|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | |  | **System Planning Division** | | | | |
|  | | | | |  |  | | |
|  | | | | |  | **Monthly Status Report**  **to**  **Reliability and Operations Subcommittee**  **for**  **December 2010** | | |
|  | | ***Report Highlights*** | | | | |  | |
| **Item** |  | | | | | | |  |
| **1.** | * **ERCOT is currently tracking 193 active generation interconnection requests totaling almost 65,000 MW. This includes almost 38,000 MW of wind generation.** | | | | | | |  |
| **2.** | * **ERCOT is currently reviewing proposed transmission improvements with a total cost of $51.1 Million** * **Transmission Projects endorsed in 2010 total $268.8 Million** * **All projects (in engineering, routing, licensing and construction) total approximately $9.3 Billion** * **Transmission Projects energized in 2010 total about $857.1 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>.

## New Generation Registering for Commercial Operations

## Lufkin Biomass (08INR0033), 45 MW in Angelina County

The total installed wind capacity remains at 9,467 MW.

**Summary of Active Generation Interconnection Requests**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **GENERATION INTERCONNECTION REQUESTS CURRENTLY BEING PROCESSED** | | | | |
| **Currently tracking 193 active generation interconnection or change requests** | | | | |
| **As of December 31, 2010** | **North** | **South** | **West** | **Total** |
| Security Screening Study | 2 | 3 | 10 | 11 |
| SSS Completed | 2 | 3 | 11 | 16 |
| Full Interconnect Study | 23 | 28 | 93 | 125 |
| FIS Completed | 4 | 14 | 4 | 23 |
| Interconnect Agreement Completed | 7 | 6 | 5 | 18 |
| Capacity under Interconnection Agreements | 5,147 | 3,742 | 756 | 9,645 |
| Capacity for Grid, MW | **19,195** | **13,235** | **32,279** | **64,708** |
| Wind Capacity, MW | 3,907 | 4,491 | 29,379 | 37,776 |



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Fuel Type** | **Confidential Projects (MW)** | **Projects Under Full Study (MW)** | **Projects w/ Interconnect Agreement/Public Letter (MW)** | **Grand Total (MW)** |
| Gas-CC |  |  | 5,352 | 12,043 |
| Gas-CT |  |  |  | 650 |
| Total Gas | 11 | 7,330 | 5,352 | 12,693 |
| Nuclear |  |  | 5,900 | 5,900 |
| Coal |  | 1,740 | 3,210 | 4,950 |
| Wind | 3,184 | 28,539 | 6,053 | 37,776 |
| Solar | 440 | 819 |  | 1,259 |
| Biomass |  | 50 | 100 | 150 |
| Other |  | 740 | 1,240 | 1,980 |
| Grand Total | 3,635 | 39,218 | 21,900 | 64,708 |



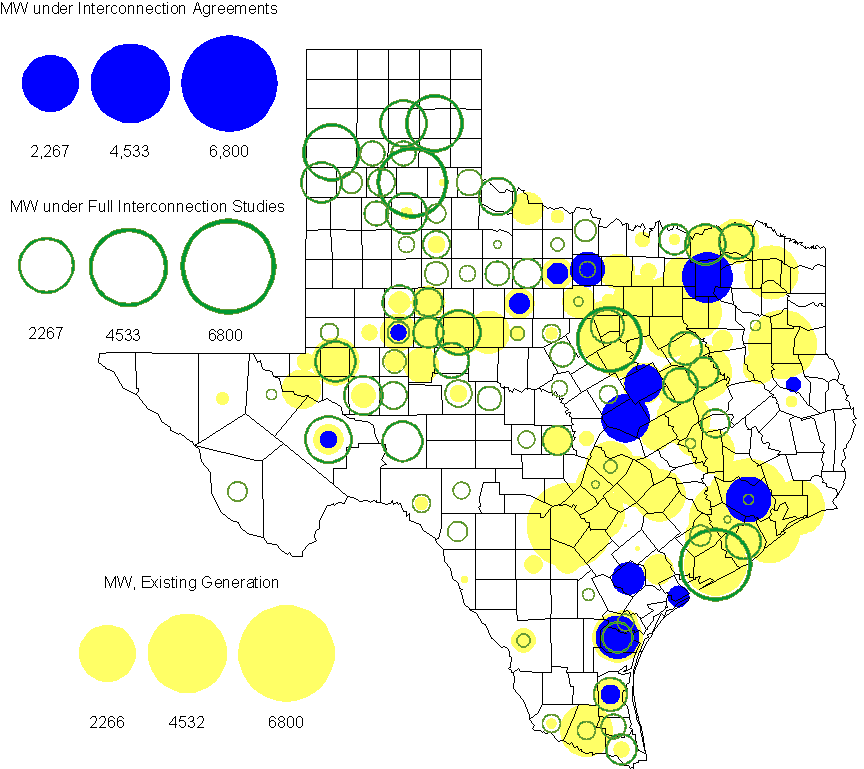
## Publicly Disclosed Generation Interconnection Projects

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

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

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Generation Interconnections as of December 31, 2010** | | | | | | | | | |
| INR | SiteName | Status | County | Region | COD | Fuel Type | | MW For Grid | Change from Last Report |
| 05INR0015b | Gulf Wind 2 | PL | Kenedy | South | Jan-11 | | Wind | 400 |  |
| 05INR0015c | Gulf Wind 3 | PL | Kenedy | South | Jan-11 | | Wind | 400 |  |
| 08INR0065 | Buffalo Gap 4 and 5 | PL | Nolan | West | Mar-11 | | Wind | 465 |  |
| 09INR0029 | CFB Power Plant Units 11&12 | IA | Calhoun | South | Mar-11 | | Coal | 260 |  |
| 10INR0010 | Jack County 2 | IA | Jack | North | Jun-11 | | Gas-CC | 620 |  |
| 08INR0038 | M Bar Wind | PL | Andrews | West | Dec-11 | | Wind | 194 |  |
| 09INR0034 | Gatesville Wind Farm | PL | Coryell | North | Dec-11 | | Wind | 200 |  |
| 12INR0003 | Throckmorton Wind Farm | PL | Throckmorton | West | Dec-11 | | Wind | 400 | Date |
| 08INR0025 | Pistol Hill Energy Center | PL | Ector | West | Dec-11 | | Wind | 300 |  |
| 06INR0012b | Sherbino Mesa Wind Farm 2 | IA | Pecos | West | Jan-12 | | Wind | 150 |  |
| 09INR0001 | Sandy Creek 1 | IA | McLennan | North | Feb-12 | | Coal | 925 |  |
| 08INR0062 | Archer-Young | IA | Young | West | Mar-12 | | Wind | 250 |  |
| 11INR0084 | 2W Whatley Phase 1 | PL | Ector | West | Mar-12 | | Wind | 45 |  |
| 09INR0007 | Nacogdoches Project | IA | Nacogdoches | North | Apr-12 | | Biomass | 100 |  |
| 07INR0004 | Pampa Energy Center | PL | Gray | West | May-12 | | Coal | 165 |  |
| 09INR0024 | B&B Panhandle Wind | PL | Carson | West | Jun-12 | | Wind | 1001 |  |
| 09INR0037 | Scurry County Wind III | PL | Scurry | West | Jun-12 | | Wind | 350 |  |
| 12INR0004 | Fort Concho Wind Farm | PL | Tom Green | West | Jul-12 | | Wind | 400 |  |
| 12INR0043 | 2W Whatley Phase 2 | PL | Ector | West | Aug-12 | | Wind | 290 |  |
| 08INR0011 | Senate Wind Project | IA | Jack | North | Sep-12 | | Wind | 150 | Date |
| 09INR0036 | McAdoo Energy Center II | PL | Dickens | West | Dec-12 | | Wind | 500 |  |
| 08INR0018 | Gunsight Mountain | IA | Howard | West | Dec-12 | | Wind | 120 |  |
| 06INR0022c | Penascal Wind Farm 3 | IA | Kenedy | South | Dec-12 | | Wind | 202 |  |
| 10INR0020a | Panda Temple Power | IA | Bell | North | Feb-14 | | Gas-CC | 780 |  |
| 06INR0006 | Cobisa-Greenville | IA | Hunt | North | May-14 | | Gas-CC | 1792 |  |
| 10INR0022 | Pondera King Power Project | IA | Harris | South | Jun-14 | | Gas-CC | 1380 |  |
| 04INR0011b | Cedar Elm | IA | Shackelford | West | Jun-14 | | Wind | 136 |  |
| 04INR0011c | Cottonwood Wind | IA | Shackelford | West | Jun-14 | | Wind | 100 |  |
| 14INR0005 | White Stallion Energy Center | PL | Matagorda | South | Jul-14 | | Coal | 1200 |  |
| 14INR0002 | Coleto Creek Unit 2 | IA | Goliad | South | Nov-14 | | Coal | 660 |  |
| 10INR0020b | Panda Temple Power | IA | Bell | North | Jan-16 | | Gas-CC | 780 |  |
| 12INR0016a | Las Brisas Energy Center | IA | Nueces | South | Jun-15 | | Other | 620 |  |
| 12INR0016b | Las Brisas Energy Center | IA | Nueces | South | Jun-16 | | Other | 620 |  |
| 15INR0008 | STP 3 and 4 | PL | Matagorda | South | Jun-16 | | Nuclear | 2700 |  |
| 15INR0002 | Comanche Peak 3 and 4 | PL | Somervel | North | Dec-18 | | Nuclear | 3200 |  |
|  |  |  |  |  |  | | **TOTAL** | **21,900** |  |

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



## Generation Projects Undergoing Full Interconnection Studies (not otherwise public)

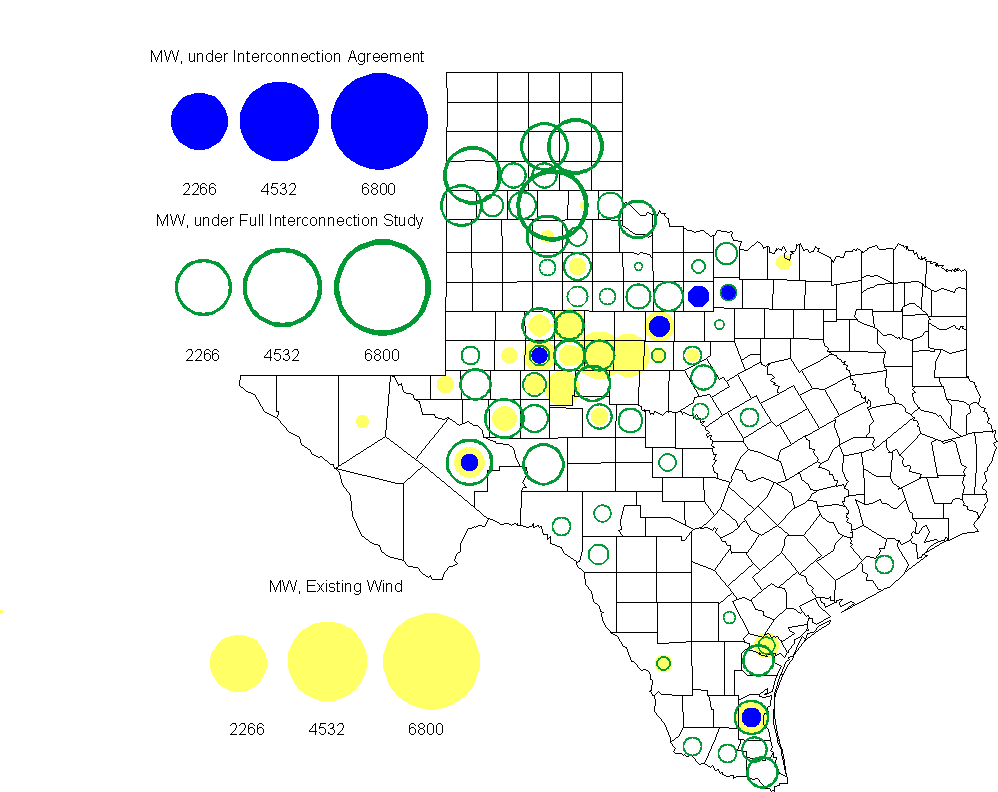
|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| INR | County | Capacity | COD | Fuel |  | INR | County | Capacity | COD | Fuel |
| 09INR0054 | Stonewall | 149 | TBD | Wind |  | 09INR0061 | Kent | 258 | TBD | Wind |
| 10INR0048 | Hardeman | 1,000 | TBD | Wind |  | 10INR0054 | Palo Pinto | 36 | TBD | Wind |
| 10INR0016 | Childress | 150 | TBD | Wind |  | 10INR0079 | Nolan | 60 | TBD | Wind |
| 10INR0029 | Hood | 810 | TBD | Gas |  | 10INR0013 | Upton | 400 | TBD | Wind |
| 10INR0052a | Knox | 21 | TBD | Wind |  | 09INR0074 | Motley | 70 | TBD | Wind |
| 10INR0041 | Floyd | 135 | TBD | Wind |  | 11INR0029 | Throckmorton | 200 | TBD | Wind |
| 10INR0032 | Navarro | 775 | TBD | Gas |  | 10INR0042 | Mason | 170 | TBD | Wind |
| 10INR0082 | Travis | 30 | TBD | Solar |  | 10INR0051 | Brazoria | 200 | TBD | Wind |
| 10INR0060 | Willacy | 401 | TBD | Wind |  | 07INR0013 | Coke | 200 | TBD | Wind |
| 10INR0008 | Pecos | 500 | TBD | Wind |  | 10INR0019 | Deaf Smith | 609 | TBD | Wind |
| 10INR0033 | Armstrong | 399 | TBD | Wind |  | 10INR0056 | Borden | 249 | TBD | Wind |
| 10INR0077 | Callahan | 101 | TBD | Wind |  | 10INR0080 | Presidio | 144 | TBD | Solar |
| 12INR0003 | Throckmorton | 400 | TBD | Wind |  | 05INR0015b | Kenedy | 400 | TBD | Wind |
| 11INR0076 | Archer | 94 | TBD | Wind |  | 05INR0015c | Kenedy | 400 | TBD | Wind |
| 11INR0081 | Live Oak | 72 | Mar-11 | Wind |  | 11INR0088 | Brazos | 45 | Mar-11 | Gas |
| 08INR0065 | Nolan | 465 | Mar-11 | Wind |  | 11INR0050 | Crosby | 149 | Mar-11 | Wind |
| 11INR0082A | Val Verde | 50 | Mar-11 | Wind |  | 11INR0083A | Crockett | 50 | Mar-11 | Wind |
| 11INR0085 | Nolan | 106 | Mar-11 | Wind |  | 11INR0071 | Harris | 7 | Apr-11 | Gas |
| 11INR0075 | Fort Bend | 15 | Apr-11 | Coal |  | 11INR0086 | Travis | 60 | Apr-11 | Solar |
| 11INR0037 | Smith | 50 | May-11 | Biomass |  | 11INR0062 | Nueces | 149 | May-11 | Wind |
| 11INR0058 | Pecos | 135 | May-11 | Solar |  | 11INR0060 | Tom Green | 90 | May-11 | Solar |
| 11INR0061 | Presidio | 90 | May-11 | Solar |  | 11INR0033a | Cameron | 200 | May-11 | Wind |
| 11INR0033b | Cameron | 200 | May-11 | Wind |  | 09INR0050 | Fannin | 1,200 | Jun-11 | Gas |
| 10INR0089 | Harris | 40 | Jun-11 | Other |  | 11INR0054 | San Patricio | 161 | Jun-11 | Wind |
| 11INR0057 | Cameron | 165 | Jun-11 | Wind |  | 11INR0065 | Nueces | 240 | Jun-11 | Wind |
| 11INR0091 | Webb | 92 | Jun-11 | Wind |  | 08INR0020 | Eastland | 200 | Jun-11 | Wind |
| 10INR0023 | Haskell | 386 | Jun-11 | Wind |  | 11INR0019 | Upton | 200 | Jun-11 | Wind |
| 11INR0006 | Lamar | 579 | Jul-11 | Gas |  | 11INR0040 | freestone | 640 | Aug-11 | Gas |
| 11INR0039 | Starr | 201 | Sep-11 | Wind |  | 11INR0079a | Clay | 200 | Sep-11 | Wind |
| 11INR0047 | Deaf Smith | 600 | Sep-11 | Wind |  | 10INR0062a | Pecos | 80 | Oct-11 | Wind |
| 10INR0081b | Clay | 19 | Oct-11 | Wind |  | 10INR0021 | Grayson | 646 | Nov-11 | Gas |
| 11INR0090 | Howard | 60 | Nov-11 | Solar |  | 11INR0094 | Kent | 100 | Nov-11 | Solar |
| 08INR0049 | Clay | 50 | Dec-11 | Wind |  | 09INR0034 | Coryell | 200 | Dec-11 | Wind |
| 11INR0013 | Mills | 150 | Dec-11 | Wind |  | 11INR0067 | Cameron | 78 | Dec-11 | Wind |
| 11INR0089 | Hays | 20 | Dec-11 | Solar |  | 08INR0038 | Andrews | 194 | Dec-11 | Wind |
| 11INR0005 | Upton | 500 | Dec-11 | Wind |  | 11INR0025 | Crockett | 400 | Dec-11 | Wind |
| 11INR0043 | Coke | 300 | Dec-11 | Wind |  | 11INR0070 | Reeves | 50 | Dec-11 | Solar |
| 08INR0025 | Ector | 300 | Dec-11 | Wind |  | 12INR0034 | Borden | 342 | Dec-11 | Wind |
| 09INR0048 | Jack | 150 | Dec-11 | Wind |  | 09INR0075 | Kinney | 248 | Dec-11 | Wind |
| 10INR0085 | Ector | 40 | Jan-12 | Solar |  | 12INR0021 | Edwards | 165 | Jan-12 | Wind |
| 12INR0033 | Motley | 150 | Jan-12 | Wind |  | 10INR0018 | Madison | 550 | Mar-12 | Gas |
| 11INR0084 | Ector | 45 | Mar-12 | Wind |  | 12INR0042 | Deaf Smith | 400 | Mar-12 | Wind |
| 12INR0007 | Lamar | 296 | May-12 | Gas |  | 11INR0049 | Wharton | 275 | May-12 | Gas |
| 07INR0004 | Gray | 165 | May-12 | Coal |  | 09INR0031 | Ector | 275 | May-12 | Gas |
| 10INR0081a | Clay | 30 | May-12 | Wind |  | 12INR0006 | Limestone | 875 | Jun-12 | Coal |
| 08INR0031 | Childress | 100 | Jun-12 | Wind |  | 09INR0024 | Carson | 1,001 | Jun-12 | Wind |
| 09INR0037 | Scurry | 350 | Jun-12 | Wind |  | 12INR0053 | Crockett | 615 | Jun-12 | Wind |
| 12INR0004 | Tom Green | 400 | Jul-12 | Wind |  | 12INR0043 | Ector | 290 | Aug-12 | Wind |
| 08INR0041 | Coke | 200 | Oct-12 | Wind |  | 12INR0026 | Randall | 400 | Oct-12 | Wind |
| 12INR0035 | Nueces | 249 | Nov-12 | Wind |  | 08INR0044 | Concho | 200 | Nov-12 | Wind |
| 08INR0054 | Comanche | 401 | Dec-12 | Wind |  | 12INR0022 | Hidalgo | 200 | Dec-12 | Wind |
| 08INR0042 | Coke | 200 | Dec-12 | Wind |  | 09INR0025 | Concho | 180 | Dec-12 | Wind |
| 09INR0036 | Dickens | 500 | Dec-12 | Wind |  | 12INR0005 | Floyd | 1,100 | Dec-12 | Wind |
| 12INR0029 | Swisher | 500 | Dec-12 | Wind |  | 10INR0024 | Briscoe | 2,940 | Jan-13 | Wind |
| 12INR0027 | Gray | 200 | Jan-13 | Wind |  | 09INR0058 | Howard | 250 | Mar-13 | Wind |
| 11INR0082B | Val Verde | 150 | Mar-13 | Wind |  | 11INR0083B | Crockett | 100 | Mar-13 | Wind |
| 12INR0018 | Gray | 500 | Apr-13 | Wind |  | 10INR0062b | Pecos | 220 | May-13 | Wind |
| 13INR0020a | Glasscock | 200 | May-13 | Wind |  | 09INR0041 | Mitchell | 300 | Jun-13 | Wind |
| 09INR0051 | Borden | 249 | Jun-13 | Wind |  | 13INR0023 | Ector | 240 | Jul-13 | Gas |
| 13INR0016 | Deaf Smith | 251 | Aug-13 | Wind |  | 13INR0005 | Carson | 600 | Oct-13 | Wind |
| 13INR0004 | Deaf Smith | 500 | Oct-13 | Wind |  | 13INR0028 | Hale | 392 | Nov-13 | Gas |
| 09INR0077 | Reagan | 500 | Dec-13 | Wind |  | 10INR0009 | Castro | 300 | Dec-13 | Wind |
| 12INR0002a | Briscoe | 200 | Dec-13 | Wind |  | 13INR0007 | Pecos | 200 | Dec-13 | Wind |
| 13INR0017 | Childress | 200 | Dec-13 | Wind |  | 13INR0010 | Parmer | 1,200 | Dec-13 | Wind |
| 09INR0073 | Scurry | 200 | Dec-13 | Wind |  | 08INR0019a | Gray | 250 | Jan-14 | Wind |
| 08INR0019b | Gray | 250 | Jan-14 | Wind |  | 08INR0019c | Gray | 250 | Jan-14 | Wind |

## Wind Generation

## Wind Capacity Installed by Year



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



# Regional Planning Group Project Reviews

* Brazos Electric Cooperative has submitted a project to move some load that is currently being served by the Entergy Texas system into the ERCOT system. The project would involve disconnecting the subject load from the Entergy Texas system, constructing a new 345/ 138 kV substation in ERCOT, upgrading an existing 69 kV line in the ERCOT system and constructing two new 138 kV lines to serve the load from the ERCOT system. The estimated cost of this project is $51.1 M. The project is currently undergoing ERCOT Independent Review.

# Congestion Costs

Dollars shown in graphs are settlement quality.

**OOMC – last 13 months in million$**



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



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



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



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



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



**Average MCPE**



**Binding Constraints & Capacity Shortages– September, 2010**

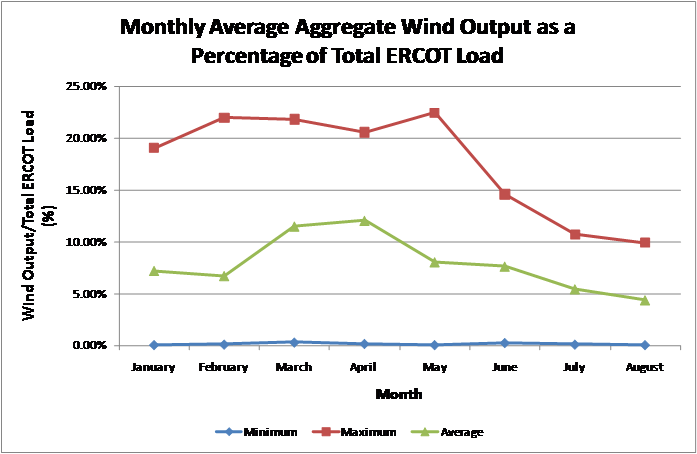
| **Contingency** | **Binding Element** | **Estimated Costs** | **Transmission Project** | **Clearance** |
| --- | --- | --- | --- | --- |
| Planned Outage |  | $1,286,069.14 |  |  |
| Brauning – Toyota – Valley 138 kV | Five Points – Westside 138 kV | $775,804.90 |  | Outage on Cagnon - Marbach and Cagnon to Anderson 138kV lines |
| Austrop – Sandow 345 kV | Hutto – Round Rock SE 138 kV | $426,869.56 | Hutto Switch - Round Rock NE - Round Rock 138 kV line  [08TPIT0009] | Outage on Round Rock - Round Rock North East 138kV |
| ODEHV Auto/ Voltage Support |  | $321,198.18 |  |  |
| Temple Pecan Creek – Tradinghouse and Temple Switch – Lake Creek 345 kV | Lake Creek 345/138kV Autotransformer 1 | $258,650.27 |  |  |
| Falcon Cal Energy – Morgan Creek 345 kV | Forsan Tap - CRMWD7 138KV | $173,010.83 |  | Outage on Odessa EVH Switch 138kV and 345kV bus and Odessa 345/138kV AT |
| Maring Lake – Elkton Outage |  | $145,821.76 |  |  |
| Greens Bayou – Gable Street and Hardy – Crockett 138 kV | Garrott – Midtown 138 kV | $120,524.41 | Upgrade 138 kV underground Ckt. 90 Garrott to Midtown to Polk [11TPIT0072] | Outage on Oasis to Meadow 345kV line |
| Moss Switch – Holt Switch 138 kV | Odessa North 138/69kV Autotransformer | $113,836.86 |  | High Wind Generation/W-N flow |
| Valley Import |  | $112,412.83 |  |  |

**Inter-zonal Congestion**



# Wind Generation as a Percent of Load

One-hour average Settlement quality data shown.



# Planning Model Activities

* ERCOT and SSWG completed work to create a 2010 planning case after three passes. The case solves if islands are disconnected and generator MVar limits are ignored. By the time work had stopped, TSPs had not completed adding standard PMCRs in MOD that might have provided additional reactive capability.
* ERCOT and SSWG continued work to create a 2012 case using PSSE version 32 format starting Dec. 3, 2010. All standard PMCR’s will be applied to this case and the case will be completed using PMCR’s to model transmission projects expected to by complete by July 1, 2012. This case will be compared to the current DSB 2012SUM1 case completed in Nov. 2010.
* The projected testing schedule for the NMMS MOD application is as follows:
  + Dec. 3 – ERCOT creates Topology Processor case and loads into MOD
  + Dec. 17 – TSPs submit Pass 0 PMCR’s (standard PMCR’s only)
  + Jan. 7 - TSPs submit Pass 1 PMCR’s (standard PMCR’s and future project PMCR’s)
  + Jan. 21 - TSPs submit Pass 2 PMCR’s (standard PMCR’s and future project PMCR’s)
* A Nodal Planning Go-Live Workshop was held December 15, 2010. The use of the NMMS MOD application to build planning cases was debated. Three options were developed for building the 2012 Data Set A cases in April 2011:
  + Option 1 – Use the NMMS MOD application and implement Planning Go-Live (defined as using the NMMS Topology Processor output as the seed case for MOD to build the Annual Planning Cases) in April 2011. Consistency would be as defined in the TAC approved (but non-binding) “Principles of Consistency” document.
  + Option 2 – Use an already created (but still undetermined) SSWG case as input to MOD independent of the NMMS data being used for Operations models. Redefine Planning Go-Live as a commitment by TSPs to compare the resulting SSWG cases with a NMMS Topology Processed case and resolve or document differences using an as yet undefined process to achieve a higher level of consistency between planning and operations cases than seen in the past. The Planning Working Group will develop and document the tolerances that will be used to define consistency. Planning Go-Live will occur when the documentation is complete and tolerances have been met which is expected to be by August 1, 2011.
  + Option 3 – Do Nothing.

# Other Notable Activities

* Work on the 2010 Five-Year Transmission Plan is wrapping up. The set of projects needed to reliably serve load and reduce congestion in the years 2011 through 2015 has been identified and comments have been received. The study is currently in the report writing phase.
* ABB has completed the CREZ Reactive Study. This study was conducted to optimize the reactive support equipment required to implement the CREZ plan. A final report will be available to market participants by mid-November.
* Work on the Long-Term System Assessment/DOE Study is ongoing.
* Transient Stability Study for 2011 Winter off-peak conditions: As part of the annual reliability assessment of the network, a transient stability study study is been performed on an ERCOT 2011 Winter off-peak case.