TX	2.625	16990.35	9/27/2007	30.13	-97.73
462	Travis	Travis	78746	TX	3.15	20611.04	9/28/2007	30.31	-97.82
463	Travis	Travis	78731	TX	3.2	21625	10/1/2007	30.35	-97.77
464	Travis	Travis	78732	TX	3.2	21625	10/1/2007	30.38	-97.90
465	Travis	Travis	78746	TX	3.2	22160	10/1/2007	30.31	-97.82
466	Travis	Travis	78746	TX	3.2	22160	10/1/2007	30.31	-97.82
467	Travis	Travis	78753	TX	0.16	1446	10/2/2007	30.39	-97.67
468	Travis	Travis	78746	TX	3.42	28247.02	10/2/2007	30.31	-97.82
469	Travis	Travis	78703	TX	3.15	21898	10/2/2007	30.29	-97.77
470	Travis	Travis	78703	TX	2.45	21898	10/2/2007	30.29	-97.77
471	Travis	Travis	78730	TX	3.24	18622.79	10/2/2007	30.37	-97.84
472	Travis	Travis	78730	TX	3.24	18622.79	10/2/2007	30.37	-97.84
473	Travis	Travis	78704	TX	3.842	20799.36	10/2/2007	30.24	-97.77
474	Travis	Travis	78704	TX	0.576	3824.64	10/2/2007	30.24	-97.77
475	Travis	Travis	78733	TX	3.15	20299.44	10/9/2007	30.33	-97.87
476	Travis	Travis	78734	TX	2.8	18043.94	10/9/2007	30.37	-97.95
477	Travis	Travis	78746	TX	3.3	23699.84	10/9/2007	30.31	-97.82
478	Travis	Travis	78746	TX	3.424	23397.2	10/9/2007	30.31	-97.82
479	Travis	Travis	78704	TX	3.006	21500.96	10/9/2007	30.24	-97.77
480	Travis	Travis	78759	TX	2.45	17027.67	10/10/2007	30.40	-97.75

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
481	Travis	Travis	78750	TX	3.15	21321.7	10/10/2007	30.43	-97.80
482	Travis	Travis	78748	TX	3.15	20661.92	10/16/2007	30.17	-97.82
483	Bexar	Bexar	78231	TX	4.59		10/24/2007	29.59	-98.56
484	Travis	Travis	78756	TX	0.7	4731.58	10/24/2007	30.32	-97.74
485	Collin	Collin	75173	TX	1.5	18000	10/31/2007	33.06	-96.38
486	Travis	Travis	78758	TX	3.15	20720.29	11/4/2007	30.39	-97.70
487	Travis	Travis	78738	TX	14	94053.22	11/8/2007	30.31	-97.98
488	Travis	Travis	78703	TX	3.1	20086.41	11/15/2007	30.29	-97.77
489	Travis	Travis	78731	TX	3.2	23150	11/16/2007	30.35	-97.77
490	Travis	Travis	78727	TX	3.15	21635.63	11/21/2007	30.43	-97.71
491	Travis	Travis	78759	TX	3.15	22017.31	11/21/2007	30.40	-97.75
492	Travis	Travis	78746	TX	2.45	15401.59	11/21/2007	30.31	-97.82
493	Travis	Travis	78703	TX	3.15	22828.46	11/21/2007	30.29	-97.77
494	Travis	Travis	78734	TX	3.15	22015.04	11/21/2007	30.37	-97.95
495	Travis	Travis	78704	TX	3.12	22701.62	11/26/2007	30.24	-97.77
496	Travis	Travis	78739	TX	3.15	20915.22	11/29/2007	30.19	-97.90
497	Travis	Travis	78704	TX	2.992	21309.71	12/4/2007	30.24	-97.77
498	Travis	Travis	78704	TX	3.4	22593.54	12/4/2007	30.24	-97.77
499	Travis	Travis	78702	TX	3.15	22369.12	12/4/2007	30.26	-97.71
500	Travis	Travis	78732	TX	3.34	23825.27	12/4/2007	30.38	-97.90
501	Travis	Travis	78723	TX	3.15	23445.98	12/4/2007	30.31	-97.68
502	Travis	Travis	78735	TX	3.328	28787	12/4/2007	30.26	-97.86
503	Travis	Travis	78704	TX	3.15	21278.94	12/6/2007	30.24	-97.77
504	Travis	Travis	78731	TX	3.15	20620.29	12/6/2007	30.35	-97.77
505	Travis	Travis	78751	TX	10.8	70258	12/12/2007	30.31	-97.73
506	Bexar	Bexar	78232	TX	4.01		12/13/2007	29.58	-98.47
507	Travis	Travis	78749	TX	3.2	21850	12/13/2007	30.22	-97.86
508	Travis	Travis	78745	TX	3.4632	20050	12/14/2007	30.21	-97.80
509	Travis	Travis	78759	TX	3.15	21014.27	12/18/2007	30.40	-97.75
510	Travis	Travis	78748	TX	3.15	21013.19	12/18/2007	30.17	-97.82
511	Travis	Travis	78724	TX	3.15	21832.79	12/18/2007	30.29	-97.62
512	Bexar	Bexar	78232	TX	4		12/19/2007	29.60	-98.49
513	Travis	Travis	78746	TX	3.24	20813.55	12/19/2007	30.31	-97.82
514	Travis	Travis	78758	TX	3.328	23573.03	12/20/2007	30.39	-97.70
515	Travis	Travis	78759	TX	3.28	27073.03	12/20/2007	30.40	-97.75
516	Travis	Travis	78702	TX	3.34	23527.08	12/20/2007	30.26	-97.71
517	Travis	Travis	78734	TX	3.5	30661.46	12/26/2007	30.37	-97.95
518	Travis	Travis	78733	TX	3.15	21071.11	12/27/2007	30.33	-97.87
519	Travis	Travis	78734	TX	3.15	21701.12	12/28/2007	30.37	-97.95
520	Travis	Travis	78735	TX	3.28	27774.08	1/4/2008	30.26	-97.86

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
521	Travis	Travis	78703	TX	2	18456	1/8/2008	30.29	-97.77
522	Travis	Travis	78746	TX	3.024	22229.9	1/8/2008	30.31	-97.82
523	Travis	Travis	78746	TX	2.808	22107.07	1/8/2008	30.31	-97.82
524	Travis	Travis	78757	TX	3.328	150672.04	1/10/2008	30.35	-97.74
525	Travis	Travis	78759	TX	3.15	20667.87	1/15/2008	30.40	-97.75
526	Bexar	Bexar	78248	TX	2.15		1/16/2008	29.57	-98.52
527	Travis	Travis	78748	TX	2.912	20595	1/17/2008	30.17	-97.82
528	Travis	Travis	78759	TX	3.34	23770.81	1/17/2008	30.40	-97.75
529	Travis	Travis	78751	TX	3.28	28090.8	1/18/2008	30.31	-97.73
530	Travis	Travis	78734	TX	3.328	24808.43	1/18/2008	30.37	-97.95
531	Travis	Travis	78660	TX	3.024	21188	1/18/2008	30.46	-97.60
532	Travis	Travis	78730	TX	3.024	21140.98	1/18/2008	30.37	-97.84
533	Travis	Travis	78730	TX	2.808	21041.71	1/18/2008	30.37	-97.84
534	Travis	Travis	78741	TX	3.15	21169.07	1/29/2008	30.23	-97.71
535	Travis	Travis	78735	TX	3.15	20661.92	1/29/2008	30.26	-97.86
536	Travis	Travis	78702	TX	3.366	20361	1/31/2008	30.26	-97.71
537	Travis	Travis	78758	TX	2.56	19815	2/1/2008	30.39	-97.70
538	Travis	Travis	78746	TX	3.5	32834.47	2/6/2008	30.31	-97.82
539	Travis	Travis	78734	TX	3.15	21286.85	2/6/2008	30.37	-97.95
540	Travis	Travis	78751	TX	3.12	20965.72	2/7/2008	30.31	-97.73
541	Travis	Travis	78704	TX	3.132	22872	2/12/2008	30.24	-97.77
542	Travis	Travis	78749	TX	3.15	21191.81	2/13/2008	30.22	-97.86
543	Travis	Travis	78746	TX	2.45	19382.65	2/13/2008	30.31	-97.82
544	Travis	Travis	78704	TX	3.15	22075.5	2/19/2008	30.24	-97.77
545	Travis	Travis	78703	TX	3.34	24847.31	2/25/2008	30.29	-97.77
546	Travis	Travis	78746	TX	3.15	21396.01	2/25/2008	30.31	-97.82
547	Travis	Travis	78724	TX	3.2	21245.93	2/25/2008	30.29	-97.62
548	Travis	Travis	78759	TX	3.15	20994.79	2/25/2008	30.40	-97.75
549	Travis	Travis	78731	TX	3.15	25209.57	2/26/2008	30.35	-97.77
550	Travis	Travis	78746	TX	3.15	46392.32	2/26/2008	30.31	-97.82
551	Travis	Travis	78746	TX	1.89	17397.12	2/26/2008	30.31	-97.82
552	Travis	Travis	78731	TX	3.28	25892.12	2/26/2008	30.35	-97.77
553	Travis	Travis	78727	TX	3.2	20875	2/26/2008	30.43	-97.71
554	Travis	Travis	78738	TX	3.15	23977.29	2/26/2008	30.31	-97.98
555	Travis	Travis	78705	TX	23.1	174726.42	2/27/2008	30.30	-97.74
556	Travis	Travis	78738	TX	2.25	17126.64	2/28/2008	30.31	-97.98
557	Travis	Travis	78731	TX	3.12	25273.77	2/29/2008	30.35	-97.77
558	Travis	Travis	78746	TX	1.575	11549	3/4/2008	30.31	-97.82
559	Travis	Travis	78704	TX	2.94	25514.26	3/5/2008	30.24	-97.77
560	Travis	Travis	78702	TX	3.024	21603	3/10/2008	30.26	-97.71

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
561	Travis	Travis	78747	TX	3.15	21216.16	3/12/2008	30.13	-97.73
562	Travis	Travis	78727	TX	1.575	9421.33	3/12/2008	30.43	-97.71
563	Travis	Travis	78722	TX	1.712	17655.79	3/21/2008	30.30	-97.70
564	Travis	Travis	78741	TX	3.15	18316	3/21/2008	30.23	-97.71
565	Travis	Travis	78751	TX	23.1	173531.65	3/24/2008	30.31	-97.73
566	Travis	Travis	78701	TX	1.225	9179.89	3/24/2008	30.27	-97.74
567	Travis	Travis	78705	TX	2.8	18621.19	3/24/2008	30.30	-97.74
568	Travis	Travis	78748	TX	3.15	32794.18	3/26/2008	30.17	-97.82
569	Travis	Travis	78748	TX	1.05	8198.54	3/26/2008	30.17	-97.82
570	Travis	Travis	78752	TX	3.2	24073	3/26/2008	30.33	-97.70
571	Travis	Travis	78703	TX	3.2	21519.74	3/26/2008	30.29	-97.77
572	Travis	Travis	78702	TX	3.2	21442.95	3/31/2008	30.26	-97.71
573	Travis	Travis	78746	TX	3.15	21000	3/31/2008	30.31	-97.82
574	Travis	Travis	78750	TX	3.15	21234.06	3/31/2008	30.43	-97.80
575	Travis	Travis	78750	TX	3.15	20904.81	3/31/2008	30.43	-97.80
576	Travis	Travis	78746	TX	3.69	30164.3	4/8/2008	30.31	-97.82
577	Travis	Travis	78745	TX	23.1	175341.19	4/8/2008	30.21	-97.80
578	Travis	Travis	78730	TX	3.15	36176	4/9/2008	30.37	-97.84
579	Travis	Travis	78756	TX	3.328	26408.47	4/10/2008	30.32	-97.74
580	Travis	Travis	78705	TX	3.15	21249.21	4/17/2008	30.30	-97.74
581	Travis	Travis	78731	TX	3.132	25366	4/17/2008	30.35	-97.77
582	Travis	Travis	78734	TX	3.06	23164.09	4/22/2008	30.37	-97.95
583	Travis	Travis	78749	TX	3.2	22741	4/22/2008	30.22	-97.86
584	Travis	Travis	78723	TX	3.2	22275.25	4/22/2008	30.31	-97.68
585	Travis	Travis	78759	TX	3.04	21984	4/23/2008	30.40	-97.75
586	Travis	Travis	78759	TX	3.15	21126.86	4/24/2008	30.40	-97.75
587	Travis	Travis	78704	TX	3.15	24325.82	4/30/2008	30.24	-97.77
588	Travis	Travis	78751	TX	3.5	23421.76	4/30/2008	30.31	-97.73
589	Travis	Travis	78704	TX	3.328	23399.99	5/2/2008	30.24	-97.77
590	Travis	Travis	78745	TX	23.625	147098.66	5/2/2008	30.21	-97.80
591	Travis	Travis	78705	TX	23.1	164150	5/2/2008	30.30	-97.74
592	Travis	Travis	78735	TX	3.4	20650	5/7/2008	30.26	-97.86
593	Travis	Travis	78750	TX	3.15	21175.79	5/7/2008	30.43	-97.80
594	Travis	Travis	78727	TX	10.5	76494.9	5/14/2008	30.43	-97.71
595	Travis	Travis	78701	TX	2.8	26666.63	5/16/2008	30.27	-97.74
596	Kendall	Bexar	78006	TX	3.06		5/20/2008	29.78	-98.73
597	Kendall	Bexar	78006	TX	2.28		5/20/2008	29.69	-98.65
598	Travis	Travis	78747	TX	3.15	20969.89	5/21/2008	30.13	-97.73
599	Travis	Travis	78751	TX	3.15	21359.59	5/22/2008	30.31	-97.73
600	Travis	Travis	78660	TX	3.24	24225.91	5/29/2008	30.46	-97.60

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
601	Travis	Travis	78703	TX	3	23758.91	5/29/2008	30.29	-97.77
602	Travis	Travis	78703	TX	3.15	20700	6/2/2008	30.29	-97.77
603	Travis	Travis	78704	TX	3.15	23339.76	6/2/2008	30.24	-97.77
604	Travis	Travis	78732	TX	3	22889.43	6/3/2008	30.38	-97.90
605	Travis	Travis	78746	TX	3.5	28096.26	6/5/2008	30.31	-97.82
606	Travis	Travis	78750	TX	3.24	21803.2	6/9/2008	30.43	-97.80
607	Bexar	Bexar	78248	TX	4.9	24681.5	6/9/2008	29.59	-98.52
608	Travis	Travis	78734	TX	3.04	22558.2	6/10/2008	30.37	-97.95
609	Travis	Travis	78735	TX	3.04	22558.2	6/10/2008	30.26	-97.86
610	Travis	Travis	78724	TX	3.15	21538.21	6/10/2008	30.29	-97.62
611	Travis	Travis	78756	TX	3.12	20965.72	6/16/2008	30.32	-97.74
612	Travis	Travis	78704	TX	3.15	23328.12	6/16/2008	30.24	-97.77
613	Travis	Travis	78746	TX	23.274	201823.61	6/16/2008	30.31	-97.82
614	Travis	Travis	78759	TX	3.15	24887.03	6/17/2008	30.40	-97.75
615	Travis	Travis	78758	TX	23.625	175414.55	6/17/2008	30.39	-97.70
616	Travis	Travis	78757	TX	8.75	69325	6/18/2008	30.35	-97.74
617	Travis	Travis	78746	TX	3.24	21543.86	6/19/2008	30.31	-97.82
618	Travis	Travis	78733	TX	3.15	22840.06	6/19/2008	30.33	-97.87
619	Williamson	Williamson	78729	TX	3.15	20990.55	6/19/2008	30.45	-97.76
620	Bexar	Bexar	78221	TX	10.5		6/30/2008	29.35	-98.53
621	Bexar	Bexar	78023	TX	3.96		6/30/2008	29.56	-98.71
622	Travis	Travis	78723	TX	3.28	25483.44	6/30/2008	30.31	-97.68
623	Travis	Travis	78704	TX	7	54885.46	6/30/2008	30.24	-97.77
624	Travis	Travis	78759	TX	3.15	21182	7/1/2008	30.40	-97.75
625	Travis	Travis	78746	TX	3.2	22175	7/1/2008	30.31	-97.82
626	Travis	Travis	78733	TX	3.06	20155.53	7/3/2008	30.33	-97.87
627	Travis	Travis	78731	TX	3.15	21242.29	7/8/2008	30.35	-97.77
628	Travis	Travis	78733	TX	3.24	21613.03	7/8/2008	30.33	-97.87
629	Travis	Travis	78746	TX	3.15	22844.84	7/8/2008	30.31	-97.82
630	Travis	Travis	78727	TX	17.5	129953.84	7/18/2008	30.43	-97.71
631	Travis	Travis	78733	TX	3.04	24898.2	7/21/2008	30.33	-97.87
632	Travis	Travis	78746	TX	3.24	20863.55	7/21/2008	30.31	-97.82
633	Travis	Travis	78746	TX	3.34	25850.4	7/22/2008	30.31	-97.82
634	Travis	Travis	78722	TX	1.38	15929.32	7/22/2008	30.30	-97.70
635	Travis	Travis	78727	TX	0.7	9160.66	7/23/2008	30.43	-97.71
636	Travis	Travis	78724	TX	3.15	21094.38	7/28/2008	30.29	-97.62
637	Travis	Travis	78757	TX	3.24	21514	7/28/2008	30.35	-97.74
638	Travis	Travis	78734	TX	3.15	20992.34	7/28/2008	30.37	-97.95
639	Travis	Travis	78724	TX	3.24	21405.65	7/29/2008	30.29	-97.62
640	Travis	Travis	78705	TX	14	106917.2	7/29/2008	30.30	-97.74

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
641	Travis	Travis	78746	TX	3.2	24331.5	8/4/2008	30.31	-97.82
642	Travis	Travis	78746	TX	3.2	21420.84	8/4/2008	30.31	-97.82
643	Travis	Travis	78746	TX	3.42	29193.2	8/4/2008	30.31	-97.82
644	Travis	Travis	78746	TX	3.136	23686.21	8/4/2008	30.31	-97.82
645	Travis	Travis	78745	TX	3.34	25203.71	8/6/2008	30.21	-97.80
646	Travis	Travis	78759	TX	3.136	23825.96	8/6/2008	30.40	-97.75
647	Travis	Travis	78741	TX	3.06	24000	8/7/2008	30.23	-97.71
648	Travis	Travis	78731	TX	3.136	24225.91	8/11/2008	30.35	-97.77
649	Travis	Travis	78746	TX	3.136	20231	8/11/2008	30.31	-97.82
650	Travis	Travis	78746	TX	2.688	20046.77	8/11/2008	30.31	-97.82
651	Williamson	Williamson	78729	TX	23.68	164142.43	8/12/2008	30.45	-97.76
652	Travis	Travis	78745	TX	3.2	21380	8/13/2008	30.21	-97.80
653	Travis	Travis	78759	TX	8.75	69325	8/13/2008	30.40	-97.75
654	Travis	Travis	78748	TX	3.15	23782	8/13/2008	30.17	-97.82
655	Travis	Travis	78733	TX	2.24	17366	8/15/2008	30.33	-97.87
656	Travis	Travis	78703	TX	3.24	22567.18	8/18/2008	30.29	-97.77
657	Travis	Travis	78734	TX	3.136	22454.91	8/18/2008	30.37	-97.95
658	Travis	Travis	78734	TX	3.136	22454.91	8/18/2008	30.37	-97.95
659	Travis	Travis	78734	TX	3.168	26935.36	8/18/2008	30.37	-97.95
660	Travis	Travis	78746	TX	3.15	25565.41	8/18/2008	30.31	-97.82
661	Travis	Travis	78758	TX	3.15	21033.19	8/18/2008	30.39	-97.70
662	Travis	Travis	78758	TX	3.15	21033.19	8/18/2008	30.39	-97.70
663	Travis	Travis	78653	TX	3.15	19052.86	8/18/2008	30.34	-97.50
664	Travis	Travis	78751	TX	2.56	20322.6	8/20/2008	30.31	-97.73
665	Travis	Travis	78746	TX	3.42	26846.76	8/25/2008	30.31	-97.82
666	Travis	Travis	78757	TX	3.15	20868.96	8/25/2008	30.35	-97.74
667	Travis	Travis	78739	TX	3.15	21600.67	8/25/2008	30.19	-97.90
668	Travis	Travis	78704	TX	2.1	17384.94	8/27/2008	30.24	-97.77
669	Bexar	Bexar	78261	TX	4		9/5/2008	29.70	-98.44
670	Bexar	Bexar	78232	TX	5.34		9/5/2008	29.58	-98.47
671	Travis	Travis	78757	TX	3.136	24000	9/8/2008	30.35	-97.74
672	Travis	Travis	78704	TX	25.2	169926.2	9/9/2008	30.24	-97.77
673	Travis	Travis	78749	TX	3	21056	9/10/2008	30.22	-97.86
674	Travis	Travis	78749	TX	1.8	21056	9/10/2008	30.22	-97.86
675	Travis	Travis	78723	TX	3.5	23782	9/10/2008	30.31	-97.68
676	Travis	Travis	78734	TX	5.33	40105	9/10/2008	30.37	-97.95
677	Travis	Travis	78733	TX	3.15	21836.5	9/12/2008	30.33	-97.87
678	Travis	Travis	78732	TX	3	24851	9/12/2008	30.38	-97.90
679	Travis	Travis	78732	TX	3	24850.5	9/12/2008	30.38	-97.90
680	Travis	Travis	78759	TX	3.04	20994.44	9/15/2008	30.40	-97.75

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
681	Travis	Travis	78759	TX	2.72	20419.62	9/15/2008	30.40	-97.75
682	Travis	Travis	78746	TX	3.15	24306.41	9/15/2008	30.31	-97.82
683	Bexar	Bexar	78201	TX	4.32		9/18/2008	29.48	-98.55
684	Travis	Travis	78756	TX	2.52	17663	9/22/2008	30.32	-97.74
685	Travis	Travis	78704	TX	3.06	22810.13	9/22/2008	30.24	-97.77
686	Travis	Travis	78734	TX	3.168	22515.75	9/22/2008	30.37	-97.95
687	Travis	Travis	78734	TX	3.168	22515.75	9/22/2008	30.37	-97.95
688	Travis	Travis	78732	TX	3.168	21200	9/22/2008	30.38	-97.90
689	Travis	Travis	78732	TX	3.168	21200	9/22/2008	30.38	-97.90
690	Travis	Travis	78746	TX	3.075	37547.44	9/23/2008	30.31	-97.82
691	Travis	Travis	78746	TX	1.845	14080.29	9/23/2008	30.31	-97.82
692	Travis	Travis	78759	TX	2.97	21190	9/23/2008	30.40	-97.75
693	Travis	Travis	78759	TX	0.99	7200	9/23/2008	30.40	-97.75
694	Travis	Travis	78759	TX	3.24	20567	9/24/2008	30.40	-97.75
695	Travis	Travis	78703	TX	3	23147.79	9/24/2008	30.29	-97.77
696	Travis	Travis	78703	TX	3	23147.79	9/24/2008	30.29	-97.77
697	Travis	Travis	78703	TX	10.816	73580.52	9/25/2008	30.29	-97.77
698	Travis	Travis	78703	TX	15.6	106125.75	9/25/2008	30.29	-97.77
699	Travis	Travis	78733	TX	3	23058.87	9/25/2008	30.33	-97.87
700	Travis	Travis	78733	TX	3	23058.86	9/25/2008	30.33	-97.87
701	Travis	Travis	78733	TX	6.29	30000	9/25/2008	30.33	-97.87
702	Travis	Travis	78704	TX	3.136	22454.58	9/29/2008	30.24	-97.77
703	Travis	Travis	78704	TX	3.136	22454.58	9/29/2008	30.24	-97.77
704	Travis	Travis	78759	TX	3.168	24201.7	9/29/2008	30.40	-97.75
705	Travis	Travis	78730	TX	3.15	45042.21	9/29/2008	30.37	-97.84
706	Travis	Travis	78730	TX	3.15	22521.11	9/29/2008	30.37	-97.84
707	Travis	Travis	78702	TX	1.8	13755.63	9/29/2008	30.26	-97.71
708	Travis	Travis	78733	TX	4	34820.91	9/29/2008	30.33	-97.87
709	Travis	Travis	78704	TX	3.15	22582.24	9/30/2008	30.24	-97.77
710	Travis	Travis	78704	TX	3.15	22582.24	9/30/2008	30.24	-97.77
711	Travis	Travis	78703	TX	2.52	20826.24	9/30/2008	30.29	-97.77
712	Travis	Travis	78704	TX	3	23758.39	9/30/2008	30.24	-97.77
713	Travis	Travis	78704	TX	3	23758.39	9/30/2008	30.24	-97.77
714	Travis	Travis	78703	TX	3.15	25855.71	9/30/2008	30.29	-97.77
715	Travis	Travis	78731	TX	2.66	19907.18	9/30/2008	30.35	-97.77
716	Travis	Travis	78731	TX	2.66	19907.18	9/30/2008	30.35	-97.77
717	Travis	Travis	78746	TX	2.8	26743.64	9/30/2008	30.31	-97.82
718	Travis	Travis	78746	TX	2.8	22608.86	9/30/2008	30.31	-97.82
719	Travis	Travis	78746	TX	2.52	18600.92	9/30/2008	30.31	-97.82
720	Travis	Travis	78746	TX	2.52	18600.92	9/30/2008	30.31	-97.82

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
721	Travis	Travis	78732	TX	3.168	23500	10/1/2008	30.38	-97.90
722	Travis	Travis	78732	TX	3.168	20000	10/1/2008	30.38	-97.90
723	Travis	Travis	78724	TX	3.24	20768.2	10/1/2008	30.29	-97.62
724	Travis	Travis	78724	TX	3.24	20738.2	10/1/2008	30.29	-97.62
725	Bexar	Bexar	78023	TX	3.71		10/3/2008	29.57	-98.67
726	Bexar	Bexar	78213	TX	3.6		10/6/2008	29.53	-98.51
727	Bexar	Bexar	78258	TX	16		10/6/2008	29.61	-98.49
728	Bexar	Bexar	78253	TX	4.81		10/8/2008	29.43	-98.76
729	Travis	Travis	78722	TX	3.5	27333.88	10/8/2008	30.30	-97.70
730	Travis	Travis	78733	TX	2.34	12883.2	10/8/2008	30.33	-97.87
731	Travis	Travis	78704	TX	2.282	26504	10/12/2008	30.24	-97.77
732	Travis	Travis	78704	TX	2.1	17786.4	10/13/2008	30.24	-97.77
733	Travis	Travis	78734	TX	2.672	21803	10/13/2008	30.37	-97.95
734	Travis	Travis	78727	TX	3.42	21426.47	10/14/2008	30.43	-97.71
735	Travis	Travis	78731	TX	3.42	22232.91	10/14/2008	30.35	-97.77
736	Travis	Travis	78723	TX	3.42	21195.53	10/20/2008	30.31	-97.68
737	Travis	Travis	78744	TX	3.2	21538.21	10/20/2008	30.20	-97.73
738	Travis	Travis	78703	TX	3.15	27311.96	10/21/2008	30.29	-97.77
739	Travis	Travis	78741	TX	3.15	26375.93	10/21/2008	30.23	-97.71
740	Bexar	Bexar	78229	TX	3.96		10/22/2008	29.51	-98.56
741	Travis	Travis	78653	TX	3.15	19052.86	10/22/2008	30.34	-97.50
742	Travis	Travis	78727	TX	10.5	91152.41	10/24/2008	30.43	-97.71
743	Travis	Travis	78731	TX	2.28	21018.9	11/3/2008	30.35	-97.77
744	Travis	Travis	78751	TX	3.15	26354.33	11/3/2008	30.31	-97.73
745	Travis	Travis	78731	TX	3.15	24488.93	11/3/2008	30.35	-97.77
746	Travis	Travis	78745	TX	7.56	64864.44	11/3/2008	30.21	-97.80
747	Travis	Travis	78746	TX	3.24	21245.44	11/4/2008	30.31	-97.82
748	Travis	Travis	78757	TX	3.15	21090.64	11/4/2008	30.35	-97.74
749	Travis	Travis	78759	TX	3.15	22132.24	11/4/2008	30.40	-97.75
750	Travis	Travis	78747	TX	3.24	21622.12	11/4/2008	30.13	-97.73
751	Travis	Travis	78746	TX	3.15	26421.61	11/5/2008	30.31	-97.82
752	Travis	Travis	78704	TX	3.06	22810.13	11/5/2008	30.24	-97.77
753	Travis	Travis	78734	TX	3.15	23505.94	11/5/2008	30.37	-97.95
754	Travis	Travis	78746	TX	3.15	25565.41	11/10/2008	30.31	-97.82
755	Travis	Travis	78752	TX	3.15	26846.76	11/17/2008	30.33	-97.70
756	Travis	Travis	78734	TX	3.2	20957.25	11/17/2008	30.37	-97.95
757	Travis	Travis	78704	TX	3.15	18427.22	11/17/2008	30.24	-97.77
758	Travis	Travis	78753	TX	3.36	23838.93	11/17/2008	30.39	-97.67
759	Travis	Travis	78756	TX	3.15	21900.49	11/17/2008	30.32	-97.74
760	Bexar	Bexar	78249	TX	4.32		11/20/2008	29.58	-98.57

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
761	Travis	Travis	78746	TX	3.06	21320	11/24/2008	30.31	-97.82
762	Travis	Travis	78746	TX	3.04	24263.49	11/24/2008	30.31	-97.82
763	Travis	Travis	78751	TX	6.656	48588.65	11/24/2008	30.31	-97.73
764	Travis	Travis	78746	TX	4.32	24290.42	11/25/2008	30.31	-97.82
765	Travis	Travis	78746	TX	1.08	5299.92	11/25/2008	30.31	-97.82
766	Travis	Travis	78750	TX	3.15	20928.43	11/25/2008	30.43	-97.80
767	Travis	Travis	78750	TX	3.15	20928.43	11/25/2008	30.43	-97.80
768	Travis	Travis	78722	TX	3.15	21744.96	11/25/2008	30.30	-97.70
769	Travis	Travis	78727	TX	3.15	21773.52	11/25/2008	30.43	-97.71
770	Travis	Travis	78745	TX	3.06	19081.78	11/26/2008	30.21	-97.80
771	Travis	Travis	78746	TX	23.625	149232.91	11/26/2008	30.31	-97.82
772	Bexar	Bexar	78212	TX	2.78		12/5/2008	29.46	-98.49
773	Travis	Travis	78745	TX	3.168	22700	12/8/2008	30.21	-97.80
774	Travis	Travis	78732	TX	3.168	23500	12/8/2008	30.38	-97.90
775	Travis	Travis	78750	TX	3.15	21294.69	12/10/2008	30.43	-97.80
776	Travis	Travis	78751	TX	3.36	29768.5	12/11/2008	30.31	-97.73
777	Travis	Travis	78730	TX	3.006	21636.62	12/12/2008	30.37	-97.84
778	Travis	Travis	78749	TX	3.24	21898.01	12/12/2008	30.22	-97.86
779	Travis	Travis	78746	TX	3.15	20900.89	12/12/2008	30.31	-97.82
780	Travis	Travis	78759	TX	3.168	24380.1	12/15/2008	30.40	-97.75
781	Travis	Travis	78731	TX	3.168	28093.34	12/15/2008	30.35	-97.77
782	Travis	Travis	78748	TX	2.846	21411.97	12/15/2008	30.17	-97.82
783	Travis	Travis	78704	TX	3.15	23834.18	12/15/2008	30.24	-97.77
784	Travis	Travis	78734	TX	2.625	15849.74	12/17/2008	30.37	-97.95
785	Travis	Travis	78702	TX	3.744	22471.23	12/19/2008	30.26	-97.71
786	Travis	Travis	78758	TX	3.24	21961.46	12/22/2008	30.39	-97.70
787	Travis	Travis	78750	TX	3.15	19994.8	12/23/2008	30.43	-97.80
788	Travis	Travis	78750	TX	3.15	19244.6	12/23/2008	30.43	-97.80
789	Travis	Travis	78750	TX	2.88	19378.22	12/23/2008	30.43	-97.80
790	Travis	Travis	78750	TX	2.88	19378.22	12/23/2008	30.43	-97.80
791	Travis	Travis	78704	TX	23.625	163059.95	12/23/2008	30.24	-97.77
792	Bexar	Bexar	78209	TX	1.02		12/30/2008	29.50	-98.46
793	Travis	Travis	78746	TX	3.15	22394.46	12/31/2008	30.31	-97.82
794	Bexar	Bexar	78148	TX	2.8		1/8/2009	29.57	-98.31
795	Bexar	Bexar	78249	TX	3.99		1/8/2009	29.56	-98.61
796	Bexar	Bexar	78249	TX	2.09		1/8/2009	29.56	-98.61
797	Travis	Travis	78746	TX	3.15	22540.6	1/9/2009	30.31	-97.82
798	Travis	Travis	78746	TX	1.05	7513.39	1/9/2009	30.31	-97.82
799	Travis	Travis	78731	TX	3.168	23065.22	1/9/2009	30.35	-97.77
800	Travis	Travis	78732	TX	3.168	23500	1/9/2009	30.38	-97.90

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
801	Travis	Travis	78746	TX	5.25	34447.85	1/9/2009	30.31	-97.82
802	Travis	Travis	78703	TX	6.12	41249	1/9/2009	30.29	-97.77
803	Travis	Travis	78733	TX	3.15	23940.88	1/12/2009	30.33	-97.87
804	Williamson	Williamson	78729	TX	3.15	22189	1/13/2009	30.45	-97.76
805	Travis	Travis	78745	TX	3.15	28708.28	1/14/2009	30.21	-97.80
806	Travis	Travis	78735	TX	3.276	29802.93	1/14/2009	30.26	-97.86
807	Travis	Travis	78722	TX	3.15	22332.09	1/21/2009	30.30	-97.70
808	Travis	Travis	78745	TX	3.15	25949.25	1/23/2009	30.21	-97.80
809	Bexar	Bexar	78261	TX	3.6		1/30/2009	29.70	-98.42
810	Bexar	Bexar	78212	TX	6.8		1/30/2009	29.47	-98.48
811	Bexar	Bexar	78232	TX	4.86		1/30/2009	29.58	-98.51
812	Travis	Travis	78703	TX	3.15	22781.5	2/2/2009	30.29	-97.77
813	Travis	Travis	78703	TX	3.15	22781.5	2/2/2009	30.29	-97.77
814	Travis	Travis	78733	TX	3.24	21488.1	2/3/2009	30.33	-97.87
815	Travis	Travis	78723	TX	3.15	20709.83	2/3/2009	30.31	-97.68
816	Travis	Travis	78746	TX	3.15	30914.48	2/4/2009	30.31	-97.82
817	Travis	Travis	78747	TX	3.024	22271.22	2/4/2009	30.13	-97.73
818	Travis	Travis	78747	TX	3.024	22271.21	2/4/2009	30.13	-97.73
819	Travis	Travis	78733	TX	3.15	20412	2/5/2009	30.33	-97.87
820	Travis	Travis	78733	TX	6.09	39610	2/5/2009	30.33	-97.87
821	Travis	Travis	78759	TX	3.15	28353.55	2/6/2009	30.40	-97.75
822	Travis	Travis	78727	TX	3.15	27000	2/6/2009	30.43	-97.71
823	Travis	Travis	78734	TX	1.84	16084.1	2/6/2009	30.37	-97.95
824	Travis	Travis	78751	TX	3.15	24162.18	2/6/2009	30.31	-97.73
825	Travis	Travis	78749	TX	3.15	25050	2/12/2009	30.22	-97.86
826	Travis	Travis	78745	TX	3.136	21775.14	2/12/2009	30.21	-97.80
827	Travis	Travis	78704	TX	3.15	28567.55	2/12/2009	30.24	-97.77
828	Travis	Travis	78724	TX	1.575	15023.23	2/18/2009	30.29	-97.62
829	Travis	Travis	78703	TX	3.15	22376	2/19/2009	30.29	-97.77
830	Travis	Travis	78704	TX	12.18	91282	2/19/2009	30.24	-97.77
831	Bexar	Bexar	78254	TX	4		2/20/2009	29.53	-98.66
832	Travis	Travis	78732	TX	3.136	23794	2/23/2009	30.38	-97.90
833	Travis	Travis	78759	TX	3.124	22631	2/23/2009	30.40	-97.75
834	Travis	Travis	78735	TX	3.15	20520.44	2/24/2009	30.26	-97.86
835	Travis	Travis	78731	TX	3.15	21744.96	2/24/2009	30.35	-97.77
836	Travis	Travis	78734	TX	3.24	22619.92	2/24/2009	30.37	-97.95
837	Travis	Travis	78734	TX	3.15	21430.96	2/24/2009	30.37	-97.95
838	Travis	Travis	78731	TX	3.15	26385.27	2/25/2009	30.35	-97.77
839	Travis	Travis	78704	TX	3.15	27300.04	2/25/2009	30.24	-97.77
840	Travis	Travis	78746	TX	22.91	201351.62	2/25/2009	30.31	-97.82

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
841	Travis	Travis	78730	TX	3.2	23174.27	2/27/2009	30.37	-97.84
842	Travis	Travis	78746	TX	3.2	24229.56	2/27/2009	30.31	-97.82
843	Travis	Travis	78728	TX	3.15	19924	2/27/2009	30.46	-97.68
844	Travis	Travis	78704	TX	3.2	22720	2/27/2009	30.24	-97.77
845	Williamson	Williamson	78729	TX	3.85	35925	2/27/2009	30.45	-97.76
846	Travis	Travis	78756	TX	11.648	87515.68	3/2/2009	30.32	-97.74
847	Travis	Travis	78727	TX	6.048	53858.84	3/2/2009	30.43	-97.71
848	Travis	Travis	78702	TX	3.12	20881.85	3/6/2009	30.26	-97.71
849	Travis	Travis	78732	TX	3.168	23500	3/9/2009	30.38	-97.90
850	Travis	Travis	78746	TX	3.15	22743.18	3/10/2009	30.31	-97.82
851	Travis	Travis	78703	TX	3.15	21405.06	3/10/2009	30.29	-97.77
852	Travis	Travis	78734	TX	3.15	29421.31	3/11/2009	30.37	-97.95
853	Travis	Travis	78704	TX	23.1	166798	3/16/2009	30.24	-97.77
854	Travis	Travis	78746	TX	3.6	26321	3/17/2009	30.31	-97.82
855	Travis	Travis	78746	TX	3.6	26321	3/17/2009	30.31	-97.82
856	Travis	Travis	78751	TX	3.15	22517.7	3/17/2009	30.31	-97.73
857	Travis	Travis	78724	TX	3.24	21961.46	3/17/2009	30.29	-97.62
858	Travis	Travis	78757	TX	6.3	89938	3/24/2009	30.35	-97.74
859	Harris	Harris	77401	TX	2.87	17238	3/28/2009	29.71	-95.46
860	Harris	Harris	77401	TX	2.87	19870.8	3/28/2009	29.71	-95.46
861	Travis	Travis	78734	TX	3.15	21810.3	3/30/2009	30.37	-97.95
862	Travis	Travis	78704	TX	3.15	20748.52	4/1/2009	30.24	-97.77
863	Travis	Travis	78731	TX	3.15	25986.93	4/6/2009	30.35	-97.77
864	Travis	Travis	78756	TX	3.85	42462	4/6/2009	30.32	-97.74
865	Travis	Travis	78727	TX	2.8	26708	4/6/2009	30.43	-97.71
866	Travis	Travis	78734	TX	9.45	65886.91	4/8/2009	30.37	-97.95
867	Travis	Travis	78736	TX	3.15	24844.88	4/10/2009	30.25	-97.95
868	Travis	Travis	78745	TX	3.15	23120.86	4/10/2009	30.21	-97.80
869	Travis	Travis	78752	TX	23.4	125123.89	4/10/2009	30.33	-97.70
870	Travis	Travis	78703	TX	2.04	15711.35	4/14/2009	30.29	-97.77
871	Bexar	Bexar	78201	TX	13.37		4/15/2009	29.46	-98.52
872	Travis	Travis	78734	TX	3.168	25673.12	4/15/2009	30.37	-97.95
873	Grayson	Collin	75090	TX	4.32	34994	4/21/2009	33.60	-96.56
874	Bexar	Bexar	78212	TX	3.68		4/21/2009	29.46	-98.50
875	Grayson	Collin	75020	TX	2.1	16792	4/21/2009	33.78	-96.60
876	Comal	Comal	78163	TX	3.96		4/30/2009	29.77	-98.43
877	Travis	Travis	78759	TX	1.575	11010	4/30/2009	30.40	-97.75
878	Travis	Travis	78741	TX	11.55	71342.88	4/30/2009	30.23	-97.71
879	Travis	Travis	78703	TX	4.2	34859.57	4/30/2009	30.29	-97.77
880	Travis	Travis	78701	TX	3.15	20378.09	5/1/2009	30.27	-97.74

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
881	Travis	Travis	78746	TX	3.15	21242.42	5/1/2009	30.31	-97.82
882	Travis	Travis	78731	TX	6.3	39000	5/1/2009	30.35	-97.77
883	Travis	Travis	78733	TX	4.2	27554.36	5/1/2009	30.33	-97.87
884	Travis	Travis	78749	TX	3.15	22465.67	5/4/2009	30.22	-97.86
885	Travis	Travis	78723	TX	3.024	23578.56	5/4/2009	30.31	-97.68
886	Travis	Travis	78756	TX	2.592	21678.34	5/4/2009	30.32	-97.74
887	Travis	Travis	78704	TX	24.48	198246.31	5/4/2009	30.24	-97.77
888	Bexar	Bexar	78216	TX	4.4		5/5/2009	29.56	-98.52
889	Travis	Travis	78752	TX	23.4	166495.31	5/5/2009	30.33	-97.70
890	Smith	Smith	75703	TX	2.31	20790	5/9/2009	32.24	-95.36
891	Bexar	Bexar	78210	TX	1.05		5/11/2009	29.40	-98.47
892	Dallas	Dallas	75214	TX	3.5	26894	5/12/2009	32.82	-96.74
893	Travis	Travis	78750	TX	7	43615.94	5/13/2009	30.43	-97.80
894	Travis	Travis	78741	TX	6.6	37310.73	5/14/2009	30.23	-97.71
895	Travis	Travis	78750	TX	2.16	21858.86	5/15/2009	30.43	-97.80
896	Travis	Travis	78727	TX	3.2	24695.08	5/19/2009	30.43	-97.71
897	Travis	Travis	78701	TX	3.2	24299.68	5/19/2009	30.27	-97.74
898	Travis	Travis	78731	TX	3.2	23747.91	5/19/2009	30.35	-97.77
899	Denton	Denton	75007	TX	2.1	18522	5/20/2009	33.01	-96.89
900	Bexar	Bexar	78216	TX	3.2		5/20/2009	29.57	-98.51
901	Smith	Smith	75771	TX	5	42500	5/20/2009	32.56	-95.44
902	Smith	Smith	75771	TX	5.376	39600	5/20/2009	32.56	-95.44
903	Travis	Travis	78731	TX	4.2	27518.98	5/21/2009	30.35	-97.77
904	Travis	Travis	78703	TX	4.375	33312.56	5/21/2009	30.29	-97.77
905	Travis	Travis	78710	TX	5.25	44738	5/21/2009	30.34	-97.66
906	Travis	Travis	78751	TX	5.775	49629.31	5/21/2009	30.31	-97.73
907	Smith	Smith	75703	TX	2	26460	5/22/2009	32.25	-95.41
908	Travis	Travis	78758	TX	3.15	21476.55	5/25/2009	30.39	-97.70
909	Travis	Travis	78749	TX	3.78	28049.37	5/26/2009	30.22	-97.86
910	Travis	Travis	78733	TX	5.6	38374.36	5/26/2009	30.33	-97.87
911	Travis	Travis	78731	TX	6.3	39773.83	5/26/2009	30.35	-97.77
912	Travis	Travis	78759	TX	3.15	22153.65	5/26/2009	30.40	-97.75
913	Travis	Travis	78734	TX	3.15	20129.76	5/26/2009	30.37	-97.95
914	Tarrant	Tarrant	76034	TX	3.024	24849	5/27/2009	32.89	-97.15
915	Travis	Travis	78731	TX	3.15	22659.83	5/27/2009	30.35	-97.77
916	Bexar	Bexar	78210	TX	2.45		5/28/2009	29.41	-98.45
917	Bexar	Bexar	78209	TX	2.6		5/28/2009	29.48	-98.47
918	Travis	Travis	78723	TX	3.168	23000	6/1/2009	30.31	-97.68
919	Dallas	Dallas	75063	TX	6	45979	6/3/2009	32.91	-96.98
920	Dallas	Dallas	75231	TX	6.272	47922	6/3/2009	32.88	-96.75

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
921	Collin	Collin	75070	TX	3.5	29094	6/3/2009	33.18	-96.70
922	Travis	Travis	78745	TX	2.376	16656.19	6/8/2009	30.21	-97.80
923	Travis	Travis	78748	TX	3.24	21534.45	6/8/2009	30.17	-97.82
924	Bexar	Bexar	78215	TX	200	1350000	6/9/2009	29.44	-98.48
925	Travis	Travis	78704	TX	4.2	26139.13	6/10/2009	30.24	-97.77
926	Travis	Travis	78751	TX	4.2	26558.96	6/10/2009	30.31	-97.73
927	Travis	Travis	78723	TX	7.8	51846.77	6/10/2009	30.31	-97.68
928	Travis	Travis	78746	TX	6.12	45360.49	6/12/2009	30.31	-97.82
929	Travis	Travis	78746	TX	3.15	27646	6/16/2009	30.31	-97.82
930	Travis	Travis	78746	TX	4.05	32873.68	6/16/2009	30.31	-97.82
931	Lamar	Hunt	75421	TX	2.46	19862	6/18/2009	33.64	-95.71
932	Travis	Travis	78701	TX	3.2	24299.68	6/18/2009	30.27	-97.74
933	Tarrant	Tarrant	76040	TX	3.24	25722	6/19/2009	32.82	-97.10
934	Tarrant	Tarrant	76131	TX	2.87	25311	6/19/2009	32.90	-97.36
935	Travis	Travis	78745	TX	3.15	22945	6/19/2009	30.21	-97.80
936	Travis	Travis	78757	TX	3.15	19308.26	6/19/2009	30.35	-97.74
937	Bell	Williamson	76543	TX	3.15	21232	6/23/2009	31.14	-97.67
938	Bell	Williamson	76542	TX	2.1	18810	6/23/2009	31.01	-97.72
939	Bell	Williamson	76542	TX	5.04	32799	6/23/2009	31.01	-97.72
940	Travis	Travis	78754	TX	3.24	21304	6/23/2009	30.36	-97.65
941	Travis	Travis	78751	TX	3.5	23876	6/24/2009	30.31	-97.73
942	Travis	Travis	78723	TX	3.15	22421	6/24/2009	30.31	-97.68
943	Travis	Travis	78735	TX	2	15827	6/24/2009	30.26	-97.86
944	Travis	Travis	78757	TX	3.15	22955.98	6/24/2009	30.35	-97.74
945	Travis	Travis	78704	TX	4.32	26847.93	6/24/2009	30.24	-97.77
946	Smith	Smith	75703	TX	2.94	26894	6/25/2009	32.27	-95.33
947	Smith	Smith	75703	TX	2.31	20790	6/25/2009	32.27	-95.33
948	Travis	Travis	78733	TX	7.8	56000	6/25/2009	30.33	-97.87
949	Travis	Travis	78749	TX	7.7	53274.34	6/26/2009	30.22	-97.86
950	Travis	Travis	78750	TX	6.825	44578.27	6/26/2009	30.43	-97.80
951	Travis	Travis	78703	TX	4.8	39769.17	6/29/2009	30.29	-97.77
952	Travis	Travis	78730	TX	7	44343.36	6/29/2009	30.37	-97.84
953	Travis	Travis	78746	TX	8	57708	6/30/2009	30.31	-97.82
954	Dallas	Dallas	75234	TX	3.1	30934	7/1/2009	32.92	-96.86
955	Rockwall	Rockwall	75087	TX	4.688	26650	7/1/2009	32.95	-96.44
956	Travis	Travis	78746	TX	3.24	33055.27	7/2/2009	30.31	-97.82
957	Tarrant	Tarrant	76179	TX	2.05	12880	7/7/2009	32.92	-97.46
958	Tarrant	Tarrant	76164	TX	236.13	1471931	7/7/2009	32.78	-97.35
959	Nacogdoches	Rusk	75964	TX	10.08	75089	7/7/2009	31.59	-94.77
960	Collin	Collin	75002	TX	4	42196	7/8/2009	33.09	-96.61

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
961	Williamson	Williamson	78665	TX	8.2	52036	7/8/2009	30.35	-98.53
962	Smith	Smith	75771	TX	9.856	78900	7/10/2009	32.56	-95.44
963	Tarrant	Tarrant	76180	TX	5.755	42169	7/10/2009	32.86	-97.21
964	Ellis	Ellis	75125	TX	3.15	22000	7/10/2009	32.52	-96.64
965	Travis	Travis	78749	TX	7.7	54000	7/13/2009	30.21	-97.86
966	Travis	Travis	78727	TX	2.16	14060.44	7/13/2009	30.43	-97.71
967	Travis	Travis	78703	TX	4.68	31532.6	7/13/2009	30.29	-97.77
968	Travis	Travis	78751	TX	23.625	179500.22	7/13/2009	30.31	-97.73
969	Travis	Travis	78751	TX	23.625	177876.47	7/13/2009	30.31	-97.73
970	Travis	Travis	78745	TX	23.328	206224.01	7/13/2009	30.21	-97.80
971	Travis	Travis	78759	TX	3.85	23109.96	7/14/2009	30.40	-97.75
972	Travis	Travis	78746	TX	3.075	22887.03	7/14/2009	30.31	-97.82
973	Travis	Travis	78746	TX	9.75	60520.42	7/14/2009	30.31	-97.82
974	Travis	Travis	78702	TX	3.15	22499	7/15/2009	30.26	-97.71
975	Travis	Travis	78725	TX	3.15	22512	7/15/2009	30.23	-97.62
976	Travis	Travis	78727	TX	5.76	37810.73	7/15/2009	30.43	-97.71
977	Travis	Travis	78750	TX	3.96	25017.72	7/17/2009	30.43	-97.80
978	Travis	Travis	78749	TX	7.7	54000	7/18/2009	30.18	-97.86
979	Travis	Travis	78723	TX	3.42	21397.55	7/21/2009	30.31	-97.68
980	Travis	Travis	78704	TX	3.24	20714	7/21/2009	30.24	-97.77
981	Travis	Travis	78728	TX	2.52	17245.67	7/21/2009	30.46	-97.68
982	Travis	Travis	78727	TX	3.24	20714	7/21/2009	30.43	-97.71
983	Travis	Travis	78732	TX	11.16	74434.66	7/21/2009	30.38	-97.90
984	Travis	Travis	78724	TX	3.24	26515	7/22/2009	30.29	-97.62
985	Travis	Travis	78730	TX	3.24	20714	7/22/2009	30.37	-97.84
986	Travis	Travis	78749	TX	1.48	19500	7/22/2009	30.22	-97.86
987	Travis	Travis	78746	TX	3.5	30728.2	7/23/2009	30.31	-97.82
988	Travis	Travis	78759	TX	3.15	26274.45	7/23/2009	30.40	-97.75
989	Travis	Travis	78733	TX	13.65	112772.82	7/23/2009	30.33	-97.87
990	Travis	Travis	78704	TX	4.2	30538.26	7/23/2009	30.24	-97.77
991	Travis	Travis	78704	TX	5.52	39343.8	7/23/2009	30.24	-97.77
992	Bexar	Bexar	78213	TX	1.8	14188	7/23/2009	29.50	-98.52
993	Tarrant	Tarrant	76051	TX	6	44000	7/23/2009	32.95	-97.09
994	Collin	Collin	75023	TX	3	24933.34	7/24/2009	33.06	-96.71
995	Travis	Travis	78747	TX	3.85	22626.22	7/27/2009	30.13	-97.73
996	Travis	Travis	78704	TX	6.24	48546.8	7/27/2009	30.24	-97.77
997	Travis	Travis	78754	TX	7.7	46434.97	7/28/2009	30.36	-97.65
998	Travis	Travis	78730	TX	3.85	26195.84	7/28/2009	30.37	-97.84
999	Travis	Travis	78734	TX	3.15	23305.28	7/29/2009	30.37	-97.95
1000	Williamson	Williamson	78729	TX	4.2	26050	7/29/2009	30.45	-97.76

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
1001	Travis	Travis	78753	TX	6.15	36002.39	7/29/2009	30.39	-97.67
1002	Travis	Travis	78728	TX	5.346	33000	7/29/2009	30.46	-97.68
1003	Travis	Travis	78723	TX	19.38	111264.01	7/29/2009	30.31	-97.68
1004	Travis	Travis	78746	TX	3.15	25565.41	8/1/2009	30.31	-97.82
1005	Henderson	Henderson	75156	TX	2.8		8/3/2009	32.31	-96.14
1006	Denton	Denton	76249	TX	2.46	19170	8/3/2009	33.29	-97.29
1007	Denton	Denton	76249	TX	2.87	19560	8/3/2009	33.29	-97.29
1008	McLennan	Ellis	76708	TX	47.25	363310	8/3/2009	31.64	-97.21
1009	Tarrant	Tarrant	76116	TX	3.36	25455	8/3/2009	32.71	-97.43
1010	Travis	Travis	78731	TX	3.15	20264.03	8/4/2009	30.35	-97.77
1011	Travis	Travis	78723	TX	6.3	36361	8/5/2009	30.31	-97.68
1012	Travis	Travis	78746	TX	4.4	31900	8/5/2009	30.31	-97.82
1013	Travis	Travis	78745	TX	11.025	69090.46	8/6/2009	30.21	-97.80
1014	Travis	Travis	78745	TX	3.15	20000	8/6/2009	30.21	-97.80
1015	Travis	Travis	78746	TX	4.92	28913	8/6/2009	30.31	-97.82
1016	Travis	Travis	78723	TX	15.386	91000	8/6/2009	30.31	-97.68
1017	Anderson	Henderson	75801	TX	10.08	61152	8/7/2009	31.76	-95.54
1018	Bexar	Bexar	78254	TX	8.4	45791.74	8/7/2009	29.53	-98.78
1019	Jefferson	Jefferson	77706	TX	9.625	80171	8/10/2009	30.10	-94.17
1020	Travis	Travis	78759	TX	7.175	45212	8/10/2009	30.40	-97.75
1021	Travis	Travis	78727	TX	5.4	35984.97	8/10/2009	30.43	-97.71
1022	Navarro	Ellis	76681	TX	7.02	59718	8/15/2009	31.91	-96.52
1023	Dallas	Dallas	75006	TX	4.2	33218	8/15/2009	32.97	-96.89
1024	Travis	Travis	78746	TX	9.45	73042.52	8/18/2009	30.31	-97.82
1025	Travis	Travis	78746	TX	5.6	39208.83	8/18/2009	30.31	-97.82
1026	Travis	Travis	78731	TX	10.85	70850.62	8/18/2009	30.35	-97.77
1027	Travis	Travis	78723	TX	23.355	167757.74	8/18/2009	30.31	-97.68
1028	Hamilton	Hood	76531	TX	9.75	71858	8/19/2009	31.68	-98.18
1029	Tarrant	Tarrant	76051	TX	6	44581	8/19/2009	32.95	-97.07
1030	Dallas	Dallas	75228	TX	4.68	46800	8/19/2009	32.83	-96.68
1031	Collin	Collin	75093	TX	8.1	63273	8/19/2009	33.04	-96.80
1032	Tarrant	Tarrant	76107	TX	3.85	33746	8/19/2009	32.74	-97.38
1033	Bell	Williamson	76502	TX	2.708	20987	8/19/2009	31.11	-97.41
1034	Bastrop	Bastrop	78621	TX	2.38	18445	8/19/2009	30.34	-97.37
1035	Navarro	Ellis	76681	TX	7.2	59718	8/19/2009	31.90	-96.43
1036	Dallas	Dallas	75043	TX	4.6	31955	8/19/2009	32.85	-96.59
1037	Tarrant	Tarrant	76179	TX	9.6	67634	8/19/2009	32.92	-97.46
1038	Hopkins	Hunt	75482	TX	2.85	40670	8/19/2009	33.18	-95.60
1039	Bell	Williamson	76579	TX	10	51106	8/19/2009	31.18	-97.20
1040	Travis	Travis	78730	TX	3.12	21102.91	8/19/2009	30.37	-97.84

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1041	Travis	Travis	78722	TX	4.29	35435	8/19/2009	30.30	-97.70
1042	Travis	Travis	78746	TX	5.7	35066	8/20/2009	30.31	-97.82
1043	Travis	Travis	78727	TX	7	40920.58	8/21/2009	30.43	-97.71
1044	Travis	Travis	78750	TX	4.2	25793.99	8/21/2009	30.43	-97.80
1045	Travis	Travis	78738	TX	8.75	46619.47	8/21/2009	30.31	-97.98
1046	Travis	Travis	78721	TX	4.725	26203.78	8/21/2009	30.27	-97.68
1047	Travis	Travis	78744	TX	3.15	20227.18	8/21/2009	30.20	-97.73
1048	Travis	Travis	78731	TX	3.15	19793.57	8/21/2009	30.35	-97.77
1049	Nacogdoches	Rusk	75961	TX	10.8	67188	8/22/2009	31.59	-94.60
1050	Travis	Travis	78733	TX	5.2	30330	8/24/2009	30.33	-97.87
1051	Travis	Travis	78749	TX	2.775	17271.31	8/24/2009	30.22	-97.86
1052	Travis	Travis	78704	TX	3.33	18714.48	8/24/2009	30.24	-97.77
1053	Travis	Travis	78758	TX	3.456	22257	8/26/2009	30.39	-97.70
1054	Travis	Travis	78727	TX	3.136	21897.38	8/31/2009	30.43	-97.71
1055	Travis	Travis	78733	TX	5.775	34306.64	8/31/2009	30.33	-97.87
1056	Hill	Ellis	76645	TX	10.08	71580	9/1/2009	32.02	-97.14
1057	Travis	Travis	78745	TX	4.356	31201.42	9/1/2009	30.21	-97.80
1058	Travis	Travis	78746	TX	4.5	37254.97	9/1/2009	30.31	-97.82
1059	Travis	Travis	78745	TX	3.456	27063.75	9/1/2009	30.21	-97.80
1060	Travis	Travis	78721	TX	2.72	18019.37	9/1/2009	30.27	-97.68
1061	Travis	Travis	78721	TX	3.15	20230.56	9/1/2009	30.27	-97.68
1062	Travis	Travis	78721	TX	3.15	20230.56	9/1/2009	30.27	-97.68
1063	Bell	Williamson	76513	TX	10	64825	9/4/2009	31.07	-97.50
1064	Travis	Travis	78723	TX	0.791	6500	9/6/2009	30.31	-97.68
1065	Travis	Travis	78732	TX	3.15	22081.5	9/8/2009	30.38	-97.90
1066	Bexar	Bexar	78253	TX	7.2	58221.61	9/8/2009	29.47	-98.81
1067	Travis	Travis	78727	TX	5.76	31734.78	9/9/2009	30.43	-97.71
1068	Travis	Travis	78733	TX	6.65	39889.89	9/9/2009	30.33	-97.87
1069	Travis	Travis	78759	TX	6.65	41961.62	9/9/2009	30.40	-97.75
1070	Travis	Travis	78728	TX	3.15	20732.36	9/9/2009	30.46	-97.68
1071	Travis	Travis	78749	TX	6.3	37143.57	9/9/2009	30.22	-97.86
1072	Travis	Travis	78748	TX	7.56	41423.6	9/9/2009	30.17	-97.82
1073	Travis	Travis	78749	TX	3.15	19644.11	9/9/2009	30.22	-97.86
1074	Travis	Travis	78702	TX	3.172	22589	9/11/2009	30.26	-97.71
1075	Travis	Travis	78754	TX	5.775	34998.2	9/11/2009	30.36	-97.65
1076	Travis	Travis	78731	TX	7	49877.37	9/11/2009	30.35	-97.77
1077	Comal	Comal	78132	TX	3.96	30000	9/14/2009	29.74	-98.20
1078	Bell	Williamson	76513	TX	6.105	42212	9/15/2009	31.07	-97.50
1079	Bell	Williamson	76502	TX	10	67981	9/15/2009	31.11	-97.41
1080	Collin	Collin	75069	TX	2.1	25631	9/15/2009	33.16	-96.59

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
1081	Collin	Collin	75013	TX	7.2	59529	9/15/2009	33.11	-96.70
1082	Travis	Travis	78747	TX	23.985	135100	9/15/2009	30.13	-97.73
1083	Travis	Travis	78746	TX	23.625	141845.48	9/15/2009	30.31	-97.82
1084	Collin	Collin	75098	TX	4.5	31500	9/16/2009	33.02	-96.51
1085	Leon	Montgomery	77865	TX	1.08	10260	9/16/2009	31.22	-96.30
1086	Denton	Denton	75007	TX	5.4	35050	9/16/2009	33.01	-96.89
1087	Travis	Travis	78749	TX	6.336	37760	9/16/2009	30.22	-97.86
1088	Travis	Travis	78746	TX	7	39063	9/18/2009	30.31	-97.82
1089	Travis	Travis	78733	TX	10.08	54250	9/18/2009	30.33	-97.87
1090	Travis	Travis	78728	TX	5.95	31803.1	9/18/2009	30.46	-97.68
1091	Travis	Travis	78705	TX	4.104	22923	9/21/2009	30.30	-97.74
1092	Travis	Travis	78753	TX	10.368	52823	9/21/2009	30.39	-97.67
1093	Travis	Travis	78750	TX	8.19	41658	9/21/2009	30.43	-97.80
1094	Travis	Travis	78749	TX	2.88	21931.97	9/21/2009	30.22	-97.86
1095	Travis	Travis	78746	TX	14	68567	9/23/2009	30.31	-97.82
1096	Travis	Travis	78759	TX	8.405	45246	9/23/2009	30.40	-97.75
1097	Travis	Travis	78747	TX	3.33	47352	9/23/2009	30.13	-97.73
1098	Ellis	Ellis	75165	TX	5.25	37500	9/24/2009	32.40	-96.79
1099	Ellis	Ellis	75125	TX	10.08	66800	9/24/2009	32.52	-96.64
1100	Tarrant	Tarrant	76016	TX	7.2	54000	9/24/2009	32.69	-97.18
1101	Parker	Parker	76008	TX	8.19	53889	9/24/2009	32.69	-97.63
1102	Dallas	Dallas	75081	TX	7.84	36924	9/24/2009	32.96	-96.70
1103	Travis	Travis	78730	TX	5.58	48756.61	9/25/2009	30.37	-97.84
1104	Travis	Travis	78757	TX	7.4	42577.37	9/25/2009	30.35	-97.74
1105	Travis	Travis	78745	TX	3.33	19157.47	9/25/2009	30.21	-97.80
1106	Travis	Travis	78704	TX	22.94	137760.89	9/25/2009	30.24	-97.77
1107	Travis	Travis	78746	TX	7.2	55379.09	9/28/2009	30.31	-97.82
1108	Cherokee	Smith	75766	TX	4.92	52100	9/29/2009	31.93	-95.35
1109	Collin	Collin	75093	TX	1.125	8195	9/29/2009	33.04	-96.80
1110	Smith	Smith	75762	TX	10	74000	9/29/2009	32.21	-95.40
1111	Travis	Travis	78704	TX	5.775	36776.53	9/29/2009	30.24	-97.77
1112	Travis	Travis	78744	TX	4.2	26212	9/29/2009	30.20	-97.73
1113	Travis	Travis	78732	TX	6.3	34358	10/1/2009	30.38	-97.90
1114	Travis	Travis	78732	TX	6.235	36658	10/1/2009	30.38	-97.90
1115	Travis	Travis	78732	TX	4.2	23009.25	10/1/2009	30.38	-97.90
1116	Travis	Travis	78730	TX	8.4	47976.75	10/1/2009	30.37	-97.84
1117	Travis	Travis	78731	TX	3.08	22026.95	10/2/2009	30.35	-97.77
1118	Travis	Travis	78702	TX	4.56	29278.01	10/2/2009	30.26	-97.71
1119	Dallas	Dallas	75230	TX	6.44	37640	10/4/2009	32.90	-96.80
1120	Hood	Hood	76035	TX	6.272	45785	10/5/2009	32.57	-97.62

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1121	Cameron	Nueces	78523	TX	4.1	23380	10/5/2009	26.00	-97.57
1122	Bexar	Bexar	78253	TX	6.3	36058	10/5/2009	29.47	-98.81
1123	Tarrant	Tarrant	76051	TX	2.7	27701	10/6/2009	32.95	-97.07
1124	Travis	Travis	78746	TX	7.77	48162.5	10/7/2009	30.31	-97.82
1125	Travis	Travis	78704	TX	13.392	101284	10/7/2009	30.24	-97.77
1126	Anderson	Henderson	75801	TX	10.08	61152	10/9/2009	31.76	-95.54
1127	Denton	Denton	75007	TX	4.2	26480	10/9/2009	33.01	-96.89
1128	Travis	Travis	78759	TX	2.45	14191.09	10/9/2009	30.40	-97.75
1129	Travis	Travis	78746	TX	3.15	18959.2	10/9/2009	30.31	-97.82
1130	Bexar	Bexar	78253	TX	3.73	18072.24	10/9/2009	29.47	-98.81
1131	Smith	Smith	75762	TX	3.15	28350	10/10/2009	32.21	-95.37
1132	Smith	Smith	75703	TX	3.5	24500	10/12/2009	32.27	-95.33
1133	Parker	Parker	76087	TX	2.4	30448	10/12/2009	32.61	-97.83
1134	Travis	Travis	78746	TX	2.73	20789.37	10/12/2009	30.31	-97.82
1135	Travis	Travis	78727	TX	2.45	12397	10/12/2009	30.43	-97.71
1136	Travis	Travis	78733	TX	12.95	70017	10/12/2009	30.33	-97.87
1137	Travis	Travis	78759	TX	3.15	17481.95	10/12/2009	30.40	-97.75
1138	Dallas	Dallas	75229	TX	3.075	19583	10/13/2009	32.90	-96.86
1139	Collin	Collin	75287	TX	1.75	10500	10/13/2009	33.00	-96.84
1140	Williamson	Williamson	78665	TX	2.632	21056	10/13/2009	30.35	-98.53
1141	Travis	Travis	78746	TX	2.45	14940	10/13/2009	30.31	-97.82
1142	Travis	Travis	78702	TX	3.33	18477.6	10/14/2009	30.26	-97.71
1143	Williamson	Williamson	78682	TX	100.62	655813	10/15/2009	30.52	-97.67
1144	Travis	Travis	78759	TX	9	64027.24	10/15/2009	30.40	-97.75
1145	Travis	Travis	78731	TX	8.8	50200	10/16/2009	30.35	-97.77
1146	Travis	Travis	78748	TX	3.15	20778.68	10/19/2009	30.17	-97.82
1147	Travis	Travis	78732	TX	3.15	19485.98	10/19/2009	30.38	-97.90
1148	Travis	Travis	78734	TX	13.475	72896.24	10/19/2009	30.37	-97.95
1149	Travis	Travis	78759	TX	7.175	37055.18	10/19/2009	30.40	-97.75
1150	Travis	Travis	78748	TX	5.25	29690	10/19/2009	30.17	-97.82
1151	Travis	Travis	78730	TX	8.19	54202.79	10/20/2009	30.37	-97.84
1152	Dallas	Dallas	75234	TX	3.01	20000	10/21/2009	32.92	-96.89
1153	Collin	Collin	75075	TX	2.25	16675	10/22/2009	33.02	-96.74
1154	Ellis	Ellis	75125	TX	4.05	27720	10/22/2009	32.52	-96.64
1155	Nacogdoches	Rusk	75961	TX	10.8	67188	10/22/2009	31.57	-94.54
1156	Travis	Travis	78753	TX	6.048	30058.56	10/22/2009	30.39	-97.67
1157	Travis	Travis	78704	TX	17.48	130940	10/22/2009	30.24	-97.77
1158	Williamson	Williamson	78729	TX	4.55	30986.34	10/23/2009	30.45	-97.76
1159	Travis	Travis	78704	TX	4.32	28891.75	10/27/2009	30.24	-97.77
1160	Tarrant	Tarrant	76020	TX	6.3	45000	10/28/2009	32.96	-97.55

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1161	Travis	Travis	78723	TX	7	34595.37	10/28/2009	30.31	-97.68
1162	Travis	Travis	78733	TX	14	80740.13	11/2/2009	30.33	-97.87
1163	Travis	Travis	78750	TX	8.8	44877	11/3/2009	30.43	-97.80
1164	Williamson	Williamson	78729	TX	4.725	27181.12	11/4/2009	30.45	-97.76
1165	Travis	Travis	78746	TX	7.875	39154.86	11/5/2009	30.31	-97.82
1166	Travis	Travis	78747	TX	3.675	20598.81	11/5/2009	30.13	-97.73
1167	Bell	Williamson	76513	TX	3.12	21210	11/6/2009	31.07	-97.50
1168	Dallas	Dallas	75248	TX	3.888	28432	11/6/2009	32.97	-96.78
1169	Bell	Williamson	76571	TX	5.25	31372	11/6/2009	30.93	-97.59
1170	Travis	Travis	78756	TX	4.5	28125	11/9/2009	30.32	-97.74
1171	Travis	Travis	78731	TX	7.35	36728.59	11/9/2009	30.35	-97.77
1172	Travis	Travis	78746	TX	23.625	147232.91	11/9/2009	30.31	-97.82
1173	Travis	Travis	78758	TX	3.78	25620.86	11/10/2009	30.39	-97.70
1174	Travis	Travis	78746	TX	3.15	21783.88	11/10/2009	30.31	-97.82
1175	Collin	Collin	75074	TX	10.08	89700	11/11/2009	33.02	-96.67
1176	Tom Green	Williamson	76935	TX	5.184	29289	11/11/2009	30.99	-100.30
1177	Eastland	Hood	76470	TX	3.15	22780	11/11/2009	32.49	-98.64
1178	Rockwall	Rockwall	75087	TX	7.2	55500	11/11/2009	32.95	-96.44
1179	Johnson	Johnson	76033	TX	3	23205	11/11/2009	32.29	-97.50
1180	Bell	Williamson	76513	TX	7.48	51986	11/11/2009	31.07	-97.50
1181	Bell	Williamson	76513	TX	7.59	53130	11/12/2009	31.07	-97.50
1182	Winkler	El Paso	79745	TX	1.12	7339	11/12/2009	31.84	-102.85
1183	Dallas	Dallas	75214	TX	2.16	19262	11/12/2009	32.82	-96.74
1184	Smith	Smith	75706	TX	10.8	54627	11/14/2009	32.41	-95.28
1185	Denton	Denton	76209	TX	3.3	27579	11/15/2009	33.23	-97.11
1186	Tarrant	Tarrant	76107	TX	1.1	8320	11/15/2009	32.74	-97.38
1187	Tarrant	Tarrant	76017	TX	2.1	15750	11/15/2009	32.66	-97.15
1188	Tarrant	Tarrant	76108	TX	3.6	31010	11/15/2009	32.79	-97.50
1189	Somervell	Hood	76043	TX	8.2	97920	11/15/2009	32.19	-97.76
1190	Ellis	Ellis	75119	TX	6.3	78750	11/15/2009	32.32	-96.62
1191	Travis	Travis	78746	TX	6.3	38250	11/16/2009	30.31	-97.82
1192	Bexar	Bexar	78261	TX	20.8	124000	11/16/2009	29.70	-98.41
1193	Collin	Collin	75002	TX	4.4	34776	11/17/2009	33.09	-96.61
1194	Dallas	Dallas	75006	TX	4.2	33218	11/17/2009	32.97	-96.89
1195	Williamson	Williamson	78664	TX	3.76	21244	11/17/2009	30.50	-97.64
1196	Tarrant	Tarrant	76051	TX	5.535	33803	11/17/2009	32.95	-97.07
1197	Travis	Travis	78750	TX	4.62	24486.34	11/18/2009	30.43	-97.80
1198	Dallas	Dallas	75234	TX	24.3	198502	11/19/2009	32.92	-96.89
1199	Grayson	Collin	75021	TX	2.46	29520	11/19/2009	33.74	-96.47
1200	Dallas	Dallas	75050	TX	7.392	53311	11/19/2009	32.78	-97.02

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1201	Dallas	Dallas	75216	TX	4.375	27138	11/20/2009	32.70	-96.80
1202	Tarrant	Tarrant	76020	TX	6.3	47725	11/20/2009	32.96	-97.55
1203	Bell	Williamson	76571	TX	5.25	31197	11/20/2009	30.93	-97.59
1204	McLennan	Ellis	76705	TX	10	90000	11/20/2009	31.59	-97.07
1205	Travis	Travis	78759	TX	3.15	18663.96	11/23/2009	30.40	-97.75
1206	Travis	Travis	78760	TX	0.7	4147.56	11/23/2009	30.21	-97.73
1207	Travis	Travis	78727	TX	2.16	14507.06	11/23/2009	30.43	-97.71
1208	Comal	Comal	78132	TX	0.6	3250	11/23/2009	29.74	-98.20
1209	Bexar	Bexar	78251	TX	4.68	27138	11/23/2009	29.47	-98.68
1210	Bexar	Bexar	78209	TX	2.8	24200	11/23/2009	29.49	-98.45
1211	Travis	Travis	78732	TX	9.66	56074.02	11/24/2009	30.38	-97.90
1212	Smith	Smith	75762	TX	3.15	28350	11/25/2009	32.21	-95.40
1213	Collin	Collin	75023	TX	7.875	45815	11/25/2009	33.06	-96.71
1214	Dallas	Dallas	75220	TX	10.5	68250	11/25/2009	32.86	-96.87
1215	Collin	Collin	75002	TX	5.4	55532	11/25/2009	33.09	-96.61
1216	Travis	Travis	78723	TX	12.425	56535.48	11/25/2009	30.31	-97.68
1217	Travis	Travis	78703	TX	3.15	25289.04	11/25/2009	30.29	-97.77
1218	El Paso	El Paso	79934	TX	2.05	13423.58	11/28/2009	31.94	-106.45
1219	Travis	Travis	78723	TX	4.725	22824.9	11/30/2009	30.31	-97.68
1220	Travis	Travis	78738	TX	7.175	38740.2	11/30/2009	30.31	-97.98
1221	Tarrant	Tarrant	76123	TX	1.62	9720	12/1/2009	32.62	-97.39
1222	Dallas	Dallas	75150	TX	4.32	48000	12/1/2009	32.82	-96.63
1223	Travis	Travis	78759	TX	5.25	27437.82	12/1/2009	30.40	-97.75
1224	Travis	Travis	78759	TX	5.6	29963.12	12/1/2009	30.40	-97.75
1225	Collin	Collin	75023	TX	3.024	24933	12/2/2009	33.06	-96.71
1226	Travis	Travis	78745	TX	3.325	19408.63	12/2/2009	30.21	-97.80
1227	Travis	Travis	78734	TX	3.15	16881.75	12/2/2009	30.37	-97.95
1228	Travis	Travis	78723	TX	5.775	28887.31	12/3/2009	30.31	-97.68
1229	Bell	Williamson	76559	TX	4.92	31415	12/4/2009	31.09	-97.62
1230	Travis	Travis	78732	TX	7.14	48025.26	12/4/2009	30.38	-97.90
1231	Dallas	Dallas	75001	TX	4.2	29947	12/5/2009	32.97	-96.83
1232	Tarrant	Tarrant	76179	TX	8.8	53967	12/7/2009	32.92	-97.46
1233	Galveston	Galveston	77546	TX	3.15	23256	12/7/2009	29.51	-95.20
1234	McLennan	Ellis	76708	TX	5.1	53570	12/7/2009	31.64	-97.21
1235	Bell	Williamson	76543	TX	1.575	8062	12/8/2009	31.14	-97.67
1236	Dallas	Dallas	75248	TX	4.2	31550	12/8/2009	32.97	-96.78
1237	Denton	Denton	75022	TX	5.06	32894	12/8/2009	33.02	-97.13
1238	Dallas	Dallas	75214	TX	2.1	16238	12/8/2009	32.82	-96.74
1239	Travis	Travis	78733	TX	4.995	28400.25	12/8/2009	30.33	-97.87
1240	Bell	Williamson	76542	TX	2	18810	12/9/2009	31.01	-97.72

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
1241	Travis	Travis	78723	TX	8.75	39247.72	12/10/2009	30.31	-97.68
1242	Williamson	Williamson	78681	TX	7	35151	12/11/2009	30.54	-97.73
1243	Lampasas	Williamson	76539	TX	5.25	26511	12/11/2009	31.04	-97.98
1244	Liberty	Liberty	77575	TX	10.15	50540	12/11/2009	30.05	-94.75
1245	Dallas	Dallas	75230	TX	3.04	23945	12/11/2009	32.90	-96.80
1246	Travis	Travis	78705	TX	1.575	8154.78	12/11/2009	30.30	-97.74
1247	Travis	Travis	78721	TX	2.8	18975.12	12/11/2009	30.27	-97.68
1248	Bexar	Bexar	78230	TX	5.25	32084.36	12/11/2009	29.54	-98.56
1249	Bexar	Bexar	78254	TX	3.78	21012	12/11/2009	29.53	-98.78
1250	Montgomery	Montgomery	77304	TX	2.8	20728	12/13/2009	30.33	-95.51
1251	Montgomery	Montgomery	77381	TX	5	36136	12/13/2009	30.17	-95.51
1252	Denton	Denton	75067	TX	9.03	38562	12/13/2009	33.01	-97.00
1253	Smith	Smith	75703	TX	5.4	34284	12/13/2009	32.27	-95.33
1254	Montgomery	Montgomery	77357	TX	5.6	34562	12/13/2009	30.18	-95.04
1255	Dallas	Dallas	75116	TX	2.64	14520	12/14/2009	32.66	-96.92
1256	Dallas	Dallas	75205	TX	5.52	31350	12/14/2009	32.83	-96.80
1257	Dallas	Dallas	75204	TX	2.7	17318	12/14/2009	32.80	-96.79
1258	Denton	Denton	76208	TX	10.08	54927	12/15/2009	33.20	-97.06
1259	Dallas	Dallas	75019	TX	2.7	25074	12/15/2009	32.96	-97.00
1260	Dallas	Dallas	75116	TX	1.05	17840	12/15/2009	32.66	-96.92
1261	Tarrant	Tarrant	76107	TX	1.05	17840	12/15/2009	32.74	-97.38
1262	Dallas	Dallas	75048	TX	3.04	29049.06	12/15/2009	32.96	-96.58
1263	Collin	Collin	75009	TX	1.05	17840	12/15/2009	33.32	-96.77
1264	Somervell	Hood	76043	TX	8.28	54324	12/16/2009	32.19	-97.76
1265	Galveston	Galveston	77546	TX	4.2	26800	12/16/2009	29.51	-95.20
1266	Travis	Travis	78723	TX	8.75	39585.62	12/16/2009	30.31	-97.68
1267	Travis	Travis	78723	TX	6.912	39313	12/16/2009	30.31	-97.68
1268	McLennan	Ellis	76705	TX	0.368	3000	12/17/2009	31.59	-97.07
1269	Collin	Collin	75074	TX	0.72	5000	12/17/2009	33.02	-96.67
1270	Dallas	Dallas	75217	TX	3.28	54152	12/17/2009	32.71	-96.67
1271	Tarrant	Tarrant	76108	TX	9.8	70153	12/17/2009	32.79	-97.50
1272	Williamson	Williamson	78665	TX	9.45	66506	12/17/2009	30.35	-98.53
1273	Tarrant	Tarrant	76051	TX	10.5	53901	12/17/2009	32.95	-97.07
1274	Tarrant	Tarrant	76022	TX	1.6	13151	12/18/2009	32.83	-97.14
1275	Travis	Travis	78660	TX	6.3	29319	12/18/2009	30.46	-97.60
1276	Ellis	Ellis	75165	TX	4.725	34358	12/18/2009	32.40	-96.79
1277	Ellis	Ellis	75165	TX	5.25	35000	12/18/2009	32.40	-96.79
1278	Smith	Smith	75706	TX	10.8	55000	12/19/2009	32.41	-95.28
1279	Travis	Travis	78750	TX	3.15	16684.88	12/21/2009	30.43	-97.80
1280	Travis	Travis	78750	TX	10.32	60607	12/21/2009	30.43	-97.80

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
1281	Travis	Travis	78730	TX	7.36	43735.5	12/21/2009	30.37	-97.84
1282	Travis	Travis	78756	TX	3.85	19212	12/23/2009	30.32	-97.74
1283	Tarrant	Tarrant	76051	TX	2.16	12805.71	12/28/2009	32.90	-97.12
1284	Smith	Smith	75706	TX	10.8	54627	12/29/2009	32.45	-95.33
1285	Collin	Collin	75074	TX	49.14	276828	12/29/2009	33.02	-96.67
1286	Bell	Williamson	76571	TX	12.25	96032	12/29/2009	30.93	-97.59
1287	Travis	Travis	78617	TX	8.4	40559	12/29/2009	30.15	-97.59
1288	Travis	Travis	78754	TX	7.7	37780.32	12/29/2009	30.36	-97.65
1289	Travis	Travis	78759	TX	3.78	17387	12/29/2009	30.40	-97.75
1290	Travis	Travis	78731	TX	6.3	26788	12/29/2009	30.35	-97.77
1291	Travis	Travis	78704	TX	3.15	13964.7	12/29/2009	30.24	-97.77
1292	Tarrant	Tarrant	76012	TX	5.25	48550	12/30/2009	32.76	-97.14
1293	Tarrant	Tarrant	76117	TX	5.04	34020	12/30/2009	32.81	-97.28
1294	Bell	Williamson	76513	TX	21.6	117825	12/30/2009	31.07	-97.50
1295	Jim Wells	Nueces	78332	TX	5.18	36200	12/30/2009	27.74	-98.09
1296	Travis	Travis	78759	TX	4.62	18234.67	12/30/2009	30.40	-97.75
1297	Travis	Travis	78732	TX	5.25	22494.07	12/30/2009	30.38	-97.90
1298	Travis	Travis	78704	TX	10.5	33000	12/30/2009	30.24	-97.77
1299	Travis	Travis	78732	TX	6.3	25843.04	12/30/2009	30.38	-97.90
1300	Travis	Travis	78704	TX	3.33	21340.78	12/30/2009	30.24	-97.77
1301	Travis	Travis	78735	TX	2.8	19941.89	12/30/2009	30.26	-97.86
1302	Travis	Travis	78723	TX	4.995	23196	12/30/2009	30.31	-97.68
1303	Williamson	Williamson	78729	TX	3.85	18674.04	12/30/2009	30.45	-97.76
1304	Travis	Travis	78723	TX	3.885	17680.44	12/30/2009	30.31	-97.68
1305	Travis	Travis	78660	TX	14.685	79827	12/30/2009	30.46	-97.60
1306	Travis	Travis	78731	TX	28	150288.52	12/30/2009	30.35	-97.77
1307	Bell	Williamson	76505	TX	5.52	48836	12/31/2009	31.10	-97.34
1308	Gregg	Gregg	75605	TX	5.52	48836	12/31/2009	32.56	-94.71
1309	Harris	Harris	77447	TX	215.6	1300000	12/31/2009	30.02	-95.86
1310	Denton	Denton	75007	TX	0.45	3000	1/1/2010	33.01	-96.89
1311	Travis	Travis	78731	TX	7	34361.34	1/4/2010	30.35	-97.77
1312	Bexar	Bexar	78260	TX	4.2	22648.86	1/4/2010	29.69	-98.50
1313	Bexar	Bexar	78216	TX	8.75	45522.78	1/4/2010	29.55	-98.50
1314	Comal	Comal	78266	TX	6.3	41236.43	1/4/2010	29.63	-98.32
1315	Smith	Smith	75706	TX	10.8	56189	1/6/2010	32.45	-95.33
1316	Travis	Travis	78723	TX	4.995	23196	1/6/2010	30.29	-97.70
1317	Travis	Travis	78704	TX	3.33	18714.48	1/7/2010	30.24	-97.77
1318	Travis	Travis	78704	TX	3.33	18714.48	1/7/2010	30.24	-97.77
1319	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1320	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1321	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1322	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1323	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1324	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1325	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1326	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1327	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1328	Travis	Travis	78703	TX	2.96	17120	1/7/2010	30.29	-97.77
1329	Travis	Travis	78703	TX	2.96	17120	1/7/2010	30.29	-97.77
1330	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1331	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1332	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1333	Travis	Travis	78703	TX	2.96	17120	1/7/2010	30.29	-97.77
1334	Travis	Travis	78703	TX	2.96	17120	1/7/2010	30.29	-97.77
1335	Travis	Travis	78703	TX	2.96	17120	1/7/2010	30.29	-97.77
1336	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1337	Travis	Travis	78703	TX	2.22	12840	1/7/2010	30.29	-97.77
1338	Travis	Travis	78703	TX	2.96	17120	1/7/2010	30.29	-97.77
1339	Travis	Travis	78703	TX	7.44	45000	1/7/2010	30.29	-97.77
1340	Travis	Travis	78703	TX	2.22	14000	1/7/2010	30.29	-97.77
1341	Travis	Travis	78703	TX	2.22	14000	1/7/2010	30.29	-97.77
1342	Hunt	Hunt	75428	TX	10.2	100000	1/8/2010	33.28	-95.92
1343	Hunt	Hunt	75422	TX	10.2	100000	1/8/2010	33.14	-95.92
1344	Travis	Travis	78703	TX	14.4	69935.97	1/8/2010	30.29	-97.77
1345	Travis	Travis	78703	TX	3.808	31493.7	1/8/2010	30.29	-97.77
1346	Henderson	Henderson	75758	TX	10.8	58808	1/9/2010	32.30	-95.47
1347	Jefferson	Jefferson	77706	TX	10.08	61002	1/10/2010	30.10	-94.17
1348	Dallas	Dallas	75229	TX	2.1	20459	1/10/2010	32.90	-96.86
1349	Dallas	Dallas	75006	TX	1.41	27648	1/10/2010	32.97	-96.89
1350	Johnson	Johnson	76033	TX	5.98	43154	1/11/2010	32.29	-97.50
1351	Dallas	Dallas	75019	TX	2.025	14175	1/11/2010	32.96	-97.00
1352	Tarrant	Tarrant	76182	TX	4.6	36354	1/11/2010	32.73	-97.32
1353	Denton	Denton	76247	TX	8.28	47840	1/11/2010	33.11	-97.33
1354	Collin	Collin	75074	TX	10.08	56980	1/11/2010	33.02	-96.67
1355	Hidalgo	Nueces	78539	TX	37.8	179250	1/12/2010	26.42	-98.18
1356	Hidalgo	Nueces	78539	TX	67.5	300750	1/12/2010	26.42	-98.18
1357	Angelina	Rusk	75904	TX	5.85	35275	1/12/2010	31.33	-94.83
1358	Williamson	Williamson	78665	TX	5.46	26648	1/13/2010	30.35	-98.53
1359	Dallas	Dallas	75248	TX	4.32	33055	1/13/2010	32.97	-96.78
1360	Denton	Denton	76247	TX	3.5	23038	1/13/2010	33.11	-97.33

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1361	Hunt	Hunt	75422	TX	9.6	100000	1/13/2010	33.14	-95.92
1362	Williamson	Williamson	76574	TX	7.175	37075	1/13/2010	30.57	-97.37
1363	Williamson	Williamson	78664	TX	102	693924	1/13/2010	30.50	-97.64
1364	Travis	Travis	78723	TX	3.5	15540	1/13/2010	30.31	-97.68
1365	Ellis	Ellis	75154	TX	10.12	58177	1/14/2010	32.52	-96.80
1366	Midland	El Paso	79707	TX	5.46	34800	1/14/2010	32.06	-102.23
1367	Dallas	Dallas	75248	TX	6.15	44900	1/14/2010	32.97	-96.78
1368	Collin	Collin	75173	TX	8.05	45100	1/14/2010	33.06	-96.38
1369	Collin	Collin	75070	TX	4.23	34500	1/14/2010	33.18	-96.70
1370	Rockwall	Rockwall	75087	TX	3.96	32374	1/14/2010	32.95	-96.44
1371	Bexar	Bexar	78230	TX	5.4	23846.78	1/15/2010	29.57	-98.57
1372	Collin	Collin	75252	TX	7	38286	1/15/2010	33.00	-96.80
1373	Denton	Denton	75065	TX	4.6	26169	1/15/2010	33.12	-97.02
1374	Dallas	Dallas	75205	TX	8.4	43113	1/15/2010	32.83	-96.80
1375	Tarrant	Tarrant	76135	TX	7.92	38584	1/15/2010	32.84	-97.47
1376	Comal	Comal	78163	TX	8.4	56444.86	1/15/2010	29.77	-98.51
1377	Comal	Comal	78132	TX	8.05	42422.11	1/15/2010	29.74	-98.20
1378	Comal	Comal	78163	TX	10.5	68485.09	1/15/2010	29.77	-98.51
1379	Tarrant	Tarrant	76116	TX	3.85	25000	1/15/2010	32.73	-97.42
1380	Tarrant	Tarrant	76179	TX	5.95	38664	1/19/2010	32.92	-97.46
1381	Smith	Smith	75709	TX	7.875	52500	1/19/2010	32.32	-95.38
1382	Travis	Travis	78723	TX	3.5	15540	1/19/2010	30.29	-97.70
1383	Denton	Denton	76262	TX	4	25639	1/19/2010	33.02	-97.23
1384	Midland	El Paso	79707	TX	5.376	31512	1/20/2010	32.06	-102.23
1385	Dallas	Dallas	75243	TX	3.44	61161	1/20/2010	32.91	-96.74
1386	Dallas	Dallas	75229	TX	5.25	37861	1/20/2010	32.90	-96.86
1387	Travis	Travis	78704	TX	3.33	18714.48	1/20/2010	30.24	-97.77
1388	Travis	Travis	78702	TX	11.9	65030.1	1/20/2010	30.26	-97.71
1389	Travis	Travis	78731	TX	4.995	25972	1/20/2010	30.35	-97.77
1390	Williamson	Williamson	76574	TX	4.48	22000	1/21/2010	30.57	-97.37
1391	Tarrant	Tarrant	76116	TX	3.85	25349	1/21/2010	32.71	-97.43
1392	Travis	Travis	78731	TX	3.15	26019.53	1/21/2010	30.35	-97.77
1393	Travis	Travis	78759	TX	6.3	25853	1/21/2010	30.40	-97.75
1394	Travis	Travis	78734	TX	4.2	22020	1/21/2010	30.37	-97.95
1395	Kendall	Bexar	78015	TX	3.96	32635	1/21/2010	29.75	-98.65
1396	Bexar	Bexar	78253	TX	5.25	17432.31	1/22/2010	29.47	-98.81
1397	McLennan	Ellis	76710	TX	3.15	17745	1/25/2010	31.53	-97.20
1398	Tarrant	Tarrant	76051	TX	2.24	13280	1/28/2010	32.95	-97.07
1399	Dallas	Dallas	75048	TX	3.04	29033	1/28/2010	32.96	-96.57
1400	Collin	Collin	75025	TX	1	8817	1/28/2010	33.09	-96.76

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1401	Tarrant	Tarrant	76021	TX	3.64	21912	1/28/2010	32.85	-97.13
1402	Tarrant	Tarrant	76107	TX	2.16	18450	1/28/2010	32.74	-97.38
1403	Tarrant	Tarrant	76034	TX	11.76	40700	1/28/2010	32.89	-97.15
1404	Dallas	Dallas	75225	TX	2.8	23184	1/29/2010	32.87	-96.79
1405	Tarrant	Tarrant	76132	TX	1.8	14312	1/29/2010	32.66	-97.42
1406	Tarrant	Tarrant	76036	TX	3.12	12362	1/29/2010	32.58	-97.43
1407	Travis	Travis	78763	TX	25.8	143528	1/29/2010	30.30	-97.77
1408	Bexar	Bexar	78218	TX	25.8	143528	1/29/2010	29.49	-98.39
1409	Bexar	Bexar	78249	TX	5.94	33558	1/29/2010	29.57	-98.61
1410	Webb	Nueces	78043	TX	8.4	42722	1/31/2010	27.51	-99.48
1411	Travis	Travis	78734	TX	3.168	21126.78	2/1/2010	30.37	-97.95
1412	Tarrant	Tarrant	76131	TX	2.8	23698	2/2/2010	32.90	-97.36
1413	Travis	Travis	78723	TX	6.3	28291.75	2/2/2010	30.31	-97.68
1414	Denton	Denton	76249	TX	10.5	59531	2/3/2010	33.29	-97.29
1415	Denton	Denton	76249	TX	9.8	54614	2/3/2010	33.29	-97.29
1416	Travis	Travis	78746	TX	3.15	16479.69	2/3/2010	30.31	-97.82
1417	Travis	Travis	78759	TX	9.8	62610.75	2/3/2010	30.40	-97.75
1418	Travis	Travis	78704	TX	3.33	17485	2/4/2010	30.24	-97.77
1419	Travis	Travis	78723	TX	3.5	15911	2/4/2010	30.31	-97.68
1420	Travis	Travis	78731	TX	3.33	22024	2/4/2010	30.35	-97.77
1421	Travis	Travis	78705	TX	24.32	175278.26	2/4/2010	30.30	-97.74
1422	Hill	Ellis	76055	TX	2.45	16400	2/5/2010	32.13	-97.20
1423	Travis	Travis	78734	TX	6.3	34071	2/5/2010	30.37	-97.95
1424	Bexar	Bexar	78233	TX	5.16	26588	2/5/2010	29.56	-98.36
1425	Dallas	Dallas	75275	TX	15.3	86445	2/8/2010	32.78	-96.80
1426	Grayson	Collin	75495	TX	5.28	29400	2/8/2010	33.43	-96.55
1427	Dallas	Dallas	75228	TX	3.6	29520	2/8/2010	32.83	-96.68
1428	Grayson	Collin	75092	TX	3.01	26827	2/8/2010	33.64	-96.73
1429	Tarrant	Tarrant	76051	TX	5.06	23158	2/8/2010	32.95	-97.07
1430	Montgomery	Montgomery	77384	TX	8.46	45595	2/9/2010	30.24	-95.49
1431	Bell	Williamson	76502	TX	4.356	32654	2/9/2010	31.11	-97.41
1432	Bell	Williamson	76502	TX	2.688	19680	2/9/2010	31.11	-97.41
1433	Montgomery	Montgomery	77384	TX	8.46	44087	2/9/2010	30.24	-95.49
1434	Collin	Collin	75074	TX	3.24	24658	2/10/2010	33.02	-96.67
1435	Denton	Denton	75007	TX	1.26	11151	2/12/2010	33.01	-96.89
1436	Dallas	Dallas	75104	TX	5.2	35500	2/12/2010	32.59	-96.99
1437	Collin	Collin	75252	TX	10.2	49939	2/12/2010	33.00	-96.80
1438	Collin	Collin	75074	TX	8.1	48600	2/15/2010	33.04	-96.68
1439	Denton	Denton	76210	TX	95.04	462641	2/16/2010	33.14	-97.08
1440	Collin	Collin	75025	TX	2.8	17717	2/16/2010	33.09	-96.76

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1441	Travis	Travis	78746	TX	3.2	22000	2/16/2010	30.31	-97.82
1442	Travis	Travis	78736	TX	6.3	29051	2/16/2010	30.25	-97.95
1443	Ector	El Paso	79762	TX	10.58	82944	2/17/2010	31.91	-102.45
1444	Bexar	Bexar	78209	TX	8.4	48079.73	2/17/2010	29.49	-98.45
1445	Bexar	Bexar	78023	TX	3.15	18945.68	2/17/2010	29.62	-98.73
1446	Denton	Denton	75022	TX	4.725	28086	2/18/2010	33.02	-97.13
1447	Rockwall	Rockwall	75087	TX	2.3		2/18/2010	32.95	-96.44
1448	Williamson	Williamson	78665	TX	3.85	19308	2/18/2010	30.35	-98.53
1449	Bexar	Bexar	78256	TX	6	51850	2/18/2010	29.62	-98.62
1450	Kendall	Bexar	78006	TX	3.15	17042.26	2/18/2010	29.92	-98.70
1451	Travis	Travis	78721	TX	3.15	20230.56	2/19/2010	30.27	-97.68
1452	Travis	Travis	78762	TX	2.2	14626.89	2/19/2010	30.26	-97.72
1453	Travis	Travis	78721	TX	1.575	11730.92	2/19/2010	30.27	-97.68
1454	Travis	Travis	78721	TX	2.8	18464	2/19/2010	30.27	-97.68
1455	Travis	Travis	78721	TX	2.8	15818.92	2/19/2010	30.27	-97.68
1456	Travis	Travis	78762	TX	3.15	16961.83	2/19/2010	30.26	-97.72
1457	Travis	Travis	78762	TX	5.2	27382.75	2/19/2010	30.26	-97.72
1458	Bexar	Bexar	78230	TX	5.06	23846.78	2/19/2010	29.54	-98.56
1459	Grayson	Collin	75076	TX	2	12567	2/22/2010	33.77	-96.73
1460	Collin	Collin	75098	TX	1	34000	2/22/2010	33.02	-96.51
1461	Travis	Travis	78759	TX	5.6	28172.36	2/22/2010	30.40	-97.75
1462	Travis	Travis	78745	TX	2.99	19435	2/22/2010	30.21	-97.80
1463	Bexar	Bexar	78245	TX	8.4	43453.03	2/22/2010	29.40	-98.74
1464	Collin	Collin	75002	TX	5.4	31375.71	2/23/2010	33.09	-96.61
1465	Denton	Denton	75007	TX	3.24	25783.67	2/23/2010	33.01	-96.89
1466	Collin	Collin	75002	TX	8.4	44533.36	2/23/2010	33.09	-96.61
1467	Tarrant	Tarrant	76108	TX	5.6	28820.48	2/23/2010	32.78	-97.55
1468	Tarrant	Tarrant	76034	TX	4.2	32581.21	2/23/2010	32.89	-97.15
1469	Travis	Travis	78703	TX	13.325	112251.26	2/23/2010	30.29	-97.77
1470	Cameron	Nueces	78566	TX	10	53636	2/24/2010	26.11	-97.42
1471	Taylor	Hood	79605	TX	3.5	23026	2/24/2010	32.44	-99.78
1472	Tarrant	Tarrant	76107	TX	10.2	73244	2/24/2010	32.74	-97.38
1473	Dallas	Dallas	75238	TX	7	42558.55	2/24/2010	32.88	-96.71
1474	Cooke	Denton	76240	TX	21	151200	2/25/2010	33.64	-97.14
1475	Cooke	Denton	76240	TX	25.6	134816	2/25/2010	33.64	-97.14
1476	Dallas	Dallas	75248	TX	10.5	58116.21	2/26/2010	32.97	-96.80
1477	Dallas	Dallas	75214	TX	2.25	22000	2/28/2010	32.82	-96.74
1478	Dallas	Dallas	75214	TX	1.1	8872.2	2/28/2010	32.82	-96.74
1479	Travis	Travis	78704	TX	9.66	73345.68	3/1/2010	30.24	-97.77
1480	Travis	Travis	78723	TX	8.75	39247.72	3/1/2010	30.31	-97.68

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1481	Travis	Travis	78746	TX	6.3	26711.03	3/1/2010	30.31	-97.82
1482	Hardin	Hardin	77659	TX	5	30000	3/2/2010	30.15	-94.46
1483	Denton	Denton	75007	TX	7.425	41695	3/2/2010	33.01	-96.89
1484	Midland	El Paso	79707	TX	5.46	38762.63	3/2/2010	32.06	-102.23
1485	Travis	Travis	78759	TX	6.3	30019.63	3/2/2010	30.40	-97.75
1486	Travis	Travis	78704	TX	6.3	32174	3/2/2010	30.24	-97.77
1487	Travis	Travis	78704	TX	3.33	17485	3/3/2010	30.24	-97.77
1488	Smith	Smith	75701	TX	1.05	17640.32	3/4/2010	32.32	-95.30
1489	Dallas	Dallas	75248	TX	9.45	46022	3/4/2010	32.97	-96.80
1490	Travis	Travis	78746	TX	5.175	29216.62	3/4/2010	30.31	-97.82
1491	Tarrant	Tarrant	76137	TX	9.98	58669	3/5/2010	32.85	-97.30
1492	Tarrant	Tarrant	76036	TX	3.5	27844.57	3/5/2010	32.58	-97.43
1493	Dallas	Dallas	75220	TX	4.4	24530.69	3/5/2010	32.86	-96.87
1494	Denton	Denton	75034	TX	9.72	50438	3/5/2010	33.15	-96.87
1495	Travis	Travis	78660	TX	2.31	14063.1	3/5/2010	30.46	-97.60
1496	Travis	Travis	78704	TX	3.33	17485	3/5/2010	30.24	-97.77
1497	Travis	Travis	78702	TX	3.5	15110	3/5/2010	30.26	-97.71
1498	Travis	Travis	78754	TX	3.24	16617.05	3/8/2010	30.36	-97.65
1499	Bexar	Bexar	78213	TX	3.8	20175	3/8/2010	29.50	-98.52
1500	Bexar	Bexar	78259	TX	10.3	57146.92	3/8/2010	29.62	-98.43
1501	Travis	Travis	78728	TX	11.7	45396	3/9/2010	30.46	-97.68
1502	Williamson	Williamson	78681	TX	6.65	33613.07	3/9/2010	30.52	-97.71
1503	Montgomery	Montgomery	77301	TX	5.25	31902.26	3/10/2010	30.31	-95.43
1504	Tarrant	Tarrant	76012	TX	5.25	37317.76	3/10/2010	32.76	-97.14
1505	Smith	Smith	75703	TX	4.5	27000	3/10/2010	32.27	-95.33
1506	Williamson	Williamson	78626	TX	6.16	27342	3/10/2010	30.70	-97.59
1507	Travis	Travis	78704	TX	5.98	31938.16	3/10/2010	30.24	-97.77
1508	Travis	Travis	78746	TX	3.168	25744.22	3/10/2010	30.31	-97.82
1509	Travis	Travis	78723	TX	1.284	11042.82	3/10/2010	30.31	-97.68
1510	Denton	Denton	75022	TX	20.7	61000	3/10/2010	33.03	-97.10
1511	Dallas	Dallas	75229	TX	42.5	250000	3/11/2010	32.90	-96.86
1512	Denton	Denton	75022	TX	10.12	39960.09	3/11/2010	33.02	-97.13
1513	Montgomery	Montgomery	77365	TX	1.05	10500	3/12/2010	30.12	-95.29
1514	Montgomery	Montgomery	77365	TX	1.1	10500	3/12/2010	30.12	-95.29
1515	Angelina	Rusk	75901	TX	6.944	34283.52	3/12/2010	31.29	-94.67
1516	Angelina	Rusk	75904	TX	7.168	34283.52	3/12/2010	31.33	-94.83
1517	Bexar	Bexar	78258	TX	5.6	37979.45	3/12/2010	29.65	-98.47
1518	Comal	Comal	78266	TX	3.5	22684.5	3/12/2010	29.63	-98.32
1519	Bexar	Bexar	78217	TX	14.8	87171.43	3/13/2010	29.54	-98.42
1520	Collin	Collin	75023	TX	4.56	33850	3/15/2010	33.05	-96.73

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1521	Grayson	Collin	75076	TX	10.12	42058	3/16/2010	33.77	-96.73
1522	Travis	Travis	78660	TX	7.2	34046	3/16/2010	30.46	-97.60
1523	Tarrant	Tarrant	76060	TX	8.51	56836.52	3/16/2010	32.64	-97.22
1524	Travis	Travis	78703	TX	4.464	35078.86	3/16/2010	30.29	-97.77
1525	Bexar	Bexar	78249	TX	10.08	57658	3/16/2010	29.57	-98.61
1526	Bexar	Bexar	78209	TX	3.85	20269.36	3/16/2010	29.49	-98.45
1527	Denton	Denton	76262	TX	4.2	14700	3/17/2010	33.02	-97.23
1528	Travis	Travis	78732	TX	9.2	45540	3/17/2010	30.38	-97.90
1529	Travis	Travis	78733	TX	6.3	32852.98	3/17/2010	30.33	-97.87
1530	Travis	Travis	78745	TX	3.675	16573.41	3/19/2010	30.21	-97.80
1531	Travis	Travis	78759	TX	3.33	17120	3/19/2010	30.40	-97.75
1532	Bexar	Bexar	78250	TX	3.5	16004.28	3/19/2010	29.50	-98.67
1533	Jim Wells	Nueces	78332	TX	2.59	11895	3/23/2010	27.74	-98.09
1534	Dallas	Dallas	75248	TX	6.93	53707.5	3/23/2010	32.97	-96.80
1535	Dallas	Dallas	75062	TX	5.52	23263	3/25/2010	32.85	-96.97
1536	Travis	Travis	78759	TX	5.25	29998.97	3/25/2010	30.40	-97.75
1537	Williamson	Williamson	78664	TX	8.19	49687.78	3/26/2010	30.50	-97.66
1538	Travis	Travis	78731	TX	6.21	44600.89	3/26/2010	30.35	-97.77
1539	Dallas	Dallas	75214	TX	3.87	36000	3/28/2010	32.82	-96.74
1540	Cooke	Denton	76252	TX	5.88	30000	3/29/2010	33.69	-97.42
1541	Dallas	Dallas	75205	TX	2	19073	3/29/2010	32.83	-96.80
1542	Tarrant	Tarrant	76054	TX	6.67	35910	3/30/2010	32.86	-97.18
1543	Jim Wells	Nueces	78332	TX	2	12000	4/1/2010	27.74	-98.09
1544	Travis	Travis	78749	TX	5.64	29789	4/2/2010	30.22	-97.86
1545	Bowie	Upshur	75570	TX	10.08	53600	4/5/2010	33.49	-94.44
1546	Dallas	Dallas	75229	TX	5.4	36335.65	4/5/2010	32.90	-96.86
1547	Travis	Travis	78727	TX	3.15	24901	4/5/2010	30.43	-97.71
1548	Travis	Travis	78738	TX	6.3	29315.75	4/5/2010	30.31	-97.98
1549	Bexar	Bexar	78261	TX	1.48	22980	4/5/2010	29.70	-98.41
1550	Bexar	Bexar	78212	TX	5.25	21637.96	4/5/2010	29.46	-98.50
1551	Bexar	Bexar	78245	TX	23.1	111571.87	4/5/2010	29.40	-98.74
1552	Bexar	Bexar	78259	TX	5.88	33588.24	4/5/2010	29.62	-98.43
1553	Tarrant	Tarrant	76052	TX	2.16	17151.86	4/6/2010	32.97	-97.37
1554	Bexar	Bexar	78245	TX	5.4	25774.03	4/7/2010	29.43	-98.66
1555	Galveston	Galveston	77546	TX	11.2	61985.05	4/7/2010	29.51	-95.20
1556	Travis	Travis	78753	TX	5.6	25963.91	4/7/2010	30.39	-97.67
1557	Travis	Travis	78703	TX	5.25	33651.08	4/7/2010	30.29	-97.77
1558	Travis	Travis	78660	TX	4.73	24035.08	4/8/2010	30.46	-97.60
1559	Travis	Travis	78660	TX	8.925	40858.87	4/8/2010	30.46	-97.60
1560	Travis	Travis	78762	TX	1.575	12244.09	4/8/2010	30.26	-97.72

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1561	Travis	Travis	78723	TX	4.725	21169.14	4/8/2010	30.31	-97.68
1562	Smith	Smith	75704	TX	6.15	26064.22	4/9/2010	32.40	-95.41
1563	Denton	Denton	76226	TX	5.76	39978.64	4/9/2010	33.12	-97.16
1564	Collin	Collin	75002	TX	10.15	51687.56	4/9/2010	33.09	-96.61
1565	Williamson	Williamson	78665	TX	1.75	10648.67	4/9/2010	30.55	-97.62
1566	Bexar	Bexar	78260	TX	7	60706.56	4/9/2010	29.69	-98.50
1567	Bexar	Bexar	78213	TX	1.1	5338	4/9/2010	29.50	-98.52
1568	Hidalgo	Nueces	78573	TX	10.752	62358.64	4/12/2010	26.29	-98.30
1569	Travis	Travis	78753	TX	2.52	11858.14	4/13/2010	30.39	-97.67
1570	Travis	Travis	78757	TX	5.25	22978.79	4/13/2010	30.35	-97.74
1571	Taylor	Hood	79601	TX	10.08	68040	4/14/2010	32.55	-99.66
1572	Denton	Denton	75022	TX	10.8	58869.64	4/14/2010	33.02	-97.13
1573	Travis	Travis	78702	TX	3.15	18791.73	4/14/2010	30.26	-97.71
1574	Travis	Travis	78735	TX	2.464	16800.35	4/14/2010	30.26	-97.86
1575	Bexar	Bexar	78258	TX	5.25	29565.4	4/14/2010	29.65	-98.47
1576	Bexar	Bexar	78254	TX	7	39182.08	4/14/2010	29.53	-98.78
1577	Bexar	Bexar	78248	TX	7	34259.23	4/14/2010	29.59	-98.53
1578	Bexar	Bexar	78232	TX	3.5	23230	4/14/2010	29.59	-98.46
1579	Bexar	Bexar	78255	TX	5.25	25687.32	4/14/2010	29.66	-98.67
1580	Bexar	Bexar	78212	TX	4.6	26780	4/14/2010	29.46	-98.50
1581	Bexar	Bexar	78249	TX	7	37713.12	4/15/2010	29.57	-98.61
1582	El Paso	El Paso	79934	TX	2.87	15612.56	4/17/2010	31.94	-106.45
1583	Travis	Travis	78702	TX	3.15	22089	4/19/2010	30.26	-97.71
1584	Bexar	Bexar	78209	TX	2.4	29194	4/20/2010	29.49	-98.45
1585	Bexar	Bexar	78245	TX	5.4	25774.03	4/20/2010	29.40	-98.74
1586	Bexar	Bexar	78231	TX	3.85	23061.63	4/20/2010	29.58	-98.54
1587	Dallas	Dallas	75224	TX	6.9	39775.2	4/21/2010	32.71	-96.84
1588	Comal	Comal	78266	TX	42.3	423000	4/21/2010	29.63	-98.32
1589	Williamson	Williamson	78626	TX	2.3	11960	4/22/2010	30.70	-97.59
1590	Archer	Parker	76351	TX	9.5	37192.98	4/23/2010	33.60	-98.68
1591	Henderson	Henderson	75156	TX	10.12	86020	4/26/2010	32.24	-96.08
1592	Travis	Travis	78762	TX	2.8	15752.03	4/26/2010	30.26	-97.72
1593	Travis	Travis	78704	TX	4.968	34776	4/26/2010	30.24	-97.77
1594	Travis	Travis	78733	TX	5.64	32994	4/26/2010	30.33	-97.87
1595	Travis	Travis	78704	TX	4.2	22923.93	4/26/2010	30.24	-97.77
1596	Travis	Travis	78758	TX	1.38	9315	4/26/2010	30.39	-97.70
1597	Travis	Travis	78721	TX	2.52	14793.15	4/27/2010	30.27	-97.68
1598	Travis	Travis	78704	TX	3.33	19000	4/28/2010	30.24	-97.77
1599	Travis	Travis	78704	TX	3.33	19000	4/28/2010	30.24	-97.77
1600	Travis	Travis	78704	TX	3.33	19000	4/28/2010	30.24	-97.77

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1601	Travis	Travis	78704	TX	3.33	19000	4/28/2010	30.24	-97.77
1602	Travis	Travis	78704	TX	3.33	19000	4/28/2010	30.24	-97.77
1603	Travis	Travis	78704	TX	3.33	19000	4/28/2010	30.24	-97.77
1604	Travis	Travis	78704	TX	3.33	19000	4/28/2010	30.24	-97.77
1605	Travis	Travis	78704	TX	3.33	19000	4/28/2010	30.24	-97.77
1606	Travis	Travis	78704	TX	3.33	19000	4/28/2010	30.24	-97.77
1607	Travis	Travis	78704	TX	3.33	19000	4/28/2010	30.24	-97.77
1608	Travis	Travis	78704	TX	3.33	19000	4/28/2010	30.24	-97.77
1609	Travis	Travis	78731	TX	4.44	21712	4/28/2010	30.35	-97.77
1610	Bell	Williamson	76502	TX	2.82	19035	4/30/2010	31.11	-97.41
1611	Tarrant	Tarrant	76051	TX	3.01	29498	4/30/2010	32.95	-97.07
1612	Collin	Collin	75075	TX	5.52	33520	5/3/2010	33.02	-96.74
1613	Smith	Smith	75789	TX	10	55995	5/3/2010	32.14	-95.08
1614	Dallas	Dallas	75062	TX	3.4	17170	5/3/2010	32.85	-96.97
1615	Travis	Travis	78745	TX	4.375	21989	5/3/2010	30.21	-97.80
1616	Dallas	Dallas	75224	TX	4.085	46924	5/4/2010	32.71	-96.84
1617	Bexar	Bexar	78253	TX	20.64	157500	5/5/2010	29.49	-98.71
1618	Bexar	Bexar	78259	TX	5.46	27871.2	5/5/2010	29.63	-98.44
1619	Tarrant	Tarrant	76148	TX	5.1	25755	5/5/2010	32.86	-97.25
1620	Travis	Travis	78749	TX	3.15	25007	5/5/2010	30.22	-97.86
1621	Travis	Travis	78727	TX	4.928	26472.7	5/5/2010	30.43	-97.71
1622	Bexar	Bexar	78255	TX	4.72	25058.65	5/5/2010	29.66	-98.67
1623	Bexar	Bexar	78230	TX	5.8	36873.54	5/5/2010	29.54	-98.56
1624	Webb	Nueces	78043	TX	30.45	146690.25	5/6/2010	27.58	-99.15
1625	Bell	Williamson	76502	TX	5.98	42813.01	5/6/2010	31.11	-97.41
1626	Grimes	Montgomery	77868	TX	10.5	77734.36	5/7/2010	30.34	-96.03
1627	Bexar	Bexar	78247	TX	2.45	13727.29	5/7/2010	29.59	-98.41
1628	Medina	Bexar	78056	TX	4.2	22336.9	5/7/2010	29.51	-98.99
1629	Webb	Nueces	78043	TX	30.45	146690	5/9/2010	27.51	-99.48
1630	Kendall	Bexar	78015	TX	10.8	51001.27	5/10/2010	29.73	-98.63
1631	Nueces	Nueces	78373	TX	6.36	32580	5/10/2010	27.67	-97.18
1632	Travis	Travis	78703	TX	3.15	19466.27	5/10/2010	30.29	-97.77
1633	Travis	Travis	78758	TX	6.3	28790.97	5/10/2010	30.39	-97.70
1634	Travis	Travis	78703	TX	4.65	43655	5/10/2010	30.29	-97.77
1635	Johnson	Johnson	76028	TX	7.875	42061.04	5/11/2010	32.53	-97.29
1636	Smith	Smith	75703	TX	8.1	52650	5/11/2010	32.27	-95.33
1637	Dallas	Dallas	75230	TX	5.52	34500	5/12/2010	32.90	-96.80
1638	Collin	Collin	75025	TX	6.97	46350.5	5/12/2010	33.09	-96.76
1639	Travis	Travis	78746	TX	5.03	29009.25	5/12/2010	30.31	-97.82
1640	Travis	Travis	78741	TX	2.8	9592.06	5/12/2010	30.23	-97.71

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1641	Bexar	Bexar	78258	TX	5.25	28000	5/13/2010	29.65	-98.47
1642	Bexar	Bexar	78209	TX	5.25	27792.37	5/13/2010	29.49	-98.45
1643	McLennan	Ellis	76712	TX	10.12	48446.64	5/14/2010	31.53	-97.25
1644	Bexar	Bexar	78259	TX	5.46	28871.2	5/14/2010	29.62	-98.43
1645	Hidalgo	Nueces	78596	TX	5.16	35393.33	5/17/2010	26.17	-97.98
1646	Travis	Travis	78617	TX	2.8	12290.58	5/18/2010	30.15	-97.59
1647	Bexar	Bexar	78232	TX	4.86	21891.92	5/19/2010	29.56	-98.47
1648	Travis	Travis	78735	TX	5.46	26220.13	5/19/2010	30.26	-97.86
1649	Bell	Williamson	76549	TX	9.6	64344.5	5/20/2010	31.00	-97.81
1650	Collin	Collin	75035	TX	6.93	52282	5/24/2010	33.15	-96.76
1651	Travis	Travis	78730	TX	5.775	28411	5/24/2010	30.37	-97.84
1652	Travis	Travis	78748	TX	2.52	14281.88	5/26/2010	30.17	-97.82
1653	Travis	Travis	78732	TX	5.88	27934.77	5/26/2010	30.38	-97.90
1654	Smith	Smith	75704	TX	6.48	42120	5/27/2010	32.40	-95.41
1655	McLennan	Ellis	76710	TX	2.365	13950	5/28/2010	31.53	-97.20
1656	Williamson	Williamson	78626	TX	7.92	34410.5	5/28/2010	30.70	-97.59
1657	Travis	Travis	78703	TX	5.07	43217.14	5/28/2010	30.29	-97.77
1658	Travis	Travis	78746	TX	6.44	43470	5/28/2010	30.31	-97.82
1659	Brewster	El Paso	79830	TX	3.15	20956.5	6/1/2010	29.93	-103.45
1660	Travis	Travis	78730	TX	5.55	29634	6/1/2010	30.37	-97.84
1661	Tarrant	Tarrant	76010	TX	2.64	17261.08	6/2/2010	32.73	-97.08
1662	Dallas	Dallas	75214	TX	7.48	41584	6/2/2010	32.82	-96.74
1663	Bexar	Bexar	78253	TX	20.64	157500	6/2/2010	29.47	-98.81
1664	Bexar	Bexar	78148	TX	4	26000	6/2/2010	29.55	-98.30
1665	Bexar	Bexar	78217	TX	3	20774	6/2/2010	29.54	-98.42
1666	Bexar	Bexar	78233	TX	4.2	21148.44	6/2/2010	29.56	-98.36
1667	Kendall	Bexar	78015	TX	10	27910.6	6/2/2010	29.75	-98.65
1668	Bexar	Bexar	78232	TX	4.86	22206.11	6/2/2010	29.59	-98.46
1669	Williamson	Williamson	78665	TX	2.82	19035	6/3/2010	30.55	-97.62
1670	Williamson	Williamson	78665	TX	5.64	38634	6/3/2010	30.55	-97.62
1671	Collin	Collin	75024	TX	9.66	33810	6/4/2010	33.08	-96.81
1672	Johnson	Johnson	76028	TX	9.856	51757	6/4/2010	32.53	-97.29
1673	Travis	Travis	78732	TX	4.62	19963.75	6/4/2010	30.38	-97.90
1674	Comal	Comal	78266	TX	42.3	423000	6/4/2010	29.63	-98.32
1675	Tarrant	Tarrant	76012	TX	3.52	19585.3	6/5/2010	32.76	-97.14
1676	Collin	Collin	75024	TX	4.05	37265.06	6/5/2010	33.08	-96.81
1677	Brewster	El Paso	79830	TX	3.525	19173	6/7/2010	29.93	-103.45
1678	Dallas	Dallas	75229	TX	6.9	41400	6/7/2010	32.90	-96.86
1679	Travis	Travis	78741	TX	4.9	29890	6/8/2010	30.23	-97.71
1680	Travis	Travis	78748	TX	5.94	54038.58	6/8/2010	30.17	-97.82

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1681	Bell	Williamson	76513	TX	7.92	45540	6/9/2010	31.07	-97.50
1682	Coryell	Williamson	76522	TX	2.8	17094.94	6/10/2010	31.22	-97.94
1683	Travis	Travis	78723	TX	6.3	28261.12	6/10/2010	30.31	-97.68
1684	Wichita	Denton	76305	TX	10.08	54985.36	6/11/2010	34.00	-98.35
1685	El Paso	El Paso	79932	TX	4.84	33611	6/14/2010	31.89	-106.62
1686	Montgomery	Montgomery	77318	TX	3.15	20612	6/14/2010	30.43	-95.54
1687	Wichita	Denton	76305	TX	10.08	52174.07	6/14/2010	34.00	-98.35
1688	Midland	El Paso	79705	TX	10.12	101120	6/14/2010	32.06	-102.06
1689	Travis	Travis	78721	TX	2.8	14946.56	6/14/2010	30.27	-97.68
1690	Bexar	Bexar	78209	TX	7.6	64255	6/14/2010	29.49	-98.45
1691	El Paso	El Paso	79912	TX	1.84	12880	6/15/2010	31.86	-106.52
1692	Wichita	Denton	76309	TX	10	31573	6/15/2010	33.90	-98.54
1693	Brewster	El Paso	79831	TX	10.56	67784.88	6/16/2010	30.41	-103.74
1694	Bexar	Bexar	78260	TX	7.9	39021.7	6/17/2010	29.69	-98.50
1695	Cooke	Denton	76240	TX	19.46	136500	6/18/2010	33.64	-97.14
1696	Bell	Williamson	76542	TX	6.48	29812.5	6/18/2010	31.01	-97.72
1697	Limestone	Ellis	76642	TX	10.08	34600	6/18/2010	31.53	-96.56
1698	El Paso	El Paso	79912	TX	4.4	35689	6/21/2010	31.86	-106.52
1699	Collin	Collin	75074	TX	4.32	24389.25	6/21/2010	33.02	-96.67
1700	Archer	Parker	76366	TX	10.08	52174.16	6/21/2010	33.71	-98.79
1701	Travis	Travis	78754	TX	24	114099.99	6/21/2010	30.36	-97.65
1702	Bexar	Bexar	78204	TX	4.14	21371	6/21/2010	29.40	-98.50
1703	Bexar	Bexar	78023	TX	11	61365.66	6/21/2010	29.62	-98.73
1704	Bexar	Bexar	78216	TX	5.6	26870	6/21/2010	29.55	-98.50
1705	Comal	Comal	78266	TX	6.21	45000	6/21/2010	29.63	-98.32
1706	Travis	Travis	78727	TX	6.3	45413	6/22/2010	30.43	-97.71
1707	Travis	Travis	78723	TX	6.48	27785	6/22/2010	30.31	-97.68
1708	Tarrant	Tarrant	76063	TX	3.12	15564.6	6/23/2010	32.58	-97.16
1709	Tarrant	Tarrant	76108	TX	6.3	37142	6/28/2010	32.78	-97.55
1710	Orange	Orange	77632	TX	5.04	34550	6/29/2010	30.22	-93.80
1711	Collin	Collin	75093	TX	12.15	64550	6/29/2010	33.04	-96.80
1712	Travis	Travis	78733	TX	5.52	30150	6/29/2010	30.33	-97.87
1713	El Paso	El Paso	79912	TX	3.96	27720	7/1/2010	31.86	-106.52
1714	Kaufman	Kaufman	75114	TX	6.3	37142	7/1/2010	32.61	-96.44
1715	Tarrant	Tarrant	76135	TX	7	38438.49	7/1/2010	32.84	-97.47
1716	Bexar	Bexar	78253	TX	5.94	25834.74	7/1/2010	29.47	-98.81
1717	Bexar	Bexar	78245	TX	1.08	3703.53	7/1/2010	29.40	-98.74
1718	Denton	Denton	75068	TX	6.3	35630	7/7/2010	33.19	-96.95
1719	El Paso	El Paso	79912	TX	4.2	28896	7/8/2010	31.86	-106.52
1720	El Paso	El Paso	79912	TX	3.87	27090	7/8/2010	31.86	-106.52

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1721	El Paso	El Paso	79907	TX	5.04	33667.2	7/8/2010	31.71	-106.33
1722	Orange	Orange	77632	TX	9.8	54566.12	7/8/2010	30.22	-93.80
1723	Henderson	Henderson	75163	TX	1.14	9000	7/8/2010	32.15	-96.08
1724	Bexar	Bexar	78258	TX	8.75	50448.6	7/8/2010	29.65	-98.47
1725	Bexar	Bexar	78233	TX	2	10621.2	7/8/2010	29.56	-98.36
1726	El Paso	El Paso	79925	TX	1.76	12320	7/12/2010	31.78	-106.36
1727	El Paso	El Paso	79821	TX	5.98	41664	7/12/2010	31.99	-106.59
1728	Tarrant	Tarrant	76118	TX	10.08	34600	7/12/2010	32.79	-97.17
1729	Bexar	Bexar	78233	TX	1.1	8243.95	7/12/2010	29.56	-98.36
1730	Travis	Travis	78730	TX	14	88130	7/13/2010	30.37	-97.84
1731	Hardin	Hardin	77659	TX	2.52	9937.5	7/14/2010	30.15	-94.46
1732	El Paso	El Paso	79925	TX	1.8	12000	7/14/2010	31.79	-106.34
1733	Dallas	Dallas	75206	TX	4.59	23179.5	7/15/2010	32.82	-96.78
1734	Galveston	Galveston	77546	TX	9.9	53000	7/18/2010	29.51	-95.20
1735	Denton	Denton	75010	TX	39.025	304395	7/19/2010	33.03	-96.93
1736	El Paso	El Paso	79912	TX	5.4	25000	7/20/2010	31.86	-106.52
1737	Dallas	Dallas	75060	TX	2.64	13264	7/20/2010	32.80	-96.95
1738	Brewster	El Paso	79830	TX	2.82	11720.54	7/21/2010	29.93	-103.45
1739	Tarrant	Tarrant	76179	TX	5.805	48645.9	7/22/2010	32.92	-97.46
1740	Dallas	Dallas	75228	TX	2.365	19818.7	7/22/2010	32.83	-96.68
1741	Dallas	Dallas	75248	TX	6.45	54051	7/22/2010	32.97	-96.80
1742	Collin	Collin	75074	TX	9.46	79274.8	7/22/2010	33.02	-96.67
1743	Ellis	Ellis	76065	TX	5.16	43240.8	7/22/2010	32.48	-96.96
1744	Tarrant	Tarrant	76063	TX	4.3	36034	7/22/2010	32.58	-97.16
1745	Johnson	Johnson	76028	TX	6.02	50477.6	7/22/2010	32.53	-97.29
1746	Tarrant	Tarrant	76116	TX	5.16	43240.8	7/22/2010	32.71	-97.43
1747	Collin	Collin	75025	TX	5.16	43240.8	7/22/2010	33.09	-96.76
1748	Dallas	Dallas	75229	TX	5.805	48645.9	7/22/2010	32.90	-96.86
1749	Tarrant	Tarrant	76051	TX	3.44	28827.2	7/22/2010	32.95	-97.07
1750	Collin	Collin	75002	TX	5.59	46844.2	7/22/2010	33.09	-96.61
1751	Denton	Denton	75028	TX	6.02	50447.6	7/22/2010	33.05	-97.06
1752	Dallas	Dallas	75229	TX	2.365	18818.7	7/22/2010	32.90	-96.86
1753	Tarrant	Tarrant	76001	TX	5.16	43240.8	7/22/2010	32.63	-97.15
1754	Tarrant	Tarrant	76132	TX	9.89	82878.2	7/22/2010	32.66	-97.42
1755	Travis	Travis	78731	TX	7.2	45000	7/22/2010	30.35	-97.77
1756	Comal	Comal	78266	TX	42.3	476300	7/22/2010	29.63	-98.32
1757	Bexar	Bexar	78253	TX	11.16	81382.11	7/22/2010	29.47	-98.81
1758	Dallas	Dallas	75104	TX	6.56	54972.8	7/23/2010	32.59	-96.99
1759	Tarrant	Tarrant	76052	TX	8.61	72151.8	7/23/2010	32.97	-97.37
1760	Collin	Collin	75025	TX	9.89	82878.2	7/23/2010	33.09	-96.76

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1761	Dallas	Dallas	75104	TX	5.805	48645.9	7/23/2010	32.59	-96.99
1762	Collin	Collin	75071	TX	6.02	50447.6	7/23/2010	33.24	-96.69
1763	Tarrant	Tarrant	76140	TX	7.74	64861.2	7/23/2010	32.63	-97.28
1764	Tarrant	Tarrant	76126	TX	3.44	28827.2	7/23/2010	32.65	-97.50
1765	Ellis	Ellis	75165	TX	6.02	73665	7/24/2010	32.40	-96.79
1766	Gregg	Gregg	75662	TX	11.28	57809	7/26/2010	32.38	-94.87
1767	Smith	Smith	75791	TX	7.2	40268	7/28/2010	32.23	-95.21
1768	Smith	Smith	75791	TX	1.07	6988	7/29/2010	32.23	-95.21
1769	Smith	Smith	75791	TX	3.15	17609	7/29/2010	32.23	-95.21
1770	Franklin	Hunt	75480	TX	4	24524.92	7/30/2010	33.04	-95.21
1771	Hidalgo	Nueces	78504	TX	2.1	10500	7/30/2010	26.39	-98.24
1772	Falls	Williamson	76570	TX	6.3	37142	7/30/2010	31.10	-96.90
1773	Henderson	Henderson	75778	TX	5.85	36134	7/30/2010	32.30	-95.71
1774	Leon	Montgomery	77871	TX	9.66	34030.5	8/2/2010	31.05	-96.13
1775	Bowie	Upshur	75503	TX	5.9	37626.13	8/2/2010	33.53	-94.13
1776	Dallas	Dallas	75220	TX	7.2	56592	8/2/2010	32.86	-96.87
1777	Smith	Smith	75703	TX	9.43	48384	8/2/2010	32.27	-95.33
1778	El Paso	El Paso	79915	TX	10.08	69249.6	8/3/2010	31.74	-106.38
1779	Kaufman	Kaufman	75114	TX	10.12	56256.59	8/3/2010	32.61	-96.44
1780	Tarrant	Tarrant	76092	TX	7.8	37963.22	8/3/2010	32.95	-97.15
1781	Tarrant	Tarrant	76140	TX	7.74	46550	8/3/2010	32.63	-97.28
1782	Tarrant	Tarrant	76034	TX	10.08	57977.48	8/5/2010	32.89	-97.15
1783	Bexar	Bexar	78222	TX	11.9	85509.89	8/5/2010	29.37	-98.39
1784	Bexar	Bexar	78260	TX	5.25	27537	8/5/2010	29.69	-98.50
1785	Bexar	Bexar	78240	TX	8.75	21671.15	8/5/2010	29.53	-98.61
1786	Bexar	Bexar	78229	TX	2.3	14145.1	8/5/2010	29.51	-98.58
1787	Hardin	Hardin	77625	TX	2.52	12000	8/9/2010	30.41	-94.36
1788	Johnson	Johnson	76009	TX	5.04	26120.98	8/9/2010	32.44	-97.20
1789	Howard	Hood	79720	TX	9.03	39988.49	8/9/2010	32.24	-101.48
1790	Bell	Williamson	76504	TX	8.97	40308.91	8/9/2010	31.11	-97.36
1791	Travis	Travis	78759	TX	3.24	15750	8/9/2010	30.40	-97.75
1792	Lamar	Hunt	75460	TX	25.6	127083.6	8/10/2010	33.60	-95.62
1793	Tarrant	Tarrant	76116	TX	6.38	27332	8/10/2010	32.71	-97.43
1794	Tarrant	Tarrant	76118	TX	10.4	79800	8/11/2010	32.79	-97.17
1795	Navarro	Ellis	75155	TX	5.4	32976	8/11/2010	32.21	-96.47
1796	Dallas	Dallas	75214	TX	2.255	15573.81	8/11/2010	32.82	-96.74
1797	Tarrant	Tarrant	76118	TX	1	82000	8/11/2010	32.79	-97.17
1798	McLennan	Ellis	76707	TX	5.04	28978.52	8/12/2010	31.56	-97.16
1799	Tarrant	Tarrant	76016	TX	3.69	26769.96	8/12/2010	32.69	-97.18
1800	Travis	Travis	78703	TX	4.44	25663.2	8/12/2010	30.29	-97.77

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1801	Travis	Travis	78703	TX	4.44	25663.2	8/12/2010	30.29	-97.77
1802	Wichita	Denton	76310	TX	7.74	52646.4	8/13/2010	33.80	-98.46
1803	Bee	San Patricio	78102	TX	3.22	17573.93	8/16/2010	28.41	-97.74
1804	Collin	Collin	75093	TX	4.84	15039.98	8/16/2010	33.04	-96.80
1805	Collin	Collin	75074	TX	4.84	16487.98	8/16/2010	33.02	-96.67
1806	Bexar	Bexar	78221	TX	2.1	10386.01	8/16/2010	29.30	-98.50
1807	Van Zandt	Henderson	75790	TX	5.06	26000	8/17/2010	32.52	-95.62
1808	Henderson	Henderson	75148	TX	6.3	37142	8/17/2010	32.10	-96.00
1809	Dallas	Dallas	75247	TX	101.64	576440	8/17/2010	32.82	-96.88
1810	Ellis	Ellis	75152	TX	5.85	36134	8/18/2010	32.44	-96.70
1811	Navarro	Ellis	76641	TX	5.85	36134	8/18/2010	32.02	-96.77
1812	Travis	Travis	78746	TX	5.075	32558.27	8/18/2010	30.31	-97.82
1813	Collin	Collin	75002	TX	101.66	448955	8/20/2010	33.09	-96.61
1814	El Paso	El Paso	79936	TX	2.2	15898	8/23/2010	31.80	-106.29
1815	Angelina	Rusk	75901	TX	6.9	32706	8/23/2010	31.29	-94.67
1816	Travis	Travis	78745	TX	3.01	24000	8/23/2010	30.21	-97.80
1817	Bexar	Bexar	78233	TX	8.36	45851	8/23/2010	29.56	-98.36
1818	Bexar	Bexar	78258	TX	8.4	43951.07	8/23/2010	29.65	-98.47
1819	Kendall	Bexar	78015	TX	3.15	18558.04	8/23/2010	29.75	-98.65
1820	Bexar	Bexar	78257	TX	12.1	94919	8/23/2010	29.66	-98.58
1821	Bexar	Bexar	78254	TX	3	25050	8/23/2010	29.53	-98.78
1822	Kendall	Bexar	78006	TX	12.76	59942.52	8/23/2010	29.92	-98.70
1823	Bexar	Bexar	78254	TX	1.75	8048.25	8/23/2010	29.53	-98.78
1824	El Paso	El Paso	79912	TX	5.04	34624.8	8/26/2010	31.86	-106.52
1825	Bexar	Bexar	78023	TX	3.08	17243.98	8/26/2010	29.62	-98.73
1826	Archer	Parker	76351	TX	30.08	160779.13	8/30/2010	33.60	-98.68
1827	Montgomery	Montgomery	77382	TX	4.4	21809.5	8/31/2010	30.20	-95.55
1828	Henderson	Henderson	75156	TX	10.32	61405	8/31/2010	32.24	-96.08
1829	Bell	Williamson	76543	TX	6.88	40243.71	9/1/2010	31.15	-97.68
1830	Bell	Williamson	76513	TX	5.94	27267.33	9/1/2010	31.07	-97.50
1831	McLennan	Ellis	76712	TX	2.24	11850	9/1/2010	31.53	-97.25
1832	Collin	Collin	75002	TX	70.84	408356.68	9/1/2010	33.09	-96.61
1833	Bell	Williamson	76513	TX	5.376	33600	9/3/2010	31.07	-97.50
1834	Bell	Williamson	76501	TX	71.52	307382	9/3/2010	31.08	-97.24
1835	Bexar	Bexar	78254	TX	6.48	28183.76	9/3/2010	29.53	-98.78
1836	Bexar	Bexar	78211	TX	10.8	51001.27	9/3/2010	29.35	-98.57
1837	Hidalgo	Nueces	78573	TX	10.32	58750	9/6/2010	26.29	-98.30
1838	Parker	Parker	76088	TX	10.08	106102.5	9/7/2010	32.85	-97.89
1839	Bexar	Bexar	78023	TX	11.5	68568.5	9/7/2010	29.62	-98.73
1840	Bexar	Bexar	78251	TX	3.24	15990	9/7/2010	29.47	-98.68

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1841	Bexar	Bexar	78209	TX	4.2	26021.37	9/7/2010	29.49	-98.45
1842	Tarrant	Tarrant	76001	TX	4.3	30136	9/8/2010	32.63	-97.15
1843	Ellis	Ellis	75165	TX	10.08	106102.5	9/8/2010	32.40	-96.79
1844	Montgomery	Montgomery	77385	TX	4.62	18480	9/9/2010	30.20	-95.43
1845	Montgomery	Montgomery	77385	TX	4.2	16800	9/9/2010	30.20	-95.43
1846	Dallas	Dallas	75220	TX	30.36	133407.62	9/9/2010	32.86	-96.87
1847	Jefferson	Jefferson	77713	TX	6.3	47000	9/9/2010	30.13	-94.21
1848	Bexar	Bexar	78216	TX	7.92	48439.12	9/10/2010	29.55	-98.50
1849	Bexar	Bexar	78257	TX	8.28	49408.25	9/10/2010	29.66	-98.58
1850	Bell	Williamson	76543	TX	10.34	69795	9/13/2010	31.15	-97.68
1851	Tarrant	Tarrant	76116	TX	3.22	18564.52	9/13/2010	32.71	-97.43
1852	Bexar	Bexar	78261	TX	2.03	12000	9/13/2010	29.70	-98.41
1853	Cameron	Nueces	78575	TX	11.52	55400	9/15/2010	26.02	-97.54
1854	Collin	Collin	75025	TX	4.14	38600	9/16/2010	33.09	-96.76
1855	Denton	Denton	75007	TX	8.4	43594.8	9/16/2010	33.01	-96.89
1856	Maverick	Bexar	78852	TX	3.6	18113.94	9/17/2010	28.71	-100.46
1857	Tarrant	Tarrant	76013	TX	9.45	79191	9/17/2010	32.72	-97.15
1858	Denton	Denton	76210	TX	9.66	80950.8	9/17/2010	33.14	-97.08
1859	Dallas	Dallas	75116	TX	53.55	437119	9/17/2010	32.66	-96.92
1860	Dallas	Dallas	75116	TX	88.2	564661	9/17/2010	32.66	-96.92
1861	Dallas	Dallas	75116	TX	44.1	399731	9/17/2010	32.66	-96.92
1862	Wichita	Denton	76310	TX	5.4	32874	9/17/2010	33.80	-98.46
1863	Ellis	Ellis	75101	TX	6.44	37142	9/17/2010	32.27	-96.69
1864	Dallas	Dallas	75080	TX	4.14	48650	9/20/2010	32.98	-96.74
1865	Collin	Collin	75023	TX	2.25	16830	9/20/2010	33.05	-96.73
1866	Dallas	Dallas	75019	TX	4.14	21907.37	9/20/2010	32.96	-97.00
1867	Tarrant	Tarrant	76114	TX	5.52	11609.78	9/21/2010	32.78	-97.40
1868	Tarrant	Tarrant	76126	TX	5.04	24450	9/21/2010	32.65	-97.50
1869	Wichita	Denton	76367	TX	5.4	32135.53	9/21/2010	33.98	-98.70
1870	Dallas	Dallas	75050	TX	10.368	70000	9/22/2010	32.78	-97.02
1871	Travis	Travis	78722	TX	2.4	17399.24	9/22/2010	30.30	-97.70
1872	El Paso	El Paso	79912	TX	10.12	58092.29	9/23/2010	31.86	-106.52
1873	Bexar	Bexar	78240	TX	9.45	47420.14	9/24/2010	29.53	-98.61
1874	Bexar	Bexar	78259	TX	5.6	32559.91	9/24/2010	29.62	-98.43
1875	Bexar	Bexar	78209	TX	4.2	20364.33	9/24/2010	29.49	-98.45
1876	Bexar	Bexar	78246	TX	4.72	23108.26	9/24/2010	29.53	-98.48
1877	Bexar	Bexar	78230	TX	4.9	22915.21	9/24/2010	29.54	-98.56
1878	El Paso	El Paso	79928	TX	2.2	16230	9/28/2010	31.66	-106.13
1879	Waller	Waller	77445	TX	9.66	43888	9/28/2010	30.09	-96.05
1880	Tarrant	Tarrant	76133	TX	3.08	15900	9/28/2010	32.65	-97.38

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
1881	Hidalgo	Nueces	78577	TX	5.52	37550	9/29/2010	26.15	-98.19
1882	Bell	Williamson	76502	TX	3.136	20384	9/29/2010	31.11	-97.41
1883	Travis	Travis	78704	TX	3.33	20300	9/29/2010	30.24	-97.77
1884	Travis	Travis	78733	TX	6.345	32137	9/29/2010	30.33	-97.87
1885	Dallas	Dallas	75062	TX	103.68	576405	9/30/2010	32.85	-96.97
1886	Denton	Denton	75007	TX	3.96	21306	9/30/2010	33.01	-96.89
1887	Travis	Travis	78745	TX	26.46	109704	10/1/2010	30.21	-97.80
1888	Travis	Travis	78752	TX	10.58	53405.19	10/1/2010	30.33	-97.70
1889	Travis	Travis	78756	TX	6.3	31664.64	10/1/2010	30.32	-97.74
1890	Bexar	Bexar	78261	TX	2.03	11539	10/4/2010	29.70	-98.41
1891	Montgomery	Montgomery	77380	TX	6.48	67657.39	10/5/2010	30.13	-95.47
1892	Hidalgo	Nueces	78596	TX	9.9	61255.98	10/5/2010	26.17	-97.98
1893	Bowie	Upshur	75503	TX	5.76	16838.23	10/5/2010	33.53	-94.13
1894	Van Zandt	Henderson	75103	TX	10.14	55665.66	10/5/2010	32.54	-95.86
1895	Williamson	Williamson	78665	TX	101.64	553660.8	10/5/2010	30.55	-97.62
1896	Dallas	Dallas	75253	TX	4.14	36800	10/5/2010	32.69	-96.59
1897	Williamson	Williamson	78664	TX	7.92	41958	10/5/2010	30.50	-97.66
1898	Travis	Travis	78759	TX	6.3	33732.12	10/7/2010	30.40	-97.75
1899	Travis	Travis	78735	TX	6.3	20975.69	10/7/2010	30.26	-97.86
1900	Travis	Travis	78746	TX	6.3	30693.69	10/7/2010	30.31	-97.82
1901	Rockwall	Rockwall	75087	TX	4.025	23540	10/8/2010	32.95	-96.44
1902	Collin	Collin	75025	TX	3.22	17458.18	10/8/2010	33.09	-96.76
1903	Dallas	Dallas	75228	TX	5.6	29747.66	10/11/2010	32.83	-96.68
1904	Collin	Collin	75098	TX	10.08	106102.5	10/11/2010	33.02	-96.51
1905	Dallas	Dallas	75248	TX	9.45	53258	10/12/2010	32.97	-96.80
1906	Collin	Collin	75025	TX	1.4	13750	10/13/2010	33.09	-96.76
1907	Tarrant	Tarrant	76179	TX	7.74	64861.2	10/14/2010	32.92	-97.46
1908	Denton	Denton	76210	TX	7.525	63059.5	10/14/2010	33.14	-97.08
1909	Collin	Collin	75075	TX	8.19	68632.2	10/14/2010	33.02	-96.74
1910	Collin	Collin	75287	TX	7.095	59456.1	10/14/2010	33.00	-96.84
1911	Tarrant	Tarrant	76110	TX	5.16	43240.8	10/14/2010	32.70	-97.34
1912	Dallas	Dallas	75230	TX	7.74	64861.2	10/14/2010	32.90	-96.80
1913	Tarrant	Tarrant	76040	TX	7.56	63352.8	10/14/2010	32.82	-97.10
1914	Ellis	Ellis	76065	TX	2.76	13883	10/14/2010	32.48	-96.96
1915	Tarrant	Tarrant	76052	TX	6.44	32200	10/14/2010	32.97	-97.37
1916	Bexar	Bexar	78255	TX	9.8	45088.07	10/15/2010	29.66	-98.67
1917	Bexar	Bexar	78256	TX	4.91	30870.59	10/15/2010	29.62	-98.62
1918	Bexar	Bexar	78148	TX	6.3	36000	10/15/2010	29.55	-98.30
1919	Bexar	Bexar	78260	TX	3.24	16909.84	10/15/2010	29.69	-98.50
1920	Bexar	Bexar	78023	TX	3.96	17901.61	10/15/2010	29.62	-98.73

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1921	Bexar	Bexar	78230	TX	8.1	53800	10/15/2010	29.54	-98.56
1922	Bexar	Bexar	78258	TX	5.25	26881.04	10/15/2010	29.65	-98.47
1923	Bexar	Bexar	78258	TX	4.2	20177.83	10/15/2010	29.65	-98.47
1924	Wichita	Denton	76302	TX	49.4	232735	10/18/2010	33.87	-98.49
1925	Dallas	Dallas	75238	TX	8.385	70266.3	10/18/2010	32.88	-96.71
1926	Tarrant	Tarrant	76018	TX	5.805	48645.9	10/18/2010	32.67	-97.08
1927	Collin	Collin	75023	TX	4.3	36034	10/18/2010	33.05	-96.73
1928	Ellis	Ellis	75119	TX	7.56	63352.8	10/18/2010	32.32	-96.62
1929	Williamson	Williamson	78681	TX	5.16	25709.71	10/18/2010	30.52	-97.71
1930	Denton	Denton	76210	TX	10.08	34600	10/18/2010	33.14	-97.08
1931	Brewster	El Paso	79830	TX	3.68	24840	10/19/2010	29.93	-103.45
1932	Tarrant	Tarrant	76040	TX	6.93	58073.4	10/19/2010	32.82	-97.10
1933	Bexar	Bexar	78209	TX	6.65	36551.55	10/19/2010	29.49	-98.45
1934	Knox	Parker	76371	TX	45.825	311396.84	10/20/2010	33.49	-99.66
1935	Dallas	Dallas	75063	TX	9.4	57960	10/20/2010	32.91	-96.98
1936	Tarrant	Tarrant	76021	TX	251.32	1326849	10/20/2010	32.85	-97.13
1937	Travis	Travis	78750	TX	23.52	134652	10/20/2010	30.43	-97.80
1938	Bexar	Bexar	78204	TX	2.23	13579.29	10/20/2010	29.40	-98.50
1939	Williamson	Williamson	78664	TX	7.2	41075	10/21/2010	30.50	-97.66
1940	Wichita	Denton	76309	TX	5.6	52979.51	10/21/2010	33.90	-98.54
1941	Cherokee	Smith	75785	TX	1.54	9500	10/22/2010	31.75	-95.18
1942	Tarrant	Tarrant	76108	TX	5.88	49274.4	10/22/2010	32.78	-97.55
1943	Dallas	Dallas	75115	TX	66.24	150000	10/22/2010	32.60	-96.86
1944	Collin	Collin	75093	TX	3.68	20200	10/27/2010	33.04	-96.80
1945	Travis	Travis	78731	TX	8.51	43264.89	10/28/2010	30.35	-97.77
1946	Gregg	Gregg	75601	TX	76.5	297654.61	11/1/2010	32.51	-94.72
1947	Travis	Travis	78723	TX	6.105	30542.18	11/1/2010	30.31	-97.68
1948	Comal	Comal	78163	TX	9	47458.37	11/1/2010	29.77	-98.51
1949	Bexar	Bexar	78236	TX	10.8	48549	11/1/2010	29.39	-98.61
1950	Bexar	Bexar	78240	TX	5.25	28693.57	11/1/2010	29.53	-98.61
1951	Bexar	Bexar	78251	TX	2.03	11539	11/1/2010	29.47	-98.68
1952	Brewster	El Paso	79830	TX	2.35	12819.65	11/2/2010	29.93	-103.45
1953	Collin	Collin	75002	TX	3.96	21711.71	11/2/2010	33.09	-96.61
1954	Bexar	Bexar	78209	TX	9.45	58150	11/2/2010	29.49	-98.45
1955	Bexar	Bexar	78109	TX	3.04	25600	11/2/2010	29.47	-98.30
1956	Bexar	Bexar	78217	TX	6.2	36907.05	11/2/2010	29.54	-98.42
1957	Bexar	Bexar	78211	TX	3.44	24403.2	11/2/2010	29.35	-98.57
1958	Dallas	Dallas	75230	TX	4.3	36034	11/3/2010	32.90	-96.80
1959	Collin	Collin	75287	TX	6.02	50447.6	11/3/2010	33.00	-96.84
1960	Denton	Denton	75007	TX	3.36	28156.8	11/3/2010	33.01	-96.89

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
1961	Denton	Denton	76262	TX	8.385	70266.3	11/3/2010	33.02	-97.23
1962	Tarrant	Tarrant	76179	TX	10.08	84470.7	11/3/2010	32.92	-97.46
1963	Parker	Parker	76008	TX	10.08	90504	11/3/2010	32.69	-97.63
1964	Bexar	Bexar	78223	TX	16000		11/4/2010	29.30	-98.41
1965	Tarrant	Tarrant	76054	TX	4.73	39637.4	11/5/2010	32.86	-97.18
1966	Tarrant	Tarrant	76034	TX	10.08	84470.4	11/5/2010	32.89	-97.15
1967	Tarrant	Tarrant	76137	TX	7.56	63352.8	11/5/2010	32.85	-97.30
1968	Dallas	Dallas	75052	TX	10.08	84470.4	11/5/2010	32.68	-97.03
1969	Tarrant	Tarrant	76123	TX	5.184	43441.92	11/5/2010	32.62	-97.40
1970	Bexar	Bexar	78255	TX	5.4	27052.05	11/8/2010	29.66	-98.67
1971	Bexar	Bexar	78223	TX	4.5	21797	11/8/2010	29.30	-98.41
1972	Bexar	Bexar	78209	TX	3.96	22123.1	11/8/2010	29.49	-98.45
1973	Collin	Collin	75002	TX	6.84	38870	11/9/2010	33.09	-96.61
1974	Bexar	Bexar	78261	TX	10.11	44513	11/9/2010	29.70	-98.41
1975	Collin	Collin	75075	TX	9.89	65039	11/10/2010	33.02	-96.74
1976	Collin	Collin	75075	TX	1.32	9729	11/10/2010	33.02	-96.74
1977	Erath	Hood	76401	TX	10.675	54710.22	11/11/2010	32.31	-98.27
1978	Dallas	Dallas	75234	TX	9.45	79191	11/11/2010	32.92	-96.89
1979	Tarrant	Tarrant	76054	TX	5.16	43240.8	11/11/2010	32.86	-97.18
1980	Dallas	Dallas	75081	TX	7.56	63352.8	11/11/2010	32.96	-96.70
1981	Tarrant	Tarrant	76018	TX	8.6	72068	11/11/2010	32.67	-97.08
1982	Tarrant	Tarrant	76112	TX	10.32	86481.6	11/11/2010	32.75	-97.21
1983	Dallas	Dallas	75149	TX	3.78	31676.4	11/11/2010	32.76	-96.59
1984	Dallas	Dallas	75205	TX	6.3	41641	11/11/2010	32.83	-96.80
1985	El Paso	El Paso	79925	TX	2.2	15400	11/12/2010	31.78	-106.36
1986	Tarrant	Tarrant	76001	TX	9.89	82878.2	11/12/2010	32.63	-97.15
1987	Collin	Collin	75002	TX	1.05	7751.03	11/12/2010	33.09	-96.61
1988	Wichita	Denton	76309	TX	7.84	49753.1	11/15/2010	33.90	-98.54
1989	Bell	Williamson	76513	TX	3.74	29985	11/15/2010	31.07	-97.50
1990	Travis	Travis	78727	TX	4.725	25114.34	11/16/2010	30.43	-97.71
1991	Bowie	Upshur	75501	TX	2.88	16958.35	11/17/2010	33.39	-94.13
1992	Dallas	Dallas	75050	TX	50.4	272700	11/17/2010	32.78	-97.02
1993	Dallas	Dallas	75051	TX	100.8	511100	11/17/2010	32.73	-96.99
1994	Bexar	Bexar	78258	TX	6.65	36424.63	11/17/2010	29.65	-98.47
1995	Comal	Comal	78266	TX	23.76	209773.34	11/17/2010	29.63	-98.32
1996	Comal	Comal	78132	TX	11.04	48342.35	11/17/2010	29.74	-98.20
1997	Dallas	Dallas	75051	TX	17.82	89100	11/18/2010	32.73	-96.99
1998	Tarrant	Tarrant	76126	TX	6.09	51034.2	11/18/2010	32.65	-97.50
1999	Collin	Collin	75023	TX	5.88	49274.4	11/18/2010	33.05	-96.73
2000	Tarrant	Tarrant	76148	TX	8.4	70392	11/18/2010	32.86	-97.25

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
2001	Dallas	Dallas	75051	TX	11.88	59400	11/18/2010	32.73	-96.99
2002	Dallas	Dallas	75051	TX	17.82	89100	11/19/2010	32.73	-96.99
2003	Dallas	Dallas	75019	TX	3.96	22596.18	11/23/2010	32.96	-97.00
2004	Denton	Denton	76210	TX	99.84	459954.52	11/24/2010	33.14	-97.08
2005	Bexar	Bexar	78217	TX	8.4	65594	11/24/2010	29.54	-98.42
2006	Bexar	Bexar	78245	TX	7.82	35593.45	11/24/2010	29.40	-98.74
2007	Bexar	Bexar	78261	TX	2.03	11539	11/24/2010	29.70	-98.41
2008	Bexar	Bexar	78261	TX	6.03	36000	11/24/2010	29.70	-98.41
2009	Parker	Parker	76087	TX	6.09	51034.2	11/29/2010	32.68	-97.81
2010	Presidio	El Paso	79843	TX	5.46	31000	11/30/2010	30.27	-104.47
2011	Nolan	Hood	79556	TX	10.12	53000	11/30/2010	32.42	-100.39
2012	Williamson	Williamson	78729	TX	10.8		11/30/2010	30.45	-97.76
2013	Montgomery	Montgomery	77304	TX	4.2	22589.76	12/1/2010	30.33	-95.53
2014	Tom Green	Williamson	76934	TX	9.66	38000	12/1/2010	31.61	-100.69
2015	Tom Green	Williamson	76901	TX	9.66	38000	12/1/2010	31.60	-100.57
2016	Travis	Travis	78735	TX	10.5	58680.69	12/2/2010	30.26	-97.86
2017	Clay	Parker	76357	TX	2.82	22900	12/3/2010	34.08	-98.20
2018	Bexar	Bexar	78244	TX	5.25	25183.02	12/3/2010	29.47	-98.35
2019	Bexar	Bexar	78216	TX	6.29	31945	12/3/2010	29.55	-98.50
2020	Bexar	Bexar	78255	TX	3.53	14801	12/3/2010	29.66	-98.67
2021	Comal	Comal	78266	TX	17.3	88597.34	12/3/2010	29.63	-98.32
2022	Bexar	Bexar	78244	TX	39.6	239002	12/3/2010	29.47	-98.35
2023	Hamilton	Hood	76531	TX	2.64	22550	12/4/2010	31.68	-98.18
2024	El Paso	El Paso	79932	TX	5.236	34621.52	12/6/2010	31.89	-106.62
2025	Tarrant	Tarrant	76021	TX	6.93	58073.4	12/6/2010	32.85	-97.13
2026	Travis	Travis	78745	TX	6.29	25573.27	12/6/2010	30.21	-97.80
2027	Dallas	Dallas	75048	TX	2.025	7955	12/6/2010	32.97	-96.59
2028	Bexar	Bexar	78023	TX	11.96	54556.17	12/6/2010	29.62	-98.73
2029	Collin	Collin	75023	TX	2.1	11525	12/7/2010	33.05	-96.73
2030	Travis	Travis	78738	TX	6.48	30803	12/8/2010	30.31	-97.98
2031	El Paso	El Paso	79932	TX	10.472	66400	12/8/2010	31.90	-106.64
2032	Tarrant	Tarrant	76248	TX	2	13395	12/9/2010	32.93	-97.23
2033	El Paso	El Paso	79912	TX	10.34	60748.66	12/10/2010	31.86	-106.52
2034	Dallas	Dallas	75019	TX	5.59	46844.2	12/10/2010	32.96	-97.00
2035	Tarrant	Tarrant	76034	TX	9.46	79274.8	12/10/2010	32.89	-97.15
2036	Dallas	Dallas	75060	TX	5.46	45754.8	12/10/2010	32.80	-96.95
2037	Tarrant	Tarrant	76021	TX	5.59	46844.2	12/10/2010	32.85	-97.13
2038	Bexar	Bexar	78201	TX	6.9	44109.78	12/13/2010	29.46	-98.52
2039	Bexar	Bexar	78247	TX	4.14	20493	12/13/2010	29.59	-98.41
2040	Bexar	Bexar	78247	TX	53.36	243984.06	12/17/2010	29.59	-98.41

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
2041	Travis	Travis	78756	TX	3.04	17300	12/21/2010	30.32	-97.74
2042	Comal	Comal	78163	TX	3.96	22383.28	12/23/2010	29.77	-98.51
2043	Bexar	Bexar	78255	TX	11.28	53917.34	12/23/2010	29.66	-98.67
2044	Bexar	Bexar	78259	TX	3.9	16866	12/23/2010	29.62	-98.43
2045	Travis	Travis	78732	TX	6.66	29980	12/27/2010	30.38	-97.90
2046	Bexar	Bexar	78232	TX	4.2	26235	12/27/2010	29.59	-98.46
2047	Denton	Denton	75007	TX	1.26	11151	12/28/2010	33.01	-96.89
2048	Orange	Orange	77632	TX	6	30000	12/28/2010	30.18	-93.76
2049	Bexar	Bexar	78212	TX	22.77	124641	12/28/2010	29.46	-98.50
2050	Bexar	Bexar	78216	TX	7	36531.73	12/28/2010	29.55	-98.50
2051	Bexar	Bexar	78209	TX	4.86	23204.44	12/29/2010	29.49	-98.45
2052	Bexar	Bexar	78209	TX	4.9	30147.4	12/29/2010	29.49	-98.45
2053	Bexar	Bexar	78232	TX	6.3	30354.63	12/29/2010	29.59	-98.46
2054	Bexar	Bexar	78109	TX	3.29	24500	12/30/2010	29.47	-98.30
2055	Bexar	Bexar	78109	TX	8.64	42149	12/30/2010	29.47	-98.30
2056	Bexar	Bexar	78148	TX	6	32703.69	12/30/2010	29.55	-98.30
2057	Travis	Travis	78736	TX	6.66	26403.22	1/3/2011	30.25	-97.95
2058	Travis	Travis	78748	TX	3.68	20082	1/4/2011	30.17	-97.82
2059	Brewster	El Paso	79830	TX	50.83	394507	1/7/2011	29.93	-103.45
2060	Brewster	El Paso	79830	TX	10.12	80780	1/7/2011	29.93	-103.45
2061	Travis	Travis	78704	TX	5.98	29003	1/7/2011	30.24	-97.77
2062	Brewster	El Paso	79830	TX	2.82	17500	1/10/2011	29.93	-103.45
2063	Travis	Travis	78746	TX	2.96	17574.46	1/10/2011	30.31	-97.82
2064	Travis	Travis	78736	TX	4.86	17037.56	1/10/2011	30.25	-97.95
2065	Travis	Travis	78723	TX	3.33	15473	1/10/2011	30.31	-97.68
2066	Travis	Travis	78723	TX	6.66	31027.55	1/11/2011	30.31	-97.68
2067	Bexar	Bexar	78148	TX	2.16	11407.71	1/11/2011	29.55	-98.30
2068	Bexar	Bexar	78251	TX	3.87	19988	1/11/2011	29.47	-98.68
2069	Bexar	Bexar	78238	TX	2.3	19354.38	1/11/2011	29.47	-98.62
2070	Bexar	Bexar	78238	TX	3.78	21618	1/11/2011	29.47	-98.62
2071	Orange	Orange	77632	TX	6	10000	1/13/2011	30.22	-93.80
2072	Bexar	Bexar	78260	TX	5.28	28608.43	1/13/2011	29.69	-98.50
2073	Bexar	Bexar	78223	TX	3.01	24500	1/13/2011	29.30	-98.41
2074	Bexar	Bexar	78223	TX	9.68	48807.72	1/13/2011	29.30	-98.41
2075	Jeff Davis	El Paso	79734	TX	9.9	52470	1/17/2011	30.77	-104.01
2076	Montgomery	Montgomery	77385	TX	4.62	18480	1/18/2011	30.20	-95.43
2077	Travis	Travis	78746	TX	6.105	33341	1/19/2011	30.31	-97.82
2078	Travis	Travis	78758	TX	6.345	32151.21	1/19/2011	30.39	-97.70
2079	El Paso	El Paso	79912	TX	2.3	13857	1/19/2011	31.86	-106.55
2080	Travis	Travis	78759	TX	6.5	30254.9	1/20/2011	30.40	-97.75

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
2081	Dallas	Dallas	75235	TX	75.46	349939.21	1/20/2011	32.83	-96.85
2082	El Paso	El Paso	79903	TX	2.35	14800	1/23/2011	31.79	-106.44
2083	Travis	Travis	78745	TX	6.44	27130.96	1/25/2011	30.21	-97.80
2084	Young	Parker	76450	TX	10.08	54339.07	1/27/2011	33.10	-98.62
2085	Travis	Travis	78704	TX	4.56	21651	1/31/2011	30.24	-97.77
2086	Travis	Travis	78731	TX	3.185	18726	1/31/2011	30.35	-97.77
2087	El Paso	El Paso	79925	TX	5.28	31627	1/31/2011	31.80	-106.36
2088	Bexar	Bexar	78233	TX	4.14	23050	1/31/2011	29.56	-98.36
2089	Bexar	Bexar	78217	TX	3.15	19692.52	1/31/2011	29.54	-98.42
2090	Comal	Comal	78132	TX	6.11	32591	1/31/2011	29.74	-98.20
2091	Bexar	Bexar	78248	TX	5.06	27577	1/31/2011	29.59	-98.53
2092	Bexar	Bexar	78023	TX	12.22	67155	1/31/2011	29.62	-98.73
2093	Bexar	Bexar	78230	TX	5.28	24266.09	1/31/2011	29.54	-98.56
2094	Bexar	Bexar	78242	TX	6.23	33050.63	1/31/2011	29.35	-98.61
2095	Travis	Travis	78746	TX	6.58	39480	2/1/2011	30.31	-97.82
2096	El Paso	El Paso	79915	TX	30	180000	2/1/2011	31.74	-106.35
2097	Dallas	Dallas	75063	TX	3.525	15525	2/1/2011	32.91	-96.99
2098	El Paso	El Paso	79912	TX	6.16	42134	2/1/2011	31.86	-106.55
2099	El Paso	El Paso	79930	TX	3.76	19910	2/1/2011	31.81	-106.47
2100	El Paso	El Paso	79912	TX	5.236	36278	2/2/2011	31.86	-106.55
2101	El Paso	El Paso	79904	TX	6.075	42525	2/2/2011	31.87	-106.48
2102	El Paso	El Paso	79912	TX	8.1	53865	2/2/2011	31.86	-106.55
2103	El Paso	El Paso	79932	TX	5.236	34621.52	2/2/2011	31.89	-106.62
2104	El Paso	El Paso	79934	TX	3.2	19800	2/2/2011	31.98	-106.42
2105	Collin	Collin	75075	TX	6	30300	2/4/2011	33.02	-96.74
2106	El Paso	El Paso	79912	TX	3.52	22719	2/7/2011	31.86	-106.55
2107	Dallas	Dallas	75220	TX	10	63555.48	2/8/2011	32.86	-96.87
2108	Bexar	Bexar	78232	TX	7	38465.23	2/8/2011	29.59	-98.46
2109	Bexar	Bexar	78222	TX	59.28	298178	2/8/2011	29.37	-98.39
2110	Bexar	Bexar	78232	TX	9.25	44700	2/10/2011	29.59	-98.46
2111	Bexar	Bexar	78216	TX	200	1586948	2/10/2011	29.55	-98.50
2112	Bexar	Bexar	78260	TX	33.6	176098.06	2/10/2011	29.69	-98.50
2113	Bexar	Bexar	78112	TX	5.52	24485.31	2/10/2011	29.21	-98.39
2114	Bexar	Bexar	78254	TX	3.78	21168	2/10/2011	29.53	-98.78
2115	Bexar	Bexar	78210	TX	1.8	16192.8	2/10/2011	29.40	-98.47
2116	Bexar	Bexar	78231	TX	4.14	34795	2/11/2011	29.58	-98.54
2117	Travis	Travis	78741	TX	3.8	19896	2/14/2011	30.23	-97.71
2118	Tarrant	Tarrant	76063	TX	5.94	30600	2/14/2011	32.56	-97.14
2119	Montgomery	Montgomery	77384	TX	5.04	19966	2/15/2011	30.24	-95.49
2120	El Paso	El Paso	79922	TX	4.4	28627	2/15/2011	31.83	-106.58

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2121	Travis	Travis	78730	TX	8.05	39389.7	2/16/2011	30.37	-97.84
2122	El Paso	El Paso	79912	TX	3.96	25542	2/17/2011	31.86	-106.55
2123	Travis	Travis	78723	TX	2.76	15180	2/18/2011	30.31	-97.68
2124	Van Zandt	Henderson	75103	TX	5.16	31020	2/18/2011	32.54	-95.86
2125	El Paso	El Paso	79902	TX	2.142	15530	2/21/2011	31.79	-106.49
2126	El Paso	El Paso	79902	TX	2.64	17595	2/23/2011	31.79	-106.49
2127	Dallas	Dallas	75223	TX	5.4	27615.11	2/24/2011	32.79	-96.74
2128	Presidio	El Paso	79845	TX	9.8	63699.78	2/24/2011	29.92	-104.54
2129	Mclennan	Ellis	76707	TX	80.08	332514.9	2/25/2011	31.56	-97.16
2130	Williamson	Williamson	78664	TX	100.8	485000	2/25/2011	30.50	-97.66
2131	El Paso	El Paso	79924	TX	4.14	21945	2/26/2011	31.90	-106.43
2132	Dallas	Dallas	75253	TX	10.92	91509.6	2/28/2011	32.69	-96.59
2133	Cass	Upshur	75563	TX	22.05	85000	2/28/2011	33.02	-94.38
2134	Travis	Travis	78732	TX	6.21	33968.52	3/1/2011	30.38	-97.89
2135	El Paso	El Paso	79938	TX	5.72	34749	3/1/2011	31.84	-105.92
2136	Travis	Travis	78660	TX	23.04	93390	3/2/2011	30.43	-97.60
2137	Bexar	Bexar	78112	TX	7.92	39389.33	3/2/2011	29.21	-98.39
2138	Travis	Travis	78730	TX	4.56	27808	3/3/2011	30.37	-97.84
2139	Bexar	Bexar	78244	TX	2.94	16611	3/3/2011	29.47	-98.35
2140	Bexar	Bexar	78261	TX	11.28	61476	3/3/2011	29.70	-98.41
2141	Bexar	Bexar	78229	TX	5.39	41900	3/3/2011	29.51	-98.58
2142	Comal	Comal	78266	TX	8.46	41031	3/3/2011	29.63	-98.32
2143	Bexar	Bexar	78251	TX	5.98	29375	3/3/2011	29.47	-98.68
2144	Bexar	Bexar	78257	TX	6.9	33189	3/3/2011	29.66	-98.58
2145	Travis	Travis	78704	TX	6.272	27001.42	3/4/2011	30.25	-97.77
2146	Kendall	Bexar	78006	TX	0.62	2000	3/5/2011	29.84	-98.59
2147	Bexar	Bexar	78211	TX	4.14	22800	3/7/2011	29.35	-98.57
2148	Bexar	Bexar	78231	TX	2.53	24800	3/7/2011	29.58	-98.54
2149	Bexar	Bexar	78240	TX	9.2	50600	3/7/2011	29.53	-98.61
2150	Bexar	Bexar	78251	TX	3.29	28500	3/7/2011	29.47	-98.68
2151	Bexar	Bexar	78240	TX	4.6	26439	3/7/2011	29.53	-98.61
2152	Comal	Comal	78266	TX	7.76	42264.75	3/7/2011	29.63	-98.32
2153	Bexar	Bexar	78217	TX	4.5	22304.03	3/7/2011	29.54	-98.42
2154	Bexar	Bexar	78202	TX	2.76	15650	3/7/2011	29.43	-98.46
2155	Bexar	Bexar	78244	TX	4.05	27990	3/7/2011	29.47	-98.35
2156	Bexar	Bexar	78209	TX	7.2	35113.59	3/8/2011	29.49	-98.45
2157	Travis	Travis	78759	TX	3.33	18072.07	3/10/2011	30.40	-97.75
2158	El Paso	El Paso	79932	TX	2.25	16928	3/10/2011	31.89	-106.62
2159	Bexar	Bexar	78148	TX	28.2	134091	3/11/2011	29.55	-98.30
2160	Bexar	Bexar	78211	TX	400	1615756.88	3/11/2011	29.35	-98.57

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2161	Bexar	Bexar	78213	TX	6.58	36190	3/11/2011	29.50	-98.52
2162	Bexar	Bexar	78248	TX	6.75	29910.08	3/11/2011	29.59	-98.53
2163	Bexar	Bexar	78232	TX	6.21	38192.5	3/11/2011	29.59	-98.46
2164	Bexar	Bexar	78232	TX	12.21	58278.56	3/11/2011	29.59	-98.46
2165	Bexar	Bexar	78148	TX	6.24	32693.54	3/11/2011	29.55	-98.30
2166	Bexar	Bexar	78249	TX	6.24	32195.23	3/11/2011	29.57	-98.61
2167	Bexar	Bexar	78148	TX	4.6	21640.69	3/11/2011	29.55	-98.30
2168	Guadalupe	Guadalupe	78154	TX	21.6	107642.65	3/11/2011	29.59	-98.28
2169	Bexar	Bexar	78257	TX	8.64	52416	3/11/2011	29.66	-98.58
2170	Bexar	Bexar	78023	TX	5.94	32245.78	3/11/2011	29.62	-98.73
2171	Travis	Travis	78745	TX	6.48	30095.95	3/14/2011	30.22	-97.80
2172	El Paso	El Paso	79912	TX	5.28	31930	3/14/2011	31.86	-106.55
2173	Jim Wells	Nueces	78332	TX	10.125	51900	3/15/2011	27.74	-98.09
2174	Travis	Travis	78735	TX	4.32	20964.16	3/21/2011	30.26	-97.86
2175	Montgomery	Montgomery	77384	TX	1.26	4500	3/21/2011	30.24	-95.49
2176	El Paso	El Paso	79936	TX	6.44	43148	3/22/2011	31.76	-106.29
2177	El Paso	El Paso	79924	TX	4.14	25875	3/22/2011	31.90	-106.43
2178	Bexar	Bexar	78217	TX	5.4	29318.35	3/22/2011	29.54	-98.42
2179	Bexar	Bexar	78251	TX	5.4	28759	3/22/2011	29.47	-98.68
2180	Bexar	Bexar	78260	TX	11.96	62157.82	3/22/2011	29.69	-98.50
2181	Bexar	Bexar	78232	TX	33.6	236905	3/22/2011	29.59	-98.46
2182	Bexar	Bexar	78219	TX	16.3	107895	3/22/2011	29.45	-98.39
2183	Atascosa	Wilson	78052	TX	9.66	51713.24	3/22/2011	29.20	-98.77
2184	Bexar	Bexar	78260	TX	6.44	27010.01	3/22/2011	29.69	-98.50
2185	Travis	Travis	78746	TX	3.5	19250	3/24/2011	30.31	-97.82
2186	Travis	Travis	78731	TX	5.13	27367	3/24/2011	30.35	-97.77
2187	Travis	Travis	78731	TX	5	30867	3/24/2011	30.35	-97.77
2188	Hopkins	Hunt	75482	TX	188.496	952739	3/25/2011	33.18	-95.60
2189	El Paso	El Paso	79938	TX	3.24	21000	3/28/2011	31.84	-105.92
2190	Williamson	Williamson	78613	TX	8.33	43548.16	3/28/2011	30.51	-97.82
2191	Bexar	Bexar	78260	TX	6.44	27010.01	3/28/2011	29.69	-98.50
2192	Angelina	Rusk	75901	TX	26.46	134050	3/29/2011	31.34	-94.67
2193	Tarrant	Tarrant	76137	TX	5.46	45754.8	3/29/2011	32.85	-97.30
2194	Guadalupe	Guadalupe	78154	TX	12.24	96387.2	3/29/2011	29.59	-98.28
2195	Travis	Travis	78744	TX	92.7	516648.39	3/30/2011	30.20	-97.73
2196	Denton	Denton	76226	TX	6.3	52794	3/30/2011	33.12	-97.16
2197	Dallas	Dallas	75230	TX	7.31	42852.5	3/30/2011	32.90	-96.79
2198	El Paso	El Paso	79836	TX	5.06	34155	3/30/2011	31.57	-106.19
2199	Bexar	Bexar	78240	TX	3.08	12147.17	3/30/2011	29.53	-98.61
2200	Kendall	Bexar	78015	TX	5.2	26883.75	3/30/2011	29.75	-98.65

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2201	Kendall	Bexar	78006	TX	7.2	42469	3/30/2011	29.92	-98.70
2202	Bexar	Bexar	78214	TX	6.44	33810	3/30/2011	29.32	-98.47
2203	Bexar	Bexar	78209	TX	10.5	57712.28	3/30/2011	29.49	-98.45
2204	Bexar	Bexar	78213	TX	8.1	44500	3/30/2011	29.50	-98.52
2205	Travis	Travis	78741	TX	2.96	12290.58	3/31/2011	30.23	-97.71
2206	Travis	Travis	78723	TX	3.33		3/31/2011	30.31	-97.68
2207	Travis	Travis	78746	TX	5.735	52240.28	3/31/2011	30.31	-97.82
2208	Dallas	Dallas	75041	TX	84.96	893235	3/31/2011	32.88	-96.65
2209	Bexar	Bexar	78221	TX	4.32	22033.59	3/31/2011	29.30	-98.50
2210	Bexar	Bexar	78023	TX	5.22	26960	3/31/2011	29.62	-98.73
2211	Bexar	Bexar	78023	TX	5.24	29960	3/31/2011	29.62	-98.73
2212	Bexar	Bexar	78240	TX	6.24	32195.23	3/31/2011	29.53	-98.61
2213	Bexar	Bexar	78264	TX	3.6	18832	3/31/2011	29.17	-98.51
2214	Atascosa	Wilson	78052	TX	5.4	24590.04	3/31/2011	29.20	-98.77
2215	Bexar	Bexar	78245	TX	3.68	24950	3/31/2011	29.40	-98.74
2216	Bexar	Bexar	78209	TX	4.76	33750	3/31/2011	29.49	-98.45
2217	Travis	Travis	78723	TX	6.105	26501.62	4/1/2011	30.31	-97.68
2218	Dallas	Dallas	75247	TX	10.92	65577	4/1/2011	32.82	-96.88
2219	Hidalgo	Nueces	78596	TX	16.92	111489	4/4/2011	26.17	-97.98
2220	Webb	Nueces	78043	TX	10.12	47554.4	4/6/2011	27.55	-99.26
2221	El Paso	El Paso	79924	TX	4.515	38288.61	4/6/2011	31.90	-106.43
2222	Bexar	Bexar	78209	TX	7.92	44249.45	4/6/2011	29.49	-98.45
2223	Bexar	Bexar	78216	TX	37.2	193510	4/6/2011	29.55	-98.50
2224	Bexar	Bexar	78240	TX	17.94	99926	4/6/2011	29.53	-98.61
2225	Bexar	Bexar	78254	TX	4.37	24469.03	4/6/2011	29.53	-98.78
2226	Bexar	Bexar	78209	TX	12	70200	4/6/2011	29.49	-98.45
2227	Bexar	Bexar	78242	TX	12	70000	4/6/2011	29.35	-98.61
2228	Bexar	Bexar	78251	TX	1.8	11380	4/6/2011	29.47	-98.68
2229	Bexar	Bexar	78209	TX	2.7	15609	4/6/2011	29.49	-98.45
2230	Bexar	Bexar	78249	TX	12	69250	4/6/2011	29.57	-98.61
2231	El Paso	El Paso	79938	TX	2.07	14302	4/7/2011	31.84	-105.92
2232	El Paso	El Paso	79821	TX	5.32	26600	4/8/2011	31.99	-106.59
2233	El Paso	El Paso	79912	TX	5.06	34206	4/11/2011	31.86	-106.55
2234	Bexar	Bexar	78023	TX	9.45	47264.14	4/11/2011	29.62	-98.73
2235	Bexar	Bexar	78249	TX	14.58	98421.56	4/11/2011	29.57	-98.61
2236	Travis	Travis	78721	TX	2.85	14643	4/12/2011	30.27	-97.68
2237	Tarrant	Tarrant	76119	TX	101.66	473401	4/13/2011	32.68	-97.28
2238	Johnson	Johnson	76033	TX	3.68	25576	4/13/2011	32.29	-97.50
2239	Travis	Travis	78704	TX	16.7	71664.22	4/14/2011	30.25	-97.77
2240	Travis	Travis	78758	TX	1.665		4/14/2011	30.39	-97.70

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2241	Travis	Travis	78732	TX	7.77	46232.6	4/14/2011	30.38	-97.89
2242	Hidalgo	Nueces	78539	TX	8.46	46530	4/14/2011	26.27	-98.19
2243	Bexar	Bexar	78212	TX	5.5	30751	4/14/2011	29.46	-98.50
2244	Bexar	Bexar	78209	TX	12.42	60858	4/14/2011	29.49	-98.45
2245	Bexar	Bexar	78228	TX	4.6	33900	4/14/2011	29.46	-98.56
2246	Bexar	Bexar	78209	TX	10.8	53500	4/14/2011	29.49	-98.45
2247	Bexar	Bexar	78240	TX	6.12	31500	4/14/2011	29.53	-98.61
2248	Bexar	Bexar	78244	TX	5.76	30016.54	4/14/2011	29.47	-98.35
2249	Bexar	Bexar	78152	TX	6.9	34500	4/14/2011	29.42	-98.20
2250	Bexar	Bexar	78237	TX	5.4	25900	4/14/2011	29.41	-98.57
2251	Bexar	Bexar	78256	TX	8.28	40312.36	4/14/2011	29.62	-98.62
2252	Bexar	Bexar	78230	TX	7.38	36075.49	4/14/2011	29.54	-98.56
2253	El Paso	El Paso	79912	TX	3.76	13912	4/15/2011	31.86	-106.55
2254	Bexar	Bexar	78239	TX	2.8	21276	4/18/2011	29.52	-98.36
2255	Travis	Travis	78733	TX	6.24	30410	4/19/2011	30.33	-97.87
2256	Travis	Travis	78738	TX	6	31763	4/19/2011	30.30	-97.97
2257	Bexar	Bexar	78232	TX	18.6	78559.33	4/19/2011	29.59	-98.46
2258	Montgomery	Montgomery	77365	TX	10.35	43331.58	4/20/2011	30.12	-95.29
2259	Bexar	Bexar	78255	TX	11.5	72299.45	4/20/2011	29.66	-98.67
2260	Bexar	Bexar	78258	TX	5.06	25775.19	4/20/2011	29.65	-98.47
2261	Bexar	Bexar	78023	TX	8	38145.68	4/20/2011	29.62	-98.73
2262	Bexar	Bexar	78245	TX	7.29	40811.23	4/20/2011	29.40	-98.74
2263	Bexar	Bexar	78217	TX	5.75	32167	4/20/2011	29.54	-98.42
2264	Travis	Travis	78704	TX	6.44	31117.75	4/21/2011	30.25	-97.77
2265	Bexar	Bexar	78263	TX	5.06	23144.77	4/21/2011	29.36	-98.32
2266	Travis	Travis	78723	TX	5.55	26364.5	4/22/2011	30.31	-97.68
2267	Travis	Travis	78723	TX	9.77	36707.67	4/22/2011	30.31	-97.68
2268	Travis	Travis	78723	TX	3.33	26364.5	4/22/2011	30.31	-97.68
2269	Comal	Comal	78132	TX	6.18	38405	4/25/2011	29.74	-98.20
2270	Comal	Comal	78163	TX	12.21	60647.07	4/25/2011	29.77	-98.51
2271	Travis	Travis	78723	TX	6.24	28980	4/26/2011	30.31	-97.68
2272	Bexar	Bexar	78258	TX	11.96	67012.31	4/26/2011	29.65	-98.47
2273	Kendall	Bexar	78015	TX	9.2	47338.43	4/26/2011	29.75	-98.65
2274	Bowie	Upshur	75570	TX	64.05	450686	4/27/2011	33.46	-94.41
2275	Bexar	Bexar	78218	TX	39	227555	4/27/2011	29.49	-98.39
2276	Travis	Travis	78723	TX	6.105	26364.5	4/28/2011	30.31	-97.68
2277	Johnson	Johnson	76028	TX	5.46	45754.8	4/28/2011	32.53	-97.29
2278	Cameron	Nueces	78550	TX	106.08	492492.25	4/28/2011	26.26	-97.65
2279	Johnson	Johnson	76028	TX	10.08	84470.4	4/29/2011	32.53	-97.29
2280	Johnson	Johnson	76028	TX	6.93	55301.4	4/29/2011	32.53	-97.29

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
2281	Kendall	Bexar	78015	TX	3.52	19138.76	4/29/2011	29.75	-98.65
2282	Bexar	Bexar	78255	TX	2.2	11485.31	4/29/2011	29.66	-98.67
2283	Bexar	Bexar	78261	TX	11.96	63109.68	4/29/2011	29.70	-98.41
2284	Bexar	Bexar	78069	TX	11.04	49901	4/29/2011	29.19	-98.67
2285	Travis	Travis	78745	TX	2.856	27538.87	5/2/2011	30.22	-97.80
2286	Bexar	Bexar	78217	TX	5.04	32500	5/2/2011	29.54	-98.42
2287	Bexar	Bexar	78261	TX	2.17	11539	5/3/2011	29.70	-98.41
2288	Medina	Bexar	78016	TX	11.2	54870.48	5/3/2011	29.19	-98.95
2289	Bexar	Bexar	78209	TX	1	9658	5/3/2011	29.49	-98.45
2290	Jim Wells	Nueces	78332	TX	10.125	51900	5/4/2011	27.74	-98.09
2291	El Paso	El Paso	79932	TX	5.28	36245	5/4/2011	31.89	-106.62
2292	Denton	Denton	76247	TX	8.28	46386	5/5/2011	33.11	-97.33
2293	Travis	Travis	78723	TX	4.56	20061	5/6/2011	30.31	-97.68
2294	Travis	Travis	78723	TX	6.105	26364.5	5/10/2011	30.31	-97.68
2295	Bexar	Bexar	78259	TX	4.86	25769.81	5/10/2011	29.62	-98.43
2296	Real	Bexar	78873	TX	9.6	33024	5/11/2011	29.85	-99.68
2297	El Paso	El Paso	79912	TX	8.97	57815.29	5/11/2011	31.86	-106.55
2298	Bexar	Bexar	78209	TX	1	9658	5/11/2011	29.49	-98.45
2299	Bexar	Bexar	78224	TX	4.6	23815.88	5/11/2011	29.32	-98.54
2300	Bexar	Bexar	78215	TX	39	203955.45	5/11/2011	29.44	-98.48
2301	Bexar	Bexar	78261	TX	3.68	15292.6	5/11/2011	29.70	-98.41
2302	El Paso	El Paso	79915	TX	19.68	112176	5/12/2011	31.74	-106.38
2303	El Paso	El Paso	79902	TX	6.16	34603	5/16/2011	31.79	-106.49
2304	Atascosa	Wilson	78052	TX	2.82	23900	5/16/2011	29.20	-98.77
2305	Bexar	Bexar	78211	TX	3.43	25580	5/16/2011	29.35	-98.57
2306	Bexar	Bexar	78254	TX	5.28	27878	5/16/2011	29.53	-98.78
2307	Bexar	Bexar	78258	TX	6.51	48750	5/17/2011	29.65	-98.47
2308	Orange	Orange	77611	TX	9.66	37257.79	5/18/2011	30.00	-93.81
2309	Bexar	Bexar	78232	TX	4.95	23600.98	5/19/2011	29.59	-98.46
2310	Bexar	Bexar	78249	TX	39.6	200000	5/19/2011	29.57	-98.61
2311	Bexar	Bexar	78216	TX	3.29	19700	5/19/2011	29.55	-98.50
2312	Bexar	Bexar	78259	TX	6.44	34112.47	5/19/2011	29.62	-98.43
2313	Travis	Travis	78744	TX	4.14	22750.17	5/20/2011	30.20	-97.73
2314	Travis	Travis	78723	TX	4.07		5/23/2011	30.31	-97.68
2315	Travis	Travis	78734	TX	6.355	46228.66	5/23/2011	30.37	-97.95
2316	Bexar	Bexar	78152	TX	11.66	52425.83	5/23/2011	29.42	-98.20
2317	Bexar	Bexar	78247	TX	9.2	48258.87	5/23/2011	29.59	-98.41
2318	Bexar	Bexar	78247	TX	5.98	32106.99	5/23/2011	29.59	-98.41
2319	Bexar	Bexar	78210	TX	5.98	30776.95	5/23/2011	29.40	-98.47
2320	Travis	Travis	78746	TX	6.44	28269.06	5/24/2011	30.31	-97.82

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2321	Williamson	Williamson	78717	TX	6.72	31254	5/24/2011	30.49	-97.77
2322	Montague	Denton	76255	TX	3.85	23286.78	5/24/2011	33.78	-97.74
2323	Bexar	Bexar	78251	TX	3.15	21747.72	5/24/2011	29.47	-98.68
2324	Bexar	Bexar	78259	TX	4.6	26172	5/24/2011	29.62	-98.43
2325	Kendall	Bexar	78015	TX	41.2	264000	5/24/2011	29.75	-98.65
2326	Collin	Collin	75024	TX	16.2	129600	5/27/2011	33.08	-96.81
2327	El Paso	El Paso	79912	TX	3.29	18924	5/27/2011	31.86	-106.55
2328	Dallas	Dallas	75048	TX	1.175	4604	5/28/2011	32.97	-96.59
2329	Tarrant	Tarrant	76137	TX	5.06	40378.8	5/31/2011	32.85	-97.30
2330	Bexar	Bexar	78253	TX	4.6	27490.22	5/31/2011	29.47	-98.81
2331	Bexar	Bexar	78221	TX	7.2	36381	5/31/2011	29.30	-98.50
2332	Kendall	Bexar	78015	TX	4.6	29154.1	5/31/2011	29.75	-98.65
2333	Bexar	Bexar	78229	TX	181.3	871507	5/31/2011	29.51	-98.58
2334	Travis	Travis	78704	TX	1.92	12028	6/2/2011	30.25	-97.77
2335	Travis	Travis	78745	TX	6.44	33086.39	6/2/2011	30.22	-97.80
2336	Bexar	Bexar	78216	TX	3.01	22800	6/3/2011	29.55	-98.50
2337	Bexar	Bexar	78240	TX	11.44	104610	6/3/2011	29.53	-98.61
2338	Bexar	Bexar	78259	TX	2.9	13786	6/3/2011	29.62	-98.43
2339	Bexar	Bexar	78239	TX	4.35	26910	6/3/2011	29.52	-98.36
2340	Bexar	Bexar	78245	TX	4.7	32900	6/3/2011	29.40	-98.74
2341	Bexar	Bexar	78232	TX	3.76	26800	6/3/2011	29.59	-98.46
2342	Montgomery	Montgomery	77302	TX	8.28	34162	6/5/2011	30.21	-95.33
2343	Bexar	Bexar	78218	TX	4.7	32900	6/6/2011	29.49	-98.39
2344	Travis	Travis	78745	TX	3.84		6/7/2011	30.22	-97.80
2345	Travis	Travis	78704	TX	7.68	53292	6/7/2011	30.25	-97.77
2346	Travis	Travis	78704	TX	4.08	19509	6/7/2011	30.25	-97.77
2347	Travis	Travis	78704	TX	4.165	19509	6/7/2011	30.25	-97.77
2348	Travis	Travis	78704	TX	4.165	18923	6/7/2011	30.25	-97.77
2349	Travis	Travis	78704	TX	5.04	23328	6/7/2011	30.25	-97.77
2350	Travis	Travis	78704	TX	5.04	23328	6/7/2011	30.25	-97.77
2351	Travis	Travis	78745	TX	7.15	45211	6/7/2011	30.22	-97.80
2352	El Paso	El Paso	79912	TX	16.95	161201.13	6/7/2011	31.86	-106.55
2353	El Paso	El Paso	79903	TX	9.88	57000	6/7/2011	31.79	-106.44
2354	Bexar	Bexar	78208	TX	41.4	204102	6/7/2011	29.44	-98.46
2355	Tyler	Hardin	77664	TX	10.8	54700	6/9/2011	30.59	-94.36
2356	Bexar	Bexar	78239	TX	6.9	33465	6/10/2011	29.52	-98.36
2357	Bexar	Bexar	78261	TX	6.11	32591	6/10/2011	29.70	-98.41
2358	El Paso	El Paso	79936	TX	2.35	12455	6/13/2011	31.76	-106.29
2359	Bexar	Bexar	78233	TX	3.45	14800.5	6/13/2011	29.56	-98.36
2360	Bexar	Bexar	78214	TX	5.76	30012.22	6/13/2011	29.32	-98.47

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2361	Bexar	Bexar	78212	TX	2	12784	6/13/2011	29.46	-98.50
2362	Travis	Travis	78731	TX	6.66	30077.03	6/14/2011	30.35	-97.77
2363	Travis	Travis	78746	TX	6.16	37748.19	6/14/2011	30.31	-97.82
2364	El Paso	El Paso	79936	TX	2.82	16638	6/14/2011	31.76	-106.29
2365	Hidalgo	Nueces	78539	TX	3.055	15510	6/15/2011	26.27	-98.19
2366	Travis	Travis	78750	TX	3.01	20197.94	6/16/2011	30.43	-97.80
2367	Williamson	Williamson	78664	TX	4.995	19173.58	6/16/2011	30.50	-97.66
2368	Harrison	Harrison	75672	TX	7.59	36596	6/16/2011	32.42	-94.27
2369	Travis	Travis	78723	TX	4.8	20362.81	6/17/2011	30.31	-97.68
2370	Travis	Travis	78723	TX	4.165	16703.17	6/17/2011	30.31	-97.68
2371	El Paso	El Paso	79912	TX	7.59	53510	6/17/2011	31.86	-106.55
2372	Bexar	Bexar	78213	TX	8.28	42288.65	6/17/2011	29.50	-98.52
2373	Bexar	Bexar	78240	TX	4.32	33327.94	6/17/2011	29.53	-98.61
2374	Comal	Comal	78266	TX	2.76	19081.64	6/20/2011	29.63	-98.32
2375	Bexar	Bexar	78240	TX	4.32	33327.94	6/20/2011	29.53	-98.61
2376	Bexar	Bexar	78259	TX	2.8	27007	6/20/2011	29.62	-98.43
2377	Bexar	Bexar	78259	TX	5.55	28070.56	6/20/2011	29.62	-98.43
2378	Bexar	Bexar	78250	TX	4.6	23690	6/21/2011	29.50	-98.67
2379	Bexar	Bexar	78232	TX	4.7	28300	6/21/2011	29.59	-98.46
2380	Bexar	Bexar	78222	TX	5.75	28191.47	6/22/2011	29.37	-98.39
2381	Travis	Travis	78746	TX	6.66	31970	6/23/2011	30.31	-97.82
2382	Montgomery	Montgomery	77318	TX	10	51744	6/23/2011	30.43	-95.54
2383	Travis	Travis	78748	TX	3.525	17123.36	6/27/2011	30.17	-97.82
2384	Travis	Travis	78723	TX	19.4	205675	6/28/2011	30.31	-97.68
2385	Tarrant	Tarrant	76126	TX	9.72	50890	6/28/2011	32.65	-97.50
2386	Tarrant	Tarrant	76112	TX	5.06	36270.88	6/29/2011	32.75	-97.21
2387	Tarrant	Tarrant	76135	TX	5.06	38142.89	6/29/2011	32.84	-97.47
2388	Tarrant	Tarrant	76112	TX	50.83	300428.36	6/29/2011	32.75	-97.21
2389	Tarrant	Tarrant	76109	TX	50.83	309788.36	6/29/2011	32.70	-97.38
2390	Tarrant	Tarrant	76133	TX	5.06	35022.88	6/29/2011	32.65	-97.38
2391	Travis	Travis	78723	TX	4.995	21251.46	6/30/2011	30.31	-97.68
2392	Travis	Travis	78723	TX	3.33	15070.68	6/30/2011	30.31	-97.68
2393	Travis	Travis	78749	TX	4.8	20446.86	6/30/2011	30.22	-97.86
2394	Colorado	Fort Bend	77434	TX	6.44	32099.3	6/30/2011	29.52	-96.34
2395	Nolan	Hood	79556	TX	19		7/1/2011	32.42	-100.39
2396	El Paso	El Paso	79901	TX	20.13	114000	7/1/2011	31.76	-106.49
2397	El Paso	El Paso	79904	TX	20.13	114000	7/1/2011	31.83	-106.43
2398	Travis	Travis	78704	TX	6.37	28553	7/5/2011	30.25	-97.77
2399	Travis	Travis	78723	TX	4.995	20857.3	7/5/2011	30.31	-97.68
2400	Bexar	Bexar	78209	TX	5.52	32568	7/5/2011	29.49	-98.45

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2401	Bexar	Bexar	78259	TX	4.28	24436.55	7/5/2011	29.62	-98.43
2402	Bexar	Bexar	78258	TX	6.44	32451.81	7/5/2011	29.65	-98.47
2403	Travis	Travis	78721	TX	3.92	18311	7/6/2011	30.27	-97.68
2404	Aransas	San Patricio	78382	TX	4.92	19327.97	7/6/2011	28.09	-97.07
2405	Bexar	Bexar	78230	TX	5.28	31605	7/6/2011	29.54	-98.56
2406	Lamar	Hunt	75460	TX	99.82	495685	7/7/2011	33.60	-95.62
2407	Cameron	Nueces	78550	TX	72.38	649904	7/7/2011	26.26	-97.65
2408	Cameron	Nueces	78586	TX	243.46	1826291.58	7/7/2011	26.10	-97.63
2409	Montgomery	Montgomery	77384	TX	9.66	54437.7	7/7/2011	30.24	-95.49
2410	El Paso	El Paso	79906	TX	20.13	363190	7/7/2011	31.81	-106.41
2411	El Paso	El Paso	79901	TX	20.13	361903	7/7/2011	31.76	-106.48
2412	Travis	Travis	78723	TX	5.92	26982.69	7/11/2011	30.31	-97.68
2413	Brewster	El Paso	79830	TX	1.84	12880	7/11/2011	29.72	-103.22
2414	El Paso	El Paso	79938	TX	2.35	14805	7/13/2011	31.84	-105.92
2415	Bexar	Bexar	78023	TX	5.17	45000	7/13/2011	29.62	-98.73
2416	Travis	Travis	78723	TX	11.065	48047.57	7/14/2011	30.31	-97.68
2417	Travis	Travis	78723	TX	3.43	29677	7/14/2011	30.31	-97.68
2418	Travis	Travis	78723	TX	4.44	25372.57	7/14/2011	30.31	-97.68
2419	Travis	Travis	78723	TX	9.18	29373.46	7/14/2011	30.31	-97.68
2420	Travis	Travis	78723	TX	1.48		7/14/2011	30.31	-97.68
2421	Travis	Travis	78723	TX	6.37	29228	7/14/2011	30.31	-97.68
2422	Travis	Travis	78723	TX	6.66	29198.15	7/14/2011	30.31	-97.68
2423	Montgomery	Montgomery	77381	TX	4.14	15109.93	7/14/2011	30.17	-95.51
2424	Galveston	Galveston	77546	TX	4.6	18571.79	7/15/2011	29.54	-95.20
2425	Bexar	Bexar	78023	TX	4.7	43113.44	7/15/2011	29.62	-98.73
2426	Guadalupe	Guadalupe	78154	TX	5.55	29502.02	7/15/2011	29.59	-98.28
2427	Bexar	Bexar	78250	TX	1.08	4325.33	7/20/2011	29.50	-98.67
2428	Bexar	Bexar	78233	TX	22.77	107399	7/20/2011	29.56	-98.36
2429	Travis	Travis	78723	TX	6.37	15502	7/21/2011	30.31	-97.68
2430	Travis	Travis	78723	TX	3.185	29342	7/21/2011	30.31	-97.68
2431	Denton	Denton	75056	TX	10.64	69230	7/21/2011	33.08	-96.91
2432	El Paso	El Paso	79902	TX	4.14	28773	7/21/2011	31.79	-106.49
2433	Grayson	Collin	75092	TX	7.36	43245	7/22/2011	33.68	-96.73
2434	Kendall	Bexar	78015	TX	82.3	575957	7/22/2011	29.75	-98.65
2435	Travis	Travis	78723	TX	9.435	26335	7/26/2011	30.31	-97.68
2436	Travis	Travis	78723	TX	6.37	28430	7/26/2011	30.31	-97.68
2437	Travis	Travis	78723	TX	1.48	22940.12	7/26/2011	30.31	-97.68
2438	Travis	Travis	78723	TX	6.125	23090	7/26/2011	30.31	-97.68
2439	Travis	Travis	78723	TX	6.105	27500	7/26/2011	30.31	-97.68
2440	Travis	Travis	78721	TX	5.145	23217	7/26/2011	30.27	-97.68

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2441	Tarrant	Tarrant	76063	TX	10.29	105000	7/26/2011	32.56	-97.14
2442	Dallas	Dallas	75115	TX	10.29	105000	7/26/2011	32.60	-96.86
2443	Tarrant	Tarrant	76021	TX	10.29	105000	7/27/2011	32.85	-97.13
2444	Travis	Travis	78723	TX	5.76	25375	7/28/2011	30.31	-97.68
2445	Hidalgo	Nueces	78596	TX	9.2	57735.83	7/28/2011	26.17	-97.98
2446	Travis	Travis	78723	TX	5.635	24828	8/2/2011	30.31	-97.68
2447	Travis	Travis	78723	TX	4.655	22397	8/2/2011	30.31	-97.68
2448	Travis	Travis	78723	TX	5.145	23722	8/2/2011	30.31	-97.68
2449	Bexar	Bexar	78211	TX	2.94	22080	8/3/2011	29.35	-98.57
2450	Bexar	Bexar	78023	TX	6.11	44569.44	8/3/2011	29.62	-98.73
2451	Bexar	Bexar	78254	TX	3.5	18673.44	8/3/2011	29.53	-98.78
2452	Travis	Travis	78723	TX	4.165	20024	8/4/2011	30.31	-97.68
2453	Travis	Travis	78723	TX	5.88	26818	8/4/2011	30.31	-97.68
2454	Travis	Travis	78723	TX	6.125	28260	8/4/2011	30.31	-97.68
2455	Travis	Travis	78723	TX	6.37	29031	8/4/2011	30.31	-97.68
2456	Bexar	Bexar	78253	TX	8.4	45540	8/5/2011	29.47	-98.81
2457	Orange	Orange	77611	TX	3.24	15000	8/9/2011	30.04	-93.81
2458	Travis	Travis	78723	TX	5.92	25372.57	8/9/2011	30.31	-97.68
2459	Travis	Travis	78723	TX	5.76	26335	8/9/2011	30.31	-97.68
2460	Dallas	Dallas	75180	TX	10.29	105000	8/9/2011	32.72	-96.62
2461	Dallas	Dallas	75230	TX	7.48	41794.42	8/9/2011	32.90	-96.79
2462	Bexar	Bexar	78233	TX	10.81	54566.7	8/9/2011	29.56	-98.36
2463	Bexar	Bexar	78209	TX	3.29	21097.17	8/9/2011	29.49	-98.45
2464	Bexar	Bexar	78222	TX	8.28	41262.36	8/9/2011	29.37	-98.39
2465	Bexar	Bexar	78023	TX	7.2	36000	8/9/2011	29.62	-98.73
2466	Bexar	Bexar	78255	TX	5.52	25889.57	8/9/2011	29.66	-98.67
2467	Comal	Comal	78266	TX	7	57358.78	8/9/2011	29.63	-98.32
2468	Orange	Orange	77611	TX	3.24	11500	8/10/2011	30.00	-93.81
2469	El Paso	El Paso	79927	TX	7.13	45727.5	8/10/2011	31.64	-106.28
2470	Travis	Travis	78723	TX	5.13	28809.8	8/11/2011	30.31	-97.68
2471	Travis	Travis	78738	TX	15.19	73023	8/11/2011	30.30	-97.97
2472	Comal	Comal	78163	TX	5.55	35600	8/11/2011	29.77	-98.51
2473	Dallas	Dallas	75235	TX	299.52	1813647.39	8/15/2011	32.83	-96.85
2474	Dallas	Dallas	75006	TX	3.6	24733.51	8/15/2011	32.97	-96.89
2475	Jeff Davis	El Paso	79734	TX	3.68	25760	8/17/2011	30.77	-104.01
2476	Montgomery	Montgomery	77357	TX	29.4	147310.69	8/17/2011	30.16	-95.20
2477	Montgomery	Montgomery	77301	TX	29.4	142766.08	8/17/2011	30.31	-95.43
2478	Travis	Travis	78733	TX	4.23	21786.42	8/18/2011	30.33	-97.87
2479	Tarrant	Tarrant	76051	TX	6.21	60933.75	8/18/2011	32.95	-97.07
2480	Travis	Travis	78723	TX	7.105	26265	8/19/2011	30.31	-97.68

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2481	Travis	Travis	78723	TX	2.94		8/19/2011	30.31	-97.68
2482	Travis	Travis	78723	TX	3.67	26931	8/19/2011	30.31	-97.68
2483	Travis	Travis	78723	TX	7.335	28809.8	8/19/2011	30.31	-97.68
2484	Travis	Travis	78723	TX	4.655	18360	8/19/2011	30.31	-97.68
2485	Travis	Travis	78723	TX	8.33	51142.59	8/19/2011	30.31	-97.68
2486	Travis	Travis	78723	TX	6.125	28253	8/19/2011	30.31	-97.68
2487	Archer	Parker	76366	TX	10.12	57000	8/19/2011	33.71	-98.79
2488	Archer	Parker	76366	TX	10.12	58000	8/19/2011	33.71	-98.79
2489	Tom Green	Williamson	76904	TX	9.87	40749.5	8/19/2011	31.26	-100.30
2490	Travis	Travis	78723	TX	5.7	24378.88	8/22/2011	30.31	-97.68
2491	Travis	Travis	78723	TX	6.27	26853.24	8/22/2011	30.31	-97.68
2492	Dallas	Dallas	75104	TX	10.29	105000	8/23/2011	32.59	-96.99
2493	Webb	Nueces	78040	TX	35	245000	8/23/2011	27.52	-99.51
2494	Orange	Orange	77632	TX	6.58	41515	8/23/2011	30.22	-93.80
2495	Bexar	Bexar	78250	TX	4.1	21114	8/24/2011	29.50	-98.67
2496	Bexar	Bexar	78203	TX	20.6	124005	8/24/2011	29.41	-98.45
2497	Bexar	Bexar	78232	TX	5.52	25657.57	8/24/2011	29.59	-98.46
2498	Bexar	Bexar	78254	TX	5.52	24918.31	8/24/2011	29.53	-98.78
2499	Travis	Travis	78723	TX	5.13	27372.57	8/25/2011	30.31	-97.68
2500	Travis	Travis	78723	TX	6.37	28401	8/25/2011	30.31	-97.68
2501	Travis	Travis	78736	TX	6.21	36215	8/25/2011	30.25	-97.95
2502	Bosque	Hood	76634	TX	8.28	48171.25	8/25/2011	31.84	-97.55
2503	Travis	Travis	78723	TX	5.76	25372.57	8/26/2011	30.31	-97.68
2504	Travis	Travis	78723	TX	3.185		8/26/2011	30.31	-97.68
2505	Travis	Travis	78723	TX	6.125	25836	8/26/2011	30.31	-97.68
2506	Travis	Travis	78723	TX	8.085	49841	8/26/2011	30.31	-97.68
2507	Travis	Travis	78723	TX	5.145	23578	8/26/2011	30.31	-97.68
2508	Travis	Travis	78723	TX	3.43	26819	8/29/2011	30.31	-97.68
2509	Travis	Travis	78723	TX	9.68	26423	8/29/2011	30.31	-97.68
2510	Travis	Travis	78723	TX	6.25	26062	8/29/2011	30.31	-97.68
2511	Travis	Travis	78723	TX	2.205	26365	8/30/2011	30.31	-97.68
2512	Travis	Travis	78723	TX	10.025	26982.69	8/30/2011	30.31	-97.68
2513	Travis	Travis	78723	TX	3.43	12693	8/30/2011	30.31	-97.68
2514	Travis	Travis	78723	TX	6.125	28428	8/30/2011	30.31	-97.68
2515	Travis	Travis	78723	TX	4.655	21127	8/30/2011	30.31	-97.68
2516	Travis	Travis	78723	TX	5.88	26637	8/30/2011	30.31	-97.68
2517	El Paso	El Paso	79927	TX	6.44	41860	8/30/2011	31.64	-106.28
2518	Kendall	Bexar	78015	TX	11.04	54600	8/30/2011	29.75	-98.65
2519	Travis	Travis	78723	TX	2.75	17253	8/31/2011	30.31	-97.68
2520	Tarrant	Tarrant	76016	TX	10.29	105000	8/31/2011	32.69	-97.18

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2521	Bexar	Bexar	78258	TX	6.21	34340	8/31/2011	29.65	-98.47
2522	Bexar	Bexar	78255	TX	4.44	27436	8/31/2011	29.66	-98.67
2523	Bexar	Bexar	78251	TX	5.28	31680	8/31/2011	29.47	-98.68
2524	Bexar	Bexar	78235	TX	10.1	48938.86	8/31/2011	29.35	-98.44
2525	Travis	Travis	78746	TX	5.92	25571.65	9/1/2011	30.31	-97.82
2526	Travis	Travis	78756	TX	3.42	16539.07	9/1/2011	30.32	-97.74
2527	Bosque	Hood	76665	TX	9	51760.79	9/1/2011	31.92	-97.72
2528	Collin	Collin	75069	TX	52.17	386704	9/1/2011	33.17	-96.64
2529	Travis	Travis	78746	TX	3.7	17222.42	9/2/2011	30.31	-97.82
2530	Travis	Travis	78746	TX	4.9	26278	9/2/2011	30.31	-97.82
2531	Galveston	Galveston	77573	TX	7.82	46835.88	9/7/2011	29.49	-95.09
2532	Travis	Travis	78723	TX	5.25	21980	9/8/2011	30.31	-97.68
2533	Travis	Travis	78723	TX	1.5		9/8/2011	30.31	-97.68
2534	Travis	Travis	78723	TX	6.34	22330	9/8/2011	30.31	-97.68
2535	Travis	Travis	78734	TX	8.35	55244.63	9/8/2011	30.37	-97.95
2536	Travis	Travis	78723	TX	5.55	23310	9/8/2011	30.31	-97.68
2537	El Paso	El Paso	79930	TX	4.14	28773	9/8/2011	31.81	-106.47
2538	El Paso	El Paso	79912	TX	2.53	18950	9/8/2011	31.86	-106.55
2539	El Paso	El Paso	79912	TX	6.21	44091	9/8/2011	31.86	-106.55
2540	Travis	Travis	78723	TX	2.25		9/9/2011	30.31	-97.68
2541	Travis	Travis	78722	TX	4.465	24108	9/9/2011	30.29	-97.71
2542	Travis	Travis	78723	TX	7.5	26499	9/9/2011	30.31	-97.68
2543	Travis	Travis	78723	TX	5.25	26771	9/9/2011	30.31	-97.68
2544	Travis	Travis	78747	TX	10.24	57513.04	9/9/2011	30.13	-97.73
2545	Bexar	Bexar	78260	TX	5.95	30885	9/9/2011	29.69	-98.50
2546	Bexar	Bexar	78023	TX	9.72	46371.15	9/9/2011	29.62	-98.73
2547	Bexar	Bexar	78258	TX	12	68484.33	9/9/2011	29.65	-98.47
2548	Bexar	Bexar	78230	TX	9.43	52143.5	9/9/2011	29.54	-98.56
2549	Bexar	Bexar	78023	TX	10.21	58669.94	9/9/2011	29.62	-98.73
2550	Bexar	Bexar	78023	TX	2.93	12595	9/9/2011	29.62	-98.73
2551	Travis	Travis	78723	TX	5.75	24337	9/10/2011	30.31	-97.68
2552	Travis	Travis	78723	TX	6.5	26830	9/10/2011	30.31	-97.68
2553	Travis	Travis	78723	TX	6	25232	9/10/2011	30.31	-97.68
2554	Travis	Travis	78723	TX	8.25	43973	9/10/2011	30.31	-97.68
2555	Travis	Travis	78723	TX	2.25		9/10/2011	30.31	-97.68
2556	Travis	Travis	78723	TX	9.5	40194	9/10/2011	30.31	-97.68
2557	Travis	Travis	78723	TX	3.92	29036	9/10/2011	30.31	-97.68
2558	Travis	Travis	78723	TX	2.45		9/10/2011	30.31	-97.68
2559	Travis	Travis	78723	TX	6.25	25925	9/10/2011	30.31	-97.68
2560	Travis	Travis	78723	TX	5.635	25775	9/10/2011	30.31	-97.68

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2561	Travis	Travis	78723	TX	5.635	25671	9/10/2011	30.31	-97.68
2562	Orange	Orange	77632	TX	6.56		9/11/2011	30.19	-93.81
2563	Travis	Travis	78732	TX	6.37	35614	9/11/2011	30.38	-97.89
2564	Travis	Travis	78723	TX	4	16720	9/11/2011	30.31	-97.68
2565	Travis	Travis	78723	TX	6	24832	9/11/2011	30.31	-97.68
2566	Bexar	Bexar	78254	TX	7.59	39875.76	9/12/2011	29.53	-98.78
2567	Travis	Travis	78738	TX	6.345	40791	9/13/2011	30.30	-97.97
2568	Travis	Travis	78746	TX	6.5	31503.32	9/13/2011	30.31	-97.82
2569	Bell	Williamson	76559	TX	3.68	21069.98	9/13/2011	31.08	-97.62
2570	Bexar	Bexar	78247	TX	26.91	154936	9/14/2011	29.59	-98.41
2571	Bexar	Bexar	78257	TX	38.64	238307.5	9/14/2011	29.66	-98.58
2572	Comal	Comal	78163	TX	6.1	31466.5	9/14/2011	29.77	-98.51
2573	Bexar	Bexar	78261	TX	5.98	34385	9/14/2011	29.70	-98.41
2574	Bexar	Bexar	78261	TX	5.98	30885	9/14/2011	29.70	-98.41
2575	Comal	Comal	78266	TX	1.6	17120	9/14/2011	29.63	-98.32
2576	Bexar	Bexar	78260	TX	5.52	26657.57	9/14/2011	29.69	-98.50
2577	Travis	Travis	78727	TX	4.6	20326	9/16/2011	30.43	-97.71
2578	Travis	Travis	78744	TX	9.58	45000	9/16/2011	30.20	-97.73
2579	Travis	Travis	78745	TX	6.345	29405.04	9/16/2011	30.22	-97.80
2580	Travis	Travis	78727	TX	6.345	26973.76	9/16/2011	30.43	-97.71
2581	Travis	Travis	78750	TX	6.105	27786.72	9/16/2011	30.43	-97.80
2582	Travis	Travis	78757	TX	6.21	23142.13	9/16/2011	30.35	-97.74
2583	Travis	Travis	78660	TX	3.36		9/16/2011	30.43	-97.60
2584	Travis	Travis	78746	TX	5.76	29610.4	9/16/2011	30.31	-97.82
2585	Travis	Travis	78660	TX	3.12	31232.17	9/16/2011	30.43	-97.60
2586	Travis	Travis	78723	TX	2.22	11654	9/17/2011	30.31	-97.68
2587	Travis	Travis	78723	TX	5.5	23900	9/17/2011	30.31	-97.68
2588	Travis	Travis	78723	TX	5.5	23510	9/17/2011	30.31	-97.68
2589	Travis	Travis	78723	TX	6.25	26412	9/17/2011	30.31	-97.68
2590	Travis	Travis	78723	TX	5	20767	9/17/2011	30.31	-97.68
2591	Travis	Travis	78723	TX	6.25	26416	9/17/2011	30.31	-97.68
2592	Travis	Travis	78723	TX	3.75		9/18/2011	30.31	-97.68
2593	Travis	Travis	78723	TX	4.5	21680	9/18/2011	30.31	-97.68
2594	Travis	Travis	78723	TX	2.25		9/18/2011	30.31	-97.68
2595	Travis	Travis	78723	TX	9.375	51905	9/18/2011	30.31	-97.68
2596	Travis	Travis	78723	TX	3		9/18/2011	30.31	-97.68
2597	Travis	Travis	78723	TX	8	47655	9/18/2011	30.31	-97.68
2598	Travis	Travis	78723	TX	4	26738	9/18/2011	30.31	-97.68
2599	Travis	Travis	78723	TX	7.75	18920	9/18/2011	30.31	-97.68
2600	Travis	Travis	78723	TX	8.145	51960	9/18/2011	30.31	-97.68

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2601	Montgomery	Montgomery	77384	TX	6.21	25200	9/18/2011	30.24	-95.49
2602	Travis	Travis	78748	TX	5.06	24128	9/19/2011	30.17	-97.82
2603	Travis	Travis	78723	TX	6.25	26417	9/19/2011	30.31	-97.68
2604	Travis	Travis	78723	TX	5.75	26674	9/19/2011	30.31	-97.68
2605	Travis	Travis	78723	TX	2.25		9/19/2011	30.31	-97.68
2606	Travis	Travis	78723	TX	7.5	26580	9/19/2011	30.31	-97.68
2607	Travis	Travis	78751	TX	8.37	57084	9/19/2011	30.31	-97.73
2608	Travis	Travis	78723	TX	4		9/19/2011	30.31	-97.68
2609	Travis	Travis	78723	TX	8.5	52581	9/19/2011	30.31	-97.68
2610	Travis	Travis	78723	TX	4.41	20455	9/19/2011	30.31	-97.68
2611	Dallas	Dallas	75115	TX	5.04	24200	9/19/2011	32.60	-96.86
2612	Tyler	Hardin	77664	TX	5.64	39870	9/19/2011	30.59	-94.36
2613	Bexar	Bexar	78255	TX	4.7	24165.8	9/19/2011	29.66	-98.67
2614	Travis	Travis	78723	TX	4.07	16804.14	9/20/2011	30.31	-97.68
2615	Travis	Travis	78723	TX	3.33	14983.09	9/20/2011	30.31	-97.68
2616	Travis	Travis	78723	TX	6.16	26905.91	9/20/2011	30.31	-97.68
2617	Travis	Travis	78723	TX	7.4	45506.71	9/20/2011	30.31	-97.68
2618	Travis	Travis	78723	TX	3.99	26536.7	9/20/2011	30.31	-97.68
2619	Travis	Travis	78723	TX	1.48		9/20/2011	30.31	-97.68
2620	Travis	Travis	78723	TX	7.585	25372.57	9/20/2011	30.31	-97.68
2621	Travis	Travis	78723	TX	5.92	29506.01	9/20/2011	30.31	-97.68
2622	Travis	Travis	78723	TX	4.44	25372.57	9/20/2011	30.31	-97.68
2623	Travis	Travis	78723	TX	3.33	28292	9/20/2011	30.31	-97.68
2624	Travis	Travis	78723	TX	9.25	24450.47	9/20/2011	30.31	-97.68
2625	Travis	Travis	78723	TX	1.665	21645.62	9/20/2011	30.31	-97.68
2626	Travis	Travis	78723	TX	3.885	17473.61	9/20/2011	30.31	-97.68
2627	Travis	Travis	78723	TX	3.675	16198	9/20/2011	30.31	-97.68
2628	Grayson	Collin	75491	TX	5.64	33276	9/20/2011	33.48	-96.39
2629	Bexar	Bexar	78209	TX	3.29	20400	9/20/2011	29.49	-98.45
2630	Bexar	Bexar	78255	TX	3.5	18637.44	9/20/2011	29.66	-98.67
2631	El Paso	El Paso	79936	TX	25.38	108855.64	9/21/2011	31.76	-106.29
2632	Travis	Travis	78705	TX	5.06	24794	9/22/2011	30.30	-97.74
2633	Travis	Travis	78704	TX	2.5	12725	9/22/2011	30.25	-97.77
2634	Travis	Travis	78728	TX	4.8	23000	9/22/2011	30.46	-97.68
2635	Travis	Travis	78759	TX	5.29	24840	9/22/2011	30.40	-97.75
2636	Travis	Travis	78704	TX	2.82	13872.8	9/22/2011	30.25	-97.77
2637	Travis	Travis	78704	TX	5.25	27600	9/22/2011	30.25	-97.77
2638	Travis	Travis	78703	TX	3.64	21792.65	9/22/2011	30.29	-97.77
2639	Travis	Travis	78759	TX	9.1	42417.3	9/22/2011	30.40	-97.75
2640	Travis	Travis	78733	TX	6.48	30451.22	9/22/2011	30.33	-97.87

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
2641	Travis	Travis	78735	TX	6.11	35000	9/22/2011	30.26	-97.86
2642	Travis	Travis	78746	TX	3.44		9/23/2011	30.31	-97.82
2643	Travis	Travis	78723	TX	4.5	32820.29	9/23/2011	30.31	-97.68
2644	Travis	Travis	78723	TX	2.82	22583.45	9/23/2011	30.31	-97.68
2645	Travis	Travis	78723	TX	3.29		9/23/2011	30.31	-97.68
2646	Travis	Travis	78723	TX	5.98	25866.08	9/23/2011	30.31	-97.68
2647	Travis	Travis	78723	TX	6.24	28205	9/23/2011	30.31	-97.68
2648	Travis	Travis	78731	TX	12.645	55090.86	9/23/2011	30.35	-97.77
2649	Travis	Travis	78735	TX	9.165	49247.95	9/23/2011	30.26	-97.86
2650	Travis	Travis	78723	TX	6.85	19321	9/24/2011	30.31	-97.68
2651	Travis	Travis	78723	TX	2	18342	9/24/2011	30.31	-97.68
2652	Travis	Travis	78723	TX	2.25		9/24/2011	30.31	-97.68
2653	Travis	Travis	78723	TX	7.25	26380	9/24/2011	30.31	-97.68
2654	Travis	Travis	78723	TX	6.88	17143	9/24/2011	30.31	-97.68
2655	Travis	Travis	78723	TX	7.25	45232	9/24/2011	30.31	-97.68
2656	Travis	Travis	78723	TX	3.24	28787	9/24/2011	30.31	-97.68
2657	Travis	Travis	78723	TX	5.25	22332	9/25/2011	30.31	-97.68
2658	Travis	Travis	78723	TX	3.25		9/25/2011	30.31	-97.68
2659	Travis	Travis	78723	TX	6.25	26243	9/25/2011	30.31	-97.68
2660	Travis	Travis	78723	TX	2.5	21853	9/25/2011	30.31	-97.68
2661	Travis	Travis	78723	TX	4.945	20539	9/25/2011	30.31	-97.68
2662	Travis	Travis	78723	TX	7.75	46844	9/25/2011	30.31	-97.68
2663	Travis	Travis	78723	TX	2.5		9/25/2011	30.31	-97.68
2664	Travis	Travis	78723	TX	6.25	26492	9/25/2011	30.31	-97.68
2665	Travis	Travis	78723	TX	8.945	26159	9/25/2011	30.31	-97.68
2666	Travis	Travis	78723	TX	3.5	20804	9/25/2011	30.31	-97.68
2667	Travis	Travis	78723	TX	8	44055	9/25/2011	30.31	-97.68
2668	Travis	Travis	78723	TX	3.705	15879	9/25/2011	30.31	-97.68
2669	Travis	Travis	78723	TX	6.25	26763	9/25/2011	30.31	-97.68
2670	Travis	Travis	78723	TX	6.37	29045	9/25/2011	30.31	-97.68
2671	Travis	Travis	78752	TX	5.52	21481.75	9/26/2011	30.33	-97.71
2672	Travis	Travis	78734	TX	6.9	41193.43	9/26/2011	30.37	-97.95
2673	Travis	Travis	78745	TX	4.07	19324.42	9/26/2011	30.22	-97.80
2674	Travis	Travis	78749	TX	4.07	19392.09	9/26/2011	30.22	-97.86
2675	Travis	Travis	78704	TX	5.55	25350.92	9/26/2011	30.25	-97.77
2676	Travis	Travis	78747	TX	4.995	23485.47	9/26/2011	30.13	-97.73
2677	Travis	Travis	78731	TX	6.105	28503.92	9/26/2011	30.35	-97.77
2678	Travis	Travis	78759	TX	2.99	14044.38	9/26/2011	30.40	-97.75
2679	Travis	Travis	78744	TX	3.7	17277.63	9/26/2011	30.20	-97.73
2680	Travis	Travis	78732	TX	3.7	17363	9/26/2011	30.38	-97.89

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
2681	Travis	Travis	78731	TX	5.4	24850.42	9/26/2011	30.35	-97.77
2682	Wichita	Denton	76310	TX	9.8	54984.48	9/26/2011	33.79	-98.51
2683	Dallas	Dallas	75006	TX	3.22	44046	9/26/2011	32.97	-96.89
2684	Travis	Travis	78704	TX	4.5	19220	9/27/2011	30.25	-97.77
2685	Travis	Travis	78723	TX	2.5	20155	9/27/2011	30.31	-97.68
2686	Travis	Travis	78723	TX	2.25		9/27/2011	30.31	-97.68
2687	Travis	Travis	78746	TX	8.5	51959	9/27/2011	30.31	-97.82
2688	Travis	Travis	78705	TX	1.75		9/27/2011	30.30	-97.74
2689	Travis	Travis	78723	TX	6.25	19282	9/27/2011	30.31	-97.68
2690	Travis	Travis	78746	TX	11.02	57085.04	9/27/2011	30.31	-97.82
2691	Travis	Travis	78702	TX	4	18346	9/27/2011	30.26	-97.71
2692	Travis	Travis	78753	TX	6.125	27584	9/27/2011	30.39	-97.67
2693	Travis	Travis	78703	TX	6.5	27742	9/27/2011	30.29	-97.77
2694	Travis	Travis	78723	TX	4.5	22601	9/27/2011	30.31	-97.68
2695	Grimes	Montgomery	77868	TX	3.76	17715	9/27/2011	30.34	-96.03
2696	El Paso	El Paso	79912	TX	9.89	67147	9/27/2011	31.86	-106.55
2697	Bexar	Bexar	78247	TX	8.14	42260.03	9/27/2011	29.59	-98.41
2698	Bexar	Bexar	78247	TX	6.11	32685.35	9/27/2011	29.59	-98.41
2699	Bexar	Bexar	78222	TX	5.52	25751.08	9/27/2011	29.37	-98.39
2700	Bexar	Bexar	78254	TX	1.05	5339.4	9/27/2011	29.53	-98.78
2701	Bexar	Bexar	78216	TX	5.64	26525	9/27/2011	29.55	-98.50
2702	Travis	Travis	78703	TX	4.14	23183.17	9/28/2011	30.29	-97.77
2703	Travis	Travis	78756	TX	1.38		9/28/2011	30.32	-97.74
2704	Travis	Travis	78704	TX	2.76	12420	9/28/2011	30.25	-97.77
2705	Travis	Travis	78756	TX	3.68	21252	9/28/2011	30.32	-97.74
2706	Travis	Travis	78703	TX	10.73	44405.4	9/28/2011	30.29	-97.77
2707	Travis	Travis	78746	TX	6.3	38208	9/28/2011	30.31	-97.82
2708	Dallas	Dallas	75150	TX	10.29	105000	9/28/2011	32.82	-96.63
2709	Bexar	Bexar	78217	TX	4.23	25103.5	9/28/2011	29.54	-98.42
2710	Bexar	Bexar	78227	TX	4.14	20493	9/28/2011	29.41	-98.63
2711	Tyler	Hardin	77664	TX	5.64		9/29/2011	30.59	-94.36
2712	Travis	Travis	78749	TX	1.41		9/29/2011	30.22	-97.86
2713	Travis	Travis	78736	TX	2.53	11511	9/29/2011	30.25	-97.95
2714	Travis	Travis	78749	TX	4.6	28166	9/29/2011	30.22	-97.86
2715	Travis	Travis	78749	TX	4.23	30674	9/29/2011	30.22	-97.86
2716	Travis	Travis	78749	TX	5.772	18113	9/29/2011	30.22	-97.86
2717	Travis	Travis	78749	TX	1.84		9/29/2011	30.22	-97.86
2718	Travis	Travis	78759	TX	11.473	53450.5	9/29/2011	30.40	-97.75
2719	Travis	Travis	78734	TX	6.96	45267	9/29/2011	30.37	-97.95
2720	Travis	Travis	78747	TX	6.12	29986	9/29/2011	30.13	-97.73

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2721	Travis	Travis	78746	TX	6.105	29953.55	9/29/2011	30.31	-97.82
2722	Travis	Travis	78749	TX	1.665		9/29/2011	30.22	-97.86
2723	Travis	Travis	78660	TX	6.21	37123.33	9/29/2011	30.43	-97.60
2724	Travis	Travis	78752	TX	4.7	22810	9/29/2011	30.33	-97.71
2725	Travis	Travis	78757	TX	6.44	29243.29	9/29/2011	30.35	-97.74
2726	Travis	Travis	78735	TX	3.76	22903	9/30/2011	30.26	-97.86
2727	Travis	Travis	78723	TX	3.96	17700	9/30/2011	30.31	-97.68
2728	Travis	Travis	78723	TX	1.08		9/30/2011	30.31	-97.68
2729	Travis	Travis	78723	TX	2.94		9/30/2011	30.31	-97.68
2730	Travis	Travis	78723	TX	6.21	26082	9/30/2011	30.31	-97.68
2731	Travis	Travis	78722	TX	9.81	34444	9/30/2011	30.29	-97.71
2732	Travis	Travis	78723	TX	1.62		9/30/2011	30.31	-97.68
2733	Travis	Travis	78723	TX	5.92	27461.44	9/30/2011	30.31	-97.68
2734	Travis	Travis	78723	TX	7.31	25657.59	9/30/2011	30.31	-97.68
2735	Travis	Travis	78756	TX	6.475	50096.65	9/30/2011	30.32	-97.74
2736	Travis	Travis	78723	TX	7.07	44463	9/30/2011	30.31	-97.68
2737	Travis	Travis	78723	TX	3.525	26944.11	9/30/2011	30.31	-97.68
2738	Travis	Travis	78723	TX	7.365	25118	9/30/2011	30.31	-97.68
2739	Travis	Travis	78722	TX	1.85	25385.13	9/30/2011	30.29	-97.71
2740	Travis	Travis	78723	TX	5.92	26064	9/30/2011	30.31	-97.68
2741	Travis	Travis	78723	TX	3.33	14665.77	9/30/2011	30.31	-97.68
2742	Travis	Travis	78723	TX	1.665	18190	9/30/2011	30.31	-97.68
2743	Travis	Travis	78723	TX	7.45	22058	9/30/2011	30.31	-97.68
2744	Travis	Travis	78723	TX	3.7	16291.47	9/30/2011	30.31	-97.68
2745	Travis	Travis	78759	TX	0.94		9/30/2011	30.40	-97.75
2746	Travis	Travis	78723	TX	6.11	25392.96	9/30/2011	30.31	-97.68
2747	Travis	Travis	78723	TX	6.615	28800	9/30/2011	30.31	-97.68
2748	Travis	Travis	78759	TX	4.23	28331	9/30/2011	30.40	-97.75
2749	Travis	Travis	78757	TX	6.345	30997	9/30/2011	30.35	-97.74
2750	Travis	Travis	78723	TX	6.345	25791.14	9/30/2011	30.31	-97.68
2751	Travis	Travis	78723	TX	14.75	66299.96	9/30/2011	30.31	-97.68
2752	Travis	Travis	78723	TX	6.37	26501	9/30/2011	30.31	-97.68
2753	Travis	Travis	78734	TX	8.14	22169.22	9/30/2011	30.37	-97.95
2754	Travis	Travis	78723	TX	5.55	24433.82	9/30/2011	30.31	-97.68
2755	Travis	Travis	78704	TX	1.6	8651	10/1/2011	30.25	-97.77
2756	Ellis	Ellis	75154	TX	10.29	105000	10/3/2011	32.51	-96.77
2757	Cherokee	Smith	75766	TX	10.248	56900	10/3/2011	31.93	-95.27
2758	Denton	Denton	75022	TX	10.12	35856.73	10/4/2011	33.02	-97.13
2759	Brewster	El Paso	79830	TX	4.9	29280	10/5/2011	29.72	-103.22
2760	Dallas	Dallas	75082	TX	4.83	25000	10/6/2011	33.00	-96.66

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
2761	Denton	Denton	76226	TX	1.26	8262	10/6/2011	33.12	-97.16
2762	Orange	Orange	77632	TX	5.4	26550	10/6/2011	30.22	-93.80
2763	Travis	Travis	78757	TX	6.44	33000	10/8/2011	30.35	-97.74
2764	Walker	Montgomery	77320	TX	23	79524	10/10/2011	30.82	-95.52
2765	Medina	Bexar	78059	TX	8.5	42300	10/10/2011	29.18	-98.85
2766	Travis	Travis	78746	TX	7.755	35002	10/11/2011	30.31	-97.82
2767	Travis	Travis	78723	TX	3.91		10/11/2011	30.31	-97.68
2768	Travis	Travis	78723	TX	8.28	54498	10/11/2011	30.31	-97.68
2769	Travis	Travis	78731	TX	5.76	34526.53	10/11/2011	30.35	-97.77
2770	Dallas	Dallas	75211	TX	5.16	41176.8	10/11/2011	32.74	-96.89
2771	Travis	Travis	78723	TX	3.33	14667.72	10/12/2011	30.31	-97.68
2772	Wichita	Denton	76310	TX	32.4	312775.22	10/12/2011	33.79	-98.51
2773	Travis	Travis	78746	TX	6.125	25042	10/13/2011	30.31	-97.82
2774	Montgomery	Montgomery	77306	TX	4.6	17560	10/13/2011	30.27	-95.32
2775	Montgomery	Montgomery	77306	TX	5.98	36840	10/13/2011	30.27	-95.32
2776	Dallas	Dallas	75088	TX	20.58	215250	10/14/2011	32.90	-96.55
2777	Bexar	Bexar	78260	TX	1	9180	10/14/2011	29.69	-98.50
2778	Bexar	Bexar	78258	TX	8.28	41234.4	10/14/2011	29.65	-98.47
2779	Dallas	Dallas	75052	TX	10.29	105000	10/17/2011	32.68	-97.03
2780	Dallas	Dallas	75052	TX	10.29	105000	10/17/2011	32.68	-97.03
2781	Van Zandt	Henderson	75790	TX	6.48	35400	10/17/2011	32.51	-95.64
2782	Bexar	Bexar	78230	TX	36	237787	10/17/2011	29.54	-98.56
2783	Comal	Comal	78266	TX	6.66	33895.92	10/17/2011	29.63	-98.32
2784	Bexar	Bexar	78259	TX	10.58	46890	10/17/2011	29.62	-98.43
2785	Dallas	Dallas	75052	TX	10.29	105000	10/18/2011	32.68	-97.03
2786	Dallas	Dallas	75052	TX	10.29	105000	10/18/2011	32.68	-97.03
2787	Dallas	Dallas	75019	TX	4.07	22156.42	10/18/2011	32.96	-97.00
2788	Bexar	Bexar	78258	TX	6.58	39480	10/18/2011	29.65	-98.47
2789	Comal	Comal	78266	TX	28.8	144000	10/18/2011	29.63	-98.32
2790	El Paso	El Paso	79902	TX	10.34	53251	10/20/2011	31.79	-106.49
2791	Travis	Travis	78733	TX	4.14	21126.42	10/21/2011	30.33	-97.87
2792	Travis	Travis	78723	TX	6.66	29500	10/21/2011	30.31	-97.68
2793	Parker	Parker	76087	TX	2.5	13800	10/21/2011	32.61	-97.83
2794	Travis	Travis	78660	TX	7.77	33455.42	10/21/2011	30.43	-97.60
2795	El Paso	El Paso	79938	TX	4.6	32430	10/21/2011	31.84	-105.92
2796	Morris	Upshur	75571	TX	5.4	23500	10/23/2011	33.19	-94.75
2797	Dallas	Dallas	75051	TX	10.29	105000	10/24/2011	32.73	-96.99
2798	Dallas	Dallas	75051	TX	10.29	105000	10/24/2011	32.73	-96.99
2799	Jeff Davis	El Paso	79734	TX	2.688	20591.18	10/24/2011	30.77	-104.01
2800	Archer	Parker	76366	TX	10.8	104258.41	10/25/2011	33.71	-98.79

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
2801	Dallas	Dallas	75082	TX	5.85	40535.63	10/25/2011	33.00	-96.66
2802	Bexar	Bexar	78247	TX	5.98	35744.83	10/25/2011	29.59	-98.41
2803	Bexar	Bexar	78249	TX	36	237787	10/25/2011	29.57	-98.61
2804	Bexar	Bexar	78254	TX	18.48	101455	10/25/2011	29.53	-98.78
2805	Travis	Travis	78732	TX	6.44	30500	10/26/2011	30.38	-97.89
2806	Dallas	Dallas	75019	TX	2.4	8588.55	10/26/2011	32.96	-97.00
2807	Dallas	Dallas	75048	TX	5.52	24189.89	10/27/2011	32.96	-96.57
2808	Brown	Hood	76890	TX	5.22	28665	10/27/2011	31.71	-98.77
2809	Dallas	Dallas	75230	TX	2.99	44935	10/28/2011	32.90	-96.79
2810	El Paso	El Paso	79901	TX	10.8	140000	10/28/2011	31.76	-106.48
2811	El Paso	El Paso	79925	TX	3.76	18918.88	10/30/2011	31.80	-106.36
2812	Travis	Travis	78747	TX	3.515	21242.29	10/31/2011	30.13	-97.73
2813	Travis	Travis	78747	TX	3.5	21301.09	10/31/2011	30.13	-97.73
2814	Travis	Travis	78747	TX	3.5	20790.08	10/31/2011	30.13	-97.73
2815	Travis	Travis	78744	TX	3.5	20790.08	10/31/2011	30.20	-97.73
2816	Travis	Travis	78744	TX	3.515	21048.7	10/31/2011	30.20	-97.73
2817	Travis	Travis	78744	TX	3.515	21301.09	10/31/2011	30.20	-97.73
2818	Travis	Travis	78744	TX	3.5	21301.14	10/31/2011	30.20	-97.73
2819	Travis	Travis	78617	TX	3.5	20790.08	10/31/2011	30.15	-97.59
2820	Travis	Travis	78617	TX	3.515	21301.09	10/31/2011	30.15	-97.59
2821	Cherokee	Smith	75766	TX	20.496	77800	10/31/2011	31.93	-95.27
2822	Travis	Travis	78722	TX	7.585	50912.77	11/1/2011	30.29	-97.71
2823	Travis	Travis	78723	TX	3.68		11/1/2011	30.31	-97.68
2824	Travis	Travis	78723	TX	6.29	28680.3	11/1/2011	30.31	-97.68
2825	Dallas	Dallas	75082	TX	5.25	41895	11/1/2011	33.00	-96.66
2826	Tarrant	Tarrant	76018	TX	4.7	37506	11/1/2011	32.67	-97.08
2827	Rusk	Rusk	75654	TX	2.665	24241	11/1/2011	32.12	-94.94
2828	El Paso	El Paso	79912	TX	8.46	41454	11/1/2011	31.86	-106.55
2829	Clay	Parker	76365	TX	10.34	52925	11/2/2011	33.79	-98.22
2830	Denton	Denton	75056	TX	5.52	31062.5	11/3/2011	33.08	-96.91
2831	Collin	Collin	75002	TX	5.28	27675	11/4/2011	33.10	-96.64
2832	Bexar	Bexar	78244	TX	8.28	37708	11/4/2011	29.47	-98.35
2833	Bexar	Bexar	78209	TX	4.9	25119.15	11/4/2011	29.49	-98.45
2834	Bexar	Bexar	78209	TX	8.97	48199	11/4/2011	29.49	-98.45
2835	Bexar	Bexar	78209	TX	5.17	26392	11/4/2011	29.49	-98.45
2836	Bexar	Bexar	78222	TX	43.68	219710	11/4/2011	29.37	-98.39
2837	Bexar	Bexar	78209	TX	5.98	35804.2	11/4/2011	29.49	-98.45
2838	Bexar	Bexar	78230	TX	9.2	52440	11/4/2011	29.54	-98.56
2839	Travis	Travis	78756	TX	19.6		11/7/2011	30.32	-97.74
2840	Bexar	Bexar	78264	TX	31.68	139350	11/7/2011	29.17	-98.51

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2841	Bexar	Bexar	78249	TX	10.5	46850	11/7/2011	29.57	-98.61
2842	Bexar	Bexar	78253	TX	4.32	24480	11/7/2011	29.47	-98.81
2843	Kendall	Bexar	78015	TX	7.48	35515	11/7/2011	29.75	-98.65
2844	Bexar	Bexar	78251	TX	6	29048	11/7/2011	29.47	-98.68
2845	Bexar	Bexar	78227	TX	81.54	298205	11/7/2011	29.41	-98.63
2846	Tarrant	Tarrant	76063	TX	41.16	432180	11/8/2011	32.56	-97.14
2847	Dallas	Dallas	75229	TX	3.29	18095	11/8/2011	32.90	-96.87
2848	Dallas	Dallas	75234	TX	5.52	31062.5	11/8/2011	32.92	-96.87
2849	Collin	Collin	75023	TX	10.29	105000	11/9/2011	33.06	-96.73
2850	Dallas	Dallas	75236	TX	3.91	23640	11/10/2011	32.69	-96.94
2851	Tarrant	Tarrant	76133	TX	5.29	31740	11/11/2011	32.65	-97.38
2852	Montgomery	Montgomery	77378	TX	5.4	30001	11/11/2011	30.49	-95.33
2853	Tarrant	Tarrant	76133	TX	2.3	13800	11/14/2011	32.65	-97.38
2854	Montgomery	Montgomery	77382	TX	5.17	17380.8	11/14/2011	30.20	-95.55
2855	Dallas	Dallas	75211	TX	3.76	19387.5	11/15/2011	32.74	-96.89
2856	Denton	Denton	75007	TX	2.53	12770	11/15/2011	33.01	-96.89
2857	El Paso	El Paso	79936	TX	6.21	41545	11/15/2011	31.76	-106.29
2858	Bexar	Bexar	78263	TX	8.46	29837	11/15/2011	29.36	-98.32
2859	Kendall	Bexar	78006	TX	5.98	18884	11/15/2011	29.92	-98.70
2860	Bexar	Bexar	78260	TX	5.98	18883.72	11/15/2011	29.69	-98.50
2861	Brown	Hood	76801	TX	27.73	199656	11/16/2011	31.81	-99.06
2862	El Paso	El Paso	79936	TX	1.41	7755	11/16/2011	31.76	-106.29
2863	Bexar	Bexar	78233	TX	5.98	25385	11/16/2011	29.56	-98.36
2864	Travis	Travis	78746	TX	5.612	26025.69	11/18/2011	30.31	-97.82
2865	Dallas	Dallas	75244	TX	6.9	40482	11/18/2011	32.93	-96.84
2866	Leon	Montgomery	75846	TX	10.12	43790	11/18/2011	31.32	-96.17
2867	Panola	Rusk	75633	TX	21.6	111521.37	11/20/2011	32.15	-94.27
2868	Tarrant	Tarrant	76051	TX	5.805	46323.9	11/21/2011	32.95	-97.07
2869	Collin	Collin	75093	TX	6.45	51471	11/21/2011	33.04	-96.82
2870	Ellis	Ellis	75154	TX	9.03	72059.4	11/21/2011	32.51	-96.77
2871	Montgomery	Montgomery	77385	TX	4.08	27200	11/21/2011	30.20	-95.43
2872	Coryell	Williamson	76538	TX	6.9	44331	11/21/2011	31.63	-97.89
2873	Dallas	Dallas	75243	TX	5.17	34845	11/22/2011	32.91	-96.74
2874	Navarro	Ellis	75155	TX	7.36	42574	11/22/2011	32.21	-96.47
2875	Robertson	Williamson	76629	TX	4.86	14489	11/22/2011	31.16	-96.69
2876	El Paso	El Paso	79912	TX	7.99	33717.8	11/22/2011	31.86	-106.55
2877	El Paso	El Paso	79924	TX	5.4	34560	11/22/2011	31.90	-106.43
2878	Collin	Collin	75013	TX	4.08	21431	11/23/2011	33.11	-96.70
2879	El Paso	El Paso	79901	TX	26.91	135312.5	11/23/2011	31.76	-106.48
2880	El Paso	El Paso	79901	TX	9.88	54125	11/23/2011	31.76	-106.48

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
2881	Dallas	Dallas	75218	TX	4.8	31950	11/28/2011	32.84	-96.70
2882	Smith	Smith	75771	TX	10.12	59634	11/28/2011	32.53	-95.41
2883	El Paso	El Paso	79922	TX	9.75	53743.05	11/28/2011	31.83	-106.58
2884	El Paso	El Paso	79928	TX	3.68	23920	11/28/2011	31.66	-106.13
2885	Bexar	Bexar	78244	TX	6.11	33094	11/28/2011	29.47	-98.35
2886	Smith	Smith	75703	TX	14.85	76726	11/29/2011	32.26	-95.32
2887	Cherokee	Smith	75766	TX	6.345	37100	11/29/2011	31.93	-95.27
2888	El Paso	El Paso	79912	TX	6.58	32242	11/29/2011	31.86	-106.55
2889	El Paso	El Paso	79902	TX	7.05	3660	11/29/2011	31.79	-106.49
2890	El Paso	El Paso	79936	TX	5.17	32500	11/29/2011	31.76	-106.29
2891	El Paso	El Paso	79936	TX	3.96	10600	11/29/2011	31.76	-106.29
2892	El Paso	El Paso	79936	TX	1.88	15040	11/29/2011	31.76	-106.29
2893	El Paso	El Paso	79912	TX	0.94	4888	11/29/2011	31.86	-106.55
2894	Bexar	Bexar	78239	TX	6.66	29356.57	11/29/2011	29.52	-98.36
2895	Gregg	Gregg	75603	TX	16.796	76300	11/30/2011	32.38	-94.71
2896	El Paso	El Paso	79922	TX	9.66	60625	11/30/2011	31.83	-106.58
2897	El Paso	El Paso	79932	TX	10.06	57683	11/30/2011	31.89	-106.62
2898	El Paso	El Paso	79925	TX	1.075	7895	11/30/2011	31.80	-106.36
2899	El Paso	El Paso	79936	TX	2.99	17818	11/30/2011	31.76	-106.29
2900	El Paso	El Paso	79925	TX	7.2	45360	11/30/2011	31.80	-106.36
2901	El Paso	El Paso	79902	TX	9.89	53864	11/30/2011	31.79	-106.49
2902	El Paso	El Paso	79932	TX	5.06	30049	11/30/2011	31.89	-106.62
2903	El Paso	El Paso	79912	TX	4.935	28898	11/30/2011	31.86	-106.55
2904	El Paso	El Paso	79912	TX	9.4	64017	11/30/2011	31.86	-106.55
2905	El Paso	El Paso	79912	TX	10.24	64500	11/30/2011	31.86	-106.55
2906	El Paso	El Paso	79932	TX	6.58	42770	11/30/2011	31.89	-106.62
2907	El Paso	El Paso	79912	TX	2.76	16747	11/30/2011	31.86	-106.55
2908	El Paso	El Paso	79912	TX	3.91	23560	11/30/2011	31.86	-106.55
2909	El Paso	El Paso	79911	TX	2.82	16615	11/30/2011	31.89	-106.54
2910	El Paso	El Paso	79821	TX	6.6	36300	11/30/2011	31.99	-106.59
2911	El Paso	El Paso	79932	TX	5.06	30461.2	11/30/2011	31.89	-106.62
2912	El Paso	El Paso	79912	TX	10.24	64500	11/30/2011	31.86	-106.55
2913	El Paso	El Paso	79932	TX	6.58	61060	11/30/2011	31.89	-106.62
2914	Bexar	Bexar	78209	TX	12	46802	11/30/2011	29.49	-98.45
2915	Comal	Comal	78163	TX	2.64	13944.97	11/30/2011	29.77	-98.51
2916	Travis	Travis	78705	TX	13.2	70825	12/1/2011	30.30	-97.74
2917	Travis	Travis	78759	TX	21.1	106622.89	12/1/2011	30.40	-97.75
2918	Travis	Travis	78744	TX	20.2	160512	12/1/2011	30.20	-97.73
2919	Ellis	Ellis	75165	TX	10.08	153770	12/1/2011	32.38	-96.77
2920	Ellis	Ellis	75154	TX	10.29	102900	12/1/2011	32.51	-96.77

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2921	Ellis	Ellis	76065	TX	10.29	102900	12/1/2011	32.48	-96.96
2922	Tarrant	Tarrant	76054	TX	9.99	32053.91	12/1/2011	32.86	-97.18
2923	Ellis	Ellis	76065	TX	9.03	72059	12/2/2011	32.48	-96.96
2924	Tarrant	Tarrant	76107	TX	2.58	20588	12/2/2011	32.74	-97.38
2925	Tarrant	Tarrant	76040	TX	9.89	78922	12/2/2011	32.82	-97.10
2926	Ellis	Ellis	76065	TX	10.08	102900	12/2/2011	32.48	-96.96
2927	Ellis	Ellis	75154	TX	10.29	102900	12/2/2011	32.51	-96.77
2928	Ellis	Ellis	75154	TX	10.29	102900	12/2/2011	32.51	-96.77
2929	Dallas	Dallas	75089	TX	5.145	51450	12/2/2011	32.94	-96.55
2930	McLennan	Ellis	76708	TX	5.28	39000	12/4/2011	31.62	-97.21
2931	Tarrant	Tarrant	76179	TX	10.08	100800	12/4/2011	32.92	-97.46
2932	Dallas	Dallas	75043	TX	10.29	102900	12/4/2011	32.85	-96.59
2933	Tarrant	Tarrant	76034	TX	9.66	46592	12/4/2011	32.89	-97.15
2934	Travis	Travis	78758	TX	3.29	17668	12/5/2011	30.39	-97.70
2935	Travis	Travis	78736	TX	2.16	8179.67	12/5/2011	30.25	-97.95
2936	Travis	Travis	78758	TX	3.29	17668	12/5/2011	30.39	-97.70
2937	Dallas	Dallas	75006	TX	11.04	72034	12/5/2011	32.97	-96.89
2938	Tarrant	Tarrant	76182	TX	9.165	73136.7	12/5/2011	32.88	-97.21
2939	Tarrant	Tarrant	76012	TX	6.02	48040	12/5/2011	32.76	-97.14
2940	Dallas	Dallas	75238	TX	4.305	34354	12/5/2011	32.88	-96.71
2941	Orange	Orange	77611	TX	17.28	57769	12/5/2011	30.00	-93.81
2942	El Paso	El Paso	79936	TX	5.06	12650	12/5/2011	31.76	-106.29
2943	Bexar	Bexar	78253	TX	4.6	26220	12/5/2011	29.47	-98.81
2944	Travis	Travis	78732	TX	2.31	7757.09	12/6/2011	30.38	-97.89
2945	Travis	Travis	78745	TX	6.105	28995.57	12/6/2011	30.22	-97.80
2946	Travis	Travis	78723	TX	6.44	26315	12/6/2011	30.31	-97.68
2947	Dallas	Dallas	75062	TX	101.64	483436.89	12/6/2011	32.84	-96.98
2948	Tarrant	Tarrant	76052	TX	3.515	21565.13	12/6/2011	32.98	-97.38
2949	Tarrant	Tarrant	76036	TX	3.515	21565.13	12/6/2011	32.57	-97.42
2950	Ellis	Ellis	75165	TX	9.03	72059.4	12/6/2011	32.38	-96.77
2951	Tarrant	Tarrant	76148	TX	5.16	41176.8	12/6/2011	32.86	-97.25
2952	Denton	Denton	75007	TX	3.45	34500	12/6/2011	33.01	-96.89
2953	Williamson	Williamson	78674	TX	4.68	16280.44	12/6/2011	30.67	-97.59
2954	Dallas	Dallas	75214	TX	7.2	37675	12/6/2011	32.82	-96.74
2955	Bexar	Bexar	78216	TX	23.2	204876	12/6/2011	29.55	-98.50
2956	Dallas	Dallas	75220	TX	15.84	6000	12/7/2011	32.86	-96.87
2957	Tarrant	Tarrant	76053	TX	4.73	37745	12/7/2011	32.82	-97.19
2958	Collin	Collin	75287	TX	2.585	20628	12/7/2011	33.00	-96.84
2959	Bell	Williamson	76513	TX	10.8	64891.13	12/7/2011	31.07	-97.50
2960	Smith	Smith	75701	TX	19.44	83000	12/7/2011	32.32	-95.30

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
2961	Smith	Smith	75703	TX	7.92	33500	12/7/2011	32.26	-95.32
2962	Dallas	Dallas	75089	TX	10.29	102900	12/7/2011	32.94	-96.55
2963	Dallas	Dallas	75217	TX	10.29	102900	12/7/2011	32.71	-96.67
2964	Rockwall	Rockwall	75032	TX	11.28	48000	12/7/2011	32.86	-96.42
2965	Dallas	Dallas	75248	TX	11	44447.14	12/7/2011	32.97	-96.78
2966	Dallas	Dallas	75230	TX	5.76	48300	12/7/2011	32.90	-96.79
2967	Ellis	Ellis	76065	TX	12.22	41900	12/7/2011	32.48	-96.96
2968	Lamar	Hunt	75473	TX	9.89	52624	12/7/2011	33.82	-95.49
2969	Gregg	Gregg	75604	TX	9.6	49000	12/7/2011	32.50	-94.80
2970	Red River	Upshur	75554	TX	4.1	28175	12/7/2011	33.55	-94.79
2971	Bowie	Upshur	75501	TX	4.1	28175	12/7/2011	33.39	-94.13
2972	Bowie	Upshur	75503	TX	4.1	28175	12/7/2011	33.53	-94.13
2973	El Paso	El Paso	79922	TX	3.22	8850	12/7/2011	31.83	-106.58
2974	Travis	Travis	78746	TX	4.7	20235.27	12/8/2011	30.31	-97.82
2975	Tarrant	Tarrant	76054	TX	6.02	48039.6	12/8/2011	32.86	-97.18
2976	Williamson	Williamson	78681	TX	7.92	35640	12/8/2011	30.52	-97.71
2977	Tarrant	Tarrant	76108	TX	8.97	35505	12/8/2011	32.77	-97.51
2978	Bell	Williamson	76548	TX	7.32	30171	12/8/2011	31.07	-97.67
2979	El Paso	El Paso	79912	TX	2.4	5950	12/9/2011	31.86	-106.55
2980	El Paso	El Paso	79936	TX	30.36	192032	12/11/2011	31.76	-106.29
2981	Travis	Travis	78747	TX	6.3	25784.31	12/12/2011	30.13	-97.73
2982	Bexar	Bexar	78233	TX	1	6198	12/12/2011	29.56	-98.36
2983	Bexar	Bexar	78258	TX	6.11	31221	12/12/2011	29.65	-98.47
2984	Tarrant	Tarrant	76244	TX	4.16	21840	12/14/2011	32.95	-97.28
2985	Bexar	Bexar	78255	TX	4.5	25560	12/14/2011	29.66	-98.67
2986	Bexar	Bexar	78232	TX	5.98	27508	12/14/2011	29.59	-98.46
2987	Bexar	Bexar	78260	TX	4.62	20800	12/14/2011	29.69	-98.50
2988	Travis	Travis	78703	TX	2.88	11553	12/15/2011	30.29	-97.77
2989	Bexar	Bexar	78255	TX	5.06	27335.63	12/16/2011	29.66	-98.67
2990	Bexar	Bexar	78249	TX	5.76	30240	12/16/2011	29.57	-98.61
2991	Bexar	Bexar	78260	TX	9.2	51060	12/16/2011	29.69	-98.50
2992	Bexar	Bexar	78216	TX	8.46	39547.12	12/16/2011	29.55	-98.50
2993	Bexar	Bexar	78213	TX	5.94	28684.06	12/16/2011	29.50	-98.52
2994	Comal	Comal	78163	TX	4	21057.3	12/16/2011	29.77	-98.51
2995	Orange	Orange	77662	TX	7.1		12/19/2011	30.17	-94.01
2996	Travis	Travis	78731	TX	6.345	28369.28	12/19/2011	30.35	-97.77
2997	Williamson	Williamson	78681	TX	3.525	23400	12/19/2011	30.52	-97.71
2998	Bexar	Bexar	78240	TX	7.2	34860.74	12/19/2011	29.53	-98.61
2999	Bexar	Bexar	78023	TX	4.17	21000	12/19/2011	29.62	-98.73
3000	Bexar	Bexar	78023	TX	5.52	24596.68	12/19/2011	29.62	-98.73

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kWDC)	Cost	Date Installed	Latitude	Longitude
3001	Travis	Travis	78653	TX	34000	12000000	12/20/2011	30.33	-97.55
3002	Callahan	Hood	79510	TX	10.8	79715	12/21/2011	32.22	-99.50
3003	Jefferson	Jefferson	77705	TX	8.46	61160	12/21/2011	29.96	-94.11
3004	Orange	Orange	77662	TX	7.05	34650	12/21/2011	30.17	-94.01
3005	Bexar	Bexar	78250	TX	6.48	30771.95	12/21/2011	29.50	-98.67
3006	El Paso	El Paso	79902	TX	76.384	422400	12/22/2011	31.78	-106.51
3007	El Paso	El Paso	79902	TX	108.416	557600	12/22/2011	31.78	-106.51
3008	Travis	Travis	78705	TX	8	26036	12/22/2011	30.30	-97.74
3009	Bexar	Bexar	78225	TX	18	85051.71	12/22/2011	29.39	-98.53
3010	Gregg	Gregg	75601	TX	14.4	65000	12/26/2011	32.51	-94.72
3011	Travis	Travis	78746	TX	6.105	24930.98	12/27/2011	30.31	-97.82
3012	Travis	Travis	78723	TX	2.035	8177.57	12/27/2011	30.31	-97.68
3013	El Paso	El Paso	79901	TX	36.96	241000	12/28/2011	31.76	-106.49
3014	Bell	Williamson	76513	TX	9.675	38694.65	12/28/2011	31.07	-97.50
3015	Jefferson	Jefferson	77710	TX	8.46		12/29/2011	30.05	-94.08
3016	Travis	Travis	78753	TX	6.24	21900	12/29/2011	30.39	-97.67
3017	Travis	Travis	78744	TX	1.48		12/29/2011	30.20	-97.73
3018	Travis	Travis	78744	TX	5.435	43878.08	12/29/2011	30.20	-97.73
3019	Travis	Travis	78727	TX	4.32		12/29/2011	30.43	-97.71
3020	Travis	Travis	78723	TX	5.275	33742.1	12/29/2011	30.31	-97.68
3021	Travis	Travis	78747	TX	3.515	21242.29	12/29/2011	30.13	-97.73
3022	Wilbarger	Parker	76384	TX	10.8	104258.41	12/29/2011	34.20	-99.32
3023	Bexar	Bexar	78249	TX	139.7	616934.86	12/30/2011	29.57	-98.61
3024	Bexar	Bexar	78249	TX	33.1	157096	12/30/2011	29.57	-98.61
3025	Bexar	Bexar	78233	TX	4.86	19391.4	12/30/2011	29.56	-98.36
3026	Bexar	Bexar	78264	TX	6.11	20384.5	12/30/2011	29.17	-98.51
3027	Bexar	Bexar	78264	TX	12.42	49680	12/30/2011	29.17	-98.51
3028	Bexar	Bexar	78258	TX	5.52	30250	12/30/2011	29.65	-98.47
3029	Bexar	Bexar	78259	TX	3.6	18417.07	12/30/2011	29.62	-98.43
3030	Schleicher	Bexar	76936	TX	9.75	158115	12/31/2011	30.91	-100.71
3031	Schleicher	Bexar	76936	TX	9.75	158115	12/31/2011	30.91	-100.71
3032	Montgomery	Montgomery	77302	TX	10.12	58684.77	12/31/2011	30.21	-95.33
3033	Galveston	Galveston	77546	TX	10.12	52388.84	12/31/2011	29.54	-95.20

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
3034	Comal	Comal	78266	TX	15.66	53009.1	1/3/2012	29.63	-98.32
3035	Bexar	Bexar	78209	TX	26.88	124561.47	1/6/2012	29.49	-98.45
3036	Bexar	Bexar	78023	TX	13.44	73920	1/9/2012	29.62	-98.73
3037	Travis	Travis	78733	TX	10.3	63677	1/17/2012	30.33	-97.87
3038	Travis	Travis	78733	TX	11.31655	27386	1/18/2012	30.33	-97.87
3039	Comal	Comal	78070	TX	13.16	67492.56	1/20/2012	29.87	-98.42
3040	Travis	Travis	78702	TX	15.2	68394	1/24/2012	30.26	-97.71
3041	Bexar	Bexar	78112	TX	10.58	58393.99	1/24/2012	29.21	-98.39
3042	Bexar	Bexar	78258	TX	10.8	58895.25	1/24/2012	29.65	-98.47
3043	Travis	Travis	78733	TX	10.32	63677	1/27/2012	30.33	-97.87
3044	Bexar	Bexar	78212	TX	12.65	60792.78	1/30/2012	29.46	-98.50
3045	Bexar	Bexar	78263	TX	11.1	44840.65	1/30/2012	29.36	-98.32
3046	Travis	Travis	78763	TX	13.4406	35701.72	2/2/2012	30.30	-97.77
3047	Bexar	Bexar	78256	TX	15.84	66185.51	2/2/2012	29.62	-98.62
3048	Bexar	Bexar	78230	TX	10.18	41980.76	2/2/2012	29.54	-98.56
3049	Travis	Travis	78702	TX	15.19	68394	2/3/2012	30.26	-97.71
3050	Bexar	Bexar	78240	TX	28.75	128920	2/10/2012	29.53	-98.61
3051	Bexar	Bexar	78215	TX	17.62	87243	2/14/2012	29.44	-98.48
3052	Bexar	Bexar	78215	TX	17.62	87243	2/14/2012	29.44	-98.48
3053	Bexar	Bexar	78215	TX	16.92	83754	2/14/2012	29.44	-98.48
3054	Bexar	Bexar	78215	TX	16.92	83754	2/14/2012	29.44	-98.48
3055	Bexar	Bexar	78247	TX	13.5	49046	2/14/2012	29.59	-98.41
3056	Bexar	Bexar	78233	TX	10	37021.25	2/14/2012	29.56	-98.36
3057	Bexar	Bexar	78261	TX	12.22	62322	2/14/2012	29.70	-98.41
3058	Travis	Travis	78733	TX	14.455	56872	2/15/2012	30.33	-97.87
3059	Bexar	Bexar	78225	TX	33.8	143143.2	2/16/2012	29.39	-98.53
3060	Galveston	Galveston	77546	TX	10.12	52388.84	2/20/2012	29.54	-95.20
3061	Montgomery	Montgomery	77302	TX	10.12	46266.79	2/29/2012	30.21	-95.33
3062	Bexar	Bexar	78207	TX	26.88	122990.97	3/6/2012	29.42	-98.52

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
3063	Hidalgo	Nueces	78572	TX	11.28	51400	3/7/2012	26.20	-98.37
3064	Travis	Travis	78763	TX	18.72	98000	3/7/2012	30.30	-97.77
3065	Bexar	Bexar	78230	TX	10	48376.55	3/14/2012	29.54	-98.56
3066	Bexar	Bexar	78207	TX	141.68	761459	3/22/2012	29.42	-98.52
3067	Bexar	Bexar	78229	TX	132.6	798616.8	3/22/2012	29.51	-98.58
3068	Bexar	Bexar	78207	TX	48	391634.48	3/22/2012	29.42	-98.52
3069	El Paso	El Paso	79934	TX	10.24	62190	3/27/2012	31.98	-106.42
3070	Bell	Williamson	76544	TX	684	3000000	3/27/2012	31.12	-97.79
3071	Bexar	Bexar	78258	TX	24.03	79298.5	3/30/2012	29.65	-98.47
3072	Bexar	Bexar	78210	TX	25.76	99102	4/2/2012	29.40	-98.47
3073	El Paso	El Paso	79912	TX	10.34	42394	4/5/2012	31.86	-106.55
3074	Bexar	Bexar	78261	TX	24.96	129792	4/9/2012	29.70	-98.41
3075	Comal	Comal	78266	TX	28.91	135350	4/11/2012	29.63	-98.32
3076	Comal	Comal	78266	TX	18.1	87103	4/11/2012	29.63	-98.32
3077	Gregg	Gregg	75605	TX	10	37000	4/13/2012	32.56	-94.71
3078	El Paso	El Paso	79904	TX	10.24	62190	4/17/2012	31.87	-106.48
3079	Hidalgo	Nueces	78501	TX	11.28	51400	4/24/2012	26.22	-98.23
3080	Bexar	Bexar	78148	TX	35.72	190950	4/24/2012	29.55	-98.30
3081	Bexar	Bexar	78253	TX	10.32	39882.92	4/24/2012	29.47	-98.81
3082	El Paso	El Paso	79907	TX	167.552	1080000	5/2/2012	31.71	-106.33
3083	El Paso	El Paso	79925	TX	20.68	84788	5/7/2012	31.80	-106.36
3084	Bexar	Bexar	78231	TX	12.65	59016	5/7/2012	29.58	-98.54
3085	Bexar	Bexar	78259	TX	25.92	57008.34	5/11/2012	29.62	-98.43
3086	Guadalupe	Guadalupe	78154	TX	16.3	84068.75	5/11/2012	29.59	-98.28
3087	Callahan	Hood	79510	TX	10.8	75600	5/16/2012	32.22	-99.50
3088	Callahan	Hood	79510	TX	10.8	75600	5/16/2012	32.22	-99.50
3089	Bexar	Bexar	78256	TX	23.35	157222	5/17/2012	29.62	-98.62
3090	El Paso	El Paso	79936	TX	15.84	75694.74	5/18/2012	31.76	-106.29
3091	Taylor	Hood	79562	TX	10.8	75600	5/24/2012	32.25	-99.89

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
3092	Travis	Travis	78749	TX	14.88	44760	5/27/2012	30.22	-97.86
3093	Cherokee	Smith	75766	TX	10.374	48000	5/28/2012	31.93	-95.27
3094	Hidalgo	Nueces	78537	TX	11.28	49400	6/4/2012	26.16	-98.06
3095	Dallas	Dallas	75244	TX	11.28	50760	6/7/2012	32.93	-96.84
3096	Dallas	Dallas	75244	TX	25.38	114210	6/7/2012	32.93	-96.84
3097	Dallas	Dallas	75244	TX	18.33	82485	6/7/2012	32.93	-96.84
3098	Dallas	Dallas	75244	TX	10.34	46530	6/7/2012	32.93	-96.84
3099	Denton	Denton	75056	TX	10.8	37177	6/11/2012	33.08	-96.91
3100	Bexar	Bexar	78221	TX	23132	88733345	6/18/2012	29.30	-98.50
3101	El Paso	El Paso	79836	TX	10.56	47973.25	6/18/2012	31.57	-106.19
3102	Archer	Parker	76366	TX	10.8	104258.41	6/19/2012	33.71	-98.79
3103	McLennan	Ellis	76712	TX	100.8	500000	6/25/2012	31.53	-97.29
3104	Ellis	Ellis	75119	TX	11.28	50552	6/28/2012	32.32	-96.62
3105	Rockwall	Rockwall	75032	TX	10.12	42435.25	7/6/2012	32.86	-96.42
3106	Harris	Harris	77024	TX	813		7/9/2012	29.78	-95.47
3107	Tarrant	Tarrant	76132	TX	10.56		7/11/2012	32.66	-97.42
3108	Tarrant	Tarrant	76126	TX	11.28	47199.11	7/13/2012	32.65	-97.50
3109	Wichita	Denton	76310	TX	11.88	95040	7/16/2012	33.79	-98.51
3110	Dallas	Dallas	75061	TX	14.57	65565	7/19/2012	32.82	-96.96
3111	Tarrant	Tarrant	76120	TX	51.935	233707.5	7/19/2012	32.77	-97.18
3112	Tarrant	Tarrant	76120	TX	24.44	109980	7/23/2012	32.77	-97.18
3113	Tarrant	Tarrant	76120	TX	22.56	101520	7/23/2012	32.77	-97.18
3114	Tarrant	Tarrant	76120	TX	11.28	50760	7/23/2012	32.77	-97.18
3115	Tarrant	Tarrant	76120	TX	56.635	254857.5	7/23/2012	32.77	-97.18
3116	Tarrant	Tarrant	76132	TX	10.56	52536	7/23/2012	32.66	-97.42
3117	Dallas	Dallas	75219	TX	21.385	96232.5	7/25/2012	32.81	-96.81
3118	Dallas	Dallas	75219	TX	52.875	237937.5	7/25/2012	32.81	-96.81
3119	Dallas	Dallas	75061	TX	61.1	274950	7/26/2012	32.82	-96.96
3120	Wilbarger	Parker	76384	TX	10.8	104258.41	7/26/2012	34.20	-99.32

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
3120	Wilbarger	Parker	76384	TX	10.8	104258.41	7/26/2012	34.20	-99.32
3121	Gregg	Gregg	75601	TX	10.12	29000	7/26/2012	32.51	-94.72
3122	Travis	Travis	78738	TX	11	39461.68	7/26/2012	30.30	-97.97
3123	Rockwall	Rockwall	75032	TX	10.12	43421.299	7/27/2012	32.86	-96.42
3124	Hopkins	Hunt	75482	TX	87.78	343265.98	7/30/2012	33.18	-95.60
3125	Nueces	Nueces	78414	TX	10	66844.64	7/30/2012	27.65	-97.36
3126	Gregg	Gregg	75605	TX	11.04	40627	7/30/2012	32.56	-94.71
3127	Tarrant	Tarrant	76179	TX	10	44300	7/31/2012	32.92	-97.46
3128	Williamson	Williamson	78665	TX	10	38850	7/31/2012	30.55	-97.62
3129	Williamson	Williamson	76574	TX	10	38500	8/2/2012	30.57	-97.37
3130	Travis	Travis	78735	TX	14.75	65732	8/2/2012	30.26	-97.86
3131	Collin	Collin	75024	TX	912		8/2/2012	33.10	-96.82
3132	El Paso	El Paso	79936	TX	10.045	41000	8/6/2012	31.76	-106.29
3133	Bexar	Bexar	78069	TX	12322	47266655	8/13/2012	29.22	-98.67
3134	Bexar	Bexar	78069	TX	10000		8/13/2012	29.19	-98.67
3135	Ellis	Ellis	75154	TX	10.56		8/14/2012	32.51	-96.77
3136	Dallas	Dallas	75006	TX	10	45500	8/16/2012	32.97	-96.89
3137	Tarrant	Tarrant	76116	TX	10.56		8/18/2012	32.72	-97.44
3138	Smith	Smith	75707	TX	10.34	36900	8/19/2012	32.32	-95.16
3139	Galveston	Galveston	77573	TX	11.76	53767	8/21/2012	29.49	-95.09
3140	Denton	Denton	75068	TX	10.64	28525.65	8/21/2012	33.17	-96.95
3141	Harris	Harris	77507	TX	53.46		8/21/2012	29.63	-95.09
3142	Jim Wells	Nueces	78332	TX	11.04	46950	8/23/2012	27.74	-98.09
3143	Travis	Travis	78704	TX	10	39796	8/23/2012	30.25	-97.77
3144	Archer	Parker	76366	TX	10.8	104258.41	8/25/2012	33.71	-98.79
3145	Tarrant	Tarrant	76116	TX	10.56	52536	8/27/2012	32.72	-97.44
3146	Ellis	Ellis	75154	TX	10.56	52536	8/27/2012	32.51	-96.77
3147	Grayson	Collin	75020	TX	49.545	173460	9/4/2012	33.78	-96.60
3148	Rockwall	Rockwall	75032	TX	10.2	26277.75	9/11/2012	32.86	-96.42

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
3149	Denton	Denton	75007	TX	10.14	50447	9/11/2012	33.01	-96.89
3150	Wichita	Denton	76309	TX	10.8	92027.42	9/17/2012	33.90	-98.54
3151	Travis	Travis	78732	TX	12	24300	9/20/2012	30.38	-97.89
3152	Tarrant	Tarrant	76179	TX	10.29	37330	10/6/2012	32.92	-97.46
3153	Denton	Denton	75007	TX	10.14		10/9/2012	33.01	-96.89
3154	Travis	Travis	78732	TX	12	49210.5	10/10/2012	30.38	-97.89
3155	Travis	Travis	78723	TX	10.965	38577.05	10/17/2012	30.31	-97.68
3156	Bexar	Bexar	78230	TX	36		11/3/2012	29.54	-98.56
3157	El Paso	El Paso	79928	TX	10.56	33933.39	11/9/2012	31.66	-106.13
3158	El Paso	El Paso	79936	TX	24	81374	11/12/2012	31.76	-106.29
3159	El Paso	El Paso	79905	TX	106.56	604800	11/13/2012	31.77	-106.42
3160	El Paso	El Paso	79934	TX	11.772	65596	11/13/2012	31.98	-106.42
3161	El Paso	El Paso	79904	TX	14.88	56008	11/14/2012	31.87	-106.48
3162	El Paso	El Paso	79905	TX	33.6	151200	11/15/2012	31.77	-106.42
3163	El Paso	El Paso	79905	TX	48.06	229450	11/15/2012	31.77	-106.42
3164	El Paso	El Paso	79932	TX	10.26	43429	11/15/2012	31.89	-106.62
3165	Travis	Travis	78746	TX	15.81	53597.32	11/15/2012	30.31	-97.82
3166	Cameron	Nueces	78559	TX	15.68	58500	11/28/2012	26.15	-97.82
3167	Cameron	Nueces	78559	TX	11.76	58500	11/28/2012	26.15	-97.82
3168	Cameron	Nueces	78559	TX	10.78	58500	11/28/2012	26.15	-97.82
3169	Cameron	Nueces	78559	TX	11.76	58500	11/28/2012	26.15	-97.82
3170	Rusk	Rusk	75652	TX	11.856	56000	11/28/2012	32.22	-94.77
3171	Hidalgo	Nueces	78516	TX	12.74	53244.44	12/3/2012	26.12	-98.11
3172	El Paso	El Paso	79905	TX	20.28	210000	12/11/2012	31.77	-106.42
3173	Travis	Travis	78733	TX	10.29	39068	12/13/2012	30.33	-97.87
3174	Travis	Travis	78702	TX	15.18	45905	12/21/2012	30.26	-97.71
3175	Cameron	Nueces	78559	TX	576.73	NA	10/15/2012	26.12	-97.52
3176	Nueces	Nueces	78401	TX	1500	NA	10/16/2012	27.80	-97.39
3177	Travis	Travis	73301	TX	4.5	NA	10/17/2012	30.31	-97.68

Table 6-2: Solar Photovoltaic Cell Projects: Data and Information (cont.)

Project No.	County in Texas	County for ECALC	Zipcode	State	Size (kW DC)	Cost	Date Installed	Latitude	Longitude
3178	Travis	Travis	73301	TX	3	NA	10/18/2012	30.31	-97.68
3179	Travis	Travis	73301	TX	6	NA	10/19/2012	30.31	-97.68
3180	Travis	Travis	73301	TX	6.2	NA	10/20/2012	30.31	-97.68
3181	Travis	Travis	73301	TX	5.28	NA	10/21/2012	30.31	-97.68
3182	Bexar	Bexar	78201	TX	20	NA	10/22/2012	29.60	-98.49
3183	Bexar	Bexar	78201	TX	10.32	NA	10/23/2012	29.60	-98.49
3184	Bexar	Bexar	78201	TX	7.5	NA	10/24/2012	29.60	-98.49
3185	Travis	Travis	78201	TX	3.66	NA	10/25/2012	29.60	-98.49
3186	Travis	Travis	73301	TX	6.48	NA	10/21/2012	30.31	-97.68

Table 6-3: Solar Photovoltaic Cell Projects: Energy and NOx Reductions

County for ECALC	Annual Energy Savings (for Base Year Conditions) and Annual Emissions Reductions			OSD Energy Savings (for Base Year Conditions) and OSD Emissions Reductions		
	Annual Elec. Generation (kWh/year)	1999 (lbs/year)	2007 (lbs/year)	OSD Elec. Generation (kWh/day)	1999 (lbs/day)	2007 (lbs/day)
		NOx	NOx		NOx	NOx
Bastrop	3,324	13	5	10	0.04	0.02
Bexar	29,640,379	78,188	48,917.10	89,624	236.71	137.57
Brazoria	0	0.00	0.00	0	0.00	0.00
Caldwell	0	0.00	0.00	0	0.00	0.00
Chambers	0	0.00	0.00	0	0.00	0.00
Collin	1,041,830	3,999.42	1,693.95	3,183	12.26	5.15
Comal	546,516	1,441.64	901.94	1,653	4.36	1.42
Dallas	3,417,651	13,286.12	5,590.69	10,440	40.66	16.91
Denton	1,233,479	4,735.12	2,005.56	3,768	14.51	6.10
El Paso	42,723,282	0.00	0.00	122,569	0.00	0.00
Ellis	676,394	2,629.48	1,106.47	2,066	8.05	3.35
Fort Bend	8,052	19.48	14.04	24	0.06	0.04
Galveston	95,860	231.49	165.87	285	0.69	0.47
Gregg	234,894	0.00	0.00	715	0.00	0.00
Guadalupe	77,978	205.70	128.69	236	0.62	0.36
Hardin	41,144	68.69	49.49	123	0.21	0.14
Harris	324,964	542.51	390.91	966	1.61	1.09
Harrison	9,957	0.00	0.00	30	0.00	0.00
Hays	0	0.00	0.00	0	0.00	0.00
Henderson	123,753	481.09	202.44	377	1.47	0.61
Hood	278,099	1,067.58	452.17	850	3.27	1.38
Hunt	535,297	2,054.92	870.36	1,635	6.30	2.65
Jefferson	54,985	0.00	0.00	164	0.00	0.00
Johnson	91,392	350.84	148.60	279	1.08	0.45
Kaufman	23,477	91.27	38.40	72	0.28	0.12
Liberty	13,002	0.00	0.00	39	0.00	0.00

Table 6-3: Solar Photovoltaic Cell Projects: Energy and NOx Reductions (cont.)

County for ECALC	Annual Energy Savings (for Base Year Conditions) and Annual Emissions Reductions			OSD Energy Savings (for Base Year Conditions) and OSD Emissions Reductions		
	Annual Elec. Generation (kWh/year)	1999 (lbs/year)	2007 (lbs/year)	OSD Elec. Generation (kWh/day)	1999 (lbs/day)	2007 (lbs/day)
		NOx	NOx		NOx	NOx
Montgomery	368,462	615.13	443.23	1,096	1.83	1.24
Nueces	34,011,503	94,413.23	40,825.25	103,133	286.19	126.34
Orange	119,064	0.00	0.00	355	0.00	0.00
Parker	341,448	1,327.38	558.55	1,043	4.06	1.69
Rockwall	135,131	525.32	221.05	413	1.61	0.67
Rusk	174,875	0.00	0.00	533	0.00	0.00
San Patricio	10,262	28.49	12.32	31	0.09	0.04
Smith	2,433,713	9,461.11	3,981.13	7,411	28.90	12.06
Tarrant	2,800,392	10,886.52	4,580.96	8,555	33.32	13.85
Travis	53,119,387	203,989.64	86,285.83	160,307	614.33	258.09
Upshur	168,477	0.00	0.00	513	0.00	0.00
Victoria	0	0.00	0.00	0	0.00	0.00
Waller	12,078	29.22	21.06	36	0.09	0.06
Williamson	1,395,795	5,360.15	2,267.29	4,212	16.14	6.78
Wilson	25,036	66.04	41.32	76	0.20	0.12

Table 6-4: Solar Thermal Projects

Project No	City	County	County for eCalc	Project Purpose	Model	Collector Area (sqft)	Number of collectors	Total Area (sqft)	Slope (degree)	Azimuth (i.e. South=0, West (-) and East (+))	Fluid
1	Austin	Travis	Travis	Domestic Hot Water (DHW)	N/A	N/A	2	N/A	N/A	0	Antifreeze
2	Austin	Travis	Travis	Domestic Hot Water (DHW)	SS HX Drainback	26.25	3	78.75	20	0	Water
3	Round Rock	Williamson	Williamson	Domestic Hot Water (DHW)	SS HX Drainback	26.25	2	52.5	20	-90	Water
4	Dripping Springs	Hays	Hays	Domestic Hot Water (DHW)	SS HX Drainback	26.25	2	52.5	20	20	Water
5	San Antonio	Bexar	Bexar	Domestic Hot Water (DHW)	SS HX Drainback	26.25	2	52.5	20	0	Water
6	San Antonio	Bexar	Bexar	Pool Heating System	FS collector	32	8	256	20	-45	Water
7	N/A	N/A	N/A	Domestic Hot Water (DHW)	SS HX Drainback	26.25	3	78.75	20	-45	Water
8	N/A	N/A	N/A	Domestic Hot Water (DHW)	SS HX Drainback	26.25	2	52.5	20	-45	Water
9	Midland	Midland	El paso	Pool Heating System-city of midland aquatic center	HC 50 collectors-make:APS	50	256	12800	N/A	N/A	Water
10	Lubbock	Lubbock	Parker	Pool Heating System-Lubbock TX State School	HC 50 collectors-make:APS	50	36	1800	N/A	N/A	Water
11	Corpus Christi	Nueces	Nueces	Pool Heating System-Corpus Christi TX State School	HC 50 collectors-make:APS	50	36	1800	N/A	N/A	Water
12	Richmond	Fort Bend	Fort Bend	Pool Heating System-Richmond TX State School	HC 50 collectors-make:APS	50	36	1800	N/A	N/A	Water
13	Elpaso	El paso	El paso	Pool Heating System-University of Elpaso recreation facility	HC 50 collectors-make:APS	50	120	6000	N/A	N/A	Water
14	Elpaso	El paso	El paso	Pool Heating System-University of Elpaso recreation facility	HC 50 collectors-make:APS	50	128	6400	N/A	N/A	Water
15	edinburg	Hidalgo	Nueces	Pool heating system for Gym spa	make : APS	N/A	34	600+	N/A	N/A	Water
16	pearland	Brazoria	Brazoria	Pool heating system-residential	make : APS	N/A	7	N/A	N/A	N/A	Water
17	cleveland	Liberty	Liberty	Domestic Hot Water (DHW)	make : APS	N/A	N/A	N/A	N/A	N/A	Water
18	Austin	Travis	Travis	Pool hating system at the Jester Club	make: FAFCO	N/A	N/A	N/A	N/A	N/A	Water
19	Austin	Travis	Travis	pool heating at Quenciera@Barton Creek	make: FAFCO	N/A	N/A	N/A	N/A	N/A	Water
20	Laredo	Webb	Nueces	Pool heating at Tjerina Ranch	make: FAFCO	N/A	N/A	N/A	N/A	N/A	Water
21	San Antonio	Bexar	Bexar	DHW system-Apartment high rise-The army resident community	30 tube Apricus collectors	25.8	180	4644	N/A	N/A	Water
22	San Antonio	Bexar	Bexar	DHW system-Assisted Living Facility-The army resident community	30 tube Apricus collectors	25.8	5	129	N/A	N/A	Water
23	Victoria	Victoria	Victoria	Domestic Hot Water (DHW)	30 tube Apricus collectors	25.8	2	51.6	N/A	N/A	Water
24	Kingsville	Kleberg	Nueces	DHW system-Texas A&M Kingsville residence hall	Evacuated tube collectors	N/A	66	N/A	N/A	N/A	Water
25	Austin	Travis	Travis	DHW system-University of Texas	Evacuated tube collectors	N/A	185	N/A	N/A	N/A	Water
26	San Antonio	Bexar	Bexar	DHW system-Army Residence Community High-Rise Apartment Building	Evacuated tube collectors	N/A	176	N/A	N/A	N/A	Water
27	San Antonio	Bexar	Bexar	DHW system-Bexar County Adult Detention Center Annex	Evacuated tube collectors	N/A	216	N/A	N/A	N/A	Water
28	San Antonio	Bexar	Bexar	DHW system-Bexar County Jail Annex	AP-30 solar collectors	N/A	220	N/A	N/A	N/A	Water
29	San Antonio	Bexar	Bexar	Domestic Hot Water (DHW)-resident project by Brooks energy & sutainability lab	N/A	N/A	N/A	N/A	N/A	N/A	Water
30	San Antonio	Bexar	Bexar	Domestic Hot Water (DHW) at city public service-northside	N/A	N/A	N/A	5000	N/A	N/A	Water
31	San Antonio	Bexar	Bexar	Domestic Hot Water (DHW)-Bexar County Adult Jail Annex	N/A	N/A	N/A	N/A	N/A	N/A	Water
32	San Antonio	Bexar	Bexar	Domestic Hot Water (DHW)	Progressive Tube Technology	N/A	N/A	N/A	N/A	N/A	Water
33	San Antonio	Bexar	Bexar	Historic Gardens phase II project by SADA	N/A	N/A	N/A	N/A	N/A	N/A	Water
34	San Antonio	Bexar	Bexar	Domestic Hot Water (DHW)-Fort sam Houston, public hot water supply	RMT modules	N/A	29	1377.95	N/A	N/A	Water
35	San Antonio	Bexar	Bexar	Domestic Hot Water (DHW)-Imagine homes	N/A	N/A	N/A	54	N/A	N/A	Water
36	San Antonio	Bexar	Bexar	Domestic Hot Water (DHW)Veterans Administration Hospitaks	EC-40-1.5	N/A	320	N/A	N/A	N/A	Water
37	Killeen	Bell	Williamson	DHW system-Ft. Hood Army Base	TitanPowerPlus SU2 series	N/A	93	N/A	N/A	N/A	Water
38	San Angelo	Travis	Travis	17th Security Forces Squadron (SFS) roof at Goodfellow Air Force Base outside of San Angelo, Texas.	N/A	N/A	2	N/A	N/A	0	Antifreeze

Table 6-5: Solar Thermal Projects: Energy and NOx Reductions

County for ECALC	Annual Energy Savings (for Base Year Conditions) and Annual Emissions Reductions			OSD Energy Savings (for Base Year Conditions) and OSD Emissions Reductions		
	Annual Elec. Generation (kWh/year)	1999 (lbs/year)	2007 (lbs/year)	OSD Elec. Generation (kWh/day)	1999 (lbs/day)	2007 (lbs/day)
		NOx	NOx		NOx	NOx
Bexar	60,388	159	99.71	161.19	0.46	0.23
El Paso	137,390	0	0.00	378.00	0.00	0.00
Fort Bend	9,434	2,282	16.45	25.20	0.05	0.04
Hays	276	1	0.35	0.74	0.00	0.00
Nueces	12,250	34	14.71	33.60	0.10	0.05
Parker	9,806	38	16.02	27.00	0.11	0.04
Travis	1,768	7	2.87	1.02	0.00	0.00
Victoria	336	1	0.40	0.93	0.00	0.00
Williamson	276	1	0.45	0.74	0.00	0.00

Table 6-6: Solar Thermal Special Project

Special Case	
Location	Fort Sam Houston, San Antonio TX
Date	3-Jun
Collector	Roof Mounted Parabolic Trough
Number of collectors	129
Total Aperture area (sqft)	4515
Maximum operation temperature (°F)	400
Annual Energy Consumption (KWh/yr)	270583
Annual Energy Consumption OSD (KWh/yr) (KWh/yr)	741.3

Table 6-7: Hydropower Plant Information

Project No	Utility Name	Plant Name	County	Initial Year of Operation	Capacity in MW	STATUS
1	Guadalupe Blanco River Auth	Abbott TP 3	Victoria	1927	1.4	operational
2	Guadalupe Blanco River Auth	Abbott TP 3	Victoria	1927	1.4	operational
3	Guadalupe Blanco River Auth	Dunlap TP 1	Guadalupe	1927	1.8	operational
4	Guadalupe Blanco River Auth	Dunlap TP 1	Guadalupe	1927	1.8	operational
5	Guadalupe Blanco River Auth	Nolte	Williamson	1927	1.2	operational
6	Guadalupe Blanco River Auth	Nolte	Williamson	1927	1.2	operational
7	Guadalupe Blanco River Auth	H 4	Guadalupe	1931	2.4	operational
8	Guadalupe Blanco River Auth	H 5	Guadalupe	1931	2.4	operational
9	Guadalupe Blanco River Auth	TP 4	Guadalupe	1932	2.4	operational
10	Maverick Cty Water Control & Improvement	Eagle Pass	Maverick	1932	3.2	operational
11	Maverick Cty Water Control & Improvement	Eagle Pass	Maverick	1932	3.2	operational
12	Maverick Cty Water Control & Improvement	Eagle Pass	Maverick	1932	3.2	operational
13	Lower Colorado River Authority	Buchanan	Burnet	1938	18.3	operational
14	Lower Colorado River Authority	Buchanan	Burnet	1938	18.3	operational
15	Lower Colorado River Authority	Buchanan	Burnet	1938	11.2	operational
16	Lower Colorado River Authority	Inks	Burnet	1938	15	operational
17	Lower Colorado River Authority	Austin	Lampasas	1941	8	operational
18	Lower Colorado River Authority	Austin	Lampasas	1941	8	operational
19	Lower Colorado River Authority	Marshall Ford	Travis	1941	34	operational
20	Lower Colorado River Authority	Marshall Ford	Travis	1941	34.5	operational
21	Lower Colorado River Authority	Marshall Ford	Travis	1941	34	operational
22	Brazos River Authority	Morris Sheppard	Palo Pinto	1942	12.5	operational
23	Brazos River Authority	Morris Sheppard	Palo Pinto	1942	12.5	operational
24	USCE-Tulsa District	Denison	Grayson	1945	35	operational
25	USCE-Tulsa District	Denison	Grayson	1949	35	operational

Table 6-7:Hydropower Plant Information (cont.)

Project No	Utility Name	Plant Name	County	Initial Year of Operation	Capacity in MW	STATUS
26	Lower Colorado River Authority	Granite Shoals	Burnet	1951	30	operational
27	Lower Colorado River Authority	Granite Shoals	Burnet	1951	30	operational
28	Lower Colorado River Authority	Marble Falls	Burnet	1951	15	operational
29	Lower Colorado River Authority	Marble Falls	Burnet	1951	15	operational
30	USCE-Fort Worth District	Whitney	Bosque	1953	15	operational
31	USCE-Fort Worth District	Whitney	Bosque	1953	15	operational
32	International Bound & Wtr Comm	Falcon Dam & Power	Zapata	1954	10.5	operational
33	International Bound & Wtr Comm	Falcon Dam & Power	Zapata	1954	10.5	operational
34	International Bound & Wtr Comm	Falcon Dam & Power	Zapata	1954	10.5	operational
35	USCE-Fort Worth District	Sam Rayburn	Jasper	1965	26	operational
36	USCE-Fort Worth District	Sam Rayburn	Jasper	1965	26	operational
37	Entergy Gulf States Inc	Toledo Bend	Newton	1969	40.5	operational
38	Entergy Gulf States Inc	Toledo Bend	Newton	1969	40.5	operational
39	International Bound & Wtr Comm	Amistad Dam & Power	Val Verde	1983	33	operational
40	International Bound & Wtr Comm	Amistad Dam & Power	Val Verde	1983	33	operational
41	Guadalupe Blanco River Auth	Canyon	Randall	1989	3	operational
42	Guadalupe Blanco River Auth	Canyon	Randall	1989	3	operational
43	USCE-Fort Worth District	Robert D Willis	Harris	1989	4	operational
44	USCE-Fort Worth District	Robert D Willis	Harris	1989	4	operational
45	City of Garland	Lewisville	Denton	1992	2.8	operational

Table 6-8: Geothermal Heat Pump Energy Projects

Project No	Project	County	Implementation Date	Capacity (ton)	Area (sqft)
1	Birdville High School Campus	Denton	2001	N/A	N/A
2	Texas Motor Speedway	Denton	1998	N/A	N/A
3	George W. Bush's ranch	McLennan	2001	14	N/A
4	Esperanza del Sol, Dallas (Hope of the Sun)	Dallas	1994	18	15,276
5	Hillside Oaks, East Dallas	Dallas	1997	366	276,120
6	Pease Elementary School, Austin	Travis	1994	90	39,162
7	Brooke Elementary School	Travis	1993	150	51,605
8	Govalle Elementary School	Travis	1994	230	89,319
9	Bailey Middle School, Austin	Travis	1992	512	200,000
10	Home in Iowa Park	Wichita	1997	1	1,668
11	The Home of the Future	Dallas	1997	13	4,573
12	Birdville Athletic Complex / Stadium	Tarrant	post 1992	N/A	60,000
13	Frisco ISD Administration Building and Network Operations Center	Collin	post 1992	N/A	20,000+
14	Aubrey Athletic Complex / Stadium	Denton	post 2002	64	25,807
15	Lake Dallas Athletic Complex / Stadium	Denton	post 2001	63	43,500
16	Wakeland High School	Collin	post 1992	1,010	335,932
17	Lovejoy High School	Collin	post 2004	793	216,290
18	Grand Prairie High Ninth Grade Center	Dallas	post 2000	598	150,000+
19	South Grand Prairie High Ninth Grade Center	Dallas	post 2001	atleast 133	100,000+
20	Renovations to HVAC System at South Grand Prairie High School	Dallas	post 2001	69	12,500
21	Renovations to HVAC System at South Grand Prairie High School	Dallas	post 2002	64	49,000
22	David Daniels Elementary	Dallas	post 1992	N/A	70,000+
23	Edelweiss Daniels Elementary	Dallas	post 2000	305	72,872
24	Crockett Elementary	Dallas	post 2000	305	72,872
25	Kirby Elementary	Dallas	post 2000	305	72,872
26	Renovations to HVAC System at Lee Middle School	Dallas	post 1992	214	136,600 +
27	Rebuild of Lee Middle School (Fire Damage)	Dallas	post 2000	64	2,800
28	Renovations/Additions to Adams Middle School	Dallas	post 1992	N/A	N/A
29	Renovations/Additions to North Oaks Middle School	Tarrant	post 1992	N/A	71,000+
30	Renovations/Additions to North Richland Middle School	Tarrant	post 1992	273	80,000+

Table 6-8: Geothermal Heat Pump Energy Projects (cont.)

Project No	Project	County	Implementation Date	Capacity (ton)	Area (sqft)
31	Watauga Middle School	Tarrant	post 2000	N/A	80,000+
32	HVAC Renovation for Watauga Middle School	Tarrant	post 1992	23	1987 added
33	Renovations to HVAC System at Eisenhower Elementary	Dallas	post 1992	N/A	N/A
34	Renovations/Additions to Rayburn Elementary	Dallas	post 1992	N/A	38,000+
35	Renovations/Additions to Watauga Elementary School	Tarrant	post 1992	N/A	56,000+
36	Renovations/Additions to Smithfield Elementary School	Tarrant	post 1992	N/A	56,000+
37	Renovations to David E. Smith Elementary School	Tarrant	2003	30	45,000+
38	Renovations/Additions to Green Valley Elementary School	Tarrant	post 2000	8	50,000+
39	Renovations/Additions to Richland Elementary School	Tarrant	post 1992	221	38,000+
40	Renovations/Additions to Birdville Elementary School	Tarrant	post 1992	N/A	32,000+
41	Renovations/Additions to Grace Hardeman Elementary	Tarrant	post 2000	12	N/A
42	W.A. Porter Elementary School	Tarrant	post 2000	N/A	48,000+
43	Renovations/Additions to W.A. Porter Elementary School	Tarrant	post 2000	12	1963 added
44	Haltom Middle School	Tarrant	post 1992	N/A	109,000
45	HVAC Renovation for Haltom Middle School	Tarrant	post 2000	22	6730 added
46	HVAC Renovation for Richland Middle School	Tarrant	post 1992	N/A	91,000
47	HVAC Renovation for North Oaks Middle School	Tarrant	post 1992	N/A	70,000
48	HVAC Renovation for North Richland Middle School	Tarrant	post 1992	N/A	75,000
49	Holiday Heights Elementary	Tarrant	post 2000	N/A	40,000
50	HVAC Renovation for Holiday Heights Elementary	Tarrant	post 2000	12	2923 added
51	HVAC Renovation for Watauga Elementary	Tarrant	post 1992	N/A	40,000
52	HVAC Renovation for David E. Smith Elementary	Tarrant	post 1992	N/A	35,000
53	HVAC Renovation for West Birdville Elementary	Tarrant	post 1992	N/A	42,000
54	HVAC Renovation for Glenview Elementary	Tarrant	post 1992	N/A	40,000
55	HVAC Renovation for South Birdville Elementary	Tarrant	post 1992	149	38,000
56	HVAC Renovation for WT Francisco Elementary	Tarrant	post 2000	26	31,000
57	HVAC Renovation for Foster Village Elementary	Tarrant	post 2000	12	66,000
58	Snow Heights Elementary	Tarrant	post 2000	124	33,000
59	Renovations/Additions to Snow Heights Elementary School	Tarrant	post 2000	8	1963 added
60	HVAC Renovation for OH Stowe Elementary	Tarrant	post 1992	N/A	40,000

Table 6-8: Geothermal Heat Pump Energy Projects (cont.)

Project No	Project	County	Implementation Date	Capacity (ton)	Area (sqft)
61	Jackson Middle School	Dallas	post 2000	365	100,000+
62	Renovations to HVAC System at Jackson Middle School	Dallas	post 2000	N/A	N/A
63	Renovations/Additions to Richland Elementary School	Tarrant	post 1992	N/A	38,000+
64	Renovations/Additions to Birdville Elementary School	Tarrant	post 1992	N/A	32,000+
65	HVAC Renovation for Rayburn Elementary School	Dallas	post 1992	N/A	N/A
66	HVAC Renovation for North Oaks Middle School	Tarrant	post 1992	204	70,000
67	HVAC Renovation for Watuaga Elementary	Tarrant	post 2000	26	40,000
68	Anchor Church	Tarrant	post 1992	N/A	40,000+
69	Little Elm Elementary	Denton	post 2001	218	70,000+
70	Griffen Parc Middle School	Collin	2004	383	151,566
71	Riddle Elementary	Collin	2003	238	70,000+
72	Boals Elementary	Collin	2003	238	74,300
73	Lake Dallas Middle School	Denton	post 2003	538	250,000+
74	North Elementary	Tarrant	post 1992	N/A	110,000+
75	Isbell Elementary	Collin	2004	279	75,904
76	Bledsoe Elementary	Collin	2005	279	75,904
77	Roach Middle School	Collin	post 1992	N/A	120,000+
78	Fowler Middle School	Collin	2006	488	138,651
79	North Star Elementary	Tarrant	post 1992	N/A	70,000+
80	Hometown Elementary School	Tarrant	post 1992	N/A	70,000+
81	Liberty High School	Collin	2007	1,051	306,179
82	Ashley Elementary	Collin	2005	279	75,325
83	Ogle Elementary	Collin	2006	279	75,904
84	Sem Elementary	Collin	post 1992	N/A	70,000+
85	Corbell Elementary	Collin	2005	279	76,814
86	Taylor Elementary	Collin	post 1992	N/A	70,000+
87	Middle School #5	Tarrant	post 1992	N/A	1,40,000+
88	Intermediate School #5	Tarrant	post 1992	N/A	1,20,000+
89	Liberty Elementary	Tarrant	post 1992	N/A	70,000+
90	Stafford Middle School	Collin	2008	509	142,108

Table 6-8: Geothermal Heat Pump Energy Projects (cont.)

Project No	Project	County	Implementation Date	Capacity (ton)	Area (sqft)
91	Scoggins Middle School	Collin	2008	512	124,108
92	Elementary #10	Tarrant	post 1992	N/A	70,000+
93	Elementary #11	Tarrant	post 1992	N/A	70,000+
94	Elementary #12	Tarrant	post 1992	N/A	70,000+
95	Elementary #13	Tarrant	post 1992	N/A	70,000+
96	Middle School #4	Tarrant	2006	624	151,417
97	Robertson Elementary	Collin	2007	291	75,902
98	Mooneyham Elementary	Collin	2007	291	75,902
99	Carrol Elementary	Collin	2007	292	75,902
100	Brookstone Elementary	Collin	2008	292	75,902
101	Tadlock Elementary	Collin	2008	307	77,184
102	Aubrey Intermediate/Middle School	Denton	post 2004	210	80,000+
103	Florence Hill Elementary	Dallas	post 2003	160	70,000+
104	Garner Elementary	Dallas	post 2004	160	70,000+
105	Bowie Elementary	Dallas	post 2004	44	25,000+
106	High School #5	Collin	post 1992	N/A	300,000+
107	High School #6	Collin	post 1992	N/A	300,000+
108	Memorial Stadium Field House	Collin	2004	27	10,000+
109	Rogers Elementary	Collin	post 2006	221	63,000+
110	Camp Wisdom Elementary	Dallas	post 1992	N/A	70,000+
111	Additions to Anderson Elementary	Collin	2003	30	9,000+
112	Additions to Borchardt Elementary	Collin	post 1992	N/A	9,000+
113	Bright Elementary	Collin	2004	30	9,000+
114	Additions to Christi Elementary	Collin	2004	30	9,000+
115	Additions to Curtsinger Elementary	Collin	post 1992	N/A	9,000+
116	Additions to Fisher Elementary	Collin	2003	30	9,000+
117	Additions to Shawnee Trail Elementary	Collin	post 1992	N/A	9000 +
118	CATE Center (Career and Technology)	Collin	2008	402	100,000+
119	CTE at Centennial High School (Career and Technology)	Collin	2007	16	9000+
120	Staley Middle School Field House	Collin	2004	12	6000+

Table 6-8: Geothermal Heat Pump Energy Projects (cont.)

Project No	Project	County	Implementation Date	Capacity (ton)	Area (sqft)
121	West Transportation Facility	Collin	2008	80	26,148
122	McKinney Lofts	Dallas	N/A	N/A	N/A
123	Havana Club Apartments	Bexar	N/A	N/A	N/A
124	Hogg Palace Lofts	Harris	N/A	N/A	N/A
125	South Main Baptist Church	Harris	N/A	N/A	N/A
126	The Tower	Tarrant	N/A	N/A	N/A
127	Edgemere	Dallas	N/A	N/A	N/A
128	Radisson Carlson Park	Bexar	N/A	N/A	N/A
129	Biggs Field Project	El Paso	N/A	N/A	N/A
130	Denison Housing Authority	Grayson	N/A	N/A	N/A
131	Fort Sam Houston Barracks	Bexar	N/A	N/A	N/A
132	Fort Sam Houston Building 905/906	Bexar	N/A	N/A	N/A
133	Fort Walters	Palo pinto	N/A	N/A	N/A
134	Drury Inn & Suites	Bexar	N/A	N/A	N/A
135	Lexington Hotel Suites	Tarrant	N/A	N/A	N/A
136	Arnold Middle School	Dallas	N/A	N/A	N/A
137	Shaner Hotel	Bexar	N/A	N/A	N/A
138	Holiday Inn Northwest	Bexar	N/A	N/A	N/A
139	2ND Home Suites	Dallas	N/A	N/A	N/A
140	Homewood Suites	Bexar	N/A	N/A	N/A
141	Air Dynamics	Dallas	N/A	N/A	N/A
142	Radiatas	Webb	N/A	N/A	N/A
143	Hensley Field Operations Center	Dallas	N/A	N/A	N/A
144	Southwest Plaza Base Bldg	Dallas	N/A	N/A	N/A
145	Air Performance	Dallas	N/A	N/A	N/A
146	Meadwest VA Co.	Harris	N/A	N/A	N/A
147	Gap #1550 Mockingbird Station	Dallas	N/A	N/A	N/A
148	Kirby Building	Dallas	N/A	N/A	N/A
149	USSA Towers	Bexar	N/A	N/A	N/A
150	Trinity Towers	Nueces	N/A	N/A	N/A

Table 6-8: Geothermal Heat Pump Energy Projects (cont.)

Project No	Project	County	Implementation Date	Capacity (ton)	Area (sqft)
151	Sonny Bryans BBQ	Dallas	N/A	N/A	N/A
152	L'Etoile Restaurant	Bexar	N/A	N/A	N/A
153	Sweeny Ind.Sch. Dist.Warehouse	Brazoria	N/A	N/A	N/A
154	Freylands Elementary	Chambers	N/A	N/A	N/A
155	Mustang Mech. Montwood High	El Paso	N/A	N/A	N/A
156	Boerne Elementary School	Kendall	N/A	N/A	N/A
157	City View Schools	Wichita	N/A	N/A	N/A
158	Montwood High School Addition	El Paso	N/A	N/A	N/A
159	Montwood High School Auditorium	El Paso	N/A	N/A	N/A
160	The Island on Lake Travis	Travis	N/A	N/A	N/A
161	Allen Campus	Brazos	N/A	N/A	N/A
162	Judson Lofts	Bexar	N/A	N/A	N/A
163	pink elementary school	Collin	2005	286	75,904
164	Griffin middle school	Collin	2002	N/A	N/A
165	Joslin Elementary	Travis	1991	N/A	N/A
166	Brent wood Elementary	Travis	1991	N/A	N/A
167	Walnut Creek Elementary	Travis	1991	N/A	N/A
168	Sims Elementary	Travis	1991	N/A	N/A
169	F R Rice Elementary	Travis	1991	N/A	N/A
170	T A Brown Elementary	Travis	1991	N/A	N/A
171	Canyon Ridge Middle School	Williamson	2004	N/A	N/A
172	Vista Ridge High School	Williamson	2004	N/A	N/A
173	Pleasant Hill Elementary	Williamson	2005	N/A	N/A
174	Good Night Middle school	Hays	1985	N/A	N/A
175	Santa Teresa Elementary	Hays	N/A	125	N/A
176	Santa Teresa Middle School	Hays	N/A	200	N/A
177	Esconreras primary kindergarten	Hays	N/A	105	N/A
178	Mullendore Elementary	Tarrant	post 1995	N/A	N/A
179	O.H. Stowe Elementary	Tarrant	post 1995	N/A	N/A
180	Austin Elementary School GPISD	Dallas	post 2000	91	atleast 21,100

Table 6-8: Geothermal Heat Pump Energy Projects (cont.)

Project No	Project	County	Implementation Date	Capacity (ton)	Area (sqft)
181	Fannin Elementary School GPISD	Dallas	2004	221	N/A
182	Peaster Elementary	Parker	post 1995	N/A	N/A
183	Frisco Elementary School #15	Collin	post 1995	N/A	N/A
184	Lone Star Elementary - Frisco ISD	Collin	post 1995	N/A	N/A
185	Woodland Springs Elementary - Keller ISD	Tarrant	post 1995	N/A	N/A
186	Bette Perot Elementary - Keller ISD	Tarrant	post 1995	N/A	N/A
187	Granbury Middle School East Site	Hood	post 1995	N/A	N/A
188	Frisco Elementary #18 - Shaddock	Collin	post 2007	N/A	N/A
189	Shiver Road Elementary #18 Keller ISD	Tarrant	post 2007	N/A	N/A
190	Woodland Springs Elementary #17 Keller ISD	Tarrant	post 2007	N/A	N/A
191	McDonwell Elementary (Keller ISD)	Tarrant	post 2007	N/A	N/A
192	Keller Intermediate School #5 Keller ISD	Tarrant	post 2007	N/A	N/A
193	Shady Shores Elementary	Denton	post 2007	393	75,904
194	Alta Vista Middle School #5 Keller ISD	Tarrant	post 2007	N/A	N/A
195	Brewer High School (White Settlement ISD)	Tarrant	post 2007	N/A	N/A
196	Leaky High school	Gillespie	N/A	120	N/A
197	Canutillo High School	El Paso	N/A	1,200	N/A
198	Lubbock Christian University	Lubbock	N/A	N/A	N/A
199	Rice University	Harris	N/A	N/A	N/A
200	brown building lofts	Travis	N/A	N/A	N/A
201	Wheeler county Court House	Wheeler	N/A	N/A	N/A
202	Ballinger housing authority	Runnels	N/A	N/A	N/A
203	Project under category miscellaneous cited by FHP manufacturing	Travis	N/A	N/A	N/A
204	Foreman independent school district	Bowie	N/A	N/A	N/A
205	Timber Creek High School #4	Tarrant	post '2008	117	361,141
206	Ed Wilkie Middle School #5: Geothermal Design Services	Travis	post '2008	643	N/A
207	William & Abbie Allen Elementary School	Collin	post '2008	339	83,960
208	Career & Technology Education Center	N/A	post '2008	799	247,880
209	Early Childhood School	Collin	post '2008	385	54,861
210	Burleson Elementary School #11	N/A	post '2008	284	N/A

Table 6-8: Geothermal Heat Pump Energy Projects (cont.)

Project No	Project	County	Implementation Date	Capacity (ton)	Area (sqft)
211	Killeen Police Headquarters: Geothermal Design	Bell	post '2008	208	88,663
212	Burleson High School #2	Tarrant	post '2008	2,126	490,447
213	Secondary Instructional Facility	Travis	post '2008	745	184,824
214	Lamar & Norma Hunt Middle School #10	Collin	post '2008	512	147,096
215	Elizabeth Cash Maus Middle School #11	Collin	post '2008	512	147,096
216	Robert Cobb Middle School #12	Collin	post '2008	512	147,096
217	D'Guiseppe (Gerald Sonntag) Elementary School: 2003 New ES	Collin	post '2008	310	77,184
218	Aubrey High School	Denton	post '2008	225	N/A
219	DFW Airport: EAD Annex	Travis	post 2009	18	N/A
220	2009 Capital Improvements @ Various Campuses	Travis	post 2009	148	N/A
221	Pre-Kindergarten School	Denton	post 2009	164	60,391
222	George & Debra Purefoy Elementary School #30	N/A	post 2009	304	N/A
223	Elementary School #14: Geothermal Design Services	N/A	post 2009	Y	N/A
224	Patricia Dean Boswell McCall Elementary School	Parker	2007	367	89,642
225	Aubrey Intermediate: Add/Reno	Denton	2007	234	69,519
226	Sam Carter Service Center	Collin	2007	116	49,377
227	Dr. Monaco Elementary School	Denton	2007	263	74,544
228	Caprock Elementary School #20	Tarrant	2007	304	92,768
229	Trinity Springs Middle School: Add.	Tarrant	2007	121	36,136
230	Milam Elementary School: 2007 Bond HVAC Replacement	Dallas	2008	131	N/A
231	Truman Middle School: HVAC Retrofit Phase 2	Dallas	under progress	146	N/A
232	Alta Vista Elementary School	Tarrant	under progress	573	N/A
233	Sandshell Elementary School #21	Travis	under progress	278	N/A
234	Corinth Primary	Denton	under progress	238	N/A
235	All Saints Episcopal School	Travis	under progress	337	N/A
236	Alliance for Children	Travis	under progress	33	N/A
237	Faithbridge Presbyterian Church	Collin	under progress	165	N/A
238	Heritage High School	Collin	2007	1,042	325,693
239	Cotulla High School	La Salle	N/A	N/A	N/A
240	Marlin Hospital	Falls	N/A	N/A	N/A

Table 6-8: Geothermal Heat Pump Energy Projects (cont.)

Project No	Project	County	Implementation Date	Capacity (ton)	Area (sqft)
241	Stacy Park Pool	Travis	N/A	N/A	N/A
242	1505, elm street	Dallas	N/A	N/A	N/A
243	Covington high school	Hill	N/A	N/A	N/A
244	Residential project by energyhomes.org	N/A	N/A	50	N/A
245	Residential project by reported Trane	Coryell	N/A	4	N/A
246	Golden Sands disaster recovery dome, Texas	Travis	N/A	N/A	N/A
247	Liberty county co production	Liberty	N/A	N/A	N/A
248	Department of defense-Fort Bliss project	El Paso	N/A	N/A	N/A
249	Department of defense-Fort Bliss project (Family housing)	El Paso	N/A	N/A	N/A
250	Department of defense-Fort Hood project (Family housing)	Bell	N/A	N/A	N/A
251	Department of defense-Fort Hood project (Administrative)	Bell	N/A	N/A	40,782
252	Department of defense-Dyes AFB project	Taylor	N/A	N/A	N/A
253	Rice University	Harris	2008	N/A	1,400
254	Trail Driver	Hays	N/A	N/A	N/A
255	Seregetti International Office Bldg.	Harris	N/A	18	10,000
256	Lone Star Calibration Lab	Harris	N/A	5	1,200
257	McDonalds Restaurant	Montgomery	N/A	30	2,000
258	Asia House	Harris	N/A	200	30,000
259	Rosewood Funeral Home	Harris	N/A	50	5,000
260	Leakey ISD	Real	N/A	120	45,000
261	Canutillo HS	El Paso	N/A	1,200	465,000
262	El Paso Chamb of Commerce	El Paso	N/A	100	30,000
263	South Houston Police	Harris	N/A	60	15,000
264	Conroe Medical Office Building	Montgomery	N/A	40	5,000
265	Kingwood Village Estates	Harris	N/A	150	60,000
266	Laughlin AFB	Val Verde	N/A	150	45,000
267	Texas Gov Mansion	Travis	N/A	40	12,000
268	Lubbock Christian University	Lubbock	N/A	800	350,000
269	Early Childhood Development	El Paso	N/A	100	45,000
270	Harlandale ISD	Bexar	N/A	80	25,000

Table 6-8: Geothermal Heat Pump Energy Projects (cont.)

Project No	Project	County	Implementation Date	Capacity (ton)	Area (sqft)
271	Shargri La Botanical Gardens	Orange	N/A	50	25,000
272	Galveston Coast Guard Station	Galveston	N/A	100	30,000
273	Billy Dade MS	Dallas	N/A	500	190,000
274	South Houston Police Station, South Houston, TX	Harris	NA	NA	NA
275	Texas Governor's Mansion in Austin	Travis	NA	NA	NA
276	Austin ISD -several schools, Austin, TX	Travis	NA	NA	NA
277	Goliad Co. Coproduction	Goliad	NA	NA	NA
278	William Beaumont New Hospital, Ft. Bliss, El Paso, TX	El Paso	NA	NA	NA
279	Finnell residence	Travis	NA	NA	NA

Table 6-9: Landfill Gas-Fired Power Plants: Operational

Project No	Landfill Name	City	County	Waste In Place (tons)	Landfill Owner Organization	Project Status	Project Start Date	MW Capacity	LFG Flow to Project (SCFD)
1	BFI - Tessman Road Landfill	San Antonio	Bexar	11300000	Republic Services, Inc.	Operational	10/10/2002	5.4	2.9
2	BFI - Tessman Road Landfill	San Antonio	Bexar	11300000	Republic Services, Inc.	Operational	5/1/2003	2.7	1.45
3	Covel Gardens LF	San Antonio	Bexar	12007000	Waste Management, Inc.	Operational	12/20/2005	9.6	
4	Sanifill Of Texas-Baytown LF	Baytown	Chambers	6290000	Waste Management, Inc.	Operational	1/24/2003	3.9	1.73
5	McKinney Landfill	McKinney	Collin	3957000	City of McKinney, TX	Operational	5/27/2011	3.2	
6	Mesquite Creek LF	New Braunfels	Comal	3817620	Waste Management, Inc.	Operational	12/31/2010	3.1	
7	McCommas Bluff LF/City of Dallas	Dallas	Dallas	30000000	City of Dallas, TX	Operational	1/1/2008		9.4
8	Trinity Oaks Landfill	Dallas	Dallas	6838600	Republic Services, Inc.	Operational	2/24/2009	3.2	
9	Camelot Landfill	Lewisville	Denton	7458794	City of Farmers Branch, TX	Operational	2/1/2011	3.2	
10	City of Denton Landfill	Denton	Denton	4900000	City of Denton, TX	Operational	12/17/2008	1.6	0.648
11	DFW Recycling & Disposal Facility	Lewisville	Denton	20817174	Waste Management, Inc.	Operational	1/1/1988	3.2	
12	DFW Recycling & Disposal Facility	Lewisville	Denton	20817174	Waste Management, Inc.	Operational	7/1/2009	6.4	
13	Skyline LF	Ferris	Ellis	8191000	Waste Management, Inc.	Operational	6/13/2007	6.4	3.4
14	Blue Ridge LF	Fresno	Fort Bend	4113900	Republic Services, Inc.	Operational	12/1/2009		4.32
15	Rosenberg Landfill	Rosenberg	Fort Bend	2649100	Fort Bend County, TX	Operational	1/1/2000		1
16	Coastal Plains LF	Alvin	Galveston	11738042	Waste Management, Inc.	Operational	1/10/2003	6.67	
17	Blue Bonnet LF	Houston	Harris	2526000	Waste Management, Inc.	Operational	3/1/2003	1.936	0.928
18	McCarty Road LF	Houston	Harris	28918718	Republic Services, Inc.	Operational	3/1/1986		9.7
19	McCarty Road LF	Houston	Harris	28918718	Republic Services, Inc.	Operational	1/1/2005		5.3
20	McCarty Road LF	Houston	Harris	28918718	Republic Services, Inc.	Operational	3/1/2009		6.48
21	WMI/Atascocita LF	Humble	Harris	9628700	Waste Management, Inc.	Operational	6/1/2003	8.5	3.09
22	WMI/Atascocita LF	Humble	Harris	9628700	Waste Management, Inc.	Operational	1/1/2004	1.7	0.62
23	City of Waco LF	Woodway	McLennan	2225000	City of Waco, TX	Operational	3/1/2004	1.5	1
24	City of Waco LF	Woodway	McLennan	2225000	City of Waco, TX	Operational	4/24/2008		1.19
25	City of Conroe LF	Conroe	Montgomery	3146000	City of Conroe	Operational	3/1/2003	2.9	
26	Security Recycling and Disposal LF	Cleveland	Montgomery	4014800	Waste Management, Inc.	Operational	5/1/2003	5	
27	Greenwood Farms Landfill	Tyler	Smith	5500000	City of Tyler, TX	Operational	4/22/2009		2.304
28	Arlington LF	Arlington	Tarrant	13981144	City of Arlington	Operational	4/1/2003	5	2.9
29	Fort Worth Regional LF	Haltom City	Tarrant		Republic Services, Inc.	Operational	12/27/2006	1.6	0.72
30	Westside Sanitary LF	Aledo	Tarrant	9955600	Waste Management, Inc.	Operational	3/15/2010	4.8	
31	Austin Community LF	Austin	Travis	13228353	Waste Management, Inc.	Operational	9/1/2007	6.4	3.17
32	Sunset Farms	Austin	Travis	9600000	Republic Services, Inc.	Operational	12/1/1996	3	2.09

Table 6-10: Landfill Gas-Fired Power Plants: Candidates

Project No	Landfill Name	County	Waste In Place (tons)	Year Landfill Opened	Landfill Closure Year	Landfill Owner Organization	Project Status
1	City of Temple Landfill	Bell	3600000	1979		City of Temple	Candidate
2	Nelson Gardens LF	Bexar	11800000	1980	1993	City of San Antonio, TX	Candidate
3	Seabreeze Environmental Landfill	Brazoria	6279700	1993	2028	Waste Connections, Inc.	Candidate
4	Rock Prairie Road Landfill	Brazos	4391600	1981	2011	Brazos Valley SWMA	Candidate
5	Royal Oaks Landfill	Cherokee	1044200	1983	2030	Republic Services, Inc.	Candidate
6	Maxwell Creek LF	Collin	4502694	1982	2005	North Texas Municipal Water District	Candidate
7	Altair Disposal Services LLC	Colorado	8581378	1973	2031	Clean Harbors	Candidate
8	Tricil Environmental Response/Altair SLF	Colorado	1980400	1976	2002	Safety Clean	Candidate
9	Fort Hood Landfill	Coryell	2240000			US Army Fort Hood	Candidate
10	C M Hinton Landfill	Dallas	3483475	2002	2056	City of Garland, TX	Candidate
11	Castle Drive Landfill	Dallas	5508137	1978	2002	City of Garland, TX	Candidate
12	City of Grand Prairie LF	Dallas	2835800	1978	2021	City of Grand Prairie, TX	Candidate
13	Charter Waste Landfill	Ector	1300000			Republic Services, Inc.	Candidate
14	McCombs LF	El Paso	4137100	1984	2046	City of El Paso, TX	Candidate
15	CSC Disposal and Landfill	Ellis	4254250	1985	2100	Republic Services, Inc.	Candidate
16	Ft. Bend Regional Landfill	Fort Bend	3000000	2004		WCA Waste Corporation	Candidate
17	Sprint Fort Bend County LF	Fort Bend	1664372	1981	2020	The Sprint Companies	Candidate
18	Galveston County LF	Galveston	7822500	1973	2020	Republic Services, Inc.	Candidate
19	City of Pampa LF	Gray	1176200	1975	2007	City of Pampa, TX	Candidate
20	Hillside Landfill	Grayson	4273776	1965	2108	Waste Management, Inc.	Candidate
21	Pine Hill LF	Gregg	12141700	1982	2060	4S Oil Company	Candidate
22	Sprint LF	Harris	2041600	1987	2005	Landfill Owner	Candidate
23	Whispering Pines LF	Harris	6405000	1978	2017	Republic Services, Inc.	Candidate
24	C&T Landfill	Hidalgo	3844000	1976	2004	Duncan Disposal, Inc.	Candidate
25	Edinburg Regional Sanitary Type 1 Landfill	Hidalgo	3900000	1976	2036	City of Edinburg, TX	Candidate
26	City of Beaumont LF	Jefferson	3711975	1983	2058	City of Beaumont, TX	Candidate
27	City of Port Arthur Landfill	Jefferson	1802100	1986	2044	City of Port Arthur, TX	Candidate
28	Golden Triangle Landfill	Jefferson	2310400	1991	2021	Republic Services, Inc.	Candidate
29	Turkey Creek LF	Johnson	3733200	1983	2025	Republic Services, Inc.	Candidate
30	BFI - Abilene Landfill	Jones	7921300	1982	2109	Ray Knowles	Candidate

Table 6-9: Landfill Gas-Fired Power Plants: Candidates (cont.)

Project No	Landfill Name	County	Waste In Place (tons)	Year Landfill Opened	Landfill Closure Year	Landfill Owner Organization	Project Status
31	Kerrville Landfill	Kerr	722608	1983	2015	City of Kerrville, TX	Candidate
32	City of Lubbock LF	Lubbock	2177800	1975	2008	City of Lubbock, TX	Candidate
33	Lacy-Lakeview LF	McLennan	1306200	1985	2020	Waste Management, Inc.	Candidate
34	City Of Midland LF	Midland	3053200	1990	2170	City of Midland, TX	Candidate
35	Colorado City Landfill	Mitchell	1545200	1975	2020	City of Colorado City, TX	Candidate
36	City of Nacogdoches Landfill	Nacogdoches	1296200	1977	2033	City of Nacogdoches	Candidate
37	City of Corsicana LF	Navarro	788100	1993	2100	City of Corsicana, TX	Candidate
38	City of Sweetwater LF	Nolan	1283800	1976	2040	City of Sweetwater, TX	Candidate
39	Cefe F Valenzuela Landfill	Nueces		2007	2107	City of Corpus Christi, TX	Candidate
40	J.C. Elliott LF	Nueces	16862087	1972	2007	City of Corpus Christi, TX	Candidate
41	City of Perryton Landfill	Ochiltree	1631100	1979		City of Perryton, TX	Candidate
42	City Of Weatherford LF	Parker	1079000	1976	2060	Progressive Waste Solutions Ltd.	Candidate
43	Polk County Landfill	Polk	1332000			Polk County, TX	Candidate
44	Amarillo LF	Potter	7031400	1976	2050	City of Amarillo, TX	Candidate
45	Southwest Landfill (Amarillo)	Randall	3393200	1987	2025	Republic Services, Inc.	Candidate
46	Eastside Landfill	Tarrant				Waste Management, Inc.	Candidate
47	Fort Worth Southeast Landfill	Tarrant	5299400	1976	2036	City of Fort Worth, TX	Candidate
48	Mill Creek LF	Tarrant	4815500	1973	2001	Republic Services, Inc.	Candidate
49	Trashaway San Angelo Landfill	Tom Green	790000	1984		Republic Services, Inc.	Candidate
50	Texas Disposal Systems LF	Travis	4408900	1990	2032	Texas Disposal Systems	Candidate
51	City of Victoria Landfill	Victoria	2556000	1983	2033	City of Victoria, TX	Candidate
52	City of Laredo LF	Webb	3180000	1986	2015	City of Laredo, TX	Candidate
53	City of Wichita Falls LF	Wichita	4073200	1982	2021	City of Wichita Falls, TX	Candidate
54	Williamson County LF	Williamson	2134700	1981	2040	Waste Management, Inc.	Candidate

Table 6-11: Landfill Gas-Fired Power Plants: Potential

Project No	Landfill Name	City	County	Waste In Place (tons)	Year Landfill Opened	Landfill Closure Year	Landfill Owner Organization	Project Status
1	Bell County/Sparks LF	Holland	Bell	343200	1994	2001	Bell County	Potential
2	New Boston Landfill	New Boston	Bowie					Potential
3	City of Luling Landfill	Luling	Caldwell		1965	1993		Potential
4	City of Richardson LF	Richardson	Collin	825218	1975	1990	City of Richardson, TX	Potential
5	City of Irving Landfill	Irving	Dallas	2063900	1981	2065	City of Irving, TX	Potential
6	Hutchins Landfill	Hutchins	Dallas	1000000	1978	1992	Republic Services, Inc.	Potential
7	Laidlaw/Wilmer LF	Wilmer	Dallas	686400	1992	2001	Landfill Owner	Potential
8	McCommas Bluff LF/City of Dallas	Dallas	Dallas	30000000	1975	2042	City of Dallas, TX	Potential
9	McCommas Bluff LF/City of Dallas	Dallas	Dallas	30000000	1975	2042	City of Dallas, TX	Potential
10	Lewisville Landfill	Lewisville	Denton		1986	2003	Republic Services, Inc.	Potential
11	ECD Landfill	Ennis	Ellis		1988	2089	Republic Services, Inc.	Potential
12	Ellis County LF	Palmer	Ellis	892320	1994		Waste Management, Inc.	Potential
13	North County C&D Landfill	Dickinson	Galveston				Republic Services, Inc.	Potential
14	Bellfort Boulevard Landfill	Houston	Harris	9731720	1954	1970	City of Houston, TX	Potential
15	Rio Grande Valley	Donna	Hidalgo				Republic Services, Inc.	Potential
16	Itasca Landfill	Itasca	Hill		1977	2017	Republic Services, Inc.	Potential
17	Maloy Landfill	Commerce	Hunt	610000	1979	2030	Republic Services, Inc.	Potential
18	Pecan Prairie Landfill	Kingston	Hunt	1479900	1984	1998	Waste Management, Inc.	Potential
19	City of Nederland Landfill	Nederland	Jefferson			1990	Mid County Municipal League, TX	Potential
20	City of Cleburne Landfill	Cleburne	Johnson	1583200	1976		Landfill Owner	Potential
21	Paris Landfill	Powderly	Lamar					Potential
22	Hallettsville Landfill	Hallettsville	Lavaca		1928	1992	City of Hallettsville, TX	Potential
23	Mexia Landfill	Mexia	Limestone		1983	2019	Republic Services, Inc.	Potential
24	Quail Canyon	Lubbock	Lubbock	200200	1977	1993	Republic Services, Inc.	Potential
25	Newton County Landfill	Mauriceville	Newton					Potential
26	El Centro Landfill	Robstown	Nueces		2000	2013	Republic Services, Inc.	Potential
27	Orange County LF	Orange	Orange	1517000	1975	1993	Orange County, TX	Potential
28	Sinton	Sinton	San Patricio		1972	2002	Republic Services, Inc.	Potential
29	BFI LF	Abilene	Taylor	745888	1993	1997	Pine Street Salvage Company	Potential
30	Pleasant Oaks Landfill	Mount Pleasant	Titus		1960	2012	City of Mount Pleasant	Potential

Figure 6-10: Landfill Gas-Fired Power Plants: Potential (cont.)

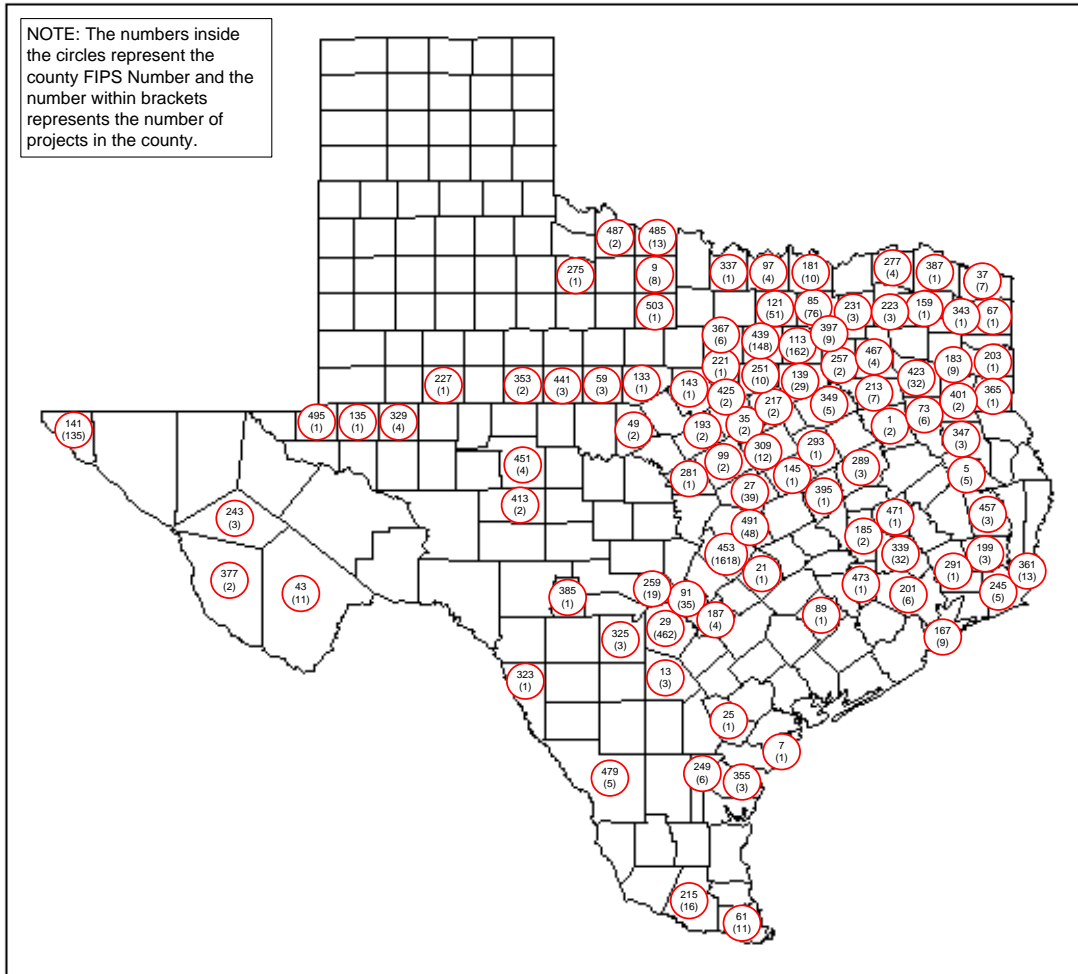
Project No	Landfill Name	City	County	Waste In Place (tons)	Year Landfill Opened	Landfill Closure Year	Landfill Owner Organization	Project Status
31	Best Pak Disposal Inc. LF	Pattison	Waller			2001	Waste Management, Inc.	Potential
32	El Campo Landfill	El Campo	Wharton		1985	1994		Potential
33	Bell Processing Inc. LF	Wichita Falls	Wichita		1990	2001	Bell Processing Inc	Potential
34	Hazelwood Enterprises, Inc. LF	Baytown					Landfill Owner	Potential

Table 6-12: Landfill Gas-Fired Power Plants: Construction

Project No	Landfill Name	City	County	Waste In Place (tons)	Year Landfill Opened	Landfill Closure Year	Landfill Owner Organization	Project Status	Project Start Date
1	Clint LF	Clint	El Paso	4,904,400	1983	2006	City of El Paso, TX	Construction	6/30/2012

Table 6-13: Landfill Gas-Fired Power Plants: Shutdown

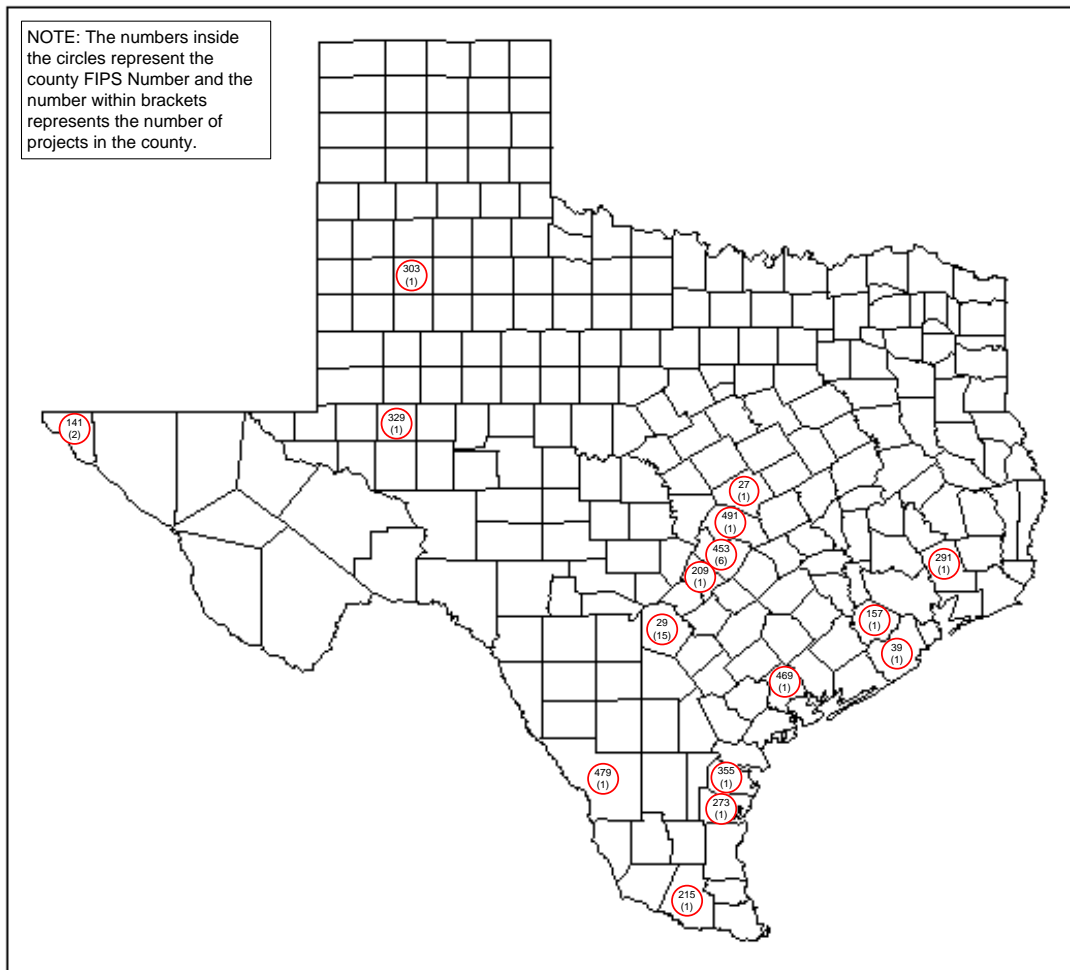
Project No	Landfill Name	City	County	Waste In Place (tons)	Landfill Owner Organization	Project Status	Project Start Date	Project Shutdown Date	MW Capacity	LFG Flow to Project (SCFD)
1	City of Brownwood Landfill	Brownwood	Brown	1300100	City of Brownwood, TX	Shutdown	1/1/1998	12/31/2007	NA	NA
2	Castle Drive Landfill	Garland	Dallas	5508137	City of Garland, TX	Shutdown	5/1/2000	12/31/2004	NA	NA
3	McCommas Bluff LF/City of Dallas	Dallas	Dallas	30000000	City of Dallas, TX	Shutdown	1/1/2000	12/31/2006	NA	5.45
4	McCommas Bluff LF/City of Dallas	Dallas	Dallas	30000000	City of Dallas, TX	Shutdown	1/1/2007	12/31/2007	NA	2.8
5	City of Denton Landfill	Denton	Denton	4900000	City of Denton, TX	Shutdown	2/1/2005	4/1/2008	NA	0.432
6	Blue Ridge LF	Fresno	Fort Bend	4113900	Republic Services, Inc.	Shutdown	12/1/2009	12/31/2010	1.6	0.648
7	Austin Community LF	Austin	Travis	13228353	Waste Management, Inc.	Shutdown	1/1/1998	1/1/2000	NA	NA
8	City of Austin LF	Austin	Travis	4858500	City of Austin, TX	Shutdown	2/1/2004	12/31/2006	0.2	NA



Legend

County	FIPS Code	No. of Projects	County	FIPS Code	No. of Projects	County	FIPS Code	No. of Projects
Anderson	1	2	Grayson	181	10	Morris	343	1
Angelina	5	5	Gregg	183	9	Nacogdoches	347	3
Aransas	7	1	Grimes	185	2	Navarro	349	5
Archer	9	8	Guadalupe	187	4	Nolan	353	2
Atascosa	13	3	Hamilton	193	2	Nueces	355	3
Bastrop	21	1	Hardin	199	3	Orange	361	13
Bee	25	1	Harris	201	6	Panola	365	1
Bell	27	39	Harrison	203	1	Parker	367	6
Bexar	29	462	Henderson	213	7	Presidio	377	2
Bosque	35	2	Hidalgo	215	16	Real	385	1
Bowie	37	7	Hill	217	2	Red River	387	1
Brewster	43	11	Hood	221	1	Robertson	395	1
Brown	49	2	Hopkins	223	3	Rockwall	397	9
Calhoun	59	3	Howard	227	1	Rusk	401	2
Cameron	61	11	Hunt	231	3	Schleicher	413	2
Cass	67	1	Jeff Davis	243	3	Smith	423	32
Cherokee	73	6	Jefferson	245	5	Somervell	425	2
Clay	77	2	Jim Wells	249	6	Tarrant	439	148
Collin	85	76	Johnson	251	10	Taylor	441	3
Colorado	89	1	Kaufman	257	2	Tom Green	451	4
Comal	91	35	Kendall	259	19	Travis	453	1618
Cooke	97	4	Knox	275	1	Tyler	457	3
Coryell	99	2	Lamar	277	4	Van Zandt	467	4
Dallas	113	162	Lampasas	281	1	Walker	471	1
Denton	121	51	Leon	289	3	Waller	473	1
Eastland	133	1	Liberty	291	1	Webb	479	5
Ector	135	1	Limestone	293	1	Wichita	485	13
El Paso	141	135	Maverick	323	1	Wilbarger	487	2
Ellis	139	29	McLennan	309	12	Williamson	491	48
Erath	143	1	Medina	325	3	Winkler	495	1
Falls	145	1	Midland	329	4	Young	503	1
Franklin	159	1	Montague	337	1			
Gaveston	167	9	Montgomery	339	32			

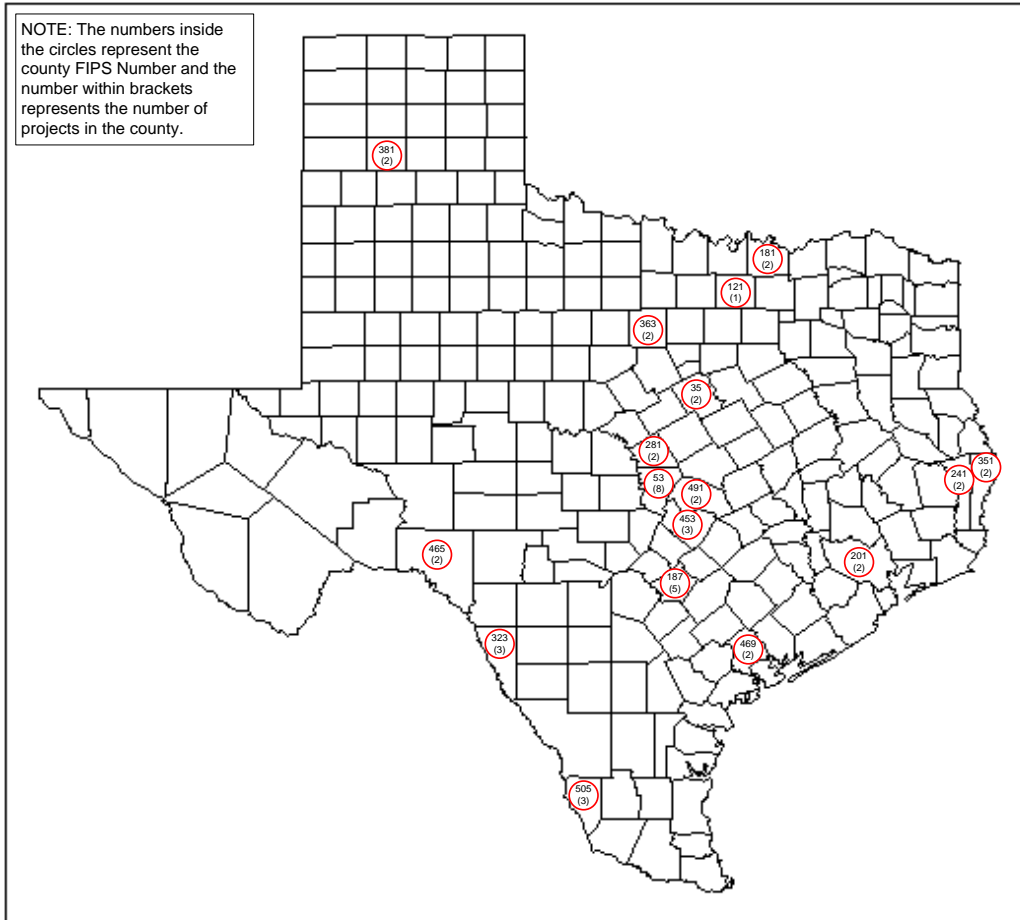
Figure 6-1: Solar Photovoltaic Projects throughout Texas



Legend

County	FIPS Code	No. of Projects
Bell	27	1
Bexar	29	15
Brazoria	39	1
El Paso	141	2
Fort Bend	157	1
Hays	209	1
Hidalgo	215	1
Kleberg	273	1
Liberty	291	1
Lubbock	303	1
Midland	329	1
Nueces	355	1
Travis	453	6
Victoria	469	1
Webb	479	1
Williamson	491	1
N/A	-	2

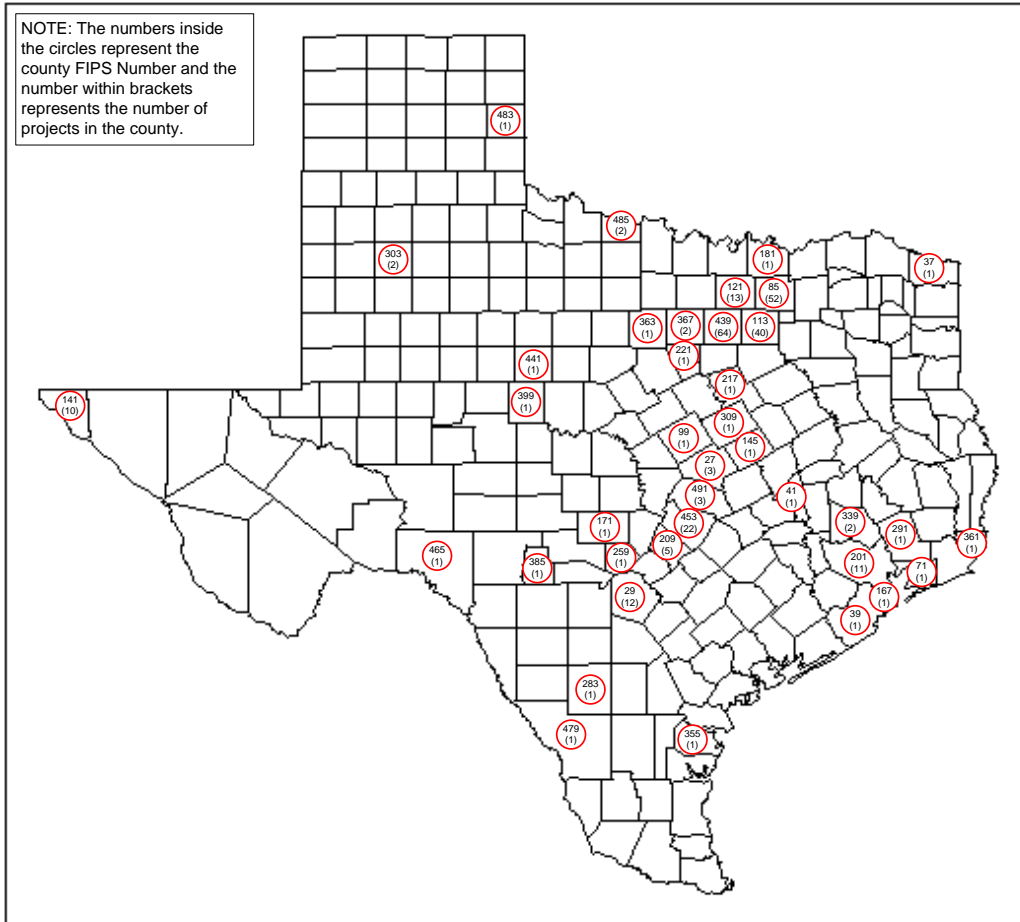
Figure 6-2: Solar Thermal Projects throughout Texas



Legend

County	FIPS Code	No. of Projects
Bosque	35	2
Burnet	53	8
Denton	121	1
Grayson	181	2
Guadalupe	187	5
Harris	201	2
Jasper	241	2
Lampasas	281	2
Maverick	323	3
Newton	351	2
Palo Pinto	363	2
Randall	381	2
Travis	453	3
Val Verde	465	2
Victoria	469	2
Williamson	491	2
Zapata	505	3

Figure 6-3: Hydropower Plants throughout Texas

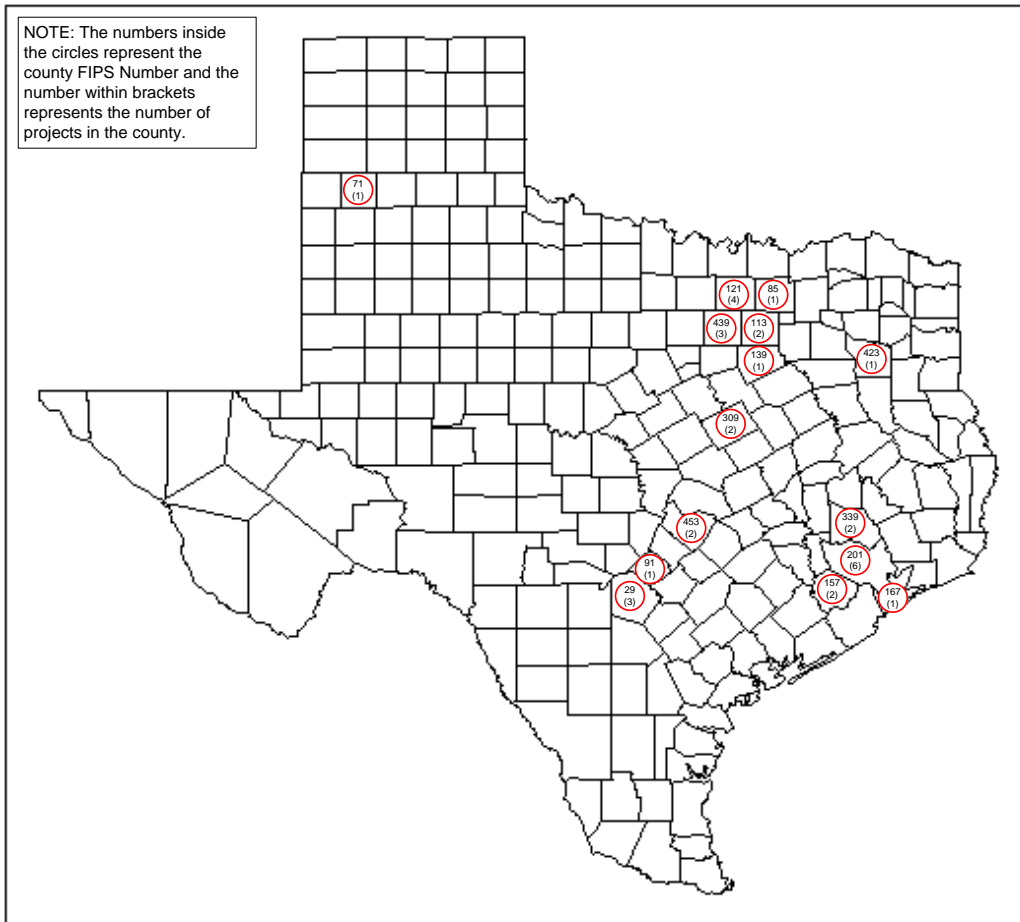


Legend

County	FIPS Code	No. of Projects
Bell	27	3
Bexar	29	12
Bowie	37	1
Brazoria	39	1
Brazos	41	1
Chambers	71	1
Collin	85	52
Coryell	99	1
Dallas	113	40
Denton	121	13
El Paso	141	11
Falls	145	1
Galveston	167	1
Gillespie	171	1
Goliad	175	1
Grayson	181	1
Harris	201	12
Hays	209	5
Hill	217	1
Hood	221	1
Kendall	259	1

County	FIPS Code	No. of Projects
La Salle	283	1
Liberty	291	1
Lubbock	303	2
McLennan	309	1
Montgomery	339	2
Nueces	355	1
Orange	361	1
Palo pinto	363	1
Parker	367	2
Real	385	1
Runnels	399	1
Tarrant	439	64
Taylor	441	1
Travis	453	26
Val Verde	465	1
Webb	479	1
Wheeler	483	1
Wichita	485	2
Williamson	491	3
N/A	-	5

Figure 6-4: Geothermal Projects Installed throughout Texas



Legend

County	FIPS Code	No. of Projects
Bexar	29	3
Chambers	71	1
Collin	85	1
Comal	91	1
Dallas	113	2
Denton	121	4
Ellis	139	1
Fort Bend	157	2
Galveston	167	1
Harris	201	6
McLennan	309	2
Montgomery	339	2
Smith	423	1
Tarrant	439	3
Travis	453	2

Figure 6-5: Landfill Gas-Fired Power Projects Installed throughout Texas

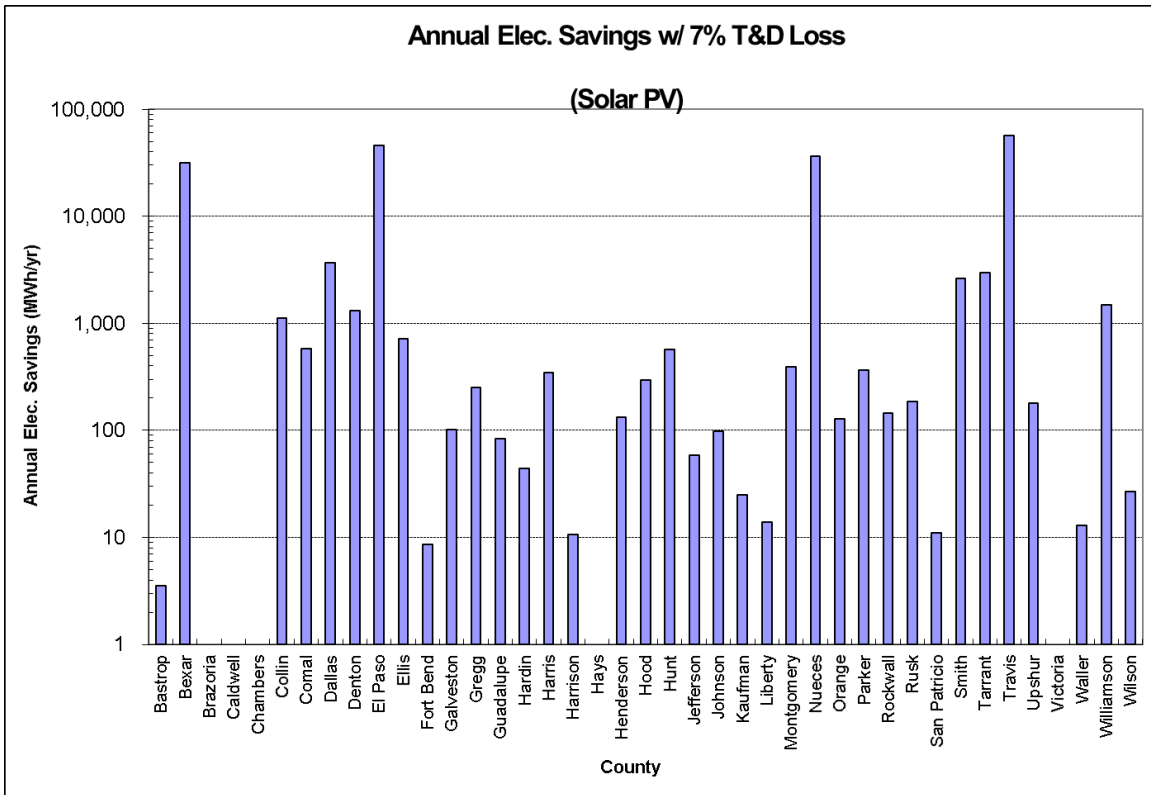


Figure 6-6: Annual Electric Savings per County from PV Projects

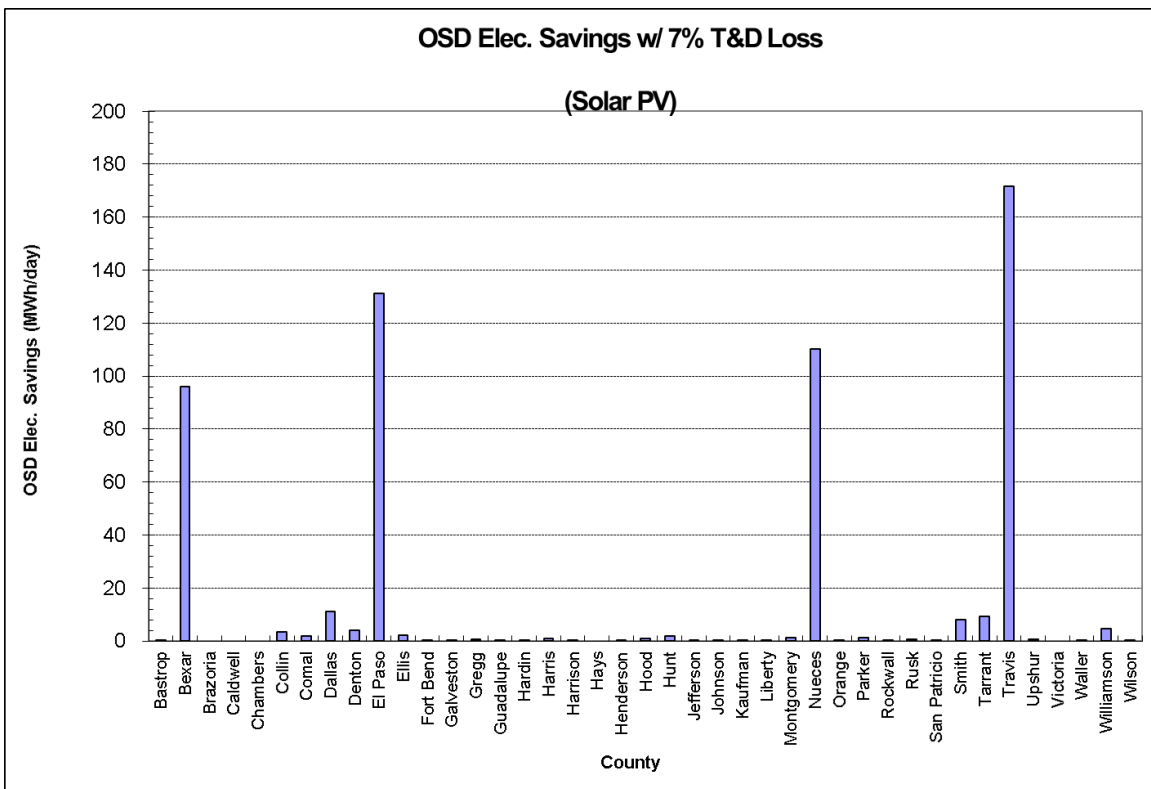


Figure 6-7: Ozone Season Day Electric Savings per County from PV Projects

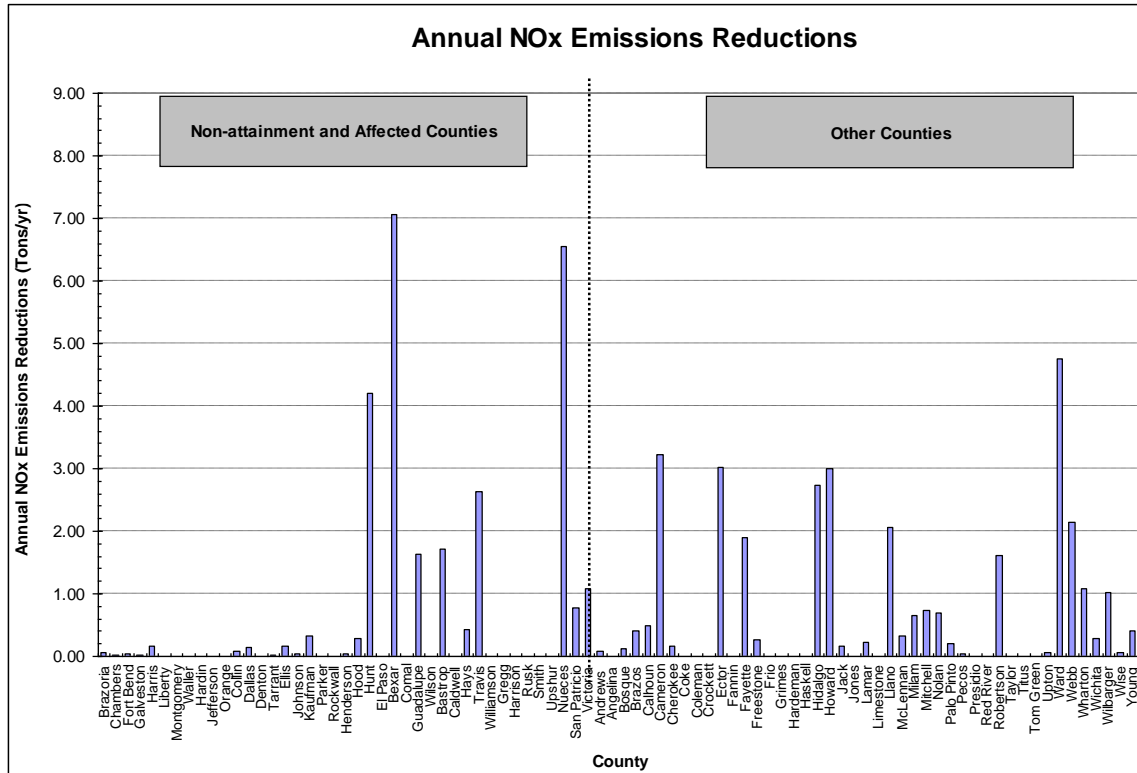


Figure 6-8: NOx Emissions Reductions per County from PV Projects

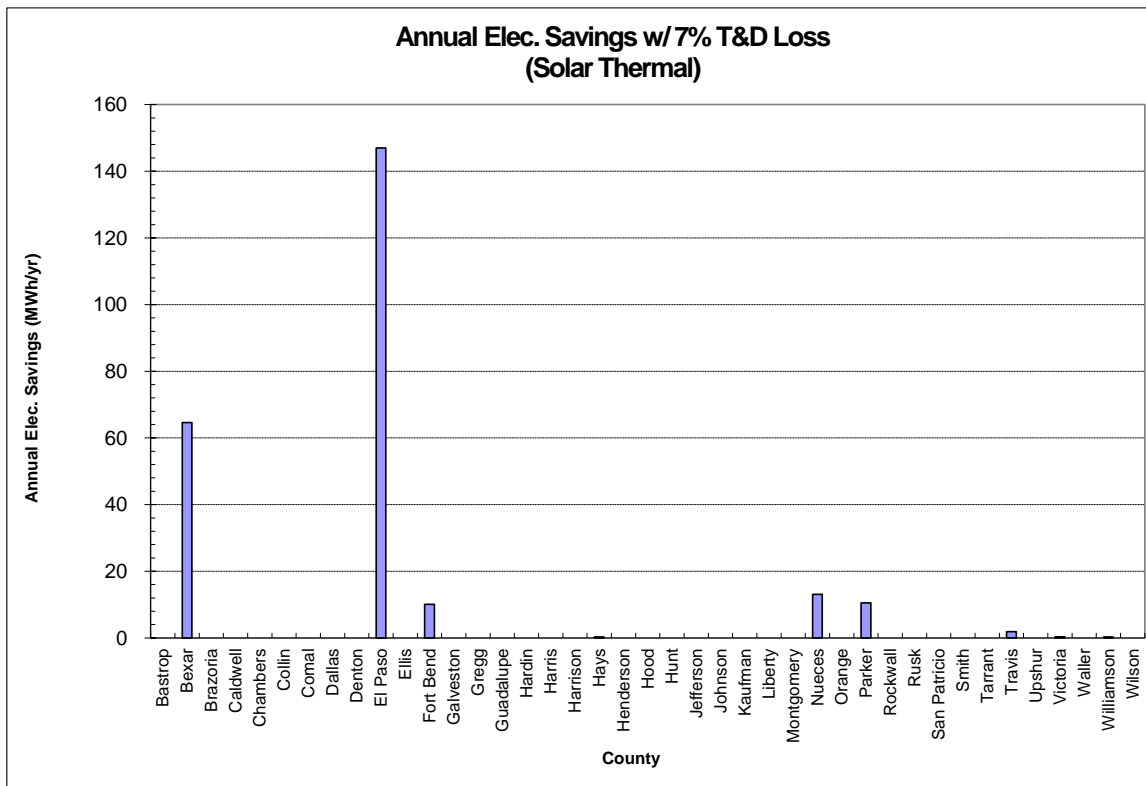


Figure 6-9: Annual Electric Savings per County from Solar Thermal Projects

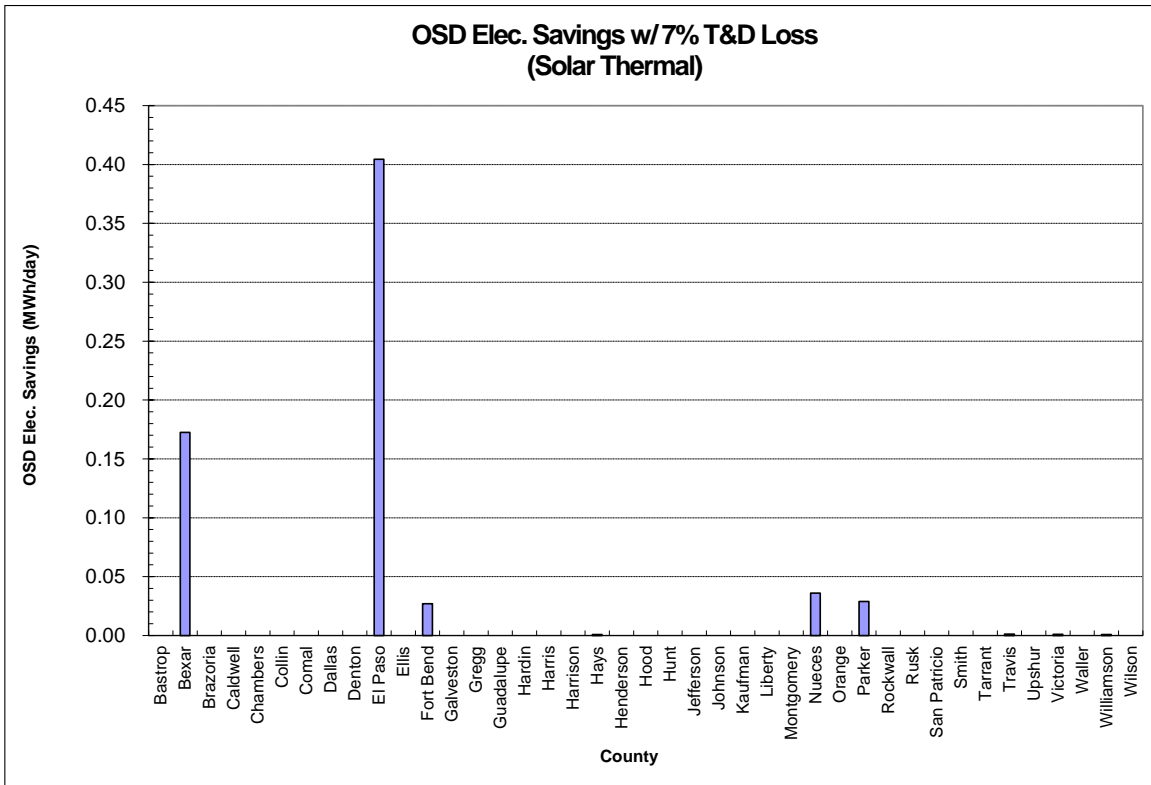


Figure 6-10: Ozone Season Day Electric Savings per County from Solar Thermal Projects

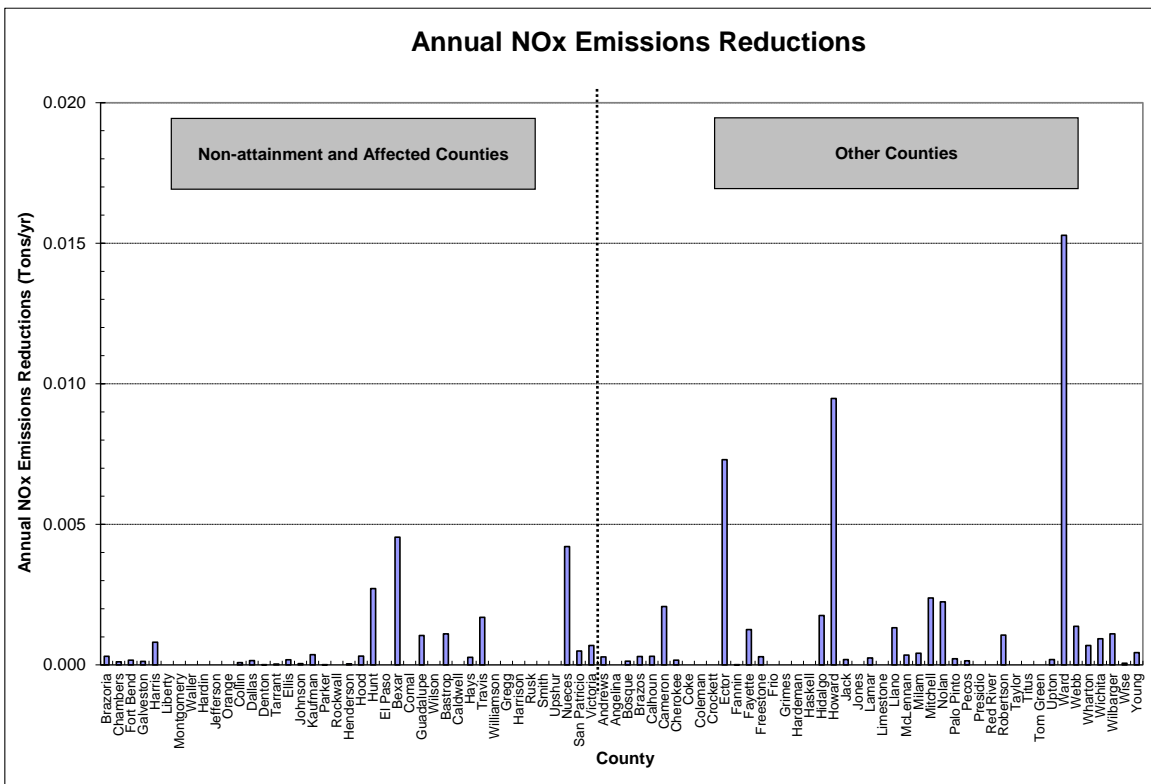


Figure 6-11: NOx Emissions Reductions per County from Solar Thermal Projects

7 REVIEW OF ERCOT'S RENEWABLE ENERGY CREDIT PROGRAM INFORMATION

7.1 Introduction

In this section, the information posted on ERCOT's Renewable Energy Credit Program site, www.texasrenewables.com, was reviewed for use in the Laboratory's report to the TCEQ. In particular, information posted under the "Public Reports" tab was downloaded and assembled into an appropriate format for review. This includes ERCOT's 2001 through 2012 reports to the Legislature, which were converted into tabular format for analysis and insertion into this report. Similarly, information from ERCOT's listing of REC generators was inspected to determine how it compared with other sources of information the Laboratory has assembled.

7.2 Summary of Renewable Projects in Texas

Each year ERCOT is required to compile a list of grid-connected sources that generate electricity from renewable energy and report it to the Legislature.

Table 7-1 shows power generator list, Table 7-2 shows quarterly electricity generation by renewable sources from year from 2001 till 2012. Table 7-3 contains the data reported by ERCOT from 2001 through 2012. Figure 7-1, Figure 7-2, Figure 7-3 and Figure 7-4 have been included to better illustrate the annual data collected by ERCOT. In Figure 7-1 the annual total electricity generation of all the renewable sources is shown. In Figure 7-2 the annual electric generation of renewable sources excluding wind is shown. In Figure 7-3 the annual electric generation of renewable sources excluding wind and hydro is shown. Similarly, in Figure 7-4 the annual electric generation of renewable sources excluding wind, hydro and biomass is shown. This was done to understand the contribution of individual energy source to the total electricity generated. In the figures and tables, it is clear to see that the electricity generated by wind each year is the largest single source of renewable energy in Texas, which has grown from 565,597 MWh in 2001 to 32,746,534 MWh in 2012. This is followed by:

- Biomass energy has grown from 39,496 MWh in 2003 to 288,988 MWh in 2012;
- Hydroelectric energy has grown from 30,639 MWh in 2001 to 389,197 MWh in 2012;
- Landfill gas energy has grown from 29,412 MWh in 2002 to 537,966 MWh in 2012; and
- Solar energy has grown from 87 MWh in 2002 to 133,642 MWh in 2012.

Table 7-1: ERCOT REC Generator List (Reference: <https://www.texasrenewables.com/publicReports/rpt1.asp>)

Company Name	Power Generating Company Name	Power Generating Company Code	Generator Site Name	Generator Site Code	Facility Identification Number	Unit Contact Information	Technology Type	Facility Noncompetitive Certification Data
El Paso Electric Company	El Paso Electric	EPE	Hueco Mountain Wind Ranch	EPE1	1	Monica Garcia	Wind	23631
FPL Pecos Wind 1, LLC	FPL Pecos Wind I II, LP	93	WOODWARD1	WOODWRD1	2	Jesse Nevarez	Wind	24296
Guadalupe-Blanco River Authority	Guadalupe-Blanco River Authority	05-631-1608-3000	DG_Schumansville	DG_Schum	3	Allen Ognoskie	Hydro	20028
Guadalupe-Blanco River Authority	Guadalupe-Blanco River Authority	05-631-1608-3000	DG-MCQUEENEY	DG_MCQUE	4	Allen Ognoskie	Hydro	20028
Trent Wind Farm, L.P.	Trent Wind Farm, L.P.	70	TRENT MESA WIND FARM	TRENT	5	Richard Walker	Wind	24322
FPL Energy Upton Wind I LLC	FPL Energy Upton Wind I, LP	94	KING MOUNTAIN SW	KING_SW	6	Jesse Nevarez	Wind	24538
FPL Energy Upton Wind II, LLC	FPL Energy Upton Wind II, LP	96	KING MOUNTAIN NW	KING_NW	7	Jesse Nevarez	Wind	24539
FPL Pecos Wind 2, LLC	FPL Energy Pecos Wind III, LP	93	WOODWARD 2	WOODWRD2	8	Jesse Nevarez	Wind	24296
Delaware Mountain Wind Farm LLC	DELAWARE MOUNTAIN WIND FARM LP	16	DELAWARE MOUNTAIN	DELAWARE	9	Linda Brandi	Wind	23705
Indian Mesa Wind Farm LLC	NWP INDIAN MESA WIND FARM LP	17	INDIAN MESA NWP	INDNNWP	10	Linda Brandi	Wind	23745
Guadalupe-Blanco River Authority	Guadalupe-Blanco River Authority	05-631-1608-3000	DG_LAKEWOOD TAP	DG_LKWDT	11	Allen Ognoskie	Hydro	20028
Guadalupe-Blanco River Authority	Guadalupe-Blanco River Authority	05-631-1608-3000	CANYON	DG_CANYON	12	Allen Ognoskie	Hydro	20028
Small Hydro of Texas, Inc.	Small Hydro of Texas, Inc.	71	DG_CUERO CSW	CUECPL	13	Linda A. Parker	Hydro	24191
FPL Energy Upton Wind III LLC	FPL Energy Upton Wind III, LP	96	KING MOUNTAIN NE	KING_NE	14	Jesse Nevarez	Wind	24540
FPL Energy Upton Wind IV, LLC	FPL Energy Upton Wind IV, LP	96	KING MOUNTAIN SE	KING_SE	15	Jesse Nevarez	Wind	24541
Desert Sky Wind Farm 1 LP	Indian Mesa Power Partners I, L.P.	999	Indian Mesa I Wind Power	INDNENR	16	Richard Walker	Wind	24921
Desert Sky Wind Farm 2 LP	Indian Mesa Power Partners II, L.P.	999	Indian Mesa II Wind Power	INDNENR	17	Richard Walker	Wind	24922
Llano Estacado	Llano Estacado Wind Ranch at White Deer	Shell	White Deer	White Deer Wind	18	Craig Dencklau	Wind	23633
Renewable Ventures	Nuon Renewable Ventures	NRV	Green Mountain Solar at Upper Kirby	USAPV003	19	Nuon Renewable Ventures	Solar	26410
Renewable Ventures	Nuon Renewable Ventures	NRV	Green Mountain Solar at The Winston School	USAPV002	20	Nuon Renewable Ventures	Solar	26411

Table 7-1: ERCOT REC Generator List (cont.)

Company Name	Power Generating Company Name	Power Generating Company Code	Generator Site Name	Generator Site Code	Facility Identification Number	Unit Contact Information	Technology Type	Facility Noncompetitive Certification Data
TX LFG Energy, LP - Atascocita	Viridis Energy, LP - Atascocita	93-01-87393	ATASCOCITA	HB	29	Sharon Frank	Landfill gas	26813
TX LFG Energy, LP - Coastal Plains	Viridis Energy, LP - Coastal Plains	93-01-16145	COASTAL PLAINS	ALVIN	32	Sharon Frank	Landfill gas	26812
TX LFG Energy, LP - Baytown	Viridis Energy, LP - Baytown	01-62-16561	BAYTOWN	TRM	33	Sharon Frank	Landfill gas	26811
TX LFG Energy, LP - Blue Bonnet	Viridis Energy, LP - Blue Bonnet	93-01-27472	BLUE BONNET	LB	34	Sharon Frank	Landfill gas	26809
TX LFG Energy, LP - Conroe	Viridis Energy, LP - Conroe	Conroe	Conroe	Conroe	35	Sharon Frank	Landfill gas	26808
TX LFG Energy, LP - Security	Viridis Energy, LP - Security	SECURITY	SECURITY	SECURITY	36	Sharon Frank	Landfill gas	26810
Gas Recovery Systems, Inc.	Gas Recovery Systems	20066	Sunset Farms Electric	Sunset Farms Electric	37	Michael Caplan	Landfill gas	24199
Bio Energy (Austin) LLC	Bio Energy Austin LLC	DG_WALZE	DG_WALZE	DG_WALZE	38	Dennis Bollinger	Biomass	25512
The University of Texas - Houston	University of Texas - Houston	UTHSC	University Center Tower	University Center Tower	42	Rahsaan Arscott	Solar	No. 77027
Sweetwater Wind Power LLC	Sweetwater Wind power LLC	137899477	Sweetwater Wind 1	SWEETWND	43	Kim Takayesu	Wind	28924
Brazos Wind, LP	Brazos Wiind LP	Brazos Wind	Green Mountain Energy Wind Farm at Brazos	BRAZ_WND1	44	Scott McBride	Wind	29025
Brazos Wind, LP	Brazos Wind LP	Brazos Wind	Green Mountain Energy Wind Farm at Brazos	BRAZ_WND2	45	Scott McBride	Wind	29025
Aeolus Wind LLC	Aeolus Wind, LLC	Aeolus Wind, LLC	North Texas	NA	51	Christine Troy	Wind	29341
Sweetwater Wind Power LLC	Sweetwater Wind Power	Sweet Wind 2	Sweetwater Wind 2	SWEETWND2	52	Kim Takayesu	Wind	30462
Renovar Arlington, Ltd.	Renovar Arlington, Ltd.	Rnvr-1	Village Creek	Vcreek	53	Lisette Cowger	Landfill gas	31083
Renovar Arlington, Ltd.	Renovar Arlington, Ltd.	Rnvr-2	Village Creek	Vcreek	54	Lisette Cowger	Landfill gas	31083
FPL Energy Callahan Wind LP (Callahan Divide)	FPL Energy Callahan Divide	30385	Callahan Wind Energy	30385	55	David Gonzalez	Wind	30385
Buffalo Gap Wind Farm LLC	Buffalo Gap Wind Farm, LLC	Buffalo Gap	Buffalo Gap Wind Farm	Buffalo Gap	56	Gabe Vaca	Wind	31412
FPL Energy Horse Hollow Wind LLC	FPL Energy Horse Hollow Wind	0	Horse Hollow Wind Energy	0	57	John Mantyh	Wind	31594
Sweetwater Wind Power LLC	Sweetwater Wind Power	603943148	Sweetwater Wind 3 LLC_AE	SWEETWND3	58	Kim Takayesu	Wind	31983

Table 7-1: ERCOT REC Generator List (cont.)

Company Name	Power Generating Company Name	Power Generating Company Code	Generator Site Name	Generator Site Code	Facility Identification Number	Unit Contact Information	Technology Type	Facility Noncompetitive Certification Data
Sweetwater Wind Power LLC	Sweetwater Wind Power	603943148-3000	Sweetwater Wind 3 LLC_CPS	SWEETWND3	59	Kim Takayesu	Wind	31983
American Wind Power Center	American Wind Power Center	Lubbock	AWPC	AWPC#1	60	Coy F. Harris	Wind	32470
Bio Energy (Texas), LLC	Bio Energy (Texas) LLC	32079	Covel Gardens Landfill Gas Power Station	DG_MEDIN	61	John M. Love	Landfill gas	20140
MeadWestvaco Texas LP	MeadWestvaco Texas LP	Evadale Opertions	MeadWestvaco Evadale Pulp and Paper Mill	Evadale Texas	63	JiNia Bradford	Biomass	31646
Fort Worth Methane LLC	G2 Energy (FW Regional) LLC	77-998-1765	DG_RDLML_1 Unit	FW Regional	64	Michael Caplan	Landfill gas	32558
Exelon Wind 1 LLC	JD Wind 1	20137	JD Wind 1	JD Wind 1	65	Steve Maller	Wind	32802
Exelon Wind 2 LLC	JD Wind 2	20138	JD Wind 2	JD Wind 2	66	Steve Maller	Wind	32803
Exelon Wind 3 LLC	JD Wind 3	20139	JD Wind 3	JD Wind 3	67	Steve Maller	Wind	32804
Mesquite Wind, LLC	Mesquite Wind LLC	Horizon Wind	Horizon Wind	Horizon Wind	68	Brian Hayes	Wind	32936
FPL Energy Horse Hollow Wind II LLC	FPL Energy Horse Hollow II, LP	Horse Hollow II	Horse Hollow II	Horse Hollow II	69	John Mantyh	Wind	32524
Post Wind Farm LP	Post Wind Farm, LP	Post Wind	Post Wind	Post Wind	70	John Cote	Wind	32525
Exelon Wind 5 LLC	JD Wind 5	20154	JD Wind 5	JD Wind 5	71	Steven Maller	Wind	33299
Exelon Wind 6 LLC	JD Wind 6	20155	JD Wind 6	JD Wind 6	72	Steven Maller	Wind	33473
Forest Creek Wind Farm, LLC	Airtricity Forest Creek Wind Farm, LLC	210	Forest Creek Wind Farm	MCDLD	74	John Franklin	Wind	33686
Exelon Wind 4 LLC	JD Wind 4	20153	JD Wind 4	JD Wind 4	75	Steven Maller	Wind	33760
Cromeco, Inc.	Cromeco, Inc.	Cromeco, Inc.	Cromeco, Inc.	Cromeco, Inc.	76	Steve Cromeens	Landfill gas	29520
Sand Bluff Wind Farm, LLC	Airtricity Sand Bluff Wind Farm, LLC	211	Sand Bluff Wind Farm	MCDLD	77	Phil Dutton	Wind	33845
Post Oak Wind, LLC	Post Oak Wind	Post Oak Wind	Post Oak Wind	Post Oak Wind	78	Brian Hayes	Wind	33801
Sweetwater Wind Power LLC	Sweetwater Wind 4 LLC	Sweetwater Wind 4 LLC	Sweetwater Wind 4 LLC	Sweetwater Wind 4 LLC	79	Kim Takayesu	Wind	34058
Scurry County Wind, L.P.	Scurry County Wind, L.P.	scurry county wind	Camp Springs Energy Center	CSEC	80	Scott Ebner	Wind	33902

Table 7-1: ERCOT REC Generator List (cont.)

Company Name	Power Generating Company Name	Power Generating Company Code	Generator Site Name	Generator Site Code	Facility Identification Number	Unit Contact Information	Technology Type	Facility Noncompetitive Certification Data
Buffalo Gap Wind Farm 2, LLC	Buffalo Gap Wind Farm 2, LLC	603768792	Buffalo Gap Wind Farm	BUFF_GAP	81	William Barnes	Wind	33477
Sweetwater Wind Power LLC	Sweetwater Wind 5 LLC	Sweetwater Wind 5 LLC	Sweetwater Wind 5 LLC	SWEETWN5	82	Kim Takayesu	Wind	34709
WM Renewable Energy, LLC	WM Renewable Energy, L.L.C.	Skyline	Skyline	DG_FERIS	83	Josh Kuba	Landfill gas	20161
Maverick County Water Control	Maverick County Water	861499895	EAGLE_HY	EAGLE_HY_EAGLE_HY1	92	Maverick County Water	Hydro	34674
Capricorn Ridge Wind, LLC	Capricorn Ridge Wind, LLC	Capricorn Ridge Wind	Capricorn Ridge	CAPRIDGE	93	Brian Harris	Wind	34549
Mission Wind LLC	Wildorado Wind, LLC	Mission Wind	Mission Wind	Mission Wind	94	Maria Litos	Wind	32900
WM Renewable Energy, LLC	WM Renewable Energy II, LLC	Austin	Austin	DG_SPRIN	95	Steven Korsgaard	Landfill gas	34906
Snyder Wind Farm, LLC	Snyder Wind Farm, LLC	20187	Snyder Wind Farm	ENAS	96	Roberto Rosner	Wind	34754
Rio Grande Valley Sugar Growers, Inc.	RGVSugar	RGVSugar	RGVSugar	RGVSugar	97	Steve Bearden	Biomass	33421
Goat Wind, LP	Goat Wind, LP	809226603	GOAT WIND LP	GOAT WIND	98	Johnny Johnson	Wind	35439
Champion Wind Farm, LLC	Airtricity Champion Wind Farm, LLC	242	Champion Wind Farm	TKWSW	99	Audrey Fogarty	Wind	35177
Roscoe Wind Farm, LLC	Airtricity Roscoe Wind Farm, LLC	243	Roscoe Wind Farm	TKWSW1	100	Audrey Fogarty	Wind	35176
Scurry County Wind II LLC	Scurry County Wind II LLC	scurry county wind II	Camp Springs Energy Center	CSEC	101	Scott Ebner	Wind	35290
Stanton Wind Energy LLC	Stanton Wind Energy LLC	stanton wind	Stanton Wind Energy LLC	SWEC	102	Scott Ebner	Wind	35206
Whirlwind Energy, LLC	Whirlwind Energy, LLC	WELLC	Whirlwind Energy Center	WEC	103	Matthew Burt	Wind	33835
Exelon Wind 9 LLC	JD Wind 9	20189	JD Wind 9	JD Wind 9	104	Steve Maller	Wind	34924
Exelon Wind 8 LLC	JD Wind 8	20194	JD Wind 8	JD Wind 8	105	Steven Maller	Wind	34991
Exelon Wind 10 LLC	JD Wind 10	20195	JD Wind 10	JD Wind 10	106	Steven Maller	Wind	34992
Exelon Wind 11 LLC	JD Wind 11	20196	JD Wind 11	JD Wind 11	107	Steven Maller	Wind	34993
Exelon Wind 7 LLC	JD Wind 7	20193	JD Wind 7	JD Wind 7	108	Steven Maller	Wind	34990

Table 7-1: ERCOT REC Generator List (cont.)

Company Name	Power Generating Company Name	Power Generating Company Code	Generator Site Name	Generator Site Code	Facility Identification Number	Unit Contact Information	Technology Type	Facility Noncompetitive Certification Data
Snider Industries, LLP	Snider Industries, LLP	Snider_1	Snider_1	Snider_1	109	Julianna Parr	Biomass	35526
Buffalo Gap Wind Farm 3, LLC	Buffalo Gap Wind Farm 3, LLC	Buffalo Gap Wind Farm 3, LLC	Buffalo Gap Wind Farm	BUFF_GAP	110	Fang Qing	Wind	35247
High Plains Wnd Power LLC	High Plains Wind Power LLC	20197	High Plains Wind Power	High Plains Wind Power	111	Steven Maller	Wind	34994
Texas Gulf Wind LLC	Texas Gulf Wind LLC	Texas Gulf Wind LLC	Texas Gulf Wind LLC	TGW	112	Kim Takayesu	Wind	35810
ECR Panther Creek Wind Farm I and II, LLC	ECR Panther Creek Wind Farm I, LLC.	259	PANTHER CREEK	PC_NORTH	113	George Nelson	Wind	35779
Capricorn Ridge Wind II, LLC	Capricorn Ridge Wind II, LLC	CR4	CR4	CR4	114	Daniel Sexton	Wind	35488
South Trent Wind LLC	South Trent Wind LLC	35778	South Trent Wind Farm	STWF	115	Kim Takayesu	Wind	35750
Biofuels Power Corporation	Biofuels Power Inc.	20174	BFP Conroe	35861	116	Christopher Dufour	Biomass	35861
Majestic Wind Power LLC	Majestic Wind Power LLC	Majestic Wind Power LLC	Majestic Wind Power LLC	Majestic Wind Power LLC	117	Kim Takayesu	Wind	35871
Biofuels Power Corporation	Biofuels Power Corporation	20174	Oak Ridge North	DG_RA	118	Chris Dufour	Biomass	34211
McAdoo Wind Energy LLC	McAdoo Wind Energy LLC	McAdoo Wind	McAdoo Wind Energy Center	MWEC	119	Scott Ebner	Wind	35935
Noble Great Plains Windpark, LLC	Noble Great Plains Windpark, LLC	Noble Great Plains Windpark, LLC	Noble Great Plains Windpark, LLC	Noble Great Plains Windpark, LLC	120	Harry Silton	Wind	36122
Sherbino I Wind Farm LLC	Sherbino I Wind Farm, LLC	20220	Sherbino I Wind Farm	KEO	121	James Holly	Wind	35887
Ocotillo Windpower, LP	Ocotillo Windpower LP	Ocotillo Windpower	Ocotillo Windfarm	OWF	122	Jason Allen	Wind	35453
Silver Star I Power Partners, LLC	Silver Star I Power Partners LLC	20186	Silver Star Wind	FLTCK	123	James C Holly	Wind	35551
Hackberry Wind, LLC	Hackberry Wind LLC	HWFLLC	Hackberry Wind Farm	HWF	124	Matthew Burt	Wind	34708
PYCO Industries, Inc.	PYCO Industries, Inc.	70047	PYCO Industries Plant #2	2	125	PYCO Industries, Inc. Wind Farm	Wind	36175
ECR Panther Creek Wind Farm I and II, LLC	EC and R Panther Creek Wind Farm II, LLC	259	PANTHER CREEK	PC_SOUTH	126	George Nelson	Wind	35779
Elbow Creek Wind Project, LLC	Elbow Creek Wind Project LLC	Elbow Creek	Elbow Creek	Elbow Creek	127	Scott McBride	Wind	36188
Turkey Track Wind Energy LLC	Turkey Track Wind Energy LLC	Turkey Track Wind	Turkey Track Wind Energy Center	TTWEC	128	Scott Ebner	Wind	36369

Table 7-1: ERCOT REC Generator List (cont.)

Company Name	Power Generating Company Name	Power Generating Company Code	Generator Site Name	Generator Site Code	Facility Identification Number	Unit Contact Information	Technology Type	Facility Noncompetitive Certification Data
Wolf Ridge Wind, LLC	Wolf Ridge Wind, LLC	C41483	WOLF RIDGE	WLFRIDGE	129	Rory Robinson	Wind	36015
Bull Creek Wind LLC	Bull Creek Wind LLC	Bull Creek Wind LLC	Bull Creek Wind LLC	Bull Creek Wind LLC	131	Michael Adcock	Wind	36239
Diamond Shamrock Refining Company LP	Sunray Wind, LLC	20234	Sunray Wind, LLC Wind Farm	Sunray Wind, LLC	132	William Root	Wind	36672
Texas State Technical College	Texas State Technical College West Texas	TSTC	TSTC West Texas	DG ROSC2	133	Ray Fried	Wind	36692
Inadale Wind Farm, LLC	Inadale Wind Farm, LLC	Inadale Wind Farm, LLC	Inadale Wind Farm, LLC	INDL_INADALE1	134	Dean Tuel	Wind	36500
Pyron Wind Farm, LLC	Pyron Wind Farm, LLC	Pyron Wind Farm, LLC	Pyron Wind Farm, LLC	PYR_PYRON1	135	Dean Tuel	Wind	36501
Trinity Oaks LLC	G2 Energy (Trinity Oaks) LLC	828961529	Trinity Oaks LFG Generating Facility	DG KLBRG	136	Michael Caplan	Landfill gas	36679
Notrees Windpower, LP	Notrees Windpower LP	Notrees	Notrees Windfarm	NWF	137	Jason Allen	Wind	36350
Iberdrola Renewables, LLC	Barton Chapel Wind LLC	Barton Chapel	Barton Chapel	Barton Chapel	138	Bobby Clark	Wind	36825
Iberdrola Renewables, LLC	Penascal Wind Power LLC	Penascal	Penascal	Penascal	139	Dan Pitts	Wind	36829
Denton Power, LLC	Denton Power, LLC	Denton Power	Denton Power	Denton Power	140	Richard Shurley	Landfill gas	36717
ECR Panther Creek Wind Farm III, LLC	ECR Panther Creek Wind Farm III, LLC	ECR Panther Creek Wind Farm III, LLC	PANTHER3	PANTHER3	141	Dean Tuel	Wind	37092
Iberdrola Renewables, LLC	Penascal Wind Power LLC	Penascal/STEC	Penascal/STEC	Penascal/STEC	142	Dan Pitts	Wind	36829
WM Renewable Energy, LLC	WM Renewable Energy, L.L.C.	???	DFW II	DG_BIO2	143	Jim Kilpatrick	Landfill gas	36832
Papalote Creek I LLC	ECR Papalote I, LLC	ECR Papalote I, LLC	ECR Papalote I, LLC	ECR Papalote I, LLC	144	John Franklin	Wind	37352
Langford Wind Power, LLC	Langford Wind Power, LLC	Langford Wind Power, LLC	Langford	Langford	145	Scott McBride	Wind	37206
Capricorn Ridge Wind, LLC	Capricorn Ridge Wind, LLC	Capricorn Ridge Wind	Capricorn Ridge	CAPRIDGE	146	Brian Harris	Wind	34549
Capricorn Ridge Wind, LLC	Capricorn Ridge Wind, LLC	Capricorn Ridge Wind	Capricorn Ridge	CAPRIDGE	147	Brian Harris	Wind	34549
Michael Laurie Blank	Michael Laurie Blank	Solar	Michael Laurie Blank	Texas	148	Michael Laurie Blank	Solar	37542
Orange County Container Group LLC	Orange County Container Group LLC	Corrugated Services Inc	Liner Mill Bio-boiler	Liner Mill Bio-boiler	149	David Garrick	Biomass	37531

Table 7-1: ERCOT REC Generator List (cont.)

Company Name	Power Generating Company Name	Power Generating Company Code	Generator Site Name	Generator Site Code	Facility Identification Number	Unit Contact Information	Technology Type	Facility Noncompetitive Certification Data
Lorraine Windpark Project, LLC	LORRAINE WINDPARK PROJECT LLC	LORRAINE WINDPARK PROJECT LLC	LORRAINE WINDPARK PROJECT LLC	LONEWOLF	150	John R. Hartzog	Wind	37533
Pattern Gulf Wind LLC	Pattern Gulf Wind LLC	Pattern Gulf Wind LLC	Texas Gulf Wind	TGW	151	Kim Takayesu	Wind	37781
Rio Grande Valley Sugar Growers, Inc.	RGVSG	2	Santa Rosa	2	152	Mark Nittler	Biomass	39181
TX Solar I LLC	TX Solar I LLC	TX Solar I	TX Solar I	DG BROOK	153	Dreama Brower	Solar	38359
TX Solar I LLC	TX Solar I LLC	TX Solar I	TX Solar I	DG ELMEN	154	Dreama Brower	Solar	38359
WM Renewable Energy, LLC	WM Renewable Energy, LLC IV	Westside	Westside	DG_WSTHL	155	Phil Keim	Landfill gas	37711
Aspen Power LLC	Aspen Power LLC	7.91294E+12	Lufkin Biomass	LFBIO	156	Rod Danielson	Biomass	38864
WM Renewable Energy, LLC	WM Renewable Energy, LLC VI	DG_HBR	Farmers Branch Landfill gas-to-energy	DG_HBR	157	LaToya Glenn	Landfill gas	38696
Cedro Hill Wind, LLC	Cedro Hill Wind, LLC	CEDROHIL	Cedro Hill Wind Farm	CEDROHIL	158	Joe LoCoco	Wind	38336
Papalote Creek II LLC	ECR Papalote Creek II, LLC	Papalote II	ECR Papalote Creek II, LLC	Papalote II	159	JohnFranklin	Wind	38252
McKinney LFG, LLC	McKinney LFG, LLC	McKinney LFG, LLC	McKinney LFG, LLC	DG_MKNSW	160	Sharon R. Frank	Landfill gas	39210
Golden Spread Panhandle Wind Ranch, LLC	Golden Spread Panhandle Wind Ranch, LLC	Golden Spread Panhandle Wind Ranch, LLC	Golden Spread Panhandle Wind Ranch, LLC	Golden Spread Panhandle Wind Ranch, LLC	161	Matt Moore	Wind	39641
Rio Grande Valley Sugar Growers Inc.	RGVSG	2	DG_S_SNR	DG_S_SNR	162	Mark Nittler	Biomass	39181
FRV AE Solar, LLC	FRV AE Solar,	FRV AE	FRV AE	FRV AE	163	Scott Pryor	Solar	39808
Little Pringle1 LLC	LittlePringle1, LLC	Little Pringle 1	Little Pringle 1	Little Pringle 1	164	Morgan Fine	Wind	39653
Little Pringle2 LLC	LittlePringle2, LLC	Little Pringle 2	Little Pringle 2	Little Pringle 2	165	Morgan Fine	Wind	39701
Sherbino II Wind Farm LLC	Sherbino II Wind Farm LLC	20274	Sherbino II Wind Farm	KEO	166	James Holly	Wind	39664
Trinity Hills Wind Farm LLC	Trinity Hills Wind Farm LLC	20277	Trinity Hills Wind Farm LLC	TRINITY	168	James Holly	Wind	40082
Trinity Hills Wind Farm LLC	Trinity Hills Wind Farm LLC	20277	Trinity Hills Wind Farm LLC	TRINITY	169	James Holly	Wind	40082
DeWind Frisco, LLC	DeWind Frisco, LLC	DeWind Frisco	DeWind Frisco	DeWind Frisco	170	Morgan Fine	Wind	39974

Table 7-1: ERCOT REC Generator List (cont.)

Company Name	Power Generating Company Name	Power Generating Company Code	Generator Site Name	Generator Site Code	Facility Identification Number	Unit Contact Information	Technology Type	Facility Noncompetitive Certification Data
Iberdrola Renewables, LLC	Penascal II Wind Project, LLC	Penascal II	Penascal II	Penascal II	171	Dan Piits	Wind	38237
El Paso Electric Company	El Paso Electric Company	EPE	Newman	Newman Solar PV #1	172	Brad Green	Solar	39175
SunE CPS1LLC	SunE CPS1, LLC	n/a	n/a	n/a	173	Elyssa Jaffe	Solar	40012
SunE CPS2, LLC	SunE CPS2, LLC	n/a	n/a	n/a	174	Elyssa Jaffe	Solar	40014
Rio Grande Valley Sugar Growers Inc.	RGVSG	1	Santa Rosa Sugar Mill	Santa Rosa Old TG Building	175	Mark Nittler	Biomass	40005
Nacogdoches Power LLC	Nacogdoches Power LLC	8.32386E+12	Nacogdoches Power LLC	NACPW	176	Erik Olsen	Biomass	36159
High Majestic Wind II, LLC	High Majestic Wind II, LLC	Majestic II	Majestic II	Majestic II	177	William Mundt	Wind	40397
Magic Valley Wind Farm I, LLC	Magic Valley Wind Farm I, LLC	MVI	MAGIC VALLEY I	REDFISH	178	George Nelson	Wind	40353
El Paso Electric Company	El Paso Electric Company	EPE	Wrangler	Wrangler Solar Facility	179	Roberto Favela	Solar	40387
El Paso Electric Company	El Paso Electric Company	EPE	Stanton	Stanton Solar Installation	180	Roberto Favela	Solar	40386
El Paso Electric Company	El Paso Electric Company	EPE	EPCC Solar Installation	EPCC Solar Installation	181	Roberto Favela	Solar	40385
Harbor Wind LLC	Harbor Wind LLC	20289	HARBOR WIND	DG_NUECE	182	Tibor Hegedus	Wind	40407
KODE Novus II	KODE Novus II	KODE Novus II	KODE Novus II	KODE Novus II	184	Morgan Fine	Wind	40502
Ralls Wind Farm LLC	Ralls Wind Farm LLC	Ralls	Ralls Wind Farm	Ralls	185	Veronica Sun	Wind	40455
KODE Novus I	KODE Novus I	KODE Novus I	KODE Novus I	KODE Novus I	186	Morgan Fine	Wind	40421
WM Renewable Energy, LLC	WM Renewable Energy, L.L.C. V	Mesquite Creek	Mesquite Creek	DG_FREIH	187	Tim Hopkins	Landfill gas	38611
Blue Summit Wind, LLC	Blue Summit Wind LLC	BLSUMMIT	BLUE SUMMIT	BLSUMMIT	188	Daniel Gerard	Wind	40710
Senate Wind, LLC	Senate Wind, LLC	Senate	Senate	Senate	189	Esther Rios	Wind	40734
Bobcat Bluff Wind Project, LLC	Bobcat Bluff Wind Project, LLC	BCATWIND	Bobcat Bluff Wind Project	BCATWIND	190	Jay Temple	Wind	20295
SunE CPS3, LLC	SunE CPS3, LLC	n/a	n/a	n/a	191	Elyssa Jaffe	Solar	40013

Table 7-1: ERCOT REC Generator List (cont.)

Company Name	Power Generating Company Name	Power Generating Company Code	Generator Site Name	Generator Site Code	Facility Identification Number	Unit Contact Information	Technology Type	Facility Noncompetitive Certification Data
Spinning Spur Wind, LLC	Spinning Spur Wind	Spinning Spur Wind	Spinning Spur Wind	Spinning Spur Wind	192	Jeff Shultz	Wind	40821
Los Vientos Windpower IA, LLC	Los Vientos Windpower IA, LLC	LV1A	Los Vientos Windpower IA, LLC	LV1A	193	Robert C. Jones Jr.	Wind	40781
Los Vientos Windpower IB, LLC	Los Vientos Windpower IB, LLC	LV1B	Los Vientos Windpower IB, LLC	LV1B	194	Robert C. Jones Jr.	Wind	40782
Whitetail Wind Energy, LLC	Exelon Wind, LLC	20137	Whitetail Wind Energy, LLC	Whitetail Wind	195	Daniel Heim	Wind	41063
Anacacho Wind Farm, LLC	Anacacho Wind Farm, LLC	Anacacho	Anacacho Wind Farm, LLC	ANACACHO	196	George Nelson	Wind	40732
Cirrus Wind 1, LLC	Cirrus Wind 1, LLC	Cirrus	Cirrus	Cirrus	197	Jason Yang	Wind	41071
Suzlon Project VIII, LLC	Suzlon Project VIII, LLC	Suzlon Project VIII, LLC	Suzlon Project VIII, LLC	Suzlon Project VIII, LLC	198	M. Hope Whitfield	Wind	40954
BayWa r.e. Mozart, LLC	BayWa r.e. Wind, LLC	20303	Mozart_Wind_1	09INR0061	199	Eric Johnston	Wind	41303

Table 7-2: Quarterly Electricity Generation by Renewable Sources, in MWh, for 2001–2012

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2001	0	0	0	0	0
Hydro	2001	0	0	11,293	19,346	30,639
Landfill gas	2001	0	0	0	0	0
Solar	2001	0	0	0	0	0
Wind	2001	0	0	201,118	364,479	565,597
Totals		0	0	212,411	383,825	596,236

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2002	0	0	0	0	0
Hydro	2002	105,817	69,165	80,154	56,956	312,093
Landfill gas	2002	8,216	7,073	6,986	7,137	29,412
Solar	2002	0	29	37	21	87
Wind	2002	611,708	716,896	622,262	500,618	2,451,484
Totals		725,741	793,163	709,440	564,732	2,793,076

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2003	8,876	11,253	10,999	8,368	39,496
Hydro	2003	92,680	52,592	71,699	22,713	239,684
Landfill gas	2003	29,995	44,629	39,920	39,662	154,206
Solar	2003	32	70	69	49	220
Wind	2003	561,994	670,248	617,794	665,446	2,515,482
Totals		693,577	778,792	740,481	736,238	2,949,087

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2004	6,274	11,459	11,482	7,725	36,940
Hydro	2004	55,638	52,735	52,350	74,067	234,791
Landfill gas	2004	52,801	47,964	53,659	49,018	203,443
Solar	2004	31	67	70	44	211
Wind	2004	815,010	1,014,396	610,157	770,066	3,209,630
Totals		929,755	1,126,621	727,718	900,920	3,685,014

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2005	13,921	15,069	14,764	14,883	58,637
Hydro	2005	108,974	106,893	61,189	33,246	310,302
Landfill gas	2005	52,118	51,193	56,166	54,301	213,777
Solar	2005	46	69	67	46	227
Wind	2005	801,232	1,246,182	869,508	1,304,646	4,221,568
Totals		976,291	1,419,406	1,001,693	1,407,122	4,804,512

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2006	16,327	10,479	17,152	16,610	60,569
Hydro	2006	55,000	83,064	44,870	27,143	210,077
Landfill gas	2006	69,191	78,650	75,665	82,580	306,087
Solar	2006	26	43	41	360	470
Wind	2006	1,478,927	1,584,166	1,376,540	2,091,295	6,530,928
Totals		1,619,471	1,756,403	1,514,268	2,217,988	7,108,131

Table 7-2: Quarterly Electricity Generation by Renewable Sources, in MWh, for 2001–2012 (cont.)

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2007	13,052	15,870	13,073	12,105	54,101
Hydro	2007	66,084	120,486	139,965	56,346	382,882
Landfill gas	2007	84,367	86,372	85,612	99,987	356,339
Solar	2007	339	503	541	461	1,844
Wind	2007	1,961,153	2,029,807	2,020,870	3,339,338	9,351,168
Totals		2,124,995	2,253,039	2,260,062	3,508,238	10,146,333

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2008	21,154	14,019	12,564	23,095	70,833
Hydro	2008	98,510	177,051	78,751	91,116	445,428
Landfill gas	2008	105,217	97,361	88,470	96,062	387,110
Solar	2008	446	862	992	1,038	3,338
Wind	2008	4,030,973	4,737,188	2,639,509	4,878,770	16,286,440
Totals		4,256,300	5,026,481	2,820,287	5,090,081	17,193,150

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2009	25,083	18,938	17,187	12,156	73,364
Hydro	2009	76,480	179,512	88,491	163,024	507,507
Landfill gas	2009	94,377	101,709	104,854	111,983	412,923
Solar	2009	101	1,409	1,761	1,222	4,492
Wind	2009	5,413,648	5,385,203	4,248,223	5,549,030	20,596,105
Totals		5,609,689	5,686,771	4,460,516	5,837,415	21,594,390

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2010	20,974	27,769	17,407	31,385	97,535
Hydro	2010	196,238	133,408	192,252	87,358	609,257
Landfill gas	2010	110,511	114,893	116,789	122,711	464,904
Solar	2010	1,385	2,042	3,483	7,539	14,449
Wind	2010	6,459,442	7,806,011	5,307,840	7,255,367	26,828,660
Totals		6,788,550	8,084,123	5,637,771	7,504,361	28,014,805

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2011	26,692	20,039	24,890	65,383	137,004
Hydro	2011	60,614	102,583	55,029	48,887	267,113
Landfill gas	2011	121,232	135,365	122,790	118,258	497,645
Solar	2011	7,390	10,160	11,202	7,827	36,580
Wind	2011	7,447,218	9,540,116	5,849,557	7,932,783	30,769,674
Totals		7,663,146	9,808,263	6,063,468	8,173,139	31,708,016

Technology Type	Year	Quarter1	Quarter2	Quarter3	Quarter4	Total MWh
Biomass	2012	41,567	95,834	100,633	50,954	288,988
Hydro	2012	122,942	125,992	68,908	71,355	389,197
Landfill gas	2012	124,192	126,896	144,644	142,235	537,966
Solar	2012	17,299	41,246	38,210	36,887	133,642
Wind	2012	8,938,807	8,399,672	6,376,312	9,031,743	32,746,534
Totals		9,244,806	8,789,640	6,728,707	9,333,174	34,096,328

Table 7-3: Annual Electricity Generation by Renewable Sources (MWh, ERCOT: 2001–2012 by Quarter)

Technology Type	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Biomass	0	0	39,496	36,940	58,637	60,569	54,101	70,833	73,364	97,535	137,004	288,988
Hydro	30,639	312,093	239,684	234,791	310,302	210,077	382,882	445,428	507,507	609,257	267,113	389,197
Landfill gas	0	29,412	154,206	203,443	213,777	306,087	356,339	387,110	412,923	464,904	497,645	537,966
Solar	0	87	220	211	227	470	1,844	3,338	4,492	14,449	36,580	133,642
Wind	565,597	2,451,484	2,515,482	3,209,630	4,221,568	6,530,928	9,351,168	16,286,440	20,596,105	26,828,660	30,769,674	32,746,534
Total (MWh)	596,236	2,793,076	2,949,087	3,685,014	4,804,512	7,108,131	10,146,333	17,193,150	21,594,390	28,014,805	31,708,016	34,096,328

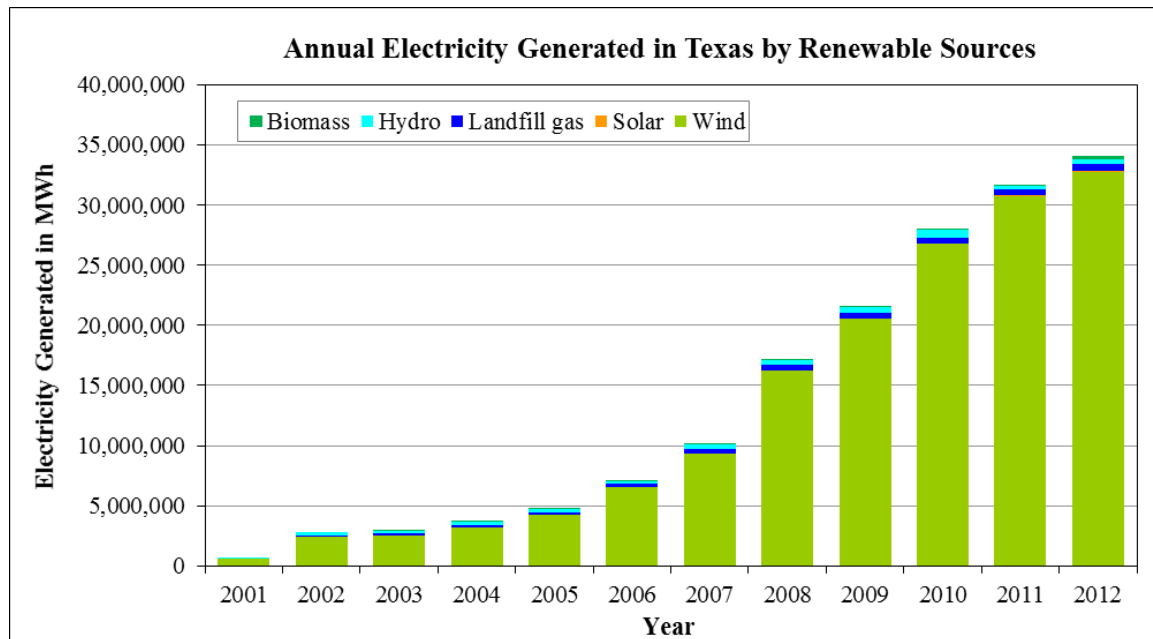


Figure 7-1: Electricity Generation by Renewable Sources (ERCOT: 2001–2012 Annually)

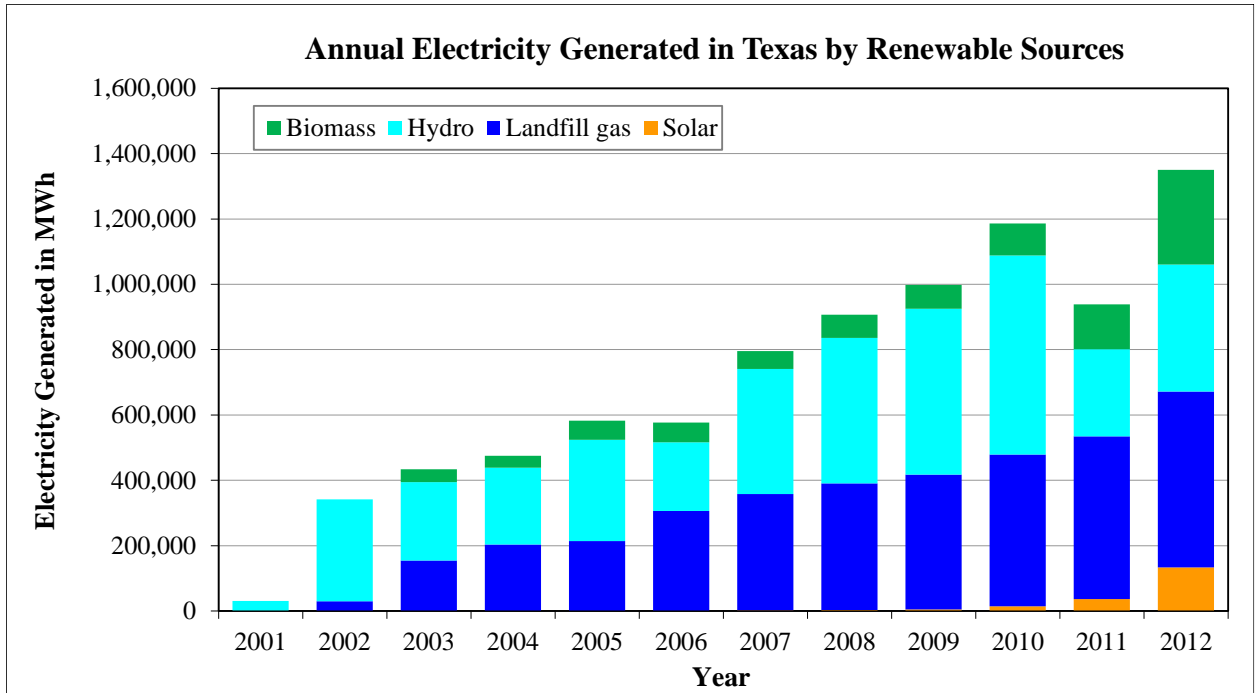


Figure 7-2: Electricity Generation by Renewable Sources Other Than Wind
(ERCOT: 2001–2012 Annually)

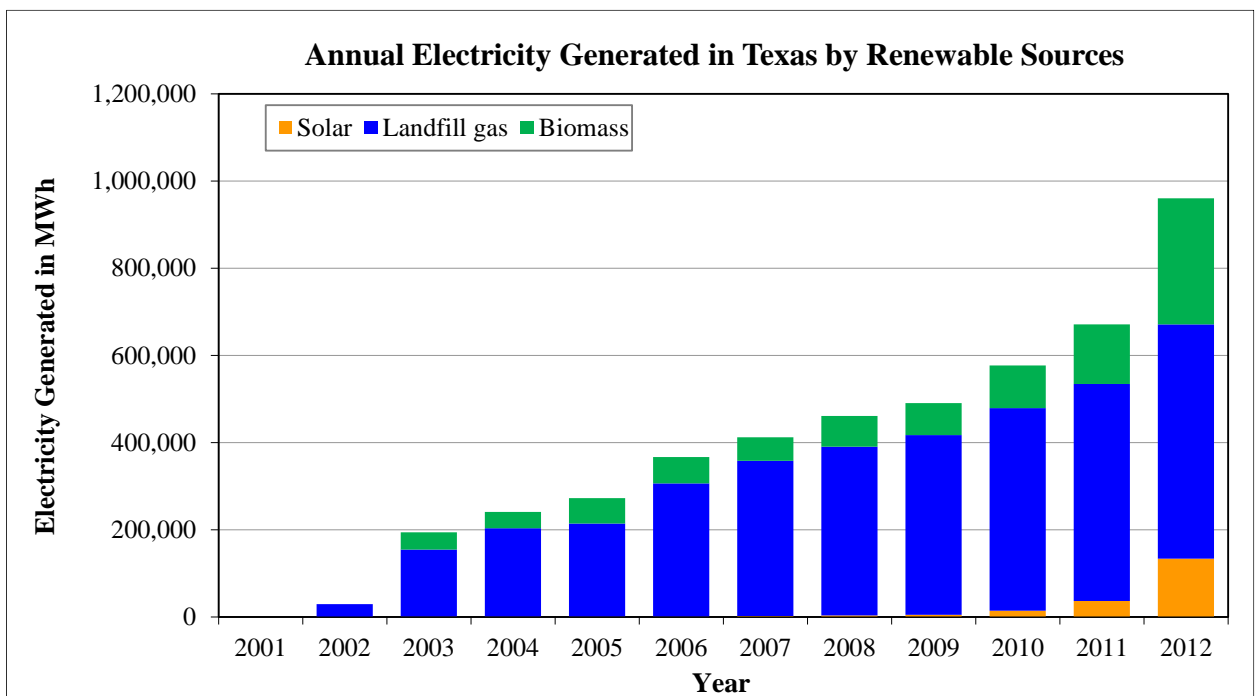


Figure 7-3: Electricity Generation by Renewable Sources from Landfill Gas, Solar and Biomass
(ERCOT: 2001–2012 Annually)

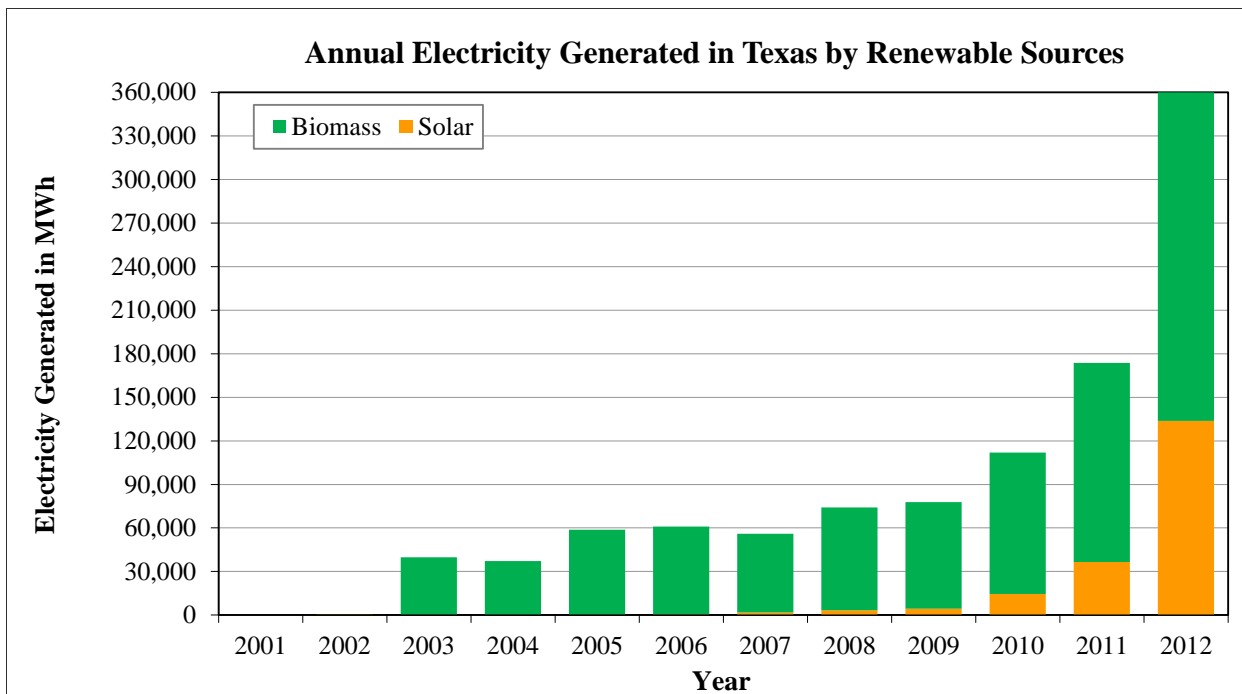


Figure 7-4: Electricity Generation by Renewable Sources from Solar and Biomass
(ERCOT: 2001–2012 Annually)

8 APPENDIX A

8.1 Presentation to the Clean Air Through Energy Efficiency (CATEE) Conference, Galveston, Texas (October 2012)

In October 2012, the Energy Systems Lab made a presentation at the CATEE conference about the Emissions Reduction Impact of Renewables



Figure 8-1: Presentation to the Clean Air Through Energy Efficiency Conference

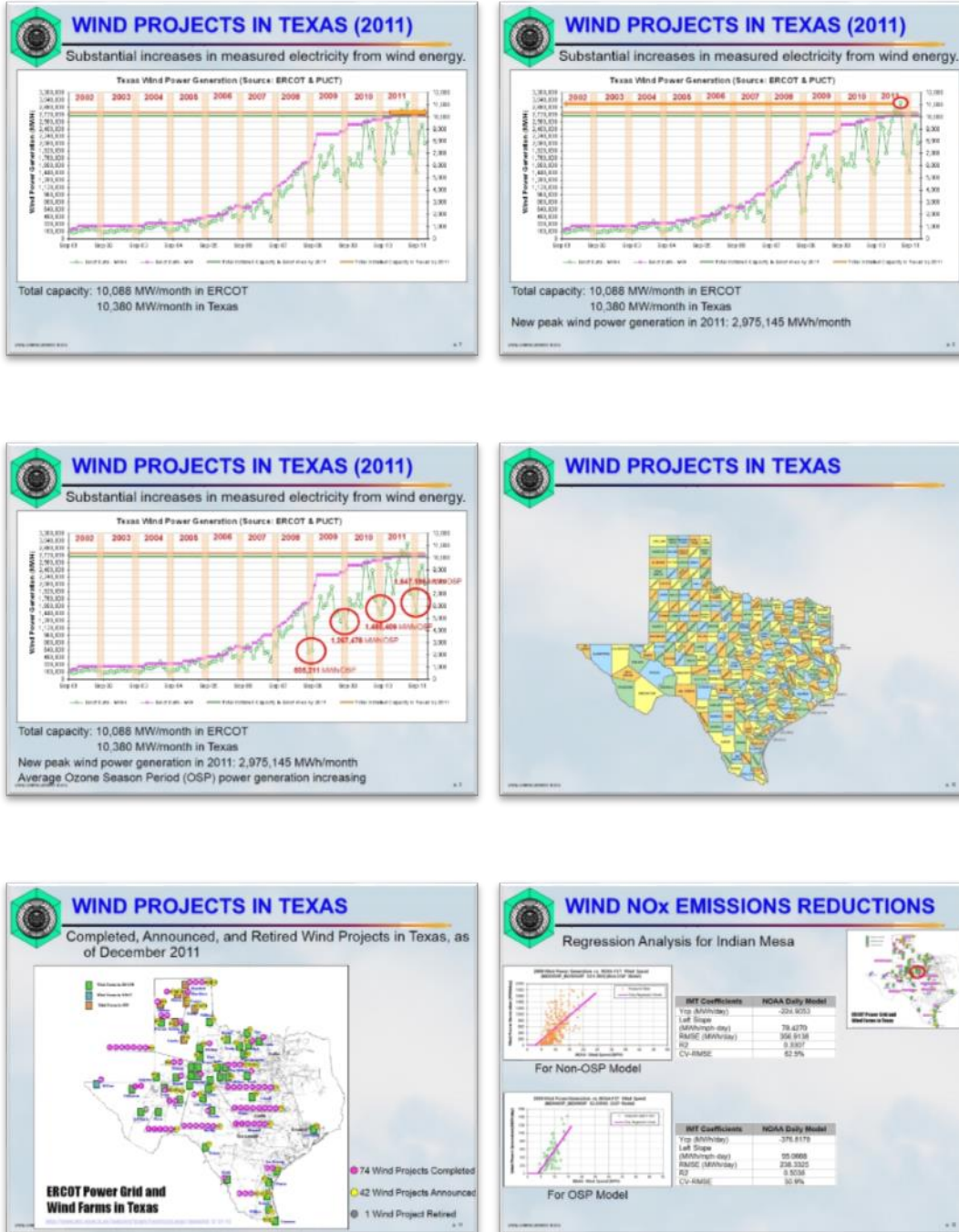


Figure 8-1: Presentation to the Clean Air Through Energy Efficiency Conference (continued)

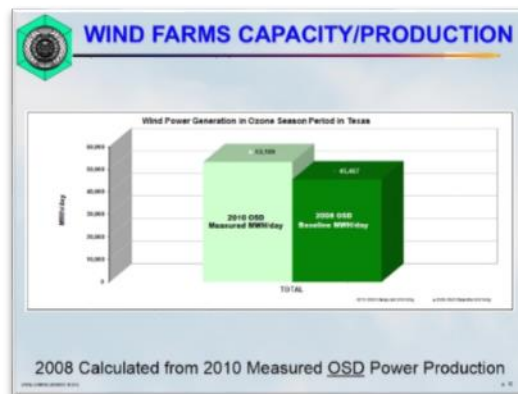
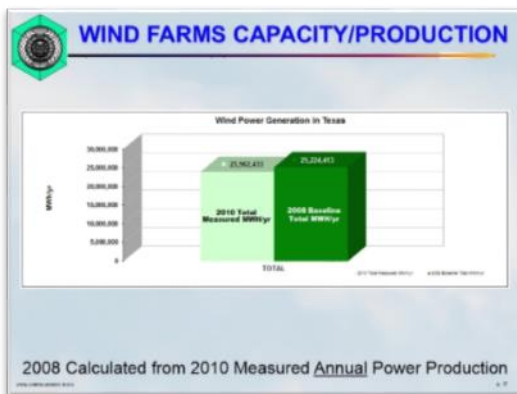
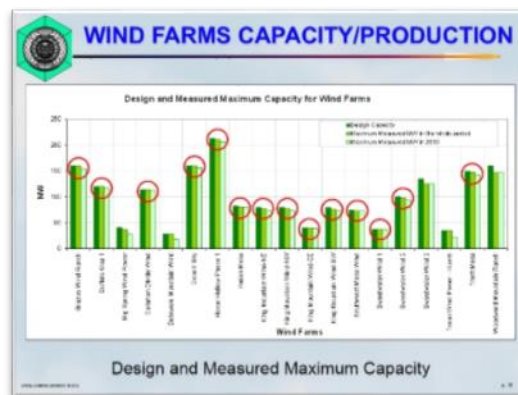
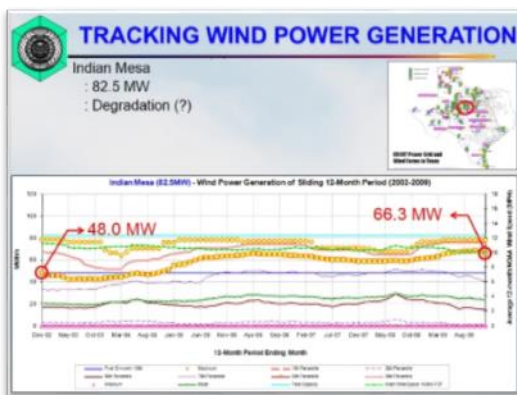
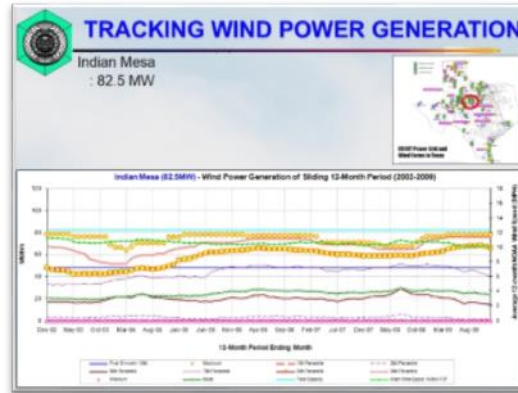
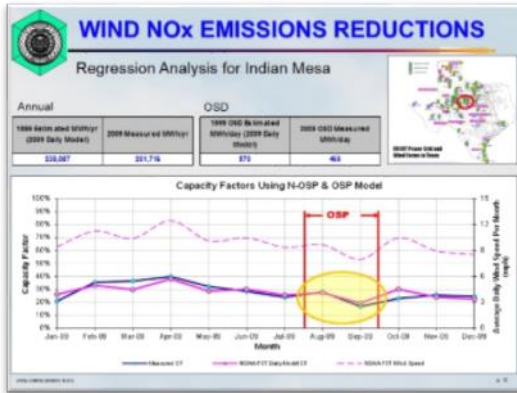


Figure 8-1: Presentation to the Clean Air Through Energy Efficiency Conference (Continued)

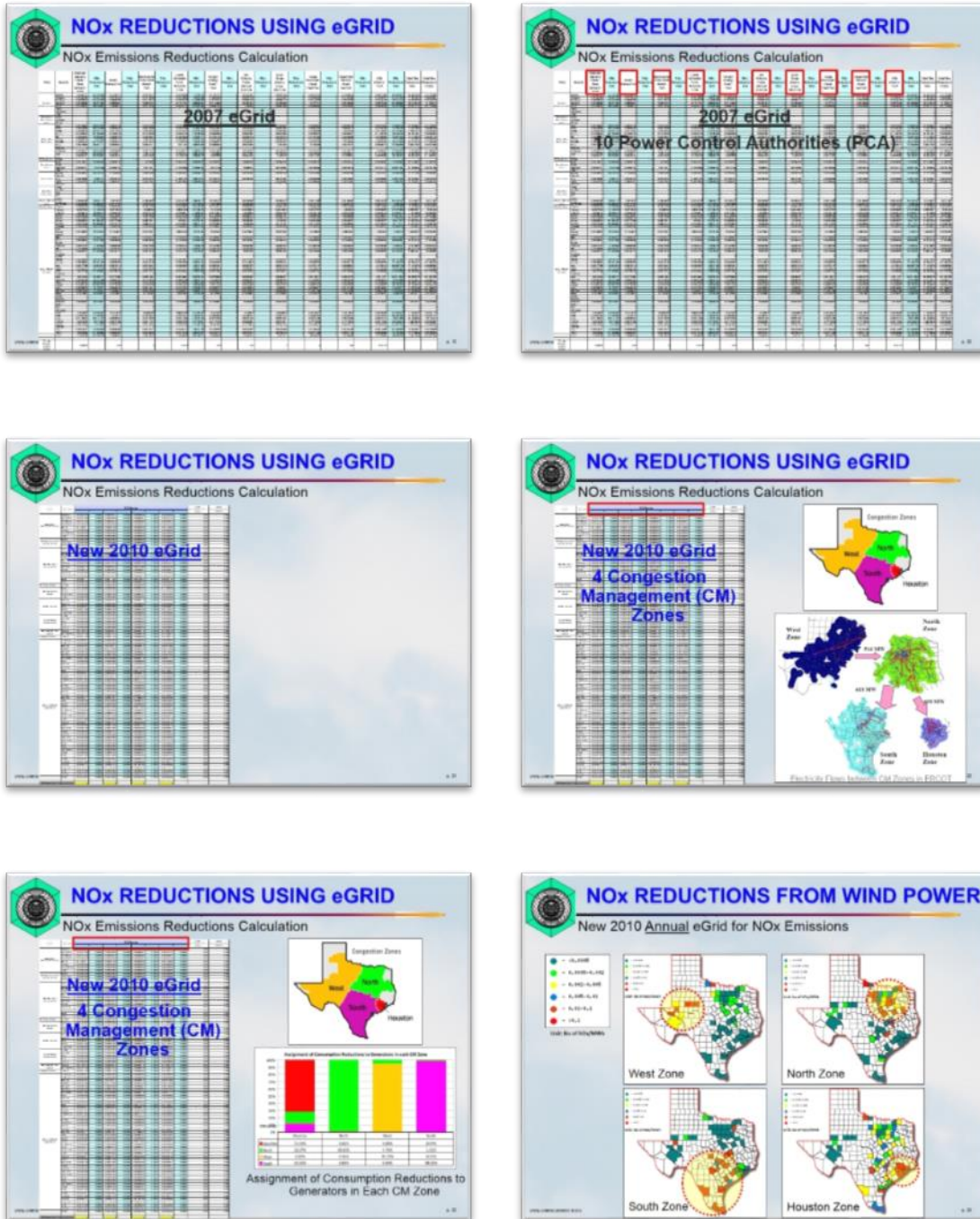


Figure 8-1: Presentation to the Clean Air Through Energy Efficiency Conference (Continued)

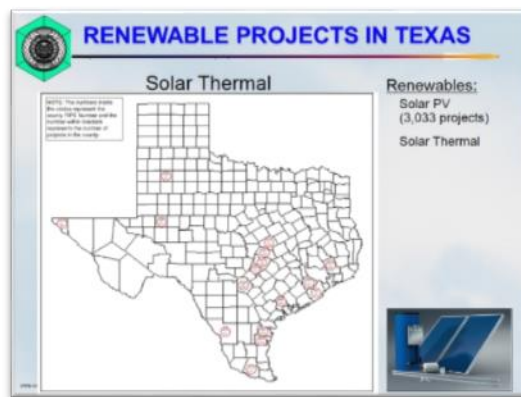
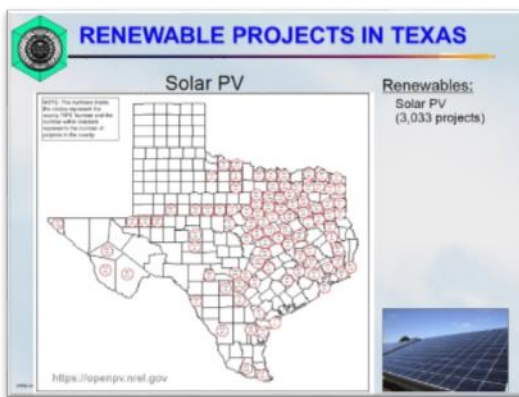
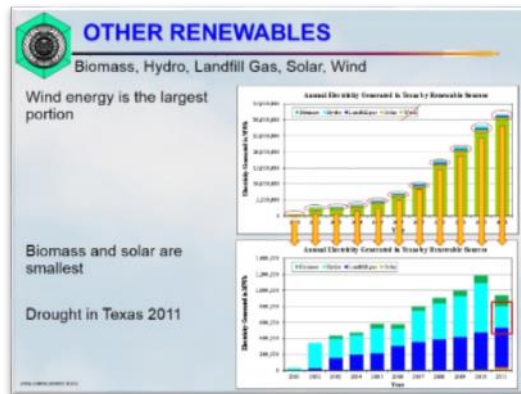
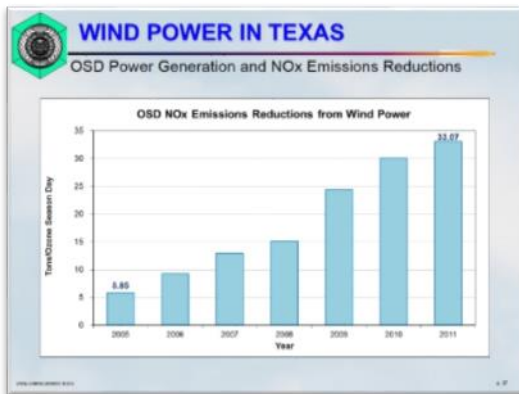
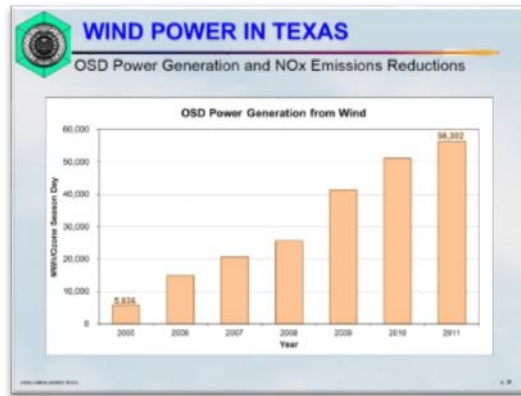
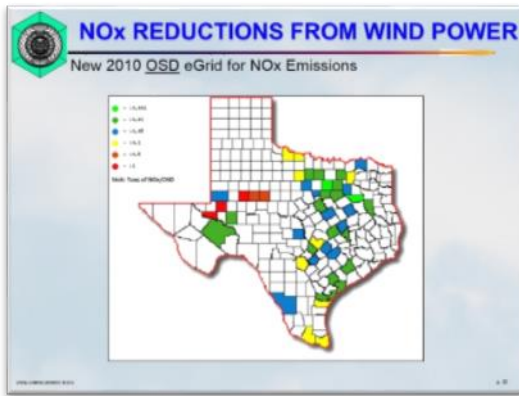


Figure 8-1: Presentation to the Clean Air Through Energy Efficiency Conference (Continued)

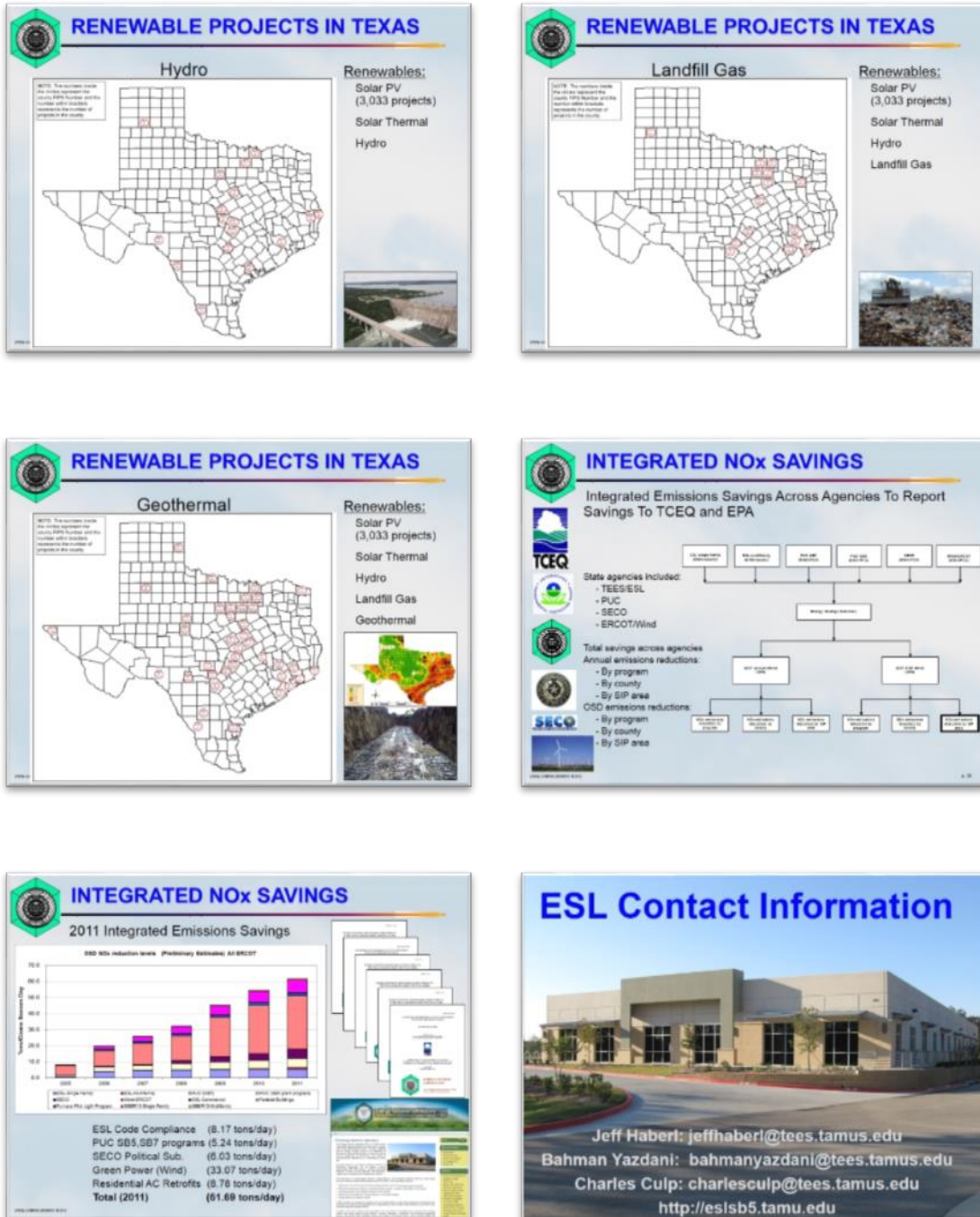


Figure 8-1: Presentation to the Clean Air Through Energy Efficiency Conference (Continued)

9 APPENDIX B

In this section, the linear regression models developed, based on 2011 wind power generation data, are presented for each wind farm. The estimated 2008 annual and OSP power productions using 2011 daily models and the resulting emissions reduction are also shown in details for each wind farm. A listing of the wind farms analyzed in this year's report is illustrated in Table 9-1.

Table 9-1: Listing of Wind Farms Analyzed for Base-year Calculations

No.	Wind Farms
1	Brazos Wind Ranch
2	Barton Chapel Wind 1
3	Buffalo Gap 1
4	Buffalo Gap 2
5	Buffalo Gap 3
6	Bull Creek Wind Plant
7	Capricorn Ridge Wind
8	Capricorn Ridge Wind exp.
9	Cedro Hill Wind
10	Champion Wind Farm
11	Camp Springs Wind Energy Center
12	Camp Springs Energy Expansion
13	Delaware Mountain Wind Farm
14	Elbow Creek Wind
15	Snyder Wind Project
16	Silver Star Phase I
17	Goat Wind
18	Callahan Divide Wind Energy Center
19	Horse Hollow Phase 1
20	Horse Hollow Phase 2
21	Horse Hollow Phase 3
22	Horse Hollow Phase 4
23	Hackberry Wind Farm
24	Inadale Wind
25	Desert Sky
26	Indian Mesa
27	Sherbino Mesa Wind Farm
28	King Mountain Wind Ranch
29	Texas Wind Power Project
30	Langford Wind Power
31	Lone Star - Post Oak Wind
32	Lone-star Mesquite Wind
33	Loraine Windpark
34	Forest Creek Wind Farm
35	Sand Bluff Wind Farm
36	McAdoo Wind Energy
37	Notrees Windpower
38	Ocotillo Windpower 1
39	Papalote Creek Wind Farm
40	Papalote Creek Phase II
41	Panther Creek 1
42	Panther Creek 2

Table 9-1: Listing of Wind Farms Analyzed for Base-year Calculations (Cont.)

No.	Wind Farms
43	Panther Creek 3
44	Penascal Wind Farm
45	Penascal 3
46	Pyron Wind Farm
47	Red Canyon
48	Big Spring Wind Power
49	South Trent Wind Farm
50	Stanton Wind Energy
51	Southwest Mesa Wind Project
52	Sweetwater Wind 1
53	Sweetwater Wind 2
54	Sweetwater Wind 3
55	Sweetwater Wind 4
56	Sweetwater Wind 5
57	Gulf Wind
58	Roscoe Wind Farm
59	Trent Mesa
60	Turkey Track Energy Center
61	Whirlwind Energy
62	Wolf Ridge Wind Farm
63	Woodward Mountain Ranch

9.1 Brazos Wind Ranch

Table 9-2: Site Information for Brazos Wind Ranch

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
BRAZ_WIND	Wind	Fluvana	Scurry	Dec-03	160	Cielo/Orion/Green Mountain	Brazos Wind Ranch	Mitsubishi 1000 (160)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
BRAZ_WND_WND1	BRAZ_WIND	99
BRAZ_WND_WND2	BRAZ_WIND	61

9.1.1 Brazos Wind Ranch – BRAZ_WND_WND1

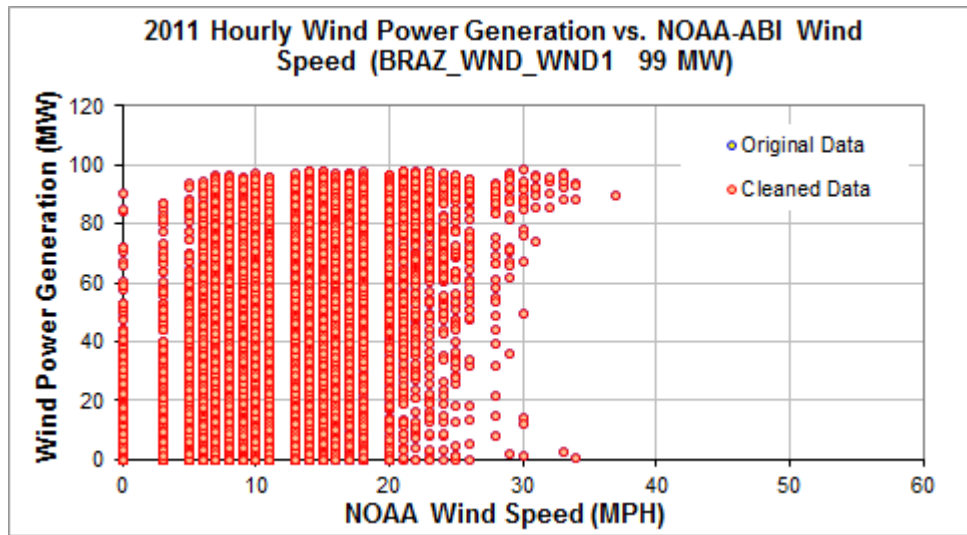


Figure 9-1: BRAZ_WND_WND1 - Hourly Wind Power vs. NOAA Wind Speed (2011)

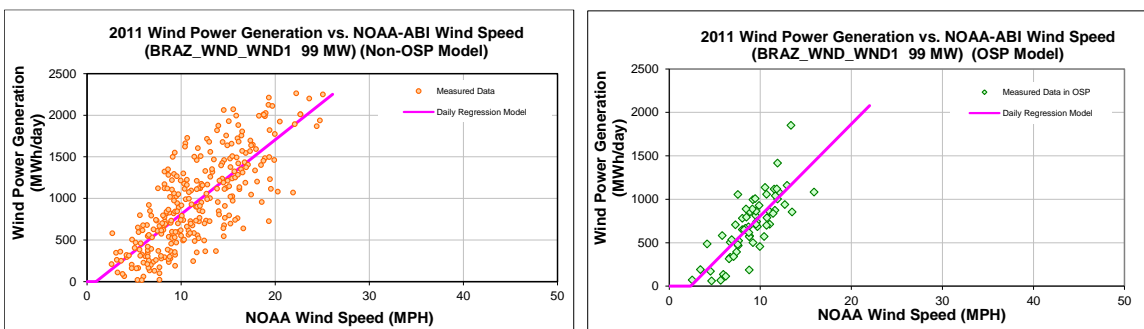


Figure 9-2: BRAZ_WND_WND1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-3: BRAZ_WND_WND1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-84.7147
Left Slope (MWh/mph-day)	89.5467
RMSE (MWh/day)	347.3111
R2	0.5950
CV-RMSE	36.3%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-250.7778
Left Slope (MWh/mph-day)	105.8126
RMSE (MWh/day)	215.0029
R2	0.6236
CV-RMSE	30.7%

Table 9-4: BRAZ_WND_WND1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	23,395	22,391	4.29%	32%	30%
Feb-11	24	11.46	23,692	22,587	4.67%	42%	40%
Mar-11	31	12.29	29,930	31,504	-5.26%	41%	43%
Apr-11	30	13.87	32,385	34,719	-7.21%	45%	49%
May-11	31	13.86	32,463	35,845	-10.42%	44%	49%
Jun-11	30	14.61	38,569	36,720	4.79%	54%	52%
Jul-11	31	10.03	22,652	25,123	-10.91%	31%	34%
Aug-11	31	9.20	23,161	22,394	3.31%	31%	30%
Sep-11	30	7.68	16,491	17,453	-5.83%	23%	24%
Oct-11	31	10.61	30,085	26,820	10.85%	41%	36%
Nov-11	28	11.82	30,281	27,262	9.97%	46%	41%
Dec-11	30	9.64	23,099	23,364	-1.15%	32%	33%
Total	358	11.16	326,202	326,181	0.01%	38%	38%
Total in OSP (07/15-09/15)	63	9.00	44,178	44,174	0.01%	30%	30%

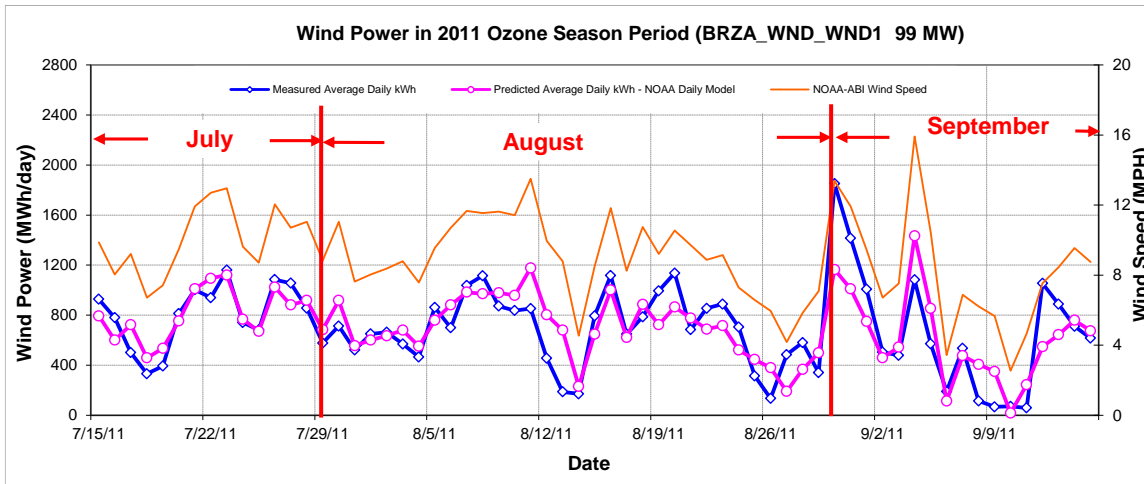


Figure 9-3: BRAZ_WND_WND1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

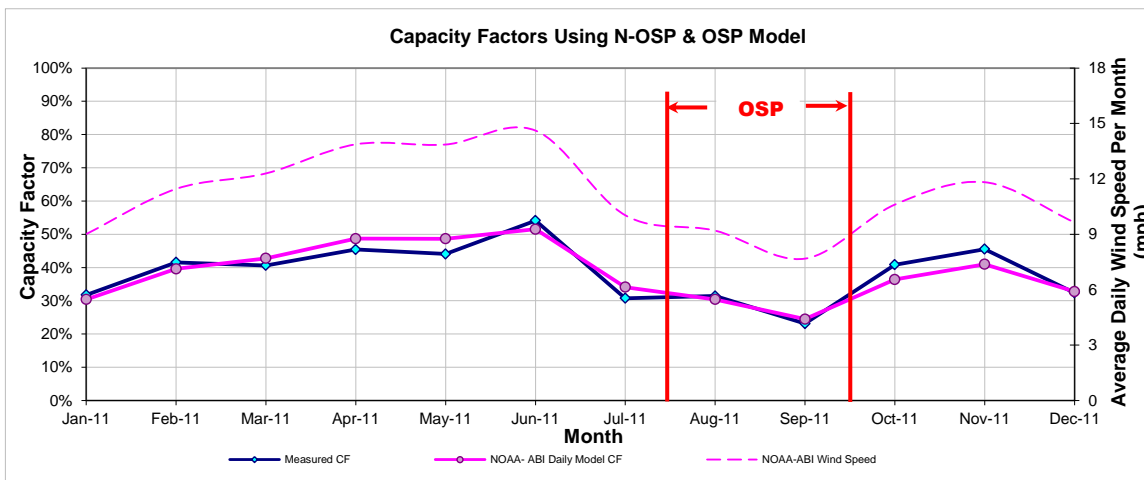


Figure 9-4: BRAZ_WND_WND1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-5: BRAZ_WND_WND1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
341,880	332,581	674	701

9.1.2 Brazos Wind Ranch – BRAZ_WND_WND2

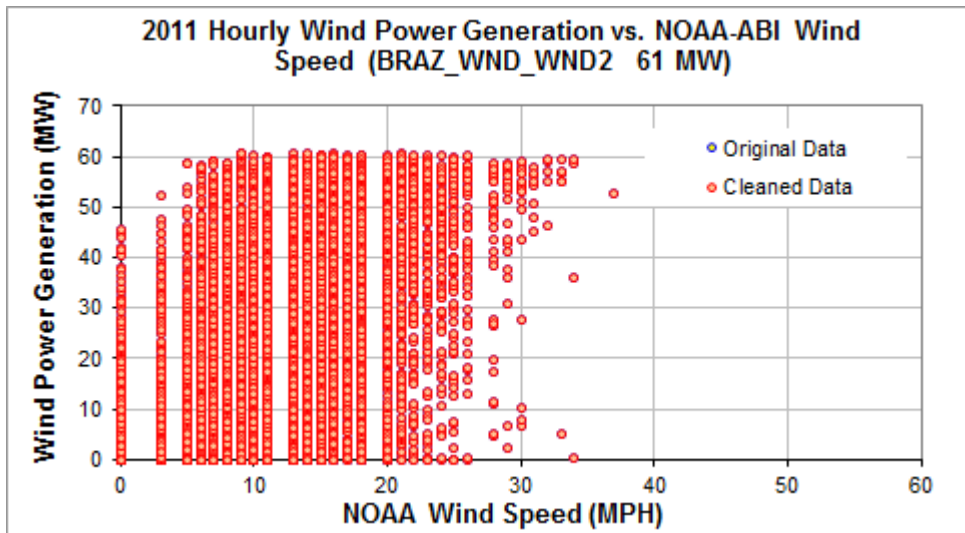


Figure 9-5: BRAZ_WND_WND2 - Hourly Wind Power vs. NOAA Wind Speed (2011)

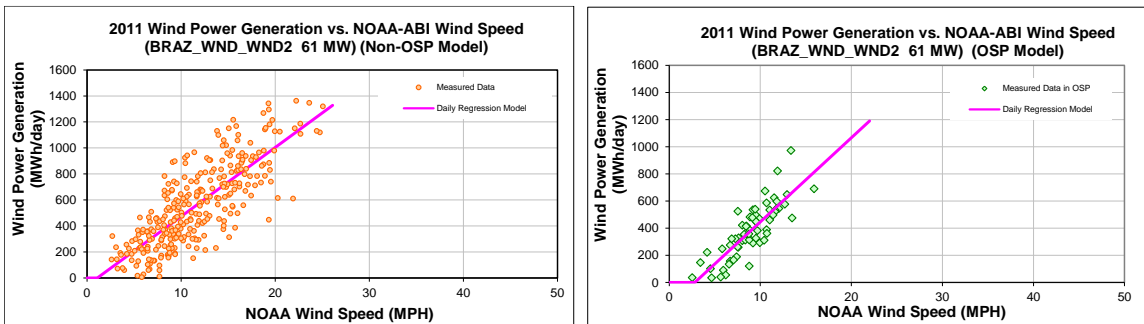


Figure 9-6: BRAZ_WND_WND2 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-6: BRAZ_WND_WND2 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-58.1784
Left Slope (MWh/mph-day)	53.1117
RMSE (MWh/day)	190.9708
R2	0.6309
CV-RMSE	34.2%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-174.1684
Left Slope (MWh/mph-day)	62.0079
RMSE (MWh/day)	109.2842
R2	0.6877
CV-RMSE	28.5%

Table 9-7: BRAZ_WND_WND2 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	13,896	13,035	6.19%	31%	29%
Feb-11	24	11.46	13,523	13,206	2.34%	38%	38%
Mar-11	31	12.29	18,186	18,440	-1.40%	40%	41%
Apr-11	30	13.87	20,254	20,354	-0.50%	46%	46%
May-11	31	13.86	19,558	21,015	-7.45%	43%	46%
Jun-11	30	14.61	22,323	21,541	3.50%	51%	49%
Jul-11	31	10.03	12,441	14,231	-14.39%	27%	31%
Aug-11	31	9.20	12,438	12,280	1.27%	27%	27%
Sep-11	30	7.68	8,478	9,782	-15.38%	19%	22%
Oct-11	31	10.61	16,760	15,662	6.55%	37%	35%
Nov-11	28	11.82	17,667	15,948	9.73%	43%	39%
Dec-11	30	9.64	13,585	13,619	-0.25%	31%	31%
Total	358	11.16	189,108	189,112	0.00%	36%	36%
Total in OSP (07/15-09/15)	63	9.00	24,175	24,189	-0.06%	26%	26%

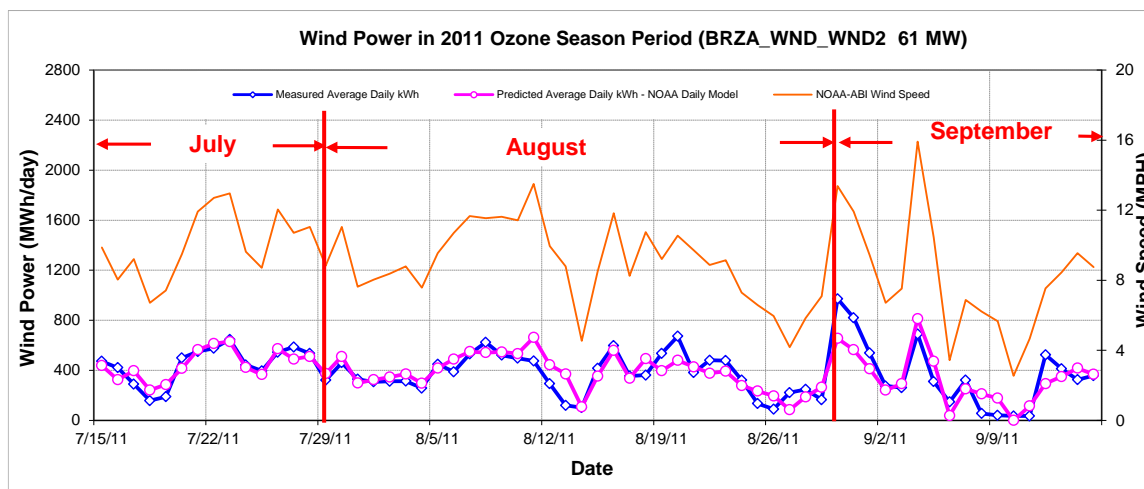


Figure 9-7: BRAZ_WND_WND2 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

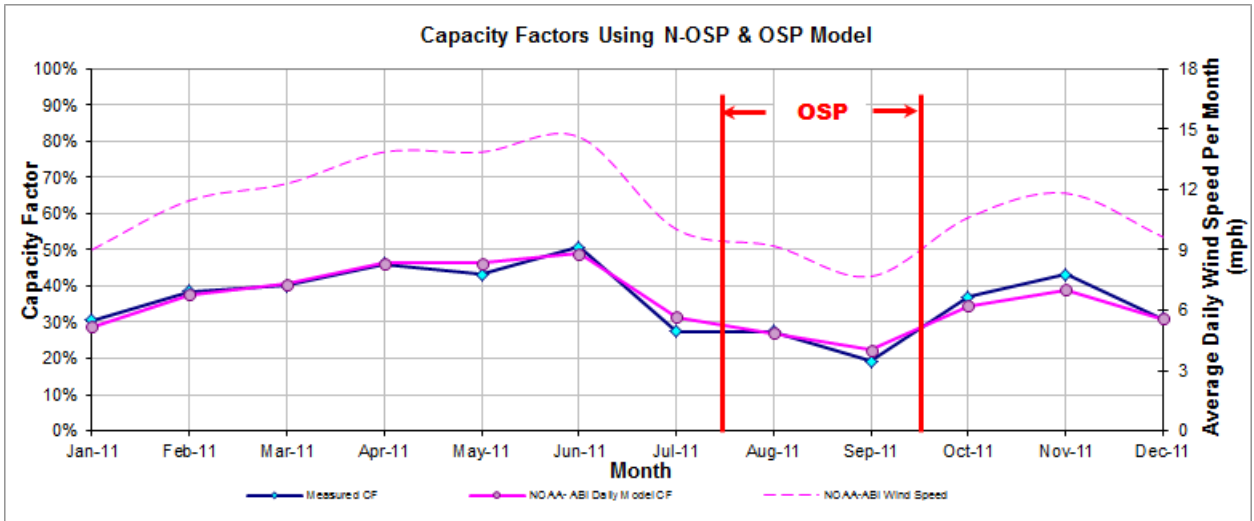


Figure 9-8: BRAZ_WND_WND2 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-8: BRAZ_WND_WND2 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
198,356	192,806	368	384

9.2 Barton Chapel Wind1

Table 9-9: Site Information for Barton Chapel Wind 1

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
BRTSW_BCW1	Wind	-	Jack	Dec-07	120	Gamesa Energy	Barton Chapel Wind 1	-	ERCOT	North	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
BRTSW_BCW1	BRTSW_BCW1	120

9.2.1 Barton Chapel Wind 1– BRTSW_BCW1

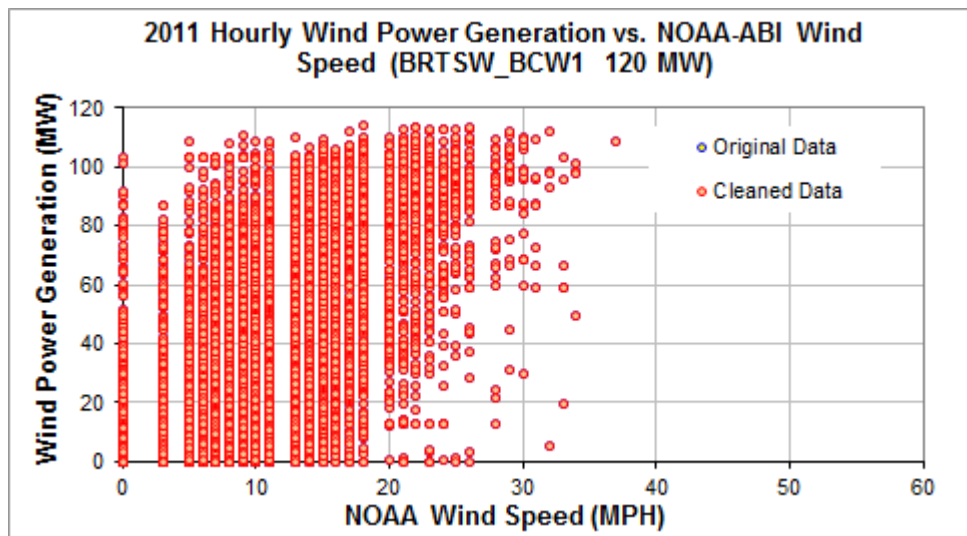


Figure 9-9: BRTSW_BCW1 – Hourly Wind Power vs. NOAA Wind Speed (2011)

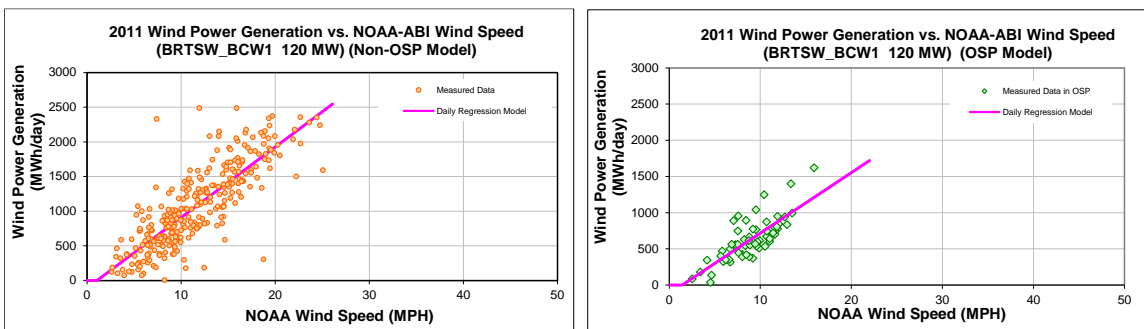


Figure 9-10: BRTSW_BCW1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-10: BRTSW_BCW1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-105.9674
Left Slope (MWh/mph-day)	101.5641
RMSE (MWh/day)	334.4781
R2	0.6750
CV-RMSE	31.3%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-118.0340
Left Slope (MWh/mph-day)	83.5205
RMSE (MWh/day)	177.4864
R2	0.6396
CV-RMSE	28.5%

Table 9-11: BRTSW_BCW1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	20,467	25,090	-22.59%	23%	28%
Feb-11	24	11.46	28,095	25,381	9.66%	41%	37%
Mar-11	31	12.29	37,151	35,426	4.65%	42%	40%
Apr-11	30	13.87	43,338	39,082	9.82%	50%	45%
May-11	31	13.86	41,473	40,349	2.71%	46%	45%
Jun-11	30	14.61	38,491	41,351	-7.43%	45%	48%
Jul-11	31	10.03	19,218	25,055	-30.37%	22%	28%
Aug-11	31	9.20	20,126	20,153	-0.14%	23%	23%
Sep-11	30	7.68	20,092	17,993	10.45%	23%	21%
Oct-11	31	10.61	27,887	30,113	-7.98%	31%	34%
Nov-11	28	11.82	33,552	30,644	8.67%	42%	38%
Dec-11	31	9.51	27,213	26,668	2.00%	30%	30%
Total	359	11.14	357,104	357,305	-0.06%	35%	35%
Total in OSP (07/15-09/15)	63	9.00	39,787	39,902	-0.29%	22%	22%

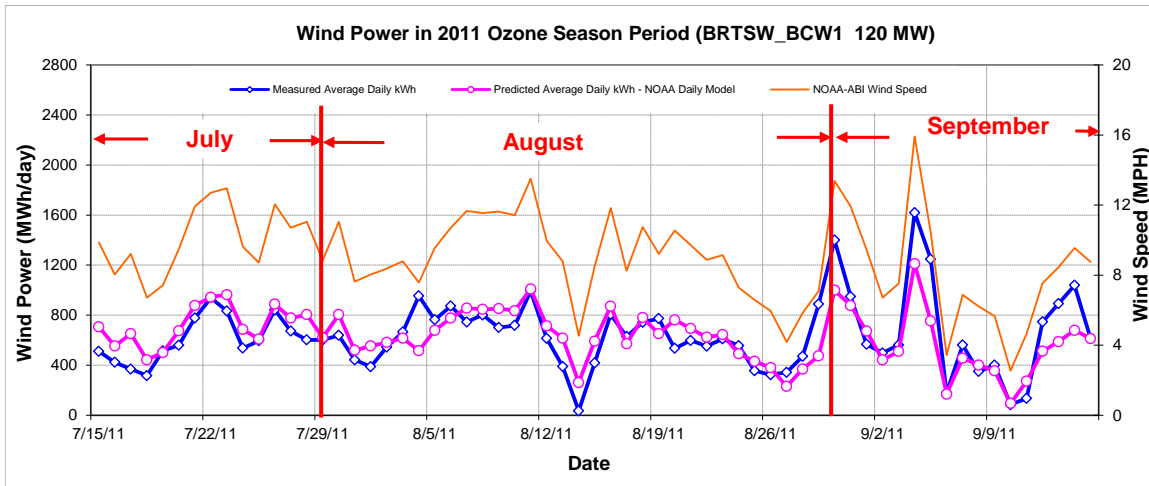


Figure 9-11: BRTSW_BCW1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

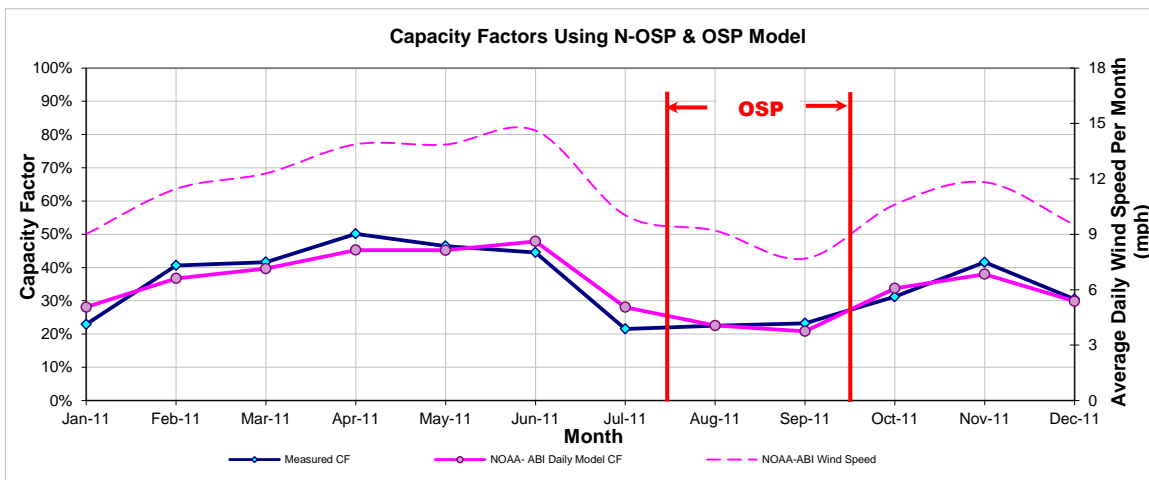


Figure 9-12: BRTSW_BCW1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-12: BRTSW_BCW1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
375,164	363,072	612	632

9.3 Buffalo Gap 1

Table 9-13: Site Information for Buffalo Gap 1

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
BUFF_GAP_UNIT1	Wind	Abilene	Taylor	Sep-05	120	AES Corporation	Buffalo Gap1	Vestas 1.8 MW (67)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
BUFF_GAP_UNIT1	BUFF_GAP_UNIT1	120

9.3.1 Buffalo Gap 1 – BUFF_GAP_UNIT1

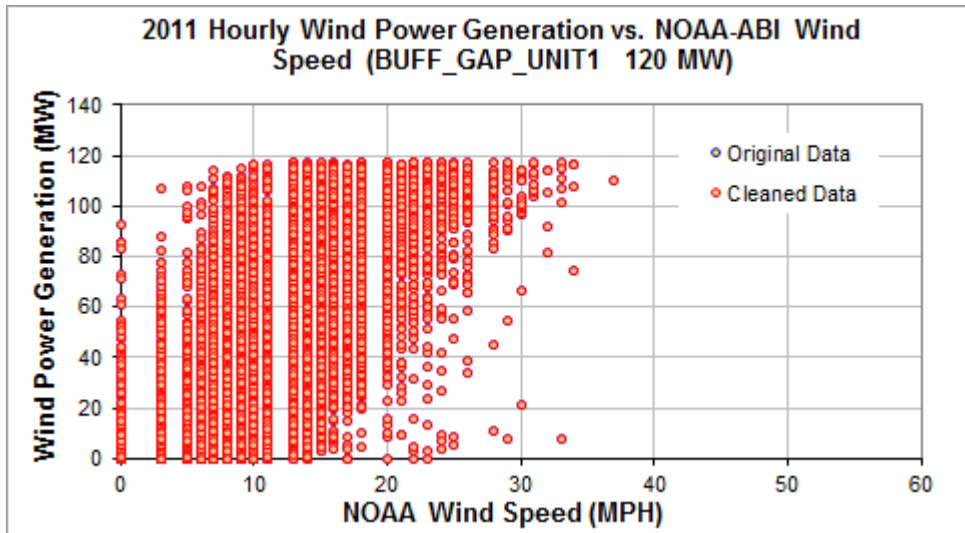


Figure 9-13: BUFF_GAP_UNIT1 – Hourly Wind Power vs. NOAA Wind Speed (2011)

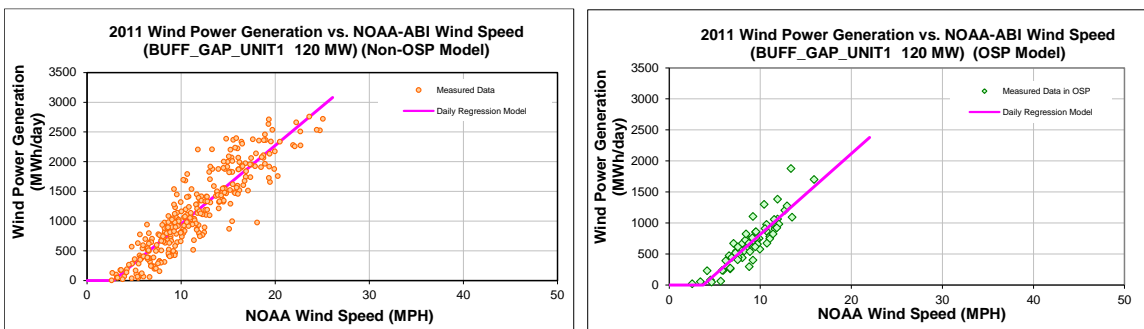


Figure 9-14: BUFF_GAP_UNIT1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-14: BUFF_GAP_UNIT1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-372.0854
Left Slope (MWh/mph-day)	132.2558
RMSE (MWh/day)	290.0900
R2	0.8212
CV-RMSE	24.9%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-485.1293
Left Slope (MWh/mph-day)	130.1889
RMSE (MWh/day)	172.4035
R2	0.7960
CV-RMSE	25.1%

Table 9-15: BUFF_GAP_UNIT1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	25,703	25,440	1.03%	29%	28%
Feb-11	24	11.46	29,137	27,433	5.85%	42%	40%
Mar-11	31	12.29	39,820	38,874	2.38%	45%	44%
Apr-11	30	13.87	40,055	43,869	-9.52%	46%	51%
May-11	31	13.86	42,706	45,286	-6.04%	48%	51%
Jun-11	30	14.61	46,819	46,824	-0.01%	54%	54%
Jul-11	31	10.03	23,700	27,314	-15.25%	27%	31%
Aug-11	31	9.20	22,021	22,079	-0.26%	25%	25%
Sep-11	30	7.68	16,936	17,576	-3.78%	20%	20%
Oct-11	31	10.61	34,913	31,956	8.47%	39%	36%
Nov-11	28	11.82	34,876	33,365	4.33%	43%	41%
Dec-11	30	9.64	30,224	27,098	10.34%	35%	31%
Total	358	11.16	386,911	387,114	-0.05%	38%	38%
Total in OSP (07/15-09/15)	63	9.00	43,231	43,419	-0.44%	24%	24%

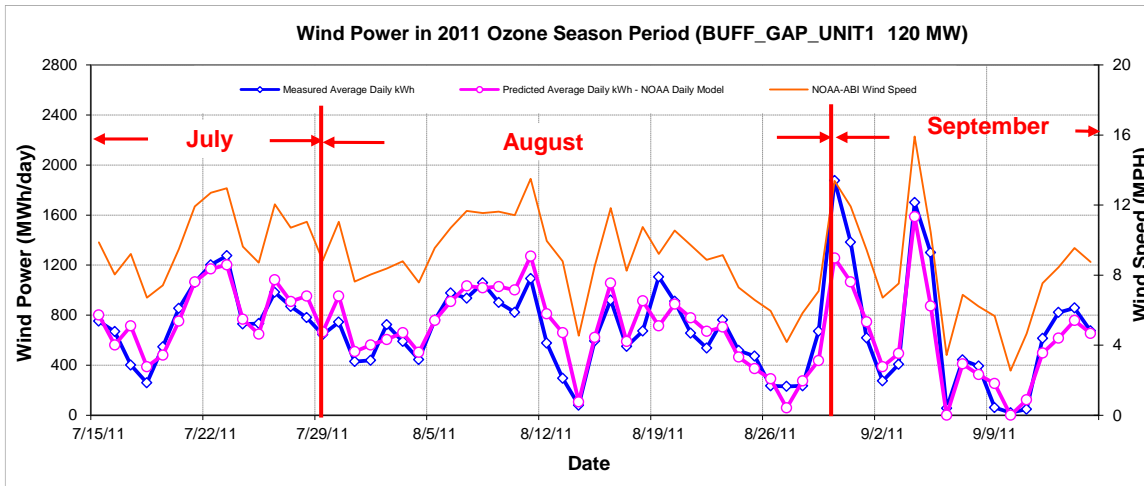


Figure 9-15: BUFF_GAP_UNIT1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

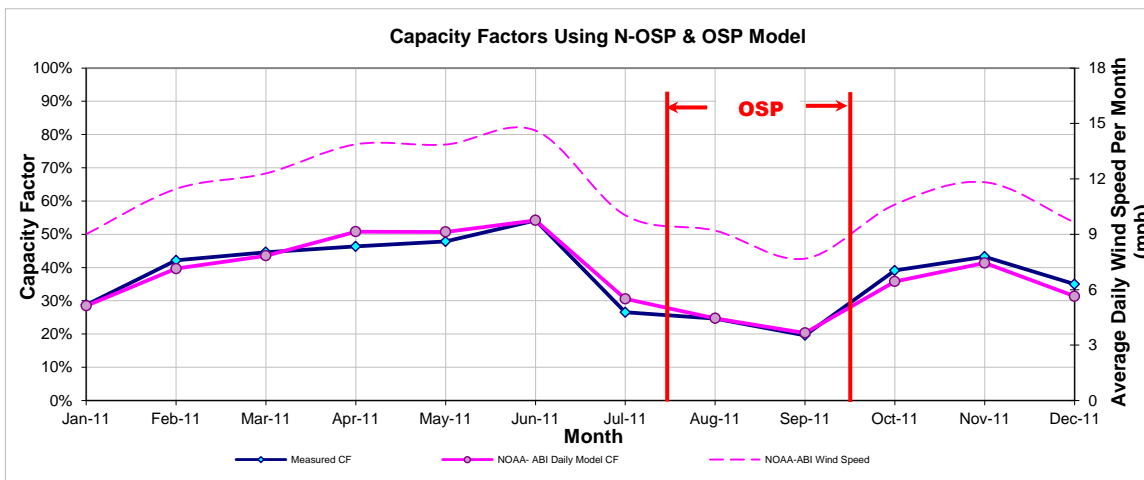


Figure 9-16: BUFF_GAP_UNIT1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-16: BUFF_GAP_UNIT1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
408,613	394,476	654	686

9.4 Buffalo Gap 2

Table 9-17: Site Information for Buffalo Gap 2

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
BUFF_GAP_UNIT2	Wind	Abilene	Taylor	Aug-07	233	AES Corporation	Buffalo Gap2	Vestas 1.8 MW (67)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
BUFF_GAP_UNIT2	BUFF_GAP_UNIT2	233

9.4.1 Buffalo Gap 2-BUFF_GAP_UNIT2

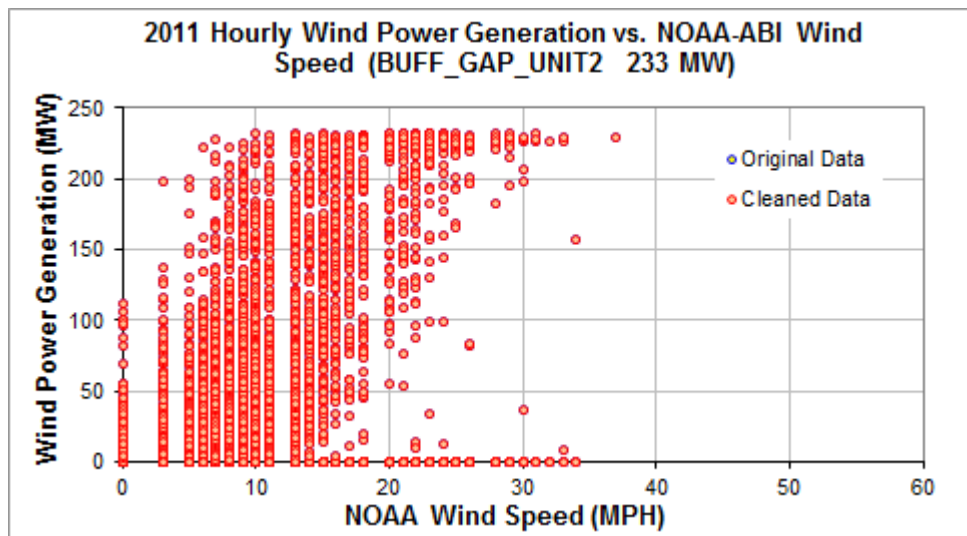


Figure 9-17: BUFF_GAP 2_UNIT2 – Hourly Wind Power vs. NOAA Wind Speed (2011)

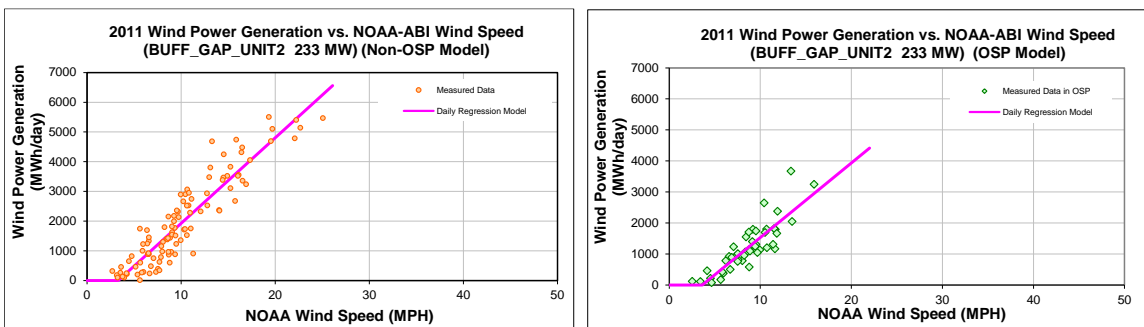


Figure 9-18: BUFF_GAP 2_UNIT2 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-18: BUFF_GAP 2_UNIT2 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-950.0358
Left Slope (MWh/mph-day)	287.6498
RMSE (MWh/day)	570.9967
R2	0.8515
CV-RMSE	28.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-870.2777
Left Slope (MWh/mph-day)	240.2757
RMSE (MWh/day)	394.8532
R2	0.7420
CV-RMSE	32.6%

Table 9-19: BUFF_GAP 2_UNIT2 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11							
Feb-11							
Mar-11							
Apr-11							
May-11							
Jun-11							
Jul-11							
Aug-11	31	9.20	39,250	41,525	-5.80%	23%	24%
Sep-11	30	7.68	34,196	33,938	0.75%	20%	20%
Oct-11	31	10.61	62,786	65,139	-3.75%	36%	38%
Nov-11	28	11.82	69,970	68,767	1.72%	45%	44%
Dec-11	31	9.51	58,049	55,397	4.57%	33%	32%
Total	151	9.74	264,250	264,767	-0.20%	31%	31%
Total in OSP (07/15-09/15)	46	8.67	55,799	56,101	-0.54%	22%	22%

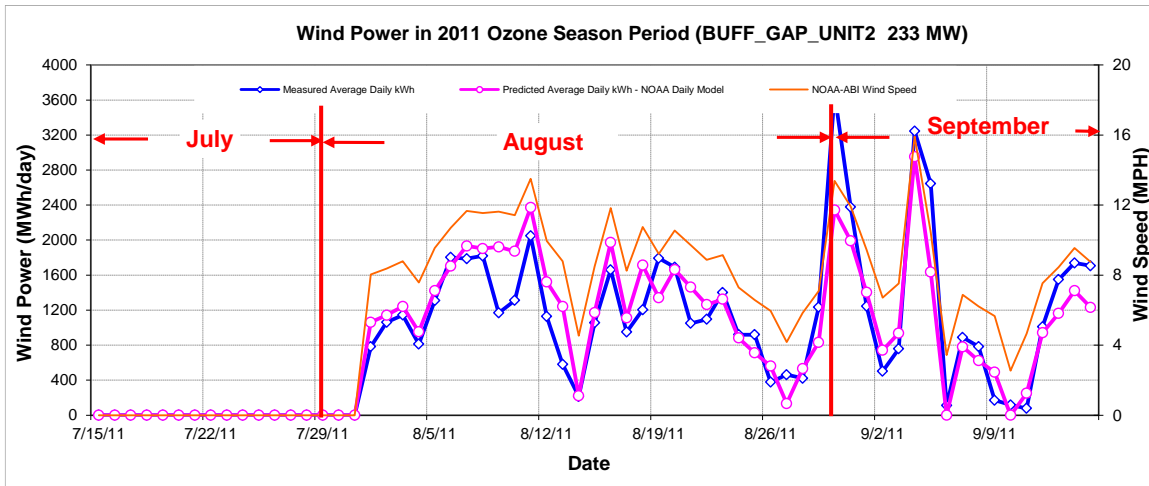


Figure 9-19: BUFF_GAP 2_UNIT2 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

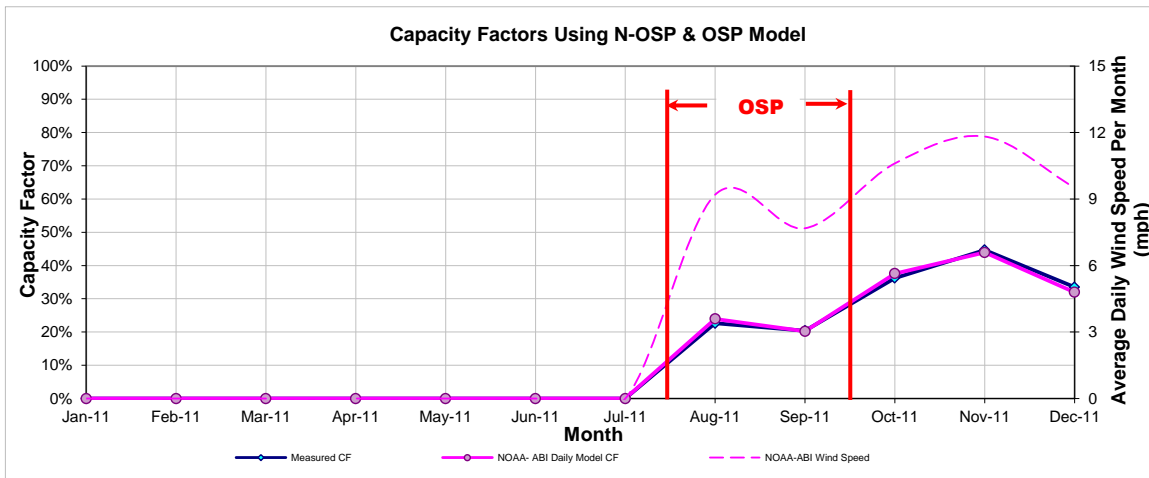


Figure 9-20: BUFF_GAP 2_UNIT2 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-20: BUFF_GAP 2_UNIT2 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
834,051	638,751	1,231	1,213

9.5 Buffalo Gap 3

Table 9-21: Site Information for Buffalo Gap 3

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
BUFF_GAP 3	Wind	Abilene	Taylor	Apr-08	170	AES Corporation	Buffalo Gap3	-	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
BUFF_GAP_UNIT3	BUFF_GAP	170

9.5.1 Buffalo Gap 3-BUFF_GAP_UNIT3

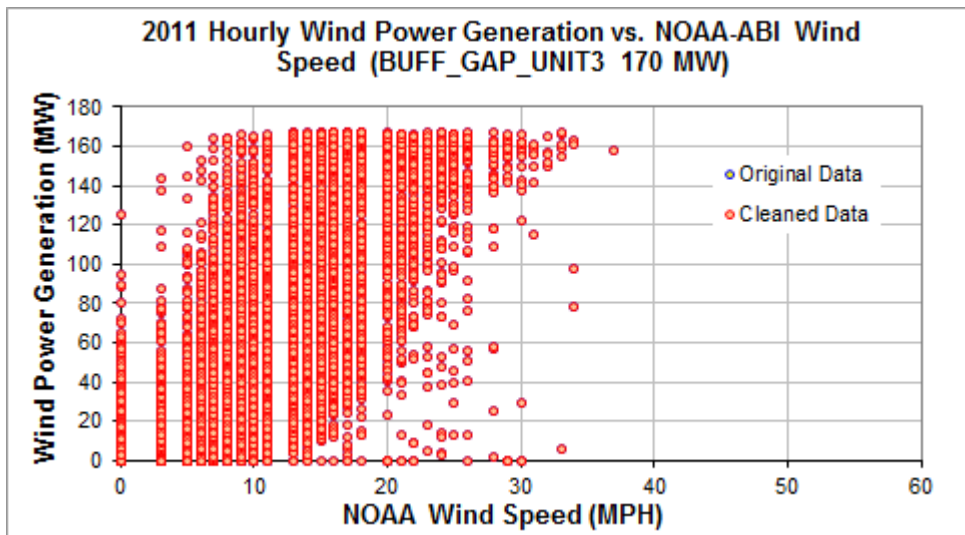


Figure 9-21: BUFF_GAP 3_UNIT3 – Hourly Wind Power vs. NOAA Wind Speed (2011)

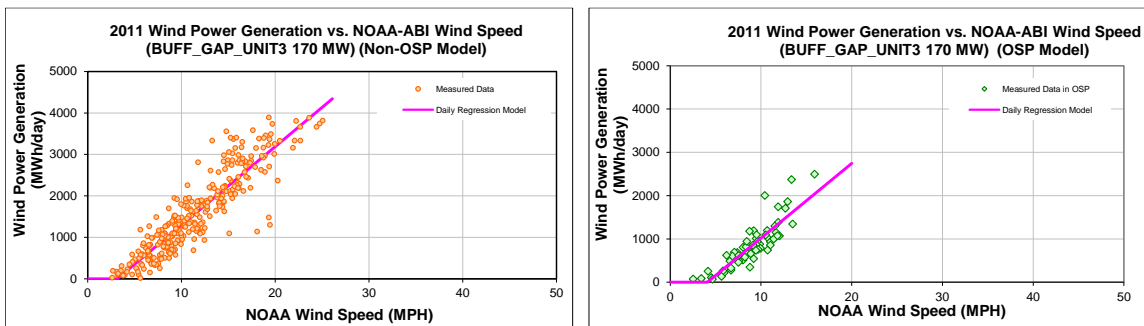


Figure 9-22: BUFF_GAP 3_UNIT3 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-22: BUFF_GAP 3_UNIT3 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-596.1160
Left Slope (MWh/mph-day)	189.2022
RMSE (MWh/day)	420.7880
R2	0.8174
CV-RMSE	26.3%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-706.0760
Left Slope (MWh/mph-day)	172.4179
RMSE (MWh/day)	258.6720
R2	0.7524
CV-RMSE	30.6%

Table 9-23: BUFF_GAP 3_UNIT3 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	32,721	34,491	-5.41%	26%	27%
Feb-11	24	11.46	39,565	37,713	4.68%	40%	39%
Mar-11	31	12.29	54,231	53,634	1.10%	43%	42%
Apr-11	30	13.87	56,286	60,843	-8.10%	46%	50%
May-11	31	13.86	60,669	62,806	-3.52%	48%	50%
Jun-11	30	14.61	66,791	65,071	2.57%	55%	53%
Jul-11	31	10.03	29,689	35,655	-20.09%	23%	28%
Aug-11	31	9.20	25,774	27,269	-5.80%	20%	22%
Sep-11	30	7.68	23,053	22,540	2.23%	19%	18%
Oct-11	31	10.61	44,546	43,737	1.82%	35%	35%
Nov-11	28	11.82	50,409	46,009	8.73%	44%	40%
Dec-11	31	9.51	42,818	37,319	12.84%	34%	30%
Total	359	11.14	526,551	527,087	-0.10%	36%	36%
Total in OSP (07/15-09/15)	63	9.00	53,247	53,623	-0.71%	21%	21%

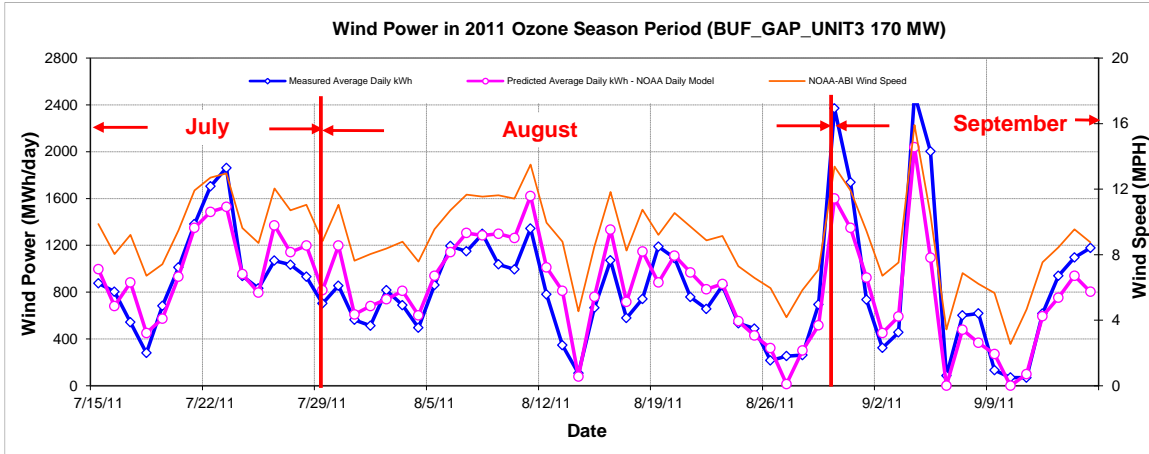


Figure 9-23: BUFF_GAP 3_UNIT3 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

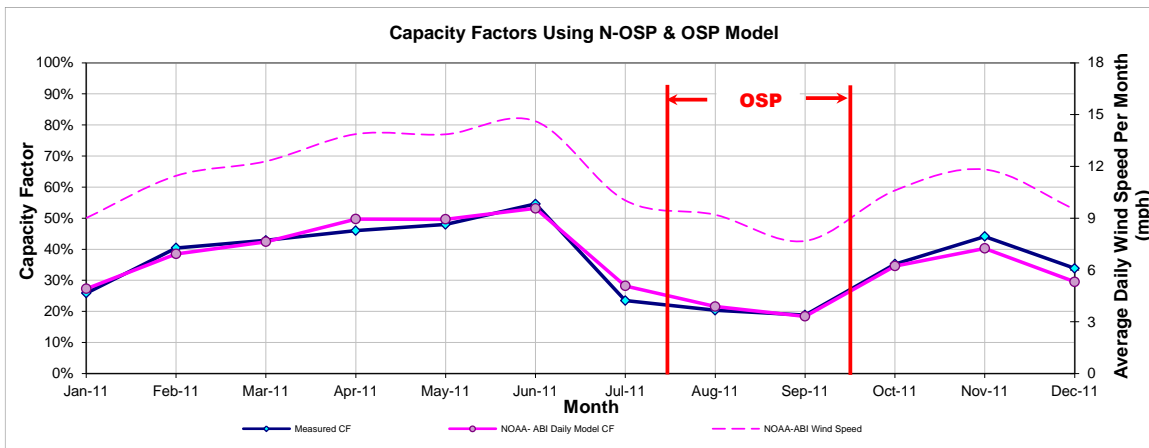


Figure 9-24: BUFF_GAP 3_UNIT3 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-24: BUFF_GAP 3_UNIT3 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
556,899	535,352	803	845

9.6 Bull Creek Wind Plant

Table 9-25: Site Information for Bull Creek Wind Plant

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
BULLCRK_WND1	Wind	-	Borden	Nov-08	91	Eurus Energy Holdings	Bull Creek Wind Plant	-	ERCOT	West	LBB

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
BULLCRK_WND1	BULLCRK_WND1	91

9.6.1 Bull Creek Wind Plant – BULLCRK_WND1

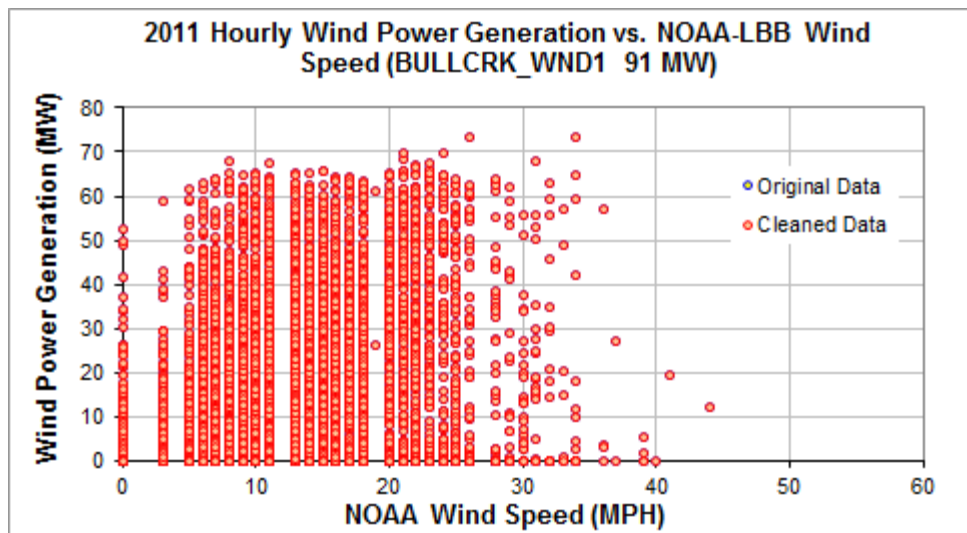


Figure 9-25: BULLCRK_WND1 - Hourly Wind Power vs. NOAA Wind Speed (2011)

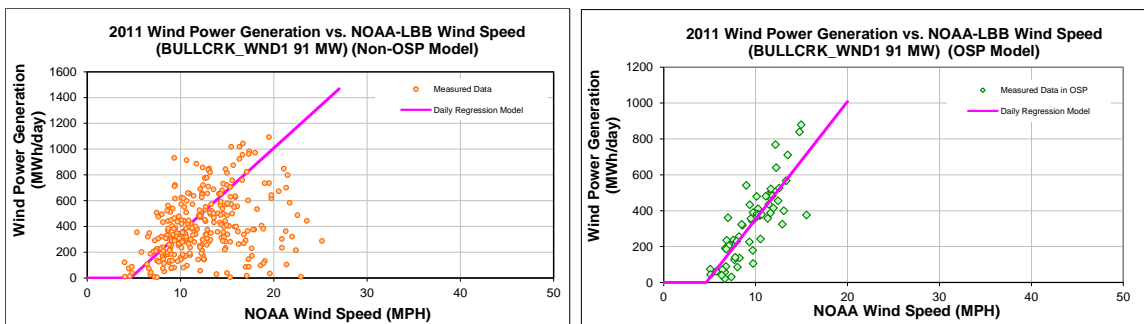


Figure 9-26: BULLCRK_WND1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-26: BULLCRK_WND1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-304.0075
Left Slope (MWh/mph-day)	65.6172
RMSE (MWh/day)	112.0354
R2	0.6886
CV-RMSE	33.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-304.0075
Left Slope (MWh/mph-day)	65.6172
RMSE (MWh/day)	112.0354
R2	0.6886
CV-RMSE	33.8%

Table 9-27: BULLCRK_WND1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.10	12,492	11,128	10.92%	18%	16%
Feb-11	25	12.63	10,106	13,113	-29.76%	19%	24%
Mar-11	31	12.11	8,888	15,218	-71.22%	13%	22%
Apr-11	30	14.92	11,505	20,254	-76.05%	18%	31%
May-11	31	14.34	14,691	19,745	-34.41%	22%	29%
Jun-11	30	15.64	15,251	21,676	-42.13%	23%	33%
Jul-11	31	10.57	10,897	12,074	-10.80%	16%	18%
Aug-11	31	9.76	10,504	10,428	0.73%	16%	15%
Sep-11	30	8.99	9,385	8,572	8.66%	14%	13%
Oct-11	31	11.18	10,278	13,314	-29.54%	15%	20%
Nov-11	30	11.91	10,722	14,322	-33.57%	16%	22%
Dec-11	30	10.83	13,889	12,289	11.52%	21%	19%
Total	361	11.90	138,606	172,132	-24.19%	18%	22%
Total in OSP (07/15-09/15)	63	9.68	20,866	20,863	0.01%	15%	15%

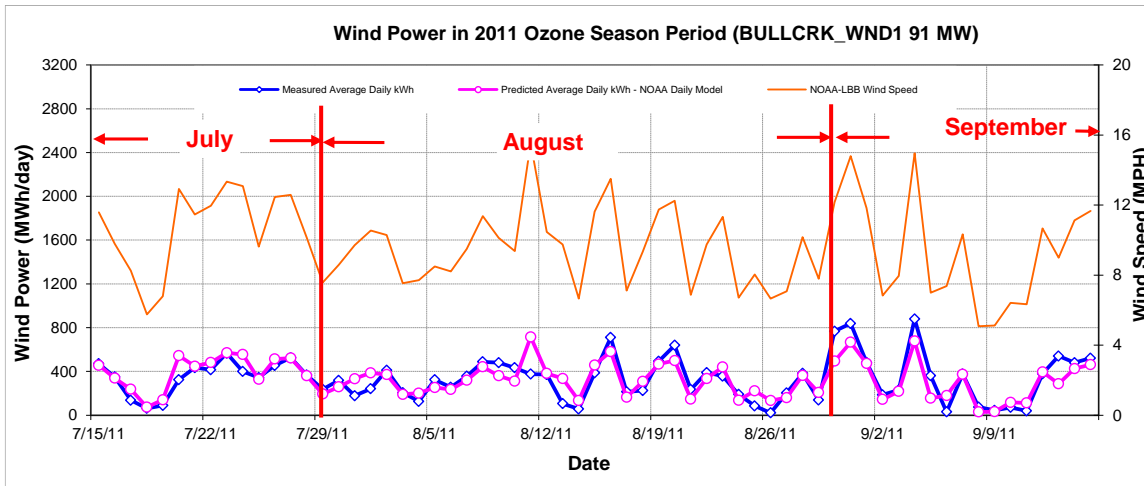


Figure 9-27: BULLCRK_WND1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

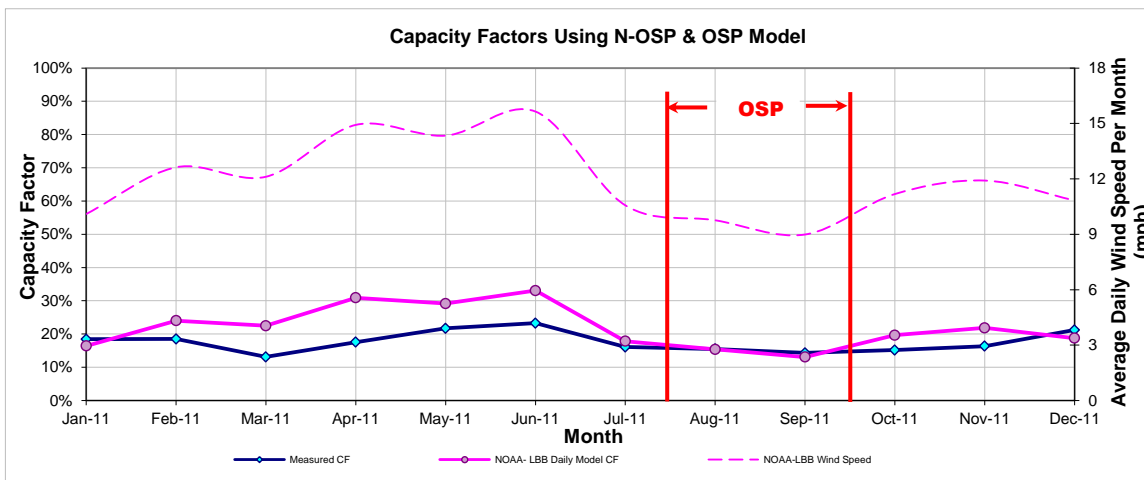


Figure 9-28: BULLCRK_WND1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-28: BULLCRK_WND1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
173,952	140,142	290	331

9.7 Capricorn Ridge Wind

Table 9-29: Site Information for Capricorn Ridge Wind

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
CAPRIDGE_CR1	Wind	Abilene	Sterling	Sep-07	364	FPL Energy	Capricorn Ridge Wind	FPL Energy	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
CAPRIDGE_CR1	CAPRIDGE_CR1	214.5
CAPRIDGE_CR2	CAPRIDGE_CR2	149.5

9.7.1 Capricorn Ridge Wind – CAPRIDGE_CR1

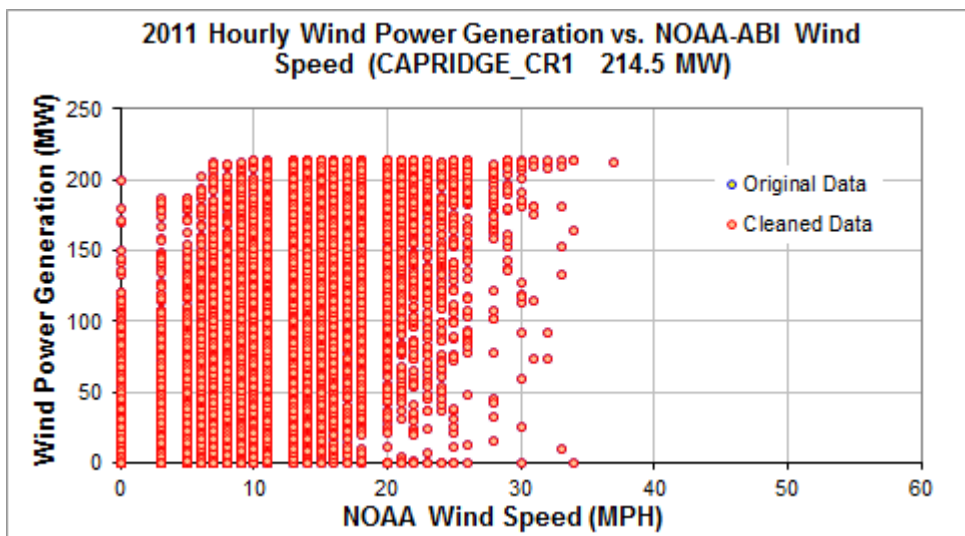


Figure 9-29: CAPRIDGE_CR1– Hourly Wind Power vs. NOAA Wind Speed (2011)

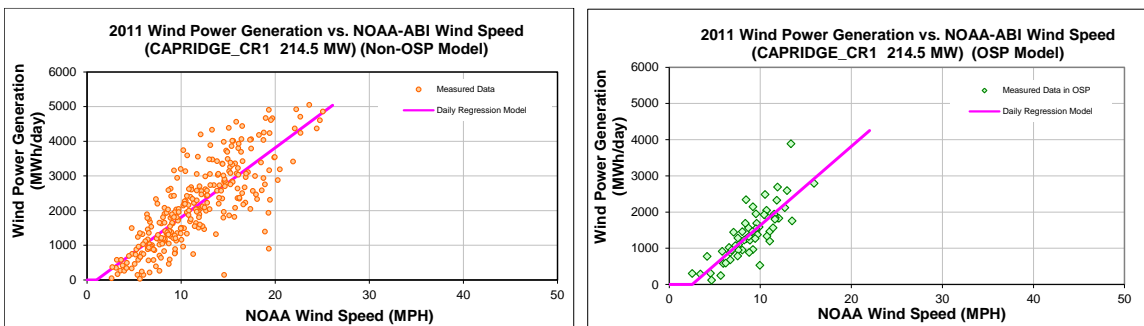


Figure 9-30: CAPRIDGE_CR1– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-30: CAPRIDGE_CR1– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-203.6708
Left Slope (MWh/mph-day)	200.9460
RMSE (MWh/day)	684.1579
R2	0.6564
CV-RMSE	32.2%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-551.2521
Left Slope (MWh/mph-day)	218.2751
RMSE (MWh/day)	408.6550
R2	0.6612
CV-RMSE	28.9%

Table 9-31: CAPRIDGE_CR1– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	50,941	49,826	2.19%	32%	31%
Feb-11	24	11.46	52,617	50,360	4.29%	43%	41%
Mar-11	31	12.29	61,345	70,276	-14.56%	38%	44%
Apr-11	30	13.87	67,755	77,503	-14.39%	44%	50%
May-11	31	13.86	74,635	80,018	-7.21%	47%	50%
Jun-11	30	14.61	87,070	81,993	5.83%	56%	53%
Jul-11	31	10.03	49,755	53,162	-6.85%	31%	33%
Aug-11	31	9.20	46,101	45,143	2.08%	29%	28%
Sep-11	30	7.68	38,066	36,953	2.92%	25%	24%
Oct-11	31	10.61	65,800	59,765	9.17%	41%	37%
Nov-11	28	11.82	68,145	60,798	10.78%	47%	42%
Dec-11	31	9.51	56,562	52,949	6.39%	35%	33%
Total	359	11.14	718,792	718,745	0.01%	39%	39%
Total in OSP (07/15-09/15)	63	9.00	88,994	88,987	0.01%	27%	27%

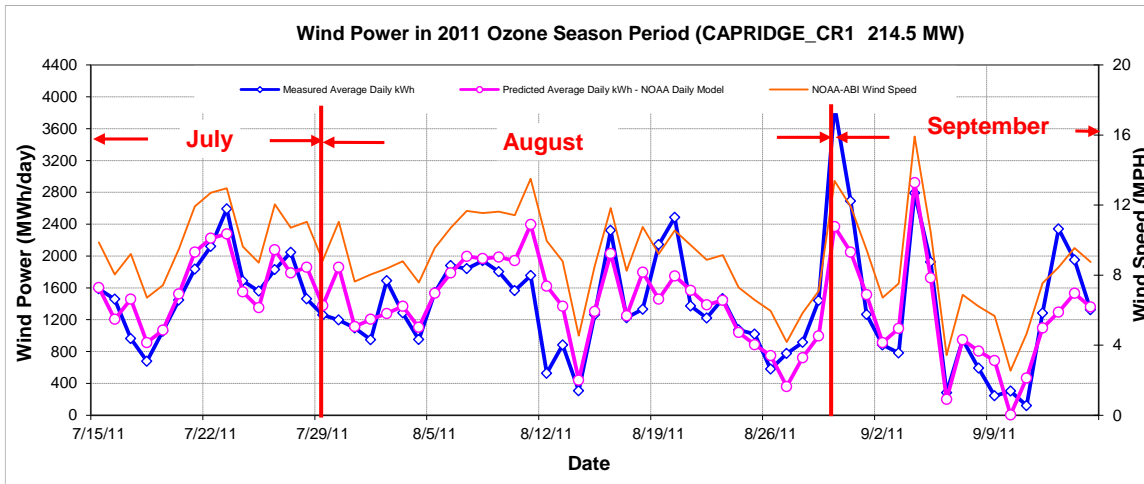


Figure 9-31: CAPRIDGE_CR1– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

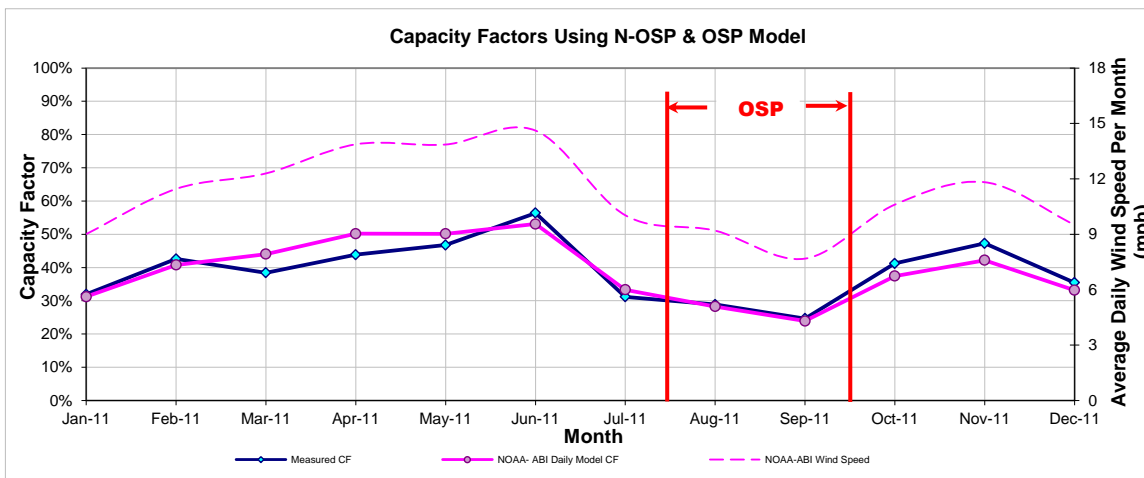


Figure 9-32: CAPRIDGE_CR1– Predicted Capacity Factors Using Daily Models (2011)

Table 9-32: CAPRIDGE_CR1– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
753,252	730,805	1,356	1,413

9.7.2 Capricorn Ridge Wind – CAPRIDGE_CR2

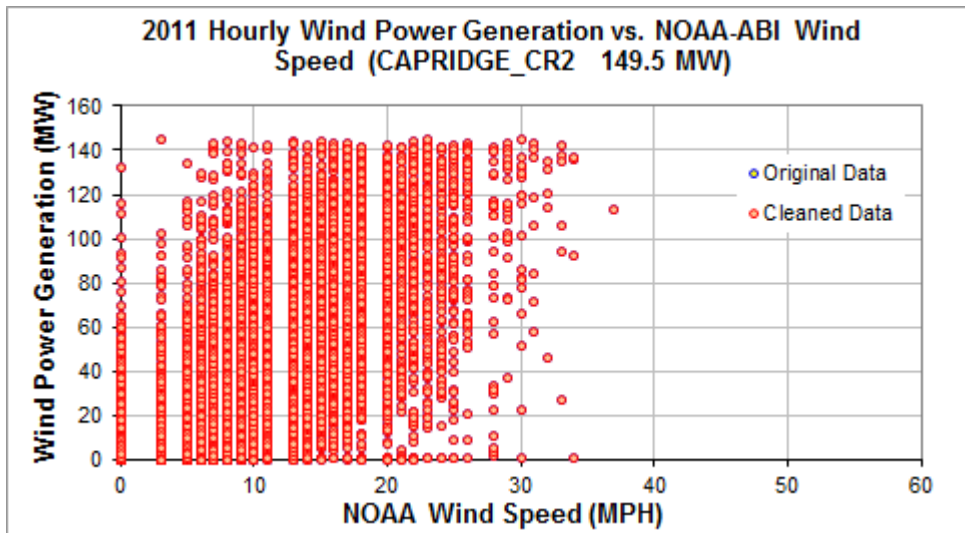


Figure 9-33: CAPRIDGE_CR2– Hourly Wind Power vs. NOAA Wind Speed (2011)

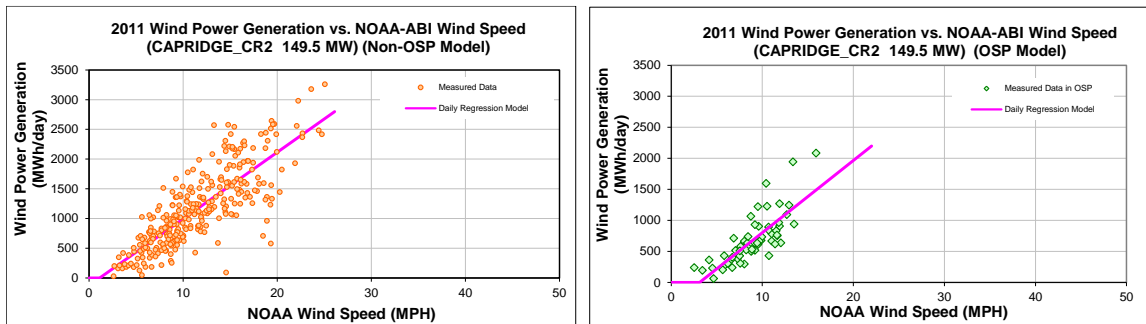


Figure 9-34: CAPRIDGE_CR2– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-33: CAPRIDGE_CR2– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-125.9546
Left Slope (MWh/mph-day)	112.0379
RMSE (MWh/day)	379.8276
R2	0.6583
CV-RMSE	32.4%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-362.8438
Left Slope (MWh/mph-day)	116.4755
RMSE (MWh/day)	243.1378
R2	0.6109
CV-RMSE	35.5%

Table 9-34: CAPRIDGE_CR2– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	27,116	27,396	-1.03%	24%	25%
Feb-11	24	11.46	27,811	27,781	0.11%	32%	32%
Mar-11	31	12.29	36,845	38,798	-5.30%	33%	35%
Apr-11	30	13.87	38,486	42,840	-11.31%	36%	40%
May-11	31	13.86	42,255	44,230	-4.67%	38%	40%
Jun-11	30	14.61	47,873	45,344	5.28%	44%	42%
Jul-11	31	10.03	23,051	27,646	-19.93%	21%	25%
Aug-11	31	9.20	20,683	21,960	-6.18%	19%	20%
Sep-11	30	7.68	21,584	19,058	11.70%	20%	18%
Oct-11	31	10.61	35,069	32,938	6.08%	32%	30%
Nov-11	28	11.82	36,655	33,551	8.47%	36%	33%
Dec-11	31	9.51	33,209	29,137	12.26%	30%	26%
Total	359	11.14	390,637	390,678	-0.01%	30%	30%
Total in OSP (07/15-09/15)	63	9.00	43,162	43,225	-0.15%	19%	19%

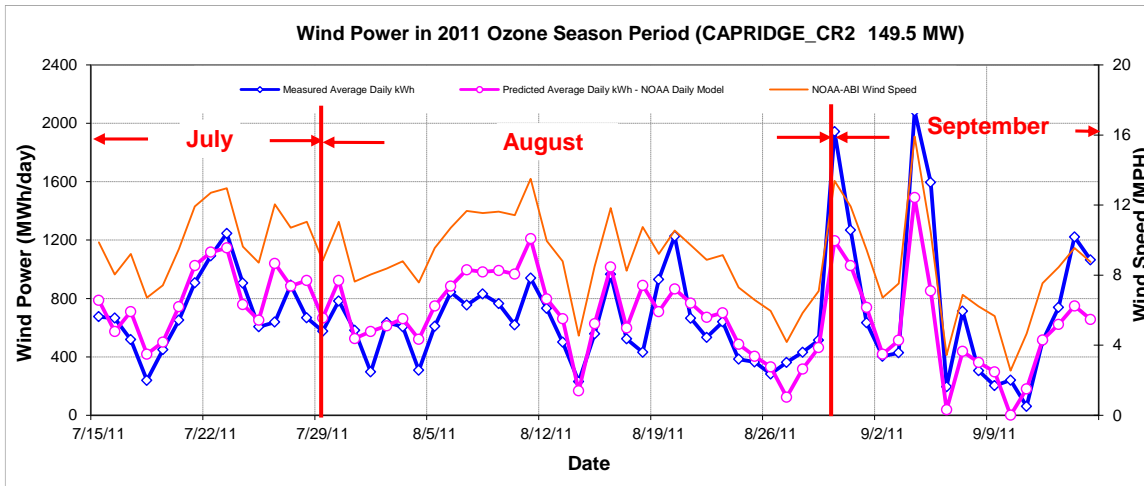


Figure 9-35: CAPRIDGE_CR2– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

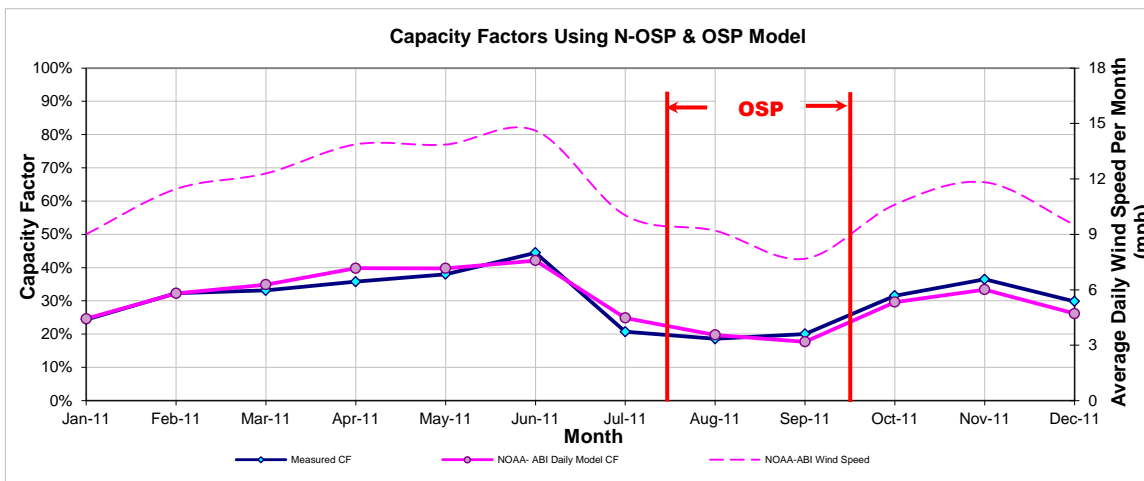


Figure 9-36: CAPRIDGE_CR2– Predicted Capacity Factors Using Daily Models (2011)

Table 9-35: CAPRIDGE_CR2– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
409,863	397,166	655	685

9.8 Capricorn Ridge Wind Expansion

Table 9-36: Site Information for Capricorn Ridge Wind Expansion

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
CAPRIDGE	Wind	Abilene	Sterling	May-08	298.5	FPL Energy	Capricorn Ridge Wind exp.	-	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
CAPRIDGE_CR3	CAPRIDGE_CR3	186
CAPRIDG4_CR4	CAPRIDG4_CR4	112.5

9.8.1 Capricorn Ridge Wind Expansion – CAPRIDGE_CR3

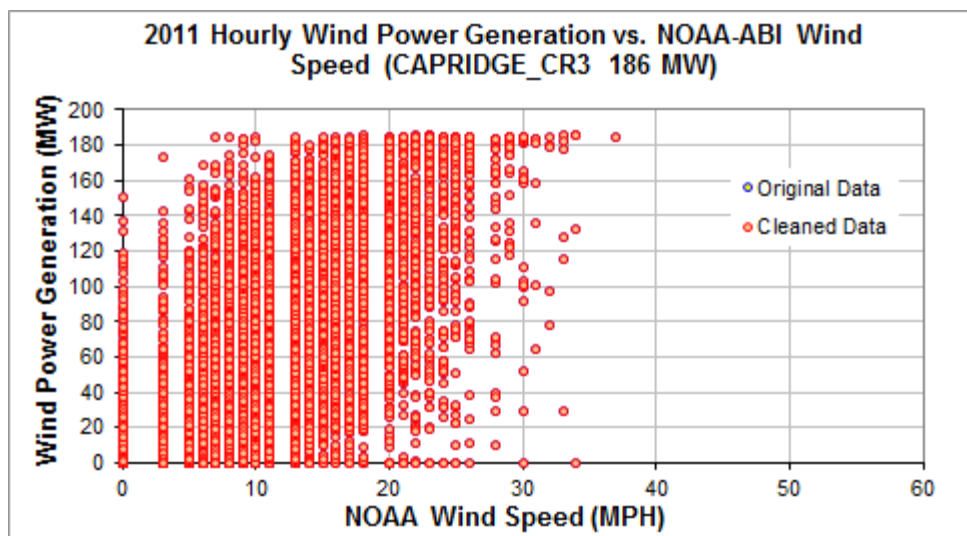


Figure 9-37: CAPRIDGE_CR3– Hourly Wind Power vs. NOAA Wind Speed (2011)

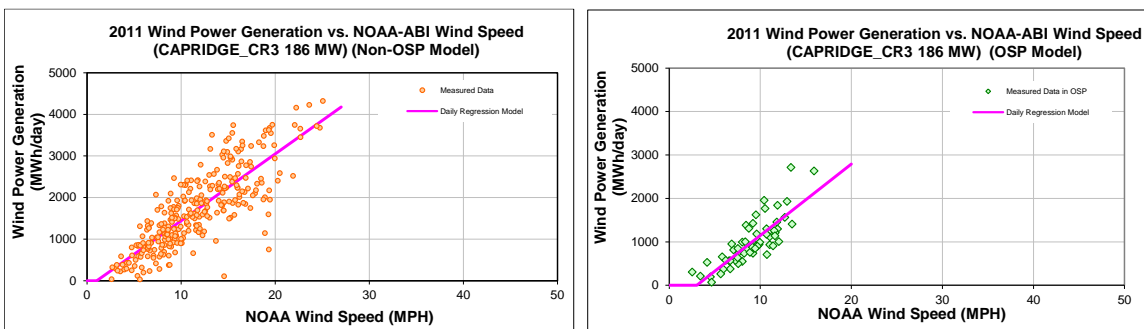


Figure 9-38: CAPRIDGE_CR3– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-37: CAPRIDGE_CR3– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-165.8582
Left Slope (MWh/mph-day)	160.7678
RMSE (MWh/day)	533.5045
R2	0.6679
CV-RMSE	31.4%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-498.4484
Left Slope (MWh/mph-day)	164.5144
RMSE (MWh/day)	304.4937
R2	0.6663
CV-RMSE	31.0%

Table 9-38: CAPRIDGE_CR3– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	41,729	39,773	4.69%	30%	29%
Feb-11	24	11.46	42,052	40,221	4.35%	39%	38%
Mar-11	31	12.29	51,283	56,134	-9.46%	37%	41%
Apr-11	30	13.87	54,754	61,920	-13.09%	41%	46%
May-11	31	13.86	59,328	63,928	-7.75%	43%	46%
Jun-11	30	14.61	69,277	65,512	5.43%	52%	49%
Jul-11	31	10.03	33,130	39,816	-20.18%	24%	29%
Aug-11	31	9.20	30,324	31,452	-3.72%	22%	23%
Sep-11	30	7.68	30,171	27,589	8.56%	23%	21%
Oct-11	31	10.61	51,032	47,725	6.48%	37%	34%
Nov-11	28	11.82	53,951	48,560	9.99%	43%	39%
Dec-11	31	9.51	47,830	42,271	11.62%	35%	31%
Total	359	11.14	564,860	564,902	-0.01%	35%	35%
Total in OSP (07/15-09/15)	63	9.00	61,848	61,923	-0.12%	22%	22%

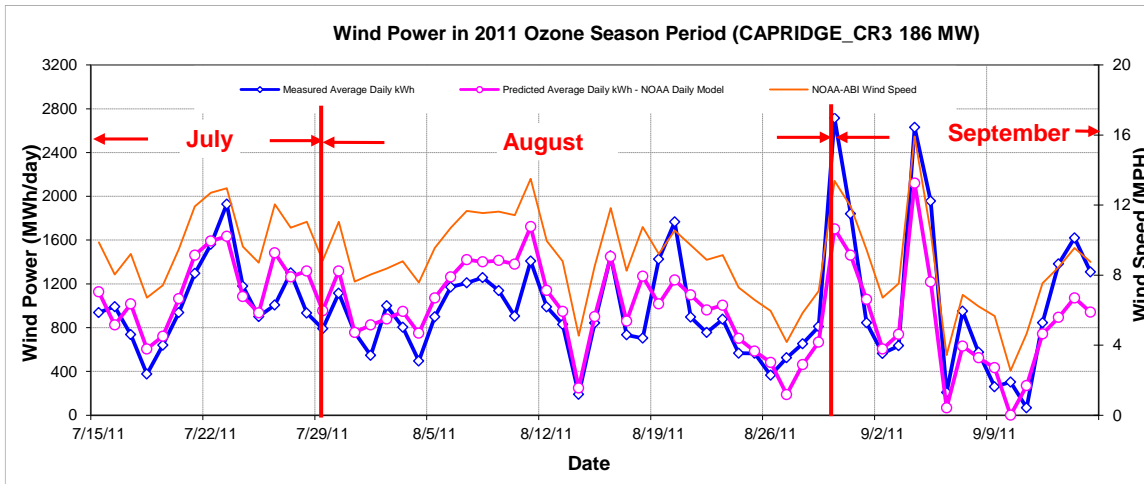


Figure 9-39: CAPRIDGE_CR3– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

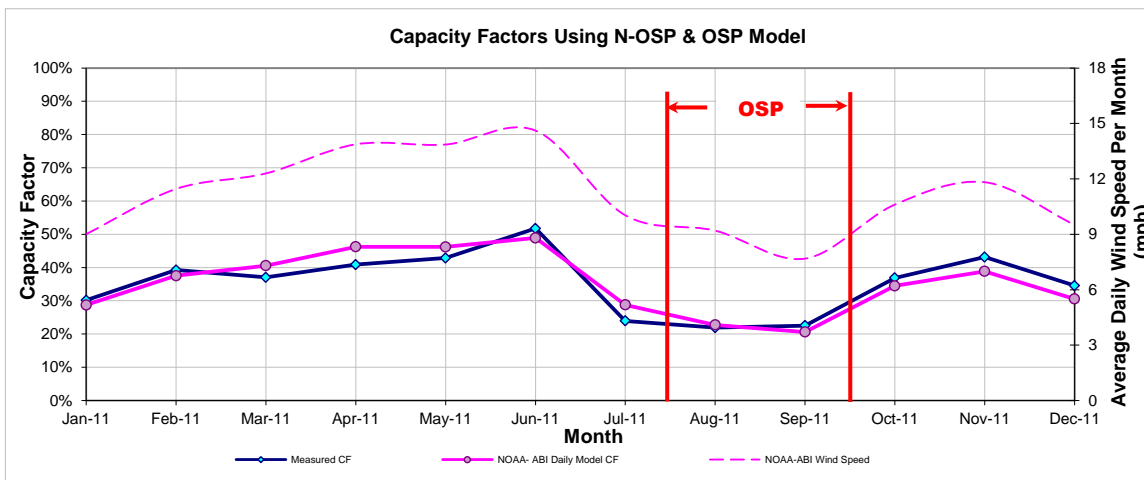


Figure 9-40: CAPRIDGE_CR3– Predicted Capacity Factors Using Daily Models (2011)

Table 9-39: CAPRIDGE_CR3– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
592,580	574,300	939	982

9.8.2 Capricorn Ridge Wind Expansion – CAPRIDGE4_CR4

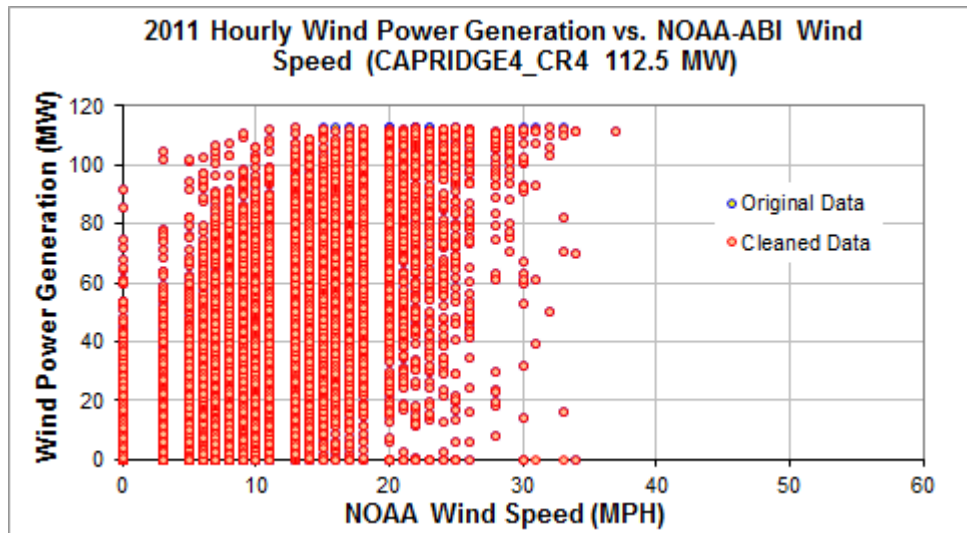


Figure 9-41: CAPRIDGE4_CR4 – Hourly Wind Power vs. NOAA Wind Speed (2011)

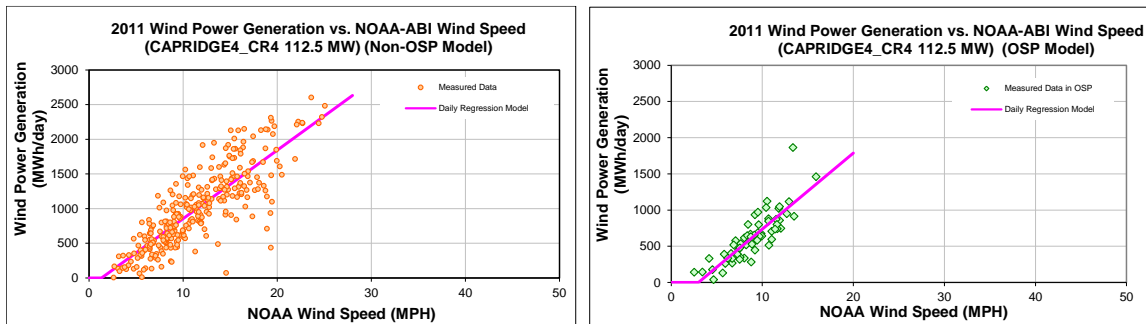


Figure 9-42: CAPRIDGE4_CR4 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-40: CAPRIDGE4_CR4 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-131.4715
Left Slope (MWh/mph-day)	98.7330
RMSE (MWh/day)	312.5075
R2	0.6885
CV-RMSE	30.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-314.9602
Left Slope (MWh/mph-day)	105.1074
RMSE (MWh/day)	173.9656
R2	0.7141
CV-RMSE	27.6%

Table 9-41: CAPRIDGE4_CR4 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	23,724	23,508	0.91%	28%	28%
Feb-11	24	11.46	25,339	23,990	5.32%	39%	37%
Mar-11	31	12.29	30,012	33,556	-11.81%	36%	40%
Apr-11	30	13.87	32,823	37,139	-13.15%	41%	46%
May-11	31	13.86	35,724	38,343	-7.33%	43%	46%
Jun-11	30	14.61	42,866	39,345	8.21%	53%	49%
Jul-11	31	10.03	22,218	24,572	-10.59%	27%	29%
Aug-11	31	9.20	20,355	20,203	0.75%	24%	24%
Sep-11	30	7.68	17,543	16,828	4.07%	22%	21%
Oct-11	31	10.61	31,281	28,392	9.24%	37%	34%
Nov-11	28	11.82	31,683	28,993	8.49%	42%	38%
Dec-11	31	9.51	26,318	25,042	4.85%	31%	30%
Total	359	11.14	339,886	339,911	-0.01%	35%	35%
Total in OSP (07/15-09/15)	63	9.00	39,735	39,779	-0.11%	23%	23%

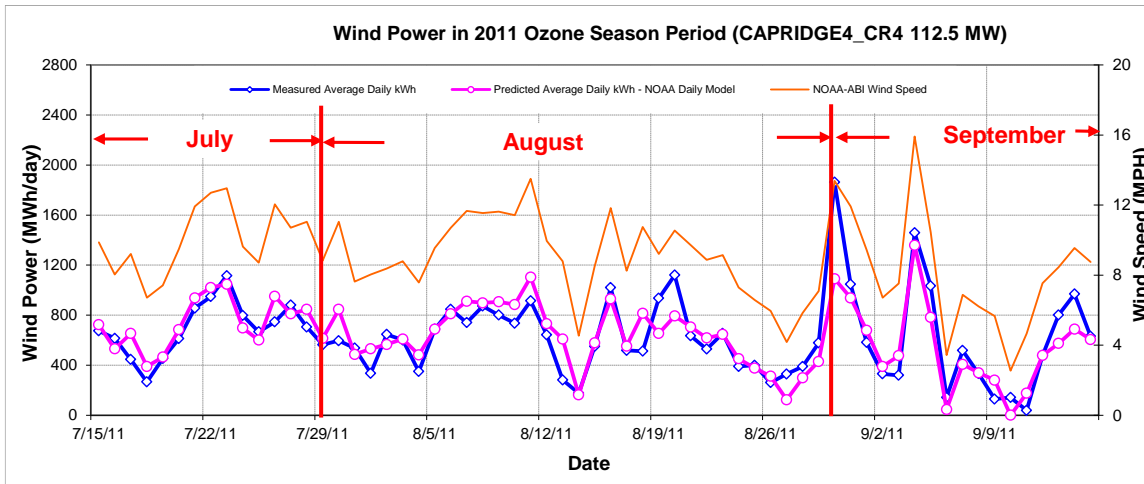


Figure 9-43: CAPRIDGE4_CR4 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

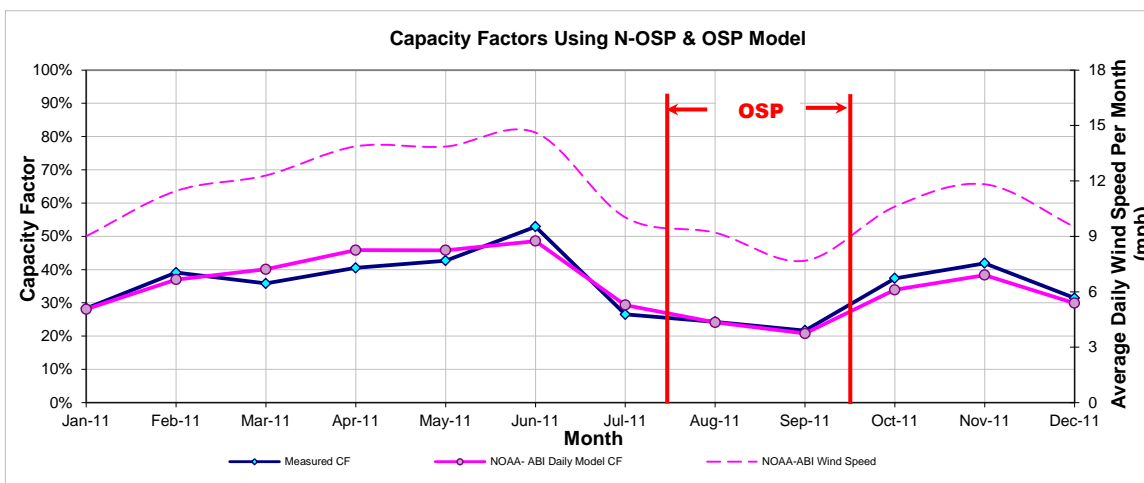


Figure 9-44: CAPRIDGE4_CR4 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-42: CAPRIDGE4_CR4 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
356,633	345,566	603	631

9.9 Cedro Hill Wind

Table 9-43: Site Information for Cedro Hill Wind

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
CEDROHILL	Wind	-	Webb	Oct-10	150	Edison Mission group	Cedro Hill Wind	-	ERCOT	South	CRP

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
CEDROHILL	CEDROHILL	150

9.9.1 Cedro Hill Wind - CEDROHILL

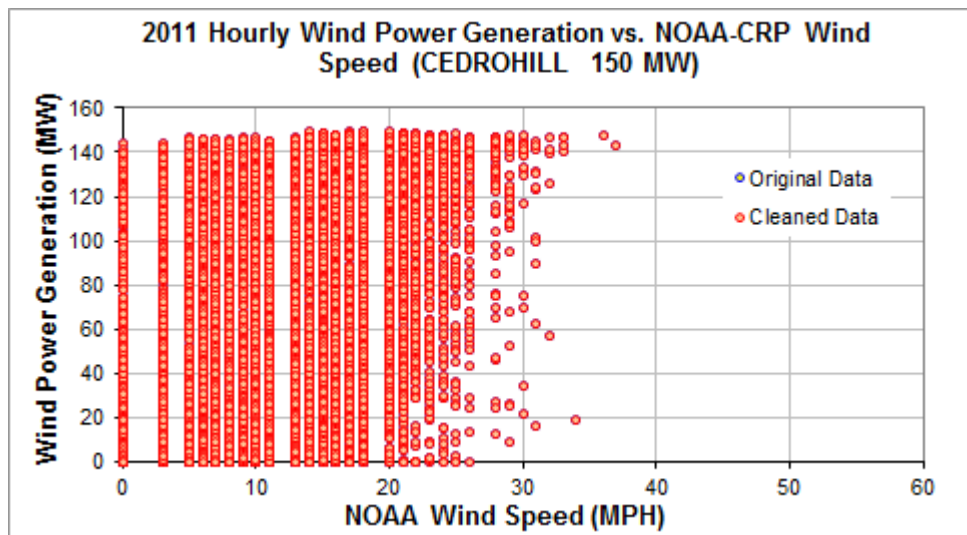


Figure 9-45: CEDROHILL – Hourly Wind Power vs. NOAA Wind Speed (2011)

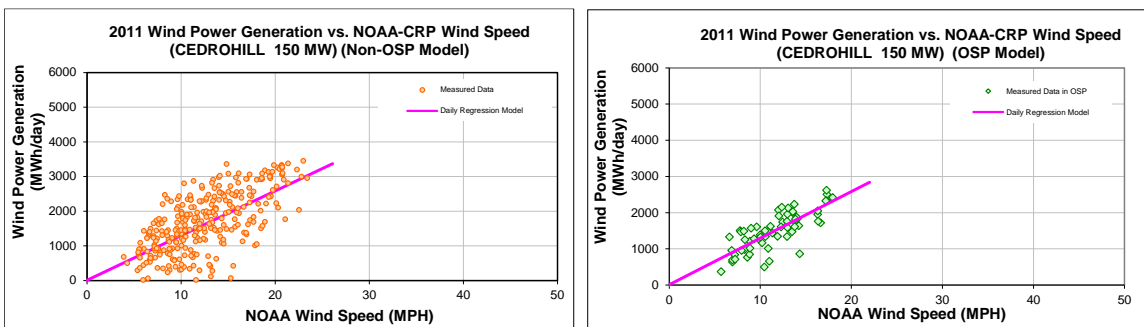


Figure 9-46: CEDROHILL – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-44: CEDROHILL – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	10.1392
Left Slope (MWh/mph-day)	128.6831
RMSE (MWh/day)	327.0857
R2	0.6159
CV-RMSE	21.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	10.1392
Left Slope (MWh/mph-day)	128.6831
RMSE (MWh/day)	327.0857
R2	0.6159
CV-RMSE	21.8%

Table 9-45: CEDROHILL – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.20	34,582	41,013	-18.60%	31%	37%
Feb-11	27	14.20	46,543	49,597	-6.56%	48%	51%
Mar-11	31	12.30	59,702	49,385	17.28%	53%	44%
Apr-11	30	15.52	70,198	60,202	14.24%	65%	56%
May-11	31	15.41	62,112	61,782	0.53%	56%	55%
Jun-11	30	12.26	53,804	47,627	11.48%	50%	44%
Jul-11	31	12.05	49,360	48,395	1.96%	44%	43%
Aug-11	31	11.42	46,990	45,879	2.36%	42%	41%
Sep-11	30	9.37	34,694	36,475	-5.13%	32%	34%
Oct-11	31	10.25	51,828	41,193	20.52%	46%	37%
Nov-11	30	13.16	56,867	51,096	10.15%	53%	47%
Dec-11	31	12.41	39,775	49,830	-25.28%	36%	45%
Total	364	12.36	606,457	582,475	3.95%	46%	44%
Total in OSP (07/15-09/15)	63	11.58	94,502	94,499	0.00%	42%	42%

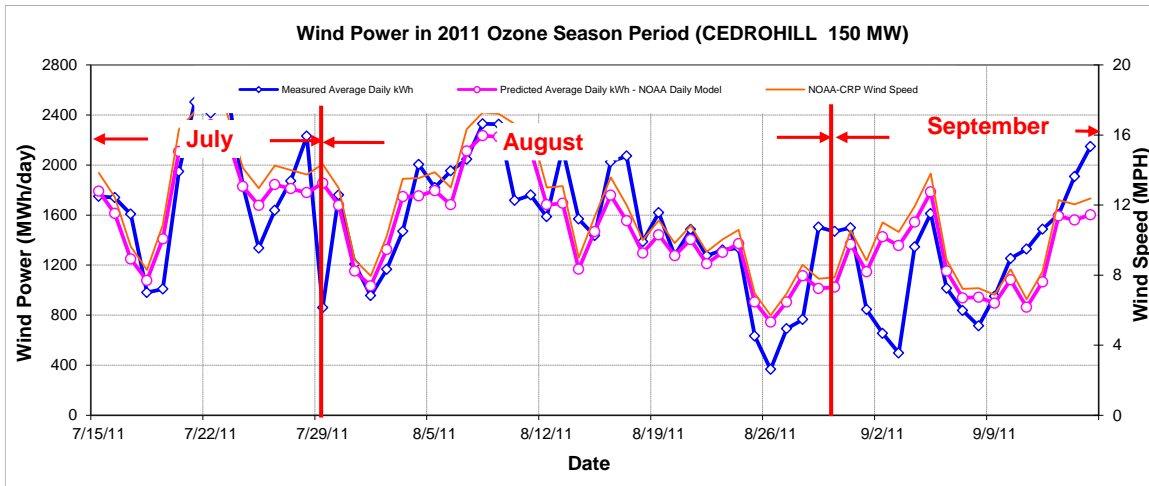


Figure 9-47: CEDROHILL – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

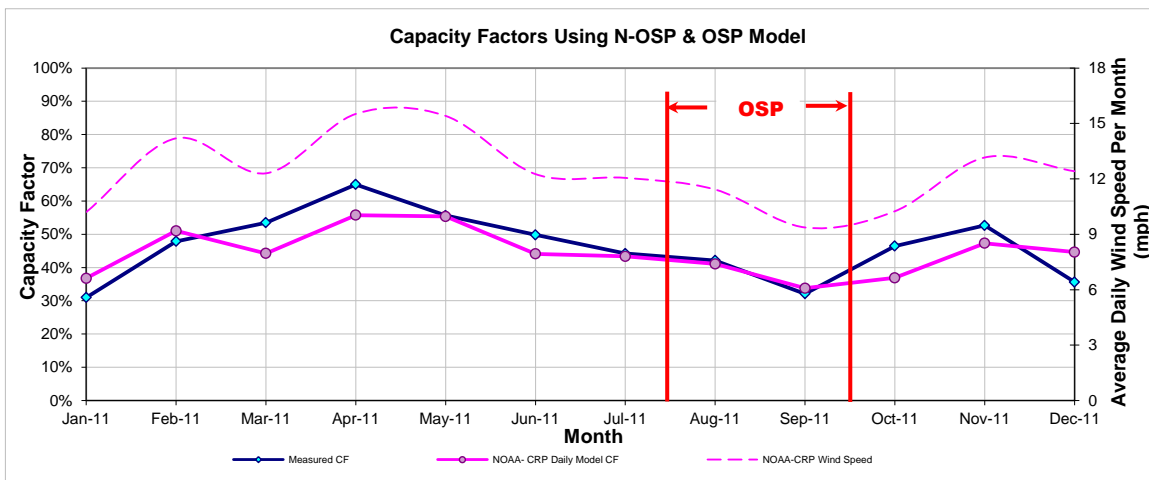


Figure 9-48: CEDROHILL – Predicted Capacity Factors Using Daily Models (2011)

Table 9-46: CEDROHILL – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
538,891	608,123	1,173	1,500

9.10 Champion Wind Farm

Table 9-47: Site Information for Champion Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
TKWSW_CHAMPION	Wind	-	Scurry	Jan-08	126.5	Airtricity	Champion Wind Farm	Siemens	ERCOT	West	LBB

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
TKWSW_CHAMPION	TKWSW_CHAMPION	126.5

9.10.1 Champion Wind Farm – TKWSW_CHAMPION

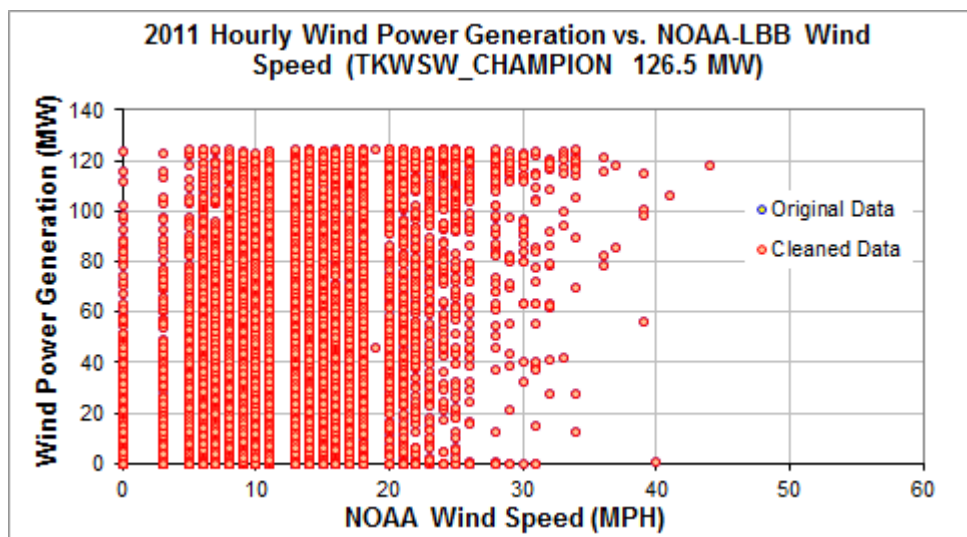


Figure 9-49: TKWSW_CHAMPION – Hourly Wind Power vs. NOAA Wind Speed (2011)

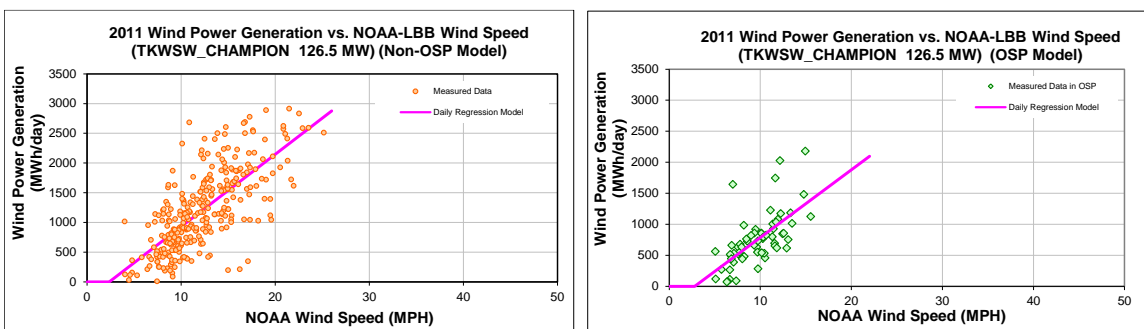


Figure 9-50: TKWSW_CHAMPION – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-48: TKWSW_CHAMPION – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-285.8465
Left Slope (MWh/mph-day)	121.6360
RMSE (MWh/day)	467.1519
R2	0.5167
CV-RMSE	38.6%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-305.6701
Left Slope (MWh/mph-day)	109.2431
RMSE (MWh/day)	324.6802
R2	0.4218
CV-RMSE	43.2%

Table 9-49: TKWSW_CHAMPION – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.10	28,518	29,216	-2.45%	30%	31%
Feb-11	28	12.51	34,113	34,604	-1.44%	40%	41%
Mar-11	27	12.34	30,248	32,822	-8.51%	37%	40%
Apr-11	30	14.92	41,566	45,877	-10.37%	46%	50%
May-11	28	13.77	36,416	38,897	-6.81%	43%	46%
Jun-11	30	15.64	50,705	48,512	4.32%	56%	53%
Jul-11	31	10.57	22,764	28,477	-25.09%	24%	30%
Aug-11	31	9.76	23,454	23,575	-0.51%	25%	25%
Sep-11	30	8.99	24,051	22,291	7.32%	26%	24%
Oct-11	31	11.18	36,952	33,289	9.91%	39%	35%
Nov-11	30	11.91	41,024	34,879	14.98%	45%	38%
Dec-11	31	10.72	34,232	31,578	7.75%	36%	34%
Total	358	11.83	404,045	404,017	0.01%	37%	37%
Total in OSP (07/15-09/15)	63	9.68	47,367	47,363	0.01%	25%	25%

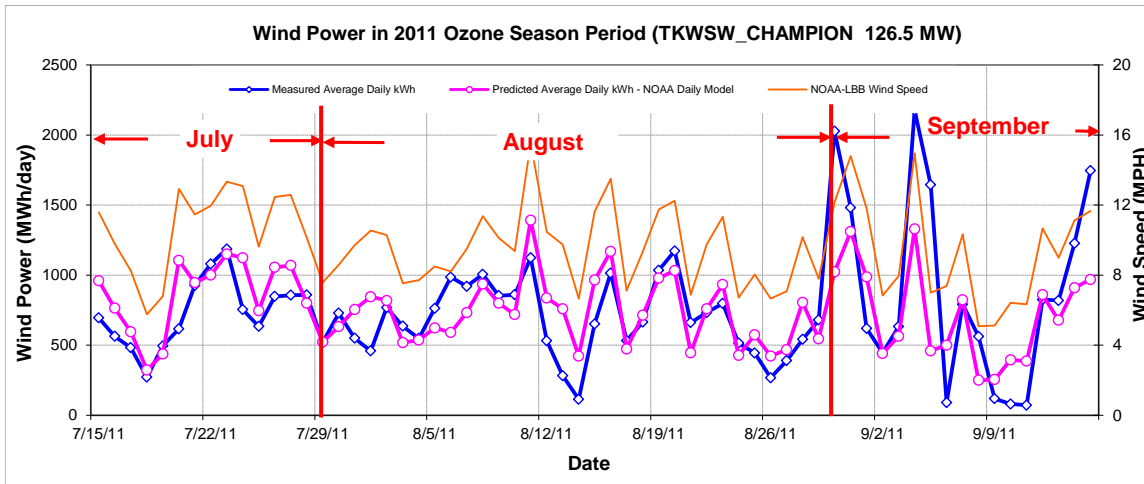


Figure 9-51: TKWSW_CHAMPION – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

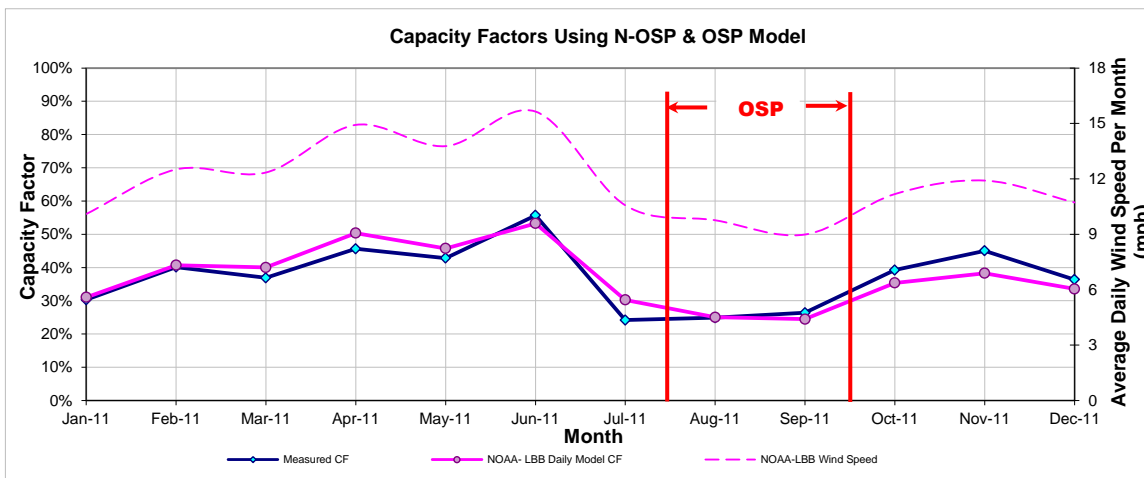


Figure 9-52: TKWSW_CHAMPION – Predicted Capacity Factors Using Daily Models (2011)

Table 9-50: TKWSW_CHAMPION – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
415,658	411,945	681	752

9.11 Camp Springs Wind Energy Center

Table 9-51: Site Information for Camp Springs Wind Energy Center

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
CSEC_CSECG1	Wind	Lubbock	Scurry	Jul-07	130	Invenergy	Camp Springs Wind Energy Center	GE Energy	ERCOT	West	LBB

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
CSEC_CSECG1	CSEC_CSECG1	130

9.11.1 Camp Springs Wind Energy Center – CSEC_CSECG1

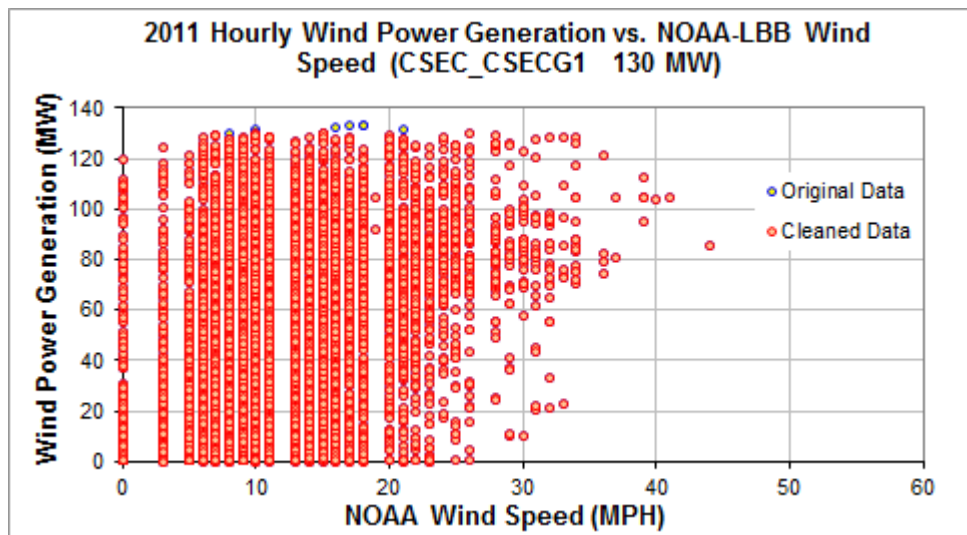


Figure 9-53: CSEC_CSECG1 – Hourly Wind Power vs. NOAA Wind Speed (2011)

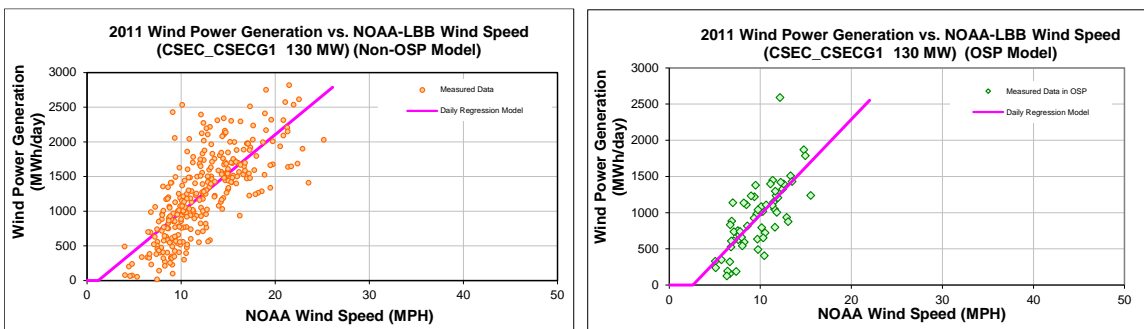


Figure 9-54: CSEC_CSECG1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-52: CSEC_CSECG1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-133.7557
Left Slope (MWh/mph-day)	111.9680
RMSE (MWh/day)	411.1938
R2	0.5453
CV-RMSE	32.9%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-344.1712
Left Slope (MWh/mph-day)	131.6246
RMSE (MWh/day)	311.1648
R2	0.5356
CV-RMSE	33.5%

Table 9-53: CSEC_CSECG1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.10	30,797	30,904	-0.35%	32%	32%
Feb-11	28	12.51	37,224	35,476	4.70%	43%	41%
Mar-11	31	12.11	39,433	37,902	3.88%	41%	39%
Apr-11	30	14.92	44,196	46,112	-4.33%	47%	49%
May-11	31	14.34	42,600	45,628	-7.11%	44%	47%
Jun-11	30	15.64	49,909	48,538	2.75%	53%	52%
Jul-11	31	10.57	30,453	32,411	-6.43%	31%	34%
Aug-11	31	9.76	30,693	29,153	5.02%	32%	30%
Sep-11	30	8.99	25,161	25,609	-1.78%	27%	27%
Oct-11	31	11.18	39,296	34,653	11.82%	41%	36%
Nov-11	30	11.91	34,429	35,988	-4.53%	37%	38%
Dec-11	31	10.72	31,289	33,078	-5.72%	32%	34%
Total	365	11.88	435,480	435,453	0.01%	38%	38%
Total in OSP (07/15-09/15)	63	9.68	58,591	58,586	0.01%	30%	30%

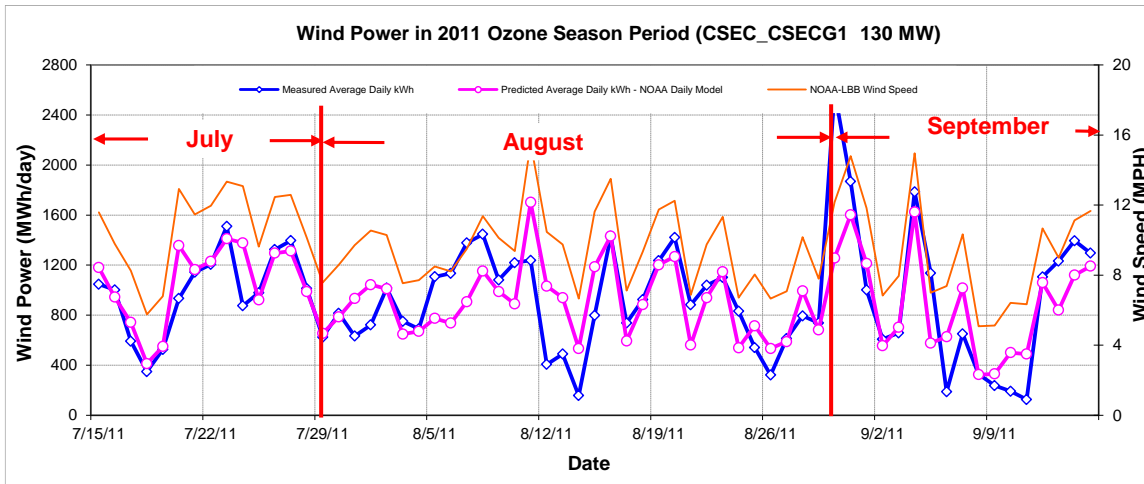


Figure 9-55: CSEC_CSECG1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

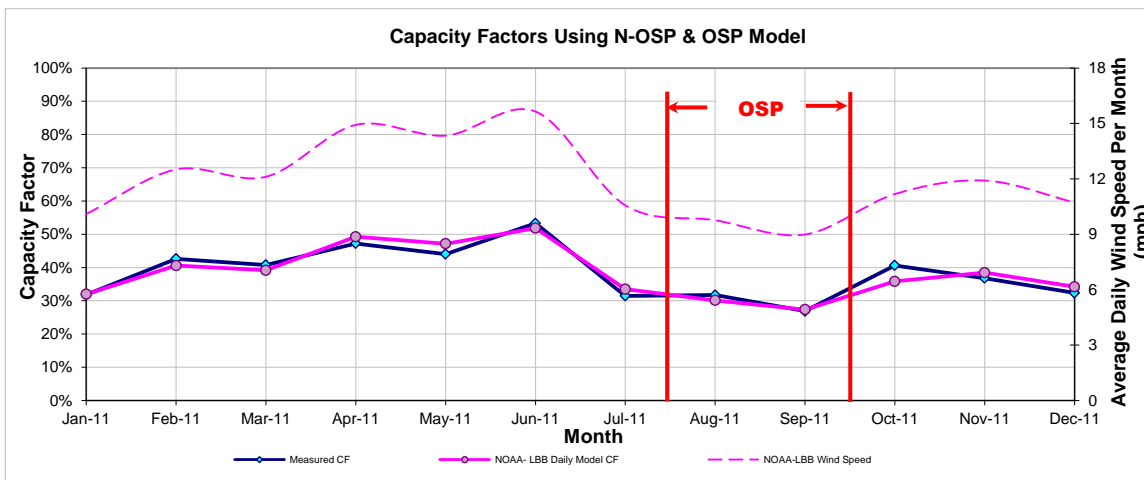


Figure 9-56: CSEC_CSECG1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-54: CSEC_CSECG1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
435,464	435,480	844	930

9.12 Camp Springs Energy Expansion

Table 9-55: Site Information for Camp Springs Energy Expansion

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
CSEC_CSECG2	Wind	Lubbock	Scurry	Jun-08	120	Invenery	Camp Springs Wind Energy Center	-	ERCOT	West	LBB

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
CSEC_CSECG2	CSEC_CSECG2	120

9.12.1 Camp Springs Energy Expansion – CSEC_CSECG2

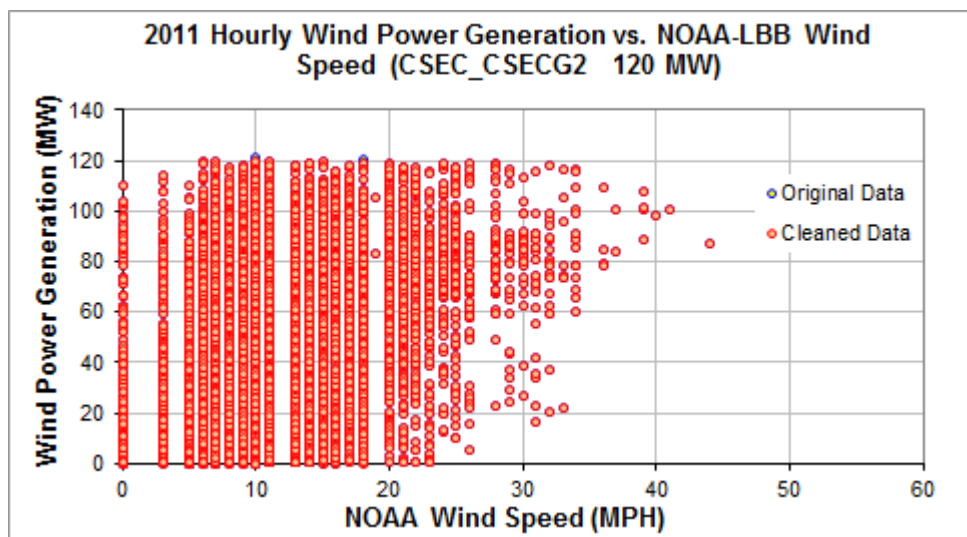


Figure 9-57: CSEC_CSECG2 – Hourly Wind Power vs. NOAA Wind Speed (2011)

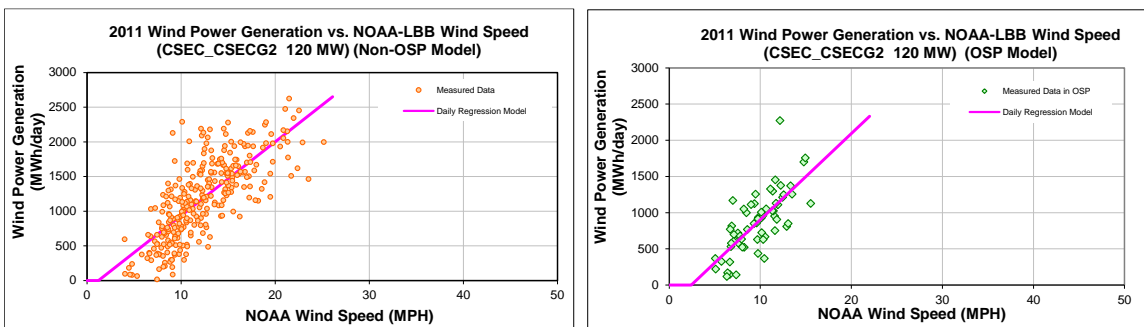


Figure 9-58: CSEC_CSECG2 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model).

Table 9-56: CSEC_CSECG2 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-128.6187
Left Slope (MWh/mph-day)	106.4601
RMSE (MWh/day)	376.9285
R2	0.5633
CV-RMSE	31.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-288.9404
Left Slope (MWh/mph-day)	119.1355
RMSE (MWh/day)	287.8997
R2	0.5246
CV-RMSE	33.3%

Table 9-57: CSEC_CSECG2 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.10	27,636	29,339	-6.16%	31%	33%
Feb-11	28	12.51	34,866	33,691	3.37%	43%	42%
Mar-11	31	12.11	37,152	35,993	3.12%	42%	40%
Apr-11	30	14.92	43,270	43,800	-1.23%	50%	51%
May-11	31	14.34	41,010	43,339	-5.68%	46%	49%
Jun-11	30	15.64	47,123	46,107	2.16%	55%	53%
Jul-11	31	10.57	27,770	30,392	-9.44%	31%	34%
Aug-11	31	9.76	28,196	27,086	3.93%	32%	30%
Sep-11	30	8.99	24,028	24,110	-0.34%	28%	28%
Oct-11	31	11.18	36,826	32,904	10.65%	41%	37%
Nov-11	30	11.91	34,008	34,174	-0.49%	39%	40%
Dec-11	31	10.72	30,484	31,406	-3.03%	34%	35%
Total	365	11.88	412,368	412,342	0.01%	39%	39%
Total in OSP (07/15-09/15)	63	9.68	54,454	54,450	0.01%	30%	30%

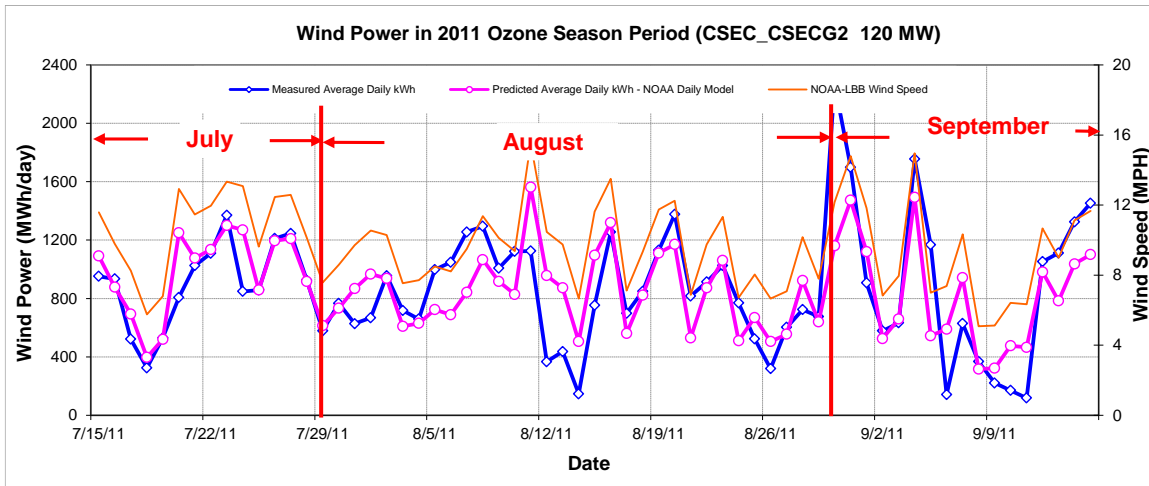


Figure 9-59: CSEC_CSECG2 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

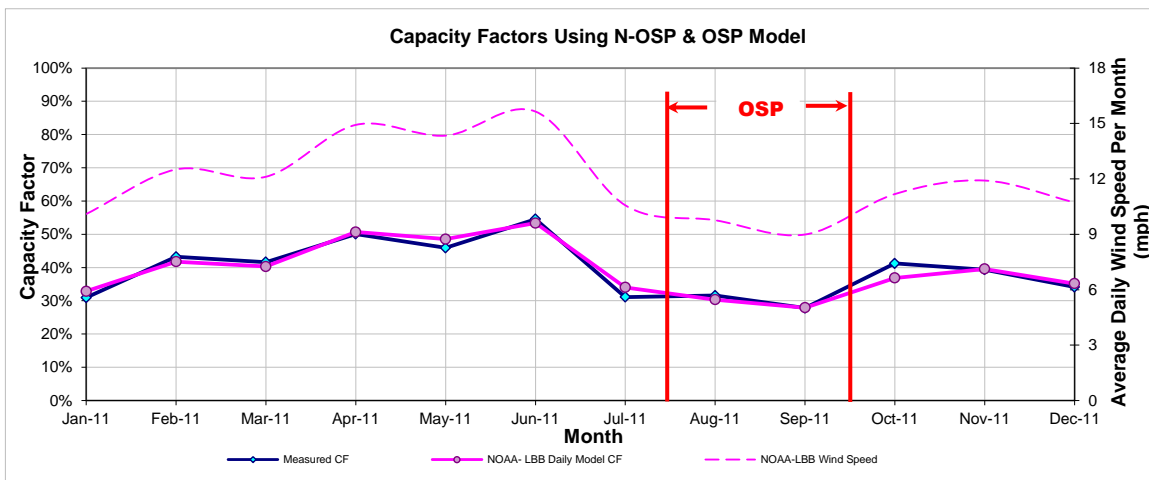


Figure 9-60: CSEC_CSECG2 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-58: CSEC_CSECG2 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
412,609	412,368	787	864

9.13 Delaware Mountain Wind Farm

Table 9-59: Site Information for Delaware Mountain Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
DELAWARE_WIND_NWP	Wind	-	Culberson	Jun-99	28.5	American National Wind Power	Delaware Mountain Wind Farm	Zond (40)	ERCOT	West	GDP

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
DELAWARE_WIND_NWP	DELAWARE_WIND_NWP	28.5

9.13.1 Delaware Mountain Wind Farm – DELAWARE_WIND_NWP

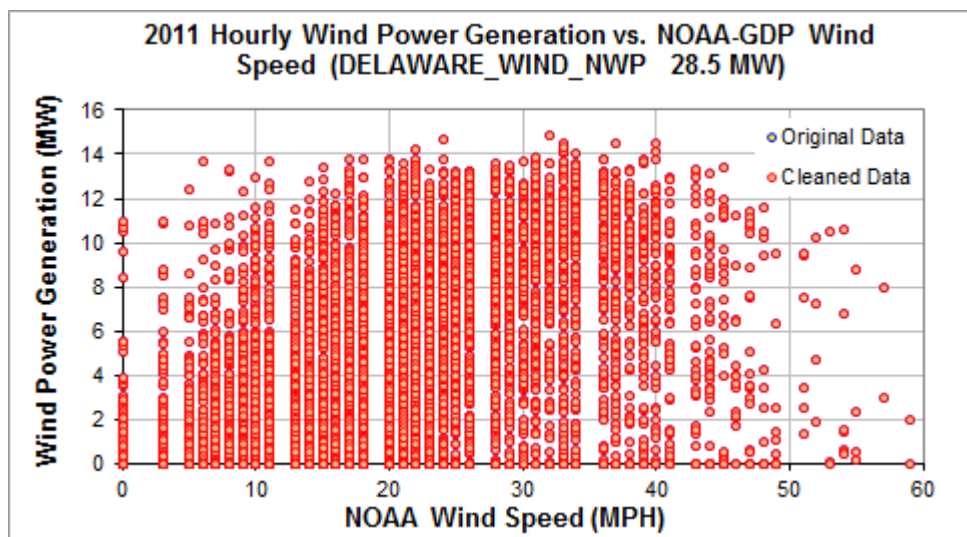


Figure 9-61: DELAWARE_WIND_NWP – Hourly Wind Power vs. NOAA Wind Speed (2011)

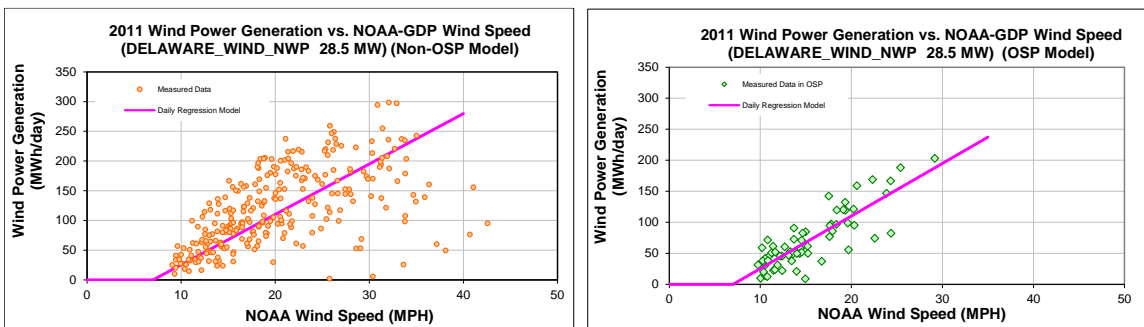


Figure 9-62: DELAWARE_WIND_NWP – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-60: DELAWARE_WIND_NWP – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-59.3662
Left Slope (MWh/mph-day)	8.4788
RMSE (MWh/day)	24.7336
R2	0.7143
CV-RMSE	34.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-59.3662
Left Slope (MWh/mph-day)	8.4788
RMSE (MWh/day)	24.7336
R2	0.7143
CV-RMSE	34.8%

Table 9-61: DELAWARE_WIND_NWP – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	20.77	4,546	3,619	20.39%	21%	17%
Feb-11	22	21.47	2,222	2,698	-21.43%	15%	18%
Mar-11	31	20.76	4,578	3,616	21.01%	22%	17%
Apr-11	30	24.69	4,173	4,500	-7.84%	20%	22%
May-11	31	24.43	5,445	4,581	15.87%	26%	22%
Jun-11	27	17.18	2,561	2,331	8.99%	14%	13%
Jul-11	30	14.64	2,630	1,944	26.10%	13%	9%
Aug-11	31	14.27	1,819	1,911	-5.06%	9%	9%
Sep-11	24	16.97	1,996	2,028	-1.59%	12%	12%
Oct-11	31	15.74	2,225	2,296	-3.17%	10%	11%
Nov-11	28	21.74	3,309	3,498	-5.72%	17%	18%
Dec-11	22	20.84	1,945	2,581	-32.73%	13%	17%
Total	338	19.42	37,448	35,602	4.93%	16%	15%
Total in OSP (07/15-09/15)	63	15.39	4,481	4,481	0.01%	10%	10%

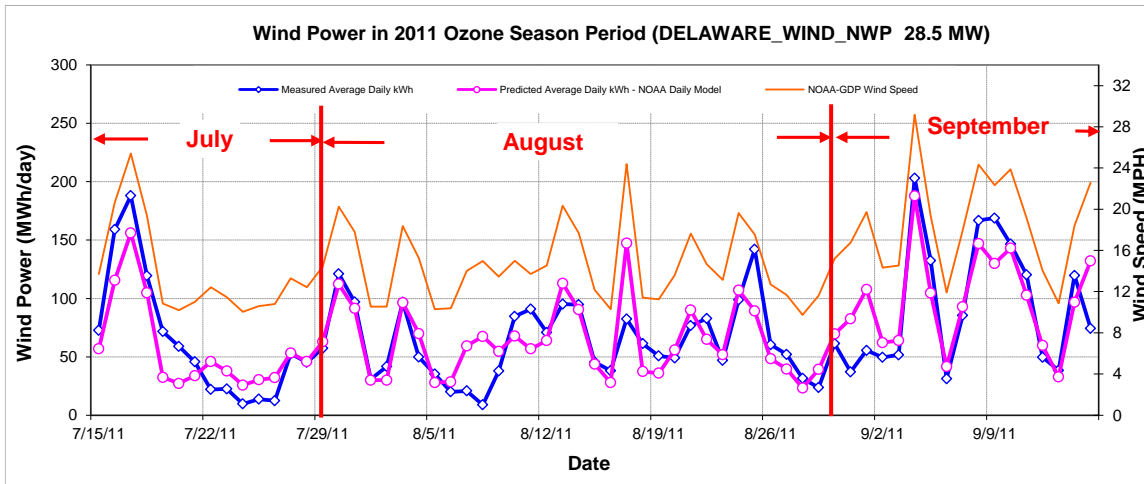


Figure 9-63: DELAWARE_WIND_NWP – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

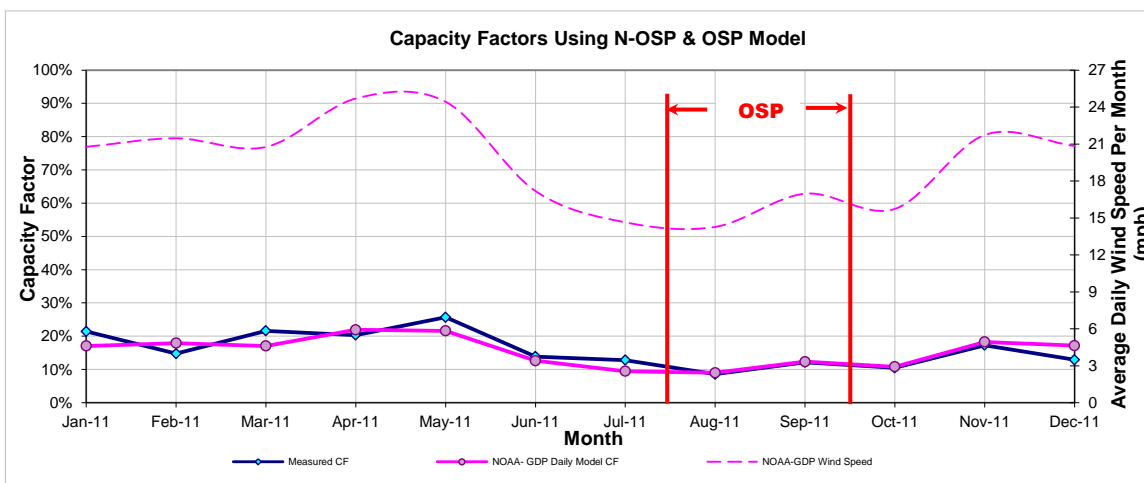


Figure 9-64: DELAWARE_WIND_NWP – Predicted Capacity Factors Using Daily Models (2011)

Table 9-62: DELAWARE_WIND_NWP – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
38,312	40,440	62	71

9.14 Elbow Creek Wind

Table 9-63: Site Information for Elbow Creek Wind

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
ELB_ELBCREEK	Wind	-	Howard	Nov-08	121.9	NRG Padoma Wind	Elbow Creek Wind	Siemens(53)	ERCOT	West	MAF

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
ELB_ELBCREEK	ELB_ELBCREEK	121.9

9.14.1 Elbow Creek Wind – ELB_ELBCREEK

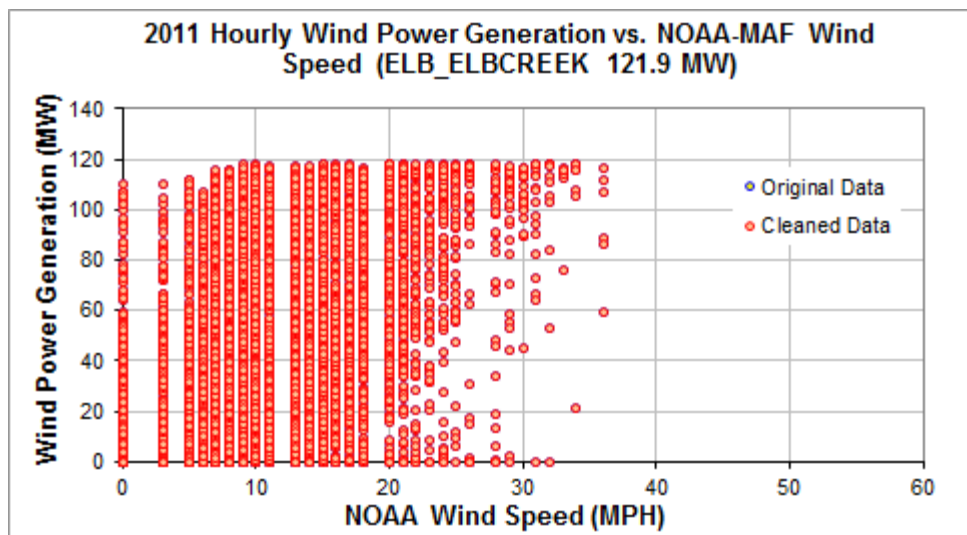


Figure 9-65: ELB_ELBCREEK – Hourly Wind Power vs. NOAA Wind Speed (2011)

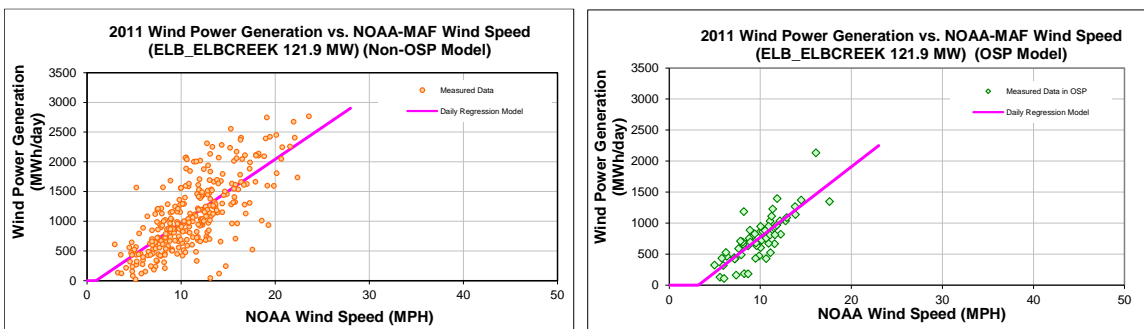


Figure 9-66: ELB_ELBCREEK – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-64: ELB_ELBCREEK – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-102.1546
Left Slope (MWh/mph-day)	107.3156
RMSE (MWh/day)	408.8993
R2	0.5243
CV-RMSE	37.0%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-364.3365
Left Slope (MWh/mph-day)	113.6656
RMSE (MWh/day)	215.0602
R2	0.6435
CV-RMSE	28.4%

Table 9-65: ELB_ELBCREEK – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	28,736	25,429	11.51%	32%	28%
Feb-11	28	10.80	30,957	29,593	4.40%	38%	36%
Mar-11	31	11.31	28,094	34,449	-22.62%	31%	38%
Apr-11	30	13.78	34,783	41,289	-18.70%	40%	47%
May-11	31	13.09	38,533	40,368	-4.76%	42%	45%
Jun-11	30	14.09	45,835	42,285	7.75%	52%	48%
Jul-11	31	10.61	25,217	28,835	-14.35%	28%	32%
Aug-11	31	9.61	24,479	22,554	7.86%	27%	25%
Sep-11	30	8.84	21,536	22,367	-3.86%	25%	25%
Oct-11	31	10.43	34,503	31,548	8.57%	38%	35%
Nov-11	30	10.82	38,766	31,759	18.07%	44%	36%
Dec-11	31	10.31	30,208	31,138	-3.08%	33%	34%
Total	365	11.02	381,646	381,615	0.01%	36%	36%
Total in OSP (07/15-09/15)	63	9.86	47,670	47,662	0.02%	26%	26%

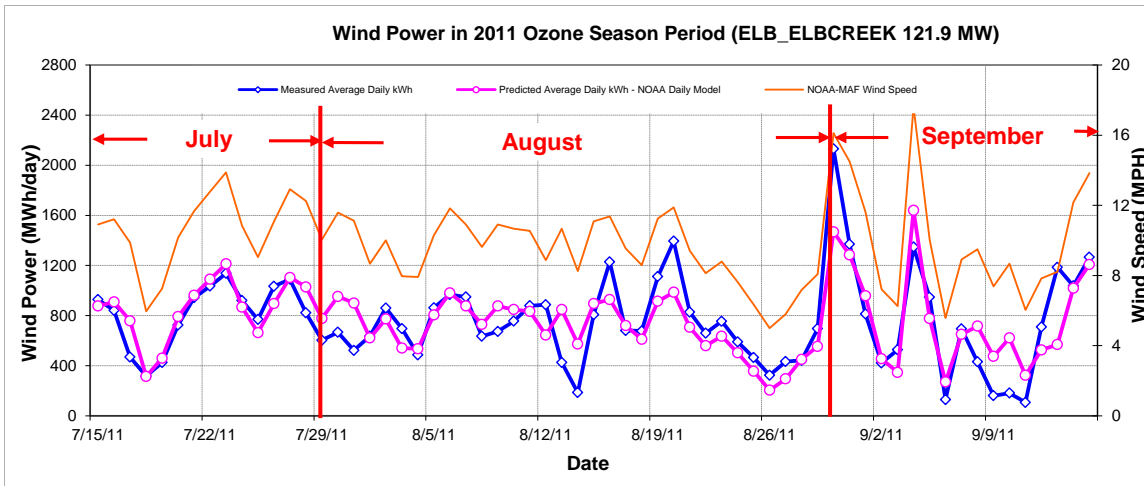


Figure 9-67: ELB_ELBCREEK – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

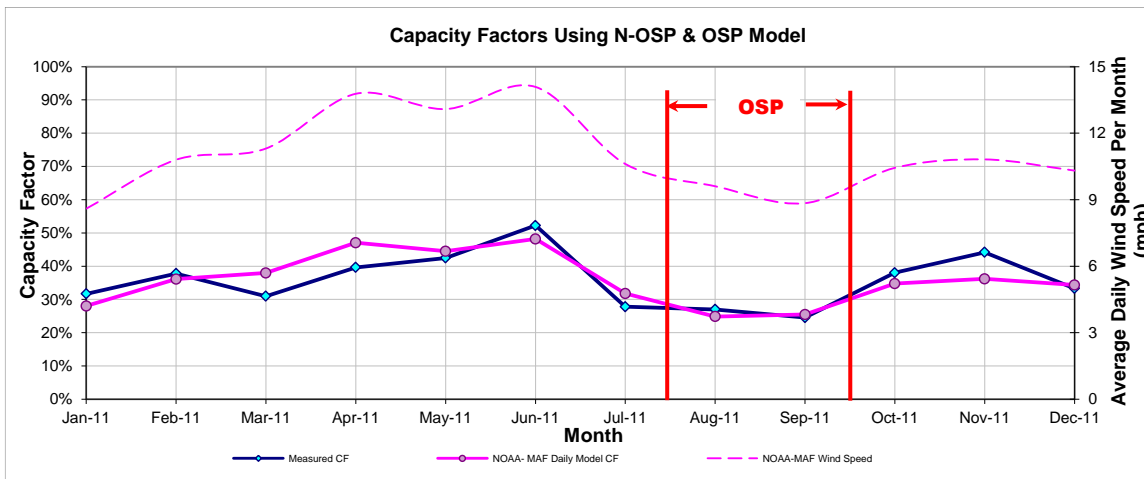


Figure 9-68: ELB_ELBCREEK – Predicted Capacity Factors Using Daily Models (2011)

Table 9-66: ELB_ELBCREEK – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
357,568	381,646	622	757

9.15 Snyder Wind Project

Table 9-67: Site Information for Snyder Wind Project

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
ENAS_ENA1	Wind	Snyder	Scurry	Dec-07	63	Enel North America/WRN USA	Snyder Wind Project	Vestas (21)	ERCOT	West	LBB

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
ENAS_ENA1	ENAS_ENA1	63

9.15.1 Snyder Wind Project – ENAS_ENA1

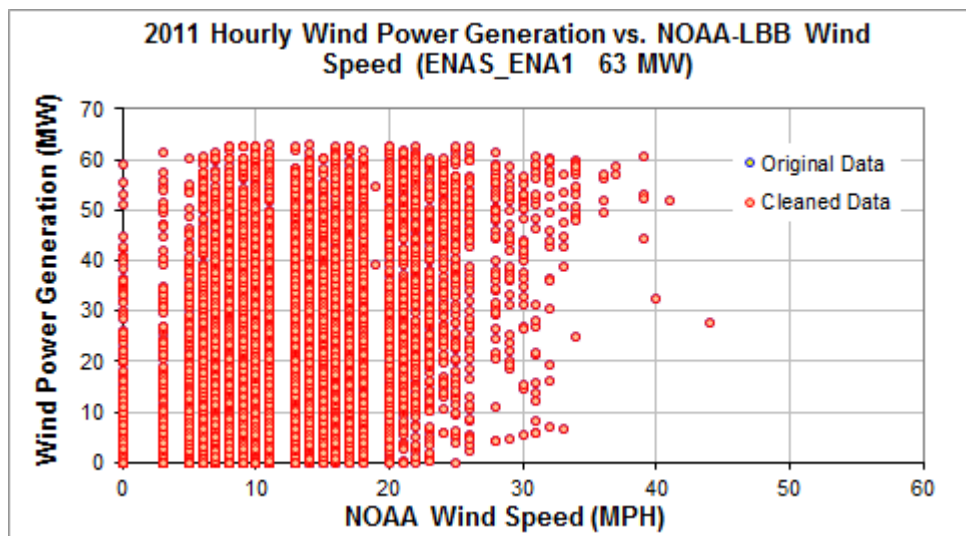


Figure 9-69: ENAS_ENA1– Hourly Wind Power vs. NOAA Wind Speed (2011)

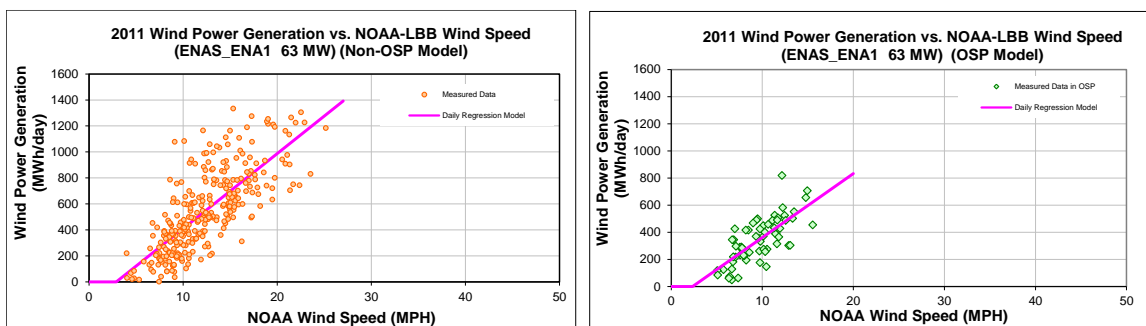


Figure 9-70: ENAS_ENA1– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-68: ENAS_ENA1– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-166.4339
Left Slope (MWh/mph-day)	57.7427
RMSE (MWh/day)	205.8783
R2	0.5599
CV-RMSE	37.7%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-110.6561
Left Slope (MWh/mph-day)	47.1365
RMSE (MWh/day)	112.3088
R2	0.5317
CV-RMSE	32.5%

Table 9-69: ENAS_ENA1– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.10	12,456	12,916	-3.70%	27%	28%
Feb-11	28	12.51	16,206	15,567	3.95%	38%	37%
Mar-11	31	12.11	18,018	16,525	8.29%	38%	35%
Apr-11	30	14.92	21,924	20,856	4.87%	48%	46%
May-11	31	14.34	18,660	20,510	-9.91%	40%	44%
Jun-11	30	15.64	19,628	22,108	-12.63%	43%	49%
Jul-11	31	10.57	11,058	12,844	-16.15%	24%	27%
Aug-11	31	9.76	11,646	10,830	7.00%	25%	23%
Sep-11	30	8.99	9,750	10,016	-2.72%	21%	22%
Oct-11	31	11.18	16,538	14,850	10.21%	35%	32%
Nov-11	30	11.91	17,661	15,636	11.47%	39%	34%
Dec-11	31	10.72	13,163	14,038	-6.64%	28%	30%
Total	365	11.88	186,709	186,695	0.01%	34%	34%
Total in OSP (07/15-09/15)	63	9.68	21,776	21,774	0.01%	23%	23%

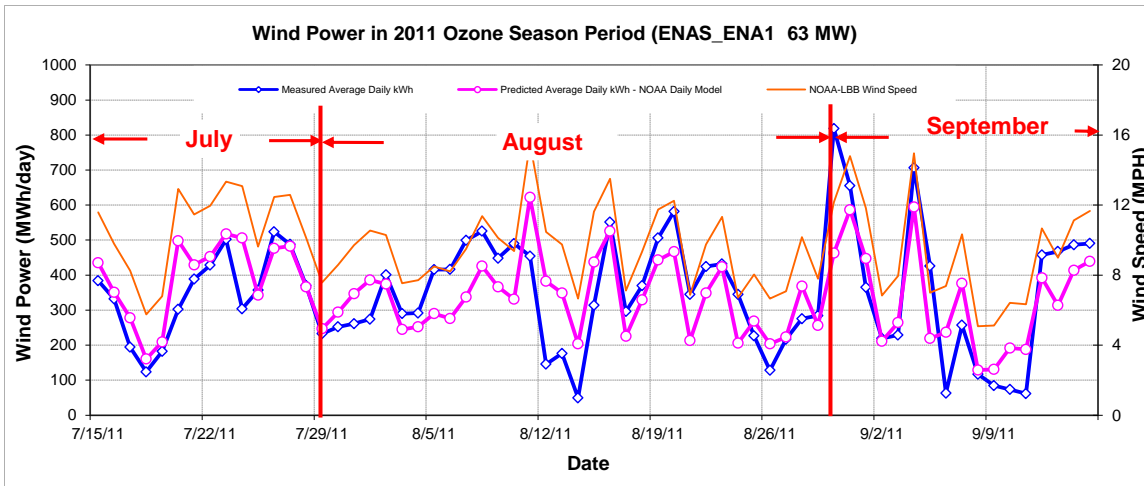


Figure 9-71: ENAS_ENA1– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

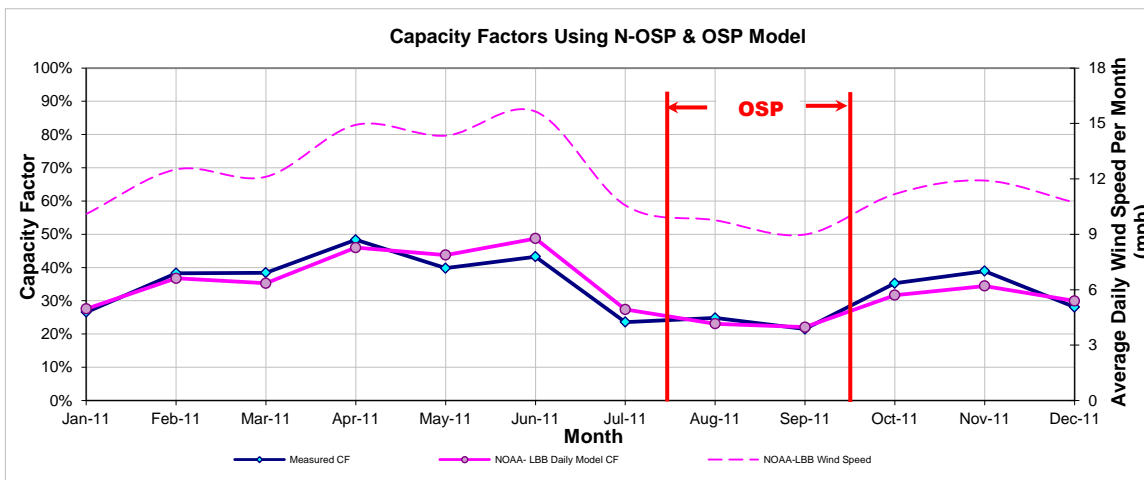


Figure 9-72: ENAS_ENA1– Predicted Capacity Factors Using Daily Models (2011)

Table 9-70: ENAS_ENA1– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
187,471	186,709	315	346

9.16 Silver Star Phase 1

Table 9-71: Site Information for Silver Star Phase 1

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
FLTCK_SSI	Wind	-	Erath	Mar-08	60	BP/Clipper Windpower	Silver Star Phase I	Clipper Windpower(24)	ERCOT	North	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
FLTCK_SSI	FLTCK_SSI	60

9.16.1 Silver Star Phase1 – FLTCK_SSI

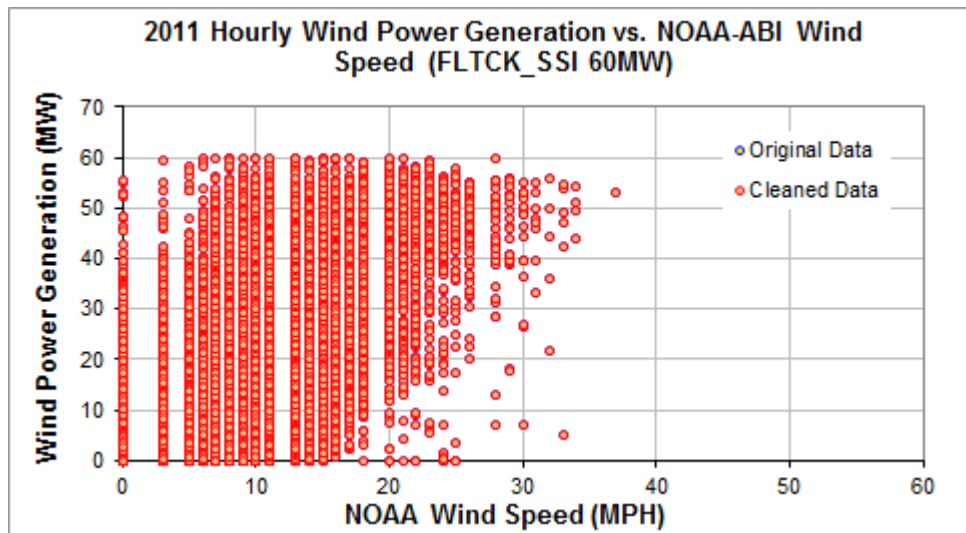


Figure 9-73: FLTCK_SSI – Hourly Wind Power vs. NOAA Wind Speed (2011)

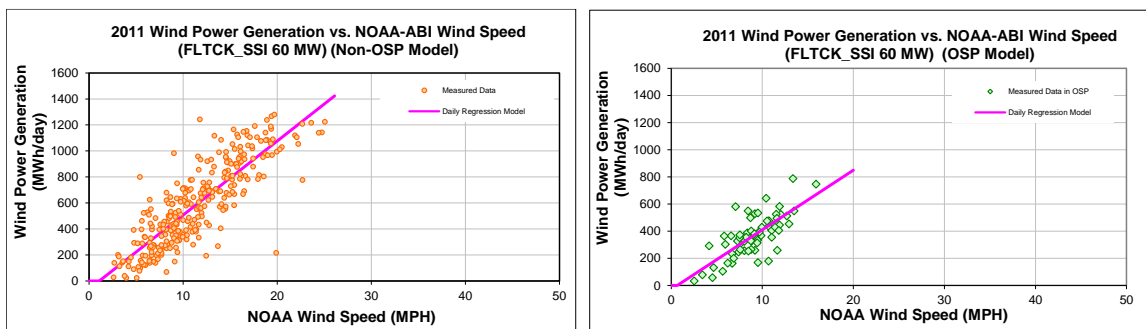


Figure 9-74: FLTCK_SSI – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-72: FLTCK_SSI – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-61.7052
Left Slope (MWh/mph-day)	56.8935
RMSE (MWh/day)	170.4555
R2	0.7116
CV-RMSE	28.5%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-29.6396
Left Slope (MWh/mph-day)	43.9192
RMSE (MWh/day)	106.1779
R2	0.5393
CV-RMSE	29.0%

Table 9-73: FLTCK_SSI – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	12,565	13,982	-11.28%	28%	31%
Feb-11	24	11.46	16,863	14,161	16.02%	49%	41%
Mar-11	31	12.29	20,675	19,772	4.37%	46%	44%
Apr-11	30	13.87	21,578	21,822	-1.13%	50%	51%
May-11	31	13.86	23,701	22,530	4.94%	53%	50%
Jun-11	30	14.61	20,044	23,093	-15.22%	46%	53%
Jul-11	31	10.03	11,977	14,141	-18.07%	27%	32%
Aug-11	31	9.20	11,916	11,603	2.63%	27%	26%
Sep-11	30	7.68	10,291	10,265	0.25%	24%	24%
Oct-11	31	10.61	17,301	16,796	2.92%	39%	38%
Nov-11	28	11.82	18,493	17,100	7.53%	46%	42%
Dec-11	31	9.51	14,741	14,866	-0.85%	33%	33%
Total	359	11.14	200,145	200,132	0.01%	39%	39%
Total in OSP (07/15-09/15)	63	9.00	23,027	23,026	0.01%	25%	25%

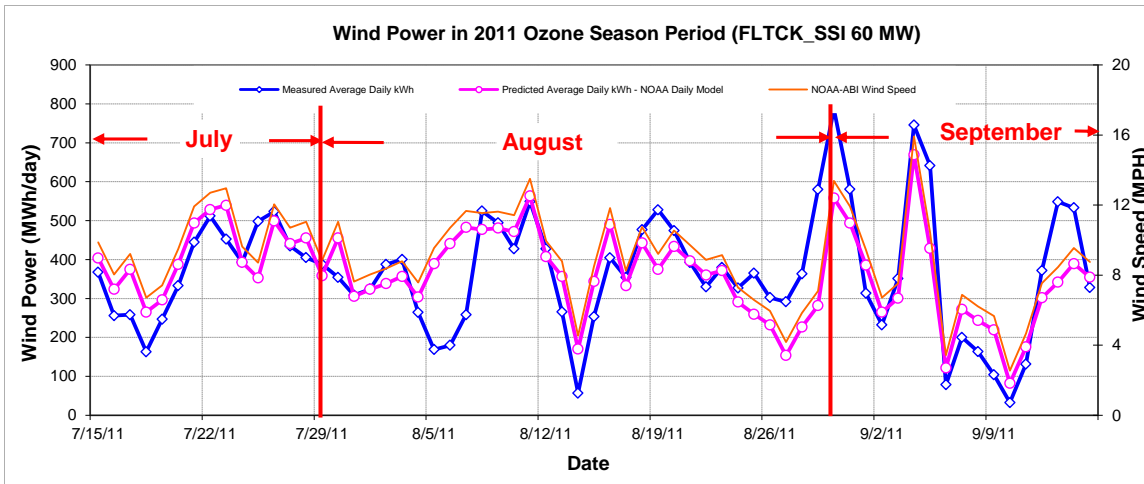


Figure 9-75: FLTCK_SSI – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

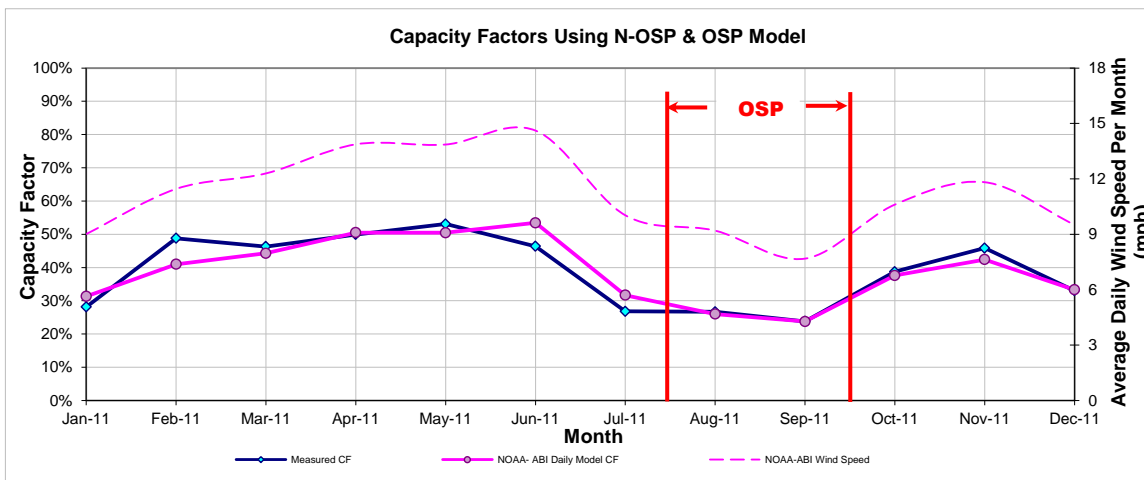


Figure 9-76: FLTCK_SSI – Predicted Capacity Factors Using Daily Models (2011)

Table 9-74: FLTCK_SSI - Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
210,167	203,490	354	366

9.17 Goat Wind

Table 9-75: Site Information for Goat Wind

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
GOAT_GOATWIND	Wind	-	Sterling	Apr-08	150	Edison Mission Group	Goat Wind & Goat Wind Phase 2	Clipper Windpower(24)	ERCOT	West	SJT

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
GOAT_GOATWIND	GOAT_GOATWIND	150

9.17.1 Goat Wind – GOAT_GOATWIND

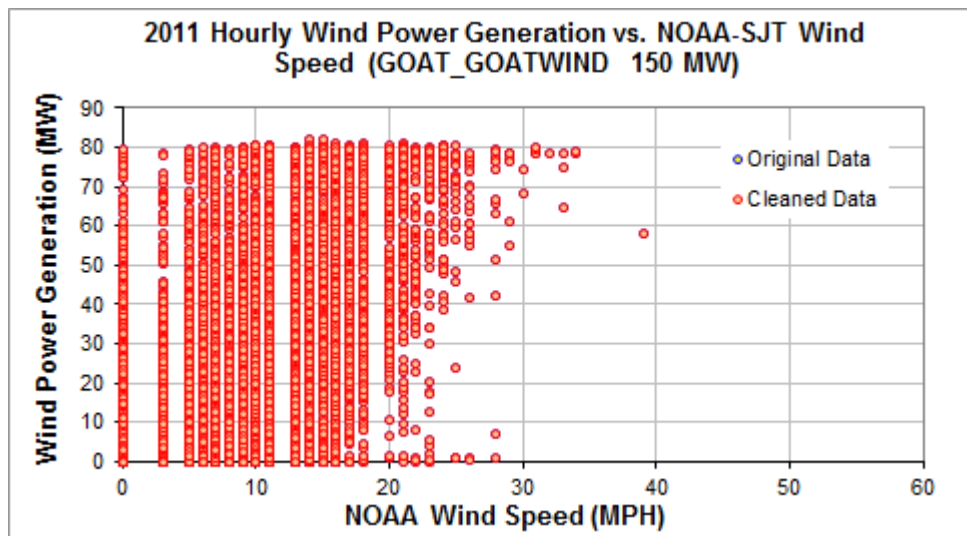


Figure 9-77: GOAT_GOATWIND – Hourly Wind Power vs. NOAA Wind Speed (2011)

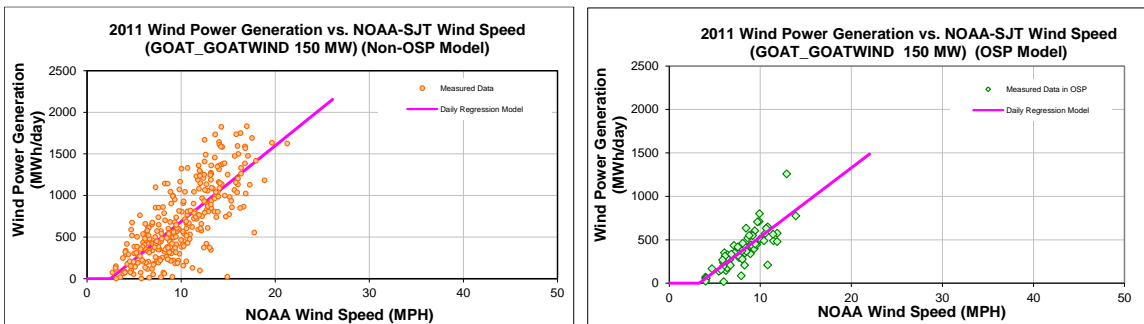


Figure 9-78: GOAT_GOATWIND – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-76: GOAT_GOATWIND – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-225.4254
Left Slope (MWh/mph-day)	91.1851
RMSE (MWh/day)	288.7480
R2	0.5810
CV-RMSE	41.9%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-262.1701
Left Slope (MWh/mph-day)	79.5072
RMSE (MWh/day)	131.1333
R2	0.6499
CV-RMSE	33.9%

Table 9-77: GOAT_GOATWIND – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	7.85	15,836	15,210	3.95%	14%	14%
Feb-11	27	10.75	17,214	20,373	-18.35%	18%	21%
Mar-11	31	10.37	24,588	22,328	9.19%	22%	20%
Apr-11	29	12.76	26,666	27,204	-2.02%	26%	26%
May-11	31	11.51	23,032	25,550	-10.93%	21%	23%
Jun-11	30	12.23	28,496	26,705	6.28%	26%	25%
Jul-11	31	9.02	13,810	16,108	-16.64%	12%	14%
Aug-11	31	7.93	13,185	11,406	13.49%	12%	10%
Sep-11	30	7.48	9,999	11,792	-17.93%	9%	11%
Oct-11	31	8.71	20,732	17,638	14.93%	19%	16%
Nov-11	30	9.63	22,338	19,572	12.38%	21%	18%
Dec-11	31	8.52	15,106	17,088	-13.13%	14%	15%
Total	363	9.70	231,001	230,972	0.01%	18%	18%
Total in OSP (07/15-09/15)	63	8.17	24,395	24,391	0.02%	11%	11%

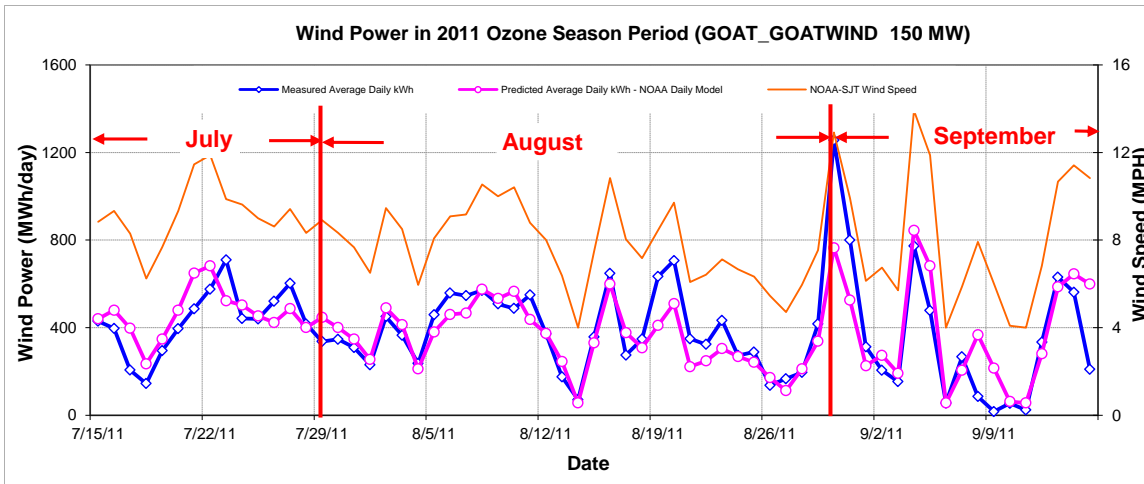


Figure 9-79: GOAT_GOATWIND – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

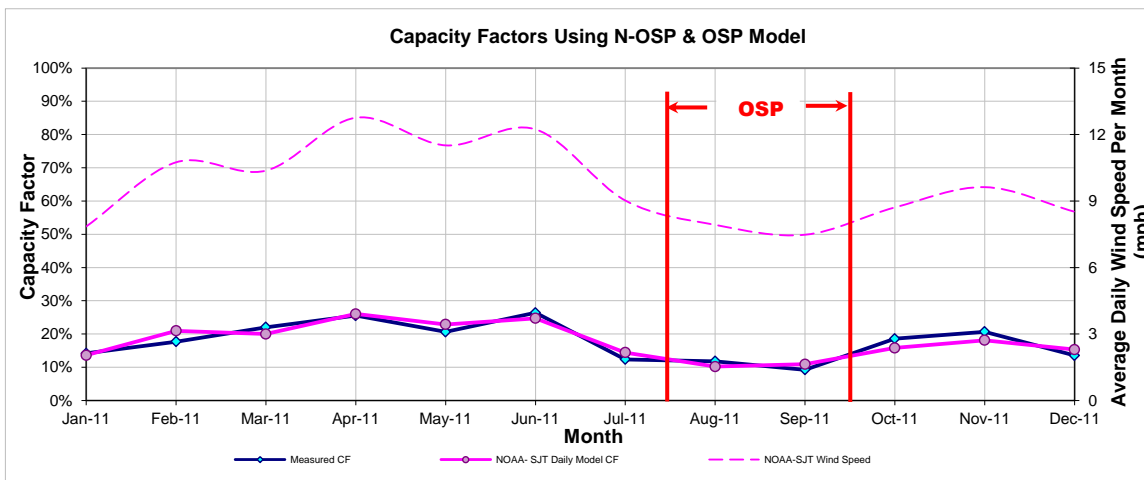


Figure 9-80: GOAT_GOATWIND - Predicted Capacity Factors Using Daily Models (2011)

Table 9-78: GOAT_GOATWIND – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
218,697	232,273	298	387

9.18 Callahan Divide Wind Energy Center

Table 9-79: Site Information for Callahan Divide Wind Energy Center

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
CALLAHAN_WND1	Wind	Abilene	Taylor	Feb-05	114	FPL Energy	Callahan Divide Wind Energy Center	GE Wind 1500 (76)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
CALLAHAN_WND1	CALLAHAN_WND1	114

9.18.1 Callahan Divide Wind Energy Center – CALLAHAN_WIND1

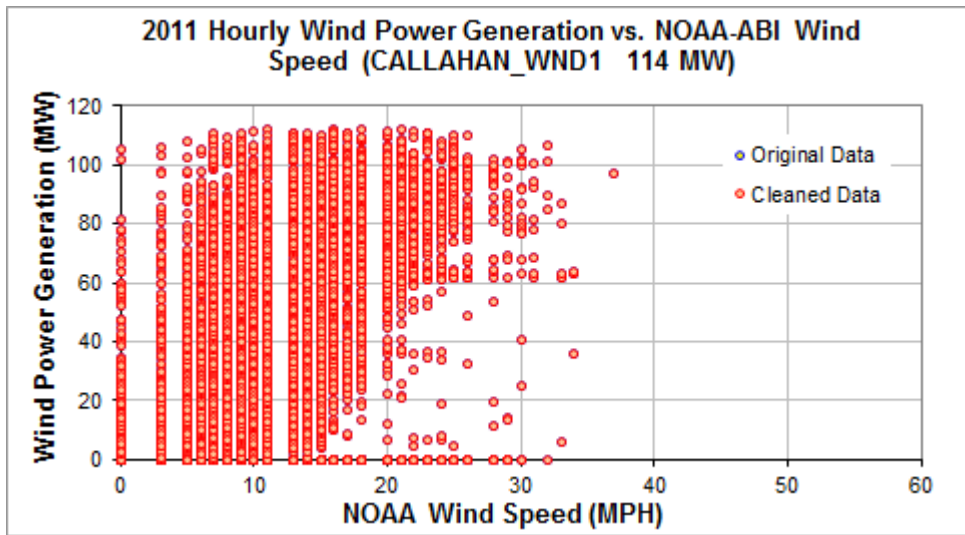


Figure 9-81: CALLAHAN WIND1 – Hourly Wind Power vs. NOAA Wind Speed (2011)

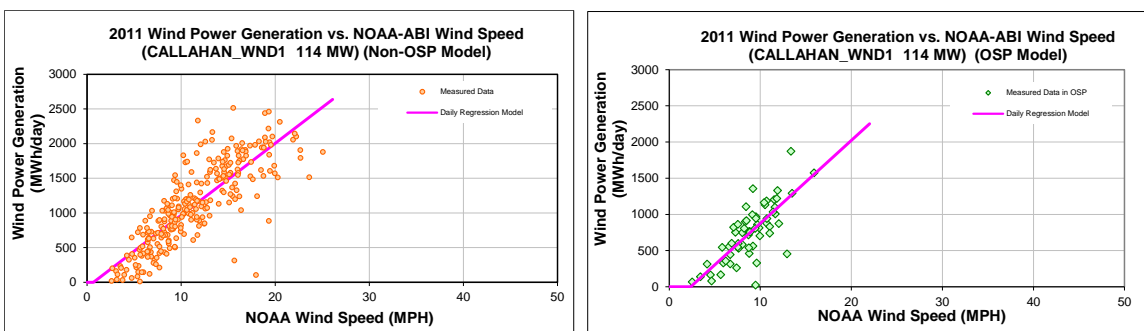


Figure 9-82: CALLAHAN WIND1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-80: CALLAHAN WIND1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-68.5054
Left Slope (MWh/mph-day)	103.6494
RMSE (MWh/day)	332.0781
R2	0.6769
CV-RMSE	29.9%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-270.5369
Left Slope (MWh/mph-day)	114.6271
RMSE (MWh/day)	247.2569
R2	0.5895
CV-RMSE	33.0%

Table 9-81: CALLAHAN WIND1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	29,800	26,834	9.95%	35%	32%
Feb-11	24	11.46	31,481	26,853	14.70%	48%	41%
Mar-11	31	12.29	41,099	37,382	9.04%	48%	44%
Apr-11	30	13.87	35,075	41,073	-17.10%	43%	50%
May-11	23	12.80	24,900	28,936	-16.21%	40%	46%
Jun-11	22	14.98	29,688	32,648	-9.97%	49%	54%
Jul-11	29	9.87	20,561	26,228	-27.56%	26%	33%
Aug-11	31	9.20	27,428	24,294	11.43%	32%	29%
Sep-11	30	7.68	20,058	20,048	0.05%	24%	24%
Oct-11	31	10.61	33,660	31,960	5.05%	40%	38%
Nov-11	28	11.82	33,242	32,383	2.58%	43%	42%
Dec-11	31	9.51	30,114	28,444	5.54%	36%	34%
Total	341	10.94	357,106	357,085	0.01%	38%	38%
Total in OSP (07/15-09/15)	61	8.89	45,647	45,644	0.01%	27%	27%

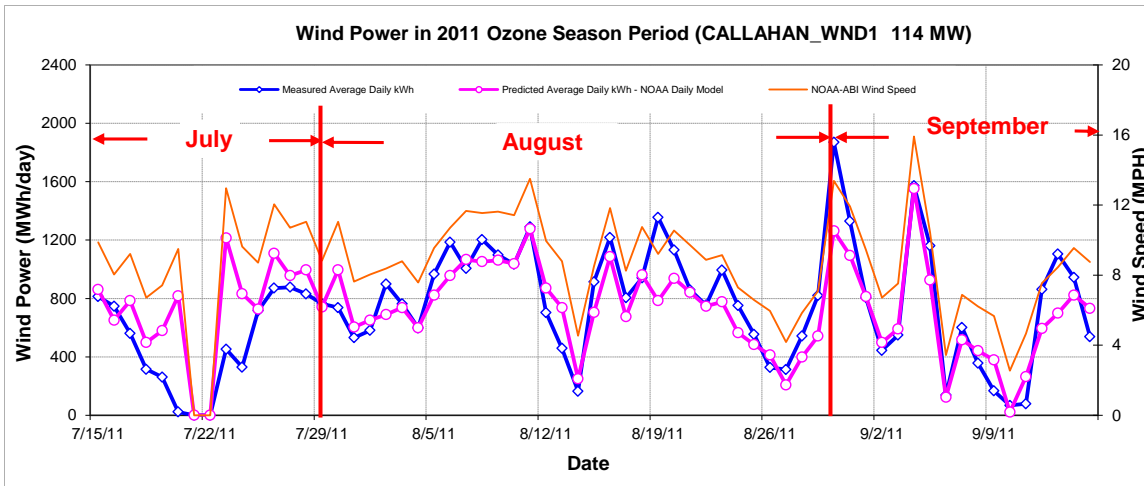


Figure 9-83: CALLAHAN WIND1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

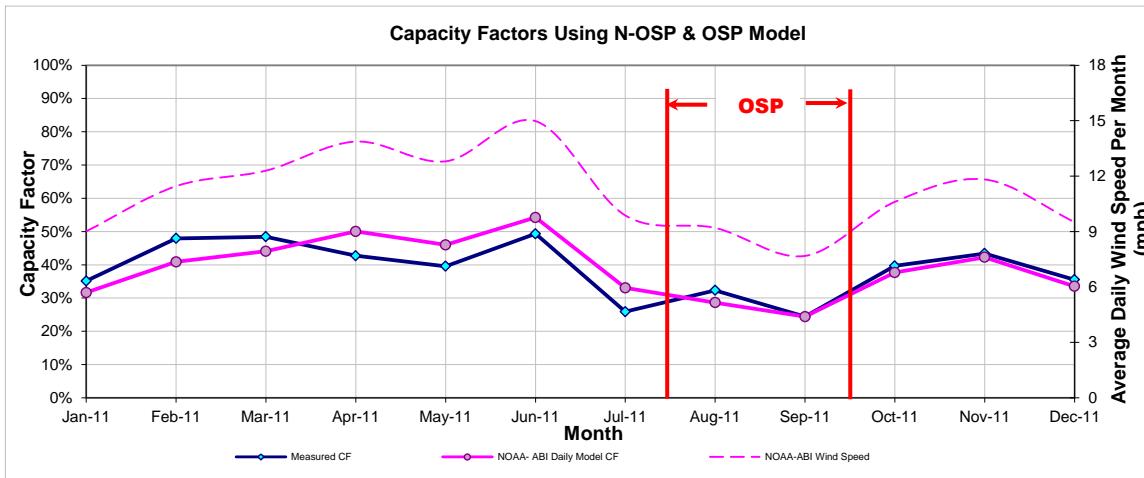


Figure 9-84: CALLAHAN WIND1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-82: CALLAHAN WIND1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
401,599	382,239	731	748

9.19 Horse Hollow Phase 1

Table 9-83: Site Information for Horse Hollow Phase 1

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
H_HOLLOW_WND1	Wind	Abilene	Taylor	Oct-05	213	FPL Energy	Horse Hollow 1	GE Energy 1.5 MW (142)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
H_HOLLOW_WND1	H_HOLLOW_WND1	213

9.19.1 Horse Hollow Phase 1 – H_HOLLOW_WND1

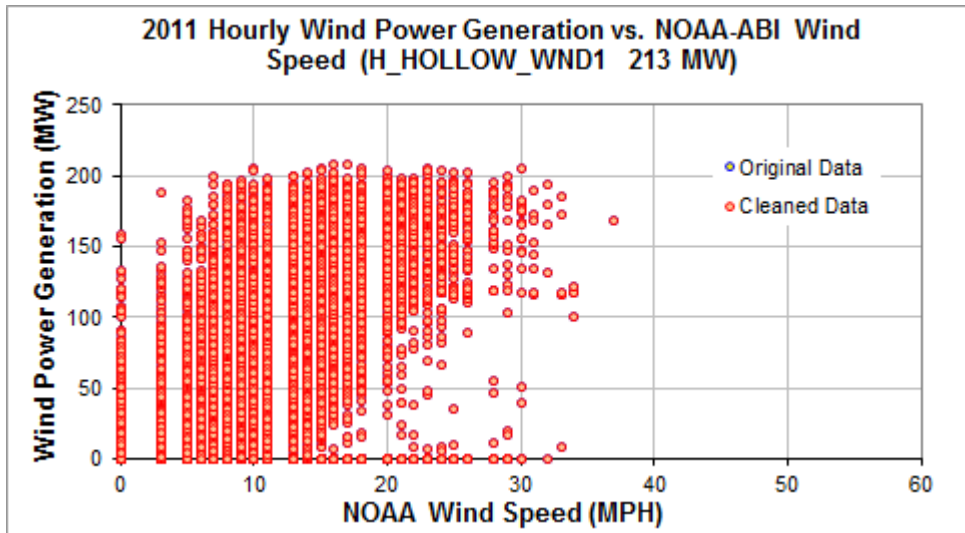


Figure 9-85: H_HOLLOW_WND1– Hourly Wind Power vs. NOAA Wind Speed (2011)

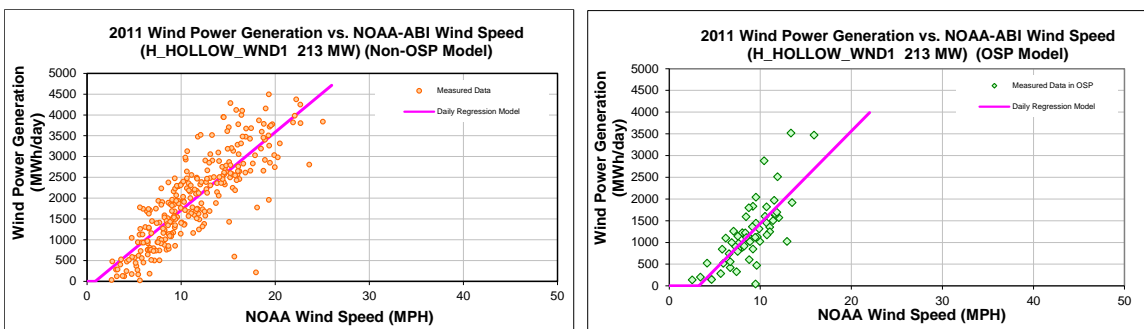


Figure 9-86: H_HOLLOW_WND1– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-84: H_HOLLOW_WND1– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-161.9106
Left Slope (MWh/mph-day)	187.5595
RMSE (MWh/day)	572.1030
R2	0.6980
CV-RMSE	29.0%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-693.8398
Left Slope (MWh/mph-day)	212.7565
RMSE (MWh/day)	467.0666
R2	0.5810
CV-RMSE	39.0%

Table 9-85: H_HOLLOW_WND1– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	44,462	47,381	-6.57%	28%	30%
Feb-11	24	11.46	51,374	47,682	7.19%	42%	39%
Mar-11	31	12.29	68,459	66,468	2.91%	43%	42%
Apr-11	30	13.87	62,737	73,186	-16.66%	41%	48%
May-11	23	12.80	43,305	51,489	-18.90%	37%	44%
Jun-11	22	14.98	58,014	58,244	-0.40%	52%	52%
Jul-11	29	9.87	33,802	44,630	-32.03%	23%	30%
Aug-11	31	9.20	40,397	39,149	3.09%	25%	25%
Sep-11	30	7.68	37,451	33,404	10.81%	24%	22%
Oct-11	31	10.61	62,841	56,658	9.84%	40%	36%
Nov-11	28	11.82	65,361	57,537	11.97%	46%	40%
Dec-11	31	9.51	57,806	50,295	12.99%	36%	32%
Total	341	10.94	626,008	626,123	-0.02%	36%	36%
Total in OSP (07/15-09/15)	61	8.89	73,030	73,178	-0.20%	23%	23%

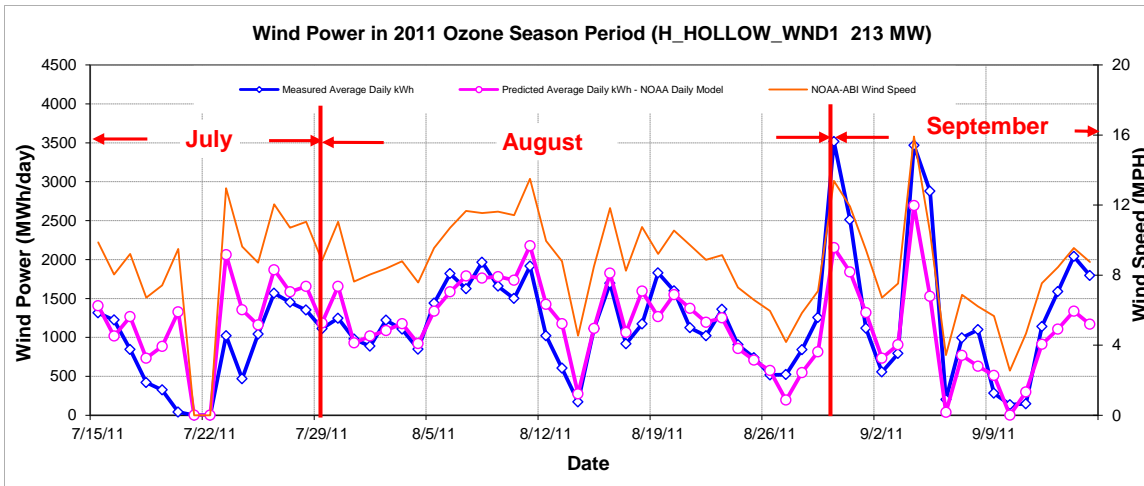


Figure 9-87: H_HOLLOW_WND1– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

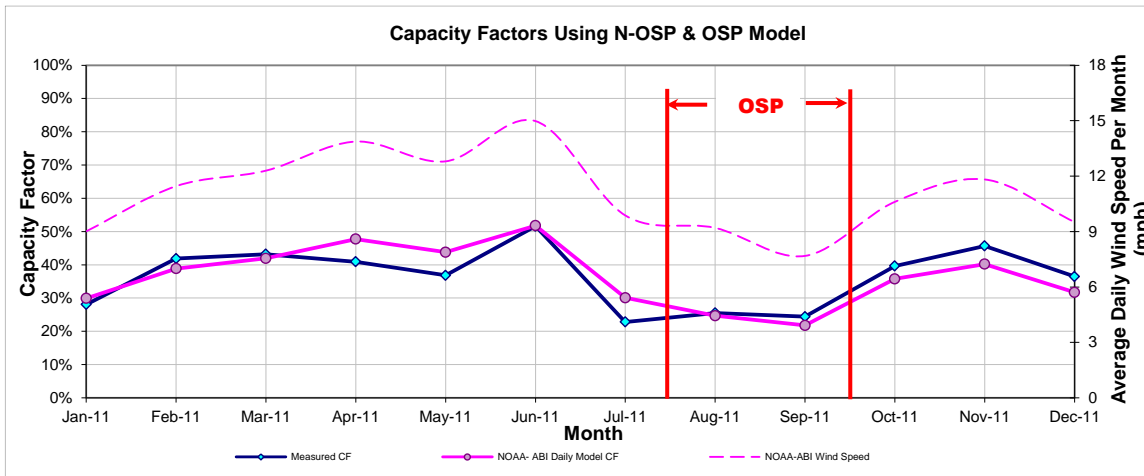


Figure 9-88: H_HOLLOW_WND1– Predicted Capacity Factors Using Daily Models (2011)

Table 9-86: H_HOLLOW_WND1– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
705,339	670,068	1,166	1,197

9.20 Horse Hollow Phase 2

Table 9-87: Site Information for Horse Hollow Phase 2

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
HHOLLOW2_WIND1	Wind	Abilene	Taylor	May-06	184	FPL Energy	Horse Hollow Phase 2	Mitsubishi 1000 (160)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
HHOLLOW2_WIND1	HHOLLOW2_WIND1	184

9.20.1 Horse Hollow Phase 2 – HHOLLOW2_WIND1

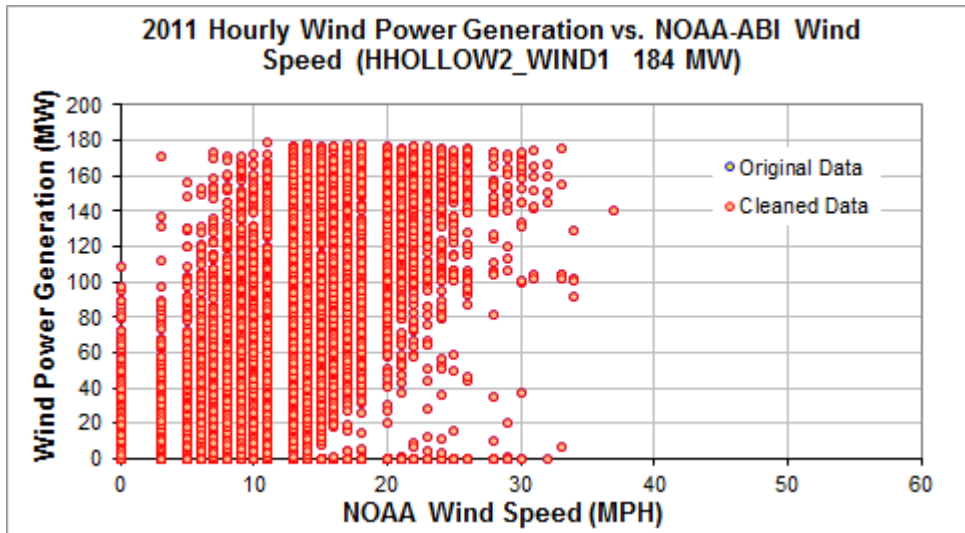


Figure 9-89: HHOLLOW2_WIND1– Hourly Wind Power vs. NOAA Wind Speed (2011)

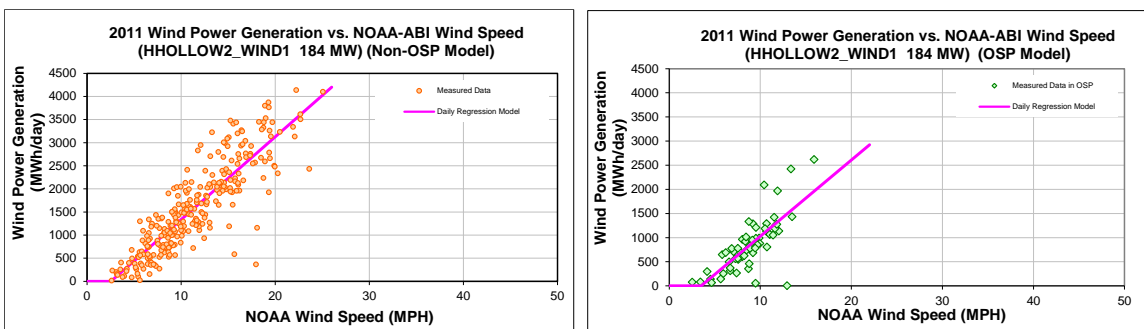


Figure 9-90: HHOLLOW2_WIND1– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-88: HHOLLOW2_WIND1– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-454.3227
Left Slope (MWh/mph-day)	179.0498
RMSE (MWh/day)	474.9995
R2	0.7534
CV-RMSE	30.0%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-556.2652
Left Slope (MWh/mph-day)	158.2070
RMSE (MWh/day)	363.4219
R2	0.5626
CV-RMSE	42.9%

Table 9-89: HHOLLOW2_WIND1– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	32,765	35,939	-9.69%	24%	26%
Feb-11	24	11.46	39,448	38,325	2.85%	37%	36%
Mar-11	31	12.29	59,360	54,160	8.76%	43%	40%
Apr-11	30	13.87	54,142	60,873	-12.43%	41%	46%
May-11	23	12.80	35,710	42,258	-18.34%	35%	42%
Jun-11	22	14.98	49,591	49,007	1.18%	51%	50%
Jul-11	28	9.88	23,939	32,599	-36.18%	19%	26%
Aug-11	31	9.20	28,741	27,861	3.06%	21%	20%
Sep-11	30	7.68	26,536	23,898	9.94%	20%	18%
Oct-11	31	10.61	49,676	44,794	9.83%	36%	33%
Nov-11	28	11.82	50,328	46,533	7.54%	41%	38%
Dec-11	31	9.51	44,601	38,721	13.18%	33%	28%
Total	340	10.95	494,836	494,968	-0.03%	33%	33%
Total in OSP (07/15-09/15)	60	8.88	50,879	51,042	-0.32%	19%	19%

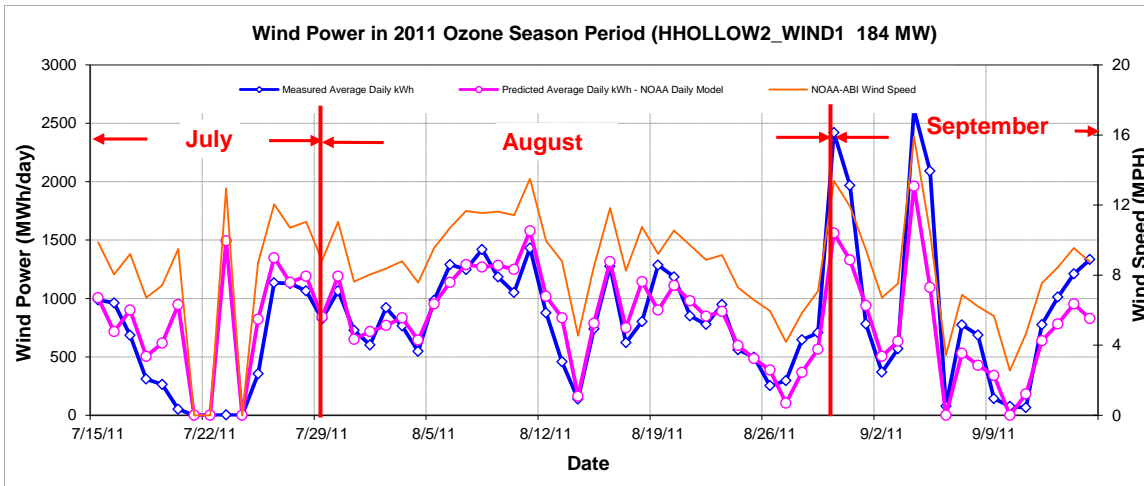


Figure 9-91: HHOLLOW2_WIND1– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

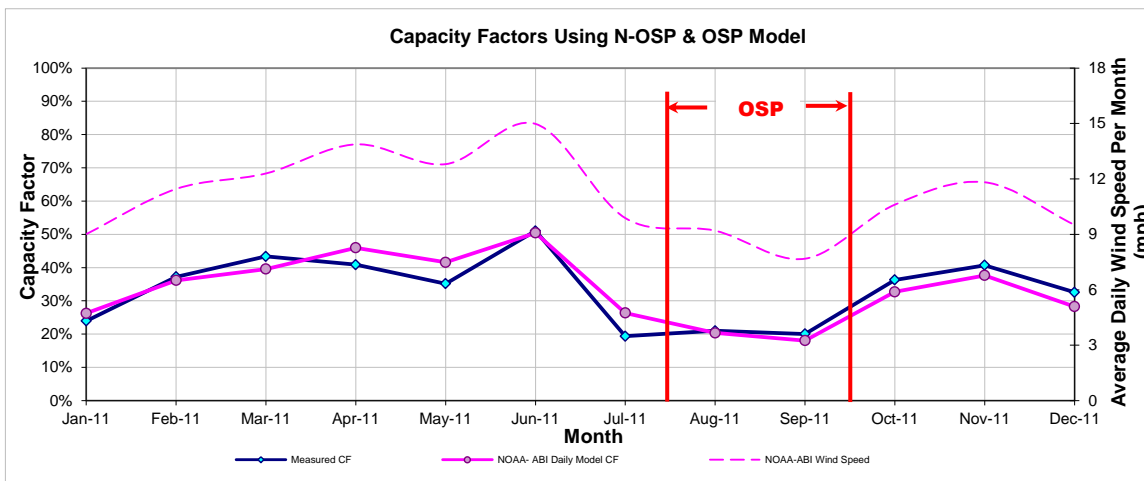


Figure 9-92: HHOLLOW2_WIND1– Predicted Capacity Factors Using Daily Models (2011)

Table 9-90: HHOLLOW2_WIND1– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
564,512	531,220	827	848

9.21 Horse Hollow Phase 3

Table 9-91: Site Information for Horse Hollow Phase 3

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
HHOLLOW3_WND_1	Wind	Abilene	Taylor	Sep-06	223.5	FPL Energy	Horse Hollow Phase 3	GE Energy (149)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
HHOLLOW3_WND_1	HHOLLOW3_WND_1	223.5

9.21.1 Horse Hollow Phase 3– HHOLLOW3_WND_3

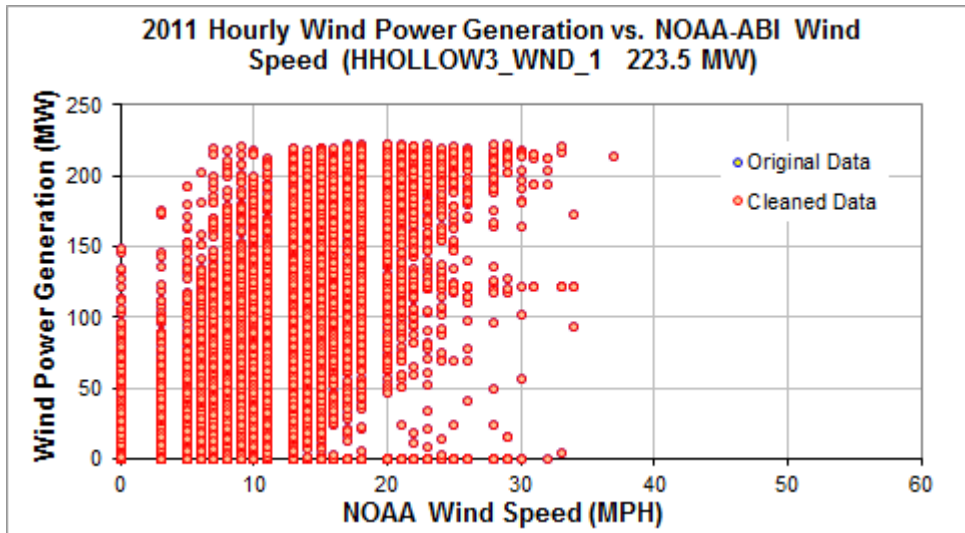


Figure 9-93: HHOLLOW3_WND_3 – Hourly Wind Power vs. NOAA Wind Speed (2011)

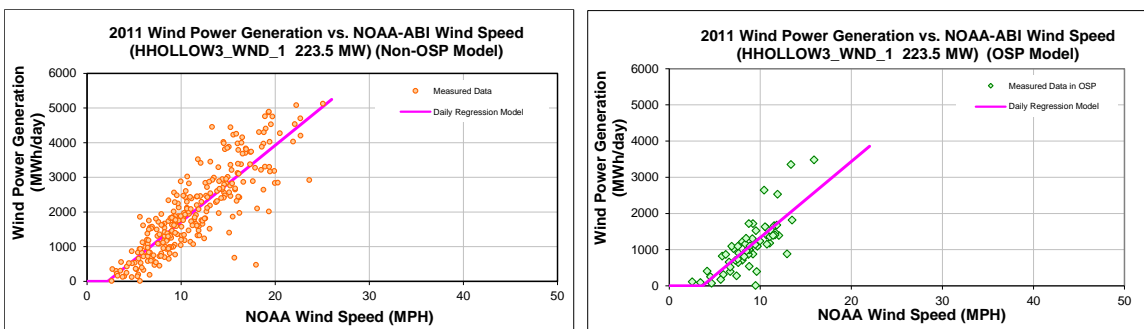


Figure 9-94: HHOLLOW3_WND_3 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-92: HHOLLOW3_WND_3 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-481.7453
Left Slope (MWh/mph-day)	220.4148
RMSE (MWh/day)	620.4101
R2	0.7308
CV-RMSE	30.6%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-765.6524
Left Slope (MWh/mph-day)	210.0846
RMSE (MWh/day)	444.1915
R2	0.5992
CV-RMSE	40.3%

Table 9-93: HHOLLOW3_WND_3 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	46,087	46,645	-1.21%	28%	28%
Feb-11	24	11.46	51,207	49,039	4.23%	40%	38%
Mar-11	31	12.29	73,713	69,076	6.29%	44%	42%
Apr-11	30	13.87	63,680	77,262	-21.33%	40%	48%
May-11	23	12.80	44,076	53,804	-22.07%	36%	44%
Jun-11	22	14.98	60,403	62,034	-2.70%	51%	53%
Jul-11	29	9.87	31,613	43,389	-37.25%	20%	28%
Aug-11	31	9.20	37,273	36,161	2.98%	22%	22%
Sep-11	30	7.68	34,613	31,183	9.91%	22%	19%
Oct-11	31	10.61	63,330	57,547	9.13%	38%	35%
Nov-11	28	11.82	68,142	59,454	12.75%	45%	40%
Dec-11	31	9.51	61,297	50,070	18.32%	37%	30%
Total	341	10.94	635,433	635,665	-0.04%	35%	35%
Total in OSP (07/15-09/15)	61	8.89	67,201	67,471	-0.40%	21%	21%

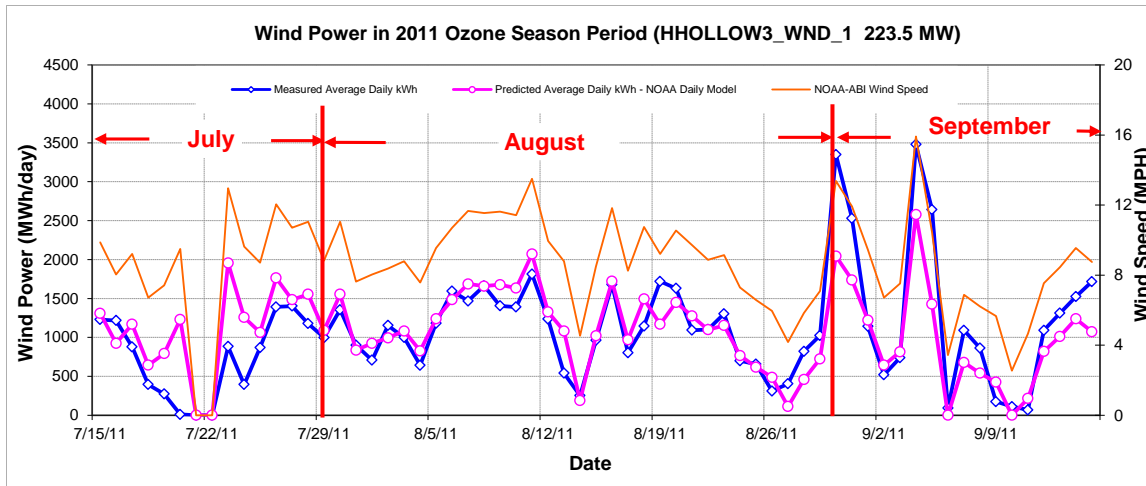


Figure 9-95: HHOLLOW3_WND_3 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

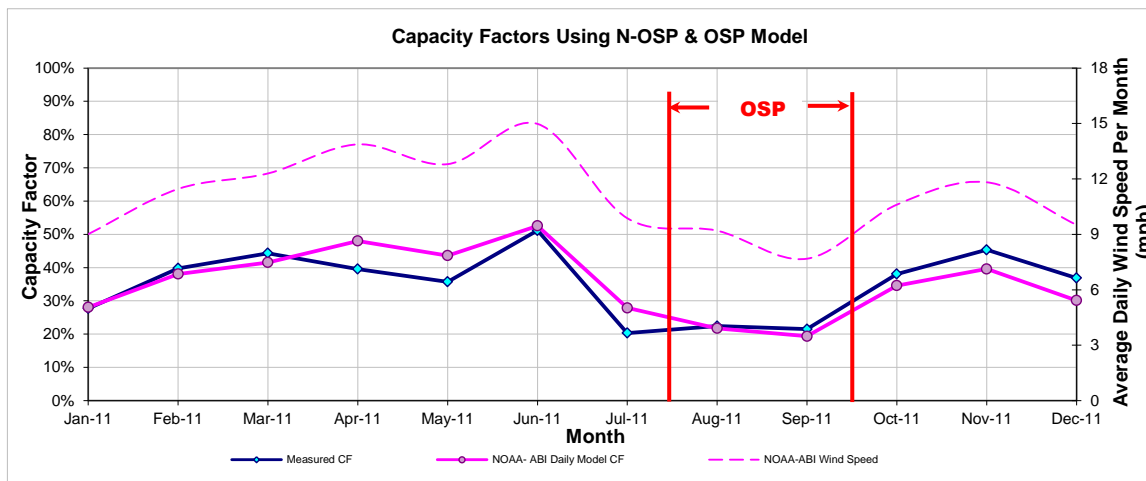


Figure 9-96: HHOLLOW3_WND_3 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-94: HHOLLOW3_WND_3 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
721,799	680,156	1,072	1,102

9.22 Horse Hollow Phase 4

Table 9-95: Site Information for Horse Hollow Phase 4

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
HHOLLOW4_WND_1	Wind	Abilene	Taylor	May-06	115	FPL Energy	Horse Hollow Phase 4	Siemens	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
HHOLLOW4_WND_1	HHOLLOW4_WND_1	115

9.22.1 Horse Hollow Phase 4 – HHOLLOW4_WND_1

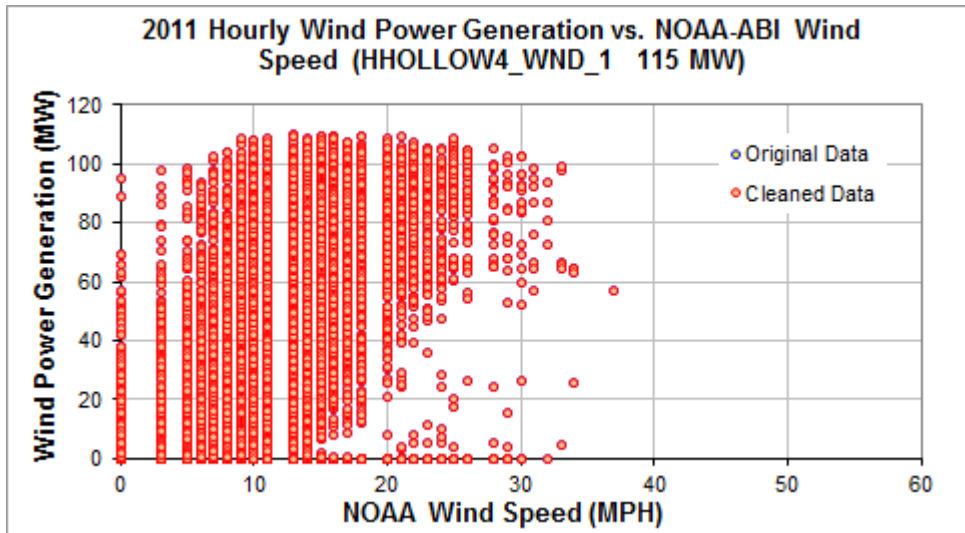


Figure 9-97: HHOLLOW4_WND_1 – Hourly Wind Power vs. NOAA Wind Speed (2011)

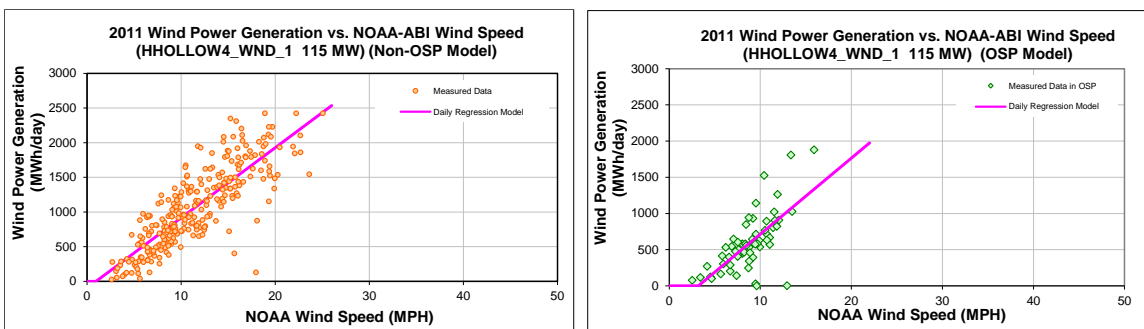


Figure 9-98: HHOLLOW4_WND_1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-96: HHOLLOW4_WND_1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-95.2886
Left Slope (MWh/mph-day)	101.1303
RMSE (MWh/day)	317.8933
R2	0.6852
CV-RMSE	30.1%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-335.0949
Left Slope (MWh/mph-day)	104.9682
RMSE (MWh/day)	286.5187
R2	0.4728
CV-RMSE	47.9%

Table 9-97: HHOLLOW4_WND_1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	23,766	25,300	-6.45%	28%	30%
Feb-11	24	11.46	27,266	25,518	6.41%	41%	39%
Mar-11	31	12.29	39,387	35,591	9.64%	46%	42%
Apr-11	30	13.87	34,342	39,222	-14.21%	41%	47%
May-11	23	12.80	22,384	27,579	-23.21%	35%	43%
Jun-11	22	14.98	28,941	31,229	-7.90%	48%	51%
Jul-11	29	9.87	15,255	23,140	-51.69%	19%	29%
Aug-11	31	9.20	20,600	19,539	5.15%	24%	23%
Sep-11	30	7.68	19,756	17,354	12.16%	24%	21%
Oct-11	31	10.61	34,468	30,302	12.09%	40%	35%
Nov-11	28	11.82	34,364	30,800	10.37%	44%	40%
Dec-11	31	9.51	31,868	26,871	15.68%	37%	31%
Total	341	10.94	332,396	332,443	-0.01%	35%	35%
Total in OSP (07/15-09/15)	61	8.89	36,472	36,537	-0.18%	22%	22%

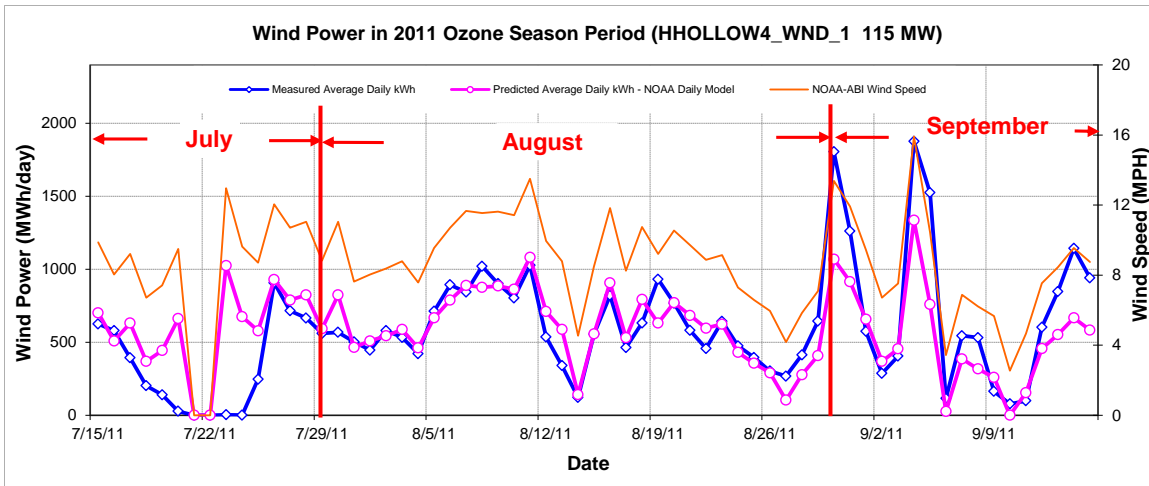


Figure 9-99: HHOLLOW4_WND_1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

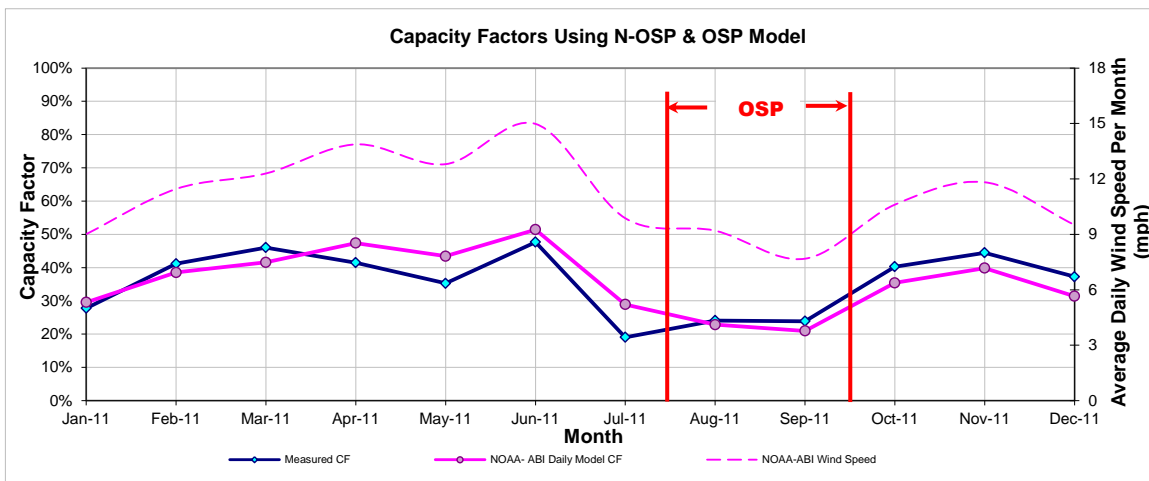


Figure 9-100: HHOLLOW4_WND_1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-98: HHOLLOW4_WND_1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
374,975	355,790	582	598

9.23 Hackberry Wind Farm

Table 9-99: Site Information for Hackberry Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
HWF_HWFG1	Wind	-	Shackelford	Nov-08	165.5	Renewable Energy Systems	Hackberry Wind Farm	Siemens(72)	ERCOT	North	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
HWF_HWFG1	HWF_HWFG1	165.5

9.23.1 Hackberry Wind Farm – HWF_HWFG1

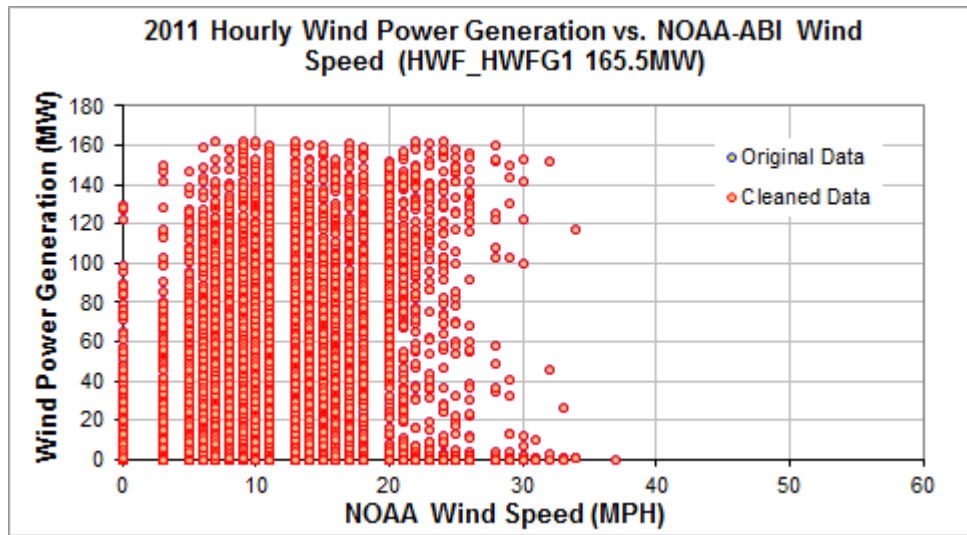


Figure 9-101: HWF_HWFG1 – Hourly Wind Power vs. NOAA Wind Speed (2011)

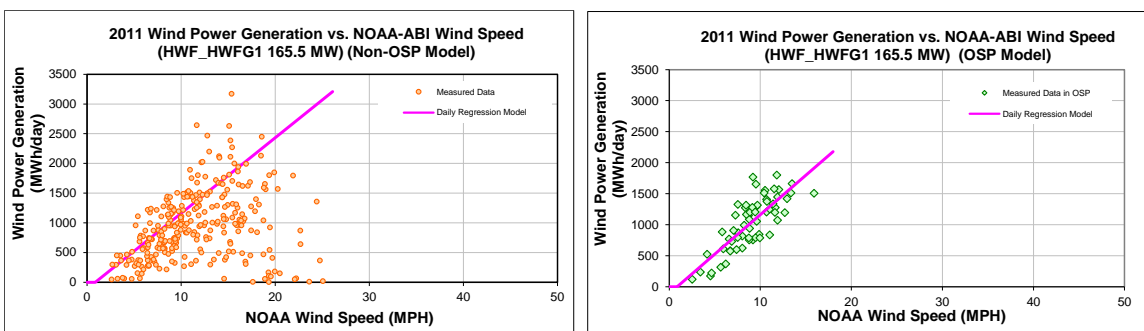


Figure 9-102: HWF_HWFG1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-100: HWF_HWFG1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-109.9261
Left Slope (MWh/mph-day)	127.0907
RMSE (MWh/day)	253.0363
R2	0.6331
CV-RMSE	24.5%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-109.9261
Left Slope (MWh/mph-day)	127.0907
RMSE (MWh/day)	253.0363
R2	0.6331
CV-RMSE	24.5%

Table 9-101: HWF_HWFG1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	25,355	32,099	-26.60%	21%	26%
Feb-11	24	11.46	23,956	32,304	-34.85%	25%	34%
Mar-11	31	12.29	26,229	45,032	-71.69%	21%	37%
Apr-11	30	13.87	22,346	49,585	-121.90%	19%	42%
May-11	31	13.86	39,035	51,194	-31.15%	32%	42%
Jun-11	30	14.61	37,458	52,424	-39.95%	31%	44%
Jul-11	31	10.03	33,281	36,105	-8.49%	27%	29%
Aug-11	31	9.20	35,741	32,827	8.15%	29%	27%
Sep-11	30	7.68	26,537	25,989	2.06%	22%	22%
Oct-11	31	10.61	27,536	38,385	-39.40%	22%	31%
Nov-11	28	11.82	20,661	38,981	-88.67%	19%	35%
Dec-11	31	9.51	29,610	34,073	-15.08%	24%	28%
Total	359	11.14	347,743	468,997	-34.87%	24%	33%
Total in OSP (07/15-09/15)	63	9.00	65,112	65,108	0.01%	26%	26%

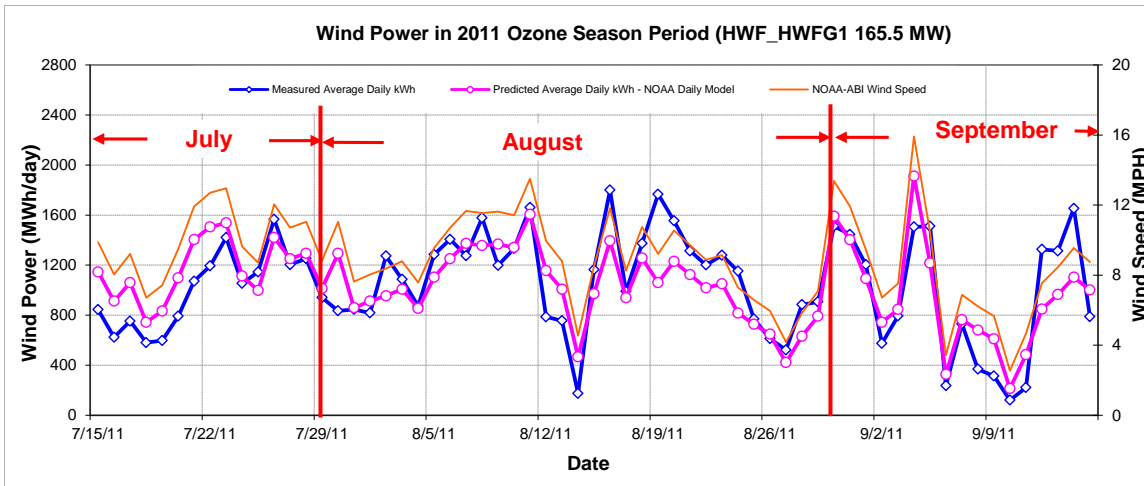


Figure 9-103: HWF_HWFG1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

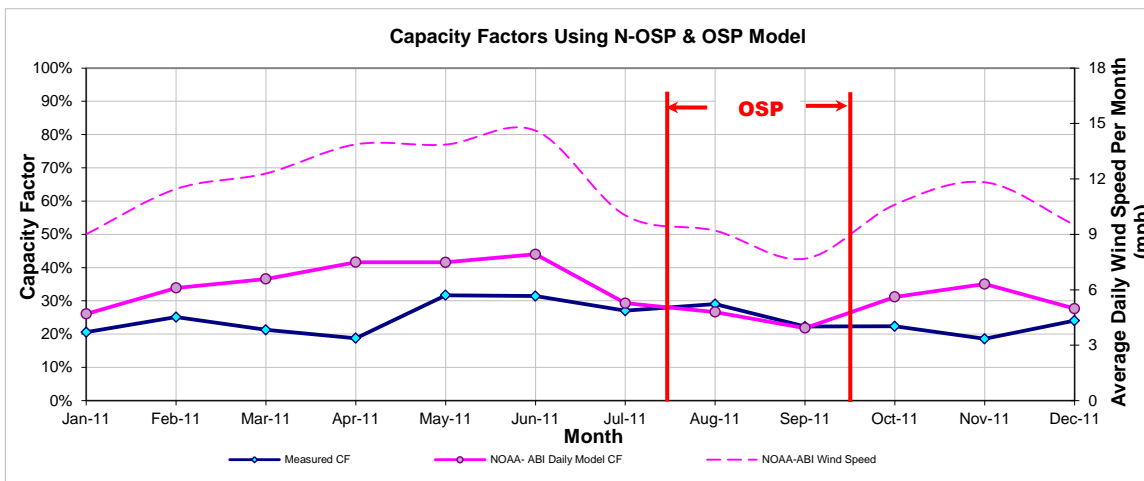


Figure 9-104: HWF_HWFG1 – Predicted Capacity Factors Using Daily Models (20)

Table 9-102: HWF_HWFG1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
491,133	353,555	1,000	1,034

9.24 Inadale Wind

Table 9-103: Site Information for Inadale Wind

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
INDL_INADALE1	Wind	-	Nolan	Nov-08	197	EOn Climate & Renewables	Inadale	Mitsubishi (197)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
INDL_INADALE1	INDL_INADALE1	197

9.24.1 Inadale Wind – INDL_INADALE1

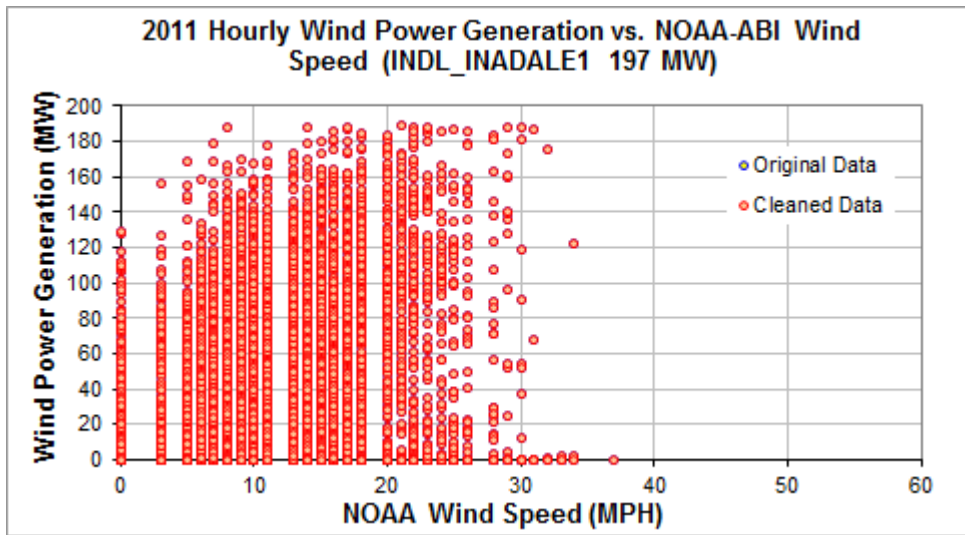


Figure 9-105: INDL_INADALE1 – Hourly Wind Power vs. NOAA Wind Speed (2011)

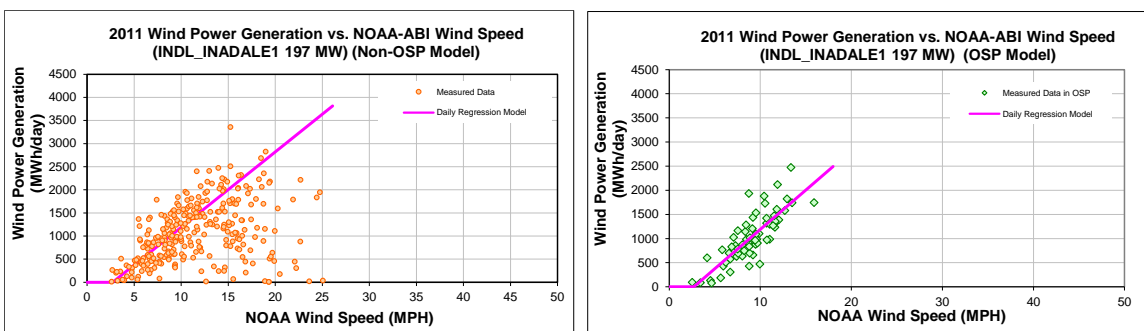


Figure 9-106: INDL_INADALE1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-104: INDL_INADALE1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-443.0253
Left Slope (MWh/mph-day)	163.0892
RMSE (MWh/day)	305.5115
R2	0.6610
CV-RMSE	29.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-443.0253
Left Slope (MWh/mph-day)	163.0892
RMSE (MWh/day)	305.5115
R2	0.6610
CV-RMSE	29.8%

Table 9-105: INDL_INADALE1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	26,318	31,845	-21.00%	18%	22%
Feb-11	24	11.46	21,503	34,207	-59.08%	19%	30%
Mar-11	27	12.12	19,980	41,399	-107.20%	16%	32%
Apr-11	30	13.87	28,860	54,571	-89.09%	20%	38%
May-11	31	13.86	42,488	56,333	-32.59%	29%	38%
Jun-11	30	14.61	51,523	58,215	-12.99%	36%	41%
Jul-11	31	10.03	34,067	36,970	-8.52%	23%	25%
Aug-11	31	9.20	33,429	32,764	1.99%	23%	22%
Sep-11	30	7.68	27,933	24,320	12.93%	20%	17%
Oct-11	31	10.61	33,634	39,896	-18.62%	23%	27%
Nov-11	28	11.82	24,665	41,571	-68.54%	19%	31%
Dec-11	30	9.64	36,075	33,890	6.06%	25%	24%
Total	354	11.13	380,475	485,981	-27.73%	23%	29%
Total in OSP (07/15-09/15)	63	9.00	64,532	64,555	-0.04%	22%	22%

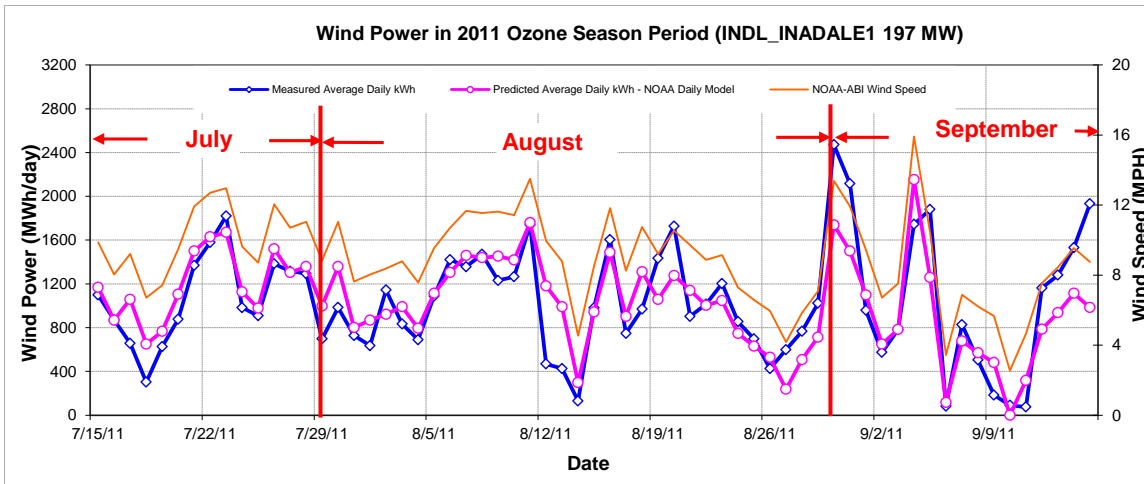


Figure 9-107: INDL_INADALE1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

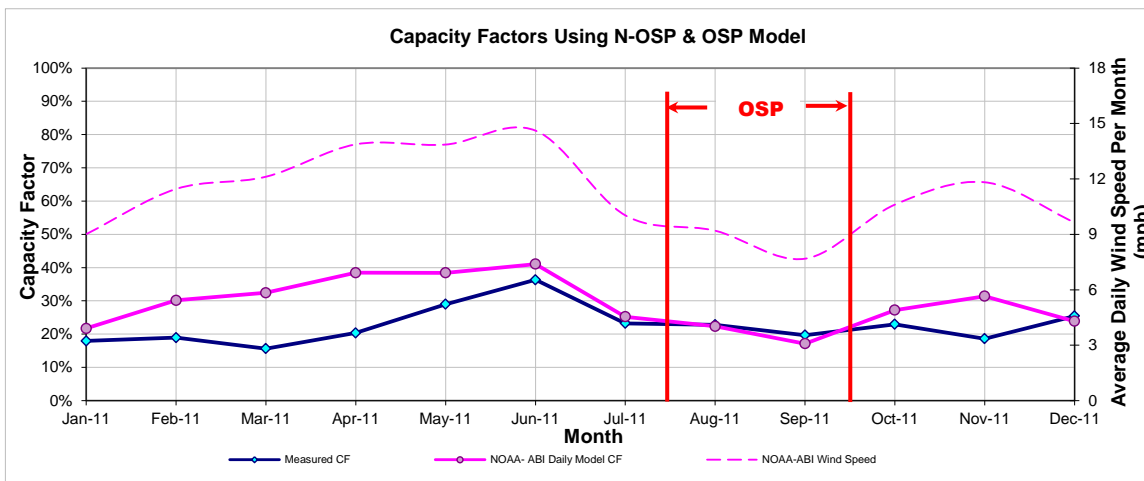


Figure 9-108: INDL_INADALE1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-106: INDL_INADALE1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
519,729	392,297	982	1,024

9.25 Desert Sky

Table 9-107: Site Information for Desert Sky

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
INDNENR	Wind	Iraan	Pecos	Dec-01	160	AEP	Desert Sky (Indian Mesa II)	Enron 1500 (107)	ERCOT	West	FST

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
INDNENR_INDNENR	INDNENR	80
INDNENR_INDNENR_2	INDNENR	80

9.25.1 Desert Sky – INDNENR_INDNENR

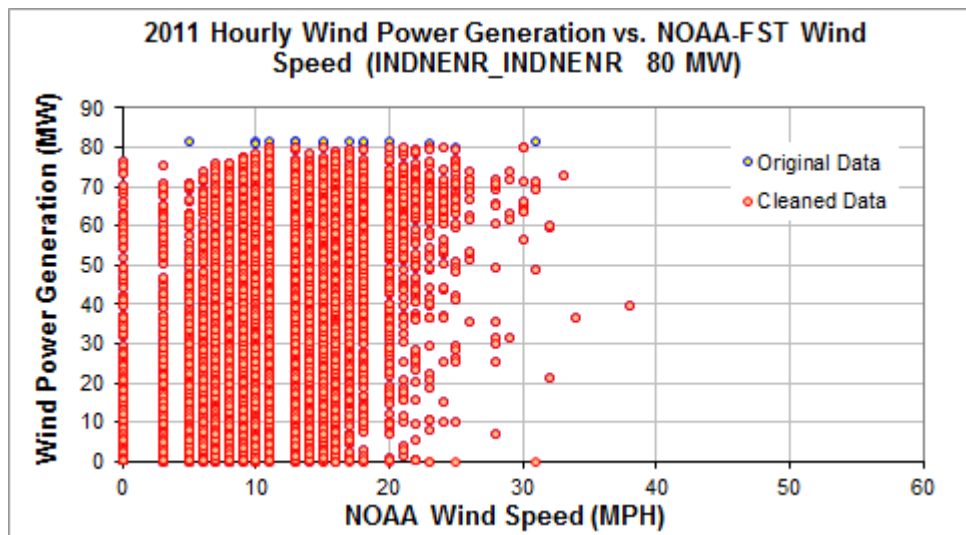


Figure 9-109: INDNENR_INDNENR – Hourly Wind Power vs. NOAA Wind Speed (2011)

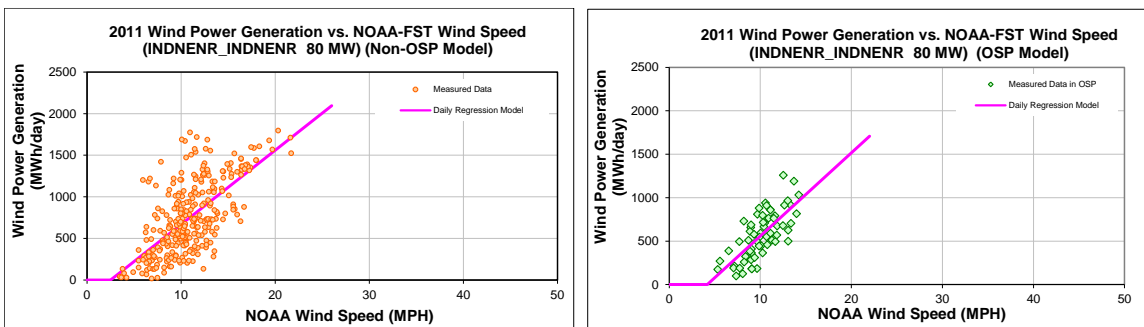


Figure 9-110: INDNENR_INDNENR – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-108: INDNENR_INDNENR – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-221.8029
Left Slope (MWh/mph-day)	89.0662
RMSE (MWh/day)	326.1261
R2	0.4376
CV-RMSE	43.4%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-399.8955
Left Slope (MWh/mph-day)	95.7961
RMSE (MWh/day)	189.8469
R2	0.5129
CV-RMSE	33.1%

Table 9-109: INDNENR_INDNENR – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.52	17,774	19,418	-9.25%	30%	33%
Feb-11	28	10.88	21,048	20,932	0.55%	39%	39%
Mar-11	31	10.67	27,255	22,575	17.17%	46%	38%
Apr-11	30	12.25	24,233	26,085	-7.64%	42%	45%
May-11	31	11.86	23,695	25,872	-9.19%	40%	43%
Jun-11	30	13.78	33,595	30,153	10.25%	58%	52%
Jul-11	31	11.49	22,774	23,129	-1.56%	38%	39%
Aug-11	31	10.29	19,093	18,169	4.84%	32%	31%
Sep-11	30	8.83	11,036	15,134	-37.13%	19%	26%
Oct-11	31	10.59	22,991	22,368	2.71%	39%	38%
Nov-11	30	10.73	23,575	22,013	6.62%	41%	38%
Dec-11	31	8.66	15,834	17,034	-7.58%	27%	29%
Total	365	10.79	262,903	262,883	0.01%	38%	38%
Total in OSP (07/15-09/15)	63	10.16	36,098	36,094	0.01%	30%	30%

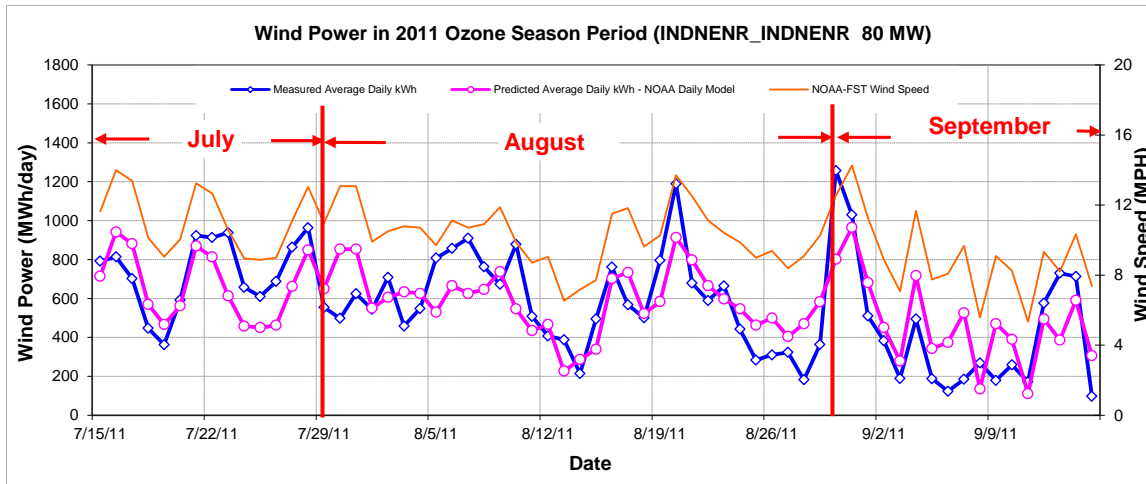


Figure 9-111: INDNENR_INDNENR – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

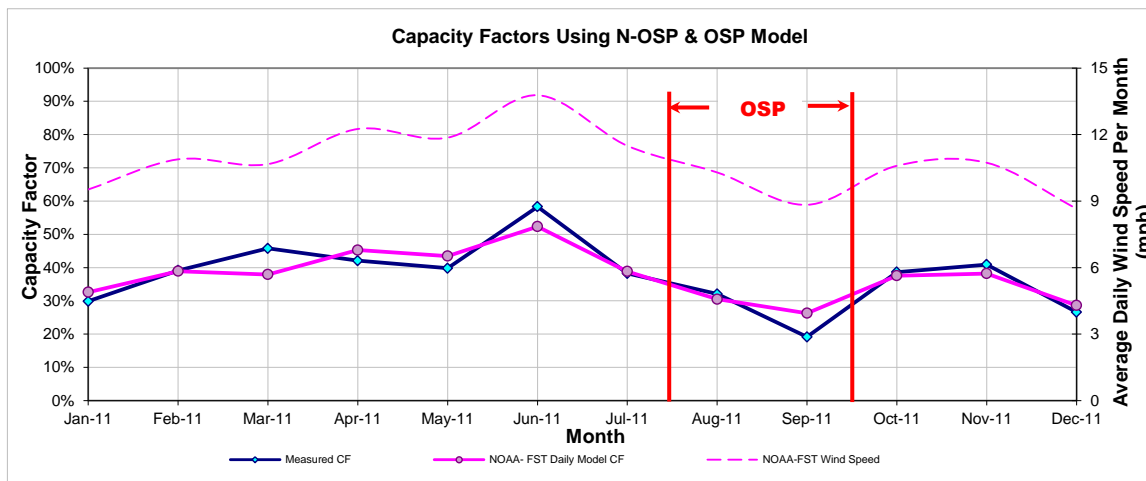


Figure 9-112: INDNENR_INDNENR – Predicted Capacity Factors Using Daily Models (2011)

Table 9-110: INDNENR_INDNENR – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
264,243	262,903	449	573

9.25.2 Desert Sky – INDNENR_INDNENR2

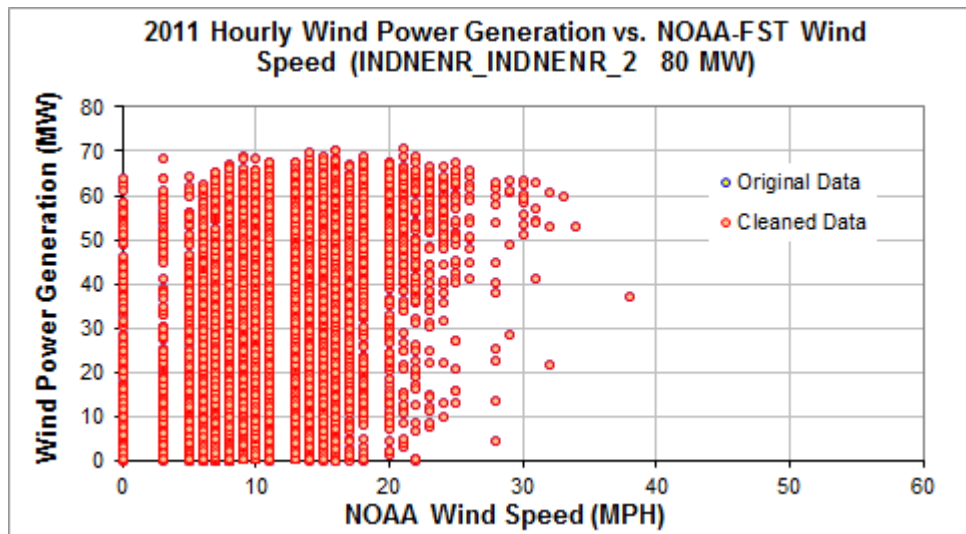


Figure 9-113: INDNENR_INDNENR2 – Hourly Wind Power vs. NOAA Wind Speed (2011)

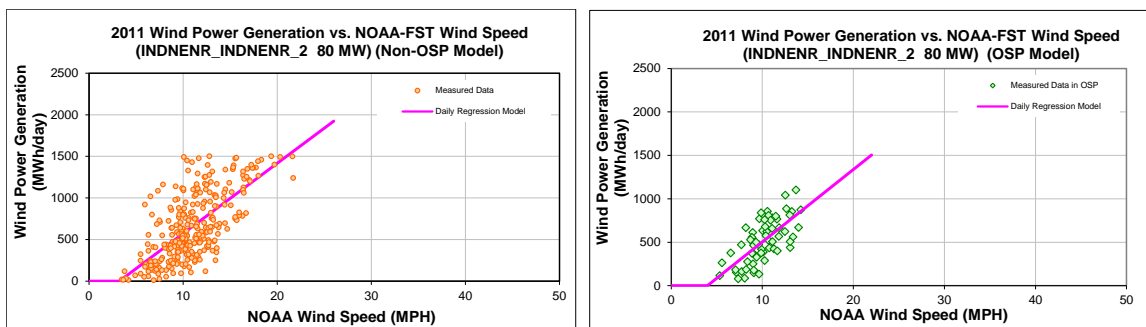


Figure 9-114: INDNENR_INDNENR2 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-111: INDNENR_INDNENR2 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-269.4723
Left Slope (MWh/mph-day)	84.3013
RMSE (MWh/day)	290.8412
R2	0.4671
CV-RMSE	44.7%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-332.7291
Left Slope (MWh/mph-day)	83.5466
RMSE (MWh/day)	182.7469
R2	0.4636
CV-RMSE	35.4%

Table 9-112: INDNENR_INDNENR2 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.52	15,921	16,534	-3.85%	27%	28%
Feb-11	28	10.88	17,822	18,146	-1.82%	33%	34%
Mar-11	31	10.67	23,013	19,522	15.17%	39%	33%
Apr-11	30	12.25	21,190	22,904	-8.09%	37%	40%
May-11	31	11.86	20,237	22,642	-11.88%	34%	38%
Jun-11	30	13.78	31,370	26,753	14.72%	54%	46%
Jul-11	31	11.49	20,738	20,463	1.33%	35%	34%
Aug-11	31	10.29	17,570	16,342	6.99%	30%	27%
Sep-11	30	8.83	9,801	13,207	-34.75%	17%	23%
Oct-11	31	10.59	20,733	19,325	6.79%	35%	32%
Nov-11	30	10.73	20,017	19,050	4.83%	35%	33%
Dec-11	31	8.66	10,771	14,278	-32.55%	18%	24%
Total	365	10.79	229,183	229,165	0.01%	33%	33%
Total in OSP (07/15-09/15)	63	10.16	32,492	32,489	0.01%	27%	27%

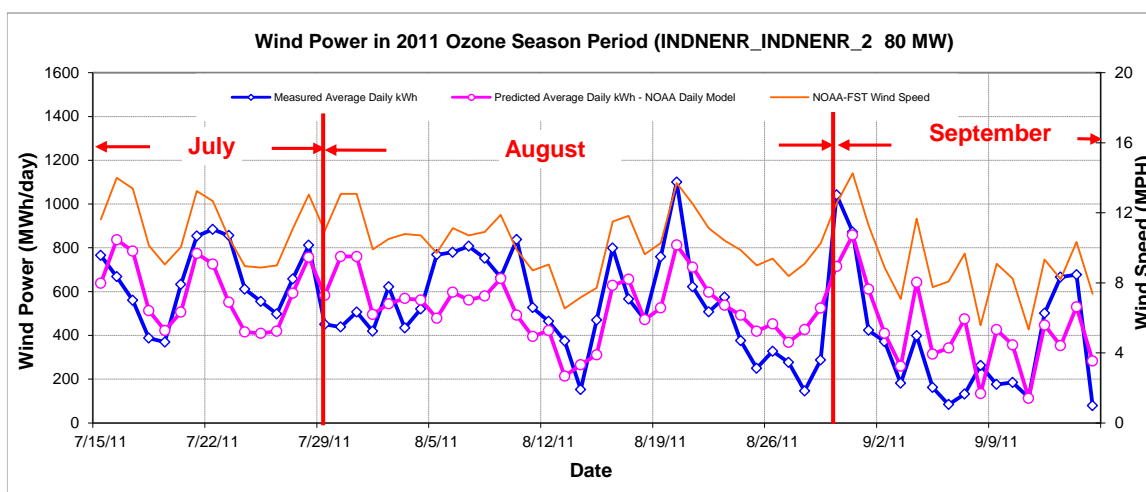


Figure 9-115: INDNENR_INDNENR2 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

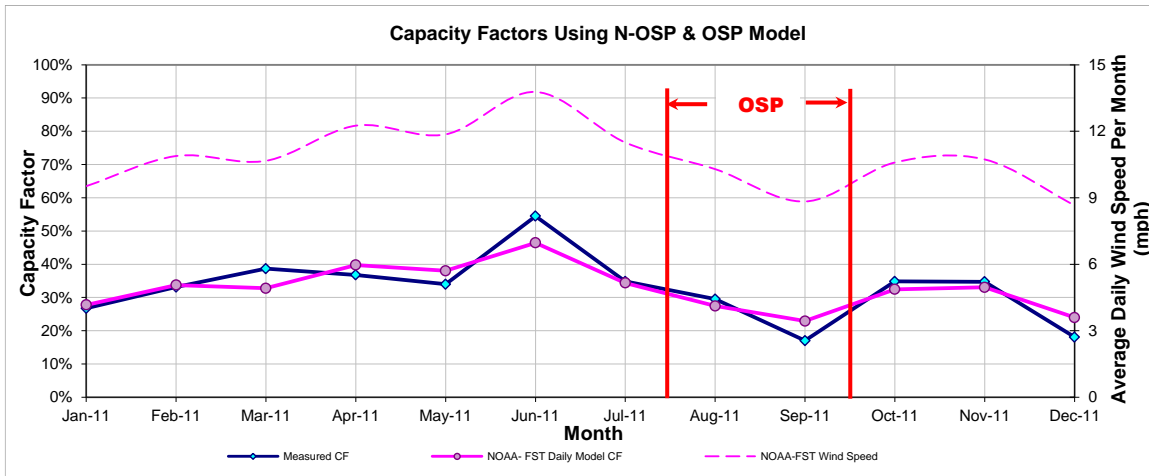


Figure 9-116: INDNENR_INDNENR2 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-113: INDNENR_INDNENR2 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
230,950	229,183	408	516

9.26 Indian Mesa

Table 9-114: Site Information for Indian Mesa

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
INDNNWP_INDNNWP	Wind	Iraan	Pecos	Jun-01	82.5	Energy/American National Wind Power	Indian Mesa I	Vestas V-47 (125)	ERCOT	West	FST

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
INDNNWP_INDNNWP	INDNNWP_INDNNWP	82.5

9.26.1 Indian Mesa – INDNNWP_INDNNWP

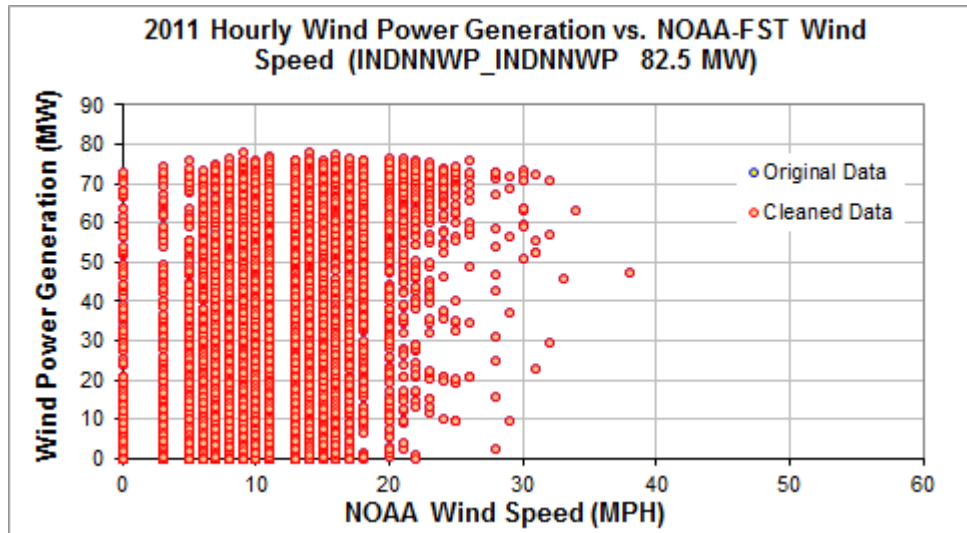


Figure 9-117: INDNNWP_INDNNWP – Hourly Wind Power vs. NOAA Wind Speed (2011)

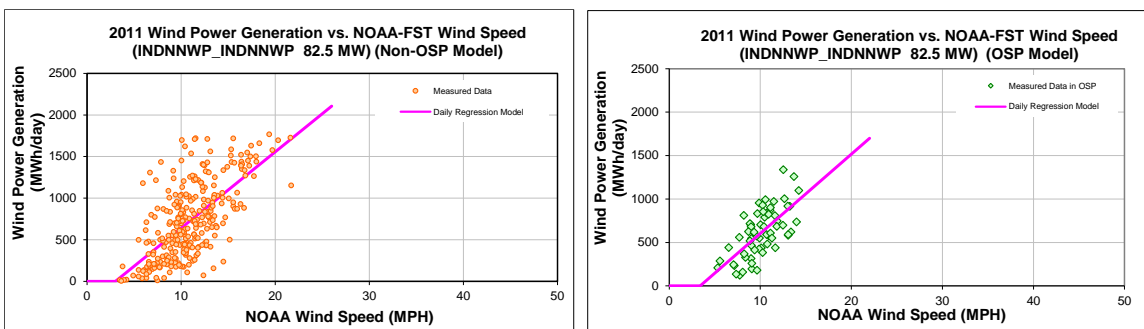


Figure 9-118: INDNNWP_INDNNWP – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-115: INDNNWP_INDNNWP – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-275.5859
Left Slope (MWh/mph-day)	91.6473
RMSE (MWh/day)	340.2492
R2	0.4303
CV-RMSE	46.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-312.0865
Left Slope (MWh/mph-day)	91.4099
RMSE (MWh/day)	209.1119
R2	0.4414
CV-RMSE	33.9%

Table 9-116: INDNNWP_INDNNWP – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.52	13,800	18,513	-34.15%	22%	30%
Feb-11	28	10.88	19,745	20,213	-2.37%	36%	36%
Mar-11	31	10.67	25,454	21,762	14.51%	41%	35%
Apr-11	30	12.25	26,979	25,420	5.78%	45%	43%
May-11	31	11.86	22,698	25,153	-10.82%	37%	41%
Jun-11	30	13.78	32,531	29,606	8.99%	55%	50%
Jul-11	31	11.49	22,753	23,445	-3.04%	37%	38%
Aug-11	31	10.29	20,782	19,491	6.21%	34%	32%
Sep-11	30	8.83	12,431	15,437	-24.18%	21%	26%
Oct-11	31	10.59	24,323	21,548	11.41%	40%	35%
Nov-11	30	10.73	22,396	21,231	5.20%	38%	36%
Dec-11	30	8.72	13,655	15,706	-15.02%	23%	26%
Total	364	10.80	257,546	257,525	0.01%	36%	36%
Total in OSP (07/15-09/15)	63	10.16	38,824	38,820	0.01%	31%	31%

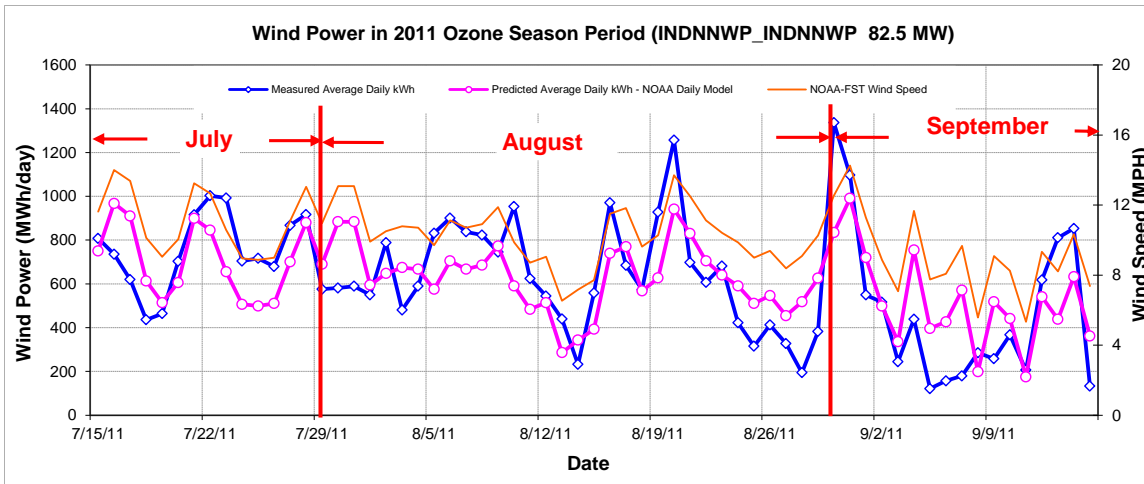


Figure 9-119: INDNNWP_INDNNWP – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

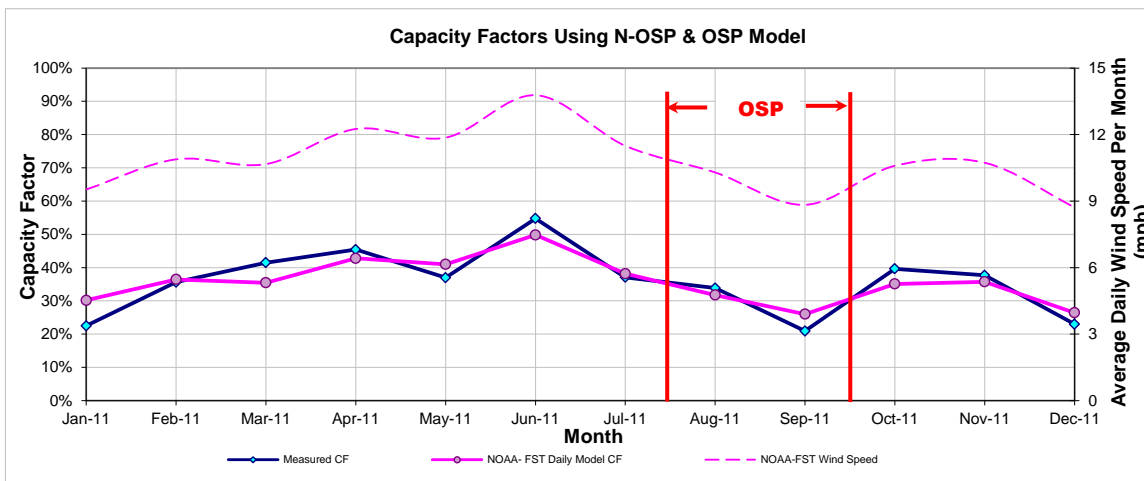


Figure 9-120: INDNNWP_INDNNWP – Predicted Capacity Factors Using Daily Models (2011)

Table 9-117: INDNNWP_INDNNWP – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
259,723	258,253	498	616

9.27 Sherbino Mesa Wind Farm

Table 9-118: Site Information for Sherbino Mesa Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
KEO_KEO_SM1	Wind	-	Pecos	Sep-08	150	BP Alt. Energy - NRG	Sherbino Mesa Wind Farm	Vestas (50)	ERCOT	West	MAF

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
KEO_KEO_SM1	KEO_KEO_SM1	150

9.27.1 Sherbino Mesa Wind Farm – KEO_KEO_SM1

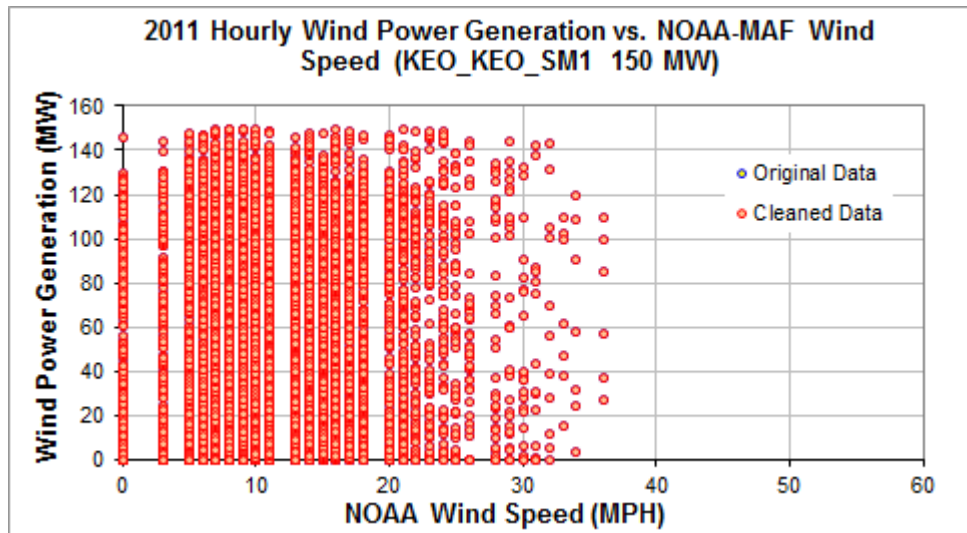


Figure 9-121: KEO_KEO_SM1 – Hourly Wind Power vs. NOAA Wind Speed (2011)

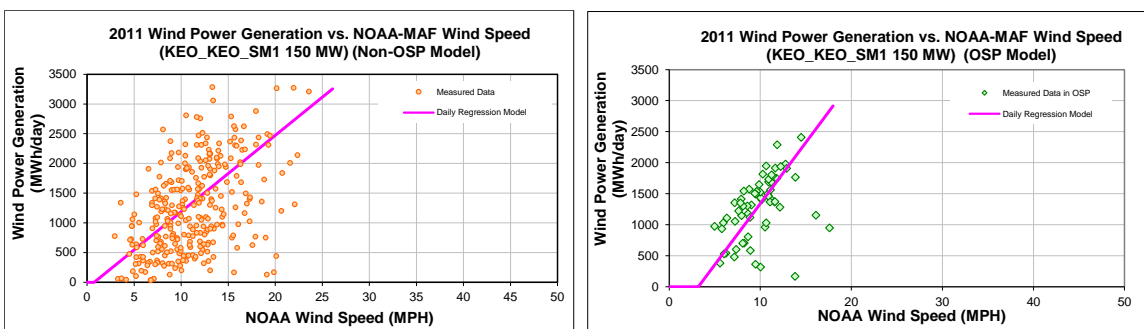


Figure 9-122: KEO_KEO_SM1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-119: KEO_KEO_SM1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-95.4421
Left Slope (MWh/mph-day)	128.4141
RMSE (MWh/day)	606.6949
R2	0.3625
CV-RMSE	47.9%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-630.4321
Left Slope (MWh/mph-day)	197.0066
RMSE (MWh/day)	284.1963
R2	0.3520
CV-RMSE	17.2%

Table 9-120: KEO_KEO_SM1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	25,902	31,259	-20.68%	23%	28%
Feb-11	28	10.80	25,057	36,162	-44.32%	25%	36%
Mar-11	31	11.31	39,964	42,053	-5.23%	36%	38%
Apr-11	30	13.78	35,287	50,210	-42.29%	33%	46%
May-11	31	13.09	40,413	49,135	-21.58%	36%	44%
Jun-11	30	14.09	59,945	51,402	14.25%	56%	48%
Jul-11	31	10.61	49,553	42,710	13.81%	44%	38%
Aug-11	31	9.61	42,677	39,124	8.33%	38%	35%
Sep-11	30	8.84	25,072	32,842	-30.99%	23%	30%
Oct-11	31	10.43	46,156	38,581	16.41%	41%	35%
Nov-11	30	10.82	40,842	38,807	4.98%	38%	36%
Dec-11	31	10.31	29,076	38,091	-31.01%	26%	34%
Total	365	11.02	459,942	490,375	-6.62%	35%	37%
Total in OSP (07/15-09/15)	63	9.86	81,403	82,673	-1.56%	36%	36%

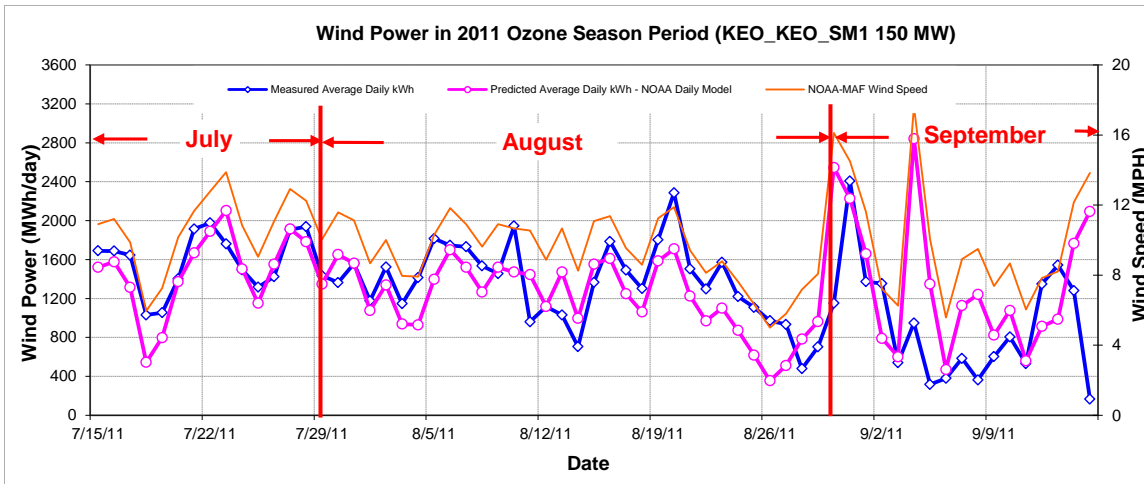


Figure 9-123: KEO_KEO_SM1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

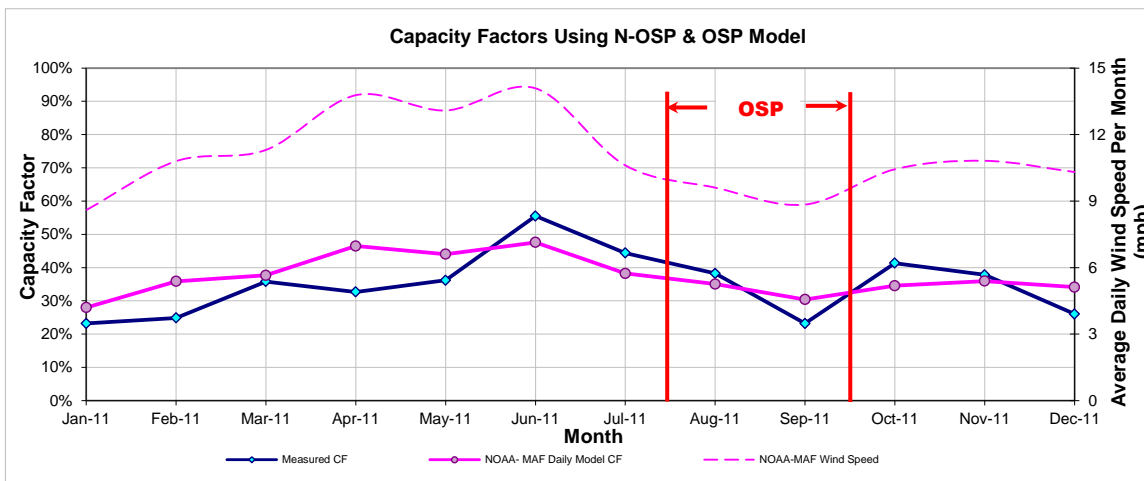


Figure 9-124: KEO_KEO_SM1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-121: KEO_KEO_SM1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
457,074	459,942	1,079	1,292

9.28 King Mountain Wind Ranch

Table 9-122: Site Information for King Mountain Wind Ranch

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
KING	Wind	McCamey	Upton	Dec-01	278.2	FPL/Cielo	King Mountain Wind Ranch	Bonus 1300 (61)	ERCOT	West	MAF

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
KING_NE_KINGNE	KING	79.3
KING_NW_KINGNW	KING	79.3
KING_SE_KINGSE	KING	40.3
KING_SW_KINGSW	KING	79.3

9.28.1 King Mountain Wind Ranch – King_NE_KINGNE

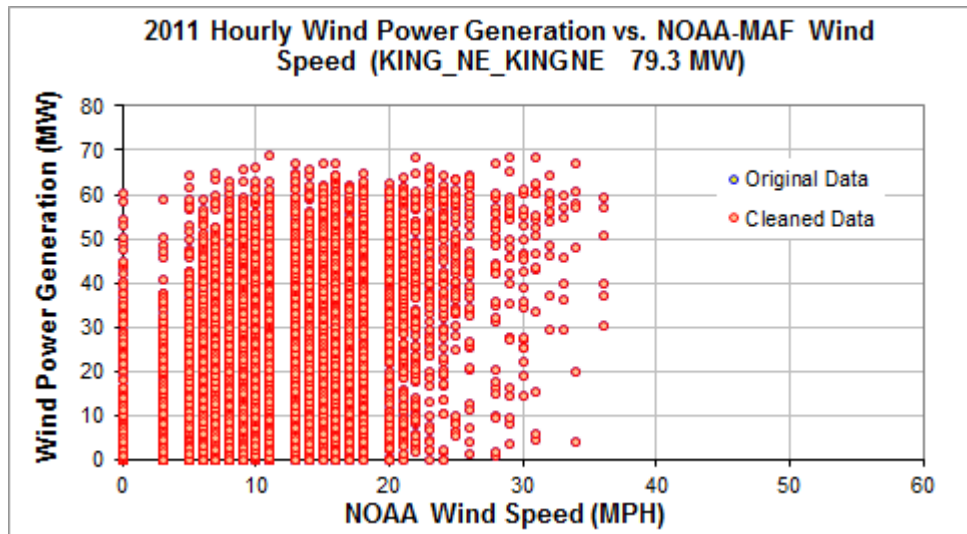


Figure 9-125: King_NE_KINGNE - Hourly Wind Power vs. NOAA Wind Speed (2011)

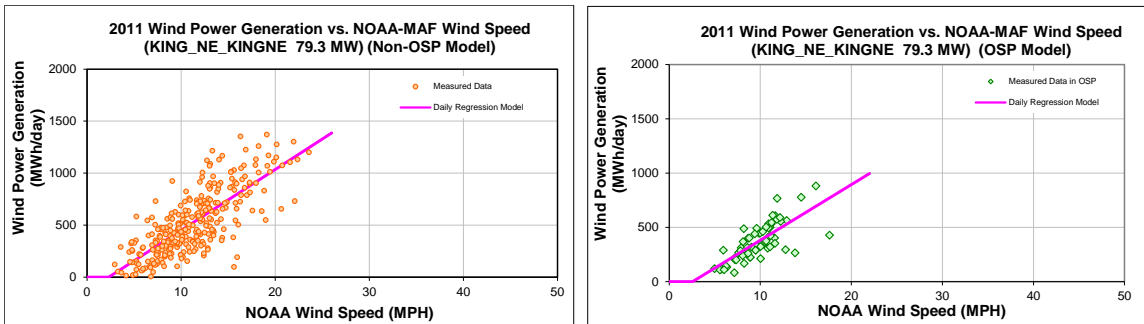


Figure 9-126: King_NE_KINGNE – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-123: King_NE_KINGNE – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-133.8518
Left Slope (MWh/mph-day)	58.4596
RMSE (MWh/day)	195.5663
R2	0.5885
CV-RMSE	37.3%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-132.2472
Left Slope (MWh/mph-day)	51.3128
RMSE (MWh/day)	116.6274
R2	0.5493
CV-RMSE	31.5%

Table 9-124: King_NE_KINGNE – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	11,703	11,428	2.35%	20%	19%
Feb-11	28	10.80	13,987	13,931	0.40%	26%	26%
Mar-11	31	11.31	16,850	16,342	3.02%	29%	28%
Apr-11	30	13.78	20,286	20,146	0.69%	36%	35%
May-11	31	13.09	18,574	19,566	-5.34%	31%	33%
Jun-11	30	14.09	22,267	20,688	7.09%	39%	36%
Jul-11	30	10.50	12,875	13,223	-2.70%	23%	23%
Aug-11	31	9.61	12,291	11,181	9.03%	21%	19%
Sep-11	30	8.84	8,620	10,511	-21.93%	15%	18%
Oct-11	31	10.43	14,792	14,761	0.21%	25%	25%
Nov-11	30	10.82	17,446	14,955	14.28%	31%	26%
Dec-11	31	10.31	11,594	14,538	-25.40%	20%	25%
Total	364	11.01	181,284	181,268	0.01%	26%	26%
Total in OSP (07/15-09/15)	62	9.80	22,970	22,967	0.01%	19%	19%

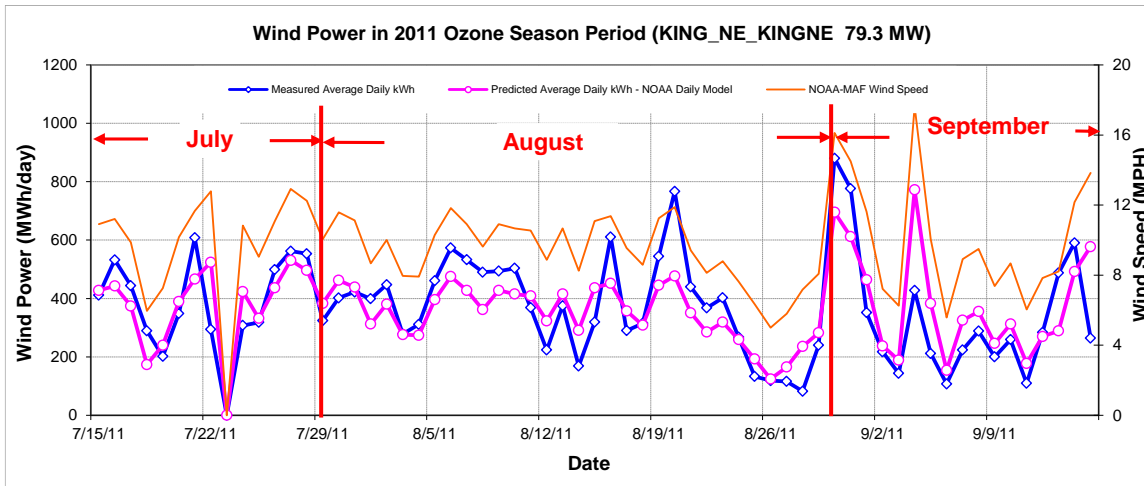


Figure 9-127: King_NE_KINGNE – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

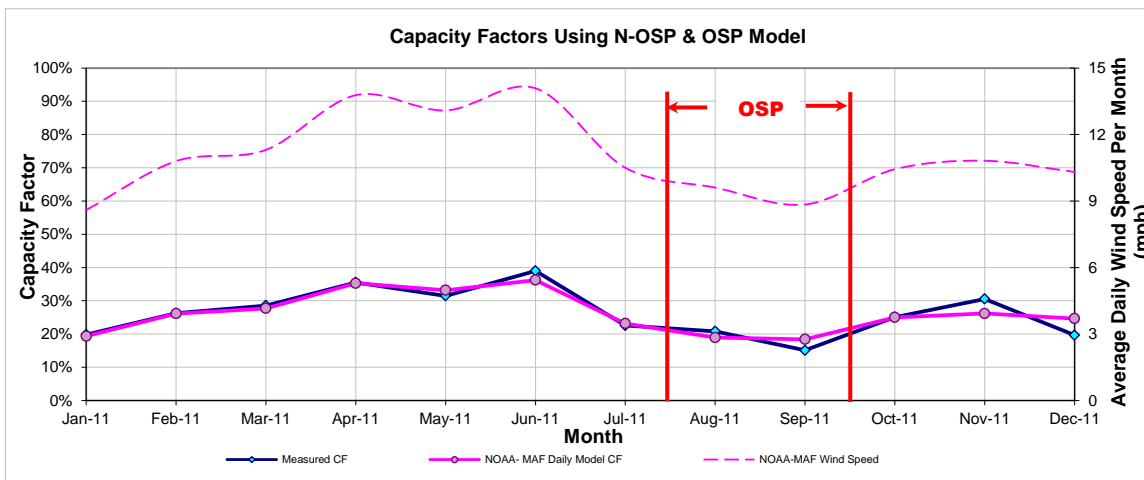


Figure 9-128: King_NE_KINGNE – Predicted Capacity Factors Using Daily Models (2011)

Table 9-125: King_NE_KINGNE – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
169,509	181,782	313	370

9.28.2 King Mountain Wind Ranch – KING_NW_KINGNW

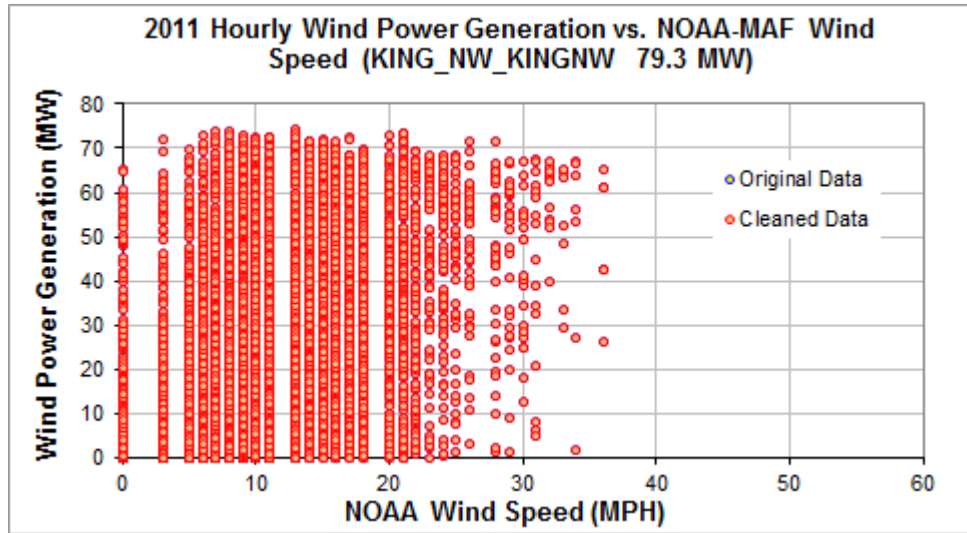


Figure 9-129: KING_NW_KINGNW – Hourly Wind Power vs. NOAA Wind Speed (2011)

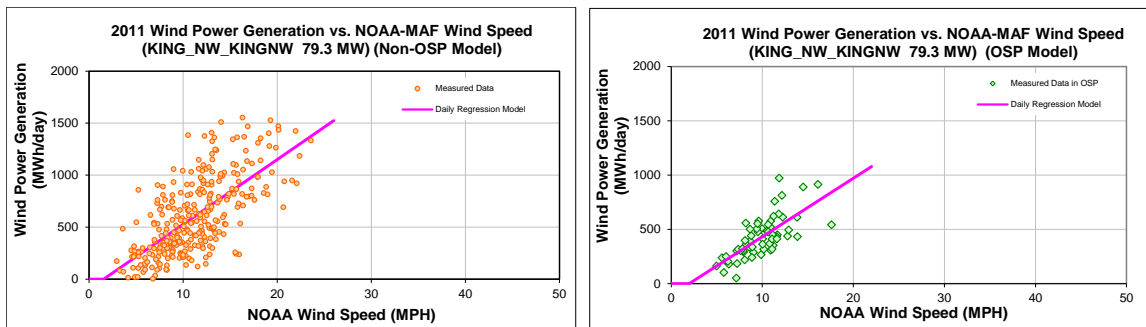


Figure 9-130: KING_NW_KINGNW – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-126: KING_NW_KINGNW – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-95.6179
Left Slope (MWh/mph-day)	62.3176
RMSE (MWh/day)	269.9760
R2	0.4602
CV-RMSE	44.6%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-106.0527
Left Slope (MWh/mph-day)	53.8108
RMSE (MWh/day)	131.0013
R2	0.5216
CV-RMSE	30.8%

Table 9-127: KING_NW_KINGNW – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	12,302	13,641	-10.88%	21%	23%
Feb-11	28	10.80	15,425	16,168	-4.82%	29%	30%
Mar-11	31	11.31	23,817	18,879	20.73%	40%	32%
Apr-11	30	13.78	22,872	22,887	-0.07%	40%	40%
May-11	31	13.09	21,287	22,316	-4.84%	36%	38%
Jun-11	30	14.09	25,032	23,466	6.26%	44%	41%
Jul-11	31	10.61	13,170	15,804	-20.00%	22%	27%
Aug-11	31	9.61	14,102	12,737	9.68%	24%	22%
Sep-11	30	8.84	11,734	12,309	-4.90%	21%	22%
Oct-11	31	10.43	18,582	17,194	7.47%	31%	29%
Nov-11	30	10.82	19,320	17,354	10.18%	34%	30%
Dec-11	31	10.31	12,087	16,957	-40.29%	20%	29%
Total	365	11.02	209,729	209,712	0.01%	30%	30%
Total in OSP (07/15-09/15)	63	9.86	26,752	26,749	0.01%	22%	22%

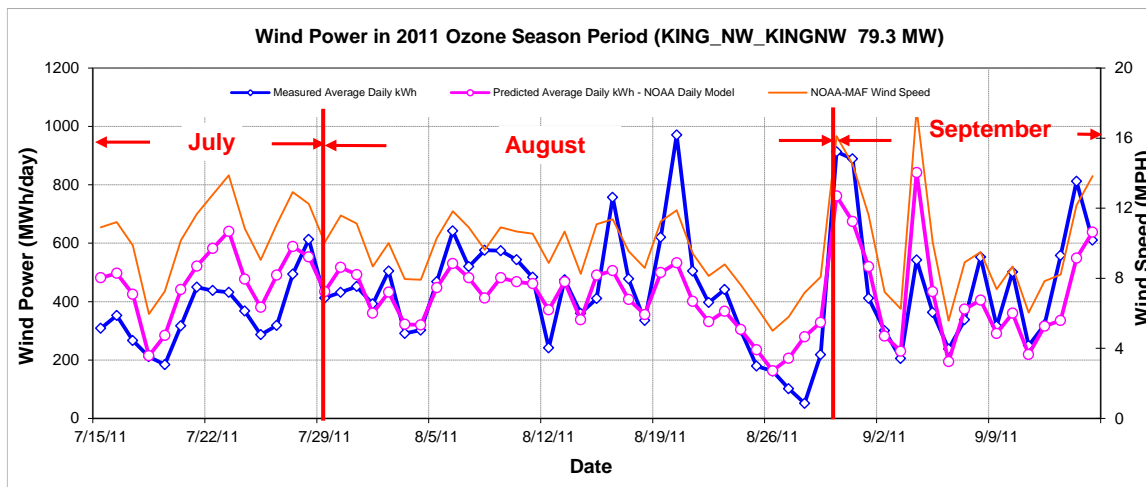


Figure 9-131: KING_NW_KINGNW – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

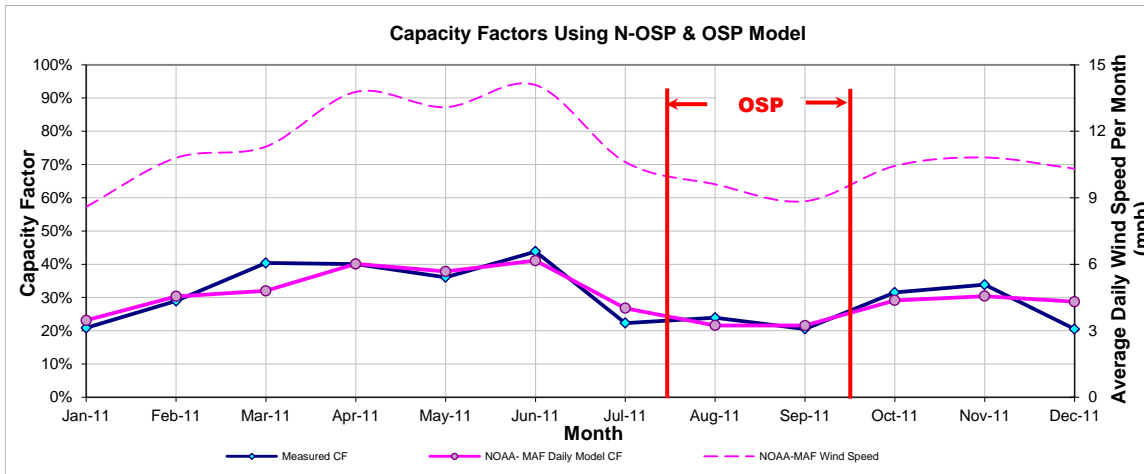


Figure 9-132: KING_NW_KINGNW – Predicted Capacity Factors Using Daily Models (2011)

Table 9-128: KING_NW_KINGNW – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
196,624	209,729	361	425

9.28.3 King Mountain Wind Ranch – KING_SE_KINGSE

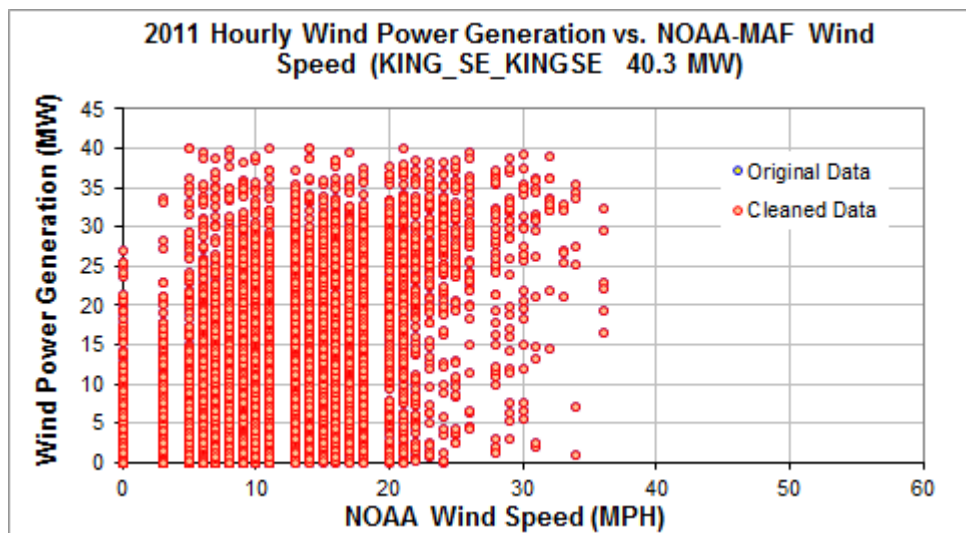


Figure 9-133: KING_SE_KINGSE – Hourly Wind Power vs. NOAA Wind Speed (2011)

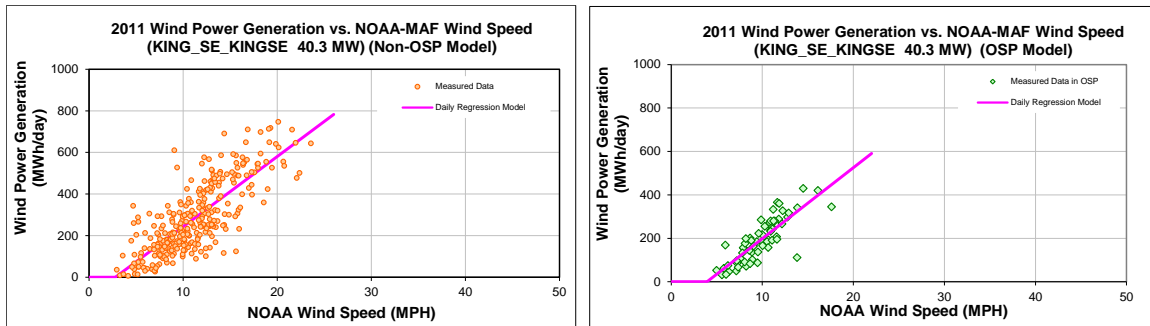


Figure 9-134: KING_SE_KINGSE – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-129: KING_SE_KINGSE – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-94.0087
Left Slope (MWh/mph-day)	33.7074
RMSE (MWh/day)	104.7858
R2	0.6233
CV-RMSE	36.6%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-128.8349
Left Slope (MWh/mph-day)	32.6856
RMSE (MWh/day)	55.9313
R2	0.6881
CV-RMSE	28.9%

Table 9-130: KING_SE_KINGSE – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed NOAA (MPH)	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	6,881	6,067	11.82%	23%	20%
Feb-11	28	10.80	8,834	7,561	14.40%	33%	28%
Mar-11	31	11.31	9,255	8,901	3.83%	31%	30%
Apr-11	30	13.78	10,751	11,111	-3.35%	37%	38%
May-11	31	13.09	9,873	10,760	-8.99%	33%	36%
Jun-11	30	14.09	12,964	11,424	11.88%	45%	39%
Jul-11	31	10.61	8,296	7,395	10.86%	28%	25%
Aug-11	31	9.61	5,944	5,740	3.44%	20%	19%
Sep-11	30	8.84	3,808	5,456	-43.26%	13%	19%
Oct-11	31	10.43	6,788	7,989	-17.70%	23%	27%
Nov-11	30	10.82	8,940	8,118	9.20%	31%	28%
Dec-11	30	10.43	5,924	7,726	-30.42%	20%	27%
Total	364	11.03	98,257	98,247	0.01%	28%	28%
Total in OSP (07/15-09/15)	63	9.86	12,192	12,189	0.02%	20%	20%

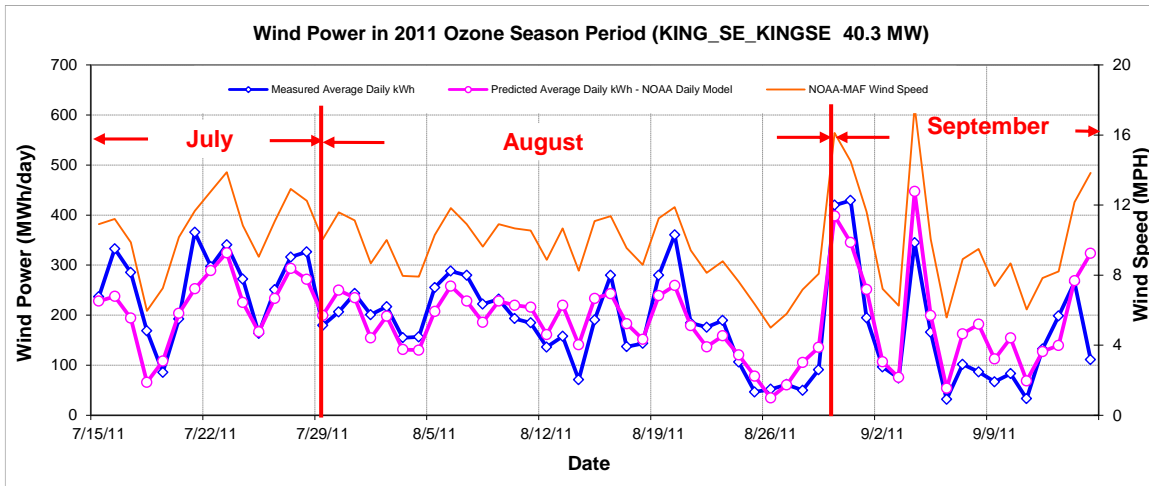


Figure 9-135: KING_SE_KINGSE – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

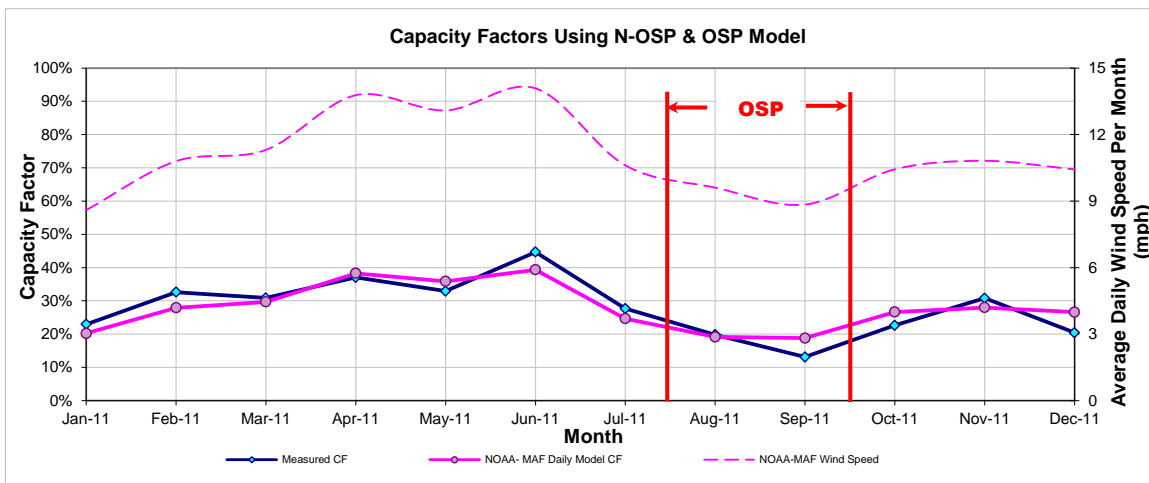


Figure 9-136: KING_SE_KINGSE – Predicted Capacity Factors Using Daily Models (2011)

Table 9-131: KING_SE_KINGSE – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
91,057	98,527	155	194

9.28.4 King Mountain Wind Ranch – KING_SW_KINGSW

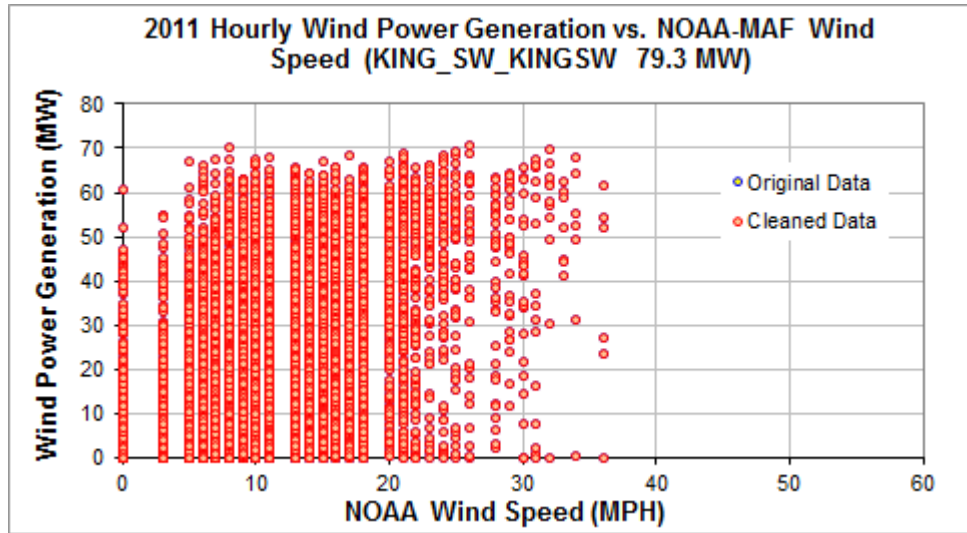


Figure 9-137: KING_SW_KINGSW - Hourly Wind Power vs. NOAA Wind Speed (2011)

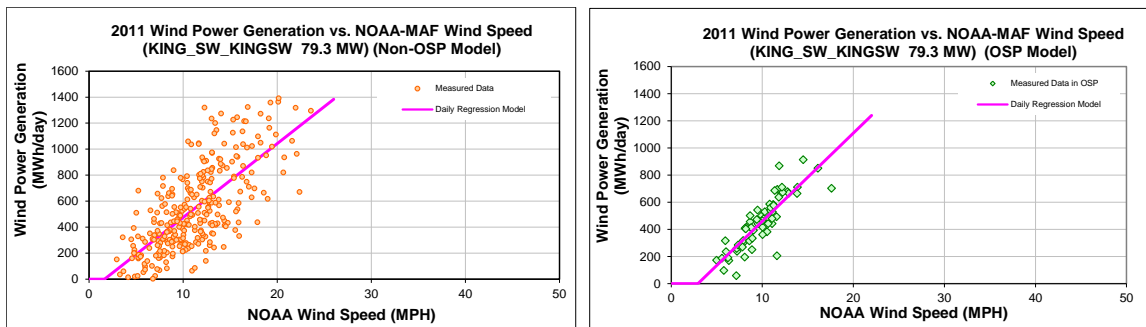


Figure 9-138: KING_SW_KINGSW – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-132: KING_SW_KINGSW – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-93.7103
Left Slope (MWh/mph-day)	56.8009
RMSE (MWh/day)	228.4414
R2	0.4977
CV-RMSE	41.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-190.5026
Left Slope (MWh/mph-day)	65.0041
RMSE (MWh/day)	99.0662
R2	0.7356
CV-RMSE	22.0%

Table 9-133: KING_SW_KINGSW – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	12,133	12,230	-0.80%	21%	21%
Feb-11	28	10.80	15,358	14,553	5.24%	29%	27%
Mar-11	31	11.31	20,297	17,005	16.22%	34%	29%
Apr-11	30	13.78	17,464	20,664	-18.33%	31%	36%
May-11	31	13.09	18,906	20,137	-6.51%	32%	34%
Jun-11	30	14.09	23,256	21,192	8.88%	41%	37%
Jul-11	31	10.61	16,319	15,631	4.22%	28%	26%
Aug-11	31	9.61	13,625	13,452	1.27%	23%	23%
Sep-11	30	8.84	9,841	11,961	-21.55%	17%	21%
Oct-11	30	10.51	15,862	15,099	4.81%	28%	26%
Nov-11	30	10.82	16,737	15,621	6.67%	29%	27%
Dec-11	31	10.31	13,017	15,252	-17.17%	22%	26%
Total	364	11.02	192,815	192,798	0.01%	28%	28%
Total in OSP (07/15-09/15)	63	9.86	28,387	28,382	0.02%	24%	24%

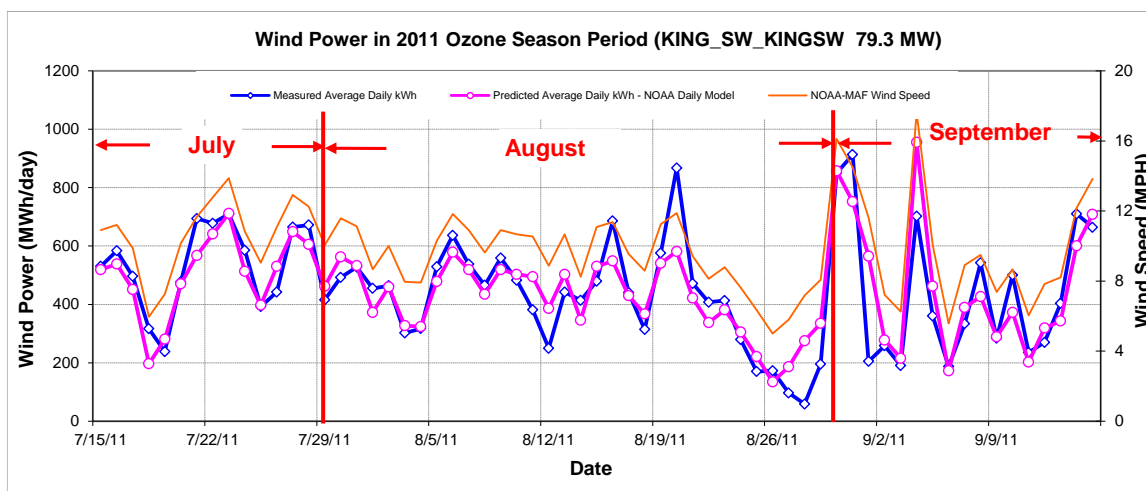


Figure 9-139: KING_SW_KINGSW – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

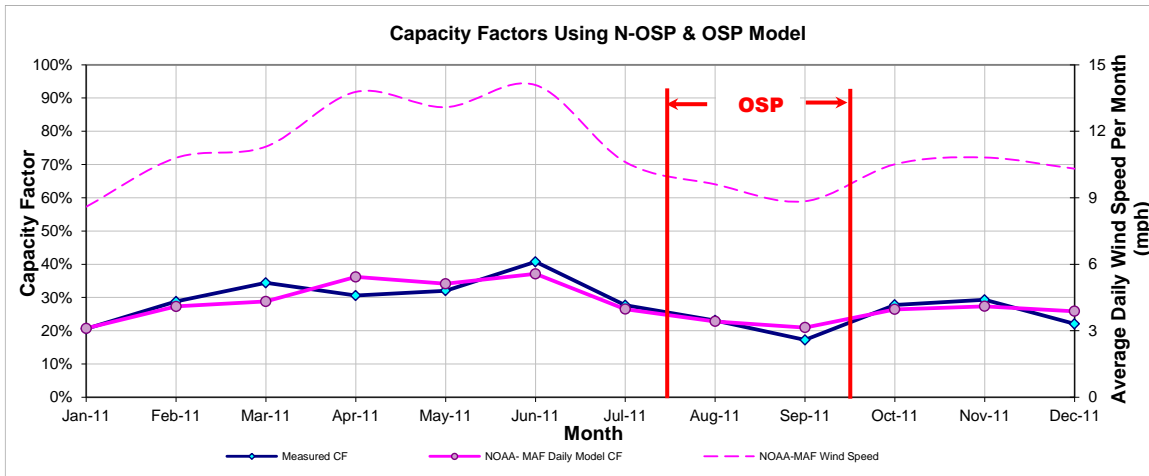


Figure 9-140: KING_SW_KINGSW – Predicted Capacity Factors Using Daily Models (2011)

Table 9-134: KING_SW_KINGSW – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
180,048	193,344	373	451

9.29 Texas Wind Power Project

Table 9-135: Site Information for Texas Wind Power Project

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
KUNITZ_WIND_LGE	Wind	-	Culberson	Jan-95	35	LG&E	Texas Wind Power Project	Kenetech (112)	ERCOT	West	GDP

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
KUNITZ_WIND_LGE	KUNITZ_WIND_LGE	35

9.29.1 Texas Wind Power Project – KUNITZ_WIND_LGE

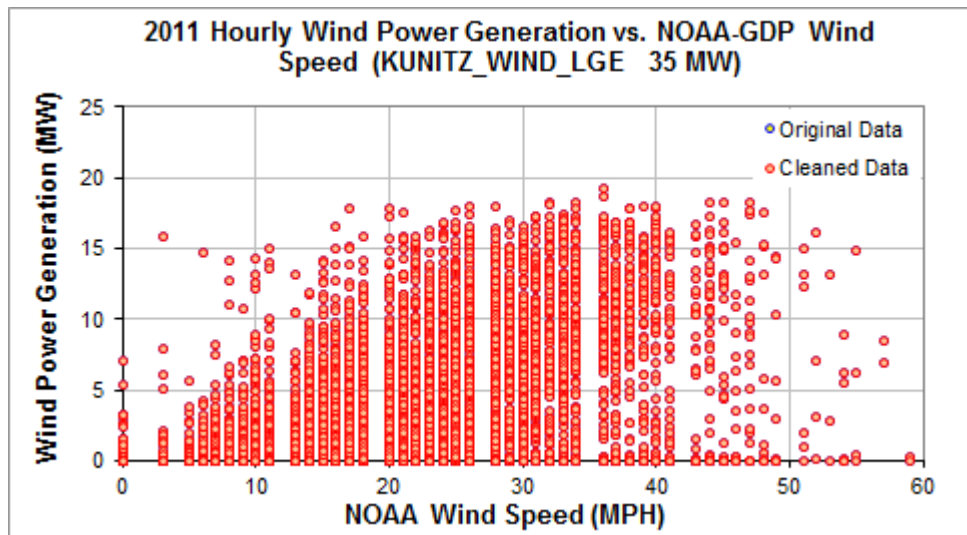


Figure 9-141: KUNITZ_WIND_LGE – Hourly Wind Power vs. NOAA Wind Speed (2011)

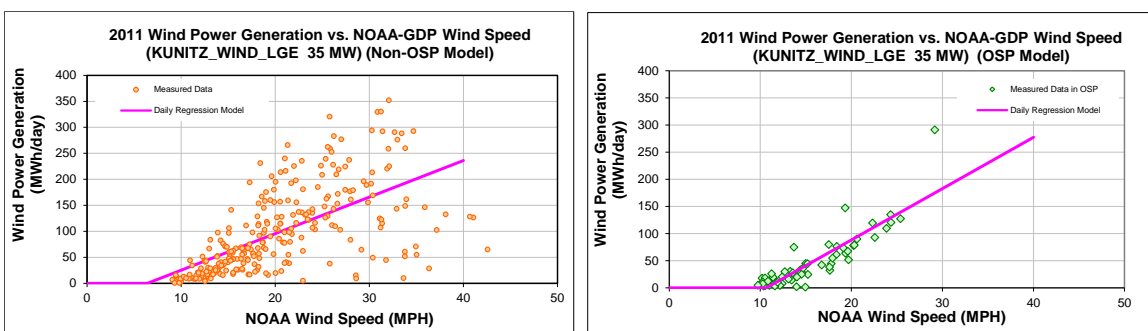


Figure 9-142: KUNITZ_WIND_LGE – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-136: KUNITZ_WIND_LGE – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-44.9460
Left Slope (MWh/mph-day)	7.0242
RMSE (MWh/day)	63.1005
R2	0.3924
CV-RMSE	64.2%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-100.9259
Left Slope (MWh/mph-day)	9.4563
RMSE (MWh/day)	23.1488
R2	0.7803
CV-RMSE	51.9%

Table 9-137: KUNITZ_WIND_LGE – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	20.77	5,371	3,130	41.73%	21%	12%
Feb-11	22	21.47	2,615	2,328	10.96%	14%	13%
Mar-11	31	20.76	3,952	3,127	20.87%	15%	12%
Apr-11	30	24.69	3,860	3,855	0.13%	15%	15%
May-11	31	24.43	2,983	3,926	-31.64%	11%	15%
Jun-11	27	17.18	1,603	2,045	-27.60%	7%	9%
Jul-11	30	14.64	1,283	1,392	-8.45%	5%	6%
Aug-11	31	14.27	974	1,076	-10.49%	4%	4%
Sep-11	23	16.97	1,514	1,555	-2.72%	8%	8%
Oct-11	31	15.74	1,617	2,033	-25.71%	6%	8%
Nov-11	30	21.78	3,459	3,242	6.28%	14%	13%
Dec-11	20	21.01	500	2,053	-310.24%	3%	12%
Total	337	19.45	29,732	29,763	-0.10%	11%	11%
Total in OSP (07/15-09/15)	63	15.39	2,811	2,843	-1.13%	5%	5%

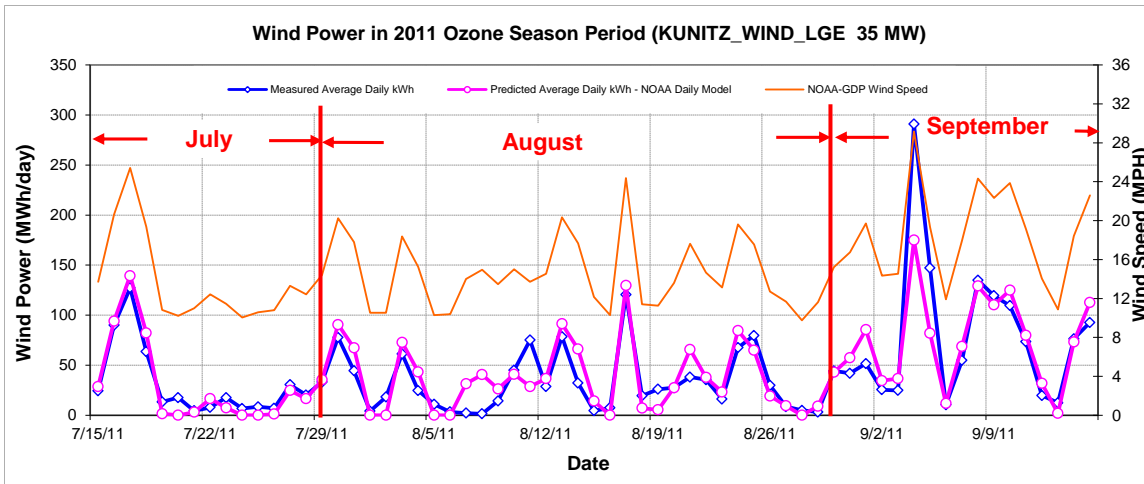


Figure 9-143: KUNITZ_WIND_LGE – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

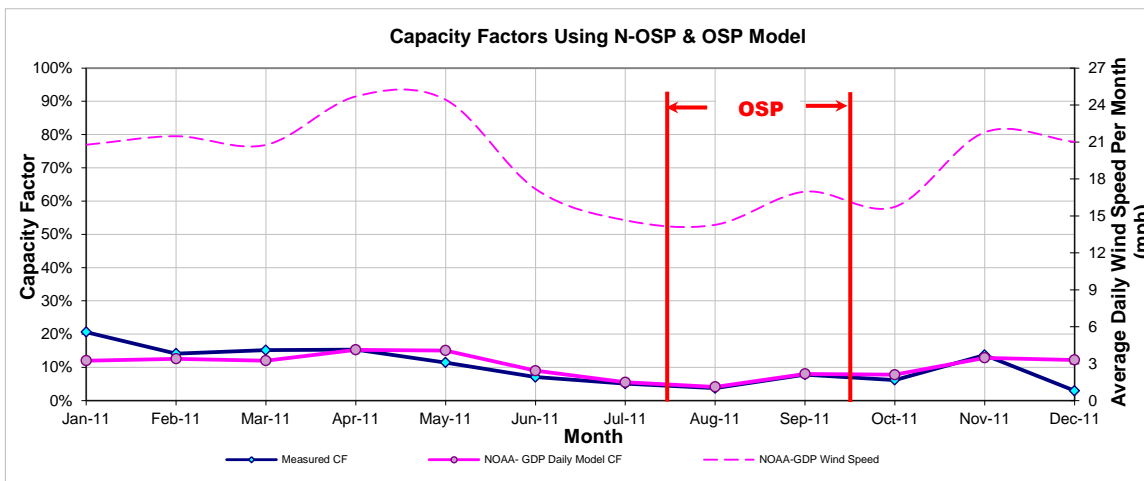


Figure 9-144: KUNITZ_WIND_LGE – Predicted Capacity Factors Using Daily Models (2011)

Table 9-138: KUNITZ_WIND_LGE – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
32,093	32,202	38	45

9.30 Langford Wind Power

Table 9-139: Site Information for Langford Wind Power

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
LGD_LANGFORD	Wind	-	Tom Green	Oct-09	150	Padoma	Langford Wind Power	GE Energy	ERCOT	West	SJT

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
LGD_LANGFORD	LGD_LANGFORD	150

9.30.1 Langford Wind Power – LGD_LANGFORD

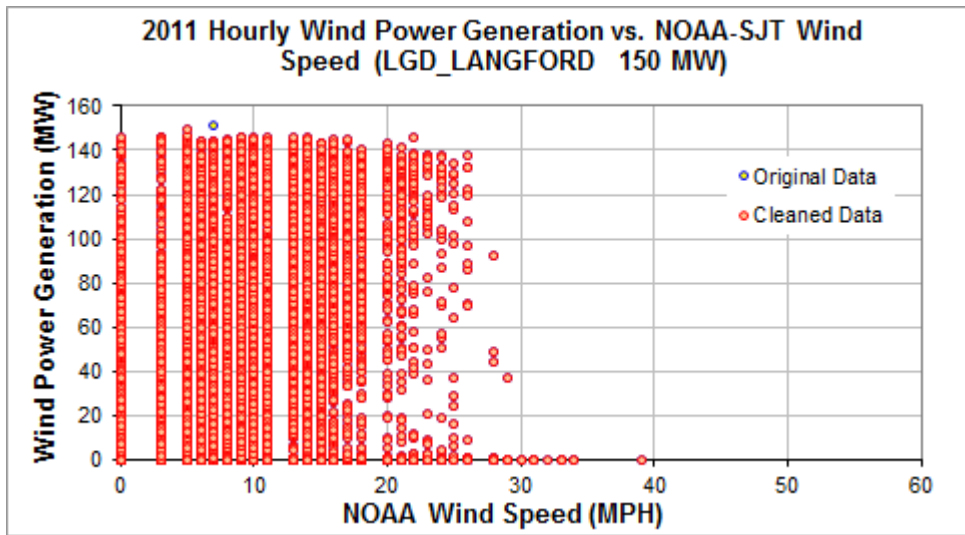


Figure 9-145: LGD_LANGFORD – Hourly Wind Power vs. NOAA Wind Speed (2011)

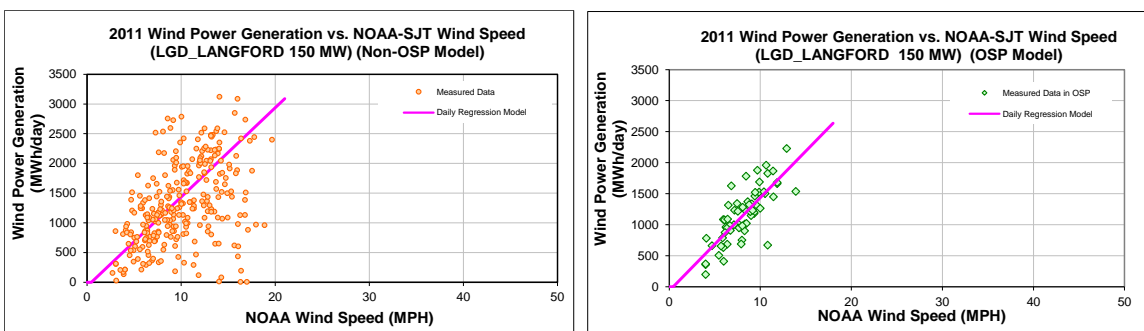


Figure 9-146: LGD_LANGFORD – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-140: LGD_LANGFORD – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-66.8338
Left Slope (MWh/mph-day)	150.2319
RMSE (MWh/day)	267.9036
R2	0.6136
CV-RMSE	23.1%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-66.8338
Left Slope (MWh/mph-day)	150.2319
RMSE (MWh/day)	267.9036
R2	0.6136
CV-RMSE	23.1%

Table 9-141: LGD_LANGFORD – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	7.85	35,851	34,500	3.77%	32%	31%
Feb-11	16	10.66	23,941	24,552	-2.55%	42%	43%
Mar-11	29	10.65	30,166	44,465	-47.40%	29%	43%
Apr-11	29	12.76	31,716	53,653	-69.17%	30%	51%
May-11	31	11.51	43,807	51,536	-17.64%	39%	46%
Jun-11	30	12.23	56,607	53,136	6.13%	52%	49%
Jul-11	31	9.02	39,068	39,949	-2.26%	35%	36%
Aug-11	31	7.93	37,250	34,837	6.48%	33%	31%
Sep-11	30	7.48	28,478	31,704	-11.33%	26%	29%
Oct-11	31	8.71	46,956	38,501	18.01%	42%	34%
Nov-11	30	9.63	38,407	41,382	-7.75%	36%	38%
Dec-11	31	8.52	38,400	37,596	2.09%	34%	34%
Total	350	9.68	450,647	485,810	-7.80%	36%	39%
Total in OSP (07/15-09/15)	63	8.17	73,094	73,086	0.01%	32%	32%

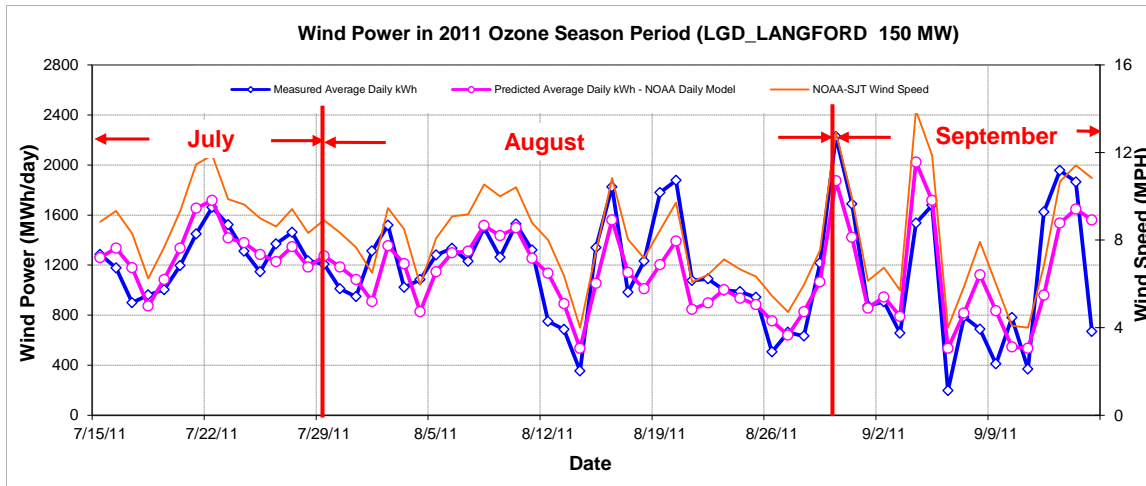


Figure 9-147: LGD_LANGFORD – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

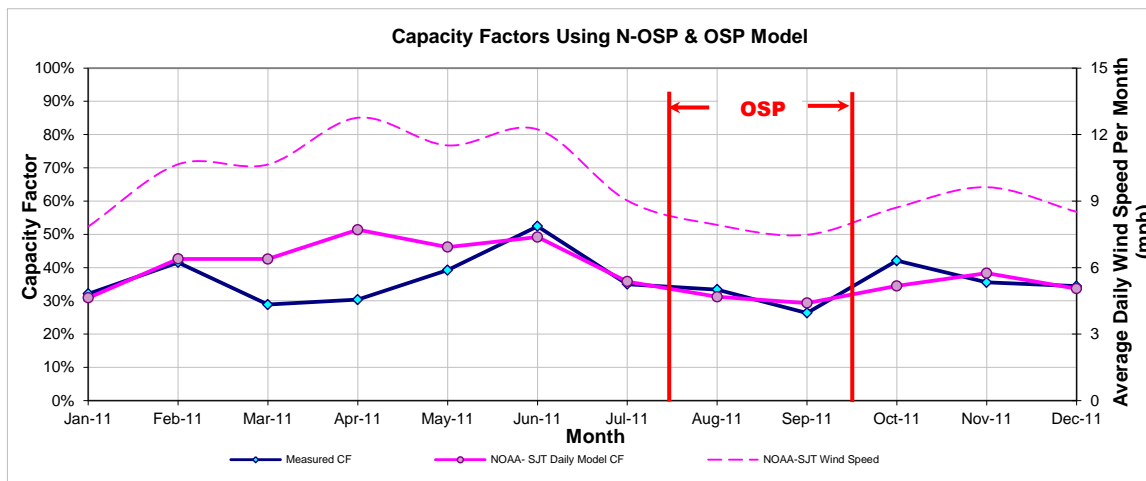


Figure 9-148: LGD_LANGFORD – Predicted Capacity Factors Using Daily Models (2011)

Table 9-142: LGD_LANGFORD – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
483,788	469,960	987	1,160

9.31 Lone Star – Post Oak Wind

Table 9-143: Site Information for Lone Star – Post Oak Wind

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
LNCRK2	Wind	-	Shackelford	Jan-08	200	Horizon Wind Energy	Lone Star-Post Oak Wind	-	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
LNCRK2_G871	LNCRK2	100
LNCRK2_G872	LNCRK2	100

9.31.1 Lone Star – Post Oak Wind (LNCRK2_G871)

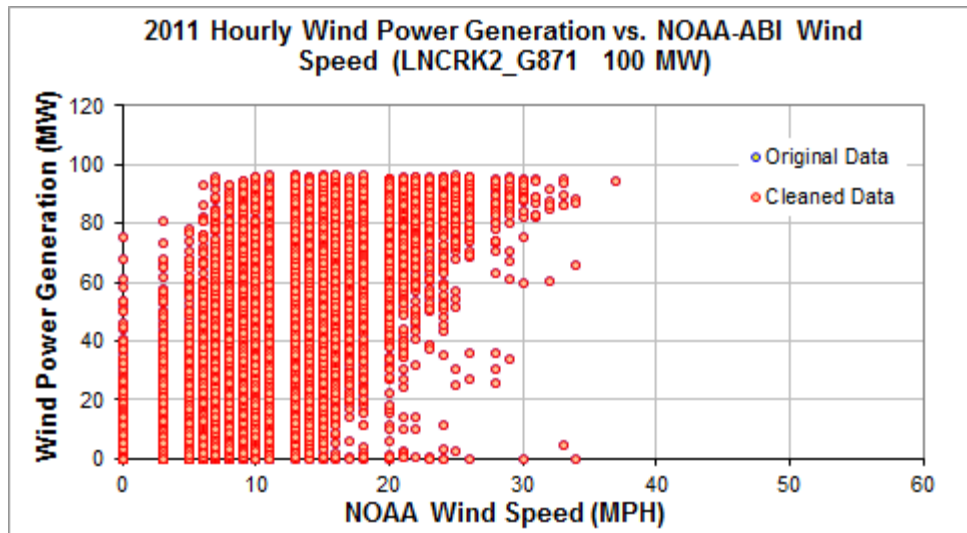


Figure 9-149: LNCRK2_G871– Hourly Wind Power vs. NOAA Wind Speed (2011)

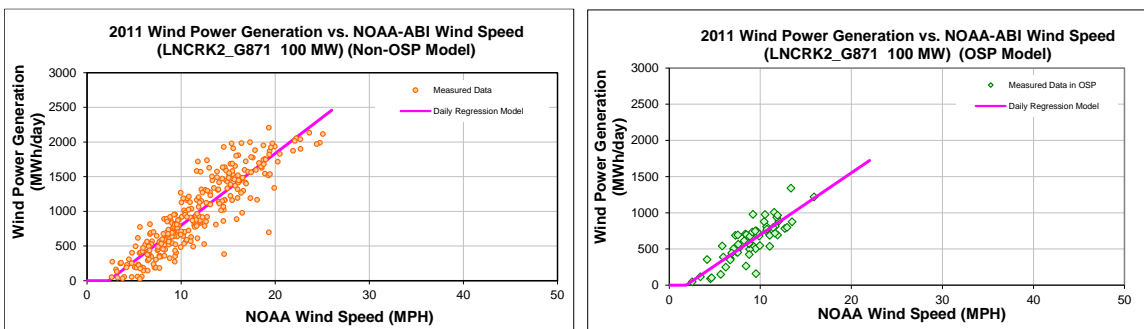


Figure 9-150: LNCRK2_G871– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-144: LNCRK2_G871– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-238.3664
Left Slope (MWh/mph-day)	103.7394
RMSE (MWh/day)	240.0619
R2	0.8053
CV-RMSE	24.9%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-157.5954
Left Slope (MWh/mph-day)	85.5213
RMSE (MWh/day)	147.9253
R2	0.6957
CV-RMSE	24.2%

Table 9-145: LNCRK2_G871– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	21,303	21,593	-1.36%	29%	29%
Feb-11	24	11.46	24,508	22,801	6.96%	43%	40%
Mar-11	31	12.29	30,727	32,150	-4.63%	41%	43%
Apr-11	30	13.87	33,372	36,015	-7.92%	46%	50%
May-11	31	13.86	38,663	37,180	3.84%	52%	50%
Jun-11	30	14.61	37,447	38,333	-2.37%	52%	53%
Jul-11	31	10.03	20,506	23,176	-13.02%	28%	31%
Aug-11	31	9.20	21,504	19,497	9.33%	29%	26%
Sep-11	30	7.68	15,532	15,895	-2.34%	22%	22%
Oct-11	31	10.61	27,445	26,724	2.63%	37%	36%
Nov-11	28	11.82	30,147	27,657	8.26%	45%	41%
Dec-11	31	9.51	23,097	23,205	-0.47%	31%	31%
Total	359	11.14	324,250	324,227	0.01%	38%	38%
Total in OSP (07/15-09/15)	63	9.00	38,547	38,544	0.01%	25%	25%

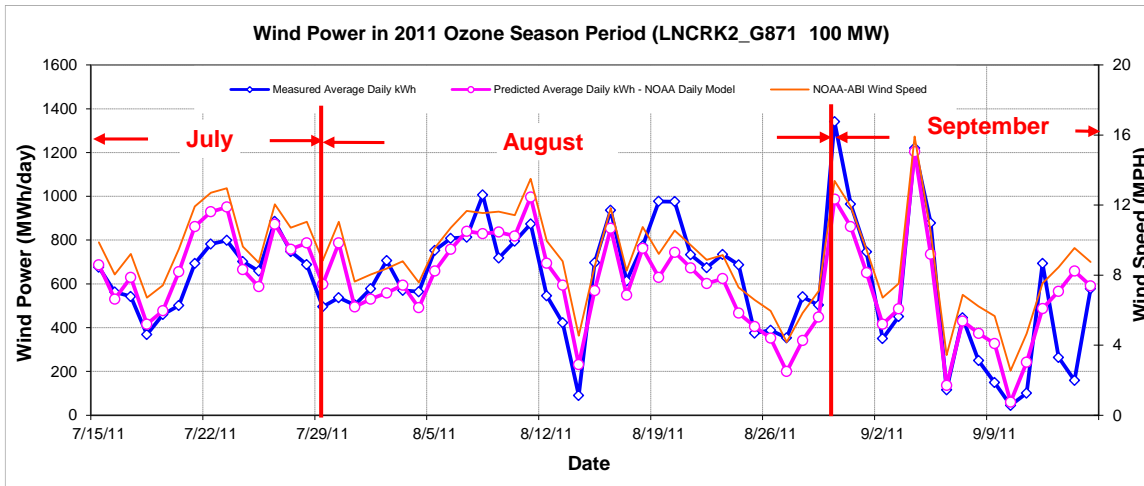


Figure 9-151: LNCRK2_G871– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

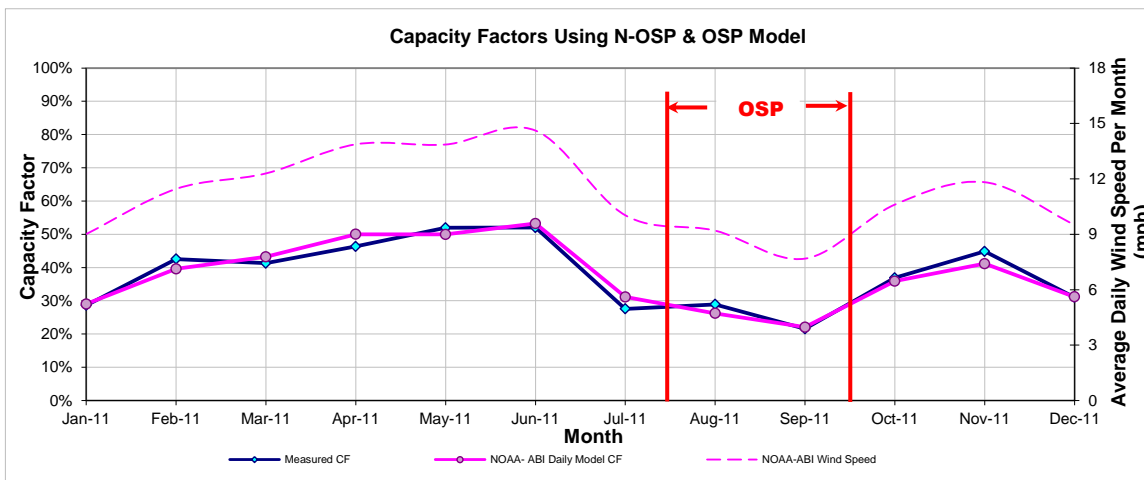


Figure 9-152: LNCRK2_G871– Predicted Capacity Factors Using Daily Models (2011)

Table 9-146: LNCRK2_G871– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
341,554	329,669	590	612

9.31.2 Lone Star – Post Oak Wind (LNCRK2_G872)

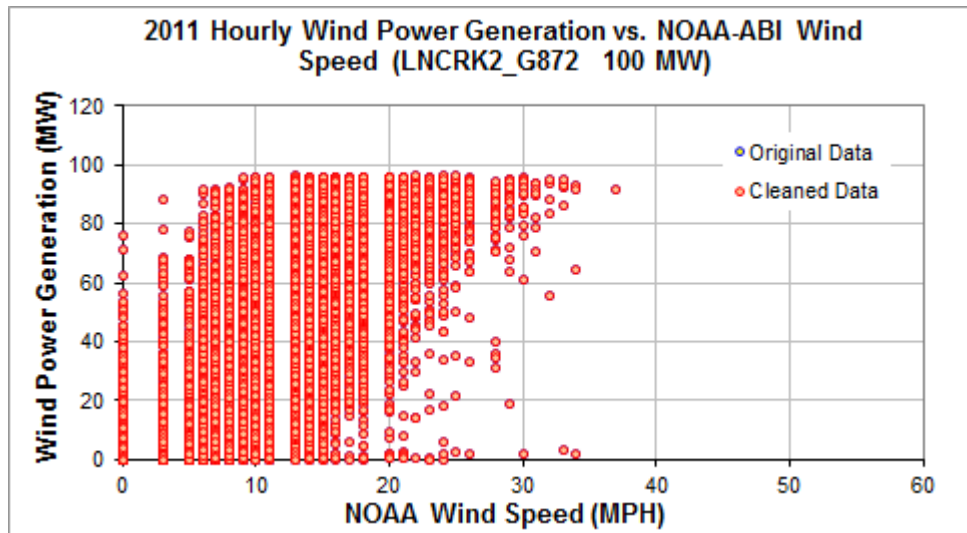


Figure 9-153: LNCRK2_G872– Hourly Wind Power vs. NOAA Wind Speed (2011)

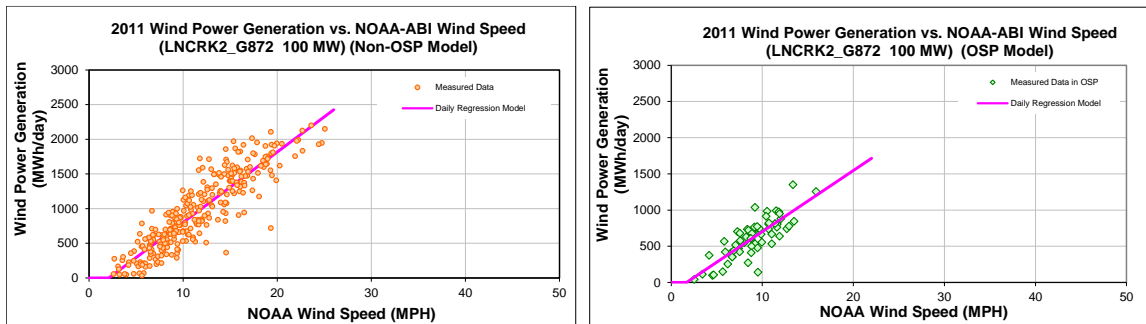


Figure 9-154: LNCRK2_G872– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-147: LNCRK2_G872– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-211.8013
Left Slope (MWh/mph-day)	101.4363
RMSE (MWh/day)	239.5237
R2	0.7989
CV-RMSE	24.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-142.4923
Left Slope (MWh/mph-day)	84.4713
RMSE (MWh/day)	159.0273
R2	0.6587
CV-RMSE	25.8%

Table 9-148: LNCRK2_G872– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	21,861	21,773	0.40%	29%	29%
Feb-11	24	11.46	25,613	22,806	10.96%	44%	40%
Mar-11	31	12.29	32,059	32,096	-0.11%	43%	43%
Apr-11	30	13.87	33,080	35,854	-8.38%	46%	50%
May-11	31	13.86	37,825	37,014	2.15%	51%	50%
Jun-11	30	14.61	35,693	38,120	-6.80%	50%	53%
Jul-11	31	10.03	20,187	23,299	-15.42%	27%	31%
Aug-11	31	9.20	21,972	19,666	10.49%	30%	26%
Sep-11	30	7.68	15,237	16,131	-5.87%	21%	22%
Oct-11	31	10.61	27,814	26,790	3.68%	37%	36%
Nov-11	28	11.82	29,851	27,639	7.41%	44%	41%
Dec-11	31	9.51	23,370	23,349	0.09%	31%	31%
Total	359	11.14	324,560	324,537	0.01%	38%	38%
Total in OSP (07/15-09/15)	63	9.00	38,903	38,900	0.01%	26%	26%

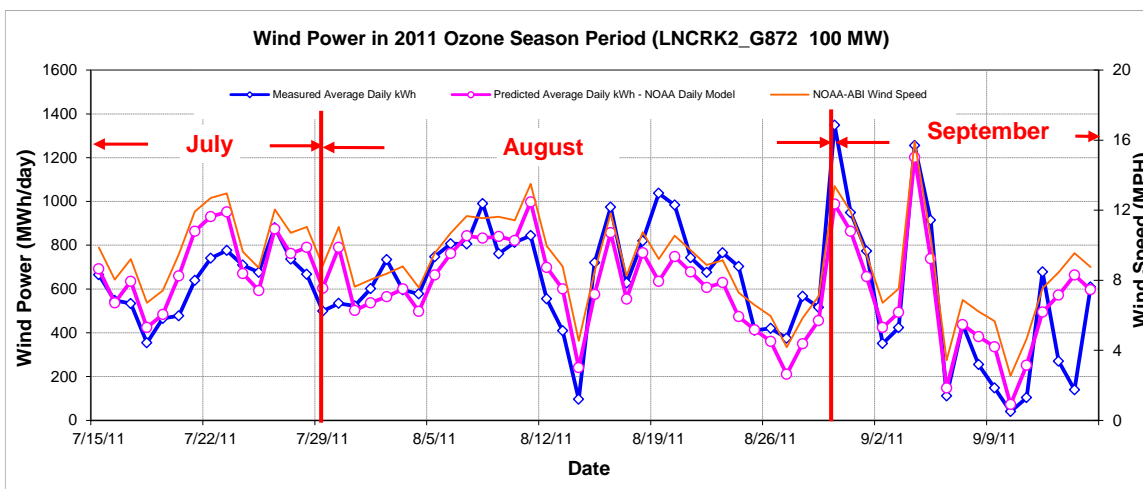


Figure 9-155: LNCRK2_G872– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

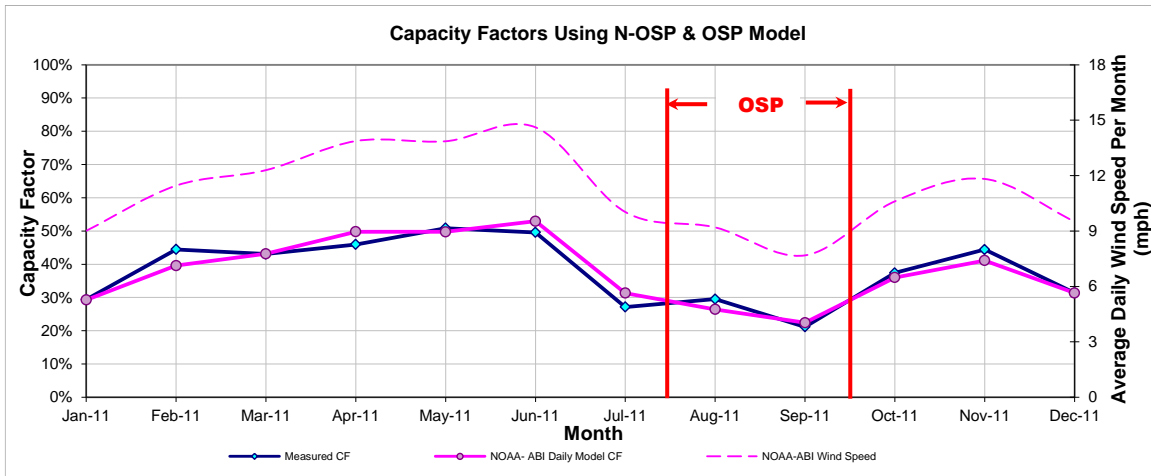


Figure 9-156: LNCRK2_G872– Predicted Capacity Factors Using Daily Models (2011)

Table 9-149: LNCRK2_G872 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
341,615	329,985	595	618

9.32 Lone Star – Mesquite Wind

Table 9-150: Site Information for Lone Star – Mesquite Wind

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
LNCRK_G83	Wind	Abilene	Shackelford	Dec-07	200	Horizon Wind Energy	LONE STAR - MESQUITE WIND	Vestas 1.8 MW (67)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
LNCRK_G83	LNCRK_G83	200

9.32.1 Lone Star – Mesquite Wind - LNCRK_G83

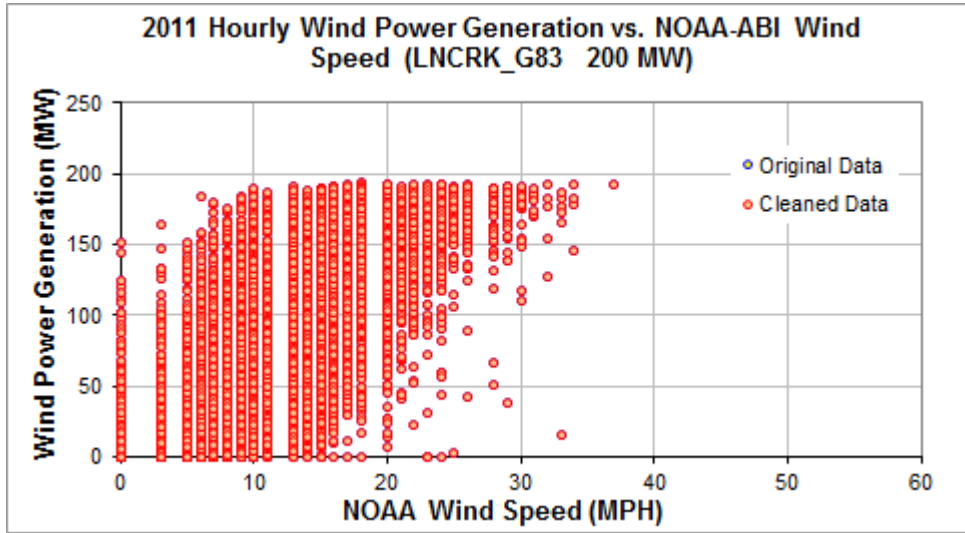


Figure 9-157: LNCRK_G83– Hourly Wind Power vs. NOAA Wind Speed (2011)

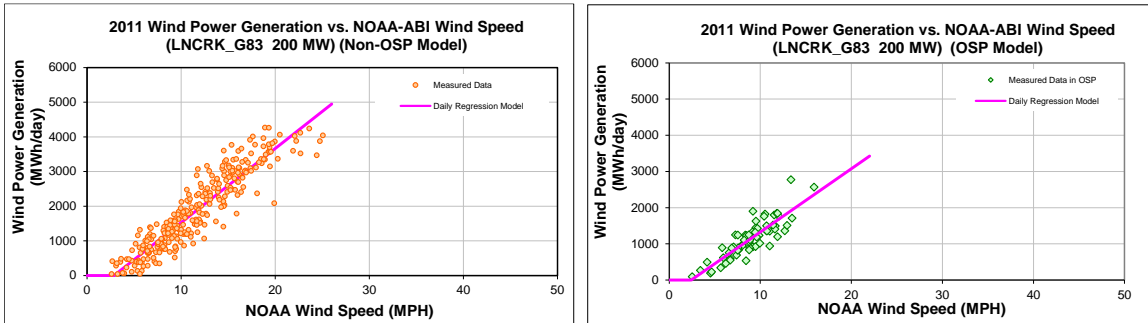


Figure 9-158: LNCRK_G83– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-151: LNCRK_G83– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-609.1774
Left Slope (MWh/mph-day)	213.7375
RMSE (MWh/day)	418.6905
R2	0.8523
CV-RMSE	22.4%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-422.9773
Left Slope (MWh/mph-day)	174.8807
RMSE (MWh/day)	269.5655
R2	0.7422
CV-RMSE	23.4%

Table 9-152: LNCRK_G83– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	39,263	40,877	-4.11%	26%	27%
Feb-11	24	11.46	45,711	44,145	3.42%	40%	38%
Mar-11	31	12.29	63,427	62,580	1.33%	43%	42%
Apr-11	30	13.87	71,969	70,661	1.82%	50%	49%
May-11	31	13.86	73,568	72,942	0.85%	49%	49%
Jun-11	30	14.61	71,830	75,437	-5.02%	50%	52%
Jul-11	31	10.03	37,179	44,205	-18.90%	25%	30%
Aug-11	31	9.20	39,672	36,747	7.37%	27%	25%
Sep-11	30	7.68	31,420	29,353	6.58%	22%	20%
Oct-11	31	10.61	50,944	51,401	-0.90%	34%	35%
Nov-11	28	11.82	58,495	53,710	8.18%	44%	40%
Dec-11	31	9.51	42,698	44,150	-3.40%	29%	30%
Total	359	11.14	626,175	626,208	-0.01%	36%	36%
Total in OSP (07/15-09/15)	63	9.00	72,478	72,473	0.01%	24%	24%

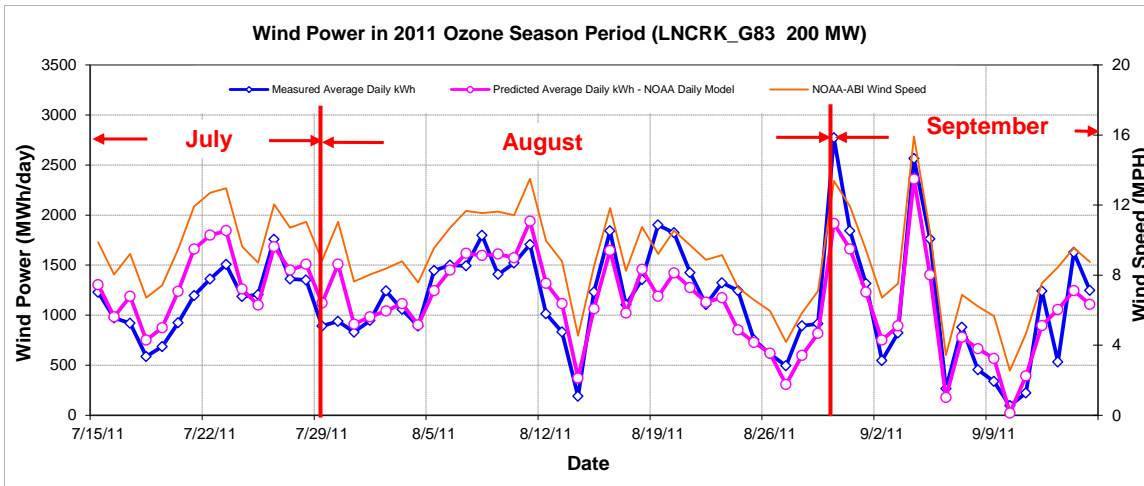


Figure 9-159: LNCRK_G83– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

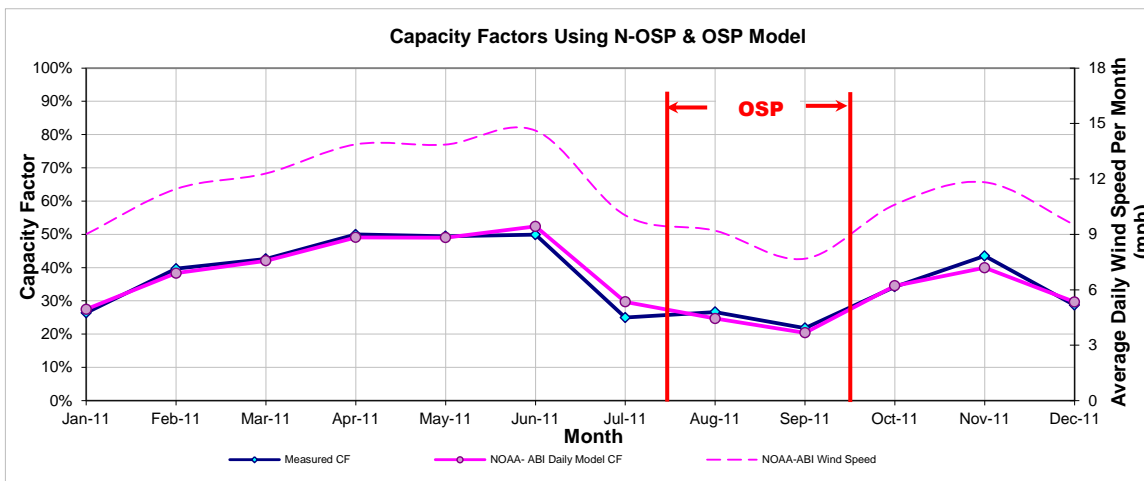


Figure 9-160: LNCRK_G83– Predicted Capacity Factors Using Daily Models (2011)

Table 9-153: LNCRK_G83– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
661,021	636,640	1,105	1,150

9.33 Loraine Windpark

Table 9-154: Site Information for Loraine Windpark

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
LONEWOLF	Wind	-	Michell	Oct-09	250.5	Third Planet Windpower	Loraine Windpark	GE Energy (67)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
LONEWOLF_G1	LONEWOLF_G1	126
LONEWOLF_G2	LONEWOLF_G2	124.5

9.33.1 Loraine Windpark (LONEWOLF_G1)

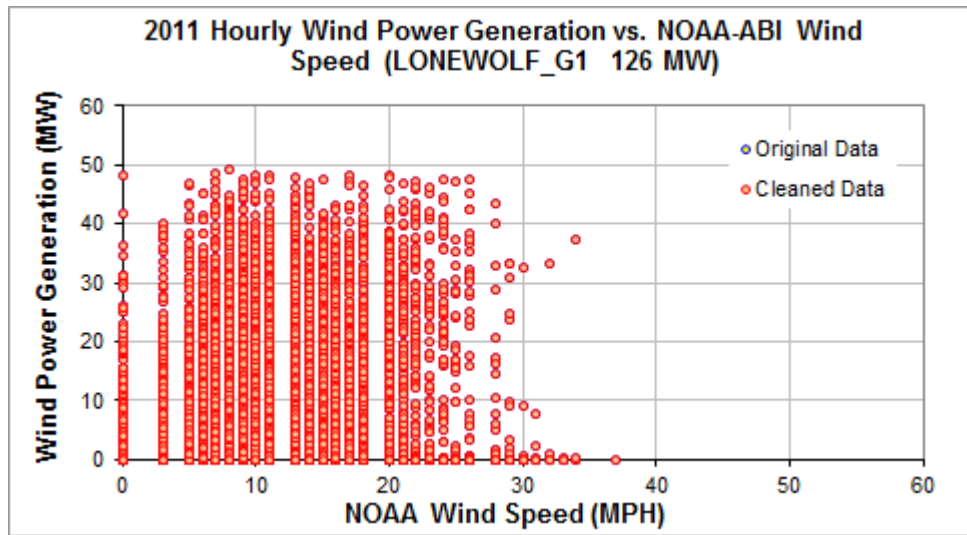


Figure 9-161: LONEWOLF_G1– Hourly Wind Power vs. NOAA Wind Speed (2011)

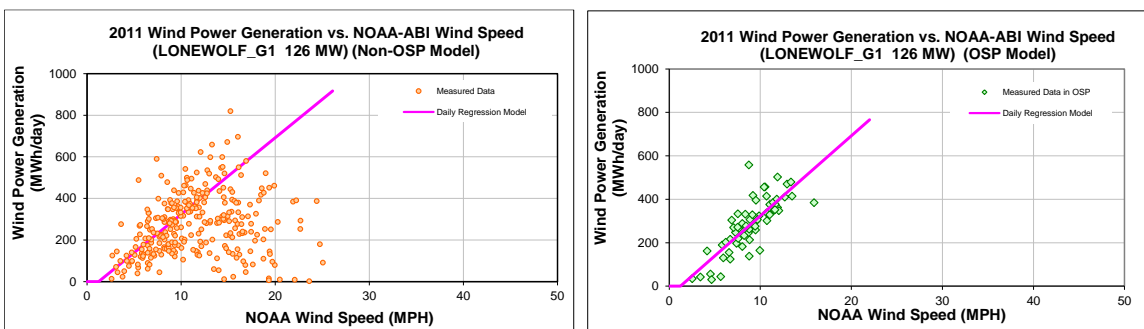


Figure 9-162: LONEWOLF_G1– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-155: LONEWOLF_G1– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-45.4371
Left Slope (MWh/mph-day)	36.8643
RMSE (MWh/day)	72.4728
R2	0.6390
CV-RMSE	25.3%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-45.4371
Left Slope (MWh/mph-day)	36.8643
RMSE (MWh/day)	72.4728
R2	0.6390
CV-RMSE	25.3%

Table 9-156: LONEWOLF_G1– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	6,565	8,891	-35.42%	7%	9%
Feb-11	24	11.46	5,534	9,045	-63.44%	8%	12%
Mar-11	29	11.83	6,333	11,324	-78.81%	7%	13%
Apr-11	30	13.87	6,074	13,976	-130.10%	7%	15%
May-11	31	13.86	9,235	14,429	-56.24%	10%	15%
Jun-11	30	14.61	11,014	14,800	-34.38%	12%	16%
Jul-11	31	10.03	9,367	10,052	-7.31%	10%	11%
Aug-11	31	9.20	9,105	9,102	0.04%	10%	10%
Sep-11	30	7.68	7,646	7,132	6.72%	8%	8%
Oct-11	31	10.61	10,213	10,714	-4.90%	11%	11%
Nov-11	28	11.82	6,398	10,928	-70.80%	8%	13%
Dec-11	30	9.64	10,372	9,301	10.32%	11%	10%
Total	356	11.11	97,856	129,694	-32.54%	9%	12%
Total in OSP (07/15-09/15)	63	9.00	18,033	18,032	0.01%	9%	9%

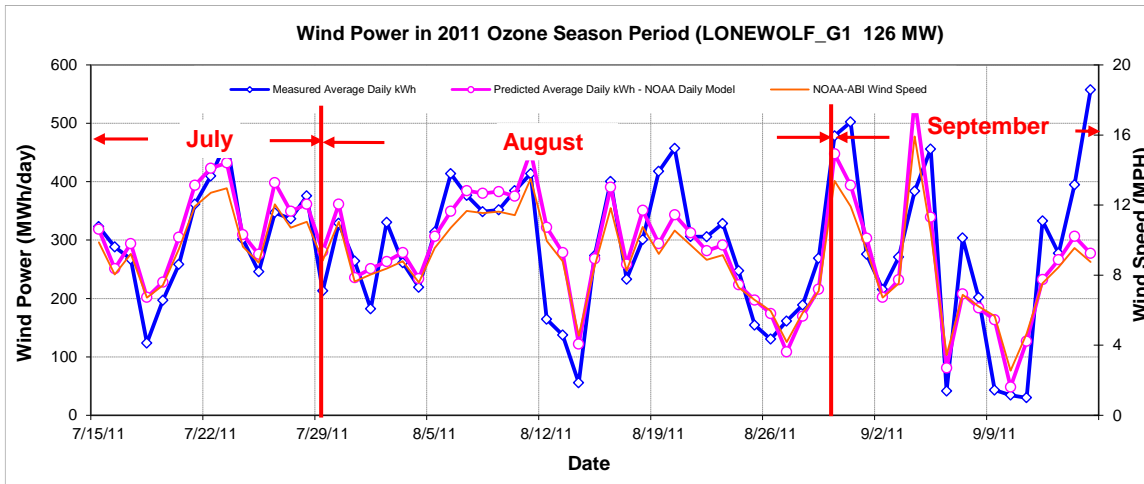


Figure 9-163: LONEWOLF_G1– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

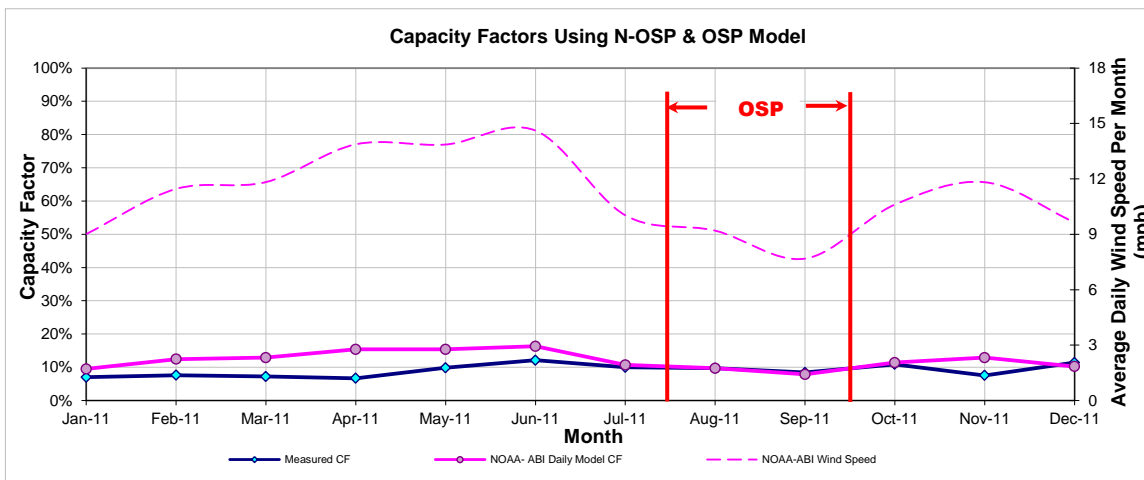


Figure 9-164: LONEWOLF_G1– Predicted Capacity Factors Using Daily Models (2011)

Table 9-157: LONEWOLF_G1– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
137,500	100,330	277	286

9.33.2 Loraine Windpark-(LONEWOLF_G2)

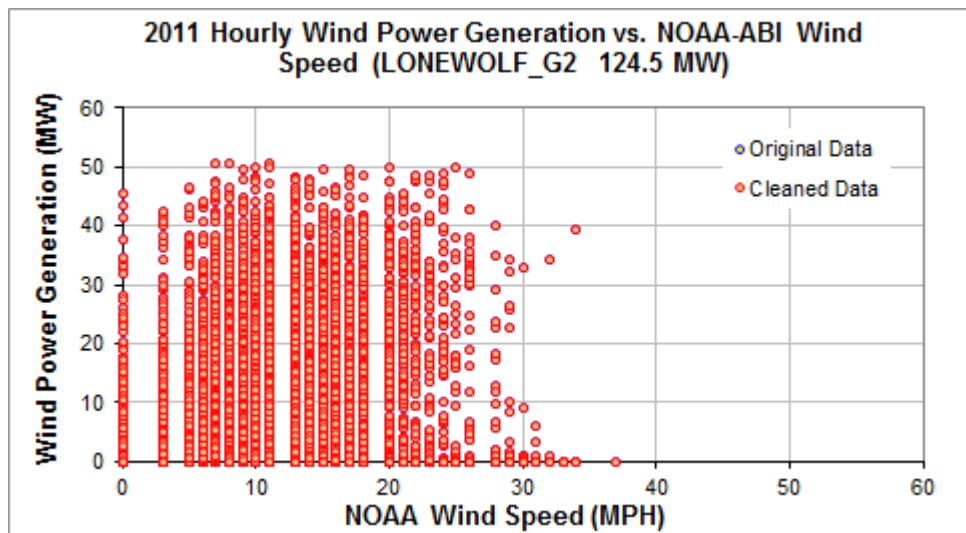


Figure 9-165: LONEWOLF_G2– Hourly Wind Power vs. NOAA Wind Speed (2011)

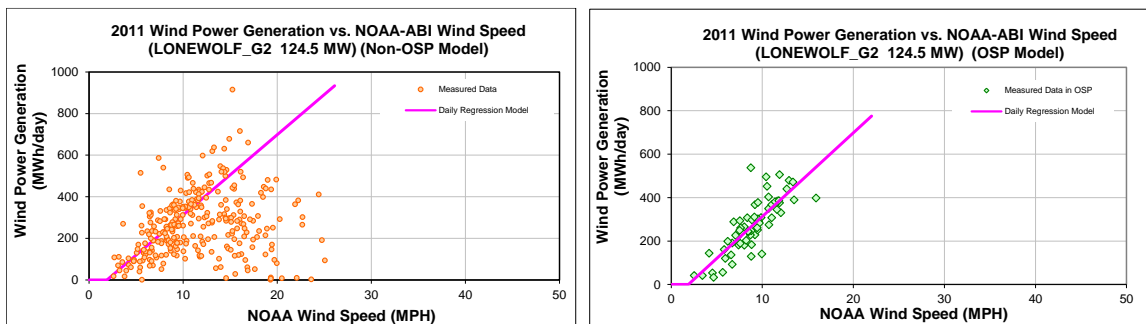


Figure 9-166: LONEWOLF_G2– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-158: LONEWOLF_G2– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-73.0425
Left Slope (MWh/mph-day)	38.5605
RMSE (MWh/day)	71.8697
R2	0.6632
CV-RMSE	26.2%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-73.0425
Left Slope (MWh/mph-day)	38.5605
RMSE (MWh/day)	71.8697
R2	0.6632
CV-RMSE	26.2%

Table 9-159: LONEWOLF_G2– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	6,097	8,509	-39.55%	7%	9%
Feb-11	24	11.46	5,374	8,849	-64.67%	7%	12%
Mar-11	30	12.07	6,105	11,776	-92.90%	7%	13%
Apr-11	30	13.87	6,002	13,854	-130.83%	7%	15%
May-11	31	13.86	9,184	14,302	-55.72%	10%	15%
Jun-11	30	14.61	11,054	14,715	-33.13%	12%	16%
Jul-11	31	10.03	9,178	9,724	-5.94%	10%	10%
Aug-11	31	9.20	8,620	8,729	-1.27%	9%	9%
Sep-11	30	7.68	7,314	6,695	8.47%	8%	7%
Oct-11	31	10.61	9,785	10,416	-6.45%	11%	11%
Nov-11	28	11.82	6,257	10,716	-71.27%	7%	13%
Dec-11	31	9.51	10,380	9,108	12.26%	11%	10%
Total	358	11.12	95,349	127,393	-33.61%	9%	12%
Total in OSP (07/15-09/15)	63	9.00	17,255	17,254	0.01%	9%	9%

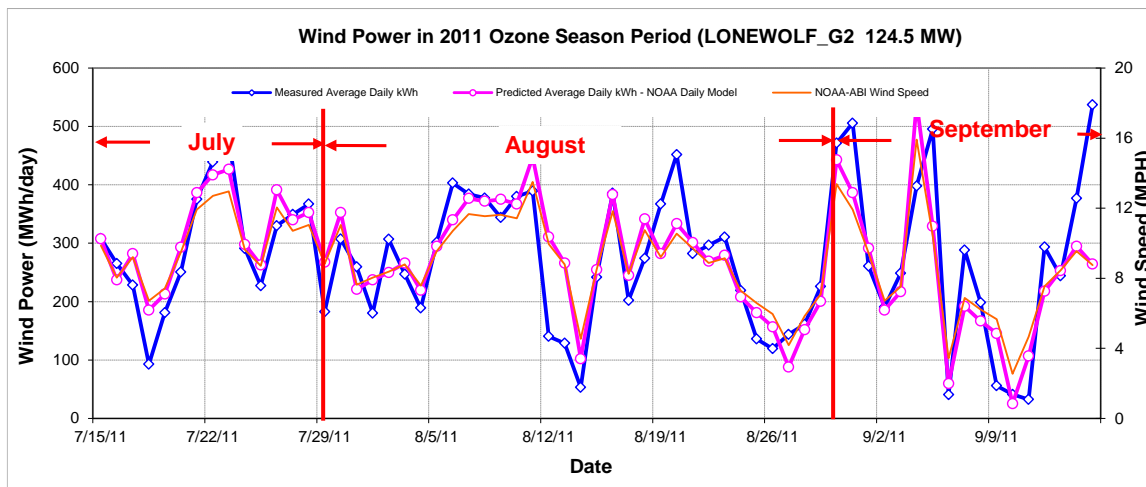


Figure 9-167: LONEWOLF_G2– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

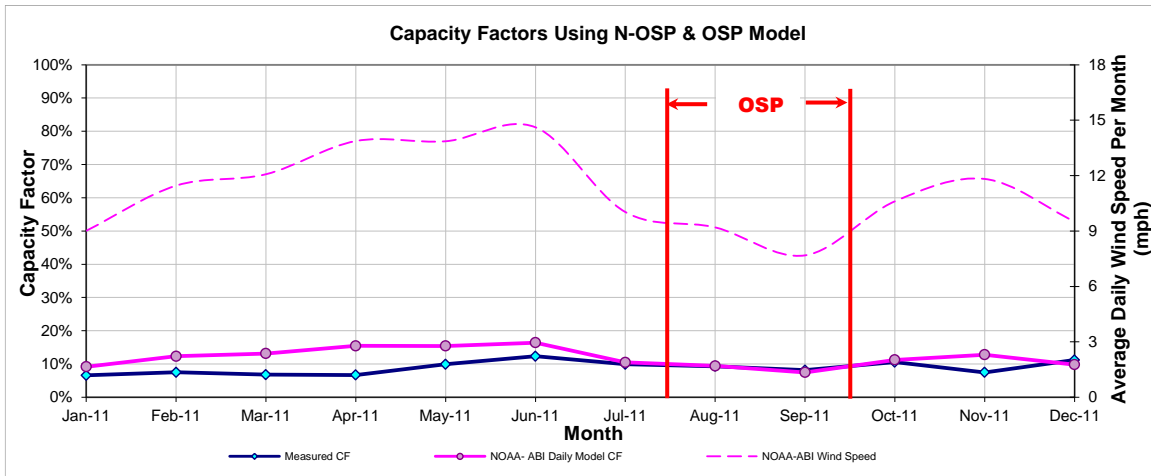


Figure 9-168: LONEWOLF_G2– Predicted Capacity Factors Using Daily Models (2011)

Table 9-160: LONEWOLF_G2– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
134,488	97,214	264	274

9.34 Forest Creek Wind Farm

Table 9-161: Site Information for Forest Creek Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
MDCDL_D_FCW1	Wind	Abilene	Sterling	Dec-06	124.2	Airtricity	Forest Creek Wind Farm	Siemens	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
MDCDL_D_FCW1	MDCDL_D_FCW1	124.2

9.34.1 Forest Creek Wind Farm – MCDLD_FCW1

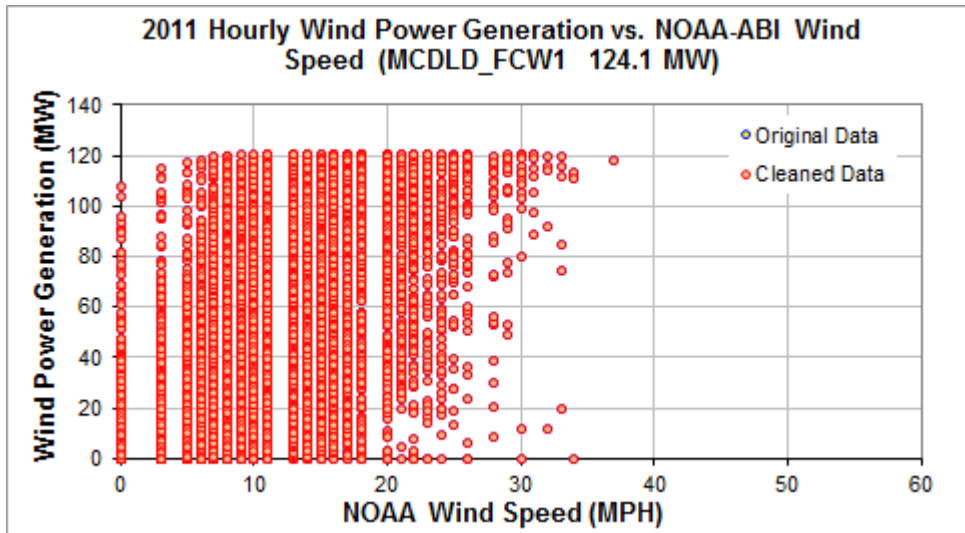


Figure 9-169: MCDLD_FCW1– Hourly Wind Power vs. NOAA Wind Speed (2011)

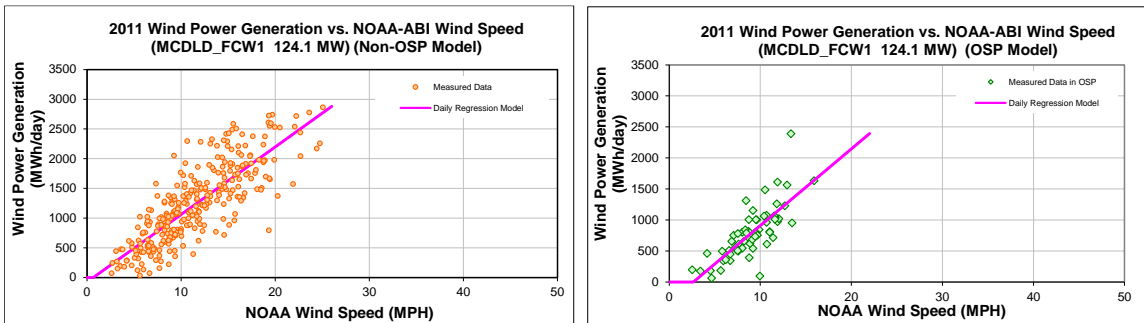


Figure 9-170: MCDLD_FCW1– Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-162: MCDLD_FCW1– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-72.8093
Left Slope (MWh/mph-day)	113.5975
RMSE (MWh/day)	378.6559
R2	0.6659
CV-RMSE	30.4%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-328.4658
Left Slope (MWh/mph-day)	123.6942
RMSE (MWh/day)	265.0029
R2	0.5985
CV-RMSE	33.8%

Table 9-163: MCDLD_FCW1– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	30,074	29,480	1.98%	33%	32%
Feb-11	24	11.46	31,837	29,485	7.39%	45%	41%
Mar-11	31	12.29	42,491	41,040	3.42%	46%	44%
Apr-11	30	13.87	42,414	45,084	-6.29%	47%	50%
May-11	31	13.86	40,667	46,547	-14.46%	44%	50%
Jun-11	30	14.61	47,016	47,622	-1.29%	53%	53%
Jul-11	31	10.03	27,245	30,410	-11.62%	29%	33%
Aug-11	31	9.20	24,889	25,083	-0.78%	27%	27%
Sep-11	30	7.68	21,990	21,321	3.04%	25%	24%
Oct-11	31	10.61	36,851	35,098	4.76%	40%	38%
Nov-11	28	11.82	39,824	35,555	10.72%	48%	43%
Dec-11	31	9.51	32,685	31,245	4.41%	35%	34%
Total	359	11.14	417,982	417,969	0.00%	39%	39%
Total in OSP (07/15-09/15)	63	9.00	49,419	49,429	-0.02%	26%	26%

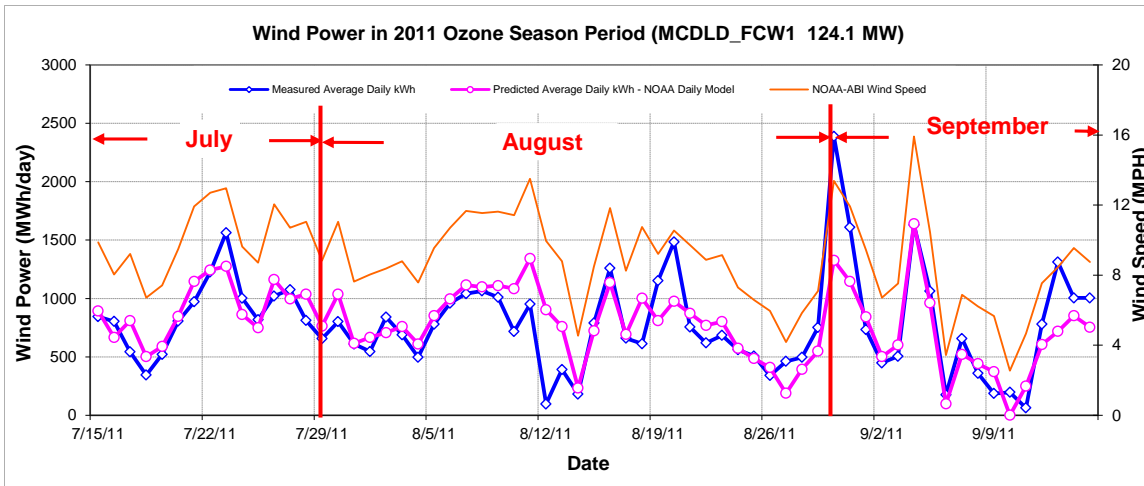


Figure 9-171: MCDLD_FCW1– Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

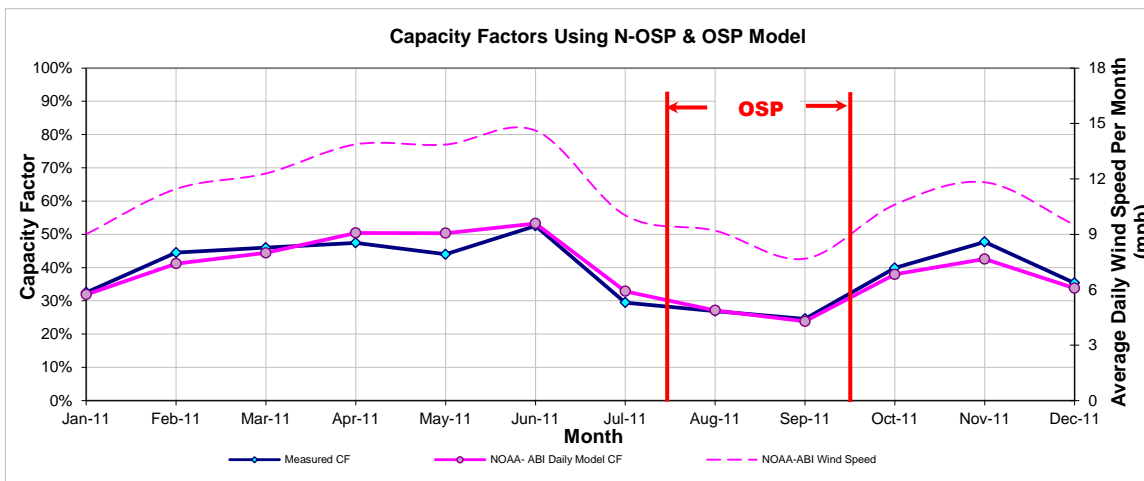


Figure 9-172: MCDLD_FCW1– Predicted Capacity Factors Using Daily Models (2011)

Table 9-164: MCDLD_FCW1– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
437,754	424,968	752	784

9.35 Sand Bluff Wind Farm

Table 9-165: Site Information for Sand Bluff Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
MDCDL_SBW1	Wind	Abilene	Sterling	Dec-06	90	Airtricity	Sand Bluff Wind Farm	Siemens	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
MDCDL_SBW1	MDCDL_SBW1	90

9.35.1 Sand Bluff Wind Farm – MDCDL_SBW1

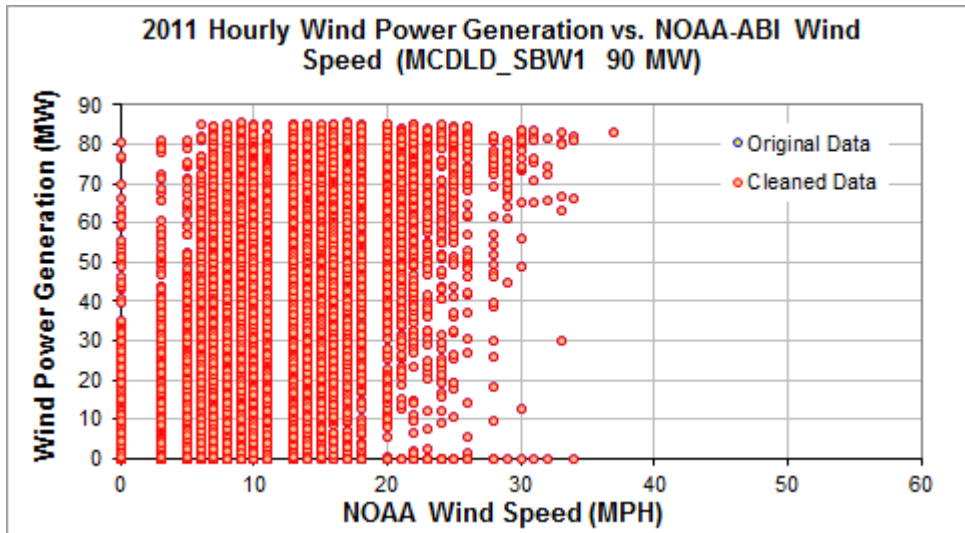


Figure 9-173: MCDLD_SBW1– Hourly Wind Power vs. NOAA Wind Speed (2011)

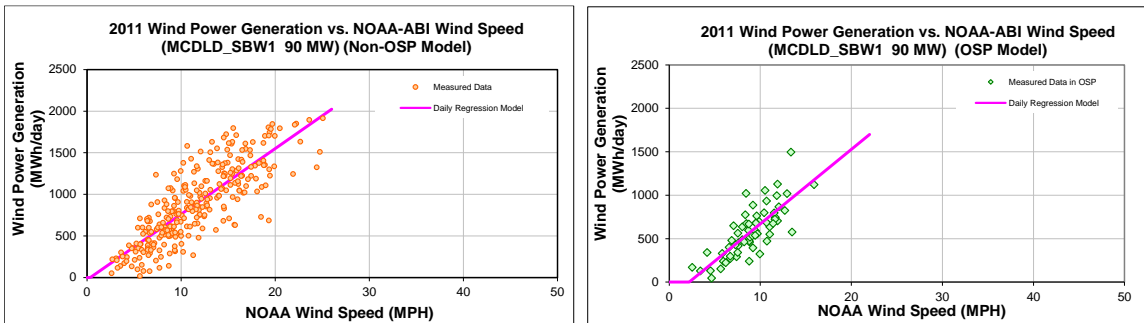


Figure 9-174: MCDLD_SBW1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-166: MCDLD_SBW1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-25.6473
Left Slope (MWh/mph-day)	78.8254
RMSE (MWh/day)	259.8720
R2	0.6652
CV-RMSE	29.4%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-188.7726
Left Slope (MWh/mph-day)	85.7896
RMSE (MWh/day)	177.7942
R2	0.6143
CV-RMSE	30.5%

Table 9-167: MCDLD_SBW1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	21,807	21,227	2.66%	33%	32%
Feb-11	24	11.46	22,964	21,057	8.30%	44%	41%
Mar-11	31	12.29	30,392	29,249	3.76%	45%	44%
Apr-11	30	13.87	31,640	32,030	-1.23%	49%	49%
May-11	31	13.86	29,055	33,070	-13.82%	43%	49%
Jun-11	26	14.42	28,985	28,878	0.37%	52%	51%
Jul-11	31	10.03	20,407	22,108	-8.34%	30%	33%
Aug-11	31	9.20	18,856	18,607	1.32%	28%	28%
Sep-11	30	7.68	15,394	15,740	-2.25%	24%	24%
Oct-11	31	10.61	24,998	25,126	-0.51%	37%	38%
Nov-11	28	11.82	27,311	25,368	7.11%	45%	42%
Dec-11	31	9.51	23,122	22,452	2.90%	35%	34%
Total	355	11.09	294,930	294,913	0.01%	38%	38%
Total in OSP (07/15-09/15)	63	9.00	36,735	36,732	0.01%	27%	27%

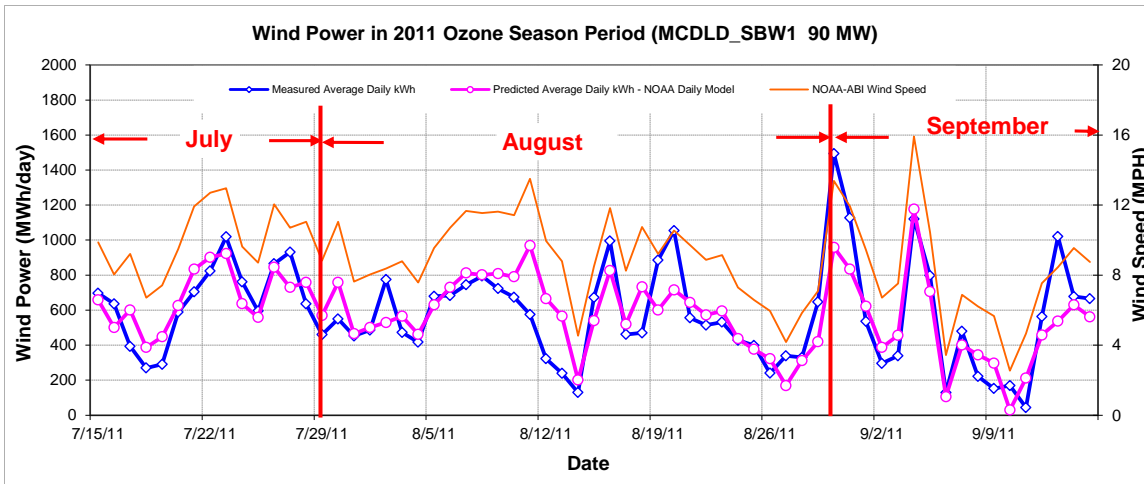


Figure 9-175: MCDLD_SBW1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

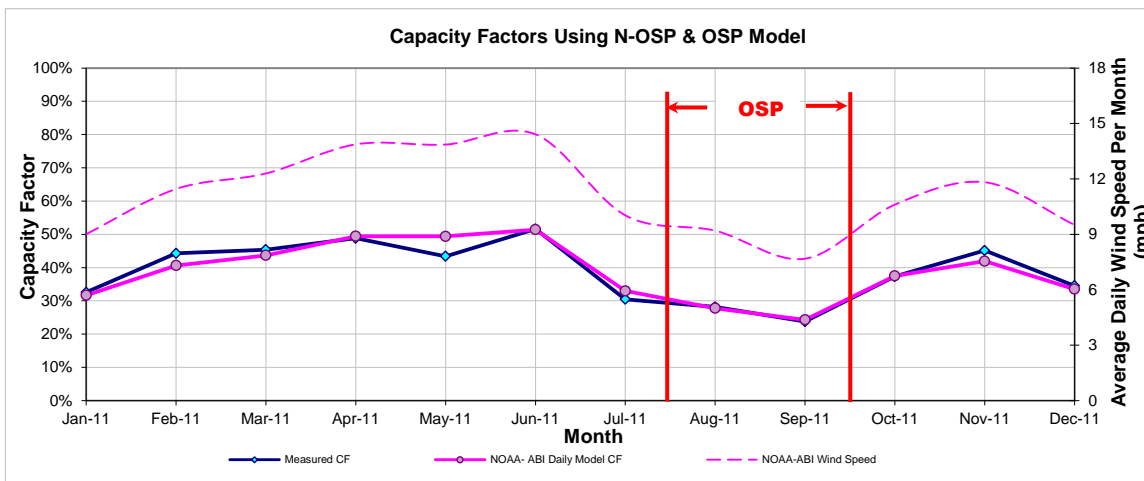


Figure 9-176: MCDLD_SBW1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-168: MCDLD_SBW1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
313,738	303,238	561	583

9.36 McAdoo Wind Energy

Table 9-169: Site Information for McAdoo Wind Energy

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
MWEC_G1	Wind	-	Dickens	May-08	150	McAdoo Wind Energy	McAdoo Wind Energy	GE Energy (100)	ERCOT	West	LBB

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
MWEC_G1	MWEC_G1	150

9.36.1 McAdoo Wind Energy – MWEC_G1

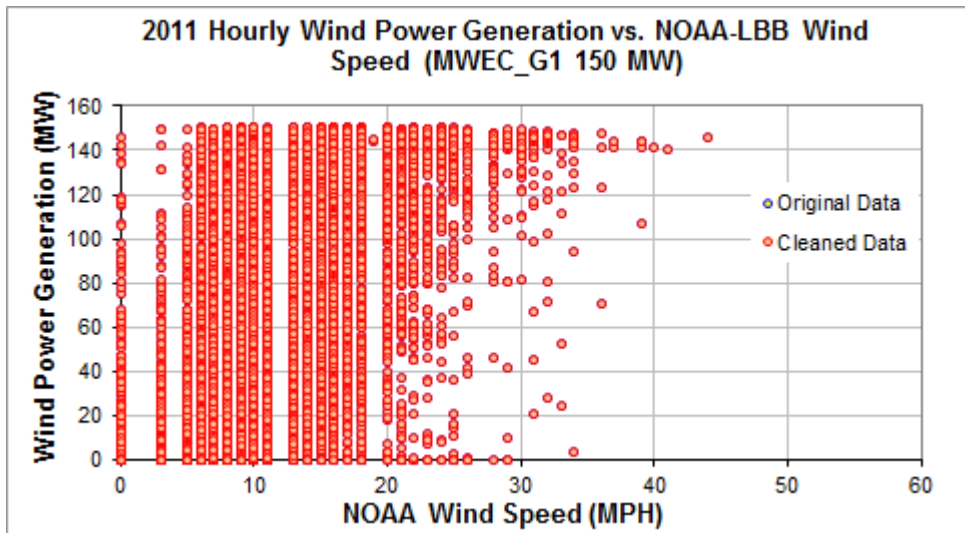


Figure 9-177: MWEC_G1- Hourly Wind Power vs. NOAA Wind Speed (2011)

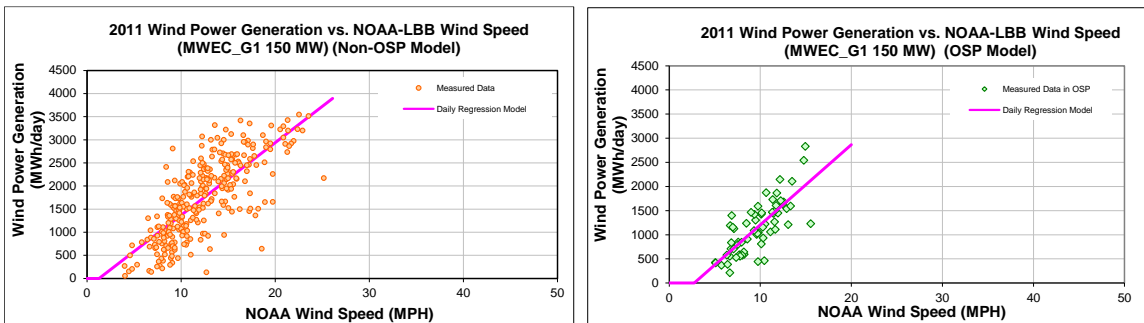


Figure 9-178: MWEC_G1- Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-170: MWEC_G1– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-199.1677
Left Slope (MWh/mph-day)	156.9660
RMSE (MWh/day)	541.9748
R2	0.5757
CV-RMSE	31.2%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-458.3600
Left Slope (MWh/mph-day)	166.2239
RMSE (MWh/day)	349.4486
R2	0.5932
CV-RMSE	30.4%

Table 9-171: MWEC_G1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.10	43,440	42,963	1.10%	39%	38%
Feb-11	28	12.51	51,600	49,407	4.25%	51%	49%
Mar-11	31	12.11	53,869	52,773	2.03%	48%	47%
Apr-11	30	14.92	55,461	64,293	-15.93%	51%	60%
May-11	31	14.34	62,320	63,604	-2.06%	56%	57%
Jun-11	30	15.64	65,665	67,694	-3.09%	61%	63%
Jul-11	31	10.57	36,517	42,471	-16.30%	33%	38%
Aug-11	31	9.76	36,502	36,080	1.16%	33%	32%
Sep-11	30	8.99	34,675	33,678	2.88%	32%	31%
Oct-11	31	11.18	50,789	48,219	5.06%	46%	43%
Nov-11	30	11.91	57,388	50,101	12.70%	53%	46%
Dec-11	31	10.72	49,107	46,010	6.31%	44%	41%
Total	365	11.88	597,332	597,294	0.01%	45%	45%
Total in OSP (07/15-09/15)	63	9.68	72,498	72,492	0.01%	32%	32%

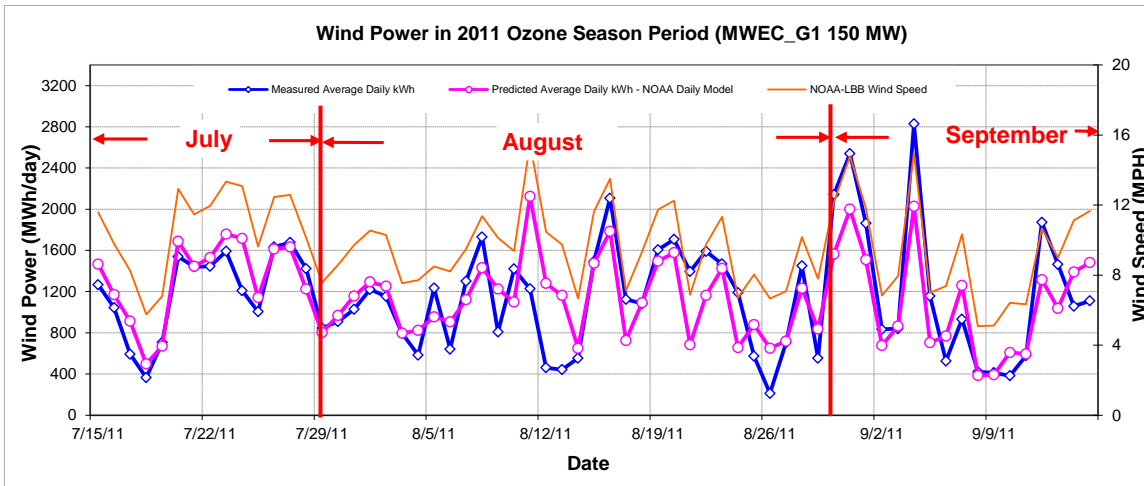


Figure 9-179: MWEC_G1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

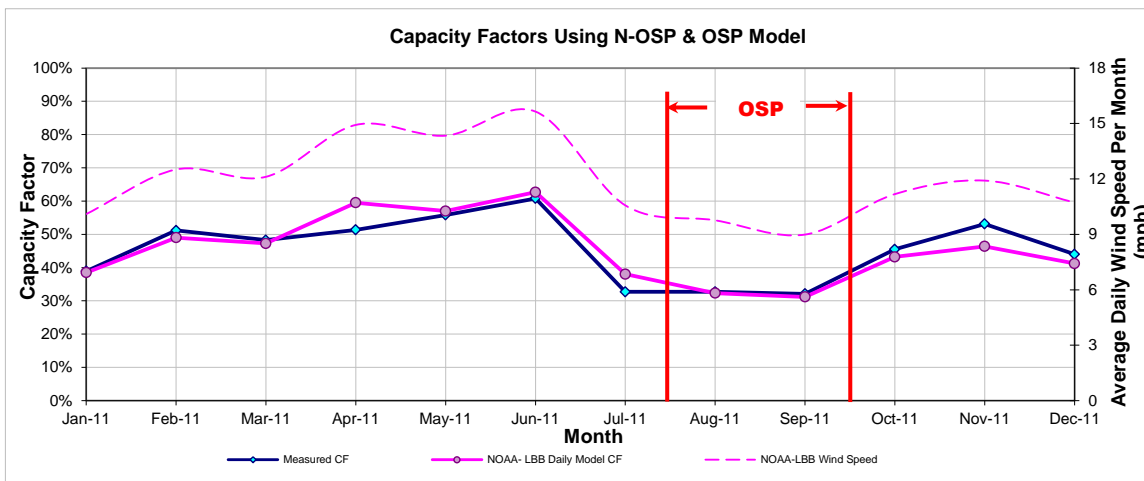


Figure 9-180: MWEC_G1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-172: MWEC_G1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
598,154	597,332	1,043	1,151

9.37 Notrees Windpower

Table 9-173: Site Information for Notrees Windpower

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
NWF_NWF1	Wind	-	Ector	Jan-09	153	Duke Energy	Notrees Windpower	Vestas (55) and GE Energy (40)	ERCOT	West	MAF

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
NWF_NWF1	NWF_NWF1	153

9.37.1 Notrees Windpower – NWF_NWF1

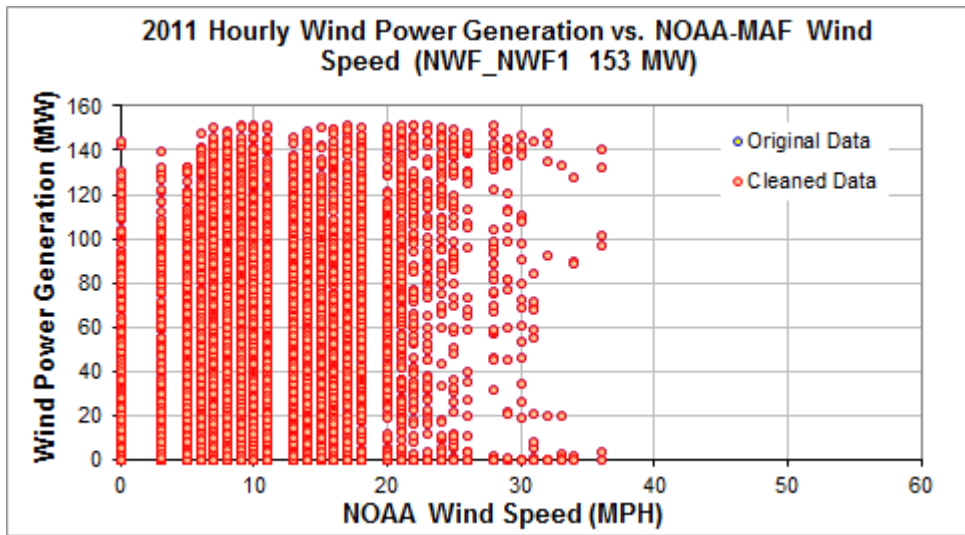


Figure 9-181: NWF_NWF1 - Hourly Wind Power vs. NOAA Wind Speed (2011)

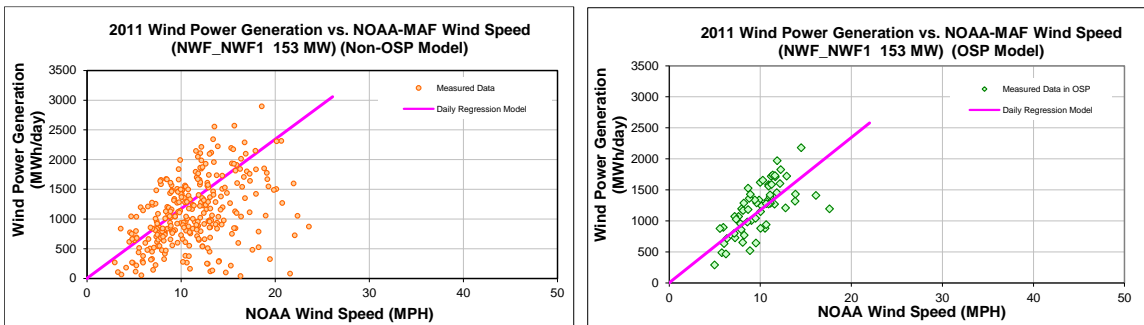


Figure 9-182: NWF_NWF1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-174: NWF_NWF1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	3.9389
Left Slope (MWh/mph-day)	117.0337
RMSE (MWh/day)	313.0952
R2	0.5176
CV-RMSE	26.0%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	3.9389
Left Slope (MWh/mph-day)	117.0337
RMSE (MWh/day)	313.0952
R2	0.5176
CV-RMSE	26.0%

Table 9-175: NWF_NWF1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	33,189	31,307	5.67%	29%	28%
Feb-11	28	10.80	31,086	35,503	-14.21%	30%	35%
Mar-11	31	11.31	39,048	41,145	-5.37%	34%	36%
Apr-11	30	13.78	36,673	48,488	-32.22%	33%	44%
May-11	31	13.09	36,332	47,599	-31.01%	32%	42%
Jun-11	30	14.09	40,080	49,574	-23.69%	36%	45%
Jul-11	31	10.61	41,885	38,619	7.80%	37%	34%
Aug-11	31	9.61	36,631	34,974	4.52%	32%	31%
Sep-11	30	8.84	29,154	31,166	-6.90%	26%	28%
Oct-11	31	10.43	32,114	37,980	-18.27%	28%	33%
Nov-11	30	10.82	21,866	38,096	-74.23%	20%	35%
Dec-11	31	10.31	28,454	37,534	-31.91%	25%	33%
Total	365	11.02	406,510	471,984	-16.11%	30%	35%
Total in OSP (07/15-09/15)	63	9.86	76,132	72,955	4.17%	33%	32%

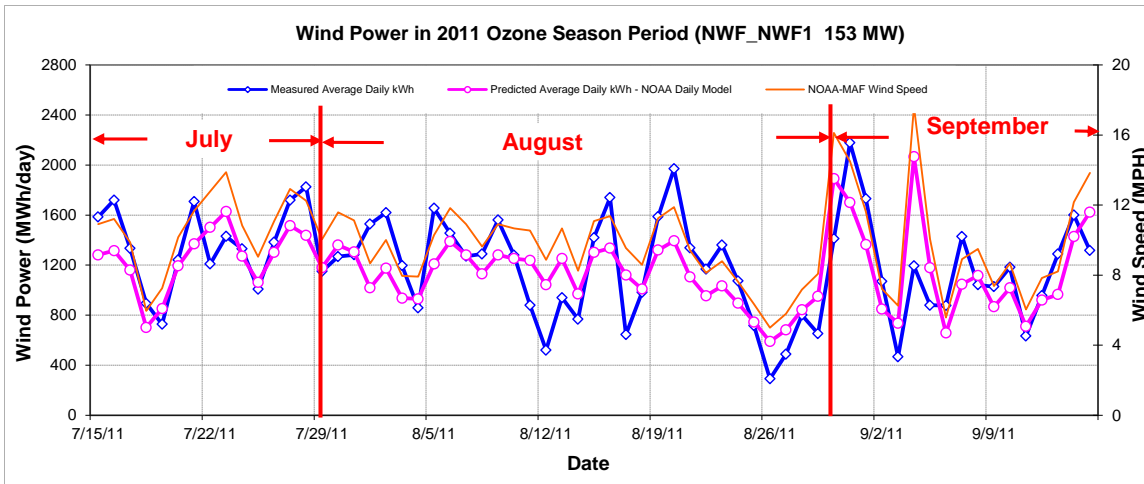


Figure 9-183: NWF_NWF1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

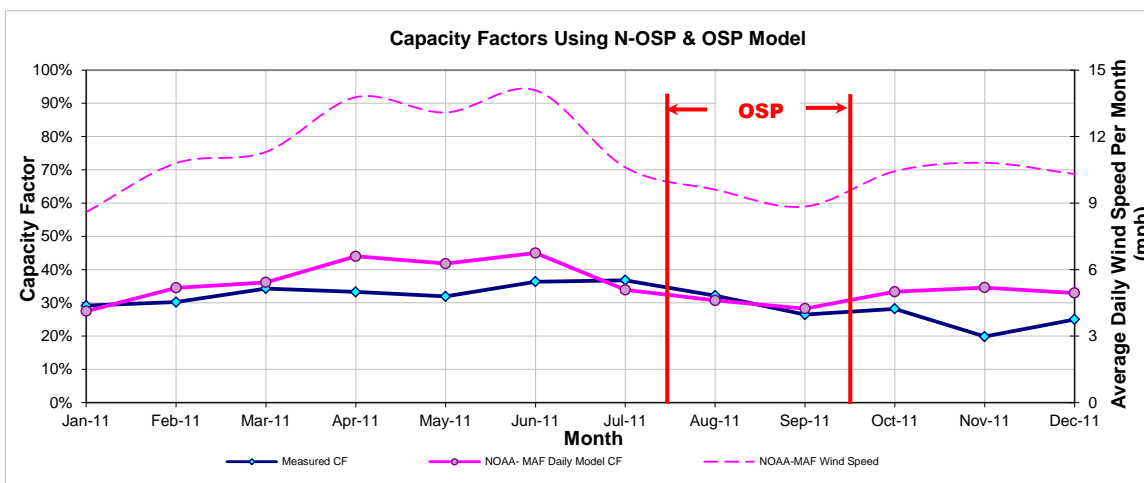


Figure 9-184: NWF_NWF1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-176: NWF_NWF1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
446,392	406,510	1,019	1,208

9.38 Ocotillo Windpower 1

Table 9-177: Site Information for Ocotillo Windpower 1

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
OWF_OWF	Wind	-	Howard	Aug-08	58.8	Duke Energy	Ocotillo Windpower 1	Suzlon (28)	ERCOT	West	MAF

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
OWF_OWF	OWF_OWF	58.8

9.38.1 Ocotillo Windpower 1 – OWF_OWF

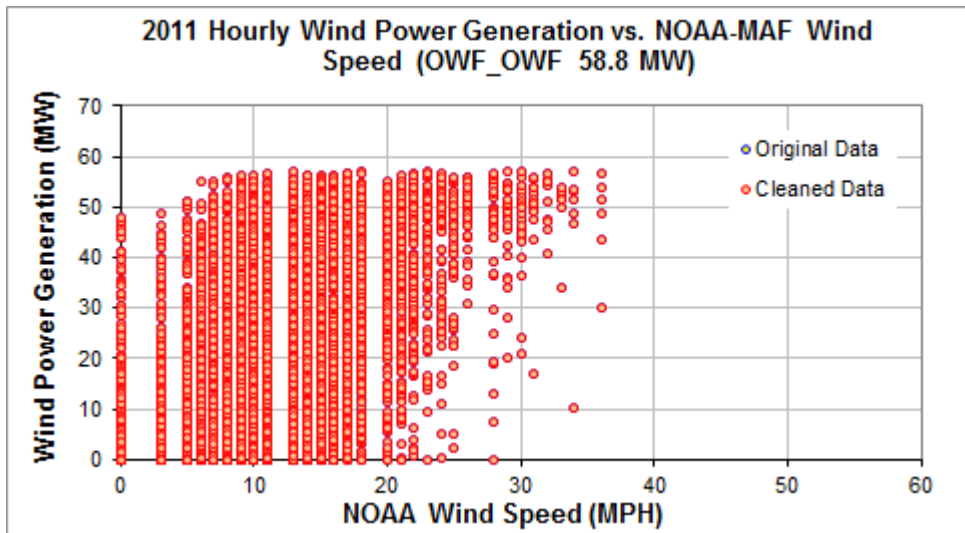


Figure 9-185: OWF_OWF - Hourly Wind Power vs. NOAA Wind Speed (2011)

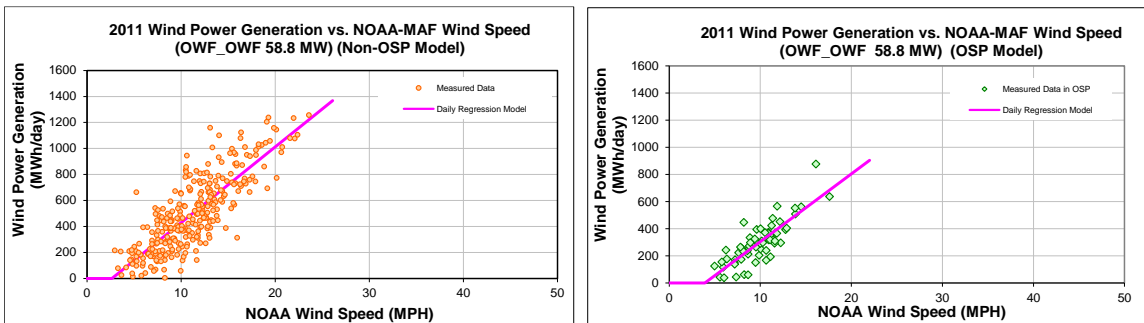


Figure 9-186: OWF_OWF - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-178: OWF_OWF – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-152.7764
Left Slope (MWh/mph-day)	58.2826
RMSE (MWh/day)	164.2480
R2	0.6681
CV-RMSE	32.6%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-195.7796
Left Slope (MWh/mph-day)	50.0142
RMSE (MWh/day)	87.4130
R2	0.6790
CV-RMSE	29.4%

Table 9-179: OWF_OWF – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	12,375	10,794	12.77%	28%	25%
Feb-11	28	10.80	14,269	13,348	6.46%	36%	34%
Mar-11	31	11.31	17,673	15,693	11.20%	40%	36%
Apr-11	30	13.78	18,576	19,505	-5.00%	44%	46%
May-11	31	13.09	17,054	18,907	-10.86%	39%	43%
Jun-11	30	14.09	19,759	20,046	-1.45%	47%	47%
Jul-11	31	10.61	9,794	12,194	-24.51%	22%	28%
Aug-11	31	9.61	9,518	8,825	7.28%	22%	20%
Sep-11	30	8.84	8,878	9,069	-2.14%	21%	21%
Oct-11	30	10.39	13,684	13,579	0.77%	32%	32%
Nov-11	30	10.82	15,873	14,329	9.72%	37%	34%
Dec-11	30	10.48	12,598	13,747	-9.11%	30%	32%
Total	363	11.03	170,051	170,035	0.01%	33%	33%
Total in OSP (07/15-09/15)	63	9.86	18,741	18,737	0.02%	21%	21%

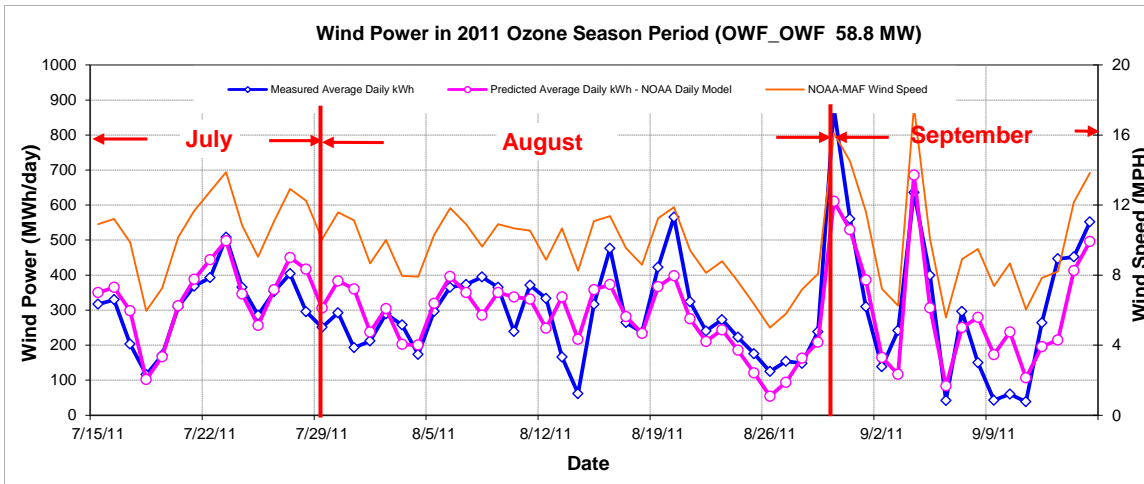


Figure 9-187: OWF_OWF - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

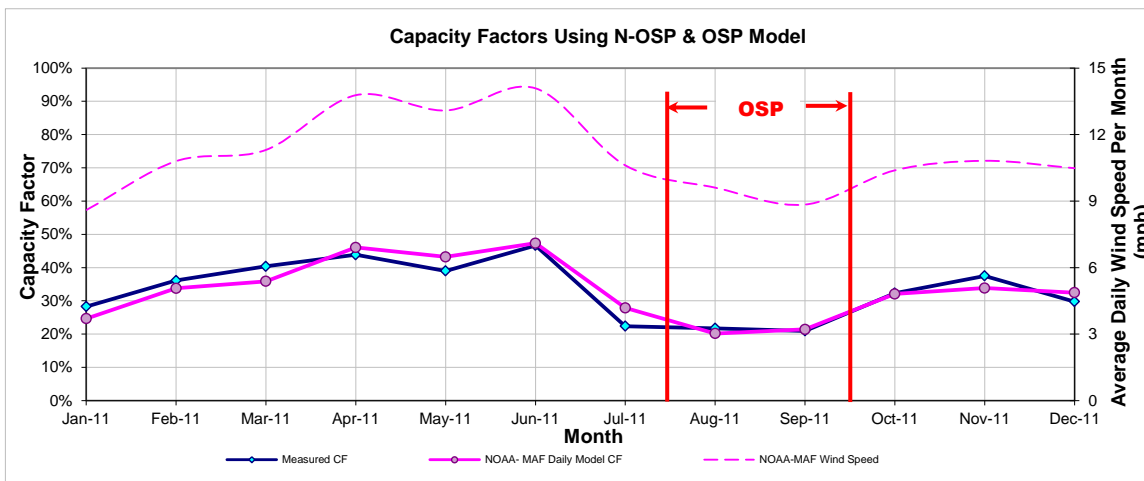


Figure 9-188: OWF_OWF – Predicted Capacity Factors Using Daily Models (2011)

Table 9-180: OWF_OWF – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
158,530	170,988	238	297

9.39 Papalote Creek Wind Farm

Table 9-181: Site Information for Papalote Creek Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
PAP1_PAP1	Wind	-	San Patricio	Sep-09	180	EOn Climate & Renewables	Papalote Creek Wind Farm	Vestas (109)	ERCOT	South	CRP

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
PAP1_PAP1	PAP1_PAP1	180

9.39.1 Papalote Creek Wind Farm – PAP1_PAP1

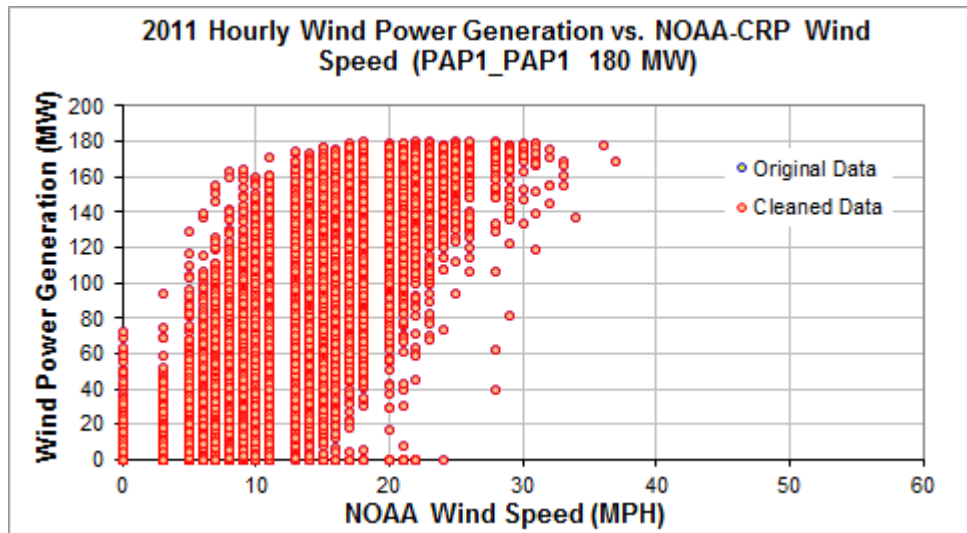


Figure 9-189: PAP1_PAP1 - Hourly Wind Power vs. NOAA Wind Speed (2011)

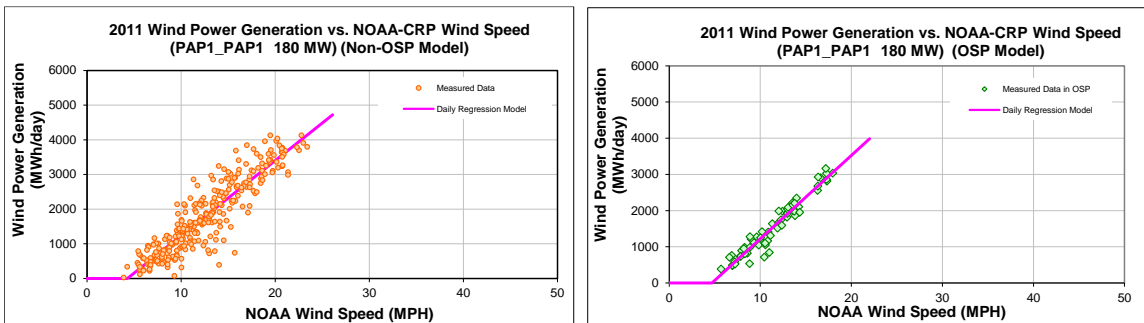


Figure 9-190: PAP1_PAP1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-182: PAP1_PAP1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-922.3932
Left Slope (MWh/mph-day)	216.2537
RMSE (MWh/day)	443.2276
R2	0.8220
CV-RMSE	24.7%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-1083.5520
Left Slope (MWh/mph-day)	230.3272
RMSE (MWh/day)	194.6799
R2	0.9355
CV-RMSE	12.3%

Table 9-183: PAP1_PAP1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.20	40,288	39,800	1.21%	30%	30%
Feb-11	28	14.17	61,237	59,963	2.08%	51%	50%
Mar-11	31	12.30	58,958	53,871	8.63%	44%	40%
Apr-11	30	15.52	82,512	72,987	11.54%	64%	56%
May-11	31	15.41	68,548	74,778	-9.09%	51%	56%
Jun-11	30	12.26	49,009	51,856	-5.81%	38%	40%
Jul-11	31	12.05	52,189	52,693	-0.96%	39%	39%
Aug-11	31	11.42	49,016	47,965	2.14%	37%	36%
Sep-11	27	9.47	27,647	30,041	-8.66%	24%	26%
Oct-11	31	10.25	40,370	40,102	0.66%	30%	30%
Nov-11	30	13.16	56,814	57,685	-1.53%	44%	45%
Dec-11	31	12.41	49,739	54,618	-9.81%	37%	41%
Total	362	12.39	636,327	636,359	-0.01%	41%	41%
Total in OSP (07/15-09/15)	63	11.58	99,739	99,734	0.01%	37%	37%

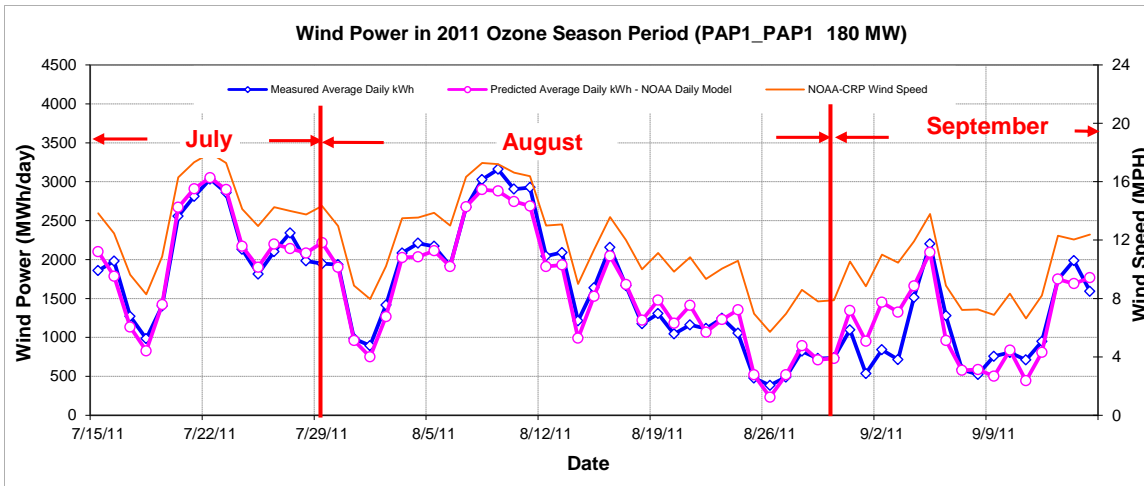


Figure 9-191: PAP1_PAP1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

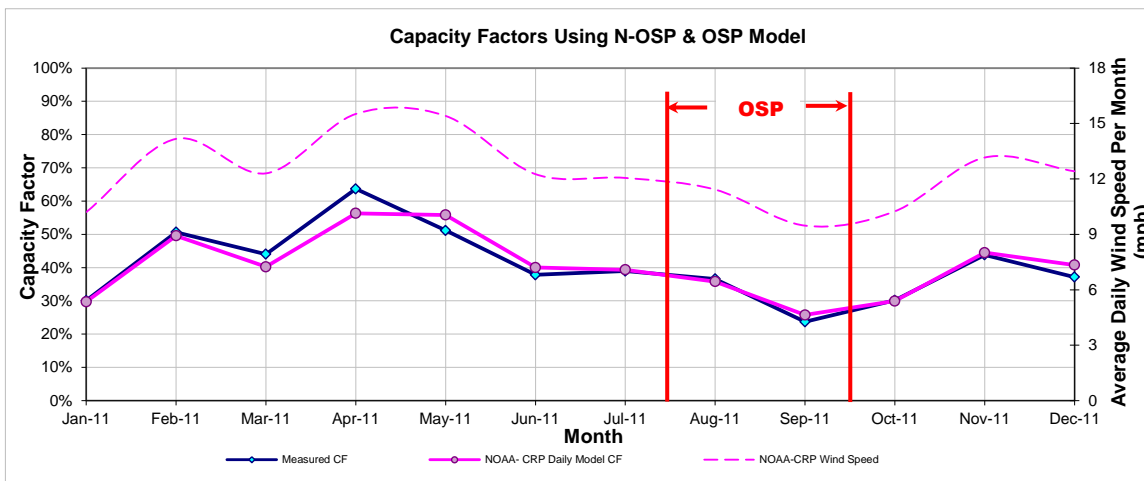


Figure 9-192: PAP1_PAP1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-184: PAP1_PAP1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
559,755	641,600	998	1,583

9.40 Papalote Creek Phase II

Table 9-185: Site Information for Papalote Creek Phase II

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
PAP2_PAP2	Wind	-	San Patricio	Jun-10	198	EOn Climate & Renewables	-	-	ERCOT	South	CRP

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
PAP2_PAP2	PAP2_PAP2	198

9.40.1 Papalote Creek Phase II – PAP2_PAP2

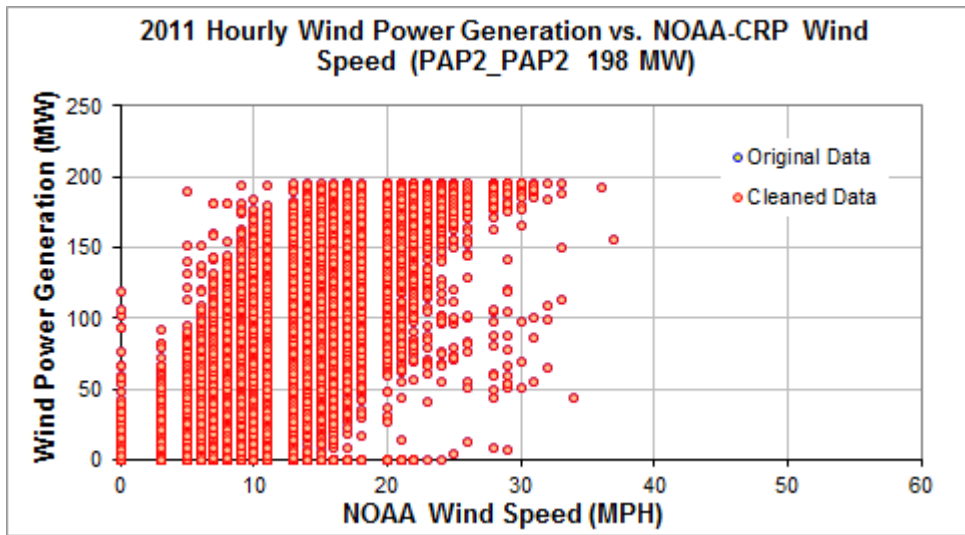


Figure 9-193: PAP2_PAP2 - Hourly Wind Power vs. NOAA Wind Speed (2011)

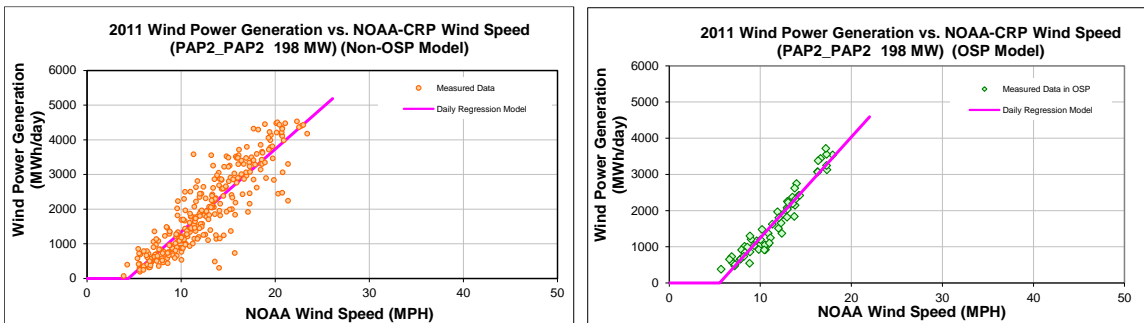


Figure 9-194: PAP2_PAP2 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-186: PAP2_PAP2 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-1046.2359
Left Slope (MWh/mph-day)	238.8375
RMSE (MWh/day)	537.8921
R2	0.7936
CV-RMSE	27.1%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-1546.0578
Left Slope (MWh/mph-day)	278.9233
RMSE (MWh/day)	247.6580
R2	0.9293
CV-RMSE	14.7%

Table 9-187: PAP2_PAP2 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	29	10.48	41,893	42,247	-0.85%	30%	31%
Feb-11	27	14.21	66,448	63,396	4.59%	52%	49%
Mar-11	31	12.30	59,264	58,643	1.05%	40%	40%
Apr-11	30	15.52	94,368	79,784	15.46%	66%	56%
May-11	31	15.41	79,366	81,762	-3.02%	54%	56%
Jun-11	30	12.26	52,899	56,445	-6.70%	37%	40%
Jul-11	31	12.05	55,775	57,497	-3.09%	38%	39%
Aug-11	31	11.42	51,757	50,834	1.78%	35%	35%
Sep-11	26	9.48	27,807	30,020	-7.96%	23%	24%
Oct-11	25	10.47	37,216	36,350	2.33%	31%	31%
Nov-11	30	13.16	58,663	62,884	-7.19%	41%	44%
Dec-11	31	12.41	53,791	59,469	-10.56%	37%	40%
Total	352	12.49	679,247	679,332	-0.01%	41%	41%
Total in OSP (07/15-09/15)	63	11.58	106,048	106,042	0.01%	35%	35%

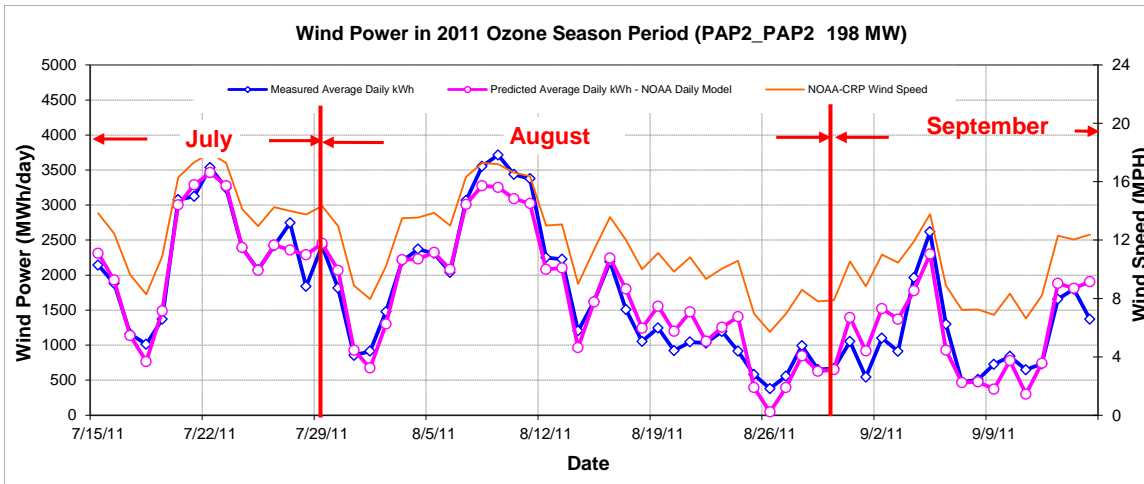


Figure 9-195: PAP2_PAP2 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

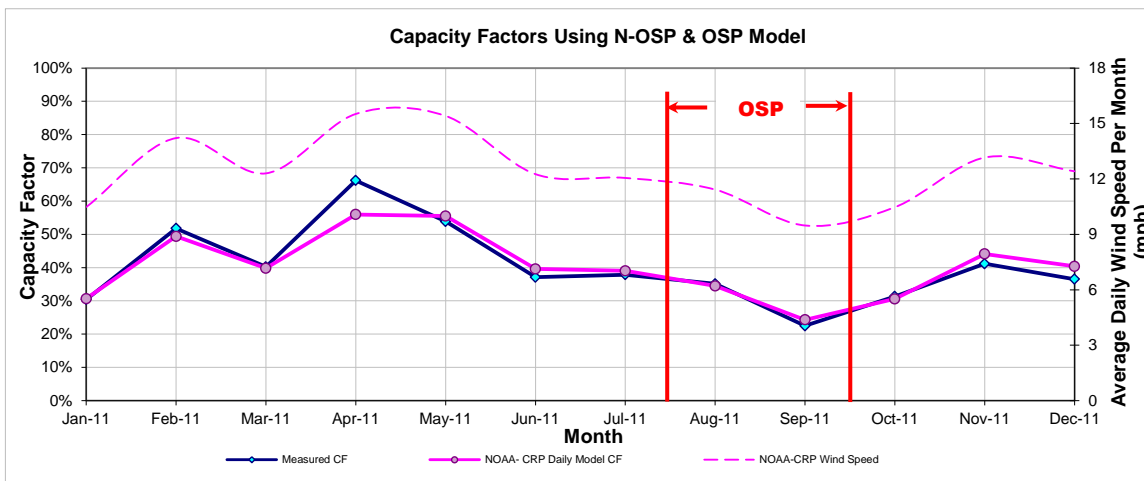


Figure 9-196: PAP2_PAP2 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-188: PAP2_PAP2 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
602,386	704,333	982	1,683

9.41 Panther Creek 1

Table 9-189: Site Information for Panther Creek 1

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
PC_NORTH_PANTHER1	Wind	-	Howard	Jun-08	142.5	Airtricity	Panther Creek 1	GE Energy (95)	ERCOT	West	MAF

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
PC_NORTH_PANTHER1	PC_NORTH_PANTHER1	142.5

9.41.1 Panther Creek 1 – PC_NORTH_PANTHER1

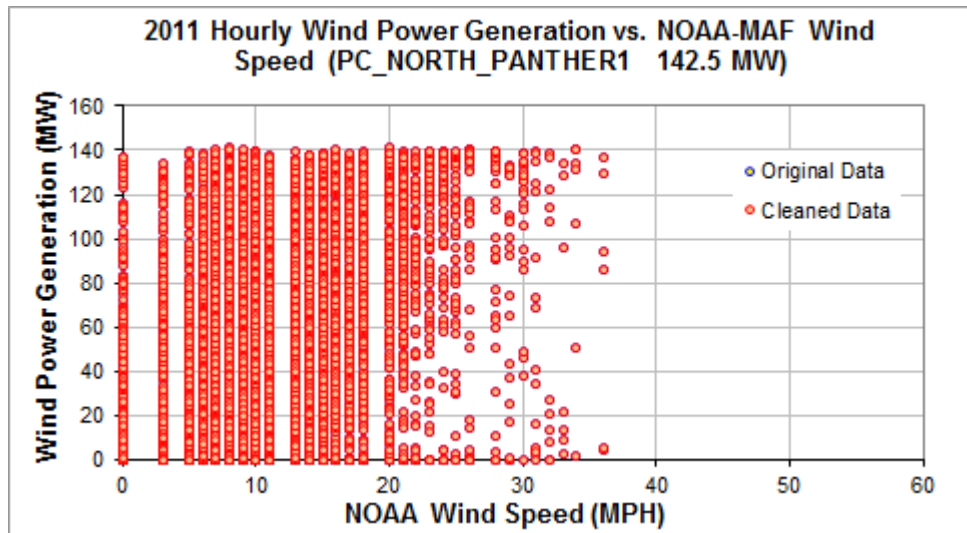


Figure 9-197: PC_NORTH_PANTHER1- Hourly Wind Power vs. NOAA Wind Speed (2011)

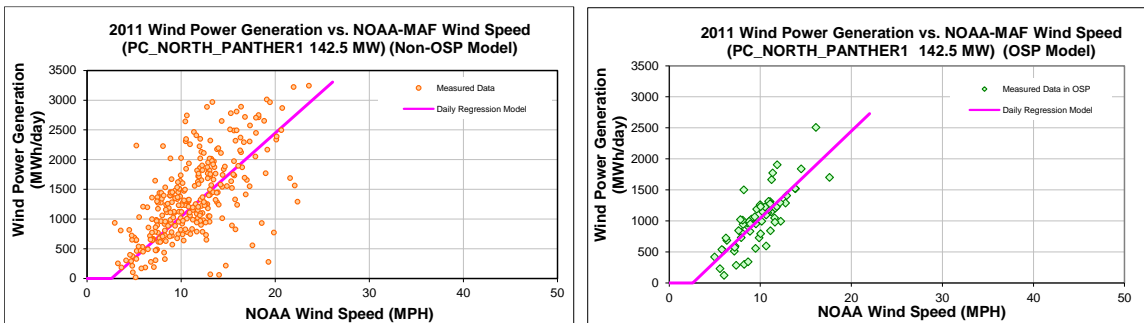


Figure 9-198: PC_NORTH_PANTHER1- Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-190: PC_NORTH_PANTHER1– Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-364.0332
Left Slope (MWh/mph-day)	140.6134
RMSE (MWh/day)	266.8166
R2	0.6422
CV-RMSE	26.1%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-364.0332
Left Slope (MWh/mph-day)	140.6134
RMSE (MWh/day)	266.8166
R2	0.6422
CV-RMSE	26.1%

Table 9-191: PC_NORTH_PANTHER1– Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	36,348	26,183	27.97%	34%	25%
Feb-11	28	10.80	36,051	32,330	10.32%	38%	34%
Mar-11	31	11.31	33,788	38,003	-12.47%	32%	36%
Apr-11	30	13.78	36,827	47,194	-28.15%	36%	46%
May-11	31	13.09	46,609	45,757	1.83%	44%	43%
Jun-11	30	14.09	59,225	48,499	18.11%	58%	47%
Jul-11	31	10.61	33,567	34,968	-4.17%	32%	33%
Aug-11	31	9.61	33,701	30,588	9.24%	32%	29%
Sep-11	30	8.84	28,192	26,383	6.42%	27%	26%
Oct-11	31	10.43	44,254	34,201	22.72%	42%	32%
Nov-11	30	10.82	45,395	34,708	23.54%	44%	34%
Dec-11	31	10.31	39,241	33,664	14.21%	37%	32%
Total	365	11.02	473,198	432,479	8.61%	38%	35%
Total in OSP (07/15-09/15)	63	9.86	64,432	64,422	0.02%	30%	30%

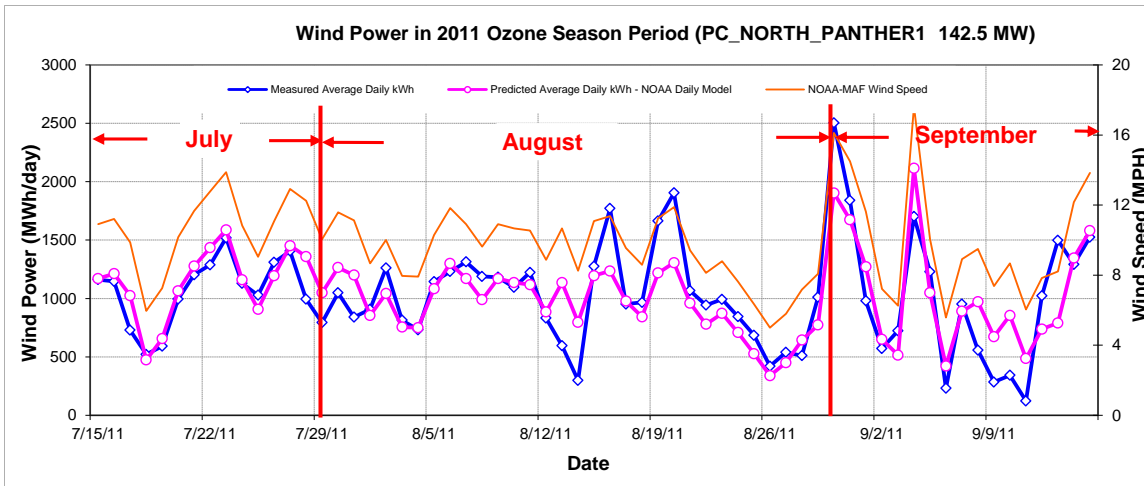


Figure 9-199: PC_NORTH_PANTHER1- Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

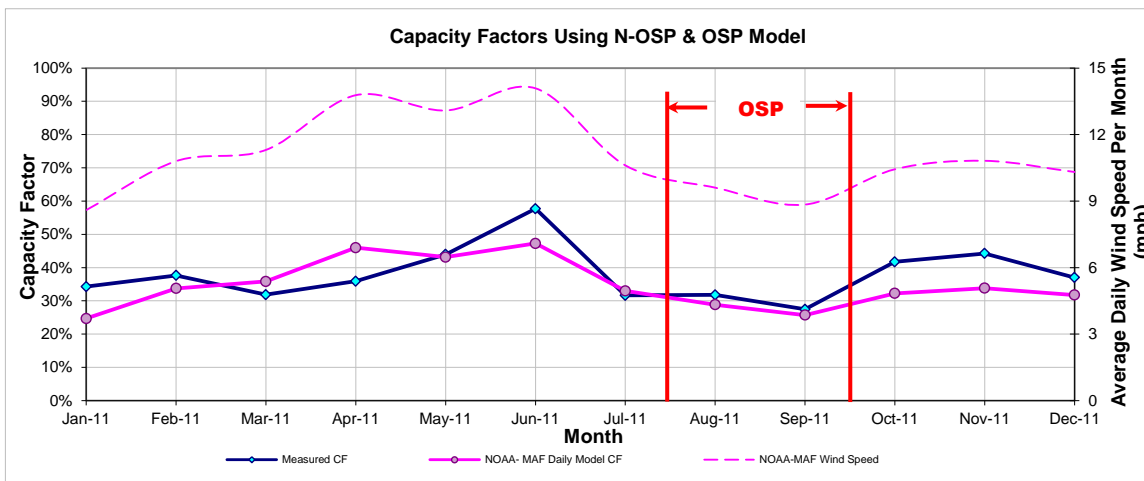


Figure 9-200: PC_NORTH_PANTHER1– Predicted Capacity Factors Using Daily Models (2011)

Table 9-192: PC_NORTH_PANTHER1– Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
401,556	473,198	856	1,023

9.42 Panther Creek 2

Table 9-193: Site Information for Panther Creek 2

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
PC_SOUTH_PANTHER2	Wind	-	Howard	Nov-08	115.5	EOn Climate & Renewables	Panther Creek 2	GEEnergy (77)	ERCOT	West	MAF

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
PC_SOUTH_PANTHER2	PC_SOUTH_PANTHER2	115.5

9.42.1 Panther Creek 2 – PC_SOUTH_PANTHER2

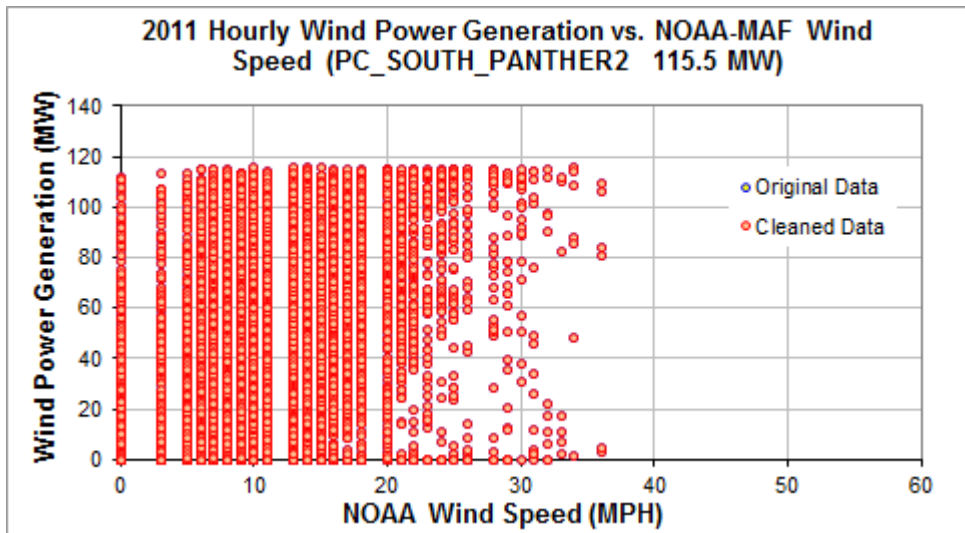


Figure 9-201: PC_SOUTH_PANTHER2 - Hourly Wind Power vs. NOAA Wind Speed (2011)

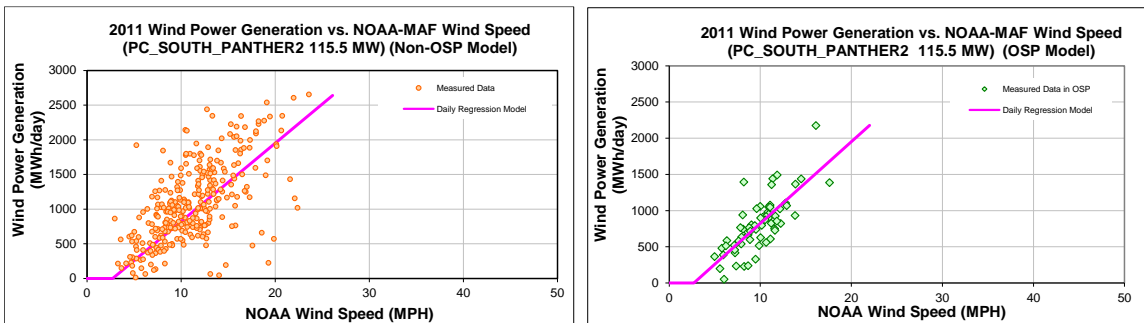


Figure 9-202: PC_SOUTH_PANTHER2 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-194: PC_SOUTH_PANTHER2 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-306.4044
Left Slope (MWh/mph-day)	112.8772
RMSE (MWh/day)	244.8512
R2	0.5786
CV-RMSE	30.3%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-306.4044
Left Slope (MWh/mph-day)	112.8772
RMSE (MWh/day)	244.8512
R2	0.5786
CV-RMSE	30.3%

Table 9-195: PC_SOUTH_PANTHER2 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	28,788	20,579	28.52%	34%	24%
Feb-11	28	10.80	30,692	25,556	16.73%	40%	33%
Mar-11	31	11.31	27,440	30,067	-9.58%	32%	35%
Apr-11	30	13.78	29,215	37,460	-28.22%	35%	45%
May-11	31	13.09	36,623	36,292	0.90%	43%	42%
Jun-11	30	14.09	48,374	38,507	20.40%	58%	46%
Jul-11	31	10.61	26,945	27,631	-2.54%	31%	32%
Aug-11	31	9.61	27,024	24,115	10.76%	31%	28%
Sep-11	30	8.84	21,762	20,753	4.63%	26%	25%
Oct-11	31	10.43	34,967	27,015	22.74%	41%	31%
Nov-11	30	10.82	36,028	27,437	23.85%	43%	33%
Dec-11	31	10.31	31,330	26,585	15.15%	36%	31%
Total	365	11.02	379,185	341,997	9.81%	37%	34%
Total in OSP (07/15-09/15)	63	9.86	50,829	50,821	0.02%	29%	29%

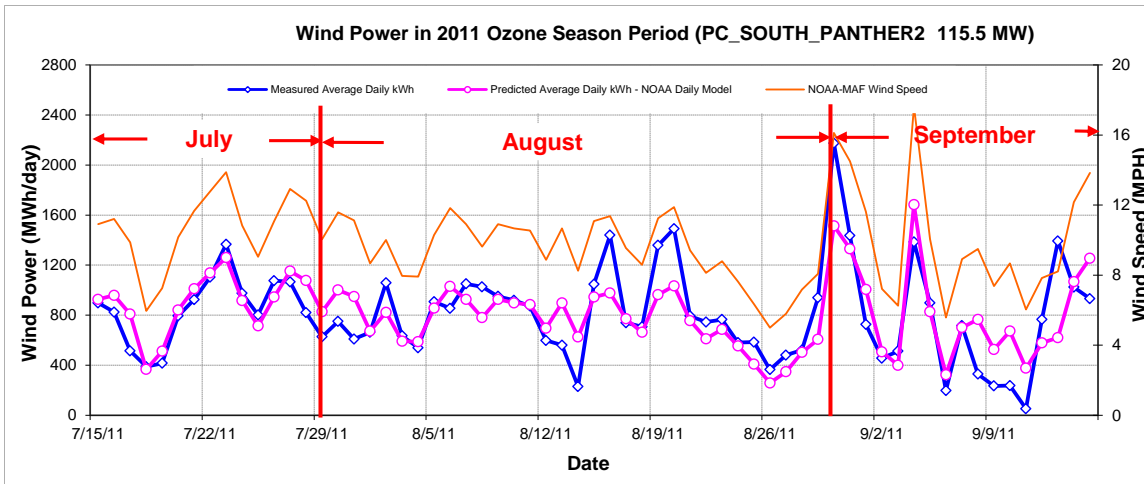


Figure 9-203: PC_SOUTH_PANTHER2 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

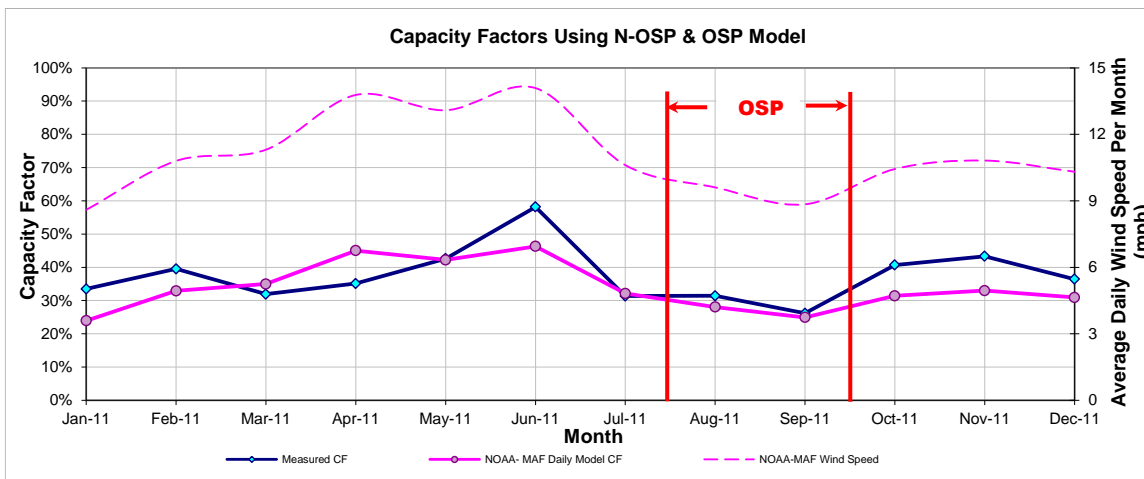


Figure 9-204: PC_SOUTH_PANTHER2 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-196: PC_SOUTH_PANTHER2 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
317,188	379,185	673	807

9.43 Panther Creek 3

Table 9-197: Site Information for Panther Creek 3

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
PC_SOUTH_PANTHER3	Wind	-	Concho	Aug-09	199.5	EOn Climate & Renewables	Panther Creek 3	GE Energy(133)	ERCOT	West	SJT

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
PC_SOUTH_PANTHER3	PC_SOUTH_PANTHER3	199.5

9.43.1 Panther Creek 3 – PC_SOUTH_PANTHER3

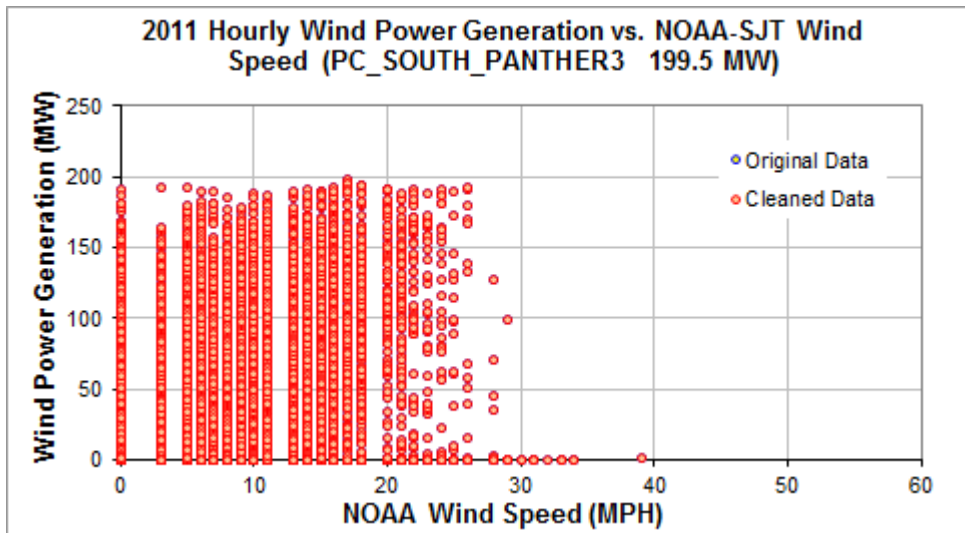


Figure 9-205: PC_SOUTH_PANTHER3 - Hourly Wind Power vs. NOAA Wind Speed (2011)

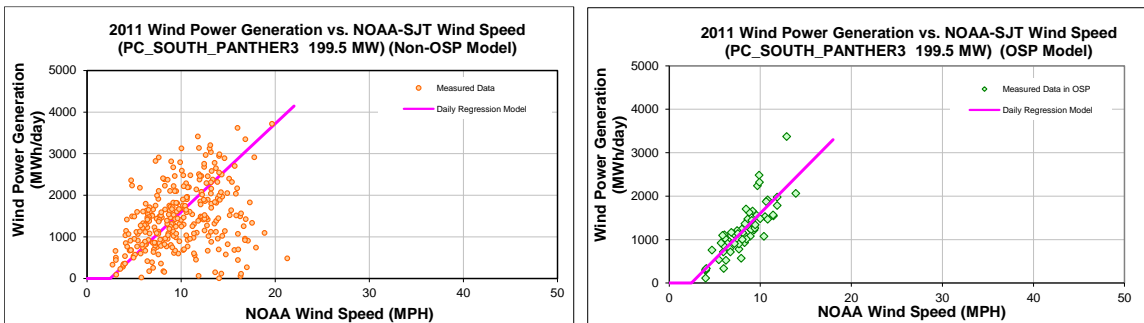


Figure 9-206: PC_SOUTH_PANTHER3 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-198: PC_SOUTH_PANTHER3 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-517.8780
Left Slope (MWh/mph-day)	211.9663
RMSE (MWh/day)	326.6784
R2	0.6801
CV-RMSE	26.9%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-517.8780
Left Slope (MWh/mph-day)	211.9663
RMSE (MWh/day)	326.6784
R2	0.6801
CV-RMSE	26.9%

Table 9-199: PC_SOUTH_PANTHER3 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	7.85	37,554	35,546	5.35%	25%	24%
Feb-11	27	10.75	38,098	47,524	-24.74%	29%	37%
Mar-11	31	10.37	36,745	52,093	-41.77%	25%	35%
Apr-11	29	12.76	28,851	63,416	-119.81%	21%	46%
May-11	31	11.51	52,488	59,582	-13.52%	35%	40%
Jun-11	30	12.23	67,451	62,263	7.69%	47%	43%
Jul-11	31	9.02	41,582	43,235	-3.97%	28%	29%
Aug-11	31	7.93	39,204	36,021	8.12%	26%	24%
Sep-11	30	7.48	34,403	32,025	6.91%	24%	22%
Oct-11	31	8.71	47,860	41,191	13.93%	32%	28%
Nov-11	30	9.63	37,181	45,680	-22.86%	26%	32%
Dec-11	31	8.52	48,096	39,914	17.01%	32%	27%
Total	363	9.70	509,512	558,489	-9.61%	29%	32%
Total in OSP (07/15-09/15)	63	8.17	76,445	76,434	0.01%	25%	25%

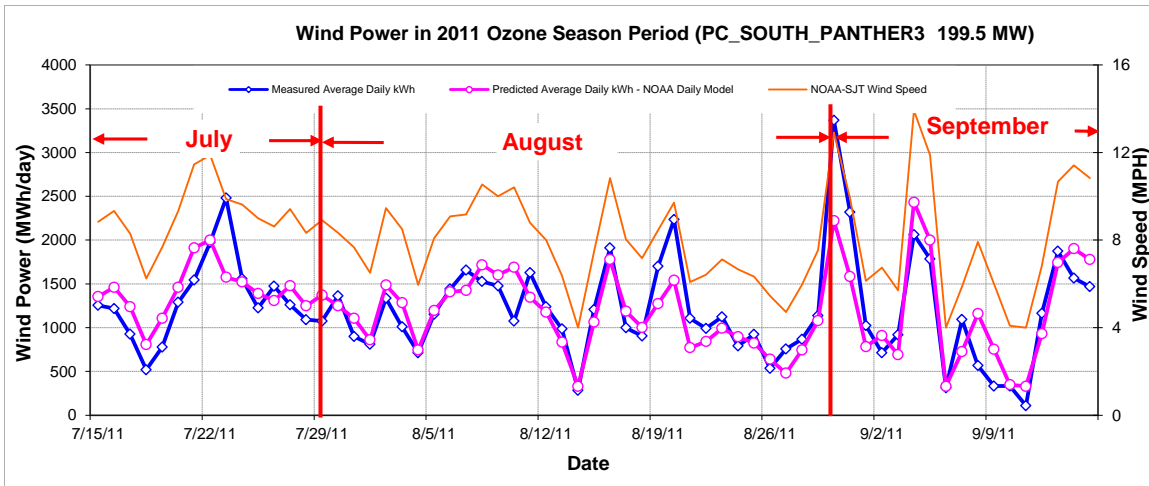


Figure 9-207: PC_SOUTH_PANTHER3 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

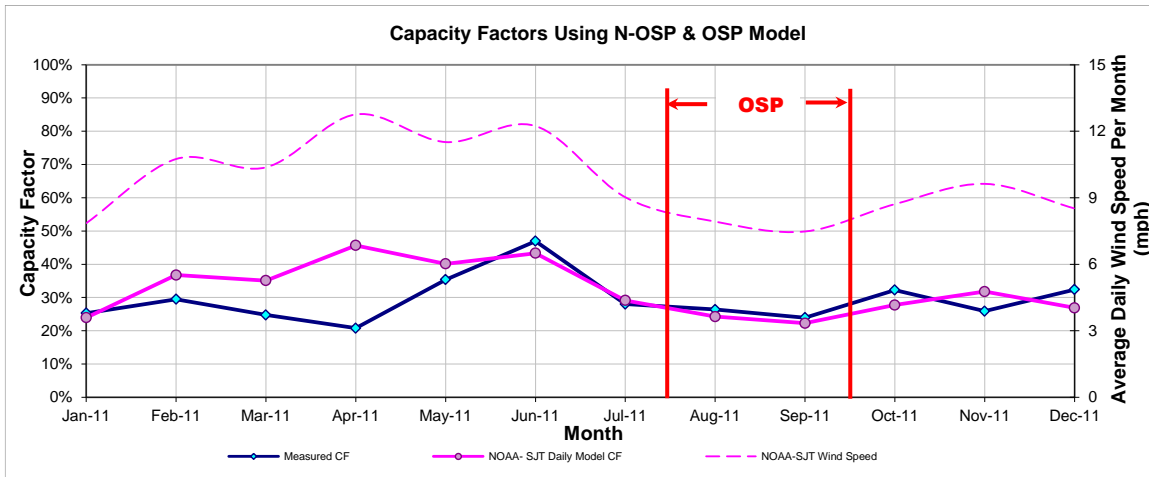


Figure 9-208: PC_SOUTH_PANTHER3 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-200: PC_SOUTH_PANTHER3 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
527,569	512,319	969	1,213

9.44 Penascal Wind Farm

Table 9-201: Site Information for Penascal Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station	Remarks
PENA	Wind	-	Kenedy	Nov-08	303	PPM Energy	Penascal Wind Farm	Mitsubishi(42)	ERCOT	South	CRP	-

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
PENA_UNIT1	PENA_UNIT1	161
PENA_UNIT2	PENA_UNIT2	142

9.44.1 Penascal Wind Farm (PENA_UNIT1)

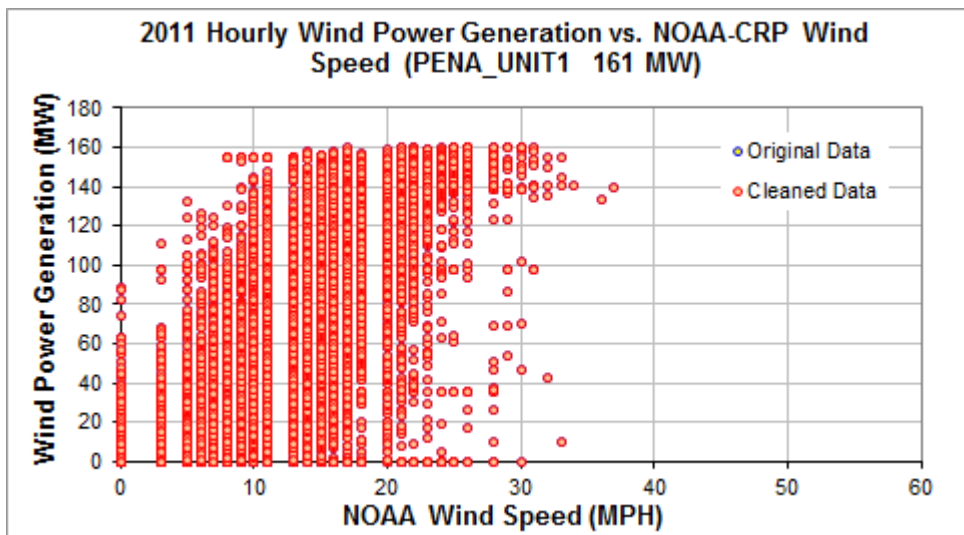


Figure 9-209: PENA_UNIT1 – Hourly Wind Power vs. NOAA Wind Speed (2011)

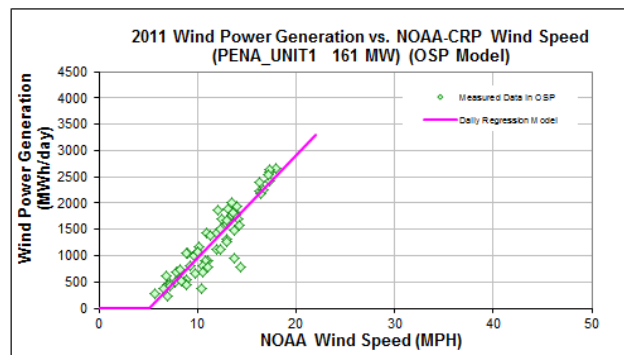
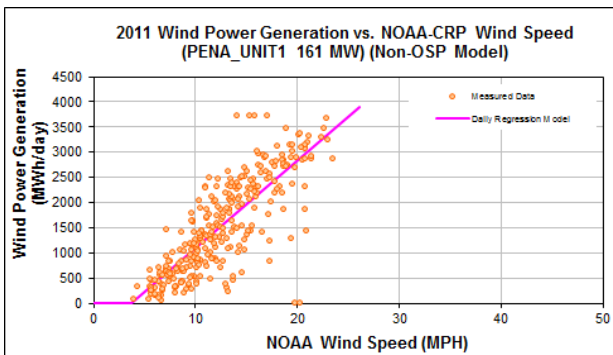


Figure 9-210: PENA_UNIT1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-202: PENA_UNIT1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-650.2936
Left Slope (MWh/mph-day)	174.4706
RMSE (MWh/day)	563.1529
R2	0.6505
CV-RMSE	36.7%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-1010.3872
Left Slope (MWh/mph-day)	195.9558
RMSE (MWh/day)	272.3513
R2	0.8429
CV-RMSE	21.6%

Table 9-203: PENA_UNIT1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.20	33,904	35,021	-3.29%	28%	29%
Feb-11	28	14.17	55,294	51,006	7.76%	51%	47%
Mar-11	31	12.30	53,032	46,372	12.56%	44%	39%
Apr-11	30	15.52	67,561	61,701	8.67%	58%	53%
May-11	31	15.41	49,308	63,180	-28.13%	41%	53%
Jun-11	30	12.26	45,064	44,653	0.91%	39%	39%
Jul-11	31	12.05	43,460	43,833	-0.86%	36%	37%
Aug-11	31	11.42	39,400	38,063	3.39%	33%	32%
Sep-11	30	9.37	26,910	27,269	-1.33%	23%	24%
Oct-11	31	10.25	37,356	35,264	5.60%	31%	29%
Nov-11	30	13.16	50,995	49,356	3.21%	44%	43%
Dec-11	31	12.41	40,445	46,976	-16.15%	34%	39%
Total	365	12.36	542,730	542,694	0.01%	38%	38%
Total in OSP (07/15-09/15)	63	11.58	79,278	79,273	0.01%	33%	33%

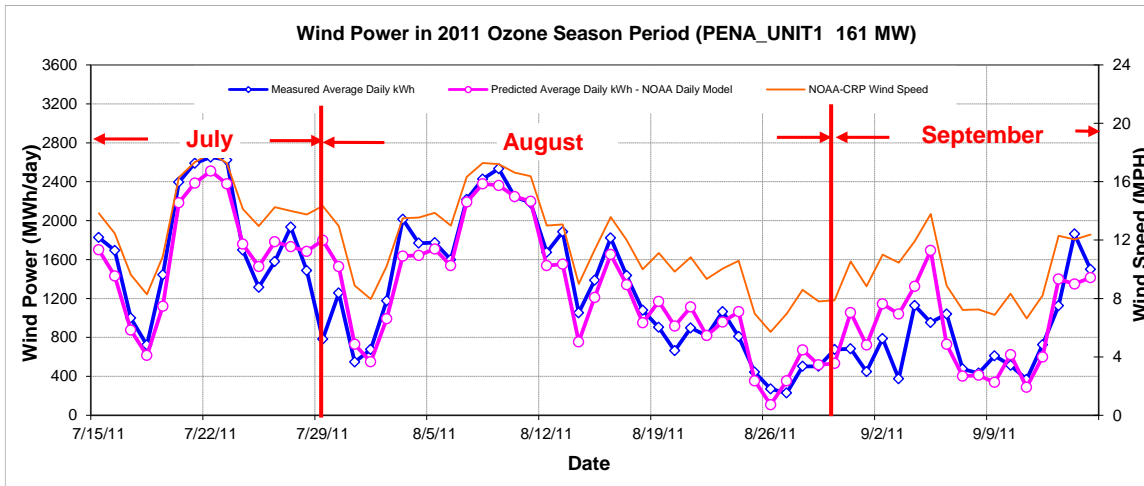


Figure 9-211: PENA_UNIT1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

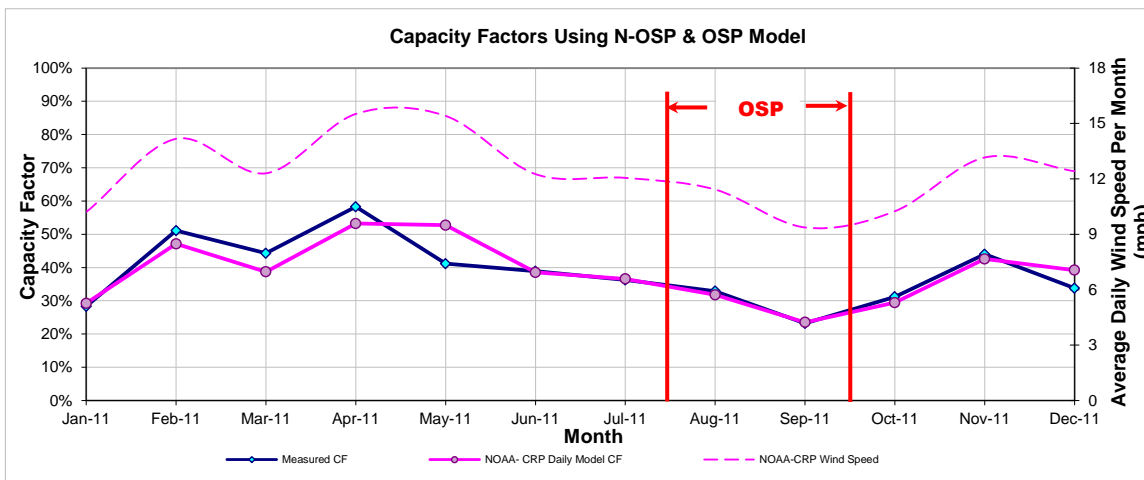


Figure 9-212: PENA_UNIT1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-204: PENA_UNIT1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
477,244	542,730	762	1,258

9.44.2 Penascal Wind Farm (PENA_UNIT2)

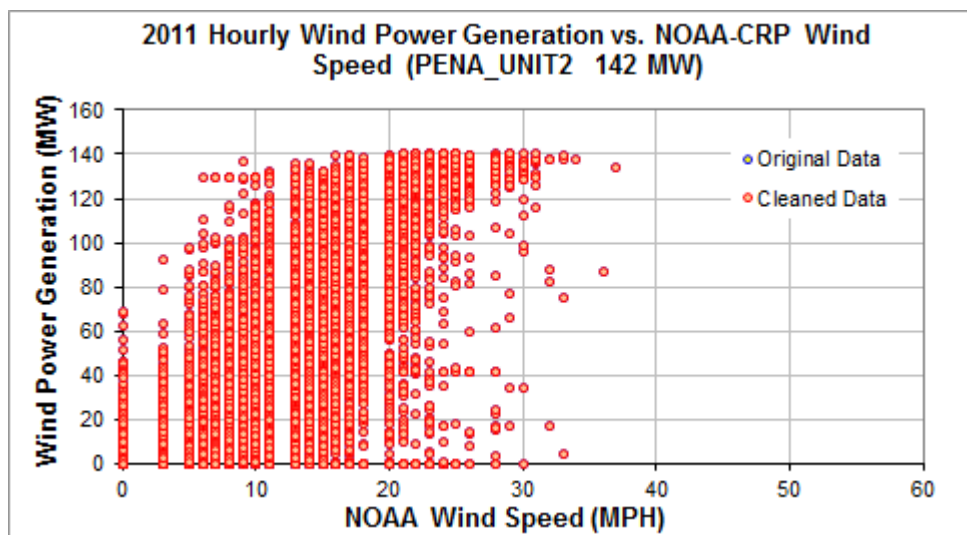


Figure 9-213: PENA_UNIT2 – Hourly Wind Power vs. NOAA Wind Speed (2011)

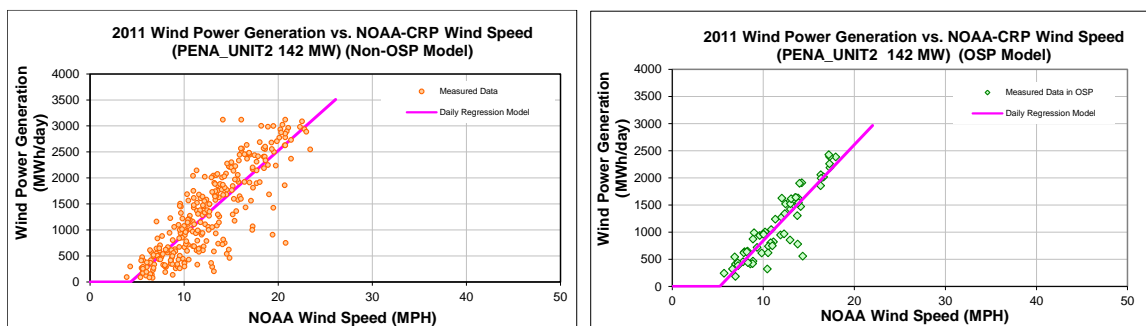


Figure 9-214: PENA_UNIT2 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-205: PENA_UNIT2 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-693.2762
Left Slope (MWh/mph-day)	161.0658
RMSE (MWh/day)	441.0201
R2	0.7186
CV-RMSE	33.5%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-922.3199
Left Slope (MWh/mph-day)	176.6952
RMSE (MWh/day)	264.2193
R2	0.8225
CV-RMSE	23.5%

Table 9-206: PENA_UNIT2 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.20	26,473	29,451	-11.25%	25%	28%
Feb-11	28	14.17	45,462	44,484	2.15%	48%	47%
Mar-11	31	12.30	40,268	39,928	0.84%	38%	38%
Apr-11	30	15.52	63,283	54,172	14.40%	62%	53%
May-11	29	15.10	43,791	50,471	-15.25%	44%	51%
Jun-11	30	12.26	39,889	38,434	3.65%	39%	38%
Jul-11	31	12.05	38,802	38,378	1.09%	37%	36%
Aug-11	31	11.42	35,381	33,973	3.98%	33%	32%
Sep-11	30	9.37	23,528	23,322	0.87%	23%	23%
Oct-11	31	10.25	31,661	29,674	6.28%	30%	28%
Nov-11	30	13.16	45,170	42,776	5.30%	44%	42%
Dec-11	31	12.41	31,808	40,485	-27.28%	30%	38%
Total	363	12.32	465,515	465,547	-0.01%	38%	38%
Total in OSP (07/15-09/15)	63	11.58	70,777	70,773	0.01%	33%	33%

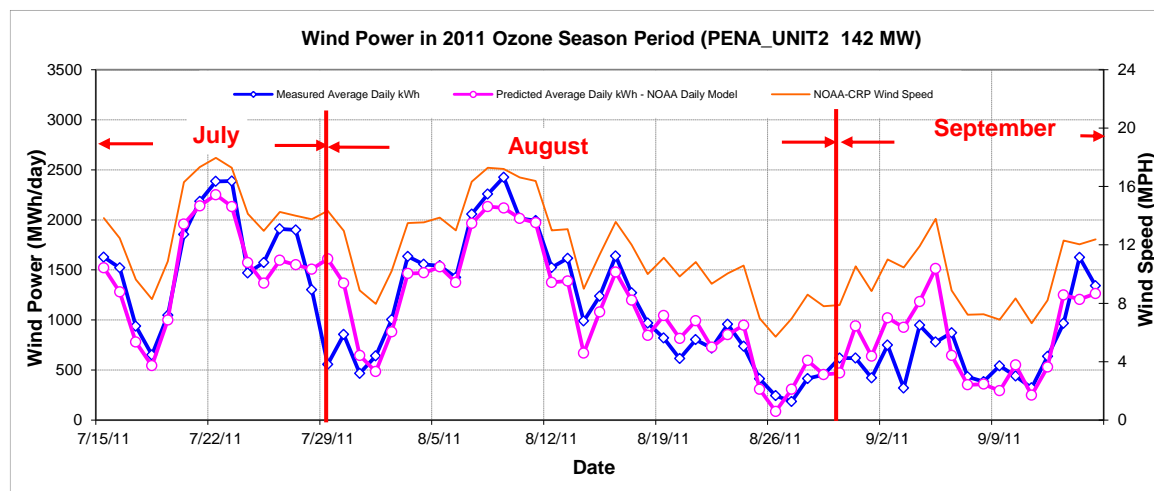


Figure 9-215: PENA_UNIT2 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

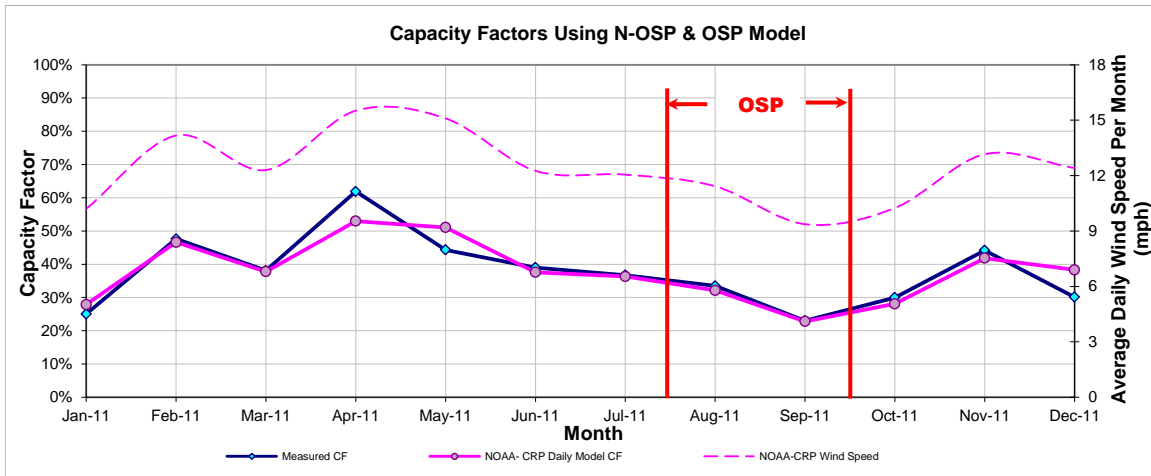


Figure 9-216: PENA_UNIT2 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-207: PENA_UNIT2 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
410,801	468,080	676	1,123

9.45 Penascal 3

Table 9-208: Site Information for Penascal 3

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
PENA_UNIT3	Wind	-	Kenedy	Oct-10	202	Lberdrola	-	-	ERCOT	South	CRP

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
PENA_UNIT3	PENA_UNIT3	202

9.45.1 Penascal 3 – PENA_UNIT3

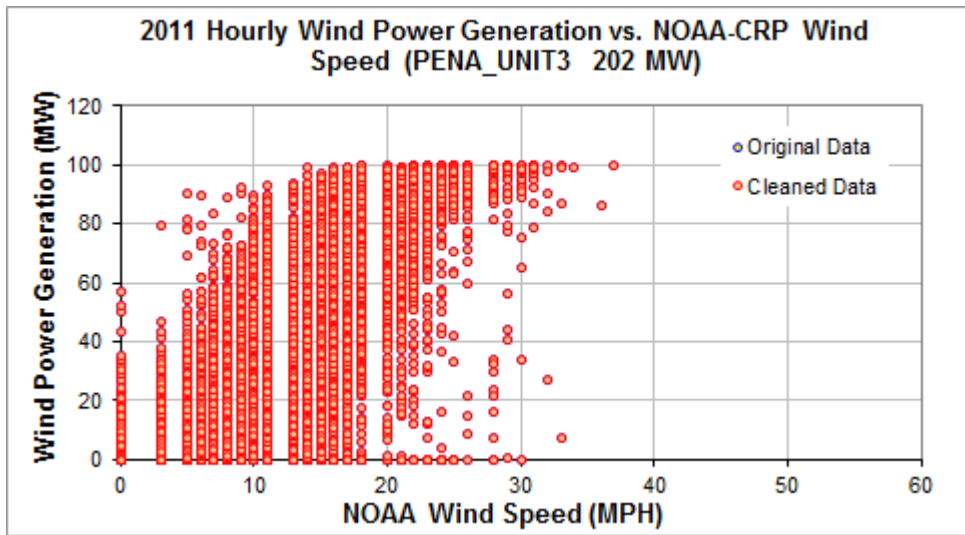


Figure 9-217: PENA_UNIT3- Hourly Wind Power vs. NOAA Wind Speed (2011)

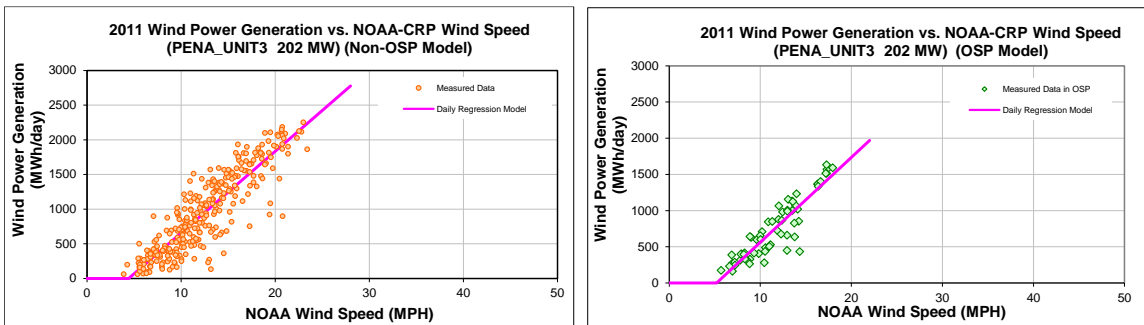


Figure 9-218: PENA_UNIT3- Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-209: PENA_UNIT3 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-520.7687
Left Slope (MWh/mph-day)	117.7659
RMSE (MWh/day)	268.3706
R2	0.7867
CV-RMSE	28.3%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-609.9635
Left Slope (MWh/mph-day)	117.1944
RMSE (MWh/day)	174.0939
R2	0.8244
CV-RMSE	23.3%

Table 9-210: PENA_UNIT3 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.20	20,403	21,117	-3.50%	14%	14%
Feb-11	28	14.17	32,080	32,137	-0.18%	24%	24%
Mar-11	31	12.30	28,740	28,764	-0.08%	19%	19%
Apr-11	30	15.52	42,829	39,193	8.49%	29%	27%
May-11	29	15.10	34,643	36,514	-5.40%	25%	26%
Jun-11	30	12.26	27,426	27,685	-0.95%	19%	19%
Jul-11	31	12.05	25,366	26,211	-3.33%	17%	17%
Aug-11	31	11.42	23,710	22,588	4.73%	16%	15%
Sep-11	30	9.37	15,848	16,058	-1.32%	11%	11%
Oct-11	31	10.25	22,376	21,266	4.96%	15%	14%
Nov-11	30	13.16	32,609	30,860	5.36%	22%	21%
Dec-11	31	12.41	25,485	29,172	-14.46%	17%	19%
Total	363	12.32	331,514	331,565	-0.02%	19%	19%
Total in OSP (07/15-09/15)	63	11.58	47,055	47,052	0.01%	15%	15%

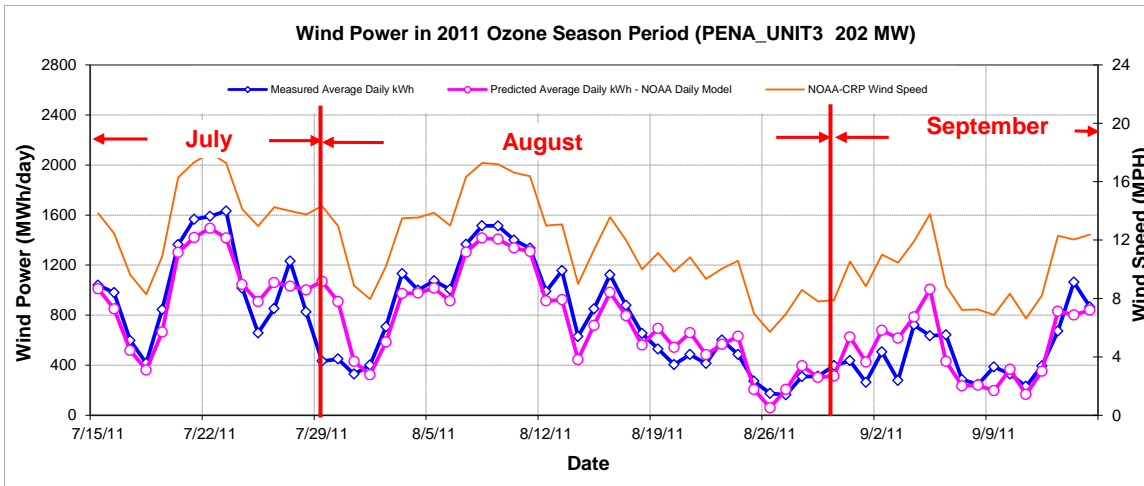


Figure 9-219: PENA_UNIT3 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

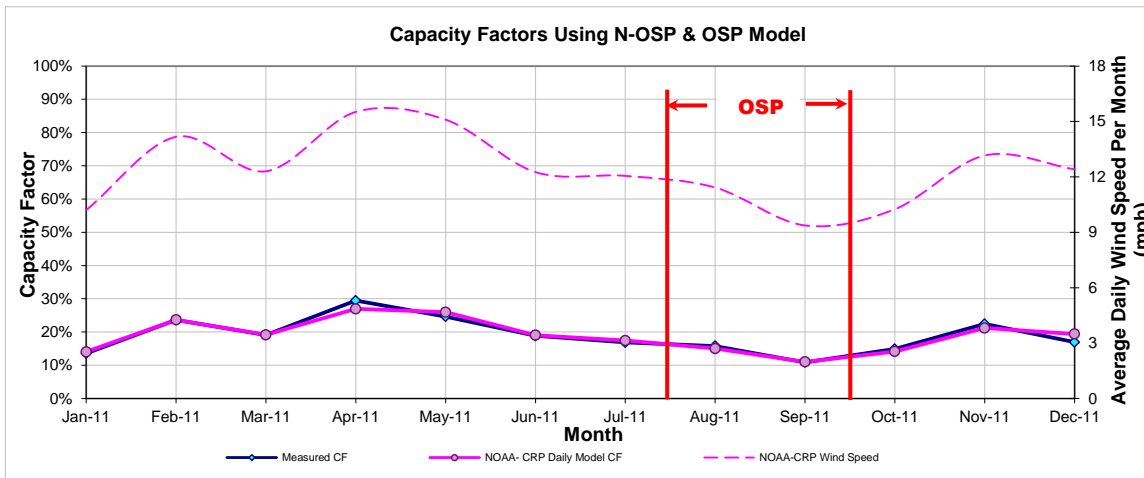


Figure 9-220: PENA_UNIT3 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-211: PENA_UNIT3 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
293,431	333,341	450	747

9.46 Pyron Wind Farm

Table 9-212: Site Information for Pyron Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
PYR_PYRON1	Wind	-	Scurry	Nov-08	249	EOn Climate & Renewables	Pyron Wind Farm	-	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
PYR_PYRON1	PYR_PYRON1	249

9.46.1 Pyron Wind Farm – PYR_PYRON1

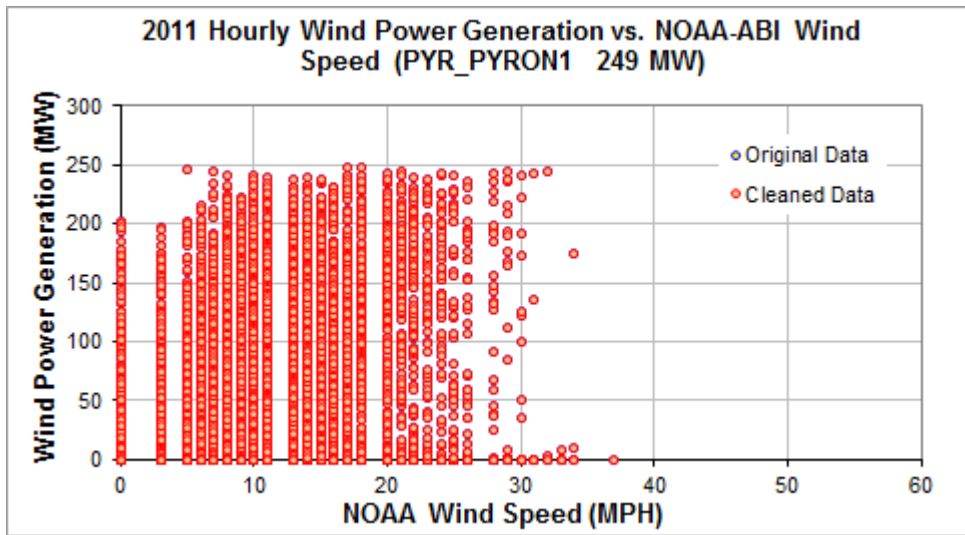


Figure 9-221: PYR_PYRON1- Hourly Wind Power vs. NOAA Wind Speed (2011)

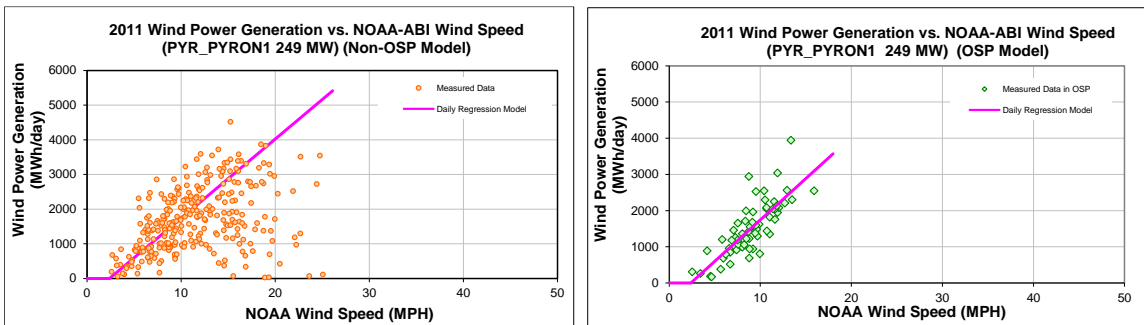


Figure 9-222: PYR_PYRON1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-213: PYR_PYRON1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-543.2684
Left Slope (MWh/mph-day)	228.3515
RMSE (MWh/day)	456.8979
R2	0.6308
CV-RMSE	30.2%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-543.2684
Left Slope (MWh/mph-day)	228.3515
RMSE (MWh/day)	456.8979
R2	0.6308
CV-RMSE	30.2%

Table 9-214: PYR_PYRON1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	41,476	46,955	-13.21%	22%	25%
Feb-11	24	11.46	38,117	49,745	-30.51%	27%	35%
Mar-11	30	12.06	37,051	66,331	-79.03%	21%	37%
Apr-11	29	13.68	45,548	74,847	-64.33%	26%	43%
May-11	31	13.86	65,180	81,264	-24.68%	35%	44%
Jun-11	30	14.61	75,764	83,821	-10.63%	42%	47%
Jul-11	31	10.03	49,942	54,153	-8.43%	27%	29%
Aug-11	31	9.20	48,766	48,263	1.03%	26%	26%
Sep-11	30	7.68	42,662	36,324	14.86%	24%	20%
Oct-11	31	10.61	53,974	58,249	-7.92%	29%	31%
Nov-11	28	11.82	41,810	60,358	-44.36%	25%	36%
Dec-11	30	9.64	53,802	49,762	7.51%	30%	28%
Total	356	11.11	594,092	710,074	-19.52%	28%	33%
Total in OSP (07/15-09/15)	63	9.00	95,208	95,201	0.01%	25%	25%

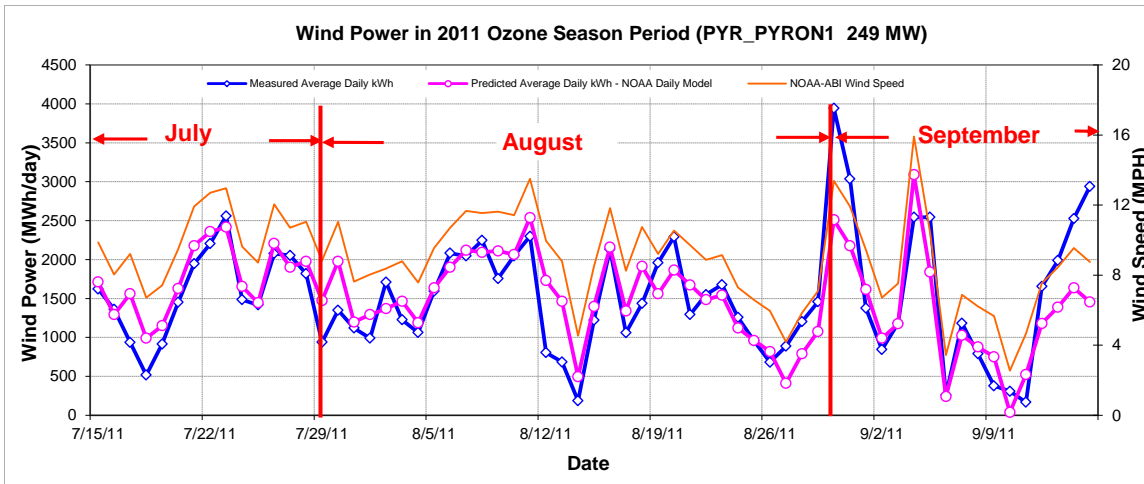


Figure 9-223: PYR_PYRON1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

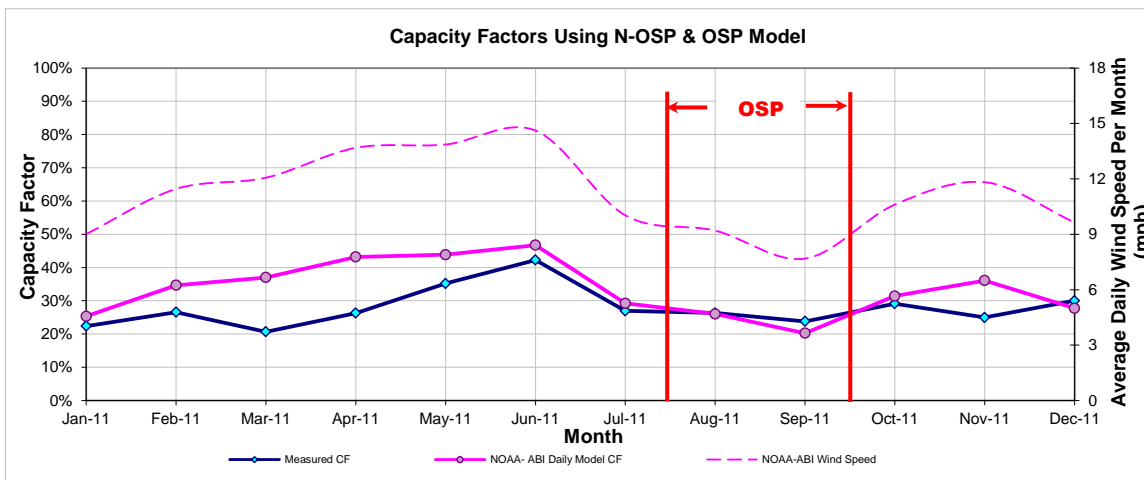


Figure 9-224: PYR_PYRON1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-215: PYR_PYRON1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
755,901	609,111	1,452	1,511

9.47 Red Canyon

Table 9-216: Site Information for Red Canyon

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
RDCANYON_RDCNY1	Wind	-	Borden	May-06	84	FPL Energy	Red Canyon	-	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
RDCANYON_RDCNY1	RDCANYON_RDCNY1	84

9.47.1 Red Canyon - RDCANYON_RDCNY1

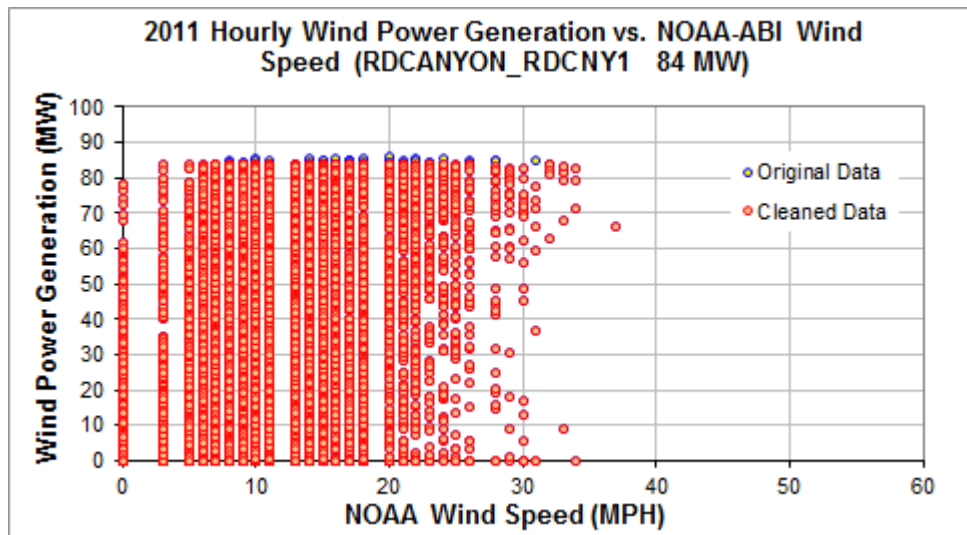


Figure 9-225: RDCANYON_RDCNY1- Hourly Wind Power vs. NOAA Wind Speed (2011)

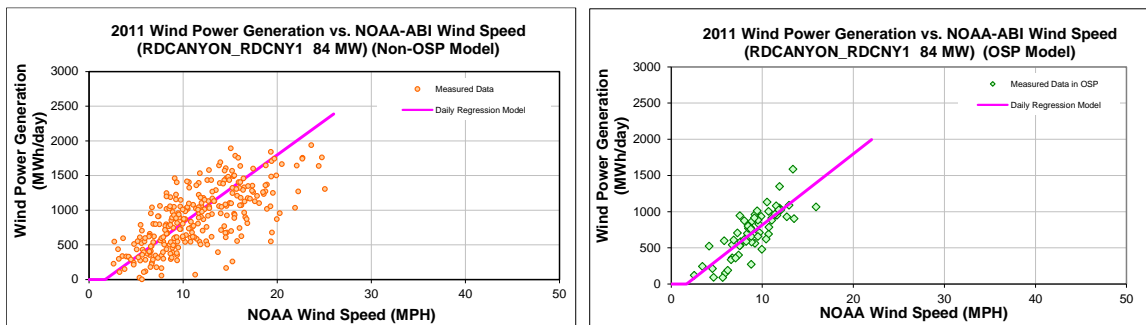


Figure 9-226: RDCANYON_RDCNY1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-217: RDCANYON_RDCNY1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-166.4825
Left Slope (MWh/mph-day)	98.2855
RMSE (MWh/day)	183.9257
R2	0.6614
CV-RMSE	25.6%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-166.4825
Left Slope (MWh/mph-day)	98.2855
RMSE (MWh/day)	183.9257
R2	0.6614
CV-RMSE	25.6%

Table 9-218: RDCANYON_RDCNY1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	23,653	22,298	5.73%	38%	36%
Feb-11	24	11.46	24,021	23,027	4.14%	50%	48%
Mar-11	31	12.29	26,808	32,300	-20.49%	43%	52%
Apr-11	30	13.87	28,090	35,902	-27.81%	46%	59%
May-11	31	13.86	32,222	37,065	-15.03%	52%	59%
Jun-11	27	14.19	32,434	33,167	-2.26%	60%	61%
Jul-11	31	10.03	24,292	25,396	-4.54%	39%	41%
Aug-11	31	9.20	23,281	22,861	1.80%	37%	37%
Sep-11	30	7.68	17,135	17,655	-3.03%	28%	29%
Oct-11	31	10.61	25,089	27,159	-8.25%	40%	43%
Nov-11	28	11.82	27,182	27,865	-2.51%	48%	49%
Dec-11	31	9.51	19,746	23,825	-20.66%	32%	38%
Total	356	11.08	303,952	328,520	-8.08%	42%	46%
Total in OSP (07/15-09/15)	63	9.00	45,222	45,219	0.01%	36%	36%

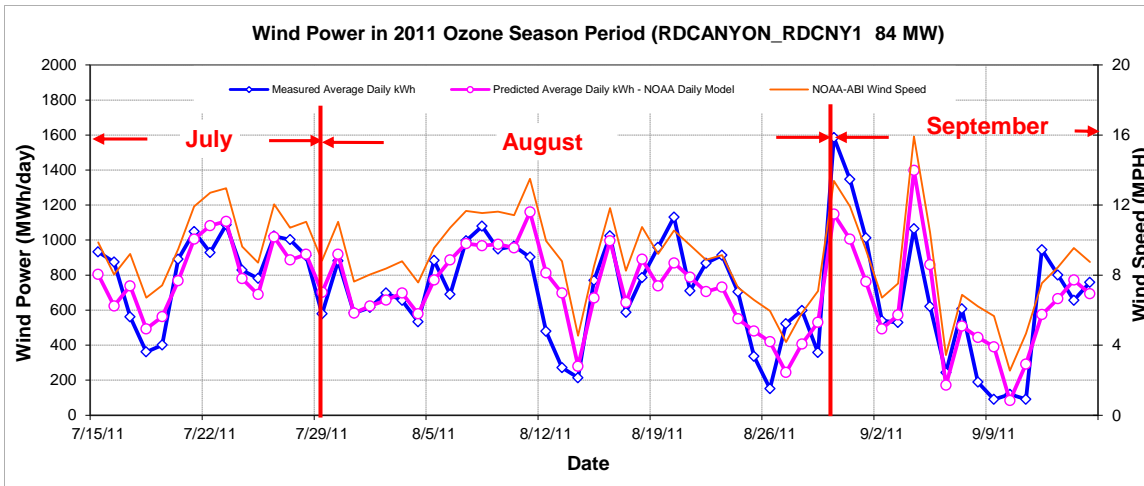


Figure 9-227: RDCANYON_RDCNY1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

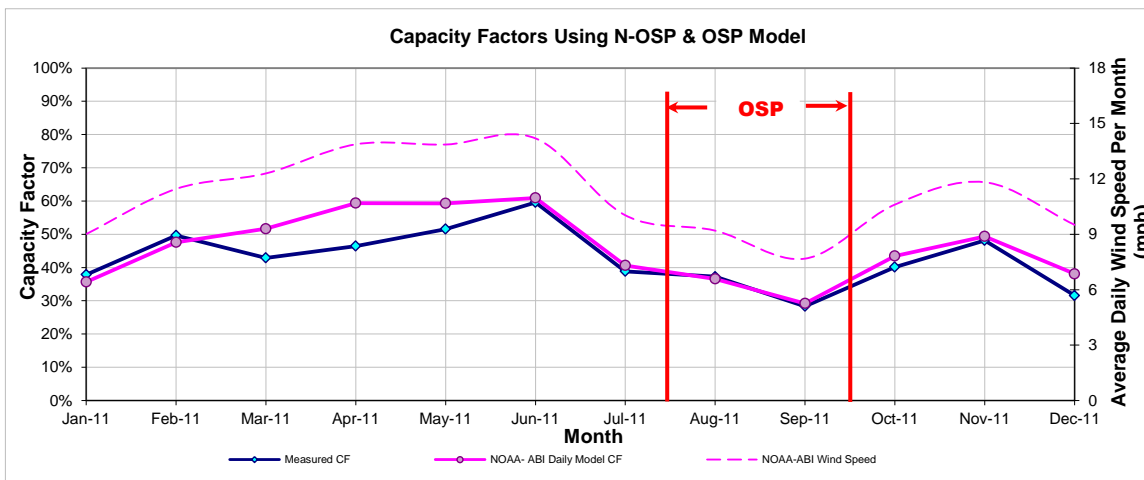


Figure 9-228: RDCANYON_RDCNY1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-219: RDCANYON_RDCNY1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
349,999	311,636	692	718

9.48 Big Spring Wind Power

Table 9-220: Site Information for Big Spring Wind Power

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
SGMTN_SIGNALMT	Wind	Big Spring	Howard	Feb-99	41	York Research	Big Spring Wind Power	Vestas V-47 (42) Vestas (4)	ERCOT	West	MAF

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
SGMTN_SIGNALMT	SGMTN_SIGNALMT	41

9.48.1 Big Spring Wind Power – SGMTN_SIGNALMT

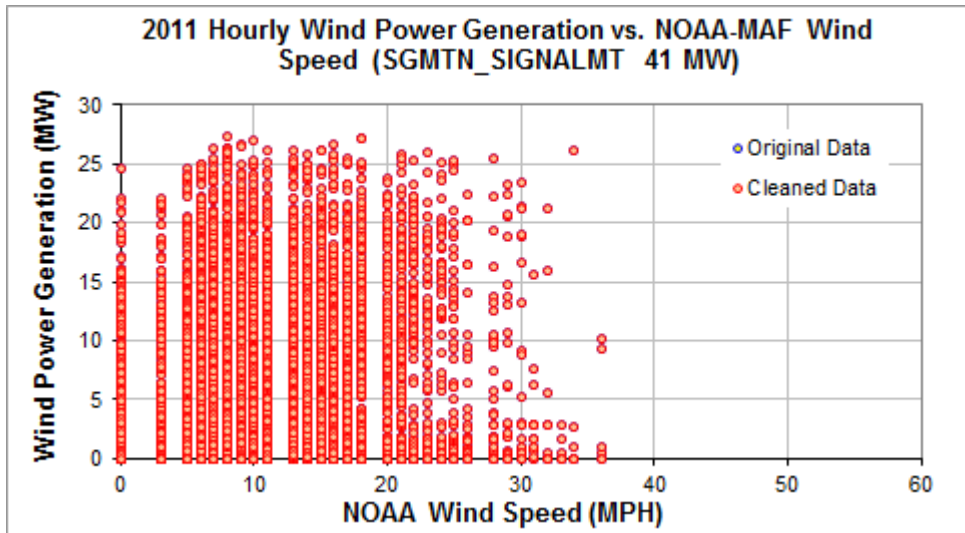


Figure 9-229: SGMTN_SIGNALMT - Hourly Wind Power vs. NOAA Wind Speed (2011)

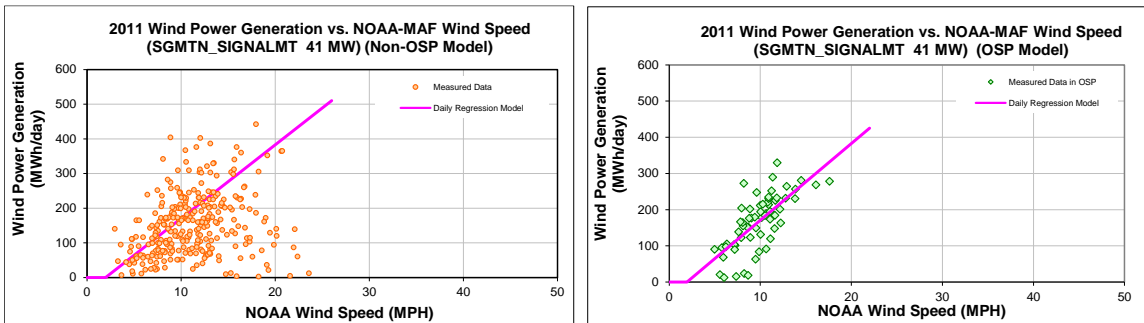


Figure 9-230: SGMTN_SIGNALMT - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-221: SGM TN_SIGNALMT – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-41.3838
Left Slope (MWh/mph-day)	21.2117
RMSE (MWh/day)	52.9479
R2	0.5091
CV-RMSE	31.6%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-41.3838
Left Slope (MWh/mph-day)	21.2117
RMSE (MWh/day)	52.9479
R2	0.5091
CV-RMSE	31.6%

Table 9-222: SGM TN_SIGNALMT – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	4,582	4,369	4.63%	15%	14%
Feb-11	28	10.80	4,583	5,256	-14.67%	17%	19%
Mar-11	31	11.31	4,076	6,152	-50.93%	13%	20%
Apr-11	30	13.78	3,822	7,525	-96.90%	13%	25%
May-11	31	13.09	4,530	7,322	-61.65%	15%	24%
Jun-11	30	14.09	5,957	7,722	-29.63%	20%	26%
Jul-11	31	10.61	5,591	5,694	-1.86%	18%	19%
Aug-11	31	9.61	5,662	5,034	11.09%	19%	17%
Sep-11	30	8.84	3,990	4,386	-9.92%	14%	15%
Oct-11	31	10.43	5,245	5,579	-6.36%	17%	18%
Nov-11	30	10.82	3,847	5,642	-46.65%	13%	19%
Dec-11	30	10.48	4,811	5,430	-12.87%	16%	18%
Total	364	11.03	56,694	70,111	-23.66%	16%	20%
Total in OSP (07/15-09/15)	63	9.86	10,572	10,571	0.01%	17%	17%

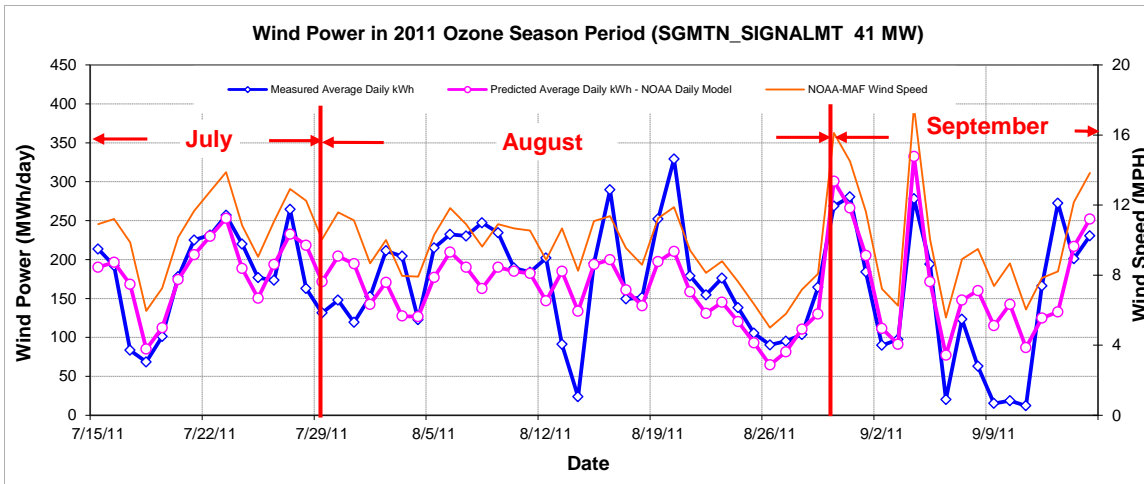


Figure 9-231: SGMTN_SIGNALMT - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

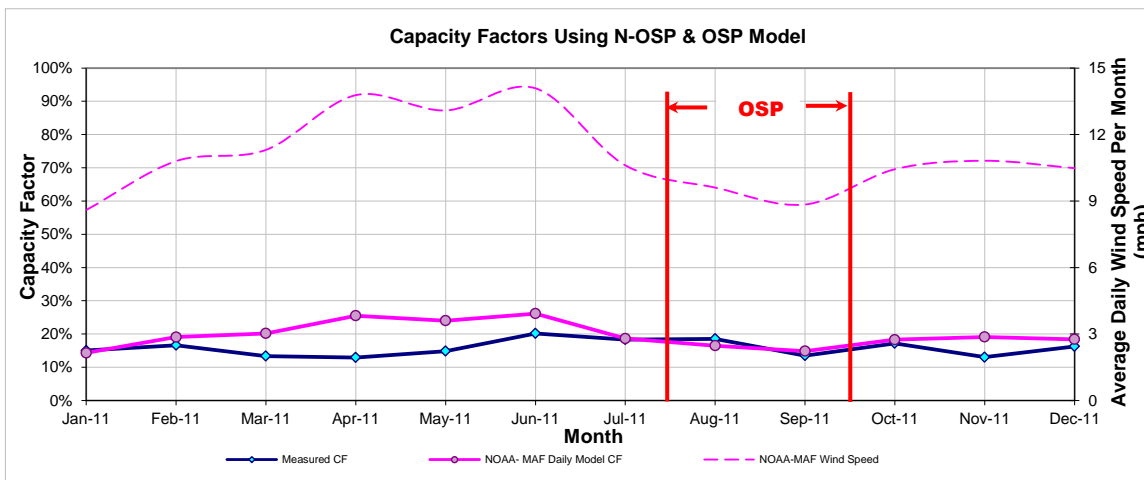


Figure 9-232: SGMTN_SIGNALMT – Predicted Capacity Factors Using Daily Models (2011)

Table 9-223: SGMTN_SIGNALMT – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
65,508	56,850	143	168

9.49 South Trent Wind Farm

Table 9-224: Site Information for South Trent Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
STWF_T1	Wind	-	Taylor	Oct-08	101.2	Babcock & Brown	South Trent Wind Farm	Siemens (44)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
STWF_T1	STWF_T1	101.2

9.49.1 South Trent Wind Farm – STWF_T1

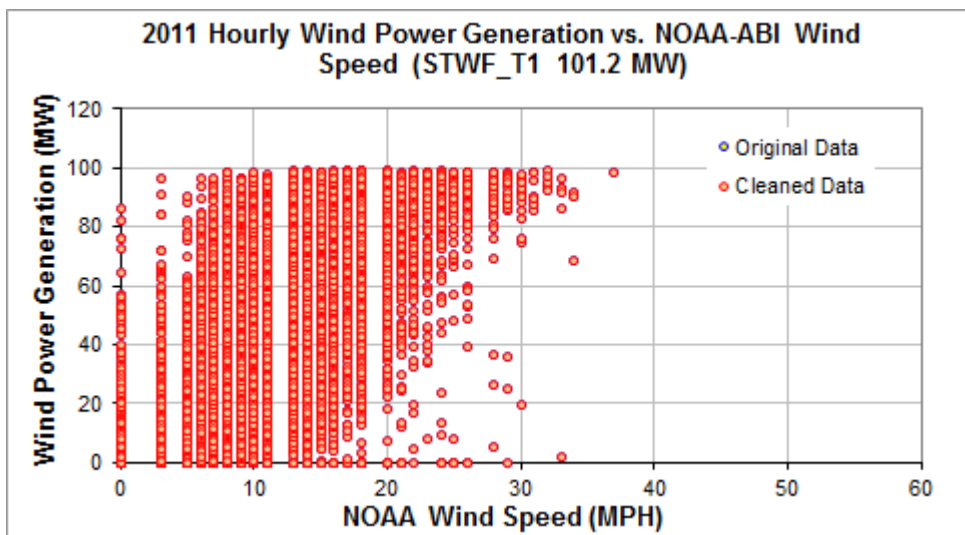


Figure 9-233: STWF_T1 - Hourly Wind Power vs. NOAA Wind Speed (2011)

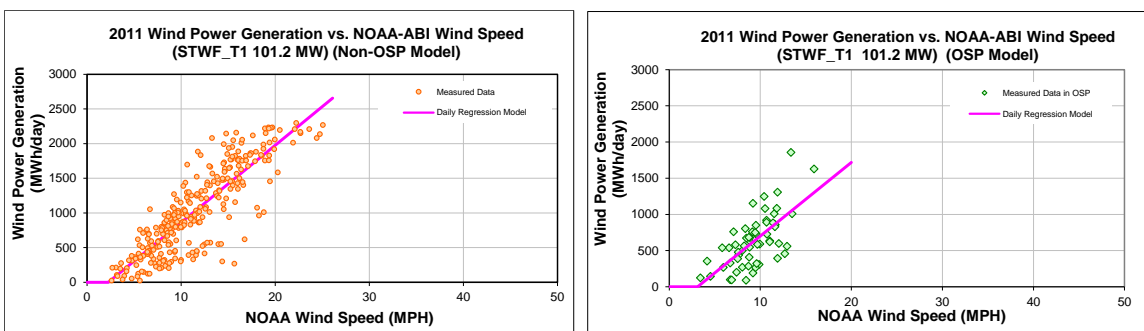


Figure 9-234: STWF_T1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-225: STWF_T1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-250.1212
Left Slope (MWh/mph-day)	111.3434
RMSE (MWh/day)	318.2995
R2	0.7316
CV-RMSE	30.6%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-318.3923
Left Slope (MWh/mph-day)	101.7849
RMSE (MWh/day)	276.3227
R2	0.4444
CV-RMSE	43.9%

Table 9-226: STWF_T1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	25,100	23,353	6.96%	33%	31%
Feb-11	24	11.46	26,649	24,610	7.65%	46%	42%
Mar-11	31	12.29	35,889	34,684	3.36%	48%	46%
Apr-11	30	13.87	37,961	38,826	-2.28%	52%	53%
May-11	28	14.00	34,474	36,634	-6.27%	51%	54%
Jun-11	29	14.80	37,210	40,525	-8.91%	53%	58%
Jul-11	31	10.03	11,967	24,097	-101.36%	16%	32%
Aug-11	31	9.20	23,255	19,149	17.65%	31%	25%
Sep-11	25	8.15	15,954	14,924	6.45%	26%	25%
Oct-11	31	10.61	31,798	28,860	9.24%	42%	38%
Nov-11	28	11.82	33,258	29,844	10.27%	49%	44%
Dec-11	31	9.51	27,101	25,083	7.44%	36%	33%
Total	350	11.22	340,616	340,591	0.01%	40%	40%
Total in OSP (07/15-09/15)	58	9.31	36,515	36,513	0.01%	26%	26%

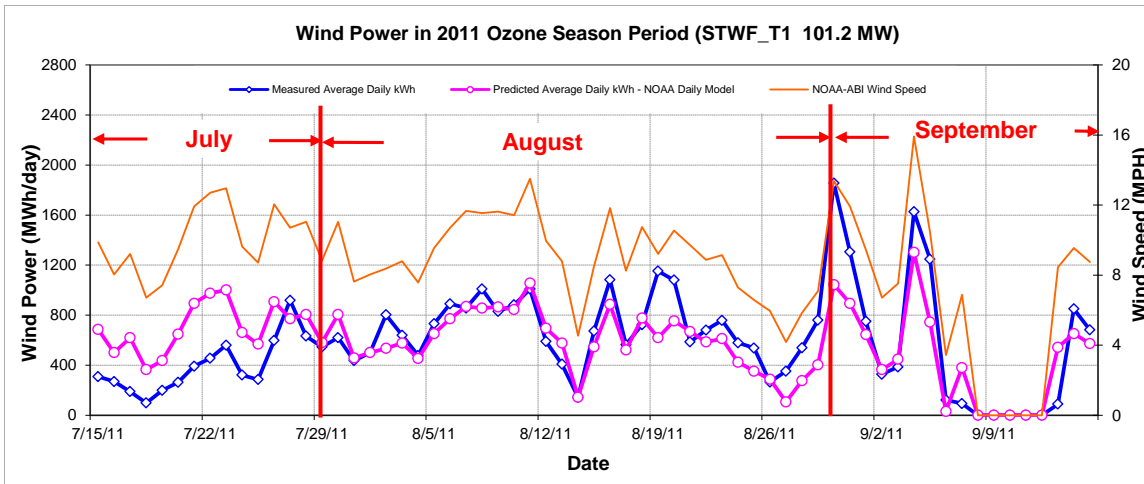


Figure 9-235: STWF_T1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

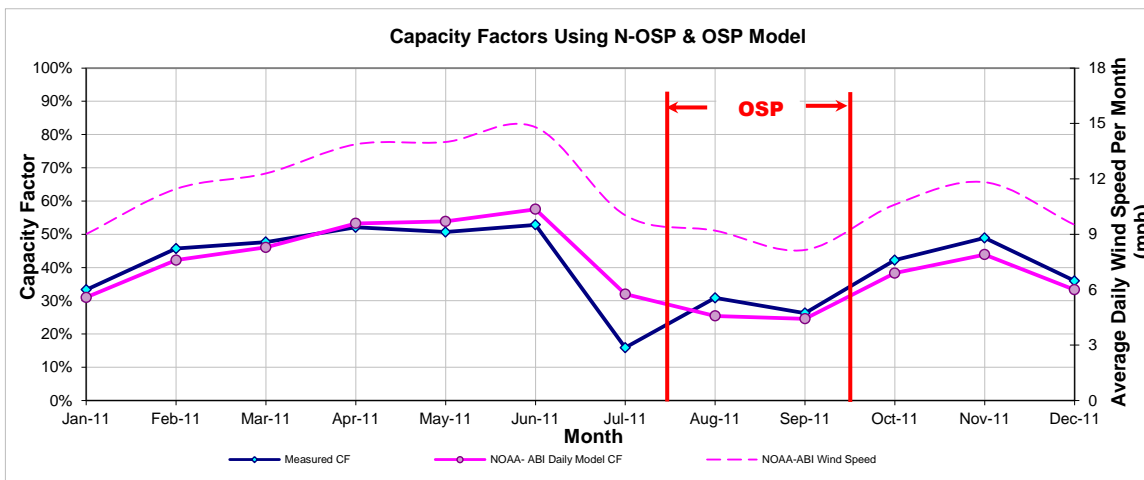


Figure 9-236: STWF_T1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-227: STWF_T1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
364,433	355,213	571	630

9.50 Stanton Wind Energy

Table 9-228: Site Information for Stanton Wind Energy

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
SWEC_G1	Wind	-	Martin	Jan-08	123.6	Invenergy	Stanton Wind Energy	GE Energy	ERCOT	West	MAF

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
SWEC_G1	SWEC_G1	123.6

9.50.1 Stanton Wind Energy– SWEC_G1

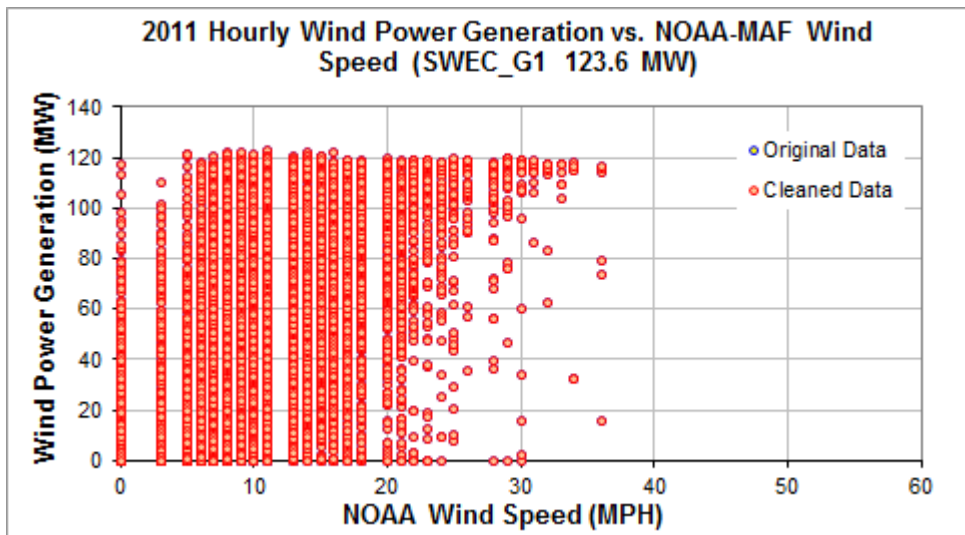


Figure 9-237: SWEC_G1 - Hourly Wind Power vs. NOAA Wind Speed (2011)

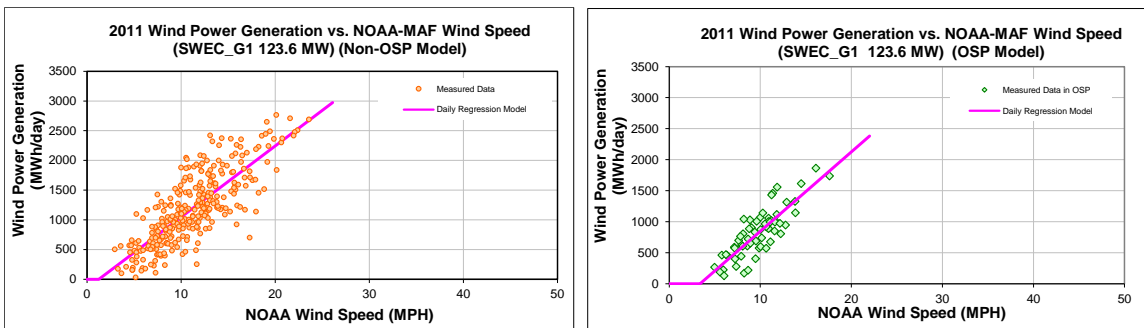


Figure 9-238: SWEC_G1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-229: SWEC_G1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-148.5249
Left Slope (MWh/mph-day)	119.5772
RMSE (MWh/day)	361.0491
R2	0.6371
CV-RMSE	30.1%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-431.6930
Left Slope (MWh/mph-day)	127.8482
RMSE (MWh/day)	213.7461
R2	0.6980
CV-RMSE	25.8%

Table 9-230: SWEC_G1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	31,807	27,259	14.30%	35%	30%
Feb-11	28	10.80	36,500	32,003	12.32%	44%	39%
Mar-11	31	11.31	37,821	37,310	1.35%	41%	41%
Apr-11	30	13.78	46,108	44,965	2.48%	52%	51%
May-11	31	13.09	37,453	43,904	-17.22%	41%	48%
Jun-11	30	14.09	40,099	46,075	-14.90%	45%	52%
Jul-11	31	10.61	27,055	31,425	-16.15%	29%	34%
Aug-11	31	9.61	27,465	24,690	10.11%	30%	27%
Sep-11	30	8.84	21,358	24,185	-13.24%	24%	27%
Oct-11	31	10.43	34,998	34,077	2.63%	38%	37%
Nov-11	30	10.82	41,852	34,347	17.93%	47%	39%
Dec-11	31	10.31	31,379	33,621	-7.14%	34%	37%
Total	365	11.02	413,895	413,860	0.01%	38%	38%
Total in OSP (07/15-09/15)	63	9.86	52,238	52,229	0.02%	28%	28%

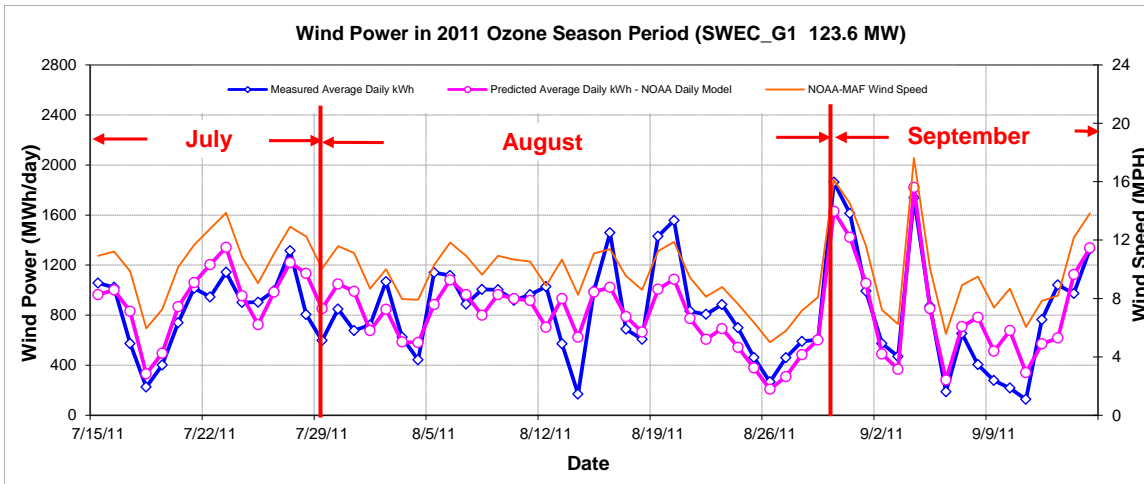


Figure 9-239: SWEC_G1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

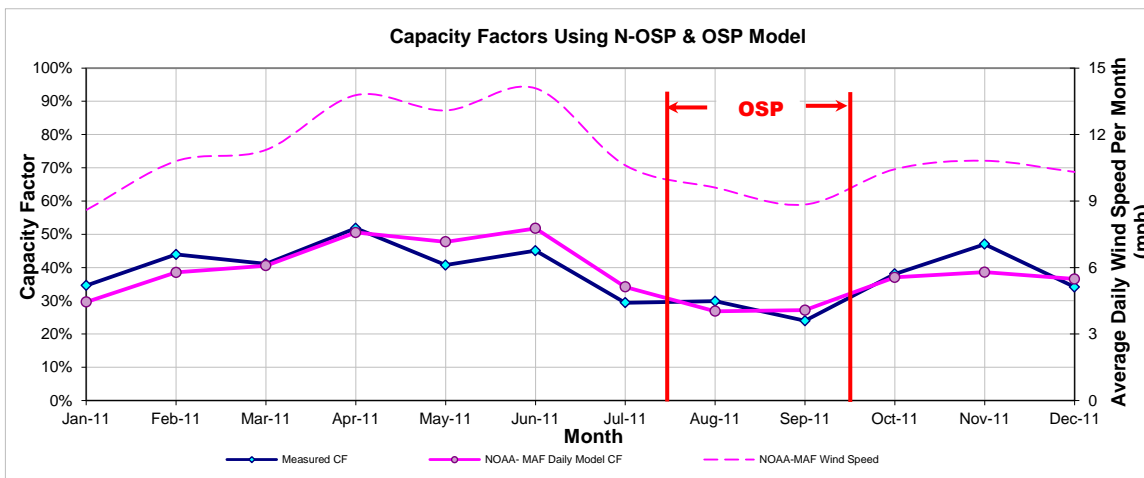


Figure 9-240: SWEC_G1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-231: SWEC_G1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
386,942	413,895	678	829

9.51 Southwest Mesa Wind Project

Table 9-232: Site Information for Southwest Mesa Wind Project

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
SW_MESA_SW_MESA	Wind	McCamey	Upton	Jun-99	74.6	FPL Energy	Southwest Mesa Wind Project	NEG Micon (107)	ERCOT	West	MAF

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
SW_MESA_SW_MESA	SW_MESA_SW_MESA	74.6

9.51.1 Southwest Mesa Wind Project – SW_MESA_SW_MESA

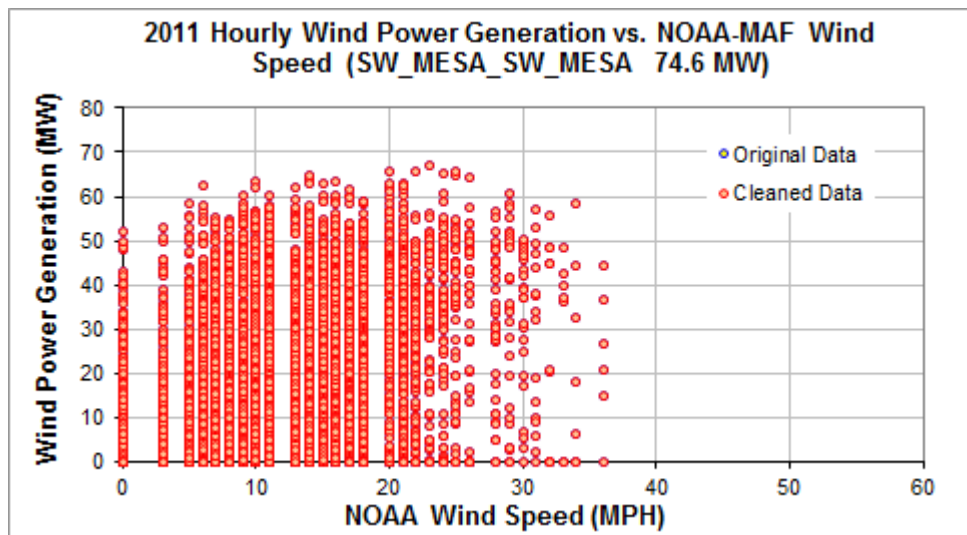


Figure 9-241: SW_MESA_SW_MESA - Hourly Wind Power vs. NOAA Wind Speed (2011)

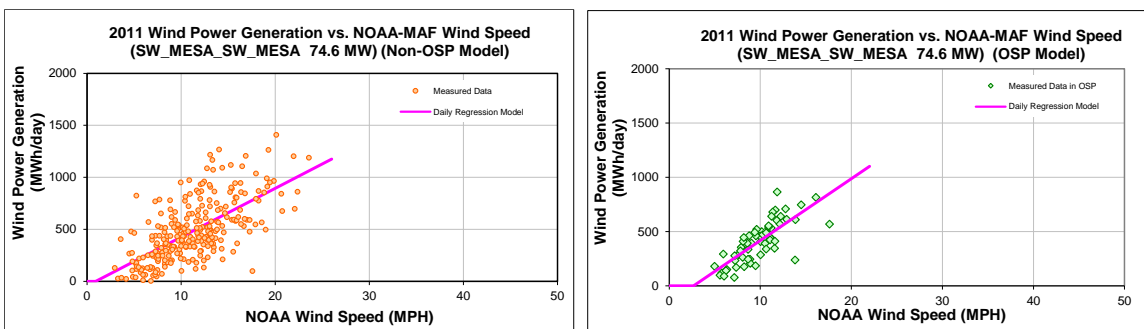


Figure 9-242: SW_MESA_SW_MESA - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-233: SW_MESA_SW_MESA – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-42.1560
Left Slope (MWh/mph-day)	46.8333
RMSE (MWh/day)	216.5605
R2	0.4261
CV-RMSE	44.6%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-151.8708
Left Slope (MWh/mph-day)	56.9725
RMSE (MWh/day)	119.2204
R2	0.5960
CV-RMSE	29.1%

Table 9-234: SW_MESA_SW_MESA – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.60	12,529	11,172	10.83%	23%	20%
Feb-11	28	10.80	15,899	12,983	18.34%	32%	26%
Mar-11	31	11.31	18,119	15,109	16.61%	33%	27%
Apr-11	30	13.78	16,134	18,091	-12.13%	30%	34%
May-11	31	13.09	14,806	17,692	-19.49%	27%	32%
Jun-11	30	14.09	17,205	18,526	-7.68%	32%	34%
Jul-11	31	10.61	15,381	14,084	8.43%	28%	25%
Aug-11	31	9.61	13,274	12,258	7.66%	24%	22%
Sep-11	30	8.84	7,886	10,942	-38.76%	15%	20%
Oct-11	31	10.43	15,768	13,843	12.21%	28%	25%
Nov-11	21	10.84	10,479	9,777	6.69%	28%	26%
Dec-11	17	9.64	3,971	6,960	-75.27%	13%	23%
Total	342	11.02	161,452	161,438	0.01%	26%	26%
Total in OSP (07/15-09/15)	63	9.86	25,830	25,826	0.02%	23%	23%

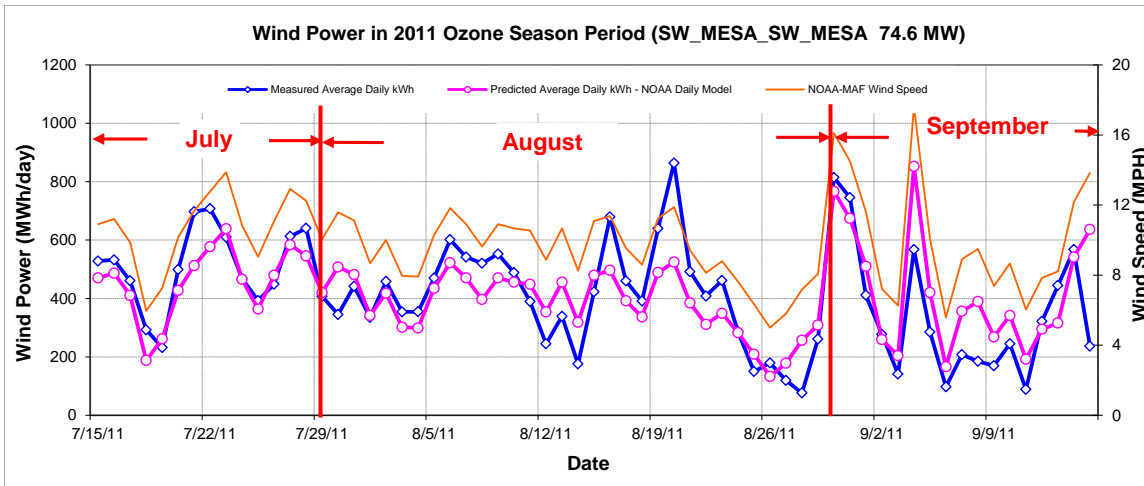


Figure 9-243: SW_MESA_SW_MESA - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

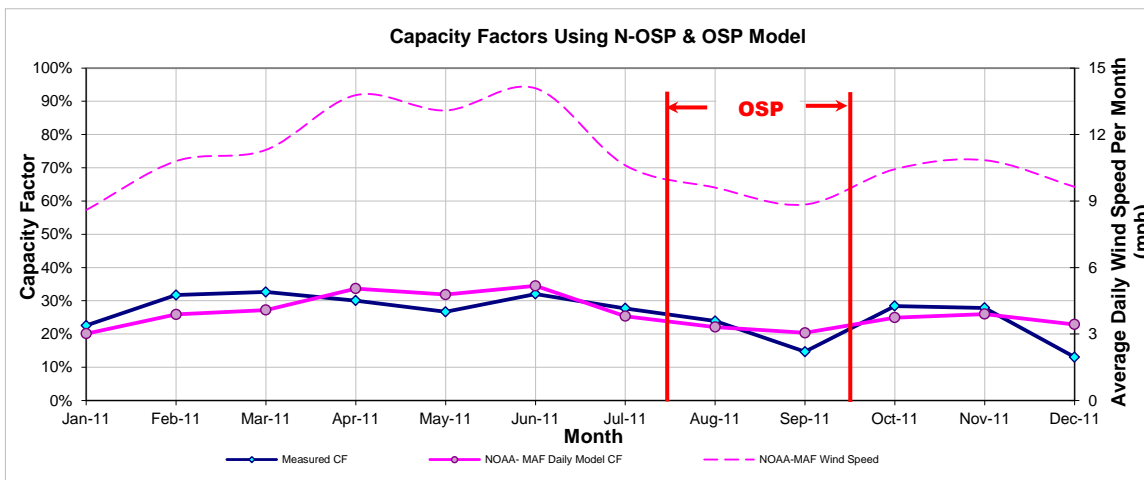


Figure 9-244: SW_MESA_SW_MESA – Predicted Capacity Factors Using Daily Models (2011)

Table 9-235: SW_MESA_SW_MESA – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
161,256	172,309	342	410

9.52 Sweetwater Wind 1

Table 9-236: Site Information for Sweetwater Wind 1

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
SWEETWND_WND1	Wind	Sweetwater	Nolan	Dec-03	37.5	DKR Development	Sweetwater Wind 1	GE Wind 1500 (25)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
SWEETWND_WND1	SWEETWND_WND1	37.5

9.52.1 Sweetwater Wind 1 – SWEETWND_WND1

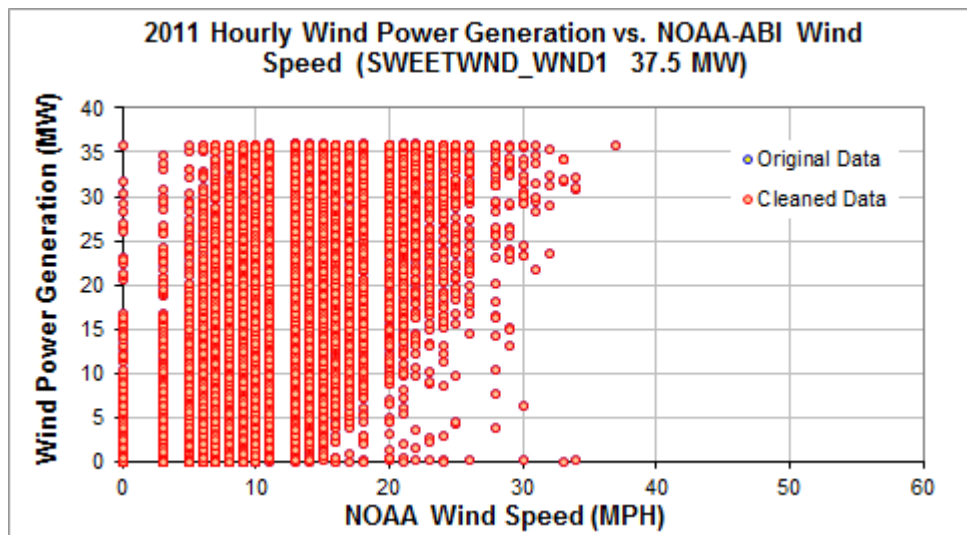


Figure 9-245: SWEETWND_WND1 - Hourly Wind Power vs. NOAA Wind Speed (2011)

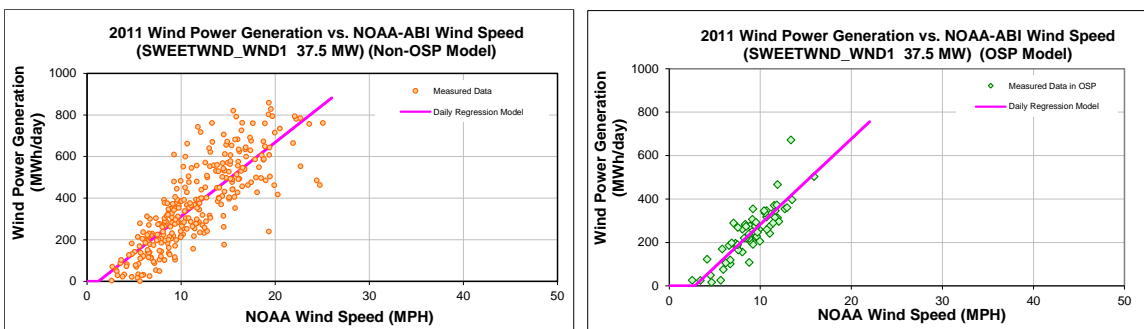


Figure 9-246: SWEETWND_WND1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-237: SWEETWND_WND1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-42.7572
Left Slope (MWh/mph-day)	35.5740
RMSE (MWh/day)	117.1636
R2	0.6712
CV-RMSE	31.7%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-110.6516
Left Slope (MWh/mph-day)	39.3973
RMSE (MWh/day)	60.1010
R2	0.7462
CV-RMSE	24.7%

Table 9-238: SWEETWND_WND1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	9,464	8,613	8.99%	34%	31%
Feb-11	24	11.46	9,301	8,755	5.87%	43%	41%
Mar-11	31	12.29	12,833	12,233	4.67%	46%	44%
Apr-11	30	13.87	12,664	13,520	-6.76%	47%	50%
May-11	31	13.86	12,818	13,958	-8.90%	46%	50%
Jun-11	30	14.61	11,873	14,314	-20.57%	44%	53%
Jul-11	31	10.03	7,463	9,222	-23.58%	27%	33%
Aug-11	31	9.20	8,273	7,802	5.69%	30%	28%
Sep-11	30	7.68	6,497	6,342	2.38%	24%	23%
Oct-11	31	10.61	11,883	10,373	12.71%	43%	37%
Nov-11	28	11.82	11,860	10,576	10.83%	47%	42%
Dec-11	31	9.51	9,944	9,166	7.83%	36%	33%
Total	359	11.14	124,871	124,874	0.00%	39%	39%
Total in OSP (07/15-09/15)	63	9.00	15,360	15,369	-0.06%	27%	27%

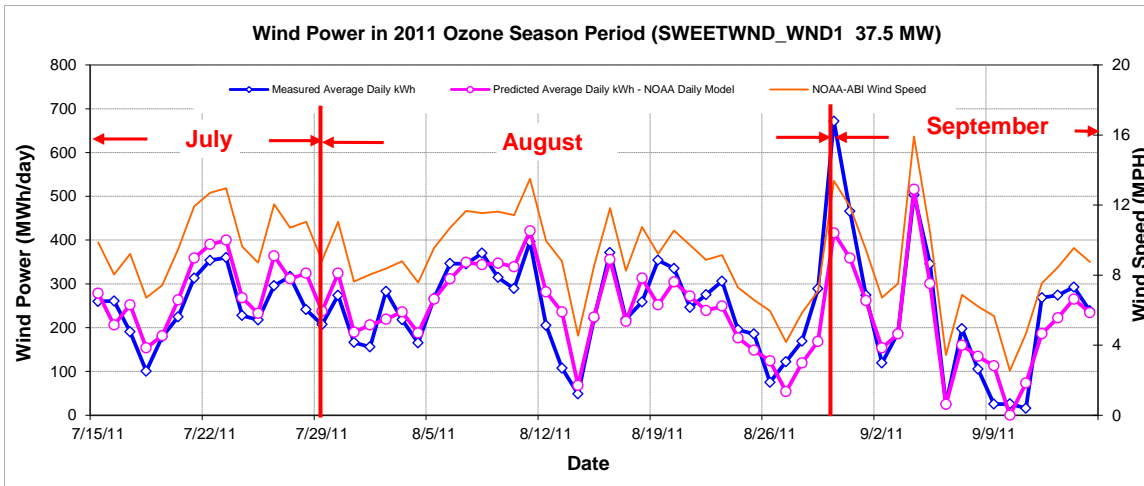


Figure 9-247: SWEETWND_WND1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

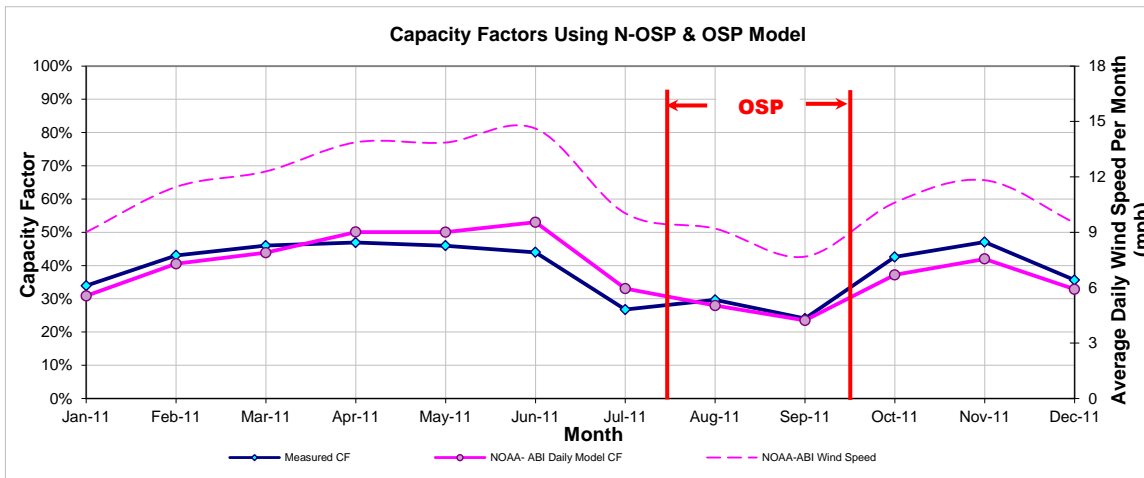


Figure 9-248: SWEETWND_WND1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-239: SWEETWND_WND1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
130,913	126,958	234	244

9.53 Sweetwater Wind 2

Table 9-240: Site Information for Sweetwater Wind 2

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
SWEETWN2_WND2	Wind	Sweetwater	Nolan	Feb-05	116.3	DKRW Development	Sweetwater Wind 2	GE Wind 1500 (61)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
SWEETWN2_WND2	SWEETWN2_WND2	100.3
SWEETWN2_WND24	SWEETWN2_WND24	16

9.53.1 Sweetwater Wind 2 (SWEETWN2_WND2)

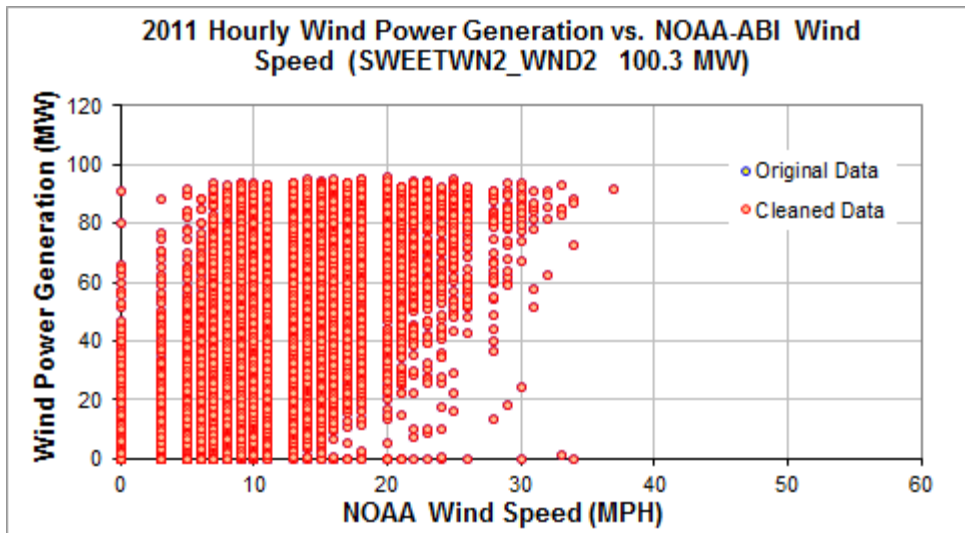


Figure 9-249: SWEETWN2_WND2 – Hourly Wind Power vs. NOAA Wind Speed (2011)

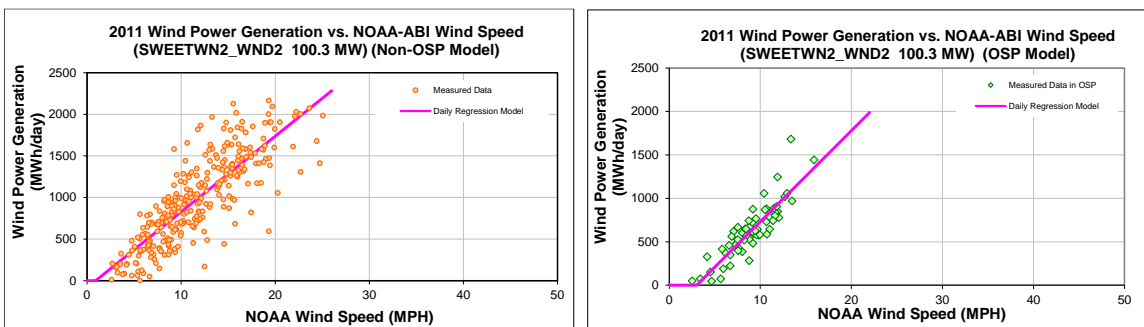


Figure 9-250: SWEETWN2_WND2 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-241: SWEETWN2_WND2 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-82.0246
Left Slope (MWh/mph-day)	90.9365
RMSE (MWh/day)	293.3483
R2	0.6803
CV-RMSE	30.1%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-317.1488
Left Slope (MWh/mph-day)	104.8047
RMSE (MWh/day)	149.2503
R2	0.7713
CV-RMSE	23.8%

Table 9-242: SWEETWN2_WND2 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	24,883	22,863	8.12%	33%	31%
Feb-11	24	11.46	25,440	23,034	9.46%	44%	40%
Mar-11	31	12.29	34,896	32,117	7.96%	47%	43%
Apr-11	30	13.87	33,672	35,378	-5.07%	47%	49%
May-11	31	13.86	33,053	36,526	-10.51%	44%	49%
Jun-11	30	14.61	32,352	37,410	-15.63%	45%	52%
Jul-11	31	10.03	18,270	24,061	-31.70%	24%	32%
Aug-11	31	9.20	20,469	20,049	2.05%	27%	27%
Sep-11	30	7.68	16,538	16,596	-0.35%	23%	23%
Oct-11	31	10.61	30,036	27,361	8.91%	40%	37%
Nov-11	28	11.82	30,398	27,798	8.55%	45%	41%
Dec-11	31	9.51	27,430	24,276	11.50%	37%	33%
Total	359	11.14	327,438	327,467	-0.01%	38%	38%
Total in OSP (07/15-09/15)	63	9.00	39,425	39,472	-0.12%	26%	26%

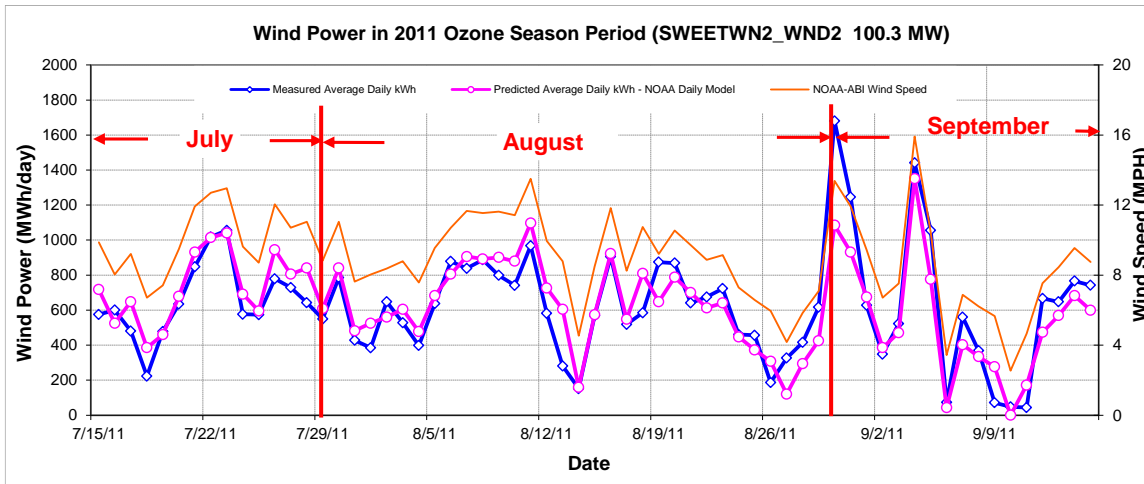


Figure 9-251: SWEETWN2_WND2 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

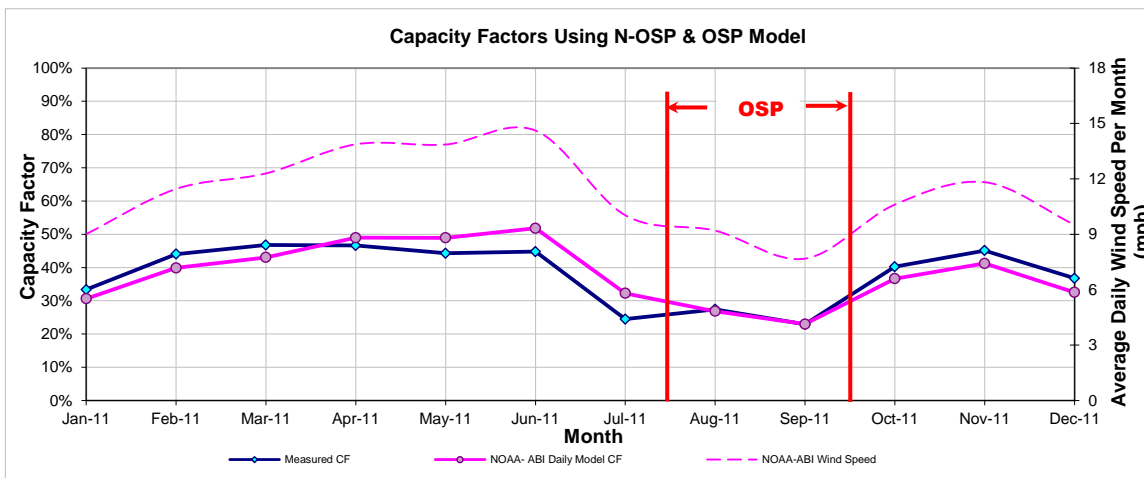


Figure 9-252: SWEETWN2_WND2 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-243: SWEETWN2_WND2 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
343,007	332,910	599	626

9.53.2 Sweetwater Wind 2 (SWEETWN2_WND24)

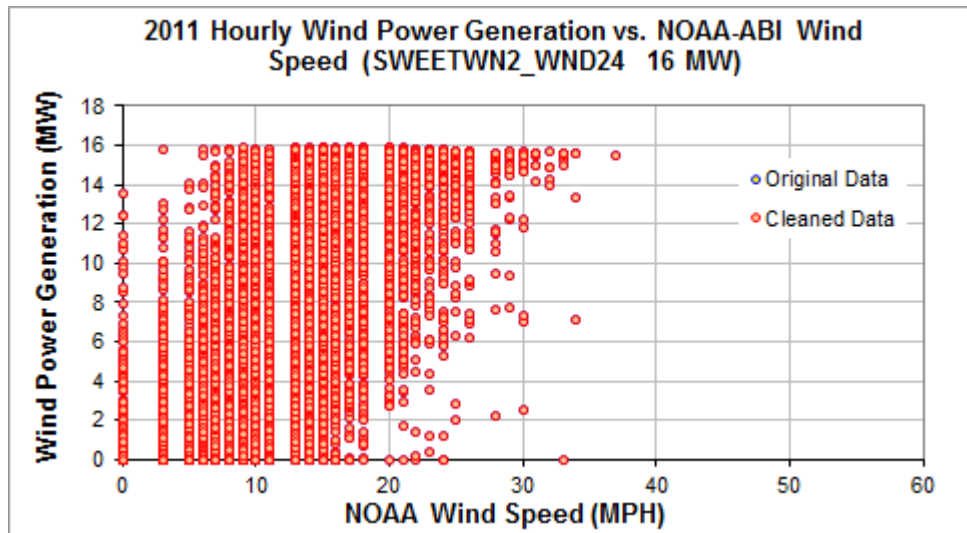


Figure 9-253: SWEETWN2_WND24 – Hourly Wind Power vs. NOAA Wind Speed (2011)

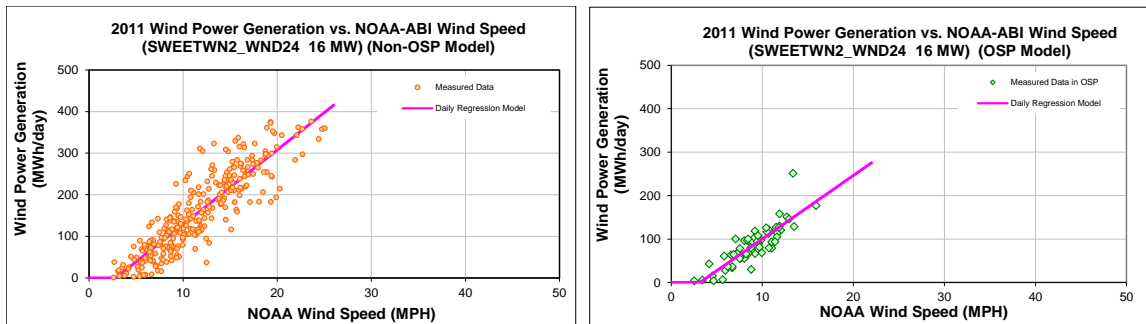


Figure 9-254: SWEETWN2_WND24 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-244: SWEETWN2_WND24 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-50.7409
Left Slope (MWh/mph-day)	17.9264
RMSE (MWh/day)	44.4751
R2	0.7831
CV-RMSE	28.2%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-46.3578
Left Slope (MWh/mph-day)	14.6432
RMSE (MWh/day)	22.5702
R2	0.7422
CV-RMSE	26.4%

Table 9-245: SWEETWN2_WND24 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	3,671	3,439	6.33%	31%	29%
Feb-11	24	11.46	3,840	3,711	3.36%	42%	40%
Mar-11	31	12.29	5,547	5,260	5.19%	47%	44%
Apr-11	30	13.87	5,785	5,937	-2.63%	50%	52%
May-11	31	13.86	5,488	6,129	-11.67%	46%	51%
Jun-11	30	14.61	5,969	6,337	-6.18%	52%	55%
Jul-11	31	10.03	2,785	3,523	-26.53%	23%	30%
Aug-11	31	9.20	2,798	2,738	2.14%	24%	23%
Sep-11	30	7.68	2,183	2,310	-5.82%	19%	20%
Oct-11	31	10.61	4,838	4,322	10.66%	41%	36%
Nov-11	28	11.82	5,004	4,514	9.79%	47%	42%
Dec-11	28	9.65	3,722	3,421	8.08%	35%	32%
Total	356	11.17	51,630	51,641	-0.02%	38%	38%
Total in OSP (07/15-09/15)	63	9.00	5,380	5,388	-0.16%	22%	22%

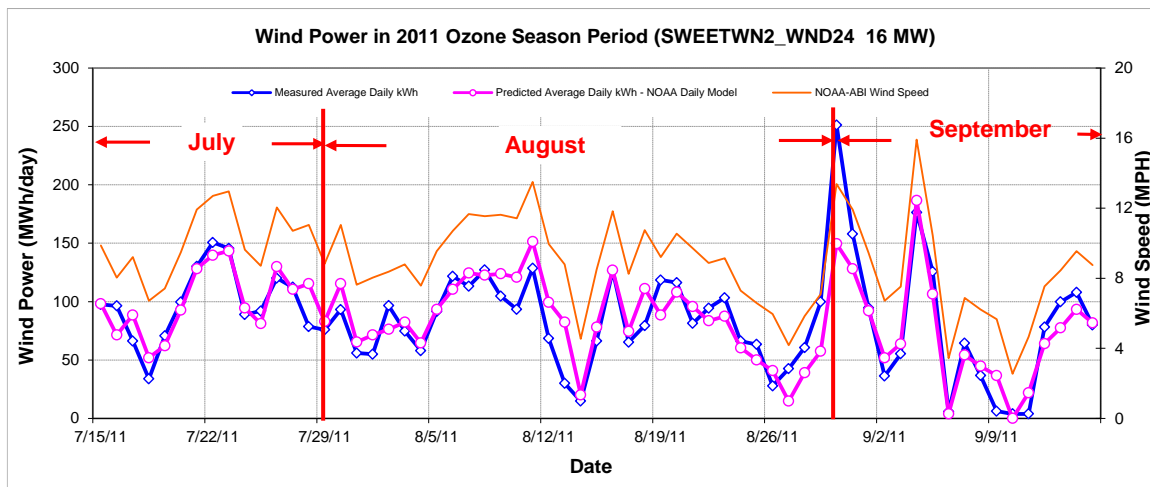


Figure 9-255: SWEETWN2_WND24 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

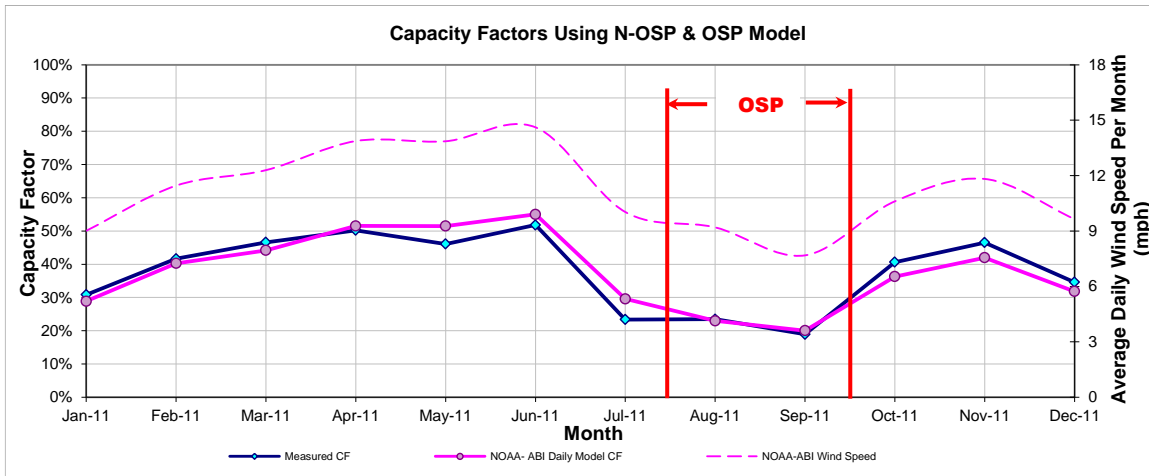


Figure 9-256: SWEETWN2_WND24 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-246: SWEETWN2_WND24 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
54,851	52,935	82	85

9.54 Sweetwater Wind 3

Table 9-247: Site Information for Sweetwater Wind 3

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
SWEETWN3	Wind	Sweetwater	Nolan	Dec-05	135	DKRW Development	Sweetwater Wind 3	GE Energy 1.5 MW (90)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
SWEETN3_WND3	SWEETN3_WND3	135

9.54.1 Sweetwater Wind 3 – SWEETWN3_WND3

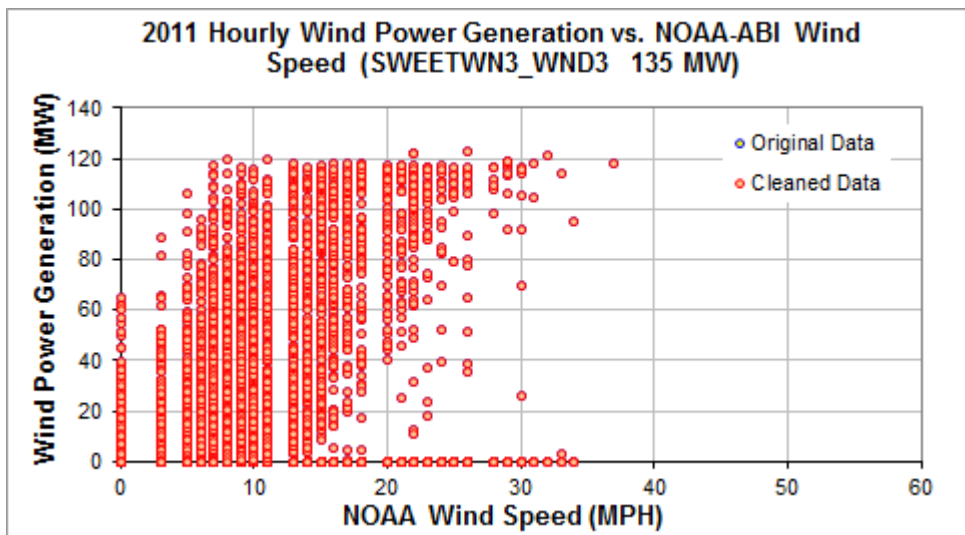


Figure 9-257: SWEETWN3_WND3 - Hourly Wind Power vs. NOAA Wind Speed (2011)

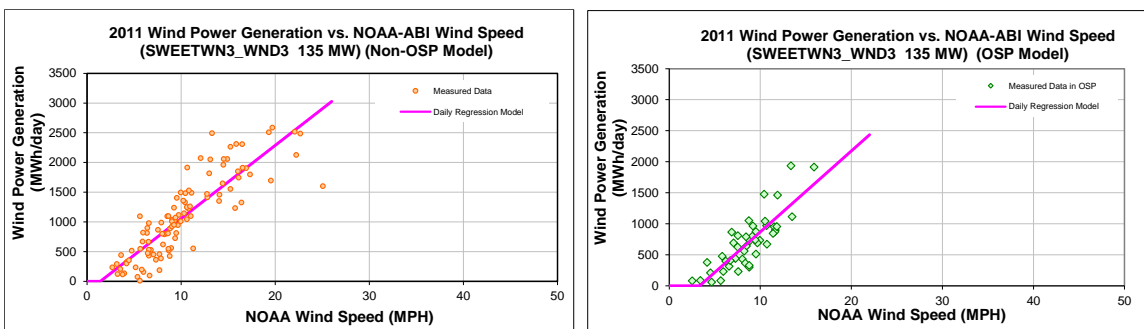


Figure 9-258: SWEETWN3_WND3 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-248: SWEETWN3_WND3 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-173.5190
Left Slope (MWh/mph-day)	123.0818
RMSE (MWh/day)	344.7465
R2	0.7423
CV-RMSE	31.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-435.8985
Left Slope (MWh/mph-day)	130.4484
RMSE (MWh/day)	240.8455
R2	0.6950
CV-RMSE	34.6%

Table 9-249: SWEETWN3_WND3 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11							
Feb-11							
Mar-11							
Apr-11							
May-11							
Jun-11							
Jul-11							
Aug-11	31	9.20	21,718	23,679	-9.03%	22%	24%
Sep-11	30	7.68	20,576	20,164	2.00%	21%	21%
Oct-11	31	10.61	33,493	35,095	-4.78%	33%	35%
Nov-11	28	11.82	35,805	35,874	-0.19%	39%	40%
Dec-11	31	9.51	34,042	30,920	9.17%	34%	31%
Total	151	9.74	145,634	145,731	-0.07%	30%	30%
Total in OSP (07/15-09/15)	46	8.67	31,977	32,080	-0.32%	21%	22%

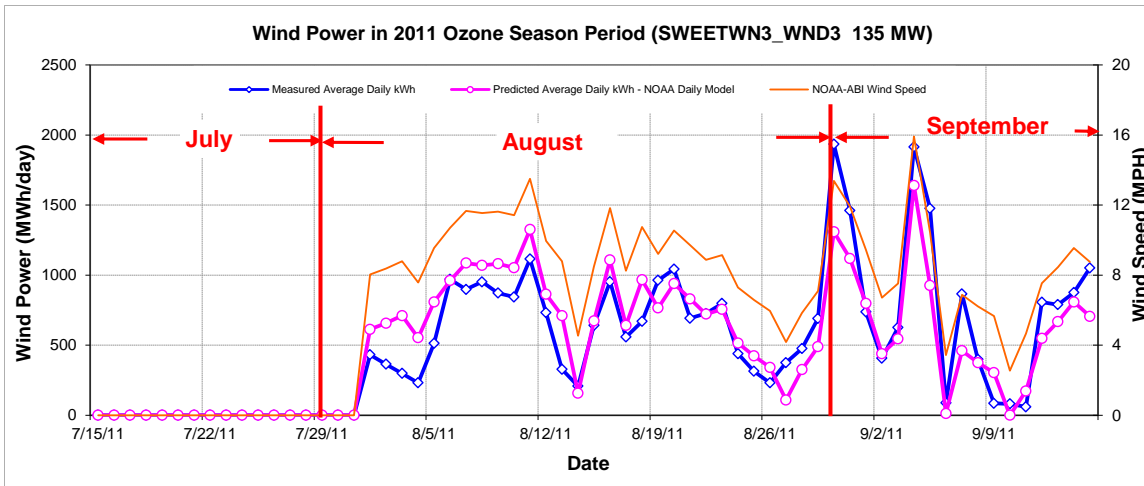


Figure 9-259: SWEETWN3_WND3 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

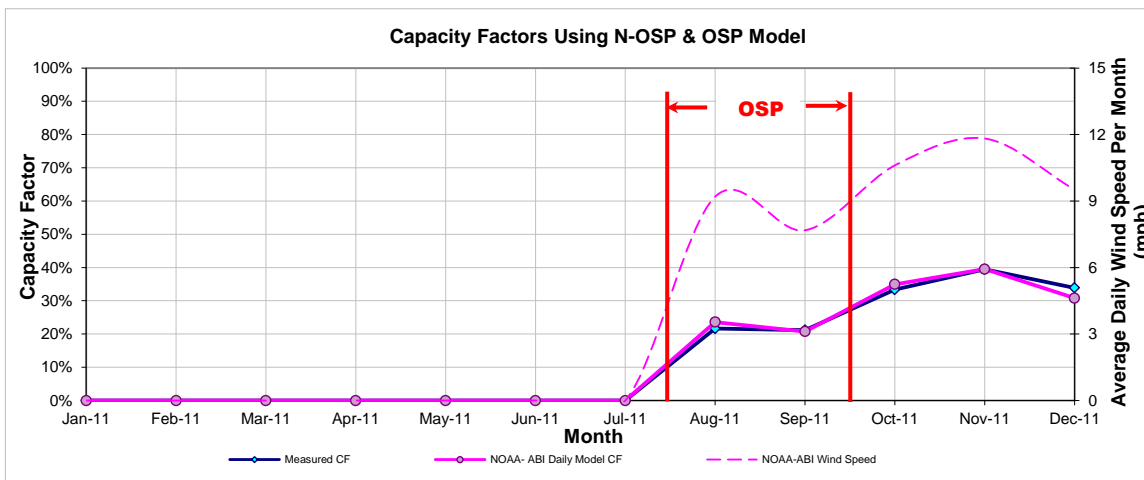


Figure 9-260: SWEETWN3_WND3 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-250: SWEETWN3_WND3 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
438,666	352,030	704	695

9.55 Sweetwater Wind 4

Table 9-251: Site Information for Sweetwater Wind 4

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
SWEETWN4	Wind	Abilene	Nolan	May-07	240.8	DKRW/ Babcock Brown	SWEET WIND 4	Mitsubishi	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
SWEETWN4_WND4A	SWEETWN4	135
SWEETWN4_WND4B	SWEETWN4	105.8

9.55.1 Sweetwater Wind 4 (SWEETWN4_WND4A)

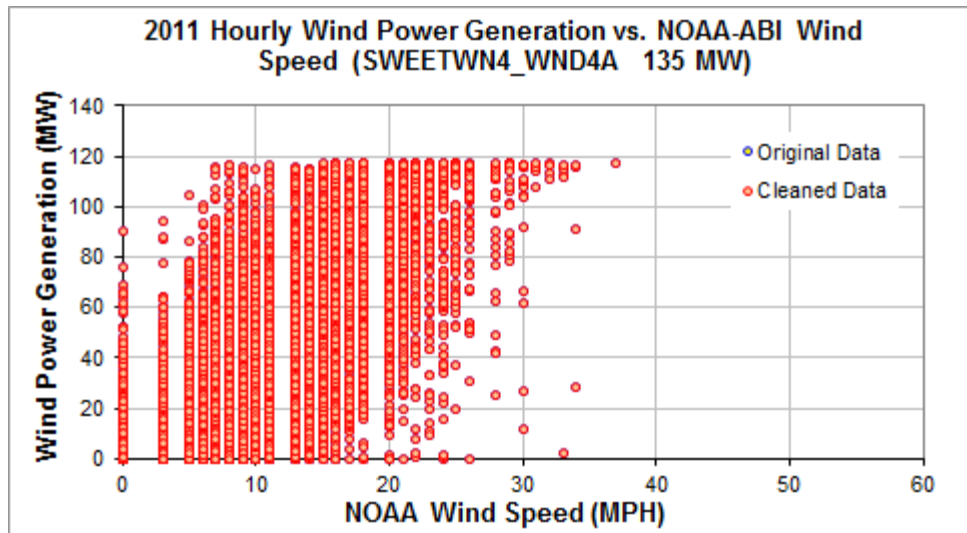


Figure 9-261: SWEETWN4_WND4A – Hourly Wind Power vs. NOAA Wind Speed (2011)

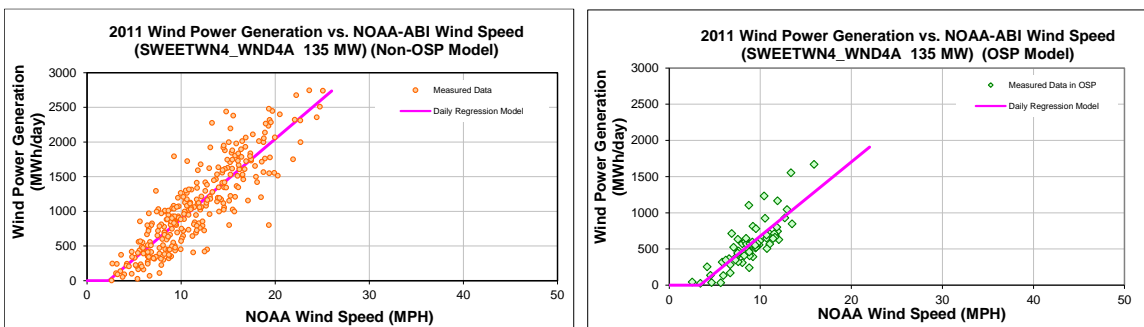


Figure 9-262: SWEETWN4_WND4A – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-252: SWEETWN4_WND4A – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-263.1432
Left Slope (MWh/mph-day)	115.3686
RMSE (MWh/day)	303.0875
R2	0.7620
CV-RMSE	28.1%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-348.0765
Left Slope (MWh/mph-day)	102.4887
RMSE (MWh/day)	190.7615
R2	0.6638
CV-RMSE	33.2%

Table 9-253: SWEETWN4_WND4A – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	25,304	24,074	4.86%	25%	24%
Feb-11	24	11.46	25,807	25,404	1.56%	33%	33%
Mar-11	31	12.29	37,912	35,815	5.53%	38%	36%
Apr-11	30	13.87	38,885	40,111	-3.15%	40%	41%
May-11	31	13.86	37,802	41,408	-9.54%	38%	41%
Jun-11	30	14.61	41,028	42,688	-4.05%	42%	44%
Jul-11	31	10.03	16,657	24,103	-44.70%	17%	24%
Aug-11	31	9.20	17,867	18,430	-3.15%	18%	18%
Sep-11	30	7.68	18,317	16,040	12.43%	19%	17%
Oct-11	31	10.61	31,443	29,780	5.29%	31%	30%
Nov-11	28	11.82	33,503	30,812	8.03%	37%	34%
Dec-11	30	9.64	29,559	25,481	13.80%	30%	26%
Total	358	11.16	354,084	354,146	-0.02%	31%	31%
Total in OSP (07/15-09/15)	63	9.00	36,164	36,248	-0.23%	18%	18%

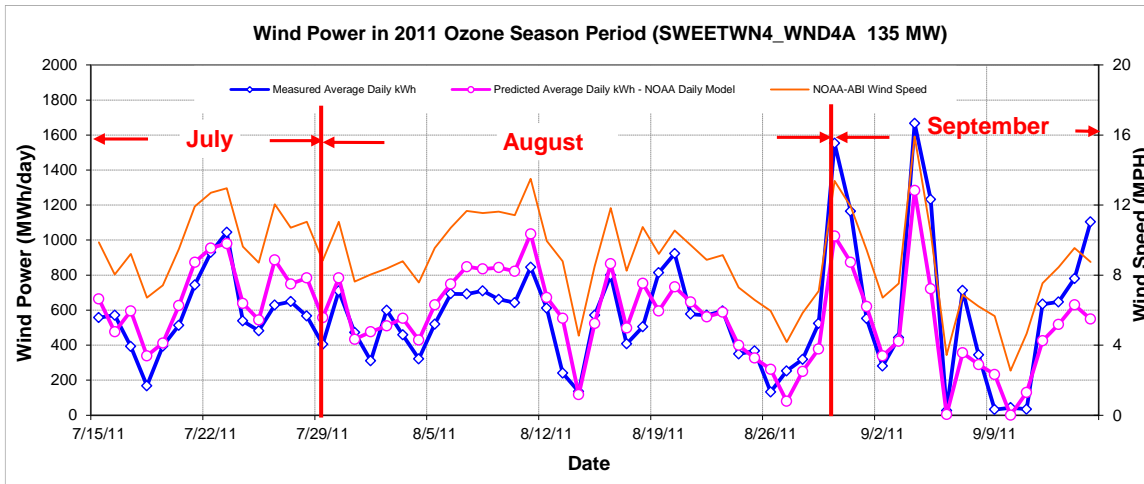


Figure 9-263: SWEETWN4_WND4A – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

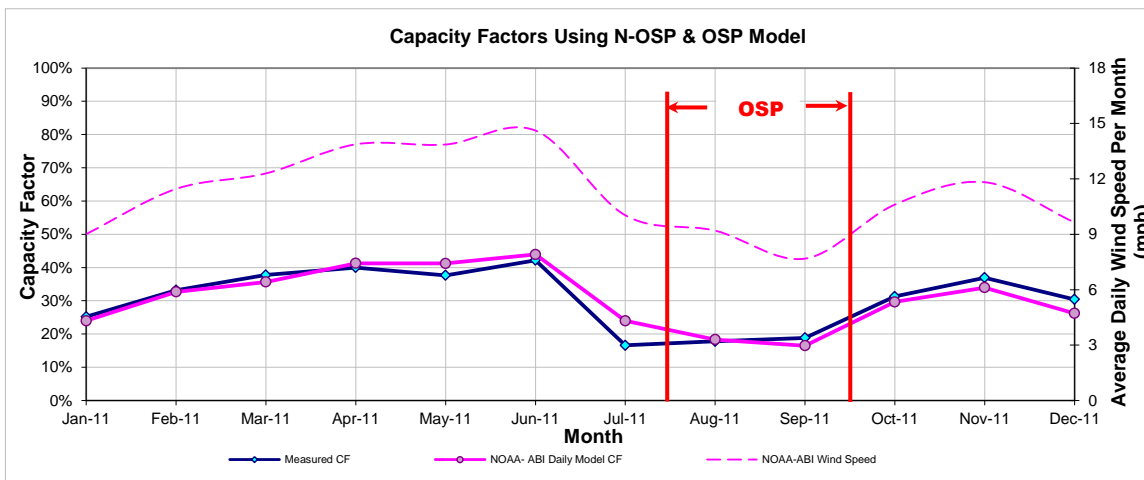


Figure 9-264: SWEETWN4_WND4A – Predicted Capacity Factors Using Daily Models (2011)

Table 9-254: SWEETWN4_WND4A – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
373,646	361,007	548	574

9.55.2 Sweetwater Wind 4 (SWEETWN4_WND4B)

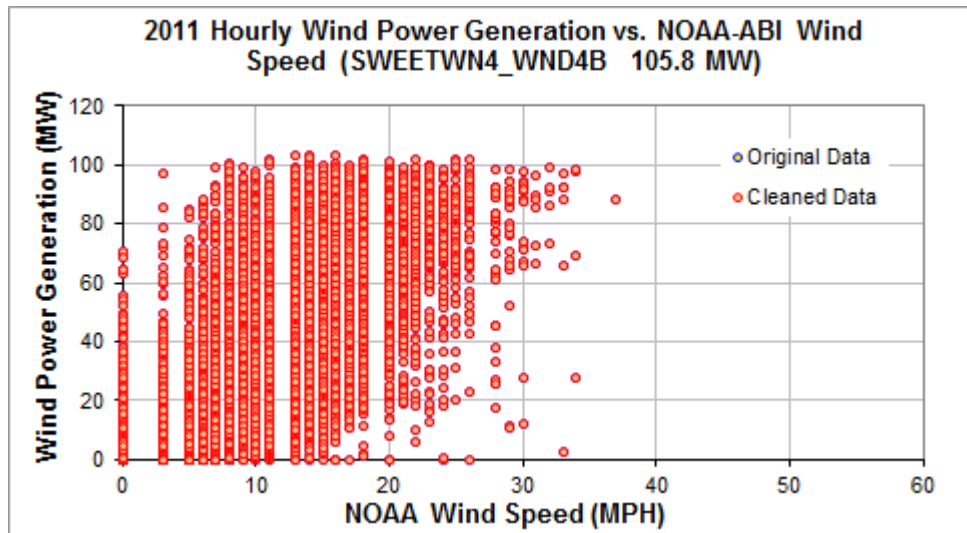


Figure 9-265: SWEETWN4_WND4B – Hourly Wind Power vs. NOAA Wind Speed (2011)

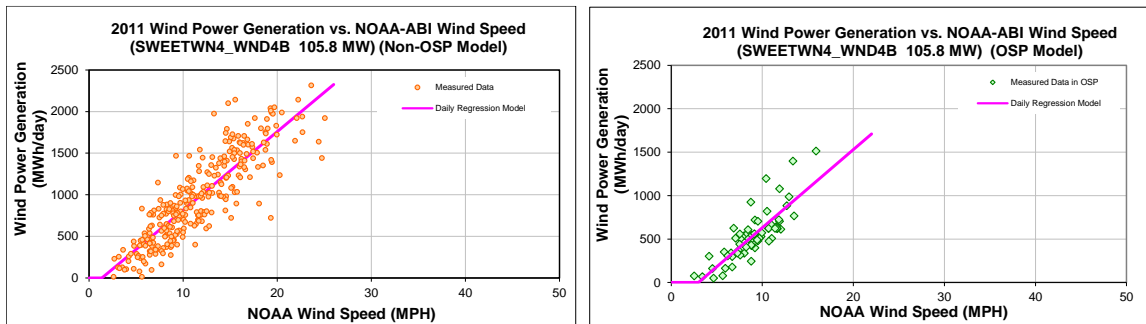


Figure 9-266: SWEETWN4_WND4B – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-255: SWEETWN4_WND4B – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-129.2441
Left Slope (MWh/mph-day)	94.3830
RMSE (MWh/day)	255.3757
R2	0.7516
CV-RMSE	26.4%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-270.4061
Left Slope (MWh/mph-day)	90.0416
RMSE (MWh/day)	167.4101
R2	0.6643
CV-RMSE	31.0%

Table 9-256: SWEETWN4_WND4B – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	23,093	22,362	3.17%	29%	28%
Feb-11	24	11.46	24,185	22,848	5.53%	40%	37%
Mar-11	31	12.29	34,559	31,967	7.50%	44%	41%
Apr-11	30	13.87	34,740	35,395	-1.89%	46%	46%
May-11	31	13.86	33,287	36,543	-9.78%	42%	46%
Jun-11	30	14.61	35,741	37,504	-4.93%	47%	49%
Jul-11	31	10.03	17,170	22,208	-29.34%	22%	28%
Aug-11	31	9.20	16,709	17,289	-3.47%	21%	22%
Sep-11	30	7.68	16,852	15,303	9.19%	22%	20%
Oct-11	31	10.61	27,774	27,030	2.68%	35%	34%
Nov-11	28	11.82	29,601	27,616	6.70%	42%	39%
Dec-11	31	9.51	26,164	23,829	8.93%	33%	30%
Total	359	11.14	319,874	319,894	-0.01%	35%	35%
Total in OSP (07/15-09/15)	63	9.00	34,002	34,041	-0.11%	21%	21%

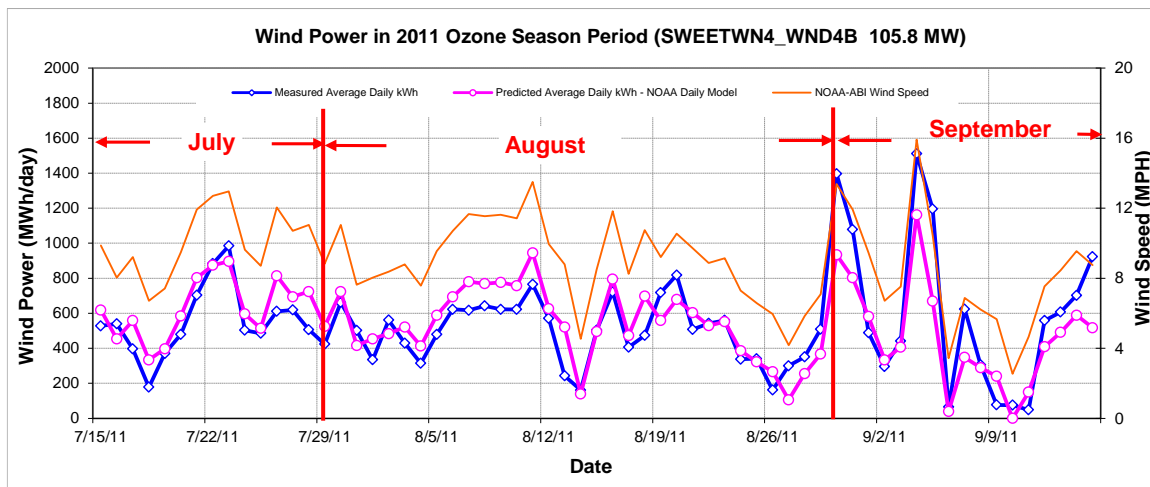


Figure 9-267: SWEETWN4_WND4B – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

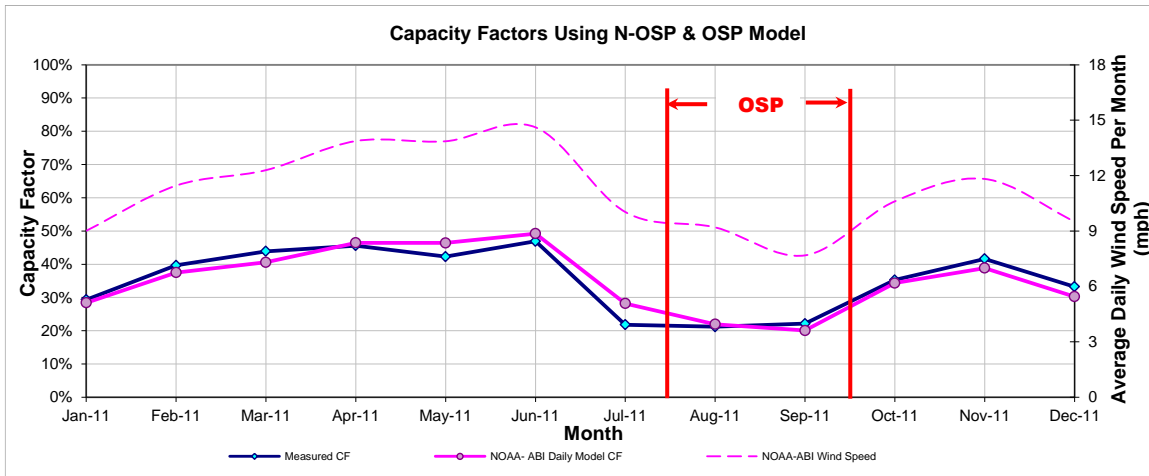


Figure 9-268: SWEETWN4_WND4B – Predicted Capacity Factors Using Daily Models (2011)

Table 9-257: SWEETWN4_WND4B – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
336,030	325,220	516	540

9.56 Sweetwater Wind 5

Table 9-258: Site Information for Sweetwater Wind 5

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
SWEETWND4_WND5	Wind	Sweetwater	Nolan	Dec-07	80.5	DKRW/BabcockBrown	Sweetwater Wind 5	Siemens	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
SWEETWND4_WND5	SWEETWND4_WND5	80.5

9.56.1 Sweetwater Wind 5 – SWEETWN4_WND5

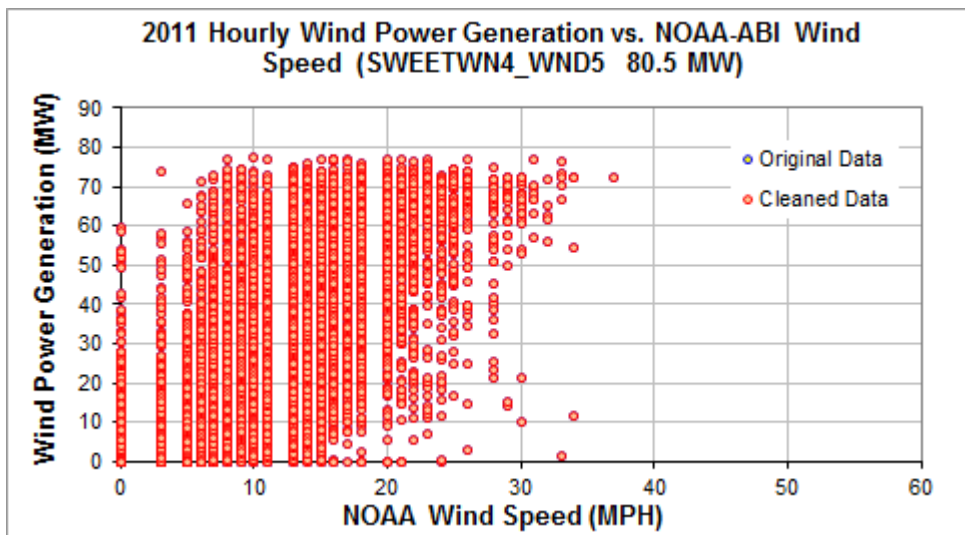


Figure 9-269: SWEETWN4_WND5 - Hourly Wind Power vs. NOAA Wind Speed (2011)

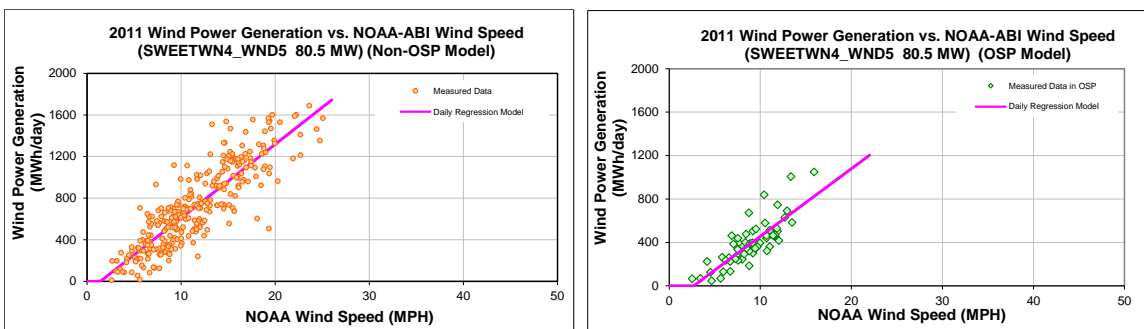


Figure 9-270: SWEETWN4_WND5 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-259: SWEETWN4_WND5 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-99.0384
Left Slope (MWh/mph-day)	70.8498
RMSE (MWh/day)	194.3066
R2	0.7468
CV-RMSE	26.8%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-167.7521
Left Slope (MWh/mph-day)	62.3547
RMSE (MWh/day)	118.2958
R2	0.6553
CV-RMSE	30.1%

Table 9-260: SWEETWN4_WND5 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	30	9.04	15,007	16,241	-8.23%	26%	28%
Feb-11	24	11.46	18,207	17,103	6.06%	39%	37%
Mar-11	31	12.29	24,798	23,934	3.49%	41%	40%
Apr-11	30	13.87	26,732	26,509	0.83%	46%	46%
May-11	31	13.86	25,479	27,369	-7.42%	43%	46%
Jun-11	30	14.61	26,266	28,093	-6.95%	45%	48%
Jul-11	31	10.03	12,458	16,362	-31.34%	21%	27%
Aug-11	31	9.20	12,120	12,577	-3.77%	20%	21%
Sep-11	30	7.68	12,717	11,368	10.60%	22%	20%
Oct-11	31	10.61	20,048	20,228	-0.90%	33%	34%
Nov-11	28	11.82	23,122	20,674	10.59%	43%	38%
Dec-11	31	9.51	21,336	17,825	16.46%	36%	30%
Total	358	11.15	238,288	238,282	0.00%	34%	34%
Total in OSP (07/15-09/15)	63	9.00	24,776	24,783	-0.03%	20%	20%

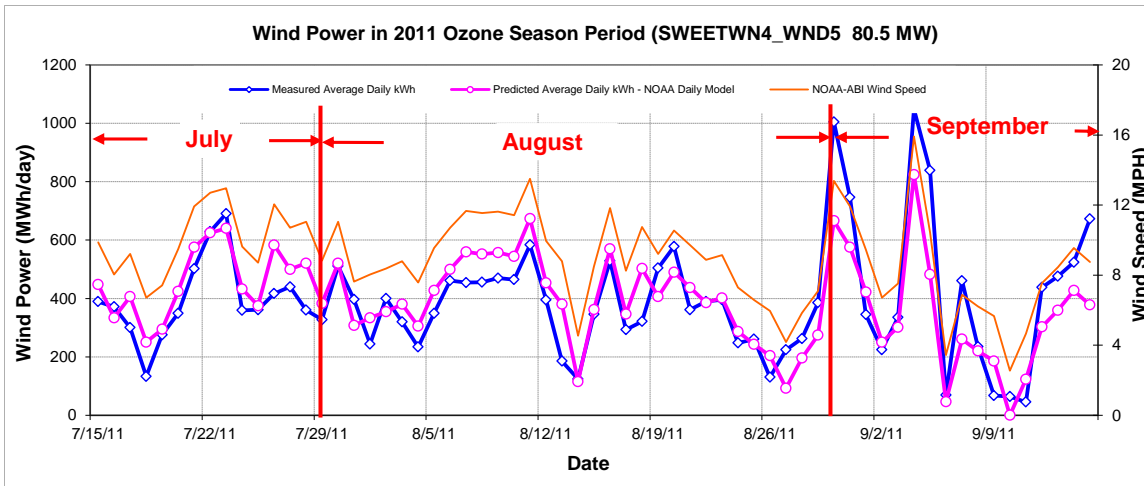


Figure 9-271: SWEETWN4_WND5 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

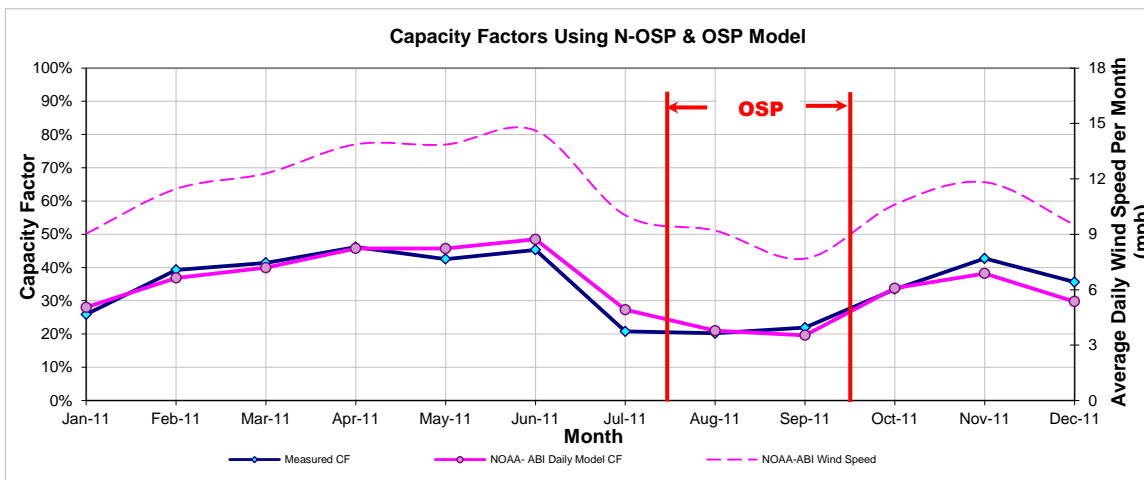


Figure 9-272: SWEETWN4_WND5 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-261: SWEETWN4_WND5 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
250,970	242,948	377	393

9.57 Gulf Wind

Table 9-262: Site Information for Gulf Wind

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
GULFW	Wind	-	Kenedy	Nov-08	283.2	Babcock & Brown	Gulf Wind	Mitsubishi (59)	ERCOT	South	CRP

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
TGW_T1	TGW_T1	141.6
TGW_T2	TGW_T2	141.6

9.57.1 Gulf Wind (TGW_T1)

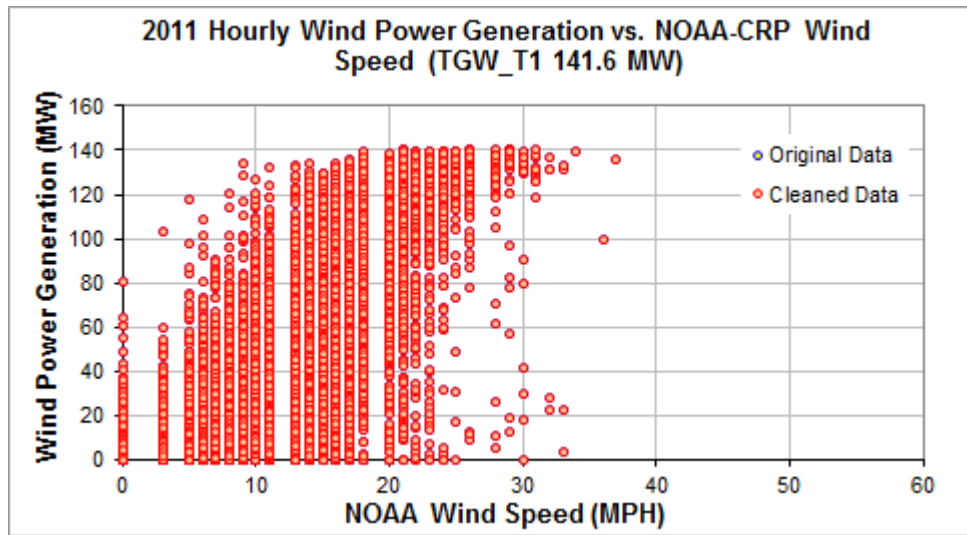


Figure 9-273: TGW_T1– Hourly Wind Power vs. NOAA Wind Speed (2011)

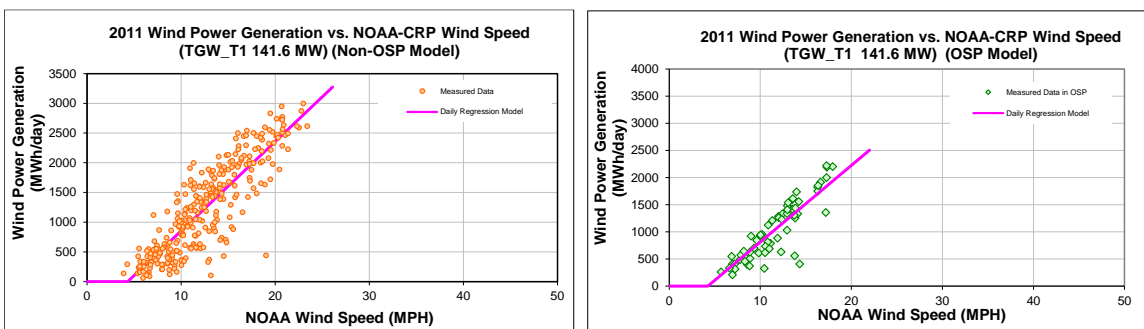


Figure 9-274: TGW_T1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-263: TGW_T1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-668.1945
Left Slope (MWh/mph-day)	151.6429
RMSE (MWh/day)	377.5511
R2	0.7578
CV-RMSE	30.7%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-734.8958
Left Slope (MWh/mph-day)	152.1564
RMSE (MWh/day)	261.6804
R2	0.7779
CV-RMSE	25.5%

Table 9-264: TGW_T1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.20	23,668	27,263	-15.19%	22%	26%
Feb-11	28	14.17	40,979	41,449	-1.15%	43%	44%
Mar-11	31	12.30	39,271	37,112	5.50%	37%	35%
Apr-11	30	15.52	52,082	50,539	2.96%	51%	50%
May-11	31	15.41	55,024	51,795	5.87%	52%	49%
Jun-11	30	12.26	37,874	35,721	5.69%	37%	35%
Jul-11	31	12.05	36,126	34,929	3.31%	34%	33%
Aug-11	31	11.42	32,701	31,094	4.91%	31%	30%
Sep-11	30	9.37	20,112	21,653	-7.66%	20%	21%
Oct-11	31	10.25	28,555	27,458	3.84%	27%	26%
Nov-11	30	13.16	41,108	39,809	3.16%	40%	39%
Dec-11	31	12.41	28,898	37,637	-30.24%	27%	36%
Total	365	12.36	436,399	436,459	-0.01%	35%	35%
Total in OSP (07/15-09/15)	63	11.58	64,686	64,683	0.01%	30%	30%

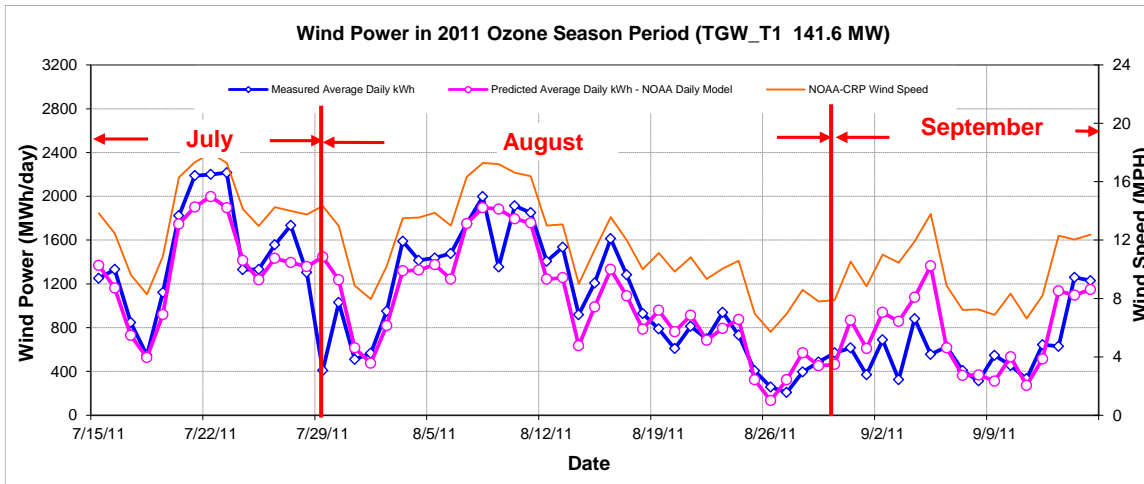


Figure 9-275: TGW_T1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

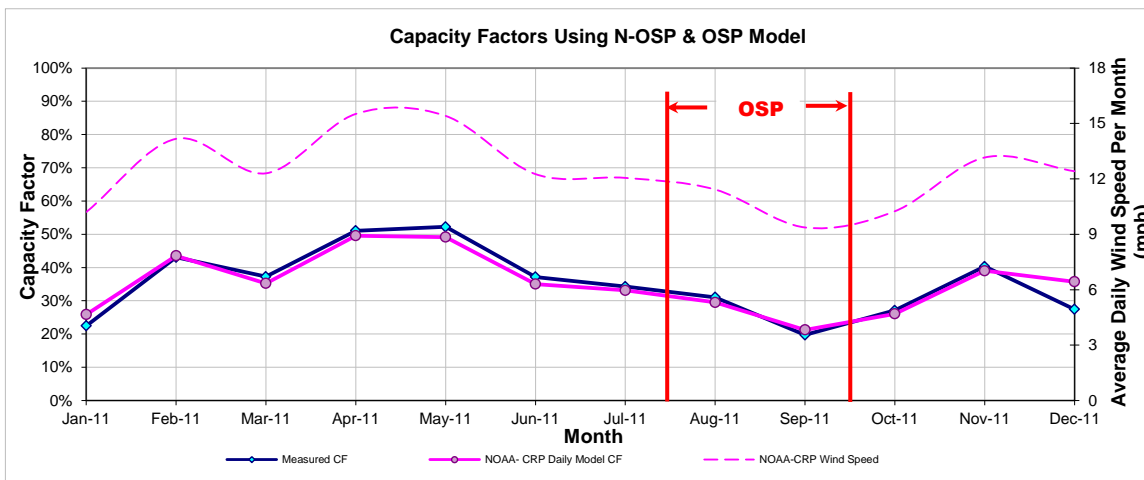


Figure 9-276: TGW_T1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-265: TGW_T1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
382,359	436,399	640	1,027

9.57.2 Gulf Wind (TGW_T2)

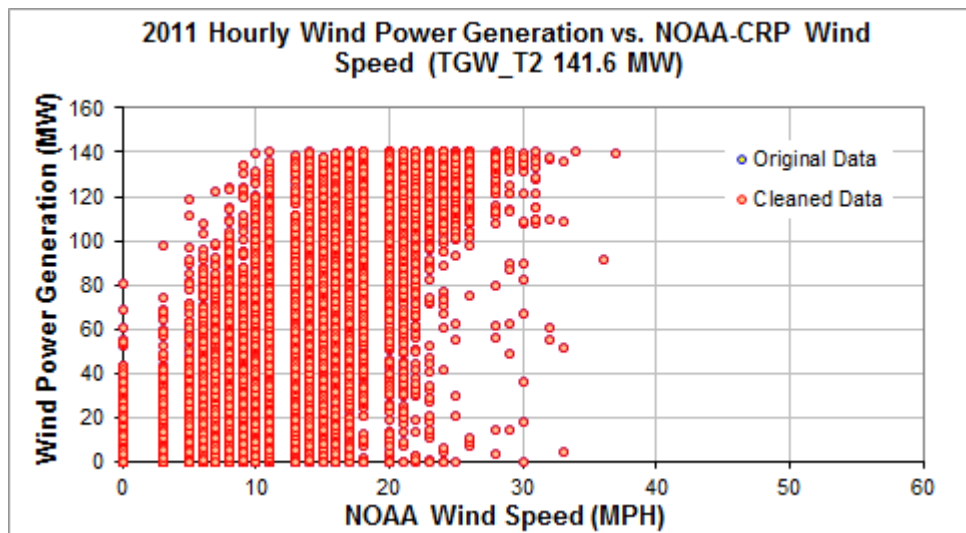


Figure 9-277: TGW_T2 – Hourly Wind Power vs. NOAA Wind Speed (2011)

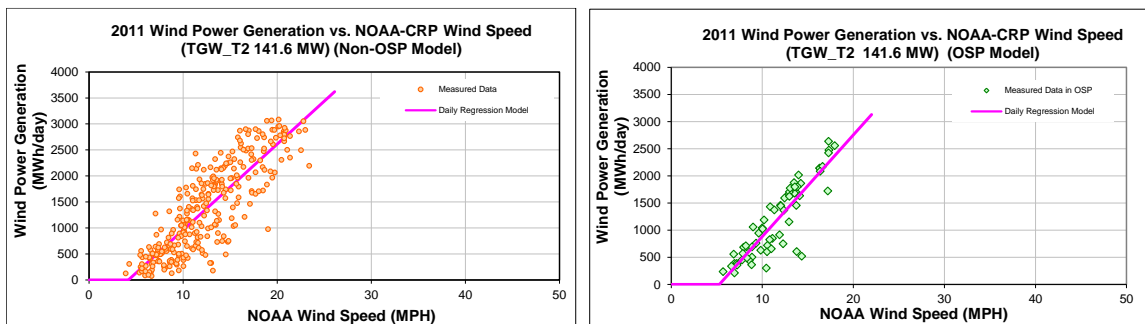


Figure 9-278: TGW_T2 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-266: TGW_T2 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-691.2839
Left Slope (MWh/mph-day)	165.2169
RMSE (MWh/day)	456.0035
R2	0.7180
CV-RMSE	33.1%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-991.8279
Left Slope (MWh/mph-day)	187.2952
RMSE (MWh/day)	314.3712
R2	0.7862
CV-RMSE	26.7%

Table 9-267: TGW_T2 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.20	26,852	30,823	-14.79%	25%	29%
Feb-11	28	14.17	46,734	46,187	1.17%	49%	49%
Mar-11	31	12.30	46,054	41,573	9.73%	44%	39%
Apr-11	30	15.52	55,881	56,164	-0.51%	55%	55%
May-11	31	15.41	59,223	57,533	2.85%	56%	55%
Jun-11	30	12.26	41,664	40,020	3.95%	41%	39%
Jul-11	31	12.05	42,201	40,253	4.62%	40%	38%
Aug-11	31	11.42	37,272	35,571	4.56%	35%	34%
Sep-11	30	9.37	22,733	24,418	-7.41%	22%	24%
Oct-11	31	10.25	31,922	31,054	2.72%	30%	29%
Nov-11	30	13.16	45,754	44,474	2.80%	45%	44%
Dec-11	31	12.41	33,918	42,144	-24.25%	32%	40%
Total	365	12.36	490,206	490,216	0.00%	40%	40%
Total in OSP (07/15-09/15)	63	11.58	74,130	74,126	0.01%	35%	35%

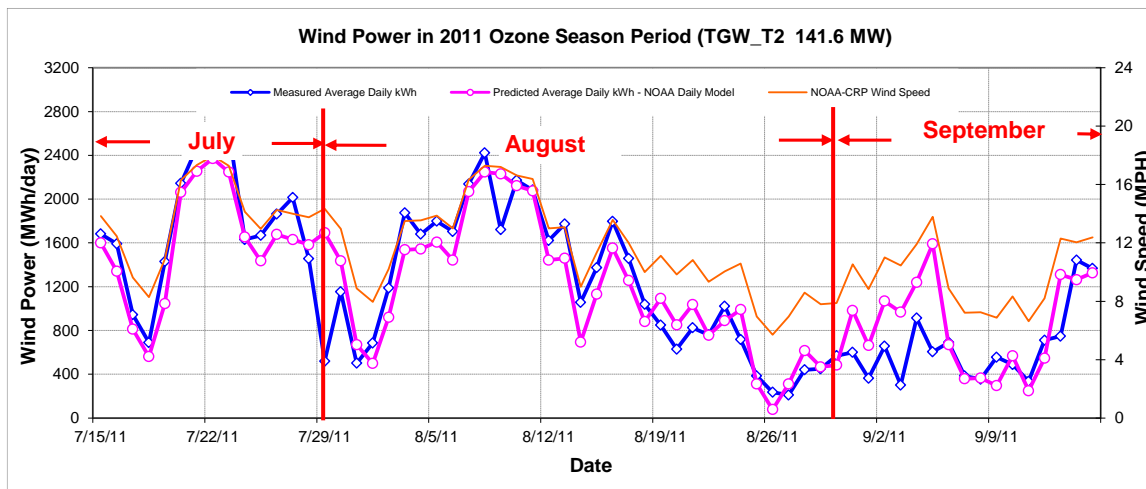


Figure 9-279: TGW_T2 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

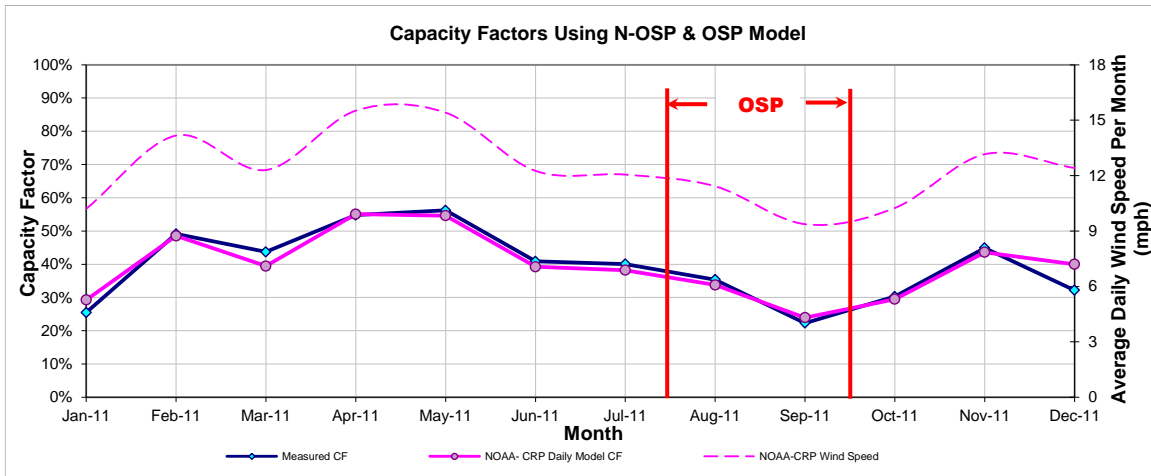


Figure 9-280: TGW_T2 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-268: TGW_T2 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
427,972	490,206	703	1,177

9.58 Roscoe Wind Farm

Table 9-269: Site Information for Roscoe Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
TKWSW1_ROSCOE	Wind	-	Scurry	Jan-08	220	Airtricity	Roscoe Wind Farm	Mitsubishi	ERCOT	West	LBB

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
TKWSW1_ROSCOE	TKWSW1_ROSCOE	220

9.58.1 Roscoe Wind Farm – TKWSW1_ROSCOE

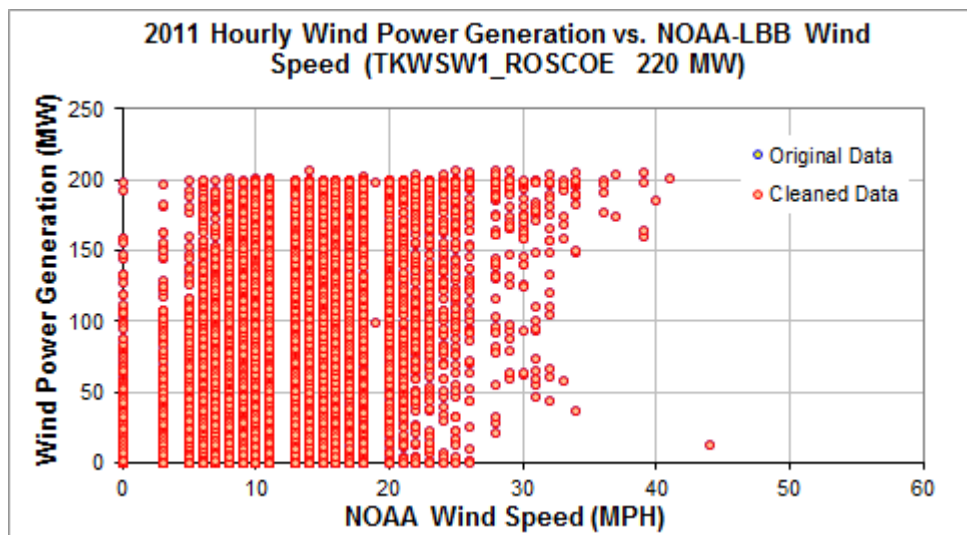


Figure 9-281: TKWSW1_ROSCOE- Hourly Wind Power vs. NOAA Wind Speed (2011)

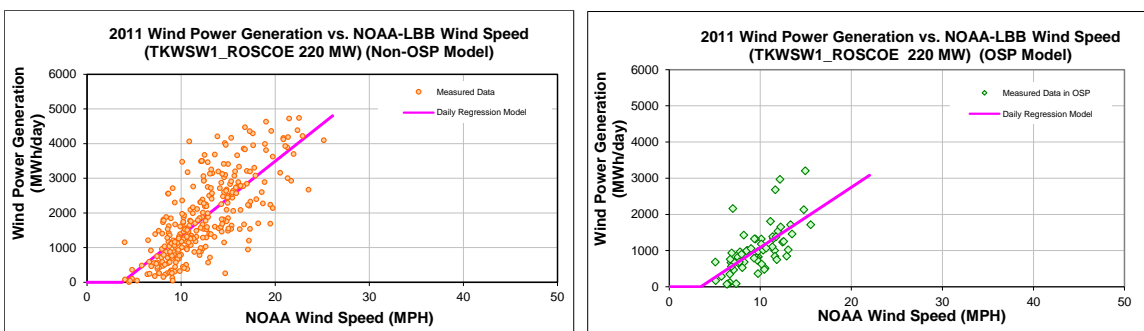


Figure 9-282: TKWSW1_ROSCOE - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-270: TKWSW1_ROSCOE – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-796.3299
Left Slope (MWh/mph-day)	214.4967
RMSE (MWh/day)	760.4078
R2	0.5636
CV-RMSE	40.9%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-575.0260
Left Slope (MWh/mph-day)	166.1925
RMSE (MWh/day)	489.4691
R2	0.4263
CV-RMSE	47.3%

Table 9-271: TKWSW1_ROSCOE – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.10	40,579	42,460	-4.64%	25%	26%
Feb-11	28	12.51	45,835	52,839	-15.28%	31%	36%
Mar-11	27	12.34	54,338	49,989	8.00%	38%	35%
Apr-11	30	14.92	71,040	72,133	-1.54%	45%	46%
May-11	31	14.34	69,080	70,666	-2.30%	42%	43%
Jun-11	30	15.64	76,055	76,781	-0.95%	48%	48%
Jul-11	31	10.57	32,111	40,869	-27.27%	20%	25%
Aug-11	31	9.76	31,977	32,454	-1.49%	20%	20%
Sep-11	30	8.99	33,841	30,901	8.69%	21%	20%
Oct-11	31	11.18	53,607	49,642	7.40%	33%	30%
Nov-11	30	11.91	60,411	52,739	12.70%	38%	33%
Dec-11	30	10.83	48,472	45,822	5.47%	31%	29%
Total	360	11.91	617,345	617,296	0.01%	32%	32%
Total in OSP (07/15-09/15)	63	9.68	65,129	65,123	0.01%	20%	20%

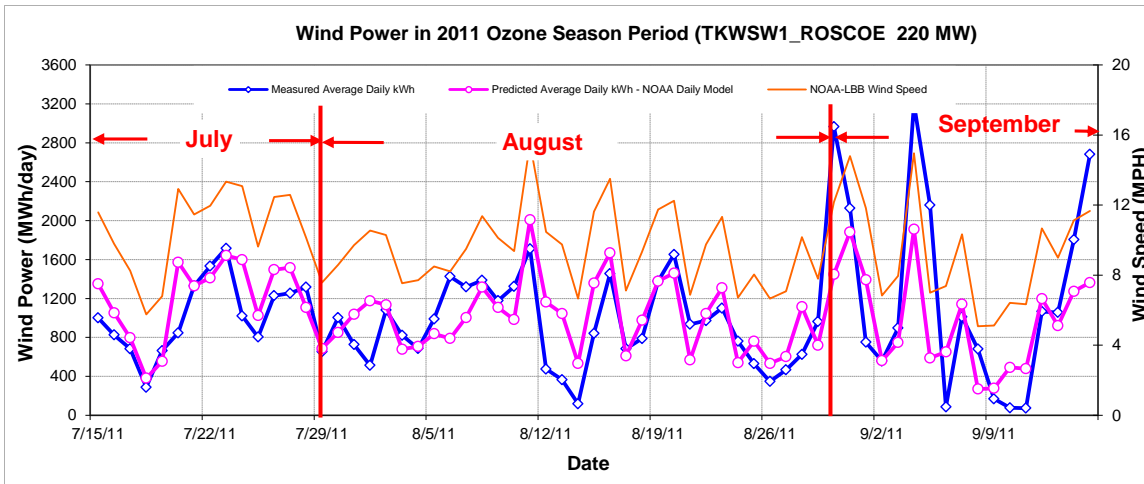


Figure 9-283: TKSW1_ROSCOE - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

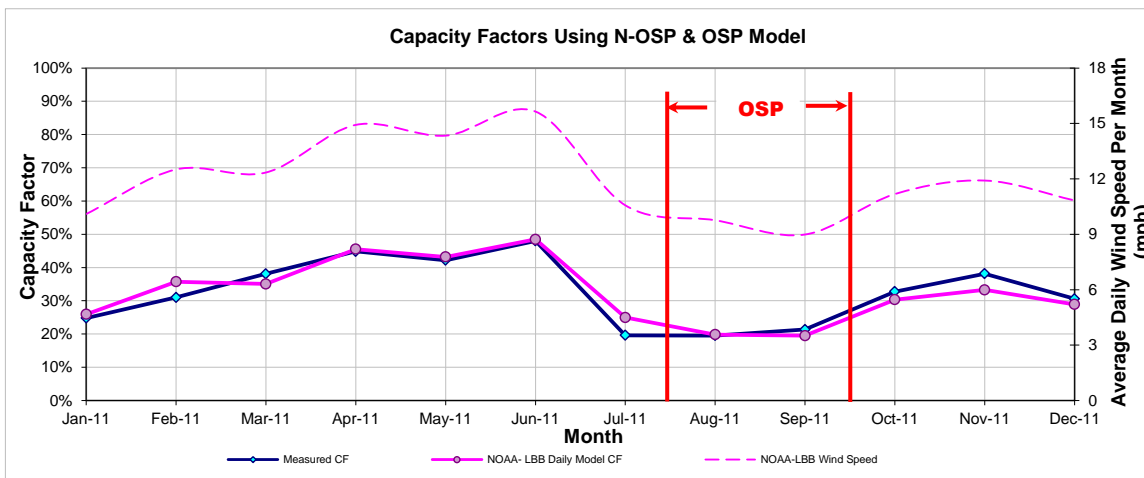


Figure 9-284: TKSW1_ROSCOE – Predicted Capacity Factors Using Daily Models (2011)

Table 9-272: TKSW1_ROSCOE – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
627,100	625,919	926	1,034

9.59 Trent Mesa

Table 9-273: Site Information for Trent Mesa

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
TRENT_TRENT	Wind	Trent Mesa	Nolan	Nov-01	150	AEP	Trent Mesa	Enron 1500 (100)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
TRENT_TRENT	TRENT_TRENT	150

9.59.1 Trent Mesa – TRENT_TRENT

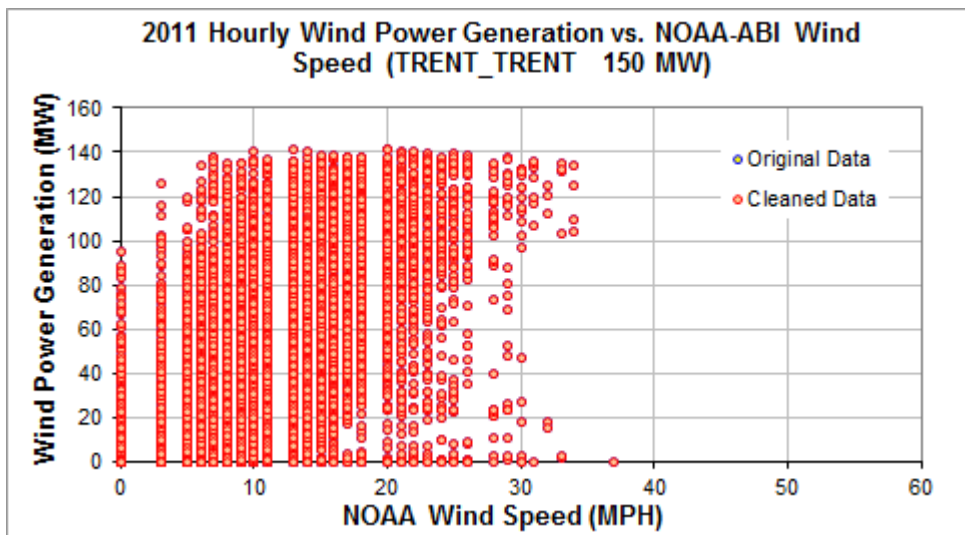


Figure 9-285: TRENT_TRENT - Hourly Wind Power vs. NOAA Wind Speed (2011)

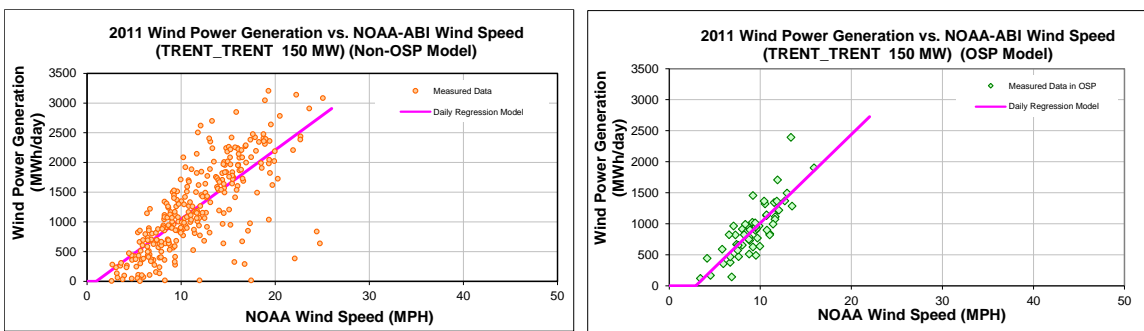


Figure 9-286: TRENT_TRENT - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-274: TRENT_TRENT – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-111.6202
Left Slope (MWh/mph-day)	116.1002
RMSE (MWh/day)	483.7482
R2	0.5606
CV-RMSE	39.2%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-416.6148
Left Slope (MWh/mph-day)	142.8753
RMSE (MWh/day)	243.0011
R2	0.6743
CV-RMSE	26.5%

Table 9-275: TRENT_TRENT – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	30,703	28,976	5.63%	28%	26%
Feb-11	24	11.46	33,668	29,242	13.15%	39%	34%
Mar-11	31	12.29	45,281	40,791	9.92%	41%	37%
Apr-11	30	13.87	46,005	44,961	2.27%	43%	42%
May-11	31	13.86	33,111	46,419	-40.19%	30%	42%
Jun-11	30	14.61	48,595	47,555	2.14%	45%	44%
Jul-11	31	10.03	29,439	31,947	-8.52%	26%	29%
Aug-11	31	9.20	29,813	27,819	6.69%	27%	25%
Sep-11	24	8.14	19,220	19,362	-0.74%	22%	22%
Oct-11	31	10.61	40,387	34,718	14.04%	36%	31%
Nov-11	28	11.82	26,718	35,296	-32.11%	27%	35%
Dec-11	31	9.51	34,952	30,780	11.94%	31%	28%
Total	353	11.23	417,892	417,865	0.01%	33%	33%
Total in OSP (07/15-09/15)	57	9.33	52,223	52,219	0.01%	25%	25%

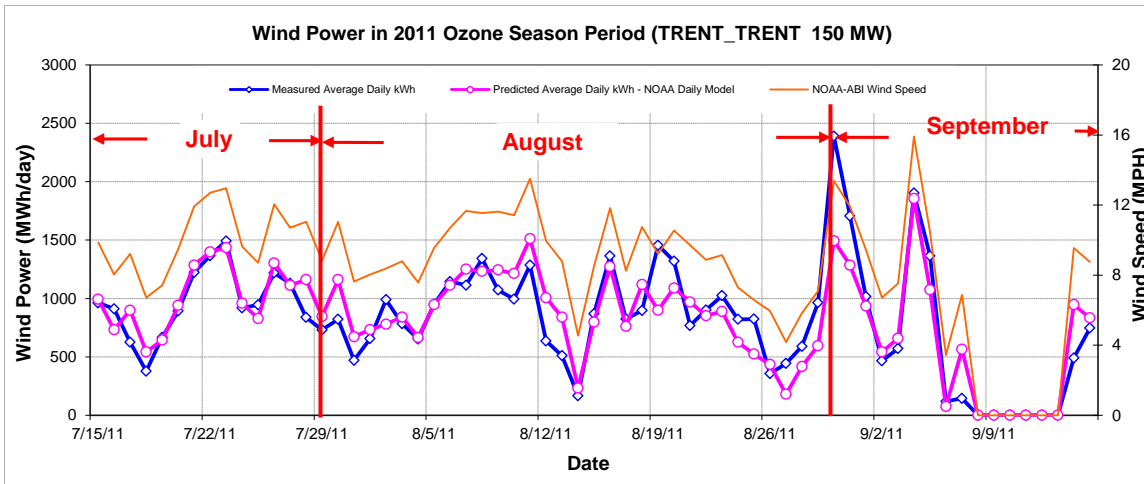


Figure 9-287: TRENT_TRENT - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

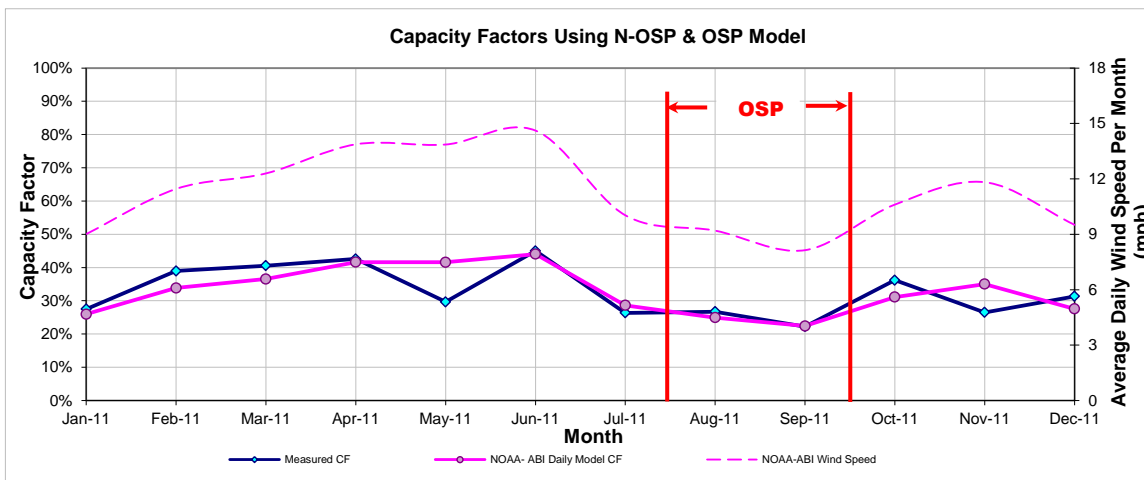


Figure 9-288: TRENT_TRENT – Predicted Capacity Factors Using Daily Models (2011)

Table 9-276: TRENT_TRENT – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
440,084	432,098	832	916

9.60 Turkey Track Wind Energy Center

Table 9-277: Site Information for Turkey Track Wind Energy Center

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
TTWEC_G1	Wind	-	Nolan	Nov-08	170	Invenergy	Turkey Track Energy Center	GE Energy (113)	ERCOT	West	ABI

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
TTWEC_G1	TTWEC_G1	170

9.60.1 Turkey Track Wind Energy Center – TTWEC_G1

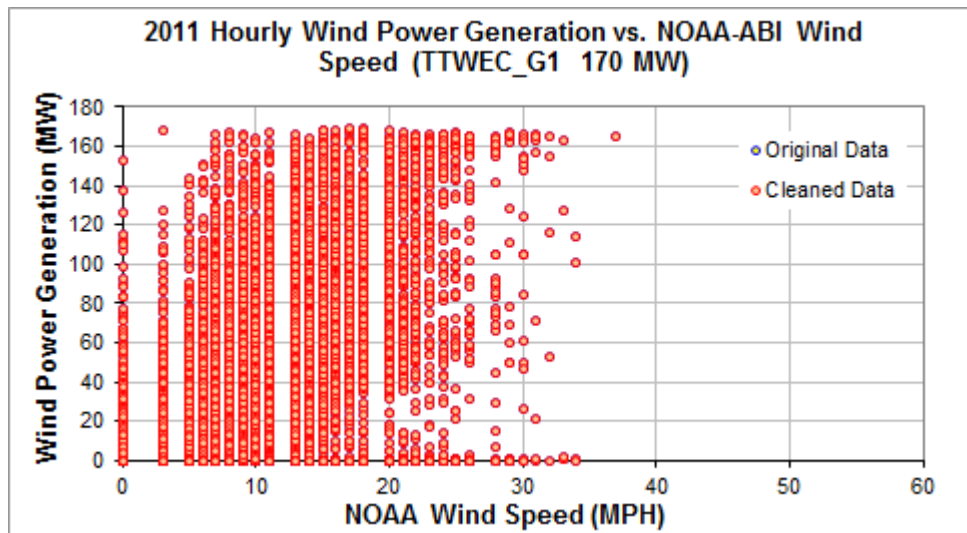


Figure 9-289: TTWEC_G1 - Hourly Wind Power vs. NOAA Wind Speed (2011)

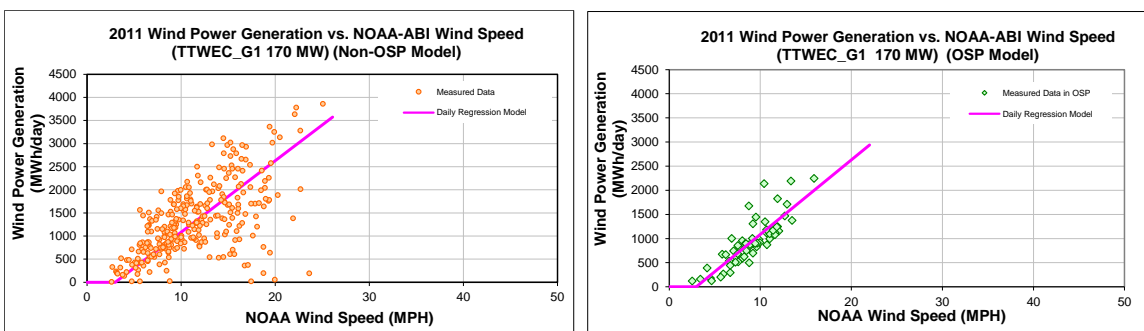


Figure 9-290: TTWEC_G1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-278: TTWEC_G1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-461.0699
Left Slope (MWh/mph-day)	154.5845
RMSE (MWh/day)	262.0093
R2	0.7043
CV-RMSE	28.2%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-461.0699
Left Slope (MWh/mph-day)	154.5845
RMSE (MWh/day)	262.0093
R2	0.7043
CV-RMSE	28.2%

Table 9-279: TTWEC_G1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.01	34,551	28,950	16.21%	27%	23%
Feb-11	24	11.46	40,701	31,436	22.76%	42%	32%
Mar-11	31	12.29	44,943	44,626	0.71%	36%	35%
Apr-11	30	13.87	30,243	50,490	-66.95%	25%	41%
May-11	29	13.12	28,332	45,442	-60.39%	24%	38%
Jun-11	30	14.61	46,852	53,945	-15.14%	38%	44%
Jul-11	31	10.03	30,895	33,767	-9.29%	24%	27%
Aug-11	31	9.20	28,468	29,780	-4.61%	23%	24%
Sep-11	30	7.68	28,402	21,859	23.04%	23%	18%
Oct-11	31	10.61	47,116	36,540	22.45%	37%	29%
Nov-11	26	11.43	43,242	33,997	21.38%	41%	32%
Dec-11	31	9.51	45,947	31,296	31.89%	36%	25%
Total	355	11.04	449,691	442,127	1.68%	31%	31%
Total in OSP (07/15-09/15)	63	9.00	58,574	58,637	-0.11%	23%	23%

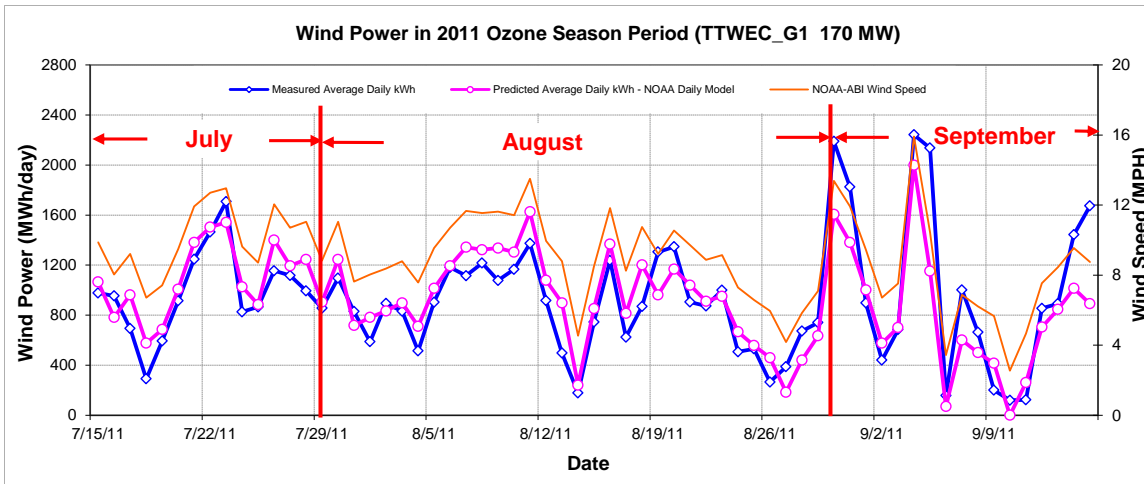


Figure 9-291: TTWEC_G1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

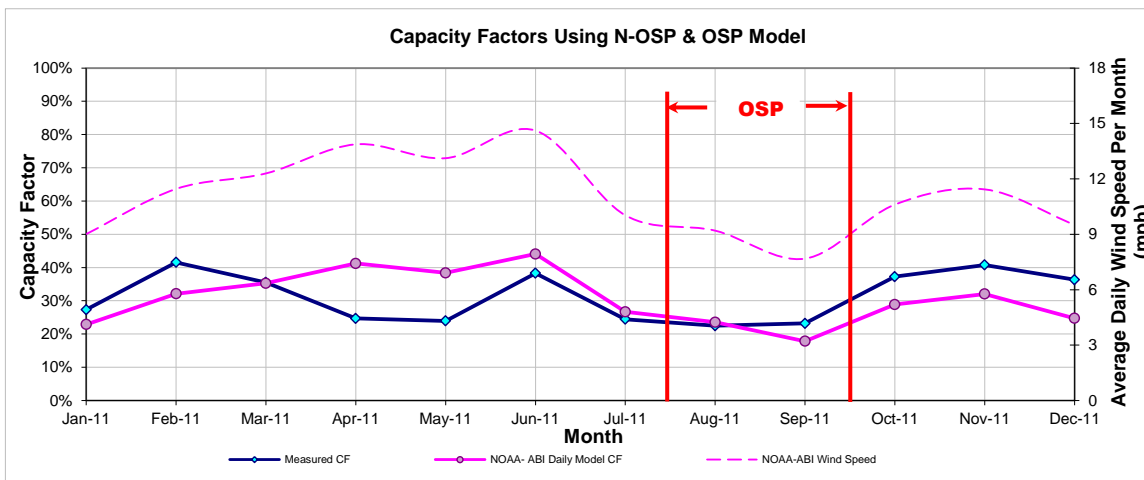


Figure 9-292: TTWEC_G1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-280: TTWEC_G1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
477,566	462,358	889	930

9.61 Whirlwind Energy

Table 9-281: Site Information for Whirlwind Energy

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
WEC_WECG1	Wind	-	Floyd	Dec-07	60	Renewable Energy Systems	Whirlwind	Siemens	ERCOT	West	LBB

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
WEC_WECG1	WEC_WECG1	60

9.61.1 Whirlwind Energy – WEC_WECG1

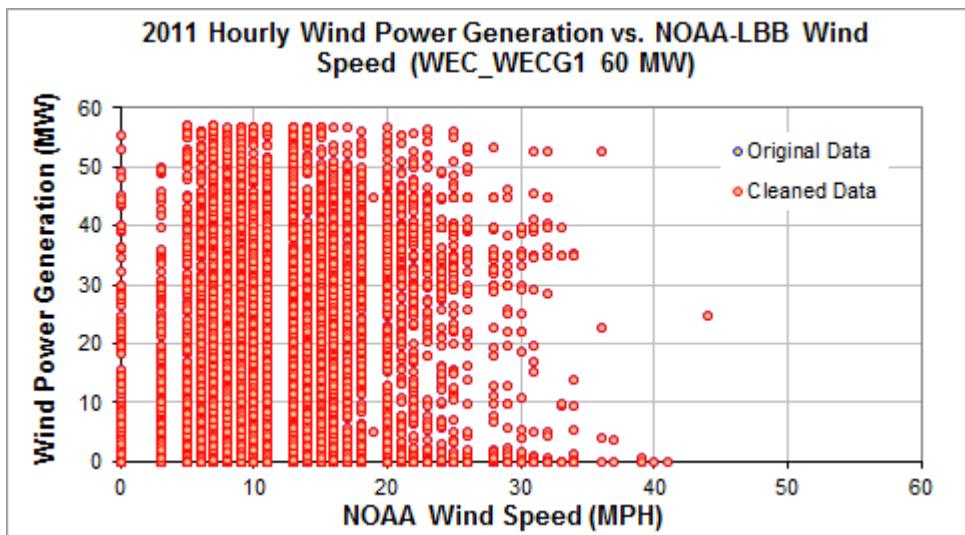


Figure 9-293: WEC_WECG1 - Hourly Wind Power vs. NOAA Wind Speed (2011)

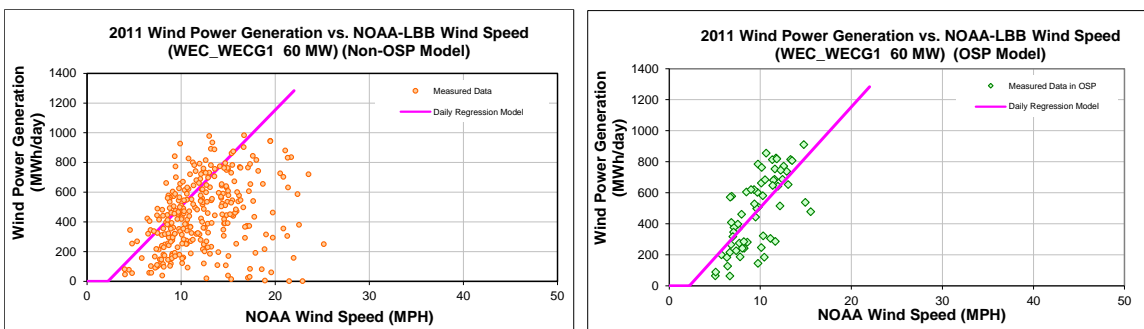


Figure 9-294: WEC_WECG1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-282: WEC_WECG1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-143.3692
Left Slope (MWh/mph-day)	64.8526
RMSE (MWh/day)	172.3086
R2	0.4773
CV-RMSE	35.6%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-143.3692
Left Slope (MWh/mph-day)	64.8526
RMSE (MWh/day)	172.3086
R2	0.4773
CV-RMSE	35.6%

Table 9-283: WEC_WECG1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	10.10	14,005	15,857	-13.23%	31%	36%
Feb-11	28	12.51	13,340	18,703	-40.20%	33%	46%
Mar-11	31	12.11	10,921	19,910	-82.31%	24%	45%
Apr-11	30	14.92	11,619	24,731	-112.85%	27%	57%
May-11	31	14.34	17,892	24,385	-36.29%	40%	55%
Jun-11	30	15.64	18,123	26,136	-44.22%	42%	61%
Jul-11	31	10.57	17,059	16,803	1.50%	38%	38%
Aug-11	31	9.76	15,604	15,176	2.74%	35%	34%
Sep-11	30	8.99	11,342	13,185	-16.25%	26%	31%
Oct-11	30	10.92	9,189	16,937	-84.32%	21%	39%
Nov-11	30	11.91	11,237	18,868	-67.91%	26%	44%
Dec-11	31	10.72	13,429	17,116	-27.46%	30%	38%
Total	364	11.86	163,760	227,808	-39.11%	31%	43%
Total in OSP (07/15-09/15)	63	9.68	30,519	30,517	0.01%	34%	34%

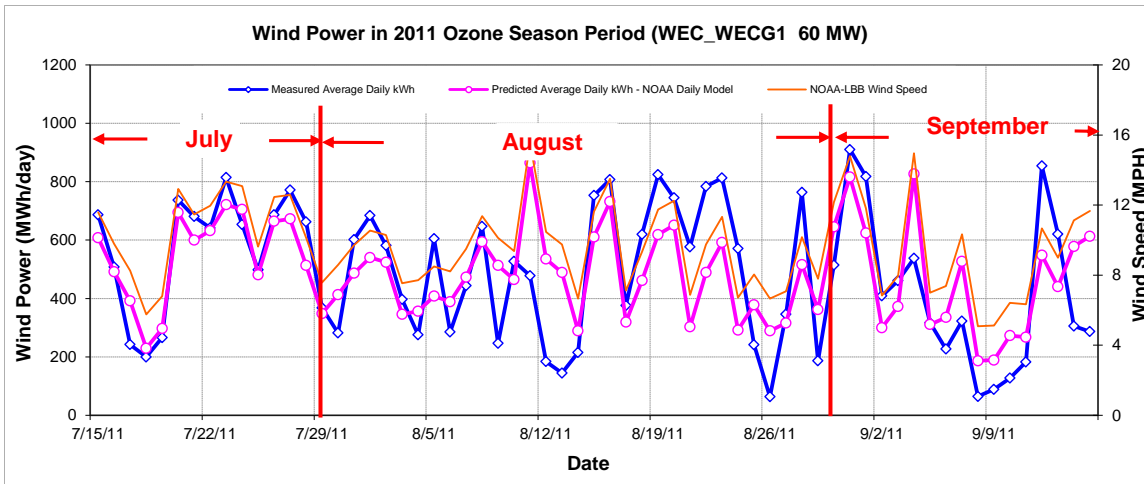


Figure 9-295: WEC_WECG1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

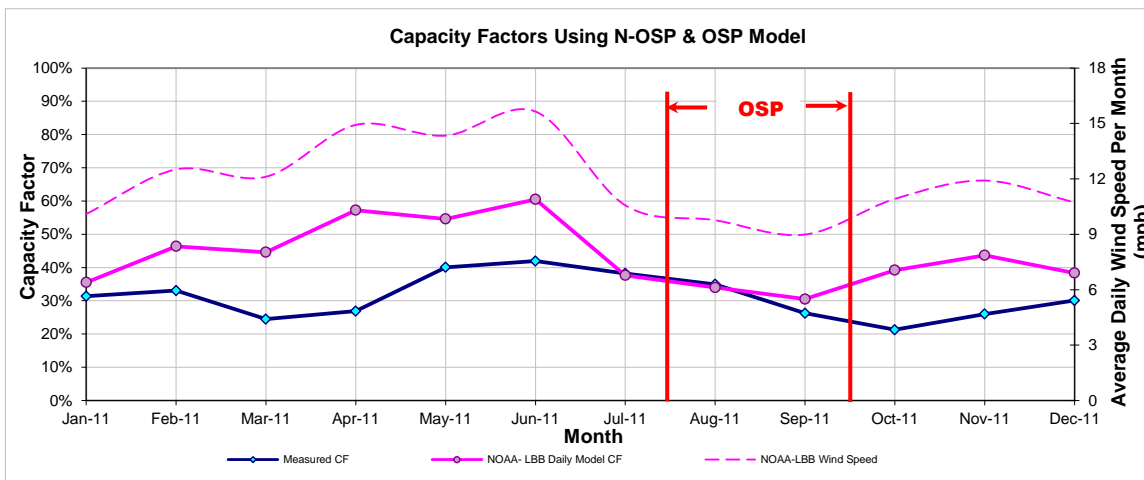


Figure 9-296: WEC_WECG1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-284: WEC_WECG1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
229,290	164,209	442	484

9.62 Wolf Ridge Wind Farm

Table 9-285: Site Information for Wolf Ridge Wind Farm

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
WHTTAIL_WR1	Wind	-	Cooke	Oct-08	112.5	FPL Energy	Wolf Ridge Windfarm	GE Energy (75)	ERCOT	North	DFW

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
WHTTAIL_WR1	WHTTAIL_WR1	112.5

9.62.1 Wolf Ridge Wind Farm – WHTTAIL_WR1

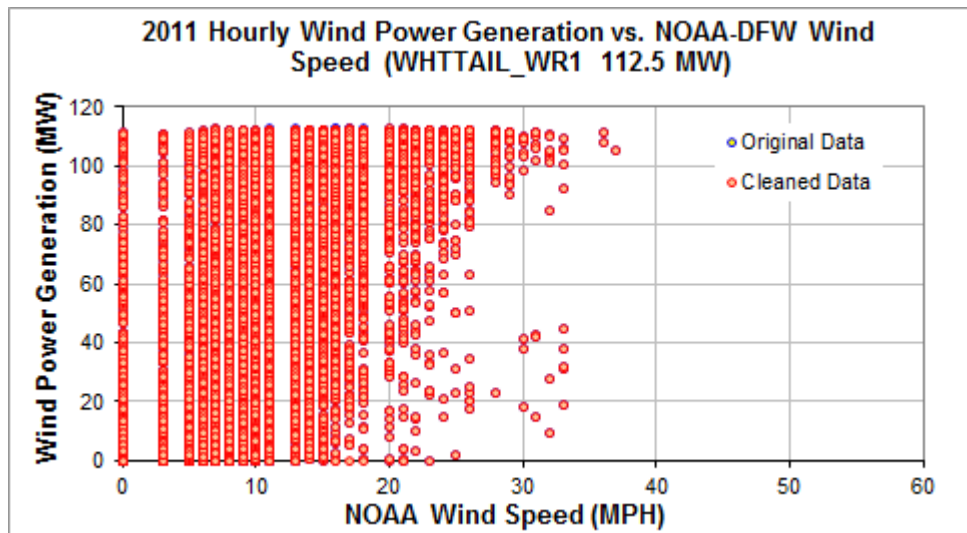


Figure 9-297: WHTTAIL_WR1 - Hourly Wind Power vs. NOAA Wind Speed (2011)

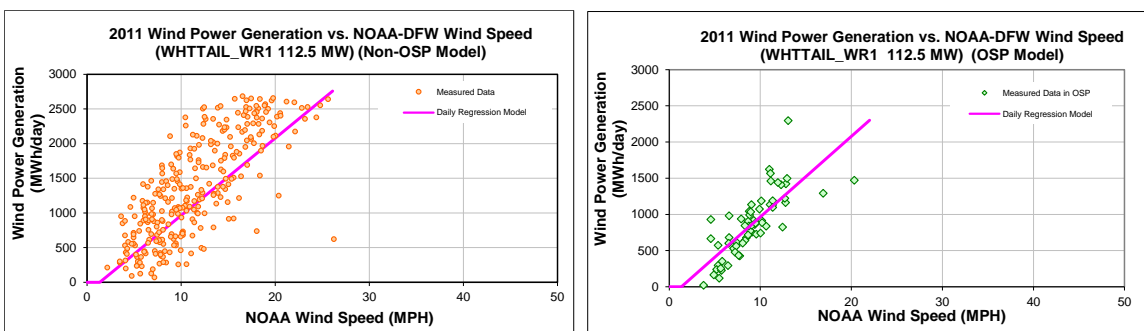


Figure 9-298: WHTTAIL_WR1 - Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non OSP Model)

Table 9-286: WHTTAIL_WR1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-150.2688
Left Slope (MWh/mph-day)	111.3953
RMSE (MWh/day)	270.3630
R2	0.6056
CV-RMSE	31.3%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-150.2688
Left Slope (MWh/mph-day)	111.3953
RMSE (MWh/day)	270.3630
R2	0.6056
CV-RMSE	31.3%

Table 9-287: WHTTAIL_WR1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	8.35	26,546	24,188	8.88%	32%	29%
Feb-11	28	12.92	38,980	36,076	7.45%	52%	48%
Mar-11	31	13.03	48,695	40,345	17.15%	58%	48%
Apr-11	30	14.74	50,352	44,766	11.09%	62%	55%
May-11	31	13.66	55,544	42,513	23.46%	66%	51%
Jun-11	30	12.84	49,921	38,388	23.10%	62%	47%
Jul-11	31	9.04	27,330	26,560	2.82%	33%	32%
Aug-11	31	8.98	29,764	26,337	11.51%	36%	31%
Sep-11	30	8.70	23,933	24,571	-2.66%	30%	30%
Oct-11	31	9.34	36,460	27,609	24.27%	44%	33%
Nov-11	30	12.06	45,226	35,789	20.87%	56%	44%
Dec-11	31	8.99	31,115	26,384	15.20%	37%	32%
Total	365	11.03	463,865	393,527	15.16%	47%	40%
Total in OSP (07/15-09/15)	63	9.10	54,366	54,363	0.01%	32%	32%

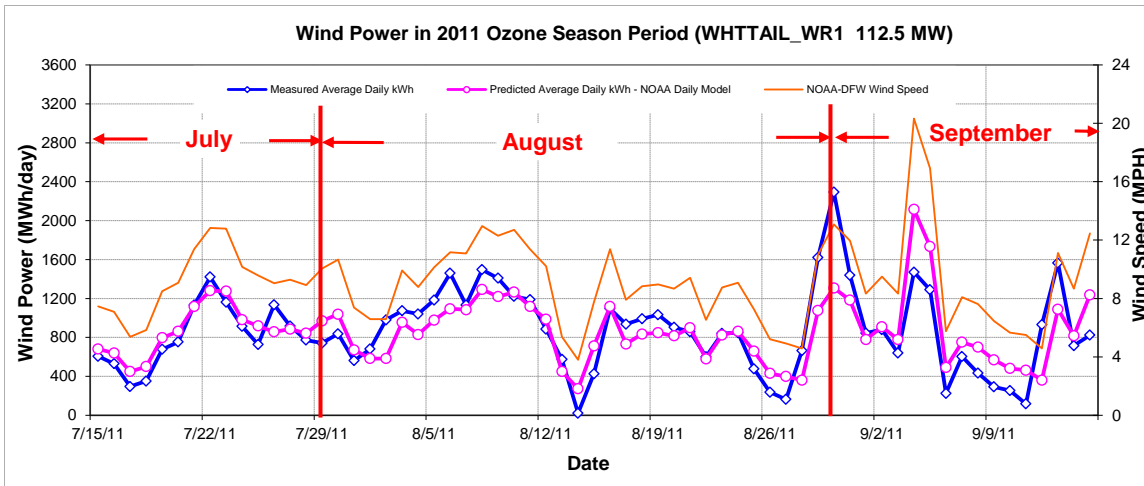


Figure 9-299: WHTTAIL_WR1 - Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

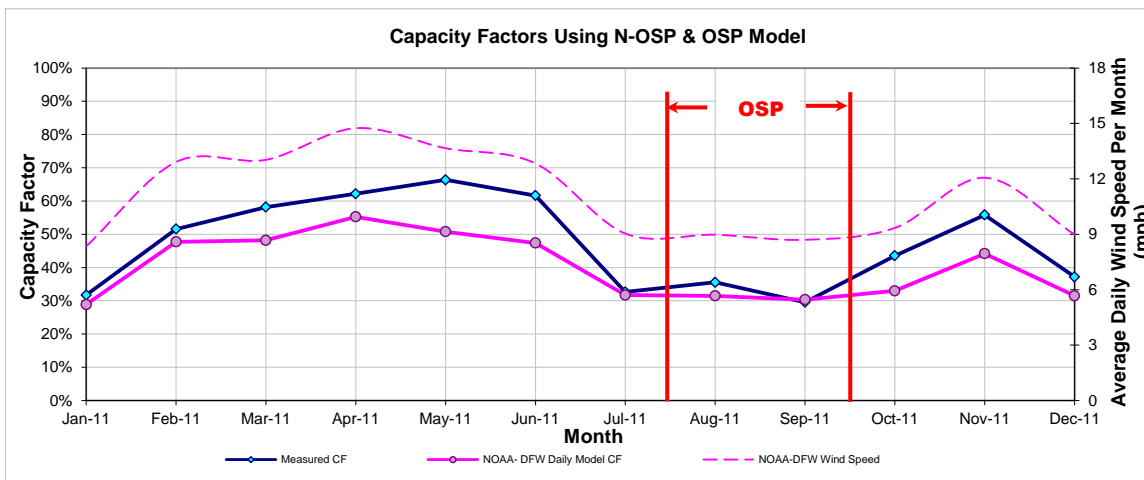


Figure 9-300: WHTTAIL_WR1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-288: WHTTAIL_WR1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
407,158	463,865	833	863

9.63 Woodward Mountain Ranch

Table 9-289: Site Information for Woodward Mountain Ranch

GENSITECODE_ERCOT	Renewable Energy	City	County	Date in Service	Capacity (MW)	Company	Facility	Wind Turbine Information	Region	CM Zones	Weather Station
WOODWRD	Wind	McCamey	PECOS	Jul-01	160	FPL/Cielo/TXU	Woodward Mountain Ranch	Vestas V-47 (121)	ERCOT	West	FST

SUBGENCODE_ERCOT	GENSITECODE_ERCOT	Capacity (MW)
WOODWRD1_WOODWRD1	WOODWRD	80
WOODWRD2_WOODWRD2	WOODWRD	80

9.63.1 Woodward Mountain Ranch (WOODWRD1_WOODWRD1)

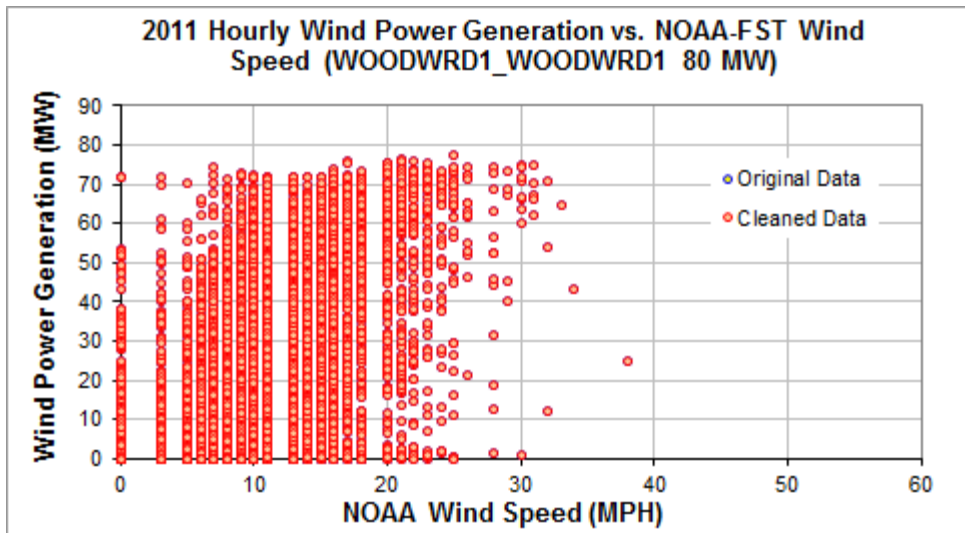


Figure 9-301: WOODWRD1_WOODWRD1 – Hourly Wind Power vs. NOAA Wind Speed (2011)

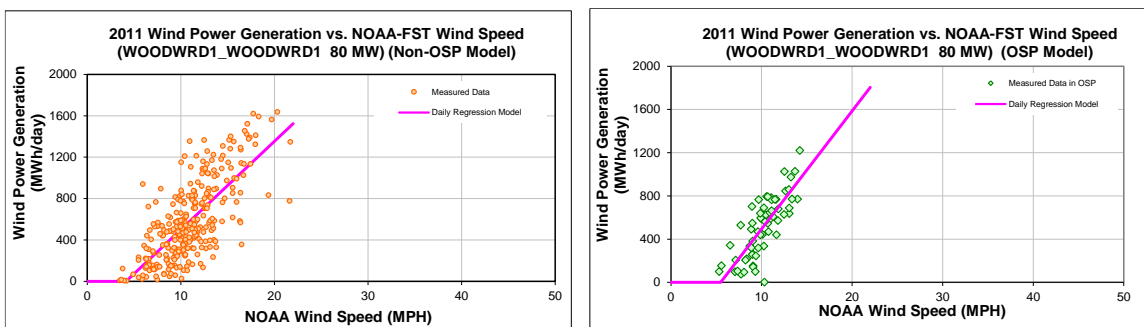


Figure 9-302: WOODWRD1_WOODWRD1 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-290: WOODWRD1_WOODWRD1 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-353.8212
Left Slope (MWh/mph-day)	85.3873
RMSE (MWh/day)	261.9775
R2	0.5252
CV-RMSE	45.2%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-600.7576
Left Slope (MWh/mph-day)	109.3374
RMSE (MWh/day)	171.5429
R2	0.6271
CV-RMSE	33.4%

Table 9-291: WOODWRD1_WOODWRD1 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.52	14,377	14,240	0.95%	24%	24%
Feb-11	28	10.88	18,087	16,115	10.90%	34%	30%
Mar-11	31	10.67	21,412	17,296	19.22%	36%	29%
Apr-11	30	12.25	21,217	20,772	2.10%	37%	36%
May-11	31	11.86	19,077	20,426	-7.07%	32%	34%
Jun-11	30	13.78	29,760	24,672	17.10%	52%	43%
Jul-11	31	11.49	21,537	19,875	7.72%	36%	33%
Aug-11	31	10.29	17,561	16,262	7.39%	30%	27%
Sep-11	29	8.85	6,679	11,090	-66.03%	12%	20%
Oct-11	31	10.59	15,948	17,067	-7.02%	27%	29%
Nov-11	30	10.73	11,257	16,869	-49.85%	20%	29%
Dec-11	30	8.72	9,466	11,834	-25.02%	16%	21%
Total	363	10.81	206,378	206,519	-0.07%	30%	30%
Total in OSP (07/15-09/15)	62	10.19	31,811	31,824	-0.04%	27%	27%

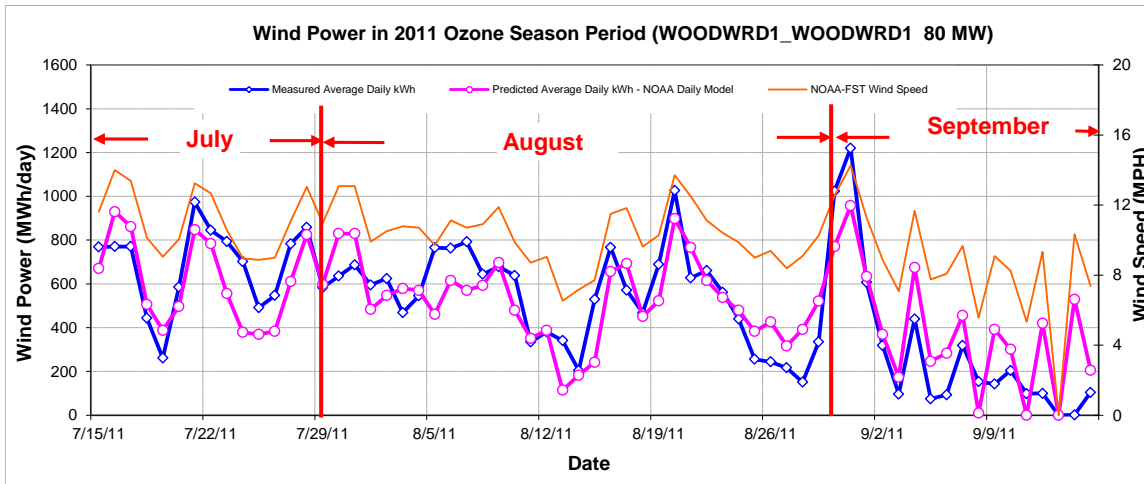


Figure 9-303: WOODWRD1_WOODWRD1 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

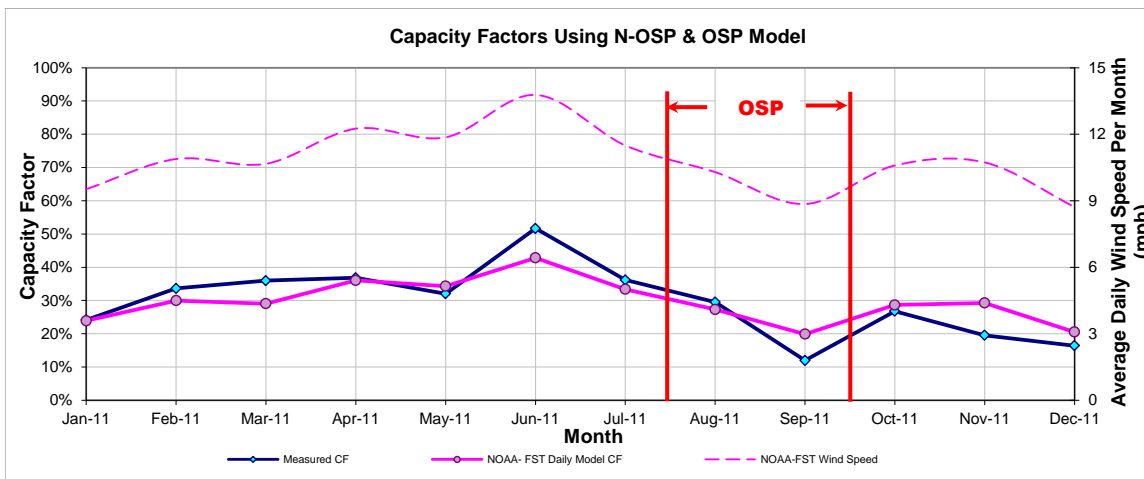


Figure 9-304: WOODWRD1_WOODWRD1 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-292: WOODWRD1_WOODWRD1 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
206,832	207,515	370	513

9.63.2 Woodward Mountain Ranch (WOODWRD2_WOODWRD2)

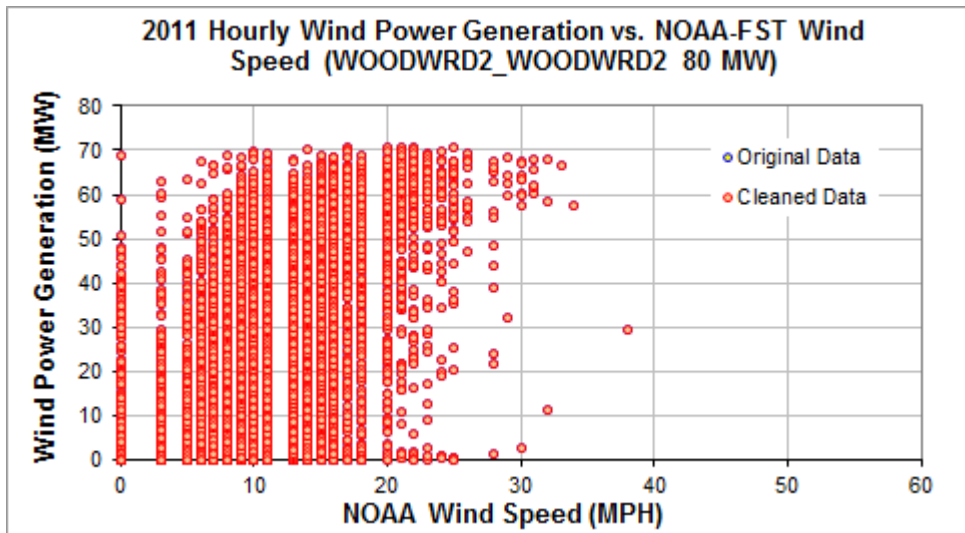


Figure 9-305: WOODWRD2_WOODWRD2 – Hourly Wind Power vs. NOAA Wind Speed (2011)

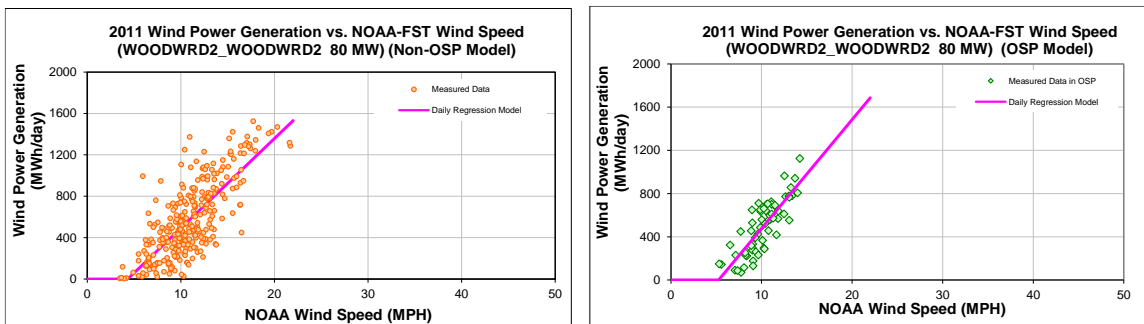


Figure 9-306: WOODWRD2_WOODWRD2 – Daily Wind Power vs. NOAA Wind Speed (Using OSP and Non-OSP Model)

Table 9-293: WOODWRD2_WOODWRD2 – Model Coefficients

Using Non-OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-373.5616
Left Slope (MWh/mph-day)	86.5435
RMSE (MWh/day)	234.9488
R2	0.5858
CV-RMSE	41.0%

Using OSP Model:

IMT Coefficient	NOAA Daily Model
YCP (MWh/day)	-531.3947
Left Slope (MWh/mph-day)	100.7955
RMSE (MWh/day)	137.6295
R2	0.6893
CV-RMSE	28.0%

Table 9-294: WOODWRD2_WOODWRD2 – Comparison of Predicted Power vs. Measured Power

Month	No. Of Days	Average Daily Wind Speed (MPH) NOAA	Measured Power Generation (MWh) NOAA	Predicted Power Generation Using Daily Model (MWh) NOAA	Diff. NOAA	Measured Capacity Factor	Capacity Factor Using Daily Model NOAA
Jan-11	31	9.52	13,601	13,969	-2.71%	23%	23%
Feb-11	28	10.88	17,524	15,914	9.19%	33%	30%
Mar-11	31	10.67	20,364	17,082	16.12%	34%	29%
Apr-11	30	12.25	21,828	20,605	5.60%	38%	36%
May-11	31	11.86	18,690	20,240	-8.29%	31%	34%
Jun-11	30	13.78	27,979	24,557	12.23%	49%	43%
Jul-11	31	11.49	19,925	19,320	3.04%	33%	32%
Aug-11	31	10.29	16,731	15,687	6.24%	28%	26%
Sep-11	29	8.84	6,979	10,830	-55.17%	13%	19%
Oct-11	31	10.59	17,030	16,835	1.15%	29%	28%
Nov-11	30	10.73	12,063	16,649	-38.01%	21%	29%
Dec-11	30	8.72	10,370	11,591	-11.77%	18%	20%
Total	363	10.81	203,085	203,280	-0.10%	29%	29%
Total in OSP (07/15-09/15)	63	10.16	31,012	31,009	0.01%	26%	26%

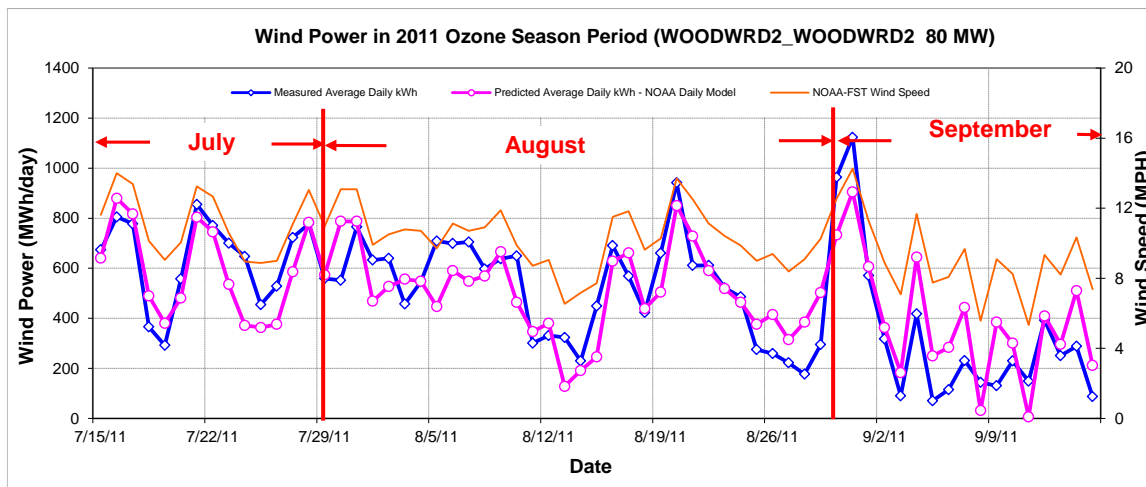


Figure 9-307: WOODWRD2_WOODWRD2 – Predicted Wind Power in OSP Using NOAA Wind Speed (2011)

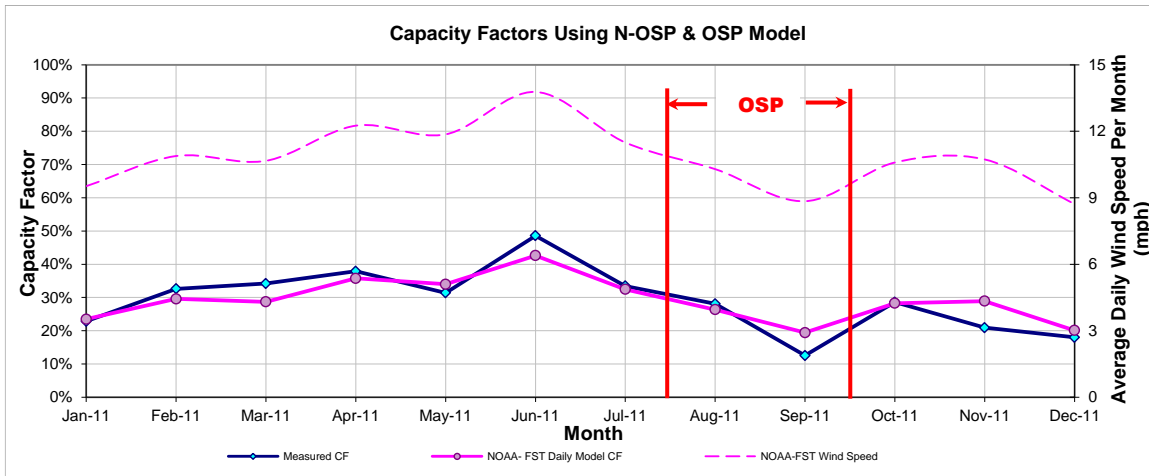


Figure 9-308: WOODWRD2_WOODWRD2 – Predicted Capacity Factors Using Daily Models (2011)

Table 9-295: WOODWRD2_WOODWRD2 – Predicted Power Production in 2008

Annual		OSP	
2008 Estimated MWh/yr (2011 Daily Model)	2011 Measured MWh/yr	2008 OSP Estimated MWh/day (2011 Daily Model)	2011 OSP Measured MWh/day
204,360	204,204	363	492

10 Appendix D

10.1 To access data Files for Wind Energy Production and Weather Files for the Modeling, contact ESL or access

10.2 Presentations

Haberl, J.; Yazdani, B.; Culp, 2012 “Emissions Reduction Impact of Renewables,” *Clean Air Through Energy Efficiency Conference*, Galveston, Texas, October 2012