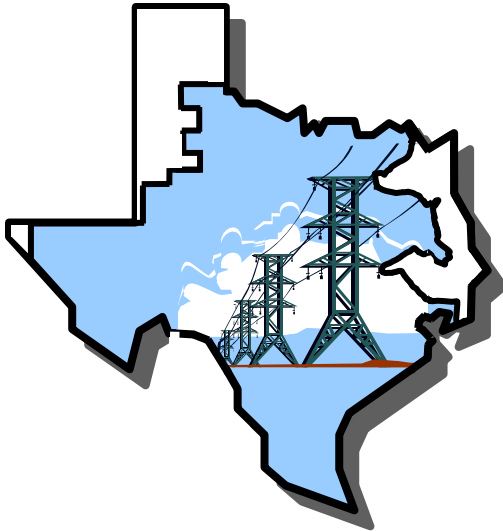




# System Planning Division



## Monthly Status Report to Reliability and Operations Subcommittee for September 2009

### Report Highlights

#### Item

1.
  - ERCOT is currently tracking 224 active generation interconnection requests totaling over 79,000 MW. This includes almost 45,000 MW of wind generation.
  
2.
  - Regional Planning is currently reviewing proposed transmission improvements with a total cost of \$1,038.6 Million
  - Transmission Projects approved in 2009 total \$257.8 Million
  - All projects (in engineering, routing, licensing and construction) total approximately \$9.2 Billion
  - Transmission Projects energized in 2009 total about \$416 million

## Table of Contents

1. Generation Interconnection.....	1
1.1 New Generation Beginning Commercial Operations.....	1
1.2 New Generation Interconnection Agreements .....	1
1.3 Summary of Active Generation Interconnection Requests .....	1
1.4 Publicly Disclosed Generation Interconnection Projects.....	3
1.5 Generation Projects Undergoing Full Interconnection Studies .....	6
1.6 Wind Generation .....	6
2. Regional Planning Group Project Reviews.....	9
3. Other Notable Activities .....	9

# 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 New Generation Registering for Commercial Operations

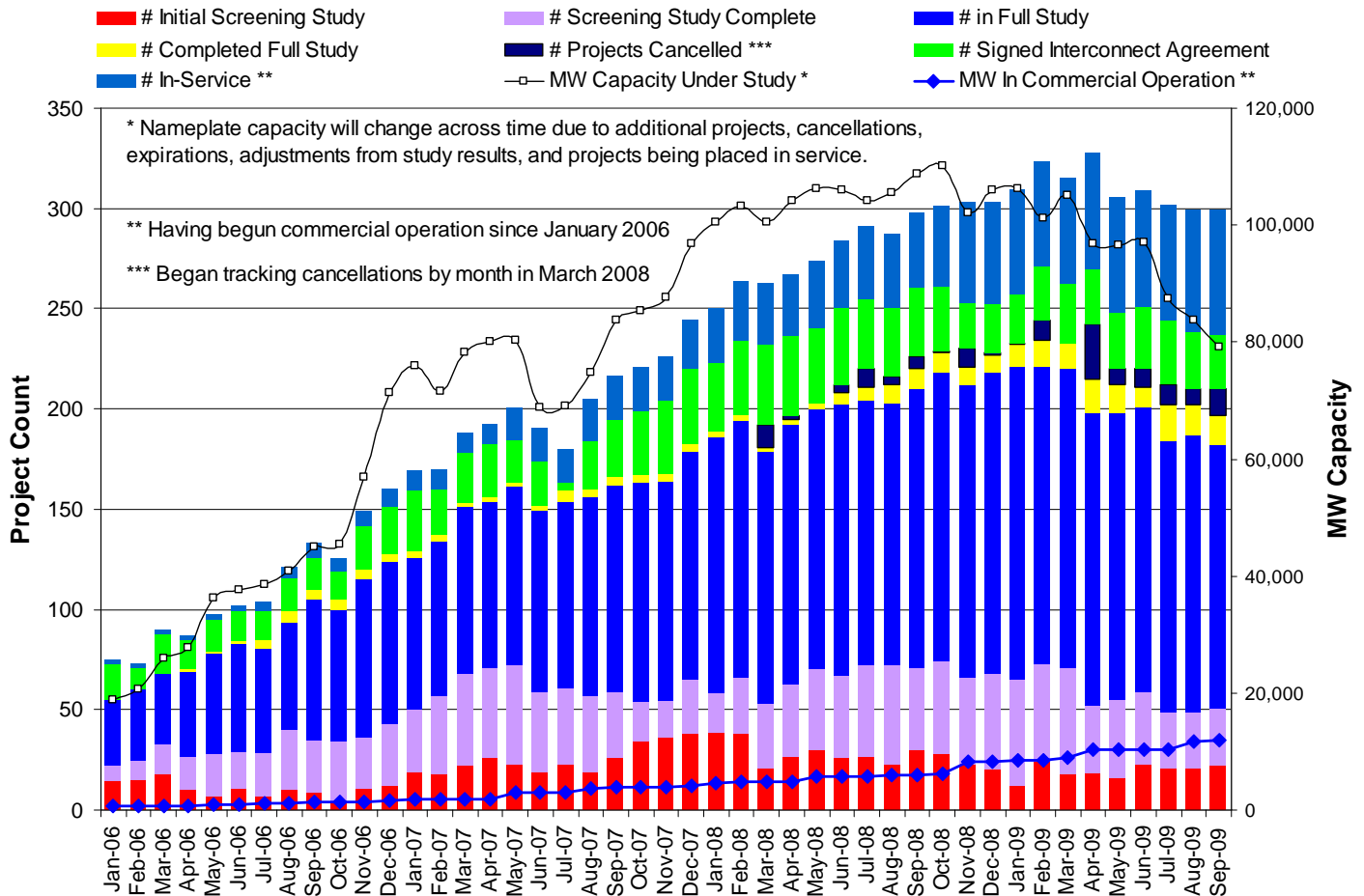
- Papalote Creek I Wind (08INR0012a) for 180 MW in San Patricio County
  - The total installed wind capacity is now 8,515 MW, of which 6,992 MW (82%) is located within the Western Congestion Management Zone.

## 1.2 New Generation Interconnection Agreements

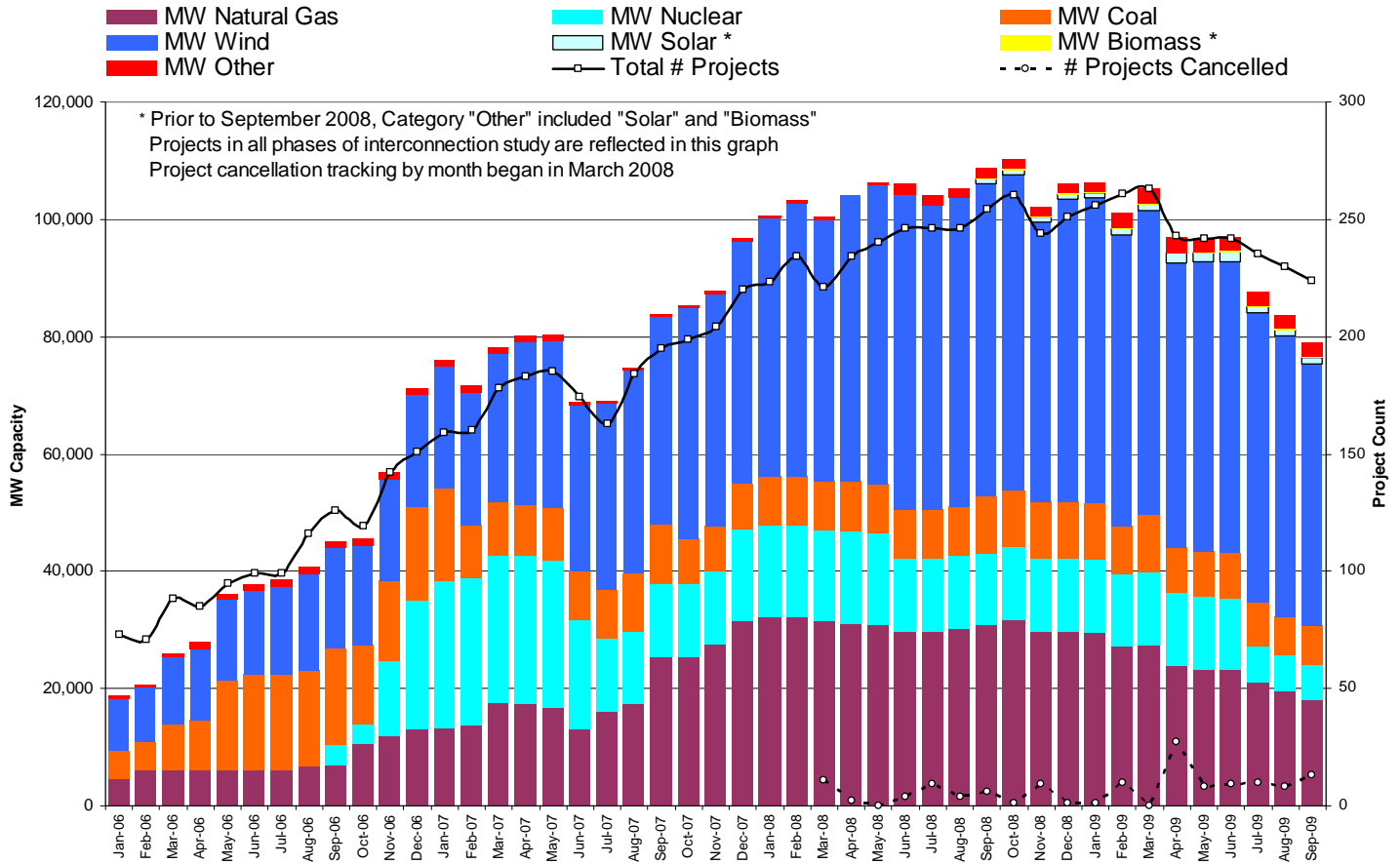
- Cedro Hill Wind (09INR0082) for 150 MW in Webb County

## 1.3 Summary of Active Generation Interconnection Requests

<b>GENERATION INTERCONNECTION REQUESTS CURRENTLY BEING PROCESSED</b>				
Currently tracking 224 active generation interconnection or change requests				
<b>As of September 30, 2009</b>	<b>North</b>	<b>South</b>	<b>West</b>	<b>Total</b>
Security Screening Study	6	6	10	22
SSS Completed	4	10	15	29
Full Interconnect Study	26	22	83	131
FIS Completed	3	10	2	15
Interconnect Agreement Completed	7	11	9	27
Capacity under Interconnection Agreements	4,487	2,423	1,578	8,488
Capacity for Grid, MW	<b>21,233</b>	<b>22,854</b>	<b>34,998</b>	<b>79,085</b>
Wind Capacity, MW	4,025	7,920	32,656	44,601



Fuel Type	Confidential Projects (MW)	Projects Under Full Study (MW)	Projects w/ Interconnect Agreement/Public Letter (MW)	Grand Total (MW)
Gas-CC			3,881	16,977
Gas-CT			527	1,177
Total Gas	1,279	12,467	4,408	18,154
Nuclear			5,986	5,986
Coal		3,712	2,958	6,670
Wind	7,245	30,264	7,092	44,601
Solar	636	459		1,095
Biomass	58	50	145	253
Other	1,126	1,200		2,326
Grand Total	10,344	48,152	20,589	79,085



### 1.4 Publicly Disclosed Generation Interconnection Projects

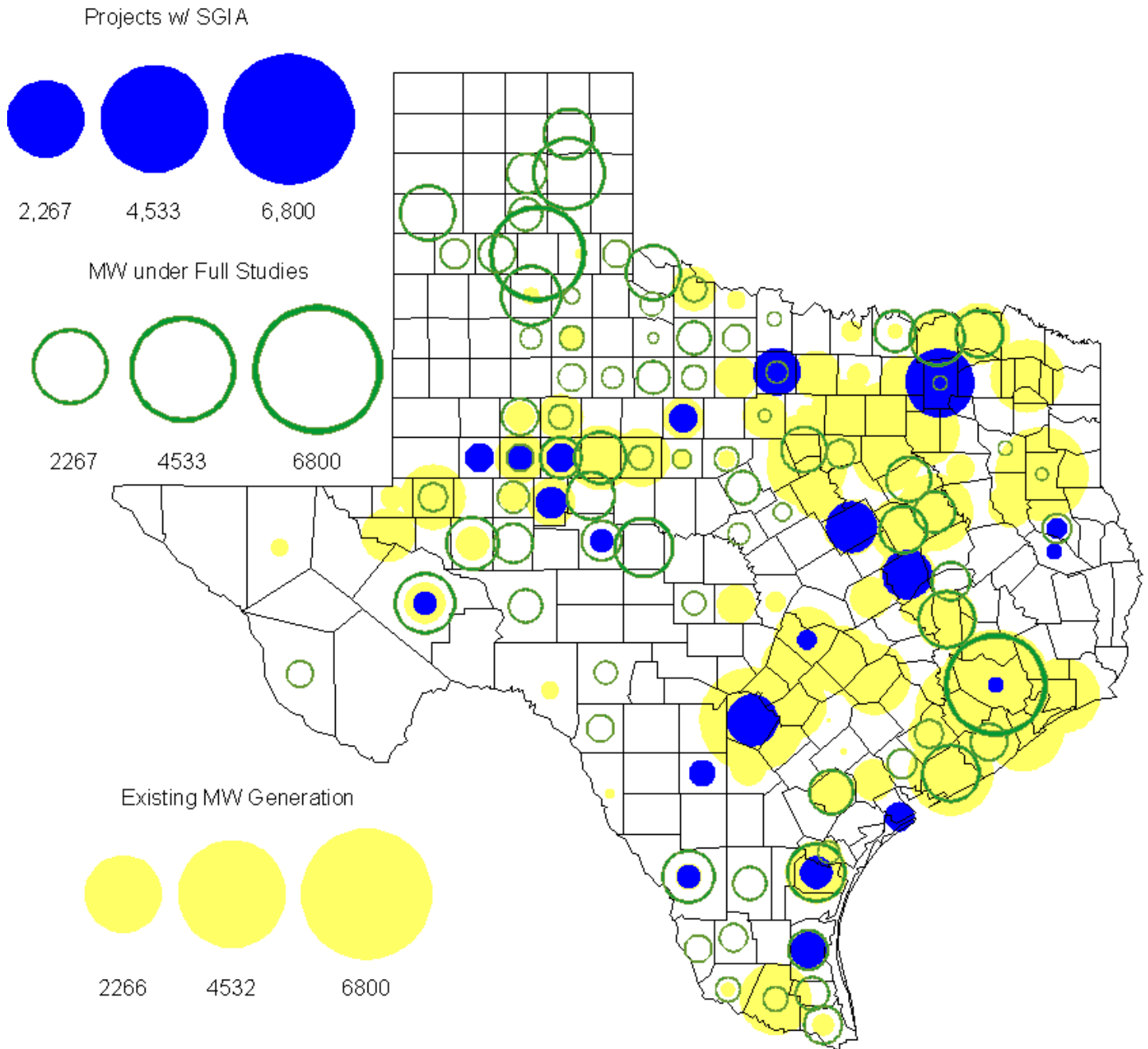
The table below summarizes the publicly disclosed generation projects for the ERCOT region.

(IA=Interconnect Agreement, PL=Public Letter, XX=cancelled)

Generation Interconnections as of September 30, 2009								
INR	SiteName	Status	County	Region	COD	Fuel	MW For Grid	Change from Last Report
09INR0015	Comanche Peak 1&2 Upgrade	PL	Somervell	North	Oct-09	Nuclear	86	
09INR0079	Pearsall Expansion	IA	Frio	South	Oct-09	Gas-CT	200	
09INR0047	Loraine Windpark	IA	Mitchell	West	Oct-09	Wind	251	date
09INR0028	V H Braunig 6	IA	Bexar	South	Oct-09	Gas-CT	185	date
09INR0072	Dansby3	PL	Brazos	North	Oct-09	Gas-CT	48	
08INR0038	M Bar Wind	PL	Andrews	West	Dec-09	Wind	194	
09INR0034	Gatesville Wind Farm	PL	Coryell	North	Dec-09	Wind	200	
10INR0026	Langford Wind Power	IA	Tom Green	West	Dec-09	Wind	150	
10INR0047	Bluff-Kendall Windfarm	IA	Kendall	South	Jan-10	Wind	0	
11INR0014	TECO Central Plant	IA	Harris	South	Feb-10	Gas-CC	50	
09INR0037	Scurry County Wind III	PL	Scurry	West	Mar-10	Wind	350	
08INR0033	Lufkin	IA	Angelina	North	Apr-10	Biomass	45	
09INR0039	Nueces Bay 7 Repowering	IA	Nueces	South	Apr-10	Gas-CC	327	
09INR0006b	Oak Grove SES 2	IA	Robertson	North	May-10	Coal	855	

09INR0082	Cedro Hill Wind	IA	Webb	South	May-10	Wind	150	new
09INR0002	J K Spruce 2	IA	Bexar	South	Jun-10	Coal	750	
09INR0045	Sand Hill Peakers	IA	Travis	South	Jul-10	Gas-CT	94	
06INR0012b	Sherbino Mesa Wind Farm 2	IA	Pecos	West	Jul-10	Wind	150	
05INR0015c	Gulf Wind 3	PL	Kenedy	South	Sep-10	Wind	400	
05INR0015b	Gulf Wind 2	PL	Kenedy	South	Oct-10	Wind	400	
08INR0011	Senate Wind Project	IA	Jack	North	Nov-10	Wind	150	
09INR0029	CFB Power Plant Units 11&12	IA	Calhoun	South	Dec-10	Coal	263	
04INR0011b	Cedar Elm	IA	Shackelford	West	Dec-10	Wind	136	Capacity
12INR0003	Throckmorton Wind Farm	PL	Throckmorton	West	Dec-10	Wind	400	
06INR0022c	Penascal Wind Farm 2	IA	Kenedy	South	Dec-10	Wind	202	
08INR0065	Buffalo Gap 4 and 5	PL	Nolan	West	Mar-11	Wind	465	
07INR0036	Coyote Run Windfarm	XX	Borden	West	Mar-11	Wind	225	Cancelled
10INR0020	Panda Temple Power	PL	Bell	North	May-11	Gas-CC	1092	
10INR0010	Jack County 2	IA	Jack	North	Jun-11	Gas-CC	620	
08INR0018	Gunsight Mountain	IA	Howard	West	Aug-11	Wind	120	
06INR0026	Wild Horse Mountain	IA	Howard	West	Dec-11	Wind	120	
04INR0011c	Cottonwood Wind	IA	Shackelford	West	Dec-11	Wind	100	Capacity
08INR0025	Pistol Hill Energy Center	PL	Ector	West	Dec-11	Wind	300	
06INR0022b	Penascal Wind Farm 3	IA	Kenedy	South	Dec-11	Wind	202	
09INR0007	Nacogdoches Project	IA	Nacogdoches	North	Apr-12	Biomass	100	
07INR0004	Pampa Energy Center	PL	Gray	West	May-12	Coal	165	
09INR0001	Sandy Creek 1	IA	McLennan	North	Jun-12	Coal	925	
09INR0024	B&B Panhandle Wind	PL	Carson	West	Jun-12	Wind	1001	
09INR0026	Sterling Energy Center	IA	Sterling	West	Jun-12	Wind	300	
09INR0026a	Sterling Energy Center	PL	Sterling	West	Jun-12	Wind	200	
12INR0004	Fort Concho Wind Farm	PL	Tom Green	West	Jul-12	Wind	400	
08INR0040	Lenorah Project	IA	Martin	West	Sep-12	Wind	251	
09INR0036	McAdoo Energy Center II	PL	Dickens	West	Dec-12	Wind	500	
06INR0006	Cobisa-Greenville	IA	Hunt	North	May-13	Gas-CC	1792	
15INR0002	Comanche Peak 3 and 4	PL	Somervell	North	Jan-15	Nuclear	3200	
15INR0008	STP 3 and 4	PL	Matagorda	South	Jan-15	Nuclear	2700	
							Total	20589

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



## 1.5 Generation Projects Undergoing Full Interconnection Studies

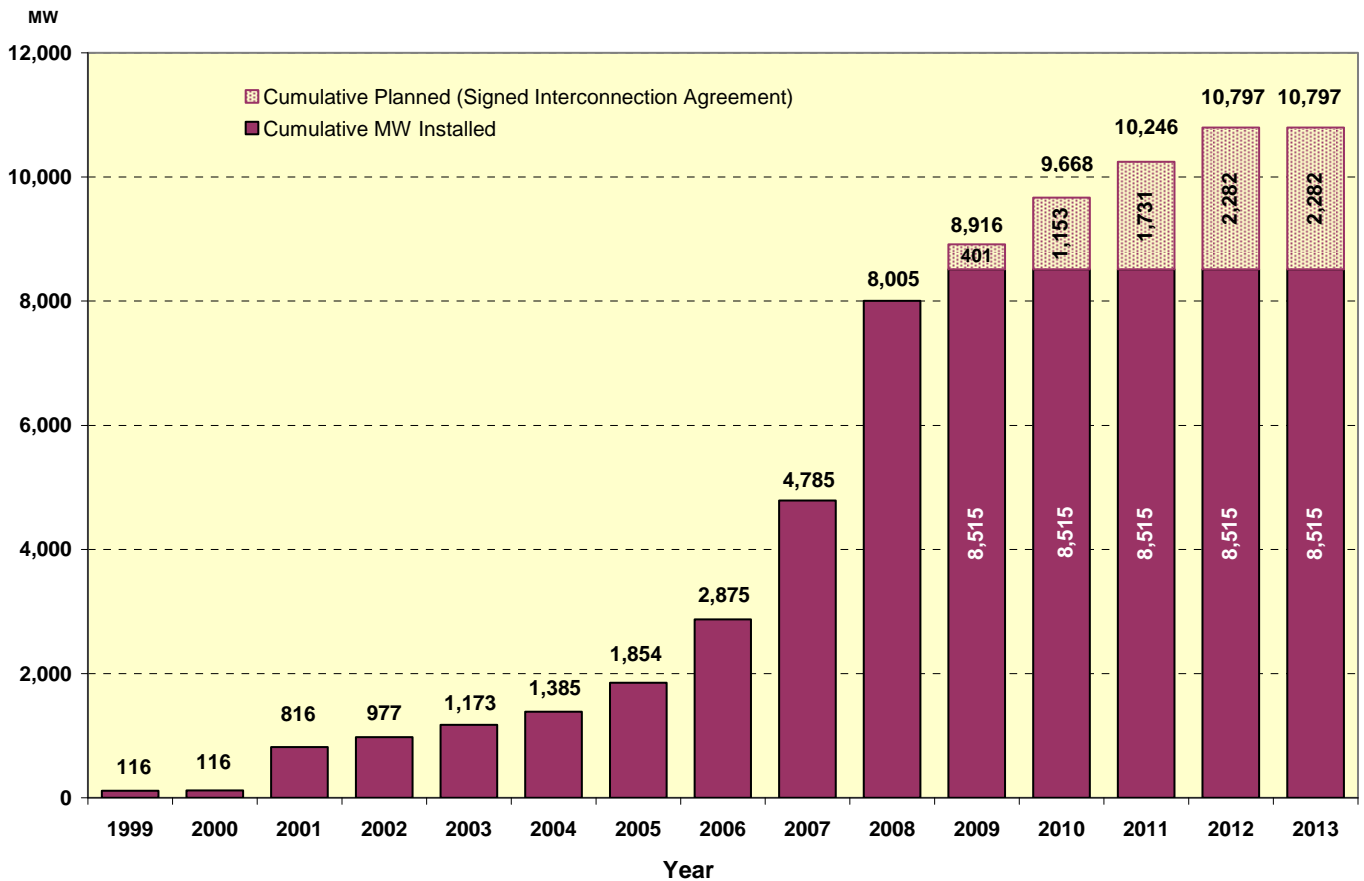
INR	County	Capacity	COD	Fuel	INR	County	Capacity	COD	Fuel
08INR0049	Clay	50	TBD	Wind	08INR0044	Concho	200	TBD	Wind
08INR0041	Coke	200	TBD	Wind	08INR0042	Coke	200	TBD	Wind
08INR0054	Comanche	401	TBD	Wind	09INR0025	Concho	180	TBD	Wind
08INR0031	Childress	100	Nov-09	Wind	09INR0048	Jack	150	TBD	Wind
08INR0022	Floyd	100	Dec-09	Wind	09INR0073	Scurry	200	Nov-09	Wind
08INR0012b	San Patricio	151	Dec-09	Wind	08INR0023	Floyd	100	Dec-09	Wind
08INR0056	Nolan	149	Dec-09	Wind	08INR0039	Hamilton	90	Dec-09	Wind
09INR0054	Stonewall	148.5	Dec-09	Wind	09INR0051	Borden	249	Dec-09	Wind
09INR0061	Kent	258	Dec-09	Wind	09INR0058	Howard	250	Dec-09	Wind
11INR0012	Duval	400	Dec-09	Wind	09INR0065	Webb	150	Dec-09	Wind
09INR0077	Reagan	500	Dec-09	Wind	11INR0013	Mills	150	Dec-09	Wind
10INR0024	Briscoe	2940	Jan-10	Wind	10INR0011	Johnson	275	Jan-10	Gas
10INR0048	Hardeman	1000	Jan-10	Wind	11INR0033a	Cameron	200	Jan-10	Wind
10INR0045	Webb	734	Apr-10	Wind	10INR0046	Jim Hogg	264	Apr-10	Wind
09INR0018	Concho	249	May-10	Wind	07INR0032	Tom Green	249	May-10	Wind
10INR0016	Childress	150	May-10	Wind	09INR0035	Concho	750	May-10	Wind
09INR0069	Reagan	36	May-10	Wind	10INR0023	Haskell	386	May-10	Wind
10INR0054	Palo Pinto	36	May-10	Wind	09INR0070	Reagan	42	May-10	Wind
10INR0079	Nolan	60	May-10	Wind	10INR0062a	Pecos	49.5	May-10	Wind
09INR0081	Rusk	18	Jun-10	Coal	10INR0069	Rusk	13	May-10	Coal
10INR0035	Harris	416	Jun-10	Gas	10INR0029	Hood	810	Jun-10	Gas
10INR0013	Upton	400	Jul-10	Wind	10INR0012	Nacogdoches	300	Jul-10	Gas
10INR0057	Taylor	200	Jul-10	Wind	10INR0052a	Knox	21	Jul-10	Wind
10INR0071	Matagorda	88	Sep-10	Wind	10INR0038	Glasscock	350	Aug-10	Wind
10INR0041	Floyd	135	Oct-10	Wind	10INR0015	Mitchell	350	Oct-10	Wind
10INR0070	Hunt	50	Nov-10	Gas	09INR0074	Motley	70	Oct-10	Wind
11INR0029	Throckmorton	200	Nov-10	Wind	10INR0039	Dickens	200	Nov-10	Wind
10INR0032	Navarro	775	Dec-10	Gas	09INR0031	Ector	275	Dec-10	Gas
07INR0013	Coke	200	Dec-10	Wind	10INR0080	Presidio	144	Dec-10	Solar
07INR0026	Baylor	400	Dec-10	Wind	07INR0015	Foard	180	Dec-10	Wind
10INR0008	Pecos	500	Dec-10	Wind	07INR0035	Tom Green	270	Dec-10	Wind
08INR0062	Archer	249	Dec-10	Wind	08INR0061	Hardeman	200	Dec-10	Wind
10INR0033	Armstrong	399	Dec-10	Wind	10INR0019	Deaf Smith	609	Dec-10	Wind
09INR0076	Jackson	300	Dec-10	Wind	10INR0042	Mason	170	Dec-10	Wind
10INR0056	Borden	249	Dec-10	Wind	10INR0051	Brazoria	200	Dec-10	Wind
10INR0060	Willacy	400.5	Dec-10	Wind	10INR0059	Zapata	250.7	Dec-10	Wind
09INR0041	Mitchell	300	Dec-10	Wind	10INR0077	Callahan	101	Dec-10	Wind
08INR0014	Webb	183	Mar-11	Wind	11INR0033b	Cameron	200	Jan-11	Wind
11INR0049	Wharton	275	Apr-11	Gas	11INR0050	Crosby	149	Mar-11	Wind
11INR0028	Grimes	1280	May-11	Gas	11INR0037	Smith	50	May-11	Biomass
11INR0048	Harris	300	May-11	Gas	11INR0046	Brazoria	300	May-11	Gas
11INR0061	Presidio	90	May-11	Solar	11INR0060	Tom Green	90	May-11	Solar
10INR0009	Castro	300	May-11	Wind	11INR0058	Pecos	135	May-11	Solar
10INR0062b	Pecos	49.5	May-11	Wind	09INR0075	Kinney	248	May-11	Wind
09INR0050	Fannin	1200	Jun-11	Gas	11INR0062	Nueces	149	May-11	Wind



11INR0019	Upton	200	Jun-11	Wind		08INR0020	Eastland	200	Jun-11	Wind
11INR0006	Lamar	579	Jul-11	Gas		11INR0057	Cameron	144	Jun-11	Wind
11INR0008a	Roberts	1000	Sep-11	Wind		11INR0040	freestone	640	Aug-11	Gas
11INR0047	Deaf Smith	600	Sep-11	Wind		11INR0039	Starr	201	Sep-11	Wind
07INR0014b	Wilbarger	70	Oct-11	Wind		07INR0014a	Wilbarger	140	Oct-11	Wind
06INR0022d	Kenedy	200	Dec-11	Wind		10INR0021	Grayson	646	Nov-11	Gas
11INR0025	Crockett	400	Dec-11	Wind		11INR0005	Upton	500	Dec-11	Wind
12INR0021	Edwards	165	Jan-12	Wind		11INR0043	Coke	300	Dec-11	Wind
12INR0007	Lamar	296	May-12	Gas		10INR0018	Madison	550	Mar-12	Gas
12INR0006	Limestone	875	Jun-12	Coal		10INR0062c	Pecos	201	May-12	Wind
12INR0002	Briscoe	750	Jul-12	Wind		10INR0022	Harris	3500	Jun-12	Gas
08INR0019c	Gray	250	Nov-12	Wind		12INR0016	Nueces	1200	Nov-12	Other
08INR0019b	Gray	250	Nov-12	Wind		08INR0019a	Gray	250	Nov-12	Wind
12INR0005	Floyd	1100	Dec-12	Wind		06INR0022f	Kenedy	200	Dec-12	Wind
12INR0022	Hidalgo	200	Dec-12	Wind		12INR0018	Gray	600	Dec-12	Wind
13INR0006	Gray	750	Oct-13	Wind		12INR0029	Swisher	500	Dec-12	Wind
06INR0022e	Kenedy	200	Dec-13	Wind		13INR0005	Carson	600	Oct-13	Wind
14INR0003	Nolan	850	Jun-14	Coal		14INR0002	Goliad	756	Feb-14	Coal
14INR0001	Pecos	500	Dec-14	Wind		14INR0005	Matagorda	1200	Jul-14	Coal

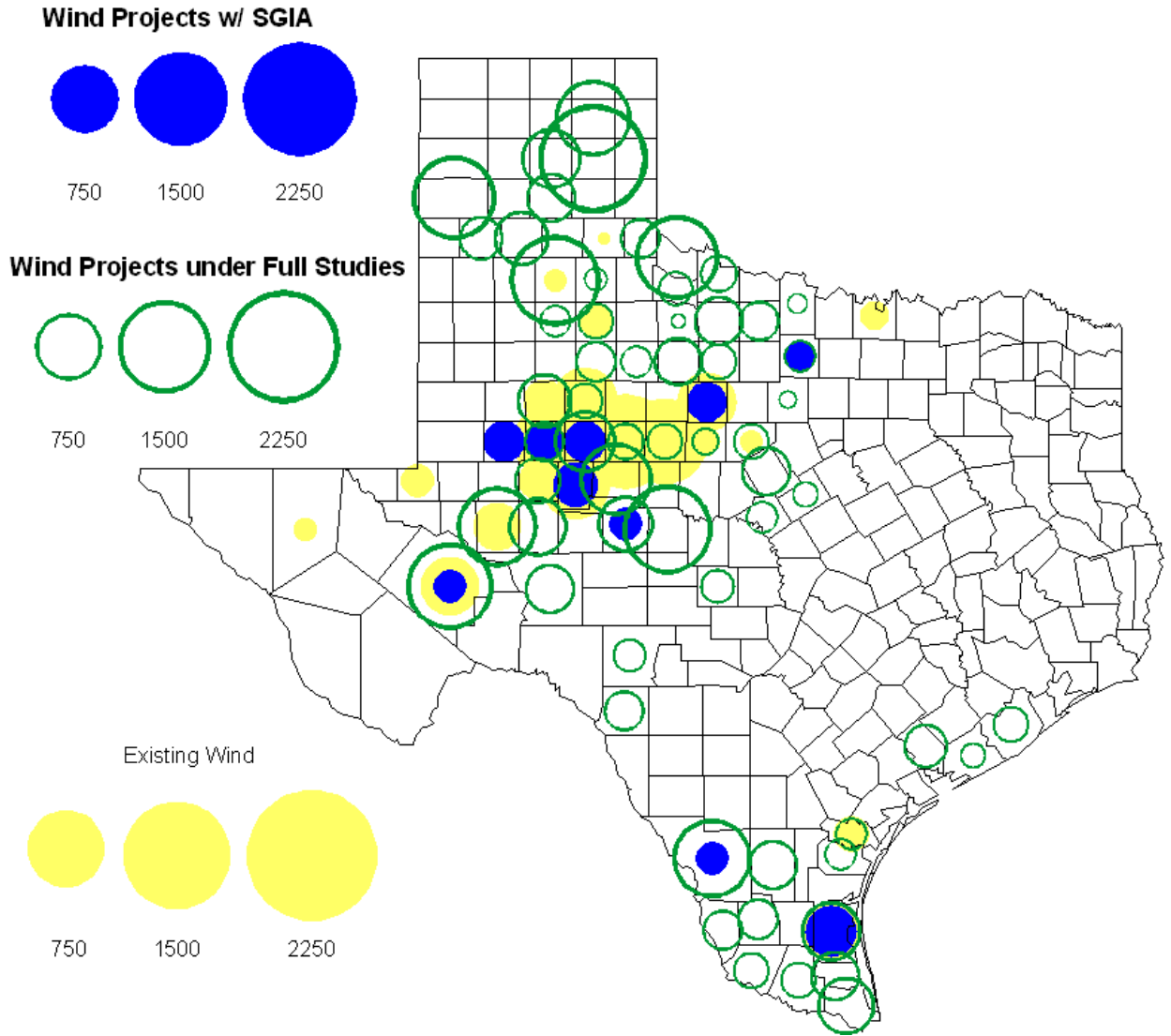
## 1.6 Wind Generation

### Wind Capacity Installed by Year



(as of September 30, 2009)

County Location of Installed Capacity and Interconnection Requests (Wind only)



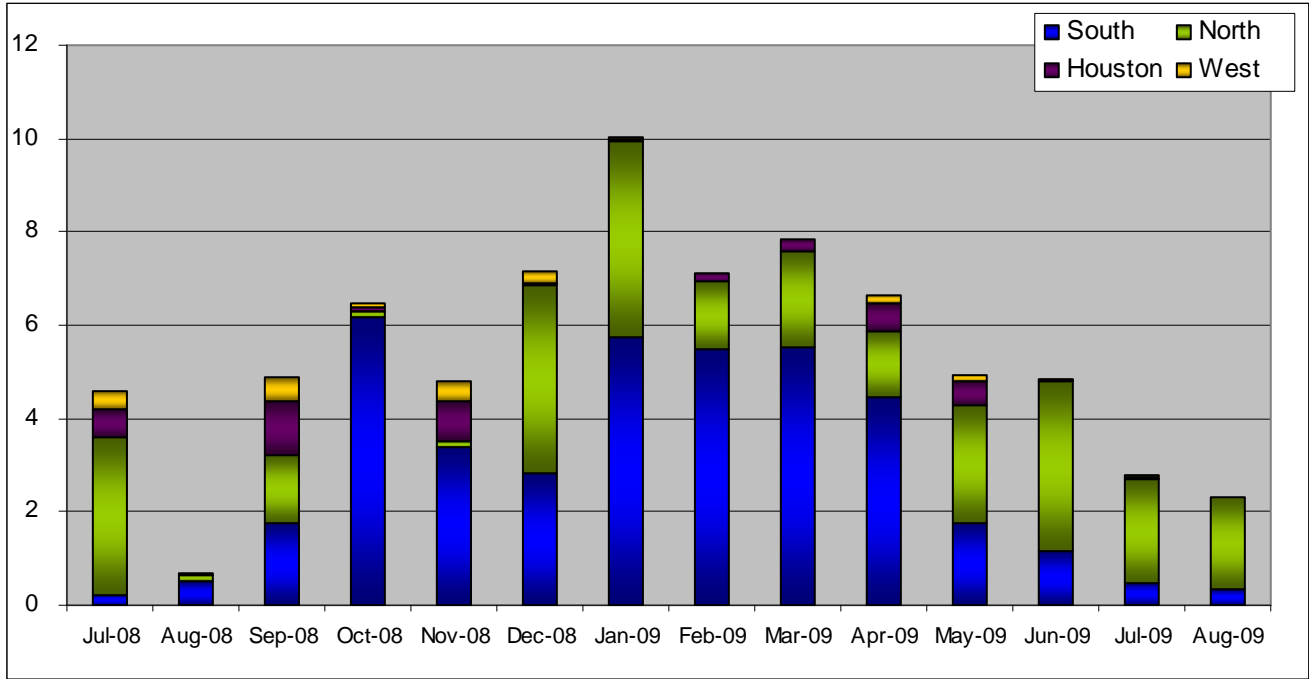
## 2. Regional Planning Group Project Reviews

- Oncor submitted a project to relieve congestion related to new wind units in the Lamesa area. The project will upgrade the Lamesa to Bluff Creek 138 kV line, rebuild the Bluff Creek to China Grove 138 kV line, rebuild the Lamesa to Ackerly Vealmoor 69 kV line to 138/69 kV double circuit, rebuild the Lamesa 138 kV switching station, build a new 138 kV Ackerly Vealmoor station, add second circuits to all rebuilt lines and include station upgrades at China Grove and Big Spring. The cost of this project is \$ 80.8 M. This project will be reviewed to ensure that the improvements fit into the likely CREZ transmission solution for the area. This project is in ERCOT Independent Review and will be studied as part of the 2009 Five-Year Transmission Plan.
- Oncor submitted a project to add several 345 kV circuits to support the addition of Comanche Peak units 3 and 4 in 2015 at an estimated cost of \$ 133 M. These upgrades include a new 345 kV double circuit line with one circuit in place from Comanche to Whitney, a new 345 kV line from Comanche to Johnson Switch, a new circuit on existing structures from Johnson Switch to Everman, a new 345 kV double circuit with one circuit in place from Comanche to DeCordova, and a new 345 kV line on existing structures from Comanche to Parker Switch. This project is in ERCOT Independent Review and will be studied when the 2009 Five-Year Transmission Plan is complete.
- Sharyland Utilities submitted a project to construct and operate the ERCOT Southeast Loop facilities consisting of a 345 kV double circuit from Lufkin to Canal 345 kV substation on the northeast side of Houston. This project will cost \$359 M with an estimated completion date of summer 2013. This project is in ERCOT Independent Review and will be studied as part of the 2009 Five-Year Transmission Plan.
- Centerpoint Energy has submitted a project to expand the Zenith substation, add one 800 MVA autotransformer, connect Zenith to existing circuits near the Gertie substation and upgrade/reconfigure nearby 138 kV circuits. The estimated completion date of this project is summer 2014 and the estimated cost is \$ 25.5 M. The ERCOT Independent Review for this project is complete and an ERCOT Endorsement Letter has been sent.
- American Electric Power Service Corporation submitted a project to construct several improvements in the Corpus Christi area. The estimated completion date of this project is June 2012 and estimated cost is \$ 214 M. This project is in ERCOT Independent Review.
- Centerpoint Energy has submitted a project to construct a new 345 kV double circuit line to allow greater power imports into the Houston area. The project involves expanding the Fayetteville and Zenith substations and constructing a new 345 kV double circuit from Fayetteville to Zenith. The proposal also includes looping the Fayette Power Project to Salem 345 kV circuit into Fayetteville and upgrading the Fayette Power Project to Fayetteville 345 kV double circuit lines. The project is estimated to be complete by September 2014 at a cost of \$222 M. This project is in ERCOT Independent Review.
- Luminant Energy has submitted the Comanche Peak Area Congestion Mitigation Plan project to loop the future Parker to Everman 345 kV CREZ line into the Comanche Peak 345 kV switch station. Luminant Energy's estimated completion date for this project is April 2010 and the estimated cost is \$3 M. This project is in ERCOT Independent Review.

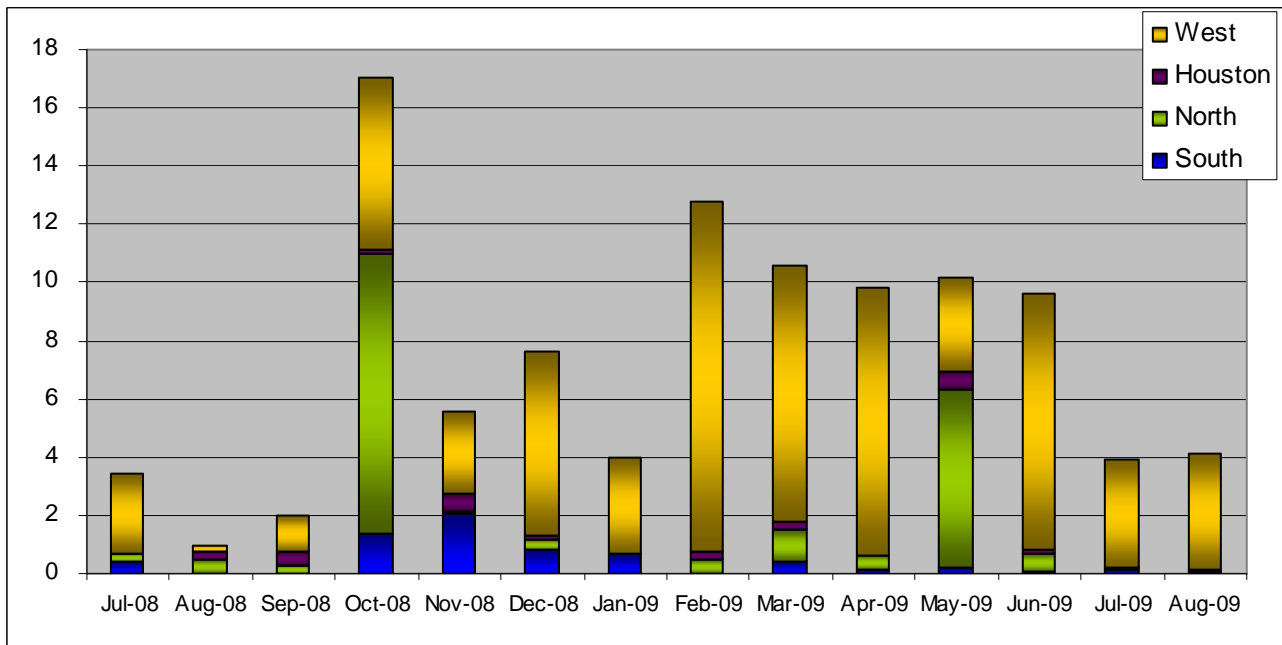
## 3. Congestion Costs

Dollars shown in graphs are settlement quality.

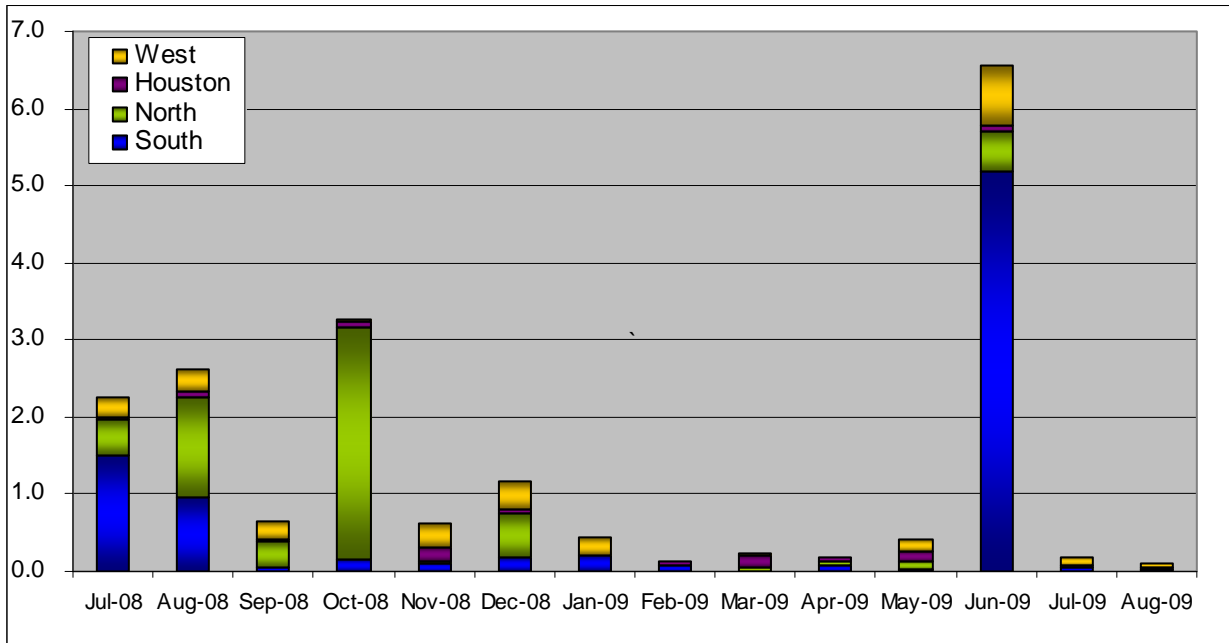
**OOMC – last 13 months in million\$**



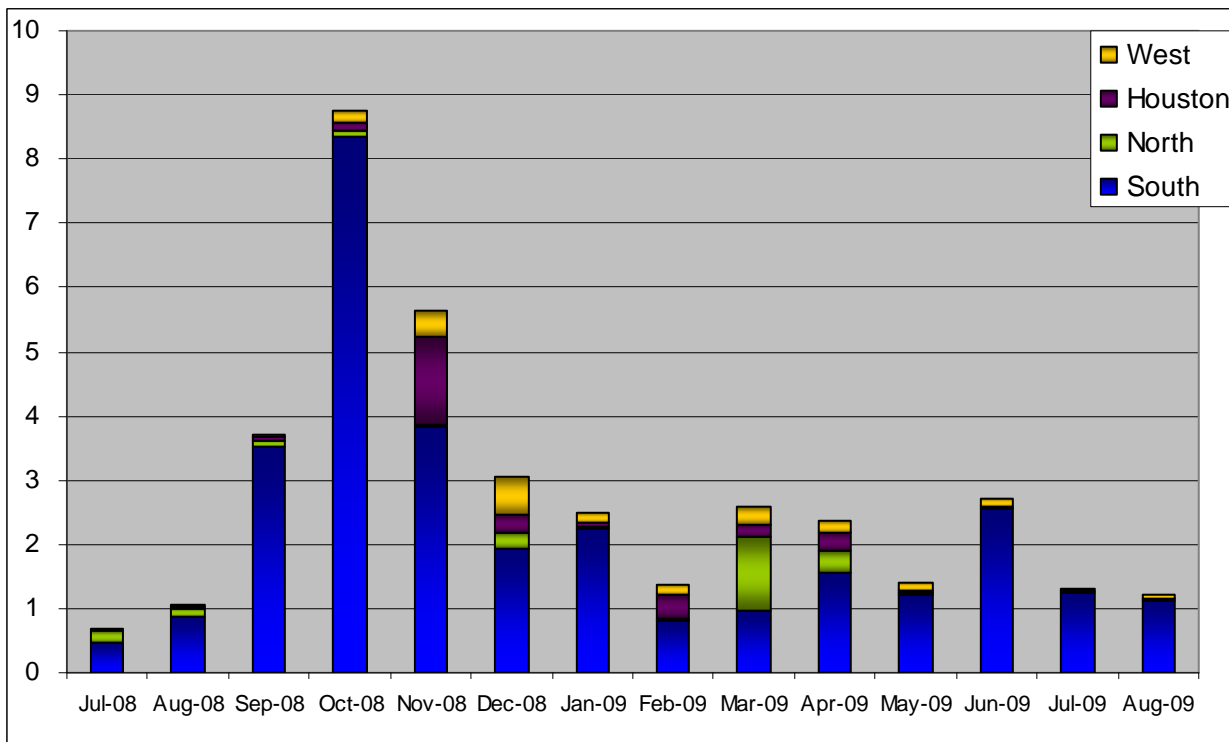
**OOM Down – last 13 months in million\$**



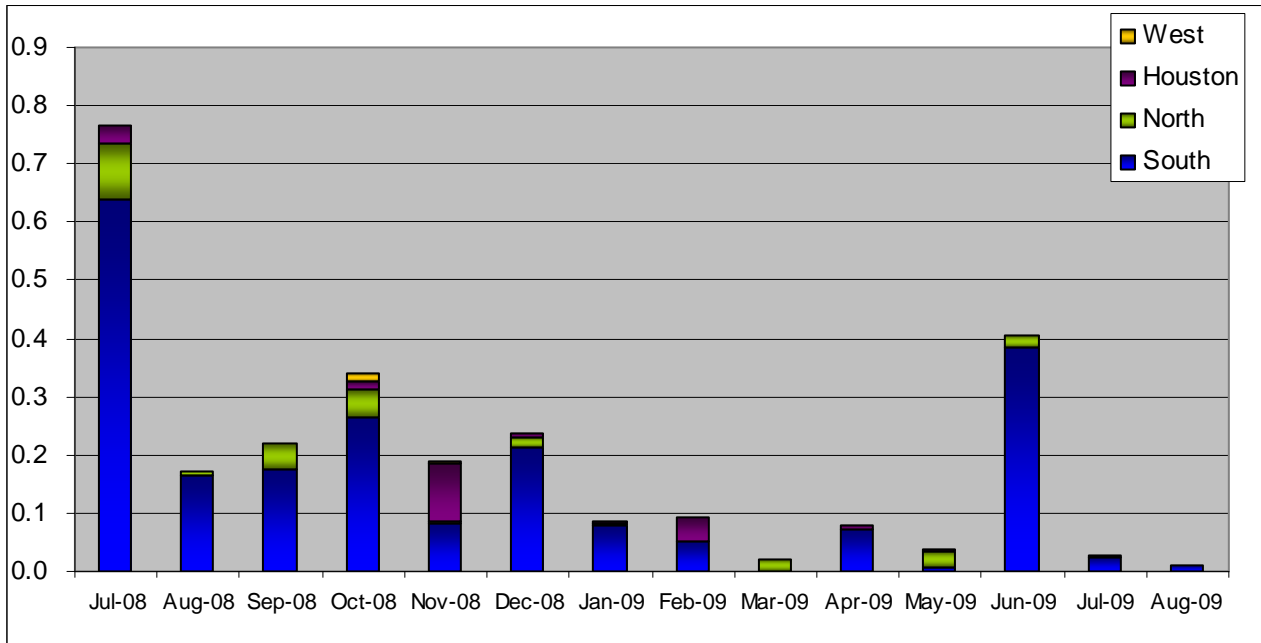
**Balancing Energy Down – last 13 months in million\$**



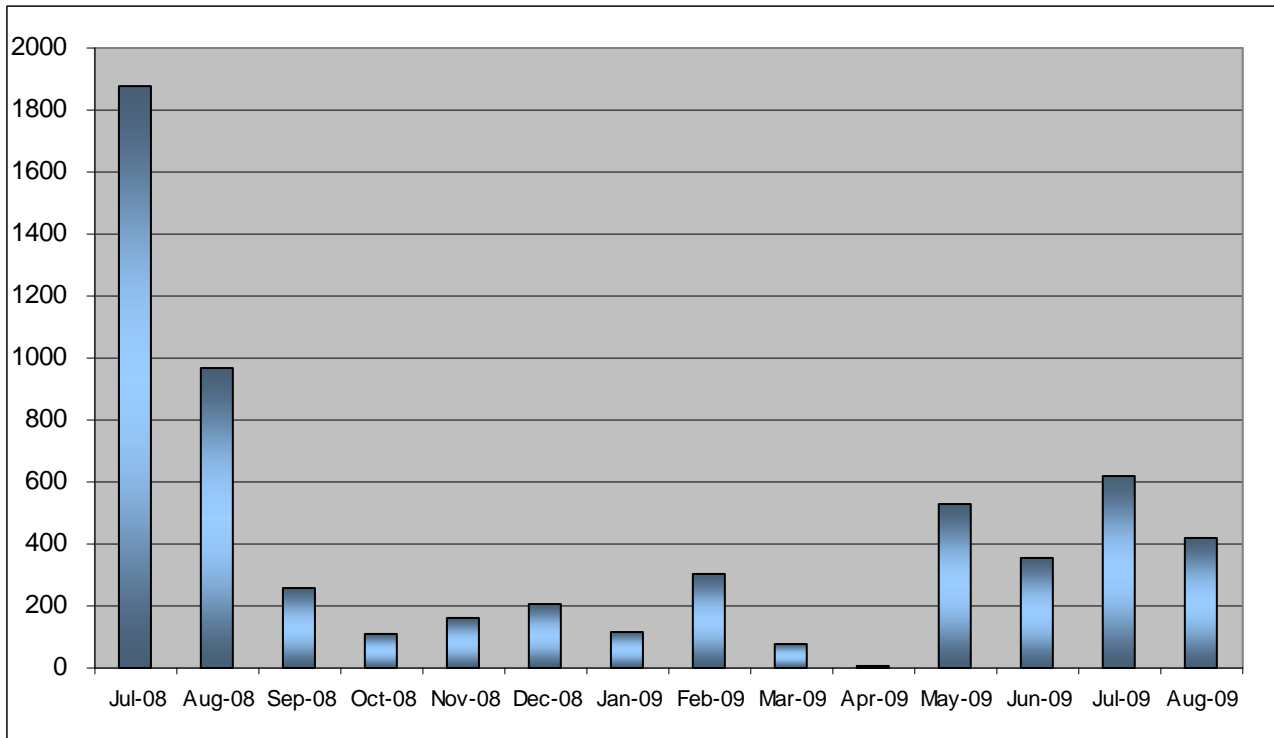
**OOM Up – last 13 months in million\$**



**Balancing Energy Up – last 13 months in million\$**



**Replacement Reserve – last 13 months in thousand\$**



**Binding Constraints – August, 2009**

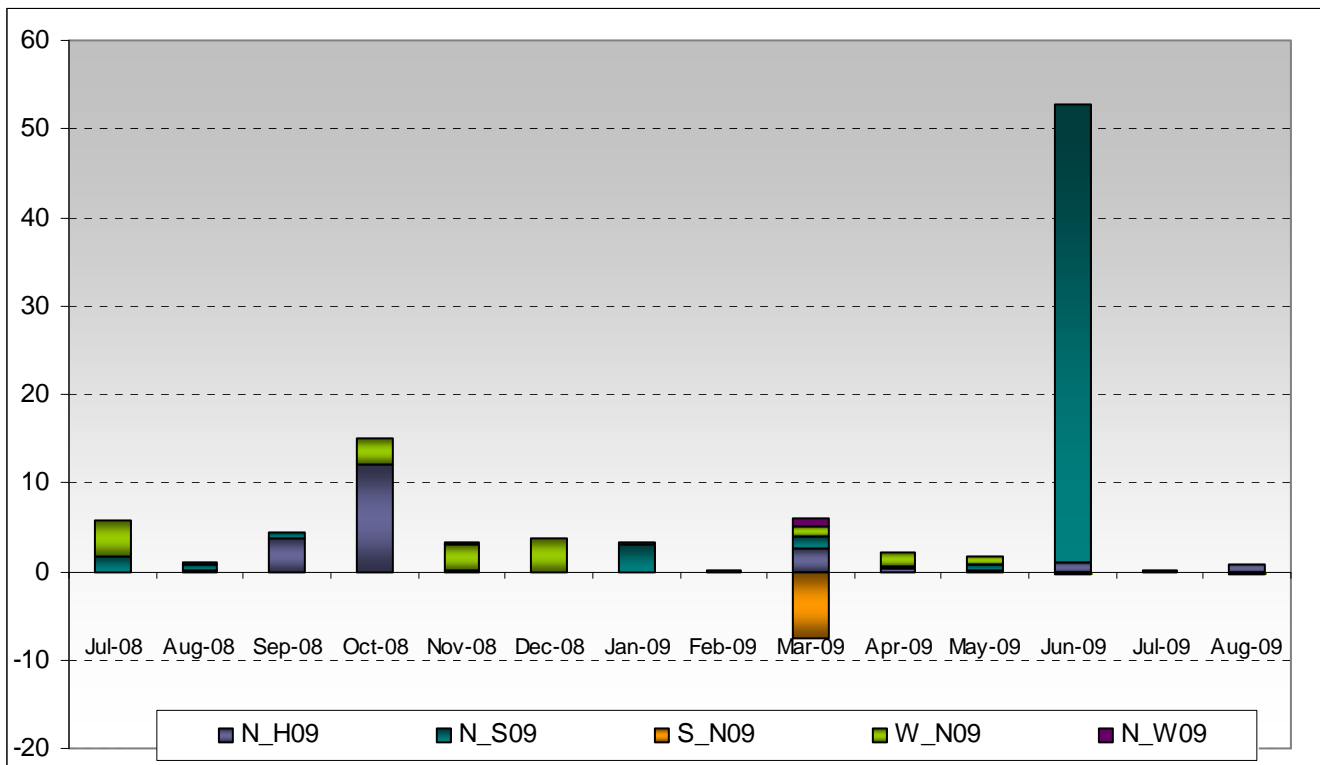
<b>Contingency</b>	<b>Binding Element</b>	<b>Estimated Costs</b>	<b>Transmission Project</b>
	Capacity Shortage	\$ 4,554,174	
Temple Pecan Creek - Tradinghouse & Temple Switch - Lake Creek SES	San Angelo Power Station -Shrew Tap	\$ 3,702,120	San Angelo Power Station, to Menard 138 kV line improvements (09TPIT0212)
Watermill - West Levee SW & Sargent Road	Watermill – DeSoto	\$ 1,545,708	Trinidad – Watermill 345kV line (07TPIT0140)
Dilley Switch - San Miguel 138kV	Derby - Pearsall 69kV	\$ 473,910	Pearsall to Dilley 69 kV Line Upgrade (09TPIT0189)
Watermill – Tricorner & Trinidad 345kV	Watermill – DeSoto	\$ 390,506	Trinidad – Watermill 345kV line (07TPIT0140)
North Denton 138/69kV Autotransformer	North Denton 138/69kV Autotransformer	\$ 233,598	
Austrop – Daffin & Decker 138kV	Austrop –Decker 138kV	\$ 221,789	Decker to Techridge 138kV Relocation (07TPIT0050)
Outages	Zorrillo Planned Outage	\$ 175,321	
RPRS		\$ 62,646	
W_N Stability		\$ 59,422	

**Binding Constraints – September, 2009 – DATA PENDING**

<b>Contingency</b>	<b>Binding Element</b>	<b>Estimated Costs</b>	<b>Transmission Project</b>
Oak Creek – Ballinger 138kV	Miles – Rowena 69kV	\$ 2,547,232	Yellow Jacket Phase Shifting Transformer addition (08TPIT0135)
	Capacity Shortage	\$ 1,622,568	
Oak Creek – Ballinger 138kV	Abilene South – Ballinger 69kV	\$ 819,234	Ballinger to Abilene South 69kV, rebuild (08TPIT0080)
Temple Pecan Creek - Tradinghouse & Temple Switch - Lake Creek SES	San Angelo Power Station -Shrew Tap	\$ 370,342	Yellow Jacket Phase Shifting Transformer addition (08TPIT0135)
Garfield - Onion Creek & Hicross AEN 138kV	Lytton Springs 345/138kV Autotransformer #4	\$ 338,471	Lytton Springs Autotransformer, addition (10TPIT0058)
Tradinghouse SES - Venus Switch 345kV	Rogers Hill TU - Elm Mott 138kV	\$ 327,011	Elm Mott – Waco Northcrest 138kV, upgrade (10TPIT0091)
Dilley Switch - San	Derby - Pearsall 69kV	\$ 199,939	Pearsall to Dilley 69 kV

Miguel 138kV			Line Upgrade (09TPIT0189)
Everman Switch - Sherry Switch 345kV	Everman Switch - Oak Hill 2 Tap 138kV	\$ 129,597	
Hillje - Holman 345kV	Columbus - Stafford Hill 69kV	\$ 79,526	
North Denton 138/69kV Autotransformer	North Denton 138/69kV Autotransformer	\$ 69,064	

### Inter-zonal Congestion Costs – last 13 months



## 4. Other Notable Activities

- The reliability phase of the 2009 Five-Year Transmission Plan utilizing the latest SSWG base cases is nearly complete. Projects to eliminate unserved energy in 2010-2014 have been identified. Projects to reduce congestion in 2014 have been identified and communicated with the TSPs and other market participants. Projects to reduce congestion in 2010 through 2013 are currently being studied.
- Voltage Ride Through Study Update:
  - Following the development of an acceptable “wind flat start” for the two study cases, High Wind High Load and High Wind Low Load, the simulation of dynamic events comprised of normally cleared and



delayed clearing events is 100%. The analysis of the results and Phase I draft report documentation is underway.

- A second email was sent to WGRs for data submission of VRT capability and more responses have been received. WGRs with no response to the second reminder email have been put in direct contact with ERCOT in order to facilitate timely data collection for Phase II. The data submitted by the remainder of the WGRs is being validated, especially in terms of dynamic models for the respective resources in PSS/E Version 31
  - Options associated with utilizing the data collected by means of the VRT Study Data Request Form to develop equivalents for wind farm collection systems are being investigated
- 
- The West-to-North Stability Limit study Phase II Update:Operations Planning released a revised W-N stability limit set in September, that added limit values with the CTs at Permian Basin and Morgan Creek out of service. The resulting new stability limits are appreciably larger than in the previous limit set. The same revisions have been applied to the data set in the System Planning study as well. Work on the project has been underway since mid-September and is on course to being completed within the three month time-frame given in the last report in December 2009.
  - The ERCOT TPIT update for November 1, 2009 is in progress.