

April 2013



System Planning

Monthly Status Report April 2013

Report Highlights

- **ERCOT is currently tracking 159 active generation interconnection requests totaling over 48,000 MW. This includes almost 20,000 MW of wind generation.**
- **ERCOT is currently reviewing proposed transmission improvements with a total cost of \$75 Million**
- **Transmission Projects endorsed in 2013 total \$349.8 Million**
- **All projects (in engineering, routing, licensing and construction) total approximately \$9.68 Billion.**
- **Transmission Projects energized in 2013 total about \$38.6 million.**

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1. Generation Interconnection

Additional information regarding detailed generation interconnection and impact studies is contained in the “Generation Project Interconnection Information” folder in the “Operations and System Planning” area on the ERCOT website: <http://planning.ercot.com/login/login>.

1.1 Signed Generation Interconnection Agreements

- 13INR0028 – Antelope Station – 364 MW of Gas in Hale County
- 11INR0079a – South Clay Wind Farm – 200 MW of Wind in Clay County

1.2 New Generation Registering for Commercial Operations

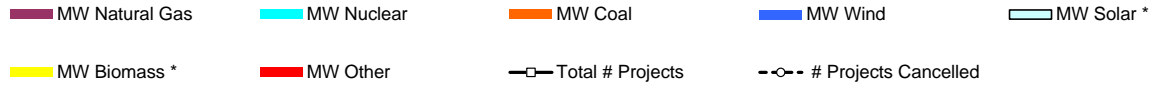
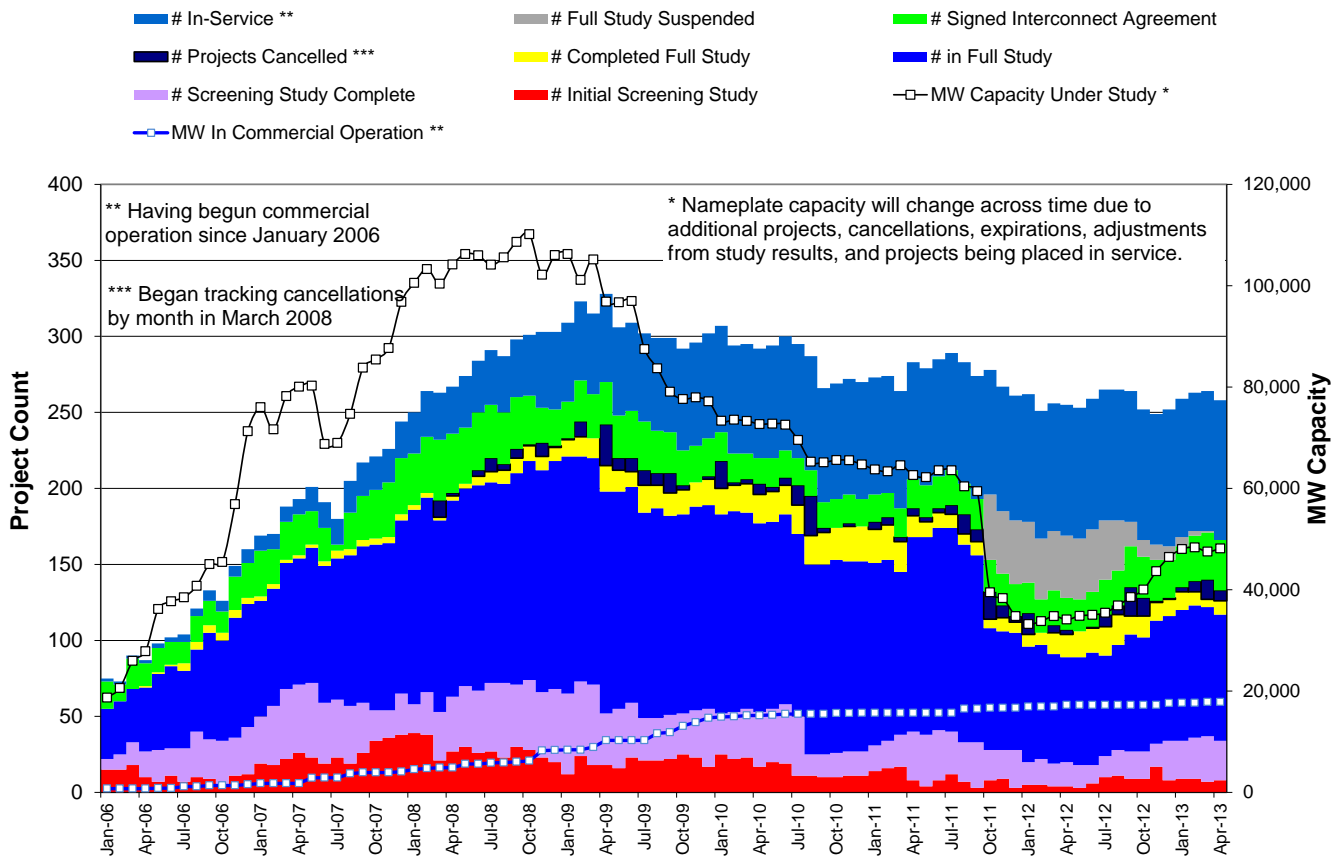
None

The total installed wind capacity is now reported as 10,570 MW by the resource owners through the registration process. Capacity by North, South and West is 832 MW, 2,375 MW, and 7,363 MW respectively. Eight-hundred fifty MW is able to switch between the West and South zones and is currently shown in the South zone.

1.3 Summary of Generation Interconnection Requests

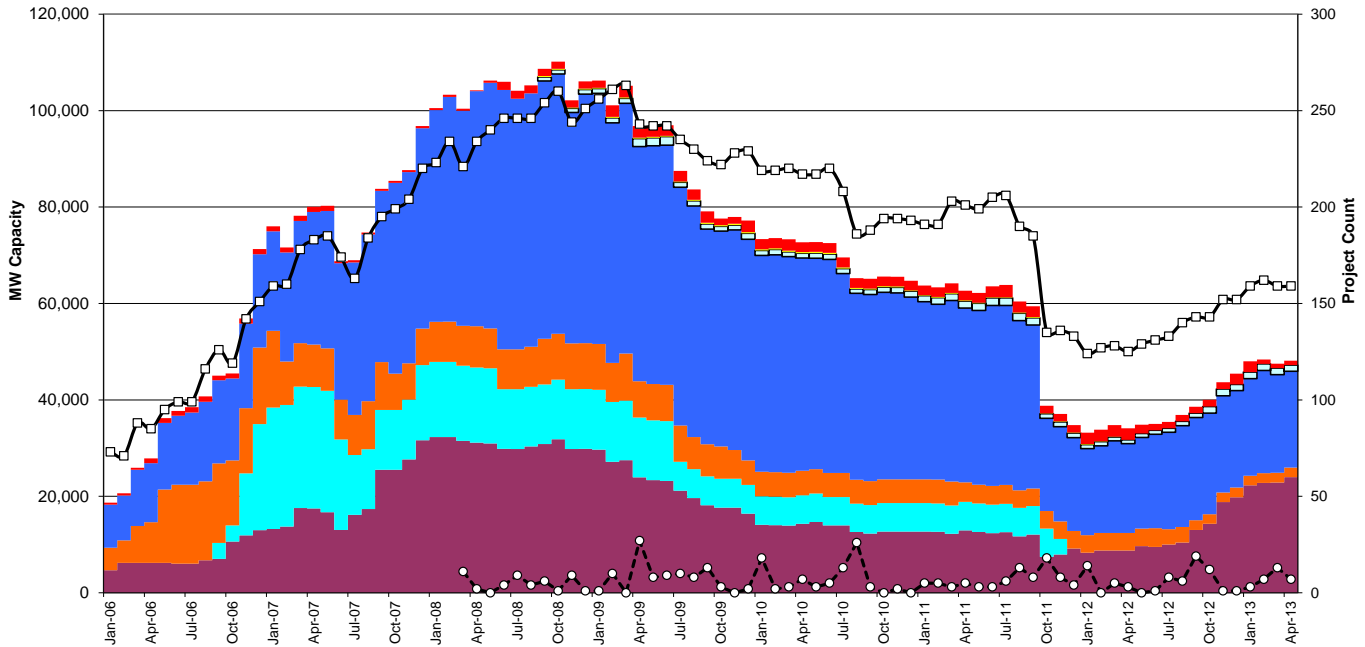
GENERATION INTERCONNECTION REQUESTS CURRENTLY UNDER REVIEW	
Currently tracking 159 generation interconnection or change requests	
As of April 30, 2013	Total
Security Screening Study	8
SSS Completed	26
Full Interconnect Study	83
FIS Completed	9
Suspended Studies	0
Capacity of Suspended Study Projects	0
Interconnect Agreement Completed	33
Capacity under Interconnection Agreements	12,815
Capacity for Grid, MW	48,148
Wind Capacity, MW	19,964

Fuel Type	Confidential Projects (MW)	Projects Under Full Study (MW)	Public Projects (MW)	Suspended Studies (MW)	Grand Total (MW)
Gas-AllOther			449		8,053
Gas-CombinedCycle			6,522		15,918
Total Gas	10,622	6,378	6,971		23,971
Nuclear					
Coal		850	1,165		2,015
Wind	2,111	13,264	4,589		19,964
Solar	710	524	50		1,284
Biomass					
Storage		874	40		914
Petroleum Coke					
Grand Total	13,443	21,890	12,815		48,148

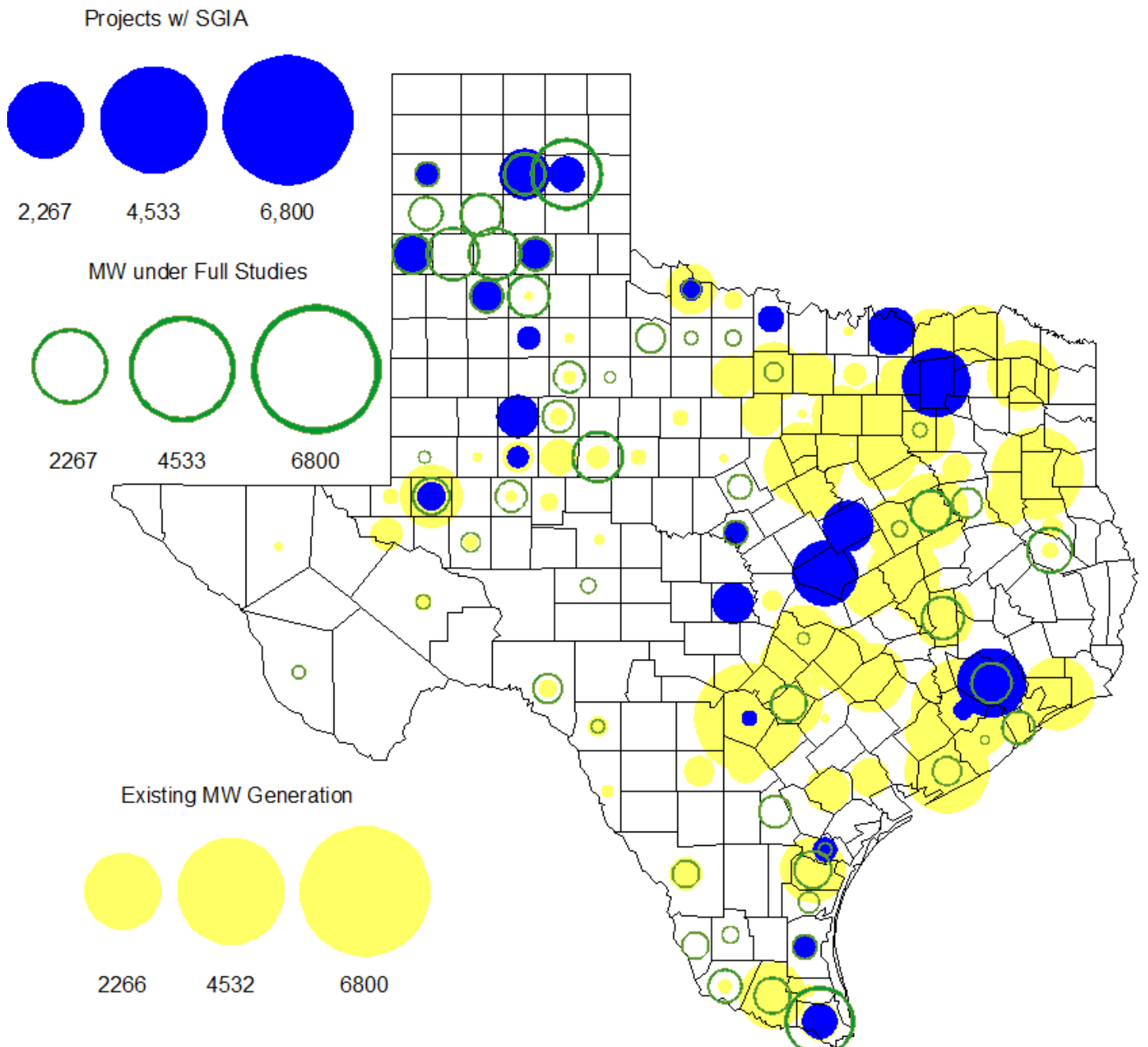


* Prior to September 2008, Category "Other" included "Solar" and "Biomass"
 Projects in all phases of interconnection study are reflected in this graph
 Project cancellation tracking by month began in March 2008

Note: Suspended Projects are not included in this chart



County Location of Installed Generation and Interconnection Requests (all fuels)



1.4 Projects with Interconnection Agreements

Generation Interconnections as of April 30, 2013						
INR	Site Name	County	COD	Fuel	MW For Grid	Change from Last Report
12INR0075	Blue Summit Windfarm	Wilbarger	May-13	Wind	135	date
11INR0033	Los Vientos	Cameron	May-13	Wind	400	date
09INR0001	Sandy Creek 1	McLennan	May-13	Coal	925	date
12INR0086	WA Parish Addition	Fort Bend	Jun-13	Gas	90	
10INR0089	Deepwater Energy Storage	Harris	Jul-13	Storage	40	
13INR0058	OCI Alamo 1	Bexar	Nov-13	Solar	50	
11INR0013	Goldthwaite Wind Energy	Mills	Dec-13	Wind	150	
12INR0034	Stephens Ranch Wind Energy	Borden	Dec-13	Wind	378	
14INR0030a2	Panhandle Wind	Carson	Feb-14	Wind	322	
13INR0048	Spinning Spur Wind Two	Oldham	Jun-14	Wind	161	
14INR0015	Deer Park Energy Center	Harris	Jun-14	Gas-CC	192	
14INR0016	Channel Energy Center 138/345kV CT	Harris	Jun-14	Gas-CC	190	
14INR0012	Miami Wind 1 Project	Gray	Jun-14	Wind	401	
10INR0021	Panda Sherman Power	Grayson	Jun-14	Gas-CC	809	date
10INR0020a	Panda Temple Power	Bell	Jun-14	Gas-CC	809	date
13INR0021	Ferguson Replacement Project	Llano	Jul-14	Gas-CC	570	
13INR0040	Agrifos Steam Unit	Harris	Aug-14	Gas	0	
11INR0050	Moore Wind 1	Crosby	Aug-14	Wind	149	
13INR0010a	Mariah Wind	Parmer	Oct-14	Wind	200	
14INR0023	Longhorn Energy Center	Briscoe	Dec-14	Wind	361	
13INR0005	Conway Windfarm	Carson	Dec-14	Wind	600	
11INR0079a	South Clay Windfarm	Clay	Dec-14	Wind	200	New
06INR0022c	Penascal Wind Farm 3	Kenedy	Dec-14	Wind	202	
09INR0051	Mesquite Creek	Borden	Mar-15	Wind	249	
08INR0018	Gunsight Mountain	Howard	Aug-15	Wind	120	
13INR0010b	Mariah Wind	Parmer	Dec-15	Wind	200	date
13INR0023	Texas Clean Energy Project	Ector	Jan-16	Coal	240	
06INR0006	Cobisa-Greenville	Hunt	May-16	Gas-CC	1,792	
10INR0020b	Panda Temple Power	Bell	May-16	Gas-CC	780	
13INR0028	Antelope Station	Hale	Jun-16	Gas	359	New
10INR0022	Pondera King Power Project	Harris	Jun-16	Gas-CC	1,380	
13INR0010c	Mariah Wind	Parmer	Dec-16	Wind	200	date
11INR0054	Midway Farms Wind	San Patricio	Oct-14	Wind	161	date

1.5 Generation Projects Undergoing Full Interconnection Studies with Confidentiality Waived by Developer

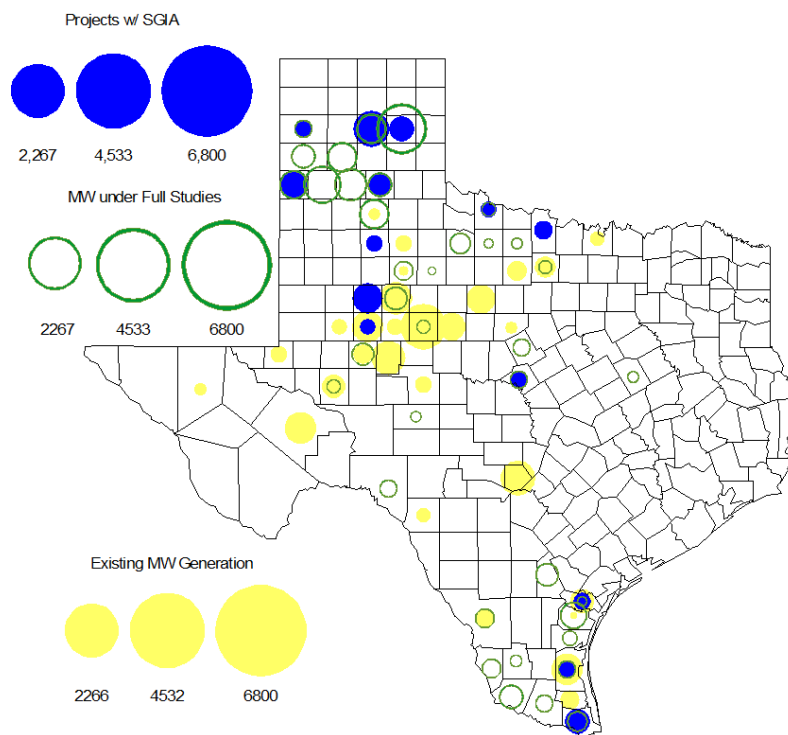
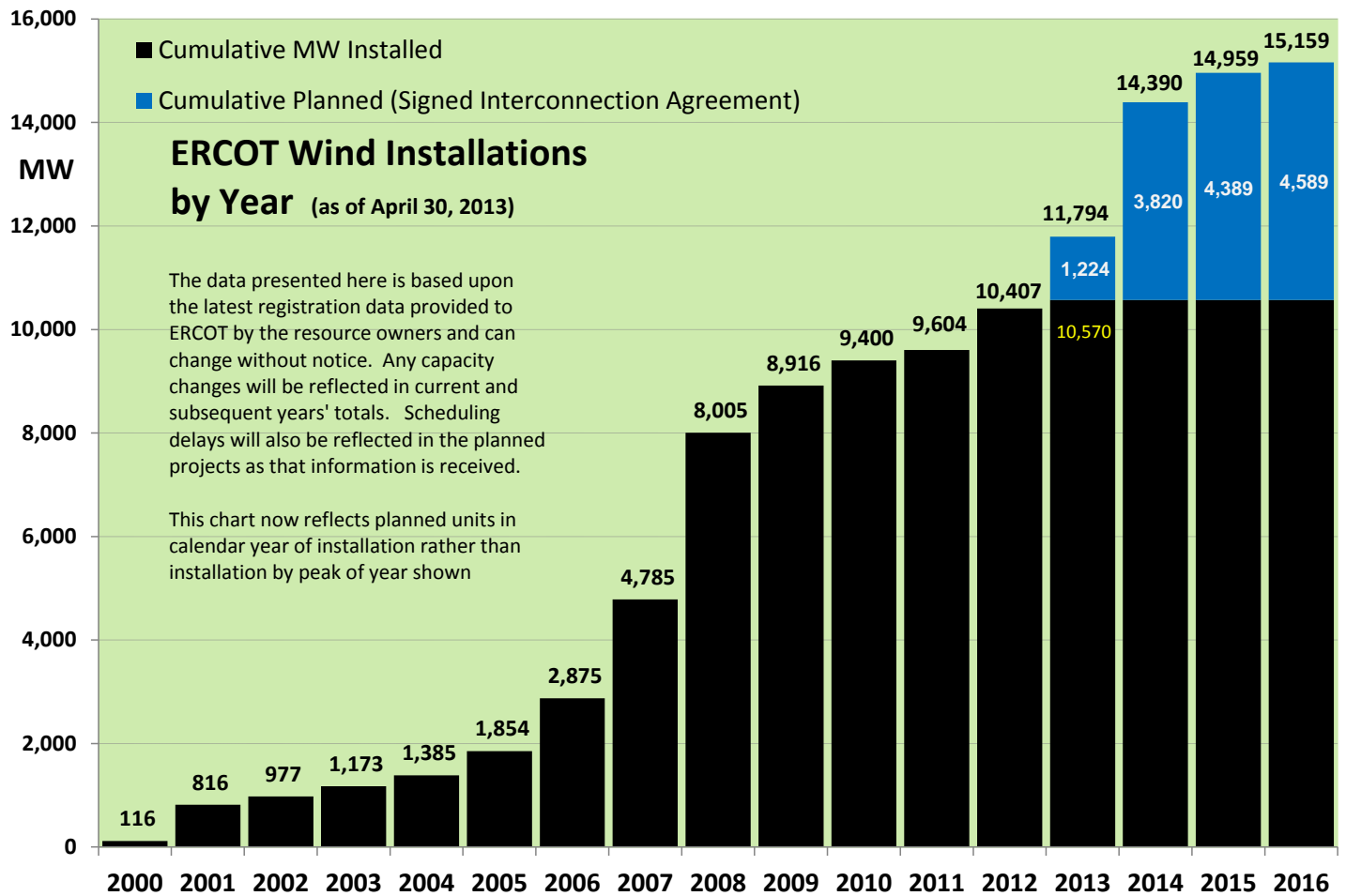
14INR0040	Redgate Power Plant	Hidalgo	Jun-14	Gas	225	New
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1.6 Generation Projects Undergoing Full Interconnection Studies

INR	County	Fuel	MW	COD
13DGR0001	Presidio	Solar	10	Apr-13
13INR0046	Limestone	Wind	71	Sep-13
13INR0038	Swisher	Wind	300	Dec-13
13INR0055	Zapata	Wind	250	Dec-13
12INR0068	Jim Hogg	Wind	80	Dec-13
14INR0014	Val Verde	Solar	100	Jan-14
12INR0055	Baylor	Wind	40	Jan-14
14INR0039	Ector	Gas	450	Mar-14
14INR0024	Kinney	Solar	42	Apr-14
14INR0013	Cameron	Wind	103	Apr-14
14INR0027	Guadalupe	Gas	471	May-14
14INR0038	Galveston	Gas	390	Jun-14
08INR0019b	Gray	Wind	250	Jun-14
11INR0057	Cameron	Wind	165	Jun-14
13INR0057	Archer	Wind	65	Jun-14
13INR0049	Harris	Gas	352	Jun-14
12INR0059	Pecos	Solar	50	Jun-14
11INR0093	San Patricio	Wind	41	Jul-14
14INR0025	Floyd	Wind	500	Jul-14
12INR0042b	Deaf Smith	Wind	135	Sep-14
12INR0070	Knox	Wind	300	Oct-14
12INR0045	Kleberg	Wind	135	Oct-14
13INR0020a	Glasscock	Wind	200	Oct-14
13INR0025	Randall	Wind	150	Nov-14
13INR0054	Bee	Gas	0	Dec-14
11INR0082A	Val Verde	Wind	50	Dec-14
11INR0085	Nolan	Wind	106	Dec-14
13INR0050	Comanche	Wind	200	Dec-14
14INR0033	Armstrong	Wind	500	Dec-14
12INR0079	Kenedy	Wind	200	Dec-14
14INR0020	Floyd	Wind	150	Dec-14
13INR0010d	Parmer	Wind	200	Dec-14
14INR0049	Jack	Wind	102	Dec-14
14INR0056	Mills	Wind	101	Dec-14
10INR0009	Castro	Wind	300	Mar-15
15INR0033	Hale	Gas	197	Jun-15
15INR0013	Anderson	Storage	324	Oct-15
11INR0065	Nueces	Wind	350	Oct-15
14INR0018	Nolan	Solar	35	Dec-15
13INR0010e	Parmer	Wind	200	Dec-15
16INR0005	Cameron	Gas	871	Apr-16
16INR0006	Angelina	Gas	785	Jun-16
16INR0003	Brazoria	Gas	11	Jun-16
12INR0002b	Briscoe	Wind	200	Dec-16
12INR0018	Gray	Wind	500	Mar-17
14INR0003	Nolan	Coal	850	Jun-19

INR	County	Fuel	MW	COD
13INR0060	Hidalgo	Gas	50	Jun-13
11INR0094	Kent	Solar	100	Oct-13
13INR0052	Starr	Wind	200	Dec-13
13INR0056	Scurry	Wind	366	Dec-13
12INR0081a	Upton	Wind	112	Dec-13
13INR0006	Gray	Wind	750	Jan-14
14INR0059	Kaufman	Gas	52	Feb-14
13INR0059	Castro	Wind	499	Mar-14
12INR0060	Schleicher	Wind	58	Apr-14
11INR0062	Nueces	Wind	178	Apr-14
14INR0031	Harris	Gas	270	Jun-14
08INR0019a	Gray	Wind	250	Jun-14
08INR0019c	Gray	Wind	250	Jun-14
13INR0026	Oldham	Wind	201	Jun-14
14INR0048	Wilbarger	Wind	114	Jun-14
14INR0040	Hidalgo	Gas	225	Jun-14
14INR0029	Uvalde	Solar	42	Jul-14
12INR0085	Stonewall	Wind	24	Jul-14
12INR0042a	Deaf Smith	Wind	265	Sep-14
14INR0032	Randall	Wind	501	Sep-14
13INR0031	Travis	Solar	30	Oct-14
13INR0036	Hidalgo	Wind	200	Oct-14
13INR0020b	Glasscock	Wind	150	Oct-14
14INR0030b	Carson	Wind	322	Nov-14
10INR0085	Ector	Solar	57	Dec-14
11INR0082B	Val Verde	Wind	150	Dec-14
14INR0009	Kent	Wind	248	Dec-14
14INR0028	Live Oak	Wind	300	Dec-14
11INR0081	Live Oak	Wind	72	Dec-14
13INR0045	Castro	Wind	288	Dec-14
15INR0021	Starr	Wind	200	Dec-14
14INR0045	Webb	Wind	251	Dec-14
14INR0055	Mills	Wind	101	Dec-14
14INR0057	Erath	Wind	48	Dec-14
15INR0032	Hale	Gas	197	Jun-15
14INR0026	Presidio	Solar	28	Sep-15
15INR0014	Matagorda	Storage	280	Oct-15
14INR0030a1	Carson	Wind	322	Nov-15
13INR0032	Andrews	Solar	30	Dec-15
12INR0002a	Briscoe	Wind	200	Dec-15
12INR0029	Swisher	Wind	500	Dec-15
16INR0008	Grimes	Gas	687	May-16
16INR0004	Cameron	Gas	730	Jun-16
14INR0011	Swisher	Storage	270	Jul-16
13INR0010f	Parmer	Wind	200	Dec-16
11INR0040	Freestone	Gas	640	Mar-18

1.7 Wind Generation Capacity Installed by Year



2. Regional Planning Group Project Reviews

- Sharyland submitted the Atlas-Driver Load Integration project, this is a Tier 2 project that is estimated to cost approximately \$18.6 million. This project has completed the RPG review and ERCOT will now prepare the RPG acceptance letter.
- Guadalupe Valley Electric Cooperative (GVEC) submitted the McQueeney-SMI-Geronimo 69 kV to 138 kV rebuild project. This is a Tier 2 project that is estimated to cost approximately \$8.1 million. This project has completed the RPG review and ERCOT has sent the RPG acceptance letter.
- LCRA TSC submitted the McNeil-Marshall Ford line upgrade (69 kV to 138 kV conversion) project. This is a Tier 3 project that is estimated to cost approximately \$20 million. This project has completed the RPG review and ERCOT has sent the RPG acceptance letter.
- Oncor submitted the Permian Basin to Moss to Odessa EHV 345 kV project. This is a Tier 1 project that is estimated to cost approximately \$75 million. This project is currently under ERCOT independent review.
- Oncor submitted the Collin-Payne 138 kV rebuild project. This is a Tier 3 project that is estimated to cost approximately \$20.6 million. This project has completed the RPG review and ERCOT will now prepare the RPG acceptance letter.

3. Asynchronous Tie Interconnection

Project	Notification to ERCOT	Reliability Study	RPG Review	Interconnection Agreement	In-service Year
Railroad DC tie expansion (150 MW - CFE)					2014
Southern Cross HVDC (3000 MW - SERC)					
Tres Amigas (1500 MW - SPP)					

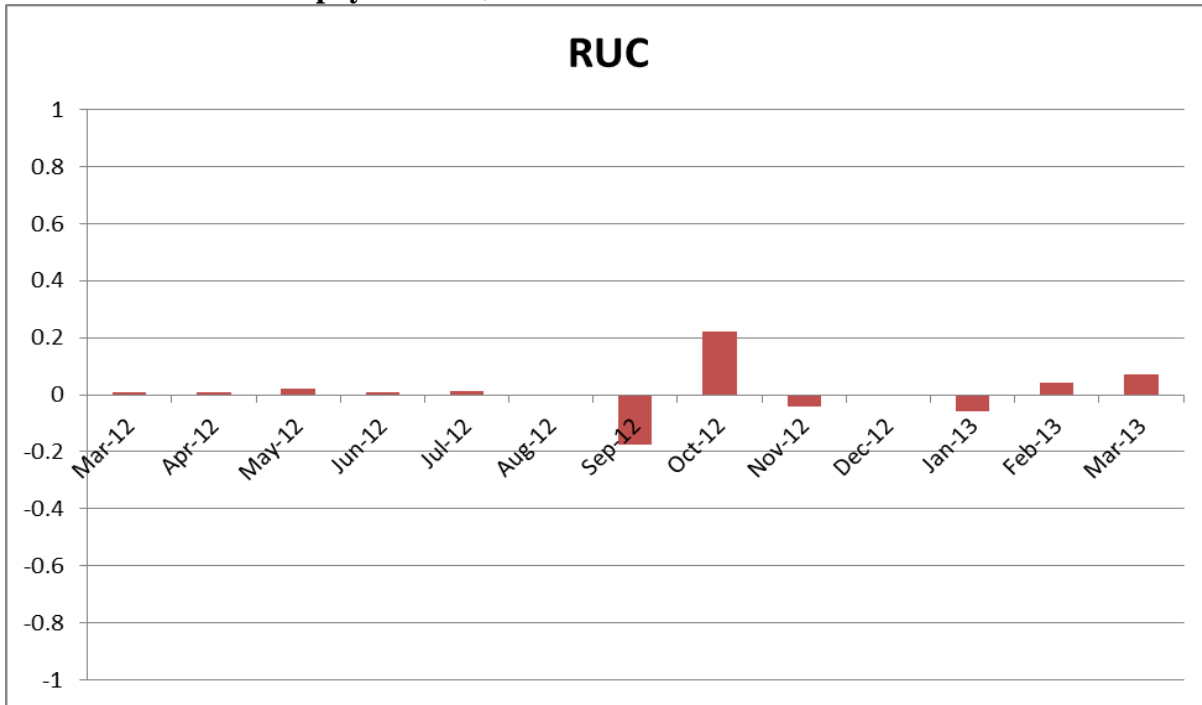
Color Legend

	In progress
	Complete

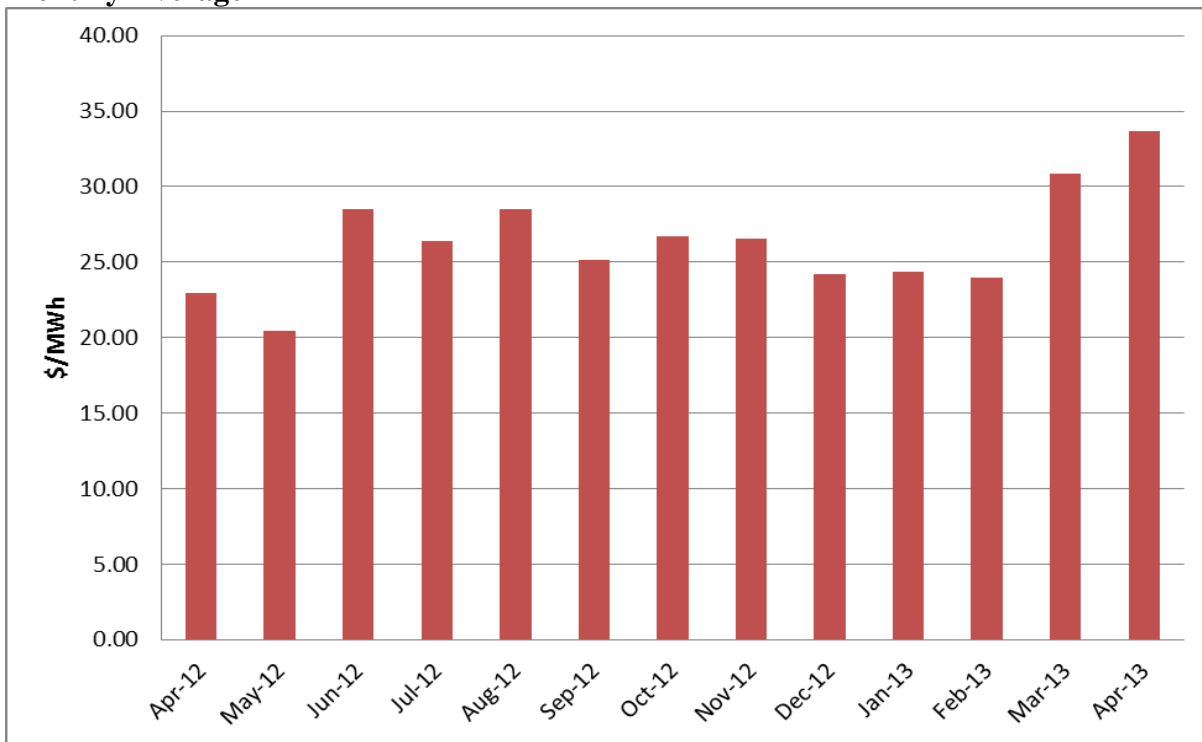
4. Congestion Costs

Dollars shown in RUC Make Whole payment graph are of settlement quality.

RUC net Make Whole payment in \$mm



Monthly Average LMP



Binding Constraints – Year to Date

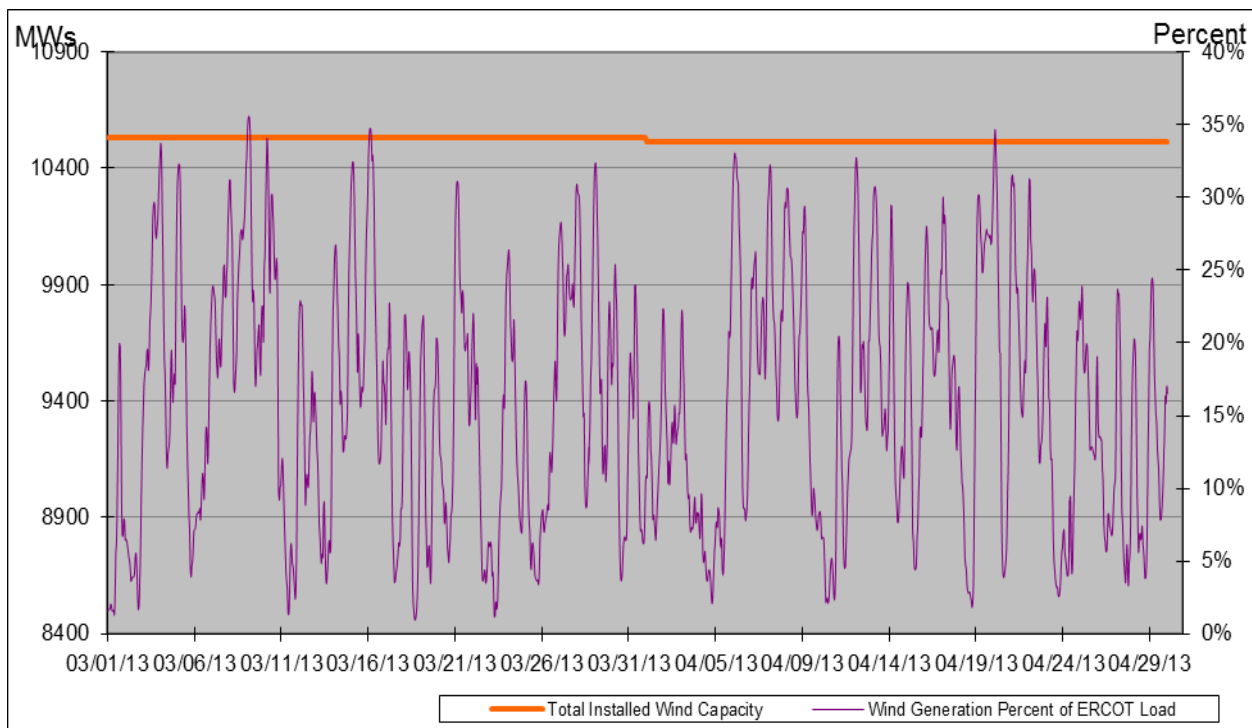
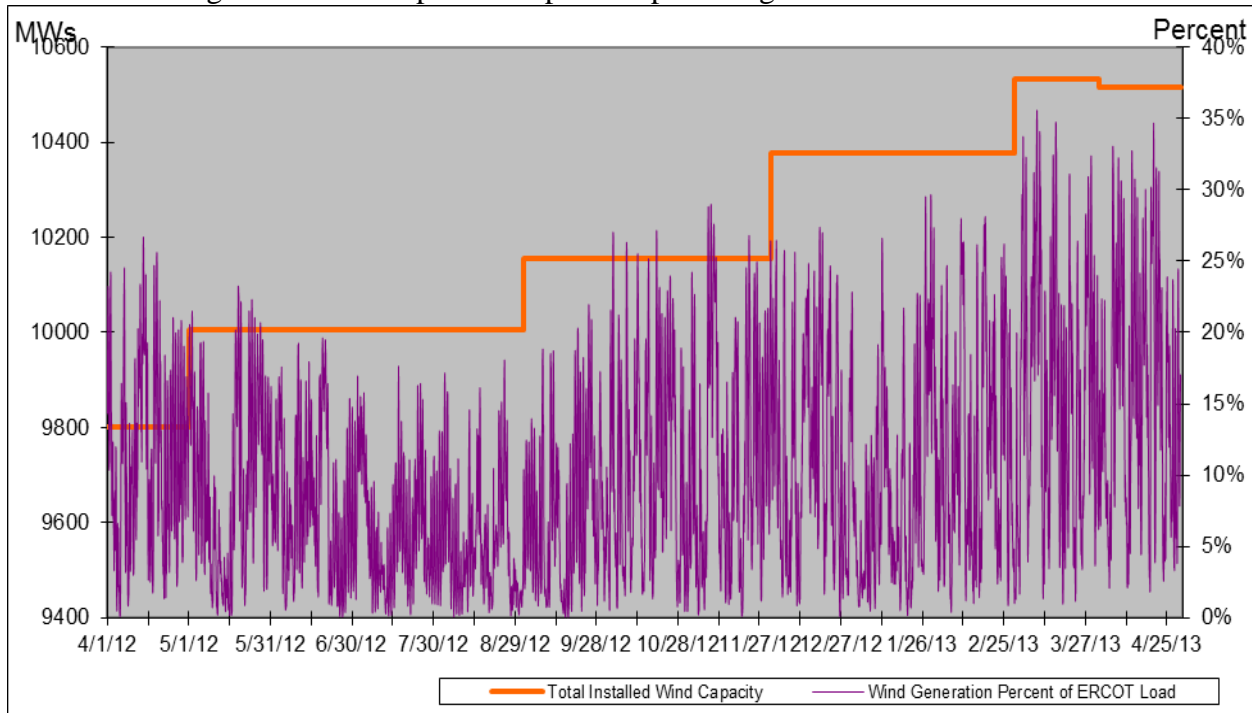
Contingency	Binding Element	Number of 5-min intervals	Shadow Price Range \$/MWh	Estimated Congestion Rent \$ (Shadow Price*Limit)	Transmission Project
Roanoke Switch - West Denton 345 kV & Roanoke Switch - Lewisville Switch 345 kV; or West Denton - Roanoke Switch 345 kV; or West Denton - Rdwells 138 kV	Jim Cristal - North Denton 138kV	1407	0 - 3500	18,679,874	14TPIT0047
Roanoke Switch - West Denton 345 kV & Roanoke Switch - Lewisville Switch 345 kV	Fort Worth - Teasley 138 kV	2813	0 - 3500	16,898,845	14TPIT0047
Morgan Creek SES 345/138 kV Autotransformer 2	Morgan Creek SES 345/138 kV Autotransformer 4	150	29 - 4500	12,952,199	
West Denton - Rdwells 138 kV	Teasley - Pockrus Substation 138 kV	728	0 - 3500	10,220,099	14TPIT0047
Golden Switch - Sun Switch 138 kV; or Sacroc - Sun Switch 138 kV; or Snyder - China Grove 138 kV	China Grove - Bluff Creek 138 kV	412	0 - 3500	7,008,745	12TPIT0058, 13TPIT0098
Odessa North 138/69 kV Autotransformer; or West Over - Odessa 138 kV	Moss Switch - Amoco North Cowden Tap 138 kV	461	0 - 3500	6,513,247	13TPIT0098, 13TPIT0093
Asphalt Mines - Odlaw Switch 138 kV	Hamilton Road - Marverick 138 kV	4176	0 - 2905	4,447,166	16TPIT0024
Graham SES - Long Creek 345 kV; or Temple Pecan Creek - Tradinghouse SES 345 kV & Temple Switch - Lake Creek SES 345 kV; or Comanche Switch - Brown Switch 345 kV	Brown Switch - Killen Switch 345 kV	1035	0 - 393	3,759,548	
Morgan Creek SES - China Grove 138 kV double-circuit	Morgan Creek SES 138/69 kV Autotransformer 3	158	0 - 2800	2,677,907	
Base Case	West to North Stability	481	0 - 60	2,624,519	CREZ

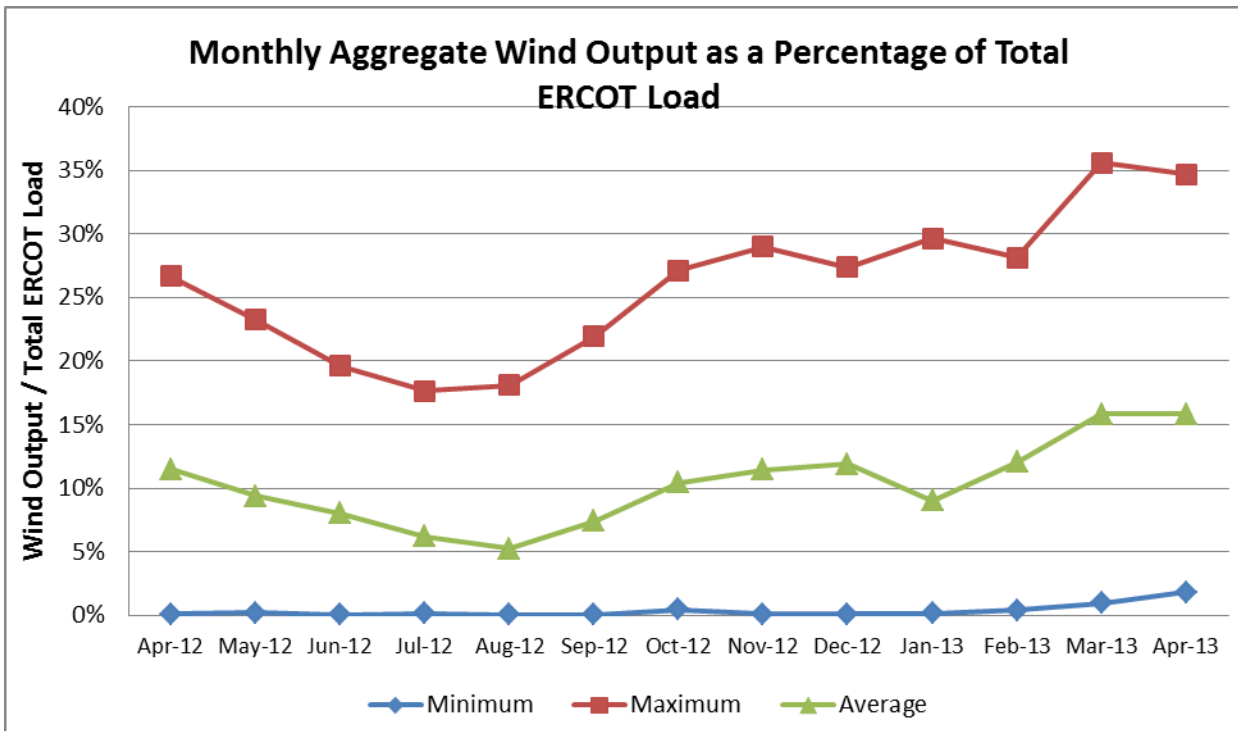
Binding Constraints – Apr 2013

Contingency	Binding Element	Number of 5-min intervals	Shadow Price Range \$/MWh	Estimated Congestion Rent \$ (Shadow Price*Limit)	Transmission Project	Comments
Roanoke Switch - West Denton 345 kV & Roanoke Switch - Lewisville Switch 345 kV ; or West Denton - Roanoke Switch 345 kV; or West Denton - Rdwells 138 kV	Jim Cristal - North Denton 138kV	1046	0 - 3500	17,473,024	14TPIT0047	Outage on Teasley Substation to Fort Worth Substation 138kV
West Denton - Rdwells 138 kV	Teasley - Pockrus Substation 138 kV	728	0 - 3500	10,220,099	14TPIT0047	Outage on Jim Crystal to West Denton 138kV
Morgan Creek SES 345/138 kV Autotransformer 2	Morgan Creek SES 345/138 kV Autotransformer 4	95 high-side; and 19 low side	29 - 4500 high side; and 186 - 3500 low side	9,646,738		Outage on Morgan Creek SES 345/138kV Autotransformer
Odessa North 138/69 kV Autotransformer; or West Over - Odessa 138 kV	Moss Switch - Amoco North Cowden Tap 138 kV	323	0 - 3500	4,771,142	13TPIT0098, 13TPIT0093	Outage on Odessa EHV Switch to Big Three Odessa Tap (BTHOT), BTHOT to Odessa Southwest and BTHOT to Nylon Switch 138 kV
Asphalt Mines - Odlaw Switch 138 kV	Hamilton Road - Marverick 138 kV	1420	0 - 2905	2,260,171	16TPIT0024	High wind leading to west – south transfers
Ajo - Rio Hondo 345 kV	North Edinburg - Lon Hill 345 kV	8	4 - 4500	1,500,659	14TPIT0050	Planned unit outages in the valley
California Creek - Paint Creek 138 kV; or Vernon 138/69 kV Autotransformer	Lake Pauline 138/69 kV Autotransformer	2943	1 - 2800	1,115,603		Outage on Salt Creek BEPC to Scurry Switch 138kV
Base Case	West to North Stability	167	0 - 28	1,109,581	CREZ	High wind
La Palma - Los Fresnos 138 kV	La Palma - Villa Cavazos 138 kV	16	3500 - 3500	983,471	16TPIT0029, 16TPIT0030	Outage on East Riohondo to Central Avenue Sub 138 kV
Singleton - Zenith 345 kV	Singleton - Tomball 345 kV	199	0 - 2167	869,416		Outage on Kuykendahl to King REIT 345 kV and Kuykendahl to Roans Prairie 345 kV

5. Wind Generation as a Percent of Load

One-hour average of total wind power output as a percentage of ERCOT load.





6. Planning Model Activities

- The short term calendar of major planning model events follows:
 - **Apr 2, 2013** **Begin 14 Data Set A case build**
 - **Apr 12, 2013** **Begin 13DSA/DSB March TPIT updates**
 - **May 24, 2013** **Post 13DSA/DSB March TPIT cases**
 - **Jun 11-13, 2013** **SSWG Data Set A meeting in Taylor**
 - **Jul 5, 2013** **Projected posting 14 Data Set A**
- Status update on SCR760, Changes Needed for Information Model Manager and Topology Processor for Planning Models, which was approved by the ERCOT Board in March 2011.
 - Bundle 1 (Items 3, 7 and 8): In Production.
 - Bundle 2 (Items 2a, 4, 9): In Production.
 - Bundle 3 (Item 5, 2b, 2c): In Production
 - Bundle 4 (Items 1, 6): First vendor release arrived at ERCOT on April 19, 2013. ERCOT is testing the release for both Planning and CRR environments. Expected off-cycle release to the environments used to create the products used for production planned for July 2013.

SCR Sub Part	SCR Description	Status
SCR760-1	Upgrade to PSS/E v32	Production
SCR760-2	Distribution Capacitor banks	Production

SCR Sub Part	SCR Description	Status
SCR760-3	Zero Impedance Line Ratings	Production
SCR760-4	Associate Loads and Capacitor banks with the correct CNG	Production
SCR760-5	Additional Transformer Data for Planning	Production
SCR760-6	FACTS Devices	Release
SCR760-7	Assign valid PSSE IDs to Breakers/ Switches/ Series Devices	Production
SCR760-8	Phase shift of Autos for short circuit studies	Production
SCR760-9	Multisection Line Grouping	Production

Table 1: In the following table:

- 1. Red will be used to show status of Not Submitted, meaning that the SCR sub part has not been submitted to Siemens as a Service Request.**
- 2. Yellow will indicate that the SCR sub part has been submitted. The color will remain yellow and the status will change in order to Submitted, Planning (Requirements, SOW, Code Writing), Release (Siemens produces first code to test), and Testing (code has completed internal test and is moving through release management).**
- 3. Green will indicate that the code has been tested and installed on the machines that ERCOT uses to produce Topology Processor output for Planning and CRR.**

7. Other Notable Activities

- ERCOT has contracted with Siemens PTI to complete the missing and questionable data for the remaining Resource Asset Registration Forms (RARF) that are still incomplete. ERCOT and Siemens are working together to gather a list of all missing and suspect data that will be used to create metrics and track progress on this project. So far, this list contains 3,000 individual data elements that are missing or suspect from 84 individual RE having between 1 and 389 missing or suspect values of required data elements. Four-hundred thirty units are included in the count.
- The Transmission Project and Information Tracking (TPIT) process is being modified to use the Model On-Demand (MOD) database as the source for future TPIT workbook postings starting with the July TPIT posting, which will be produced using the current process and the new process. Starting with the November 1 TPIT posting, the new process will be used. New fields have been added to the MOD user interface to hold the additional TPIT information not currently in MOD.
- Work on the 2013 Regional Transmission Plan (formerly the Five-Year Transmission Plan) has begun.
- ERCOT is currently performing the study to analyze the system needs in the West Texas area due to oil and gas load growth. The steady-state base cases used for this study are posted at the ERCOT POI.
- ERCOT is preparing the report on the results of the Long-Term System Assessment and the improvements to the long-term study process as a result of the grant received from the Department of Energy. The report is expected to be published in July.
- ERCOT has begun a study to plan the long-term transmission roadmap for the Panhandle Region. With CREZ lines now extending the ERCOT transmission system into the area, ERCOT has received a significant amount of wind generation interconnection study activity in the Panhandle. Currently, there are almost 2,600 MW of wind generation with signed generation interconnection agreements in the region with another approximately 2,500 MW that have completed the full interconnection study phase of the process. An additional approximately 5,400 MW is in the advanced stages of the interconnection study process.