

# *Technical Advisory Committee*

Presentation to the  
ERCOT Board of Directors  
September 15, 2009

# *TAC Report Summary*

- Update on wind metrics development
- 2 PRRs for Board approval
- 8 NPRRs for Board approval
- 1 NOGRR for Board approval
- Report on Approved Market Guide Revision Requests
- Designation of 2010 Commercially Significant Constraints (CSCs)
- Preview: Future Board meetings

# Update on wind metrics development

- Since last update to the Board on this topic in April, 1 new performance metric applicable to wind generators has been approved and implemented (PRR 800, which eliminated the exemption granted by PRR 777, which addressed a compliance issue raised by PRR 763)
- Performance requirements: Protocol requirements which are enforceable by TRE and PUCT. Requirements violations are typically noticed and pursued as a result of an unusual system event or through spot checking.
- Performance metrics: Protocol requirements which are measured and reported on a regular basis as a tool to ensure consistent compliance by relevant entities, to compare the performance of relevant entities, and to provide transparency into effects of performance and system reliability.

# Update on wind metrics development

- Performance Requirements vs. Performance Metrics and Nodal Project Impacts
  - TRE request for automated data aggregation triggers system projects
  - System projects run the risk of Nodal Project impacts
  - TAC requests Board feedback on the appropriate balance on these two high priority policy areas
- PRR 812 example
  - Began as a discussion for a substitution for Schedule Control Error performance metric
  - WGR QSE forecast would be compared to AWT forecast in each interval and repeated underperformance relative to the AWT forecast triggers requirement for WGR QSE to substitute AWT forecast for its own
  - CEO determination of nodal impacts led TAC to change “shall” to “may” for ERCOT evaluation, which essentially stripped the “metric” function of the PRR
  - TAC kept the new requirement for hourly schedule updates and directed RTWG to review forecast comparison data between WGRs and AWT

# Update on wind metrics development

- PRR 811 presents similar issues
  - Established requirement for WGRs to telemeter Real Time Production Potential (function of wind data and turbine availability) to ERCOT
  - Original requirement in PRR to require ERCOT to compare RTPP to meter data and post monthly scores deemed by CEO to have Nodal Project impacts
  - PRS again changed ERCOT function from “shall” to “may” and stakeholders appear again to be on path to recommend performance “requirement” but not a “metric”

# Update on wind metrics development

- Performance requirements and metrics currently in the stakeholder process
  - PRR 812 Wind Generator Forecast Scheduling
    - Performance requirement
    - Awaiting Board action
  - PRR 811 Real Time Production Potential (PRS)
    - Performance Requirement
    - PRS
  - PRR 824 Primary Frequency Response from WGRs
    - Performance Requirement
    - PRS
  - PRR 828 Remove QSE SCE Performance Exemption for QSEs with only Uncontrollable Renewable Resources On-Line – URGENT
    - Performance Metric
    - PRS
  - PRR 830 Reactive Power Capability Requirement – URGENT
    - Performance Requirement
    - PRS

# *Protocol Revision Requests*

PRR 812 Wind Generator Forecast Scheduling (Formerly  
“Wind Generator Forecast Scheduling Metric”)

PRR 818 Out-of-Merit Capacity (OOMC) for Quick Start  
Units - URGENT

# ***PRR812, Wind Generator Forecast for Scheduling***

## ***(formerly Wind Generator Forecast for Scheduling Metric)***

<b>Purpose</b> <b>(Wind Coalition)</b>	Specifies the process for Wind-powered Generation Resources (WGRs) to update Resource Plans and schedules every hour using the ERCOT provided most likely Short-Term Wind Power Forecast (STWPF) as the standard for accuracy. [Note - It is expected that AWS Truewind will be providing a forecast adjusted for turbine availability as a result of other pending Protocol changes.]	
<b>Benefit</b>	More predictable results for deployment and more accurate settlement calculations	
<b>Market Impact</b>	N/A	
<b>System Change</b>	No	N/A
<b>Assumptions</b>	N/A	
<b>TAC Vote</b>	TAC unanimously recommended approval as amended by NextEra comments; All Market Segments were present.	
<b>CEO Determination</b>	No opinion on whether PRR is necessary prior to TNMID	
<b>Effective Date</b>	October 1, 2009	



# *PRR812, Wind Generator Forecast for Scheduling (formerly Wind Generator Forecast for Scheduling Metric)*

<i>Item Reviewed</i>	<i>No Impact</i>	<i>Impact</i>	<i>Description</i>
<i>Budget</i>	★		
<i>Staffing</i>	★		
<i>Computer Systems</i>	★		
<i>Business Functions</i>	★		
<i>Grid Operations</i>	★		
<i>Credit Monitoring/ Liability</i>	★		

# *PRR818, OOMC for Quick Start Units – Urgent*

<b>Purpose (Topaz)</b>	This Protocol Revision Request (PRR) provides that a Quick Start Unit that is not synchronously interconnected to the ERCOT System that receives an Out of Merit Energy (OOME) Dispatch Instruction or Local Balancing Energy Instruction will be settled as providing Out of Merit Capacity (OOMC) Service.	
<b>Benefit</b>	This PRR would revise the Protocols to prevent Quick Start Units from being disadvantaged as a result of responding to OOME Dispatch Instructions or Local Balancing Energy Instructions.	
<b>Market Impact</b>	N/A	
<b>System Change</b>	No	N/A
<b>Assumptions</b>	N/A	
<b>TAC Vote</b>	TAC unanimously recommended approval as amended by 09/01/09 ERCOT comments; all Market Segments were present.	
<b>CEO Determination</b>	No opinion for go-live	
<b>Effective Date</b>	October 1, 2009	

# *PRR818, OOMC for Quick Start Units – Urgent*

<i>Item Reviewed</i>	<i>No Impact</i>	<i>Impact</i>	<i>Description</i>
<i>Budget</i>	★		
<i>Staffing</i>	★		
<i>Computer Systems</i>	★		
<i>Business Functions</i>	★		<i>Minor impact to handle additional settlement and billing disputes but accommodated by current staff</i>
<i>Grid Operations</i>	★		
<i>Credit Monitoring/ Liability</i>	★		

# ***Nodal Protocol Revision Requests***

NPRR 165 Synchronizing Section 1 with PRR 697

NPRR 168 Change the Definition of “Start-up” and Include the Fuel from Breaker Close to LSL in Start-up Costs (formerly “Verifiable Costs General Corrections”)

NPRR 183 Synchronization of PRR 790, Load Profile Annual Validation Change Request

NPRR 184 Section 2, Addition of Definitions and Acronyms from Zonal Protocols and Clarifications

NPRR 185 Cancellations of Reliability Unit Commitment (RUC)-Committed Resources

# ***Nodal Protocol Revision Requests***

NPRR 186 Naming Convention Clarification

NPRR 188 Mega Volt-Amperes (MVA) for Security-Constrained Economic Dispatch (SCED) Input

NPRR 192 Qualified Scheduling Entity (QSE) Energy and Ancillary Service Compliance Criteria

# ***NPRR165, Synchronizing Section 1 with PRR697***

<b>Purpose (ERCOT)</b>	Synchronizes the Nodal Protocols with PRR697, Posting Requirement Changes, which incorporated disclosure requirement changes resulting from PUCT Project No. 33490, Rulemaking Proceeding to Address Pricing Safeguards in the Markets Operated by the Electric Reliability Council of Texas.	
<b>Benefit</b>	This NPRR synchronizes the Nodal Protocols with PRR697	
<b>Market Impact</b>	N/A	
<b>System Change</b>	No	N/A
<b>Assumptions</b>	N/A	
<b>TAC Vote</b>	TAC unanimously recommended approval; All Market Segments were present.	
<b>CEO Determination</b>	Necessary prior to go-live	

# *NPRR165, Synchronizing Section 1 with PRR697*

<i>Item Reviewed</i>	<i>No Impact</i>	<i>Impact</i>	<i>Description</i>
<i>Budget</i>	★		
<i>Staffing</i>	★		
<i>Computer Systems</i>	★		
<i>Business Functions</i>	★		
<i>Grid Operations</i>	★		
<i>Credit Monitoring/ Liability</i>	★		

***NPRR168, Change the Definition of “Start-up” and Include the Fuel from Break Close to LSL in Start-up Costs (formerly titled “Verifiable Costs General Corrections”)***

<b>Purpose (VCWG)</b>	Allows QSEs or Resource Entities to file Resource fuel consumption from breaker close to LSL and breaker open to shutdown. This NPRR includes a reduction to the startup cost that reflects an estimate of the expected revenue that would be credited to the QSE for output during the time period between breaker close and LSL.	
<b>Benefit</b>	Allow Resource Entities to recuperate their variable operating costs and thus make these Entities whole as allowed under the Day-Ahead Market (DAM) and Reliability Unit Commitment (RUC) market.	
<b>Market Impact</b>	N/A	
<b>System Change</b>	No	N/A
<b>Assumptions</b>	N/A	
<b>TAC Vote</b>	TAC unanimously recommended approval; All Market Segments were present.	
<b>CEO Determination</b>	No opinion for go-live	



*NPRR168, Change the Definition of “Start-up” and Include the Fuel from Break Close to LSL in Start-up Costs (formerly titled “Verifiable Costs General Corrections”)*

<i>Item Reviewed</i>	<i>No Impact</i>	<i>Impact</i>	<i>Description</i>
<i>Budget</i>	★		
<i>Staffing</i>	★		
<i>Computer Systems</i>	★		
<i>Business Functions</i>	★		
<i>Grid Operations</i>	★		
<i>Credit Monitoring/ Liability</i>	★		

# ***NPRR183, Synchronization of PRR790, Load Profile ID Annual Validation Change Request***

<b>Purpose (PWG)</b>	This NPRR synchronizes the Nodal Protocols with PRR790, Load Profile ID Annual Validation Change Request, which allows for changes in the Annual Validation process timeline due to extreme events.	
<b>Benefit</b>	Allows Market Participants to utilize their Resources to handle emergency situations	
<b>Market Impact</b>	N/A	
<b>System Change</b>	No	N/A
<b>Assumptions</b>	N/A	
<b>TAC Vote</b>	TAC unanimously recommended approval; all Market Segments were present.	
<b>CEO Determination</b>	Necessary prior to go-live	

# *NPRR183, Synchronization of PRR790, Load Profile ID Annual Validation Change Request*

<i>Item Reviewed</i>	<i>No Impact</i>	<i>Impact</i>	<i>Description</i>
<i>Budget</i>	★		
<i>Staffing</i>	★		
<i>Computer Systems</i>	★		
<i>Business Functions</i>	★		
<i>Grid Operations</i>	★		
<i>Credit Monitoring/ Liability</i>	★		

# ***NPRR184, Section 2, Addition of Definitions and Acronyms from Zonal Protocols and Clarifications***

<b>Purpose (ERCOT)</b>	This NPRR incorporates certain definitions and acronyms from the zonal Protocols for terms that are used in the Nodal Protocols but are not defined in Section 2, Definitions and Acronyms. Some of these definitions have been slightly modified for use in the Nodal Protocols. This NPRR also makes clarifying revisions to Section 2.	
<b>Benefit</b>	Consistent definition of capitalized terms and explanation of all acronyms used in Nodal Protocols will add clarity for readers.	
<b>Market Impact</b>	N/A	
<b>System Change</b>	No	N/A
<b>Assumptions</b>	N/A	
<b>TAC Vote</b>	TAC unanimously recommended approval; All Market Segments were present.	
<b>CEO Determination</b>	Necessary prior to go-live	

# *NPRR184, Section 2, Addition of Definitions and Acronyms from Zonal Protocols and Clarifications*

<i>Item Reviewed</i>	<i>No Impact</i>	<i>Impact</i>	<i>Description</i>
<i>Budget</i>	★		
<i>Staffing</i>	★		
<i>Computer Systems</i>	★		
<i>Business Functions</i>	★		
<i>Grid Operations</i>	★		
<i>Credit Monitoring/ Liability</i>	★		

# ***NPRR185, Cancellations of RUC-Committed Resources***

<b>Purpose (WMS)</b>	Will provide units that are cancelled after being Reliability Unit Commitment (RUC)-committed in the Day-Ahead RUC (DRUC) or Hourly RUC (HRUC) a process to recover costs that they incur between the time of RUC commitment and the cancellation of the RUC. These costs would include actual fuel and O&M expenses that were incurred by the cancellation.	
<b>Benefit</b>	To ensure Resources are made whole for costs incurred when instructed to provide a RUC service that is subsequently cancelled.	
<b>Market Impact</b>	N/A	
<b>System Change</b>	No	N/A
<b>Assumptions</b>	N/A	
<b>TAC Vote</b>	TAC unanimously recommended approval; all Market Segments were present.	
<b>CEO Determination</b>	No opinion on go-live	

# *NPRR185, Cancellations of RUC- Committed Resources*

<i>Item Reviewed</i>	<i>No Impact</i>	<i>Impact</i>	<i>Description</i>
<i>Budget</i>	★		
<i>Staffing</i>	★		
<i>Computer Systems</i>	★		
<i>Business Functions</i>	★		
<i>Grid Operations</i>	★		
<i>Credit Monitoring/ Liability</i>	★		

# ***NPRR186, Naming Convention Clarification***

<b>Purpose (NDSWG)</b>	Clarifies the Nodal Protocols regarding the naming convention approved by TAC by removing the requirement for use of a prefix within the name of Transmission Elements. The naming convention does not and should not require inclusion of a prefix to identify Transmission Service Providers (TSPs).	
<b>Benefit</b>	Removes Protocol language that if left or implemented would have detrimental affects	
<b>Market Impact</b>	N/A	
<b>System Change</b>	No	N/A
<b>Assumptions</b>	N/A	
<b>TAC Vote</b>	TAC unanimously recommended approval as revised by TAC; all Market Segments were present.	
<b>CEO Determination</b>	No opinion on go-live	



# *NPRR186, Naming Convention Clarification*

<i>Item Reviewed</i>	<i>No Impact</i>	<i>Impact</i>	<i>Description</i>
<i>Budget</i>	★		
<i>Staffing</i>	★		
<i>Computer Systems</i>	★		
<i>Business Functions</i>	★		
<i>Grid Operations</i>	★		
<i>Credit Monitoring/ Liability</i>	★		

# ***NPRR188, MVA for SCED Input***

<b>Purpose (NDSWG)</b>	This NPRR removes the TSP requirement to provide (MVA) to be used in Real-Time sequence and Security-Constrained Economic Dispatch (SCED). This NPRR also corrects the use of Common Information Model (CIM) and corrects the Dynamic Rating requirement.	
<b>Benefit</b>	Removal of the requirement for MVA data that is not utilized benefits all Market Participants from a resource and continued maintenance perspective. The MVA requirements for Dynamic Ratings should be a requirement if, the Market Participant has chosen the delivery method described in Section 3.10.8.	
<b>Market Impact</b>	N/A	
<b>System Change</b>	No	N/A
<b>Assumptions</b>	N/A	
<b>TAC Vote</b>	TAC unanimously recommended approval; all Market Segments were present.	
<b>CEO Determination</b>	No opinion on go-live	






# *NPRR188, MVA for SCED Input*

<i>Item Reviewed</i>	<i>No Impact</i>	<i>Impact</i>	<i>Description</i>
<i>Budget</i>	★		
<i>Staffing</i>	★		
<i>Computer Systems</i>	★		
<i>Business Functions</i>	★		
<i>Grid Operations</i>	★		
<i>Credit Monitoring/ Liability</i>	★		

## ***NPRR192, QSE Energy and Ancillary Service Compliance Criteria***

<b>Purpose (PUC/TRE/ERCOT)</b>	Establishes performance criteria for following energy deployments and/or providing Ancillary Services which must be met by Generation and Load Resources. For performance in providing Ancillary Services, the NPRR includes criteria for both Ancillary Service Capacity Monitoring and for periods during which ERCOT has deployed Ancillary Services. The calculation of energy deployment performance is also updated.	
<b>Benefit</b>	Maintains reliability in the Nodal Market.	
<b>Market Impact</b>	N/A	
<b>System Change</b>	No	N/A
<b>Assumptions</b>	N/A	
<b>TAC Vote</b>	TAC unanimously recommended approval of NPRR192 as amended by TAC, with X=5%, Y=5MW, and Z=10% and values to be reevaluated and modified as necessary by TAC and the Texas Regional Entity beginning two months prior to the Texas Nodal Market Implementation Date (TNMID) and as necessary after the TNMID. All Market Segments were present.	
<b>CEO Determination</b>	No opinion on go-live	

# *NPRR192, QSE Energy and Ancillary Service Compliance Criteria*

<i>Item Reviewed</i>	<i>No Impact</i>	<i>Impact</i>	<i>Description</i>
<i>Budget</i>			<i>Less than \$50K</i>
<i>Staffing</i>			
<i>Computer Systems</i>			<i>Energy Management System and Enterprise Data Warehouse</i>
<i>Business Functions</i>			
<i>Grid Operations</i>			
<i>Credit Monitoring/ Liability</i>			

# *Nodal Operating Guide Revision Request*

## NOGRR 025 Monitoring Programs for Qualified Scheduling Entities, Transmission Service Providers, and ERCOT - URGENT

- Adds new Section 9 to the Nodal Operating Guide to incorporate performance metrics for QSEs, Resources, TSPs, and ERCOT. Establishes monitoring and reporting methodology.
- Companion to NPRR 192. Taken together, addresses concerns for nodal market performance measures raised by PUCT Staff and TRE.
- Some ERCOT reporting functionality to be incorporated in nodal program for market Go-Live, others to be delivered post-Go-Live to mitigate risks to nodal schedule and budget.
- TAC unanimously recommended approval; all market segments were present.

# *Guide Revision Requests approved by TAC*

SMOGRR 007 Synchronization of Settlement Metering Operating Guide with PRR 804, Revisions to Section 21 Appeal Process

OGRR 217 Relay Misoperation Report Format Change

OGRR 224 SPS Operations Under No Contingency

OGRR 220 Synchronization of Operating Guide with PRR 804, Revisions to Section 21 Appeal Process

OGRR 234 EEA Media Appeal Correction

CMGRR 009 Clarification of the Standards for Competitive Meters

COPMGRR 014 Synchronization of Commercial Operations Market Guide with PRR 804, Revisions to Section 21 Appeal Process

LPGR 033 Synchronization of Load Profiling Guide with PRR 804, Revisions to Section 21 Appeal Process

# *Notice of PRR Rejection*

PRR 825 Distributed Energy Resource Participation in  
Responsive Reserve Service Markets



# 2010 CSC Recommendation

- TAC recommendation for 2010 CSC passed with all market segments present; no opposing votes; one abstention (IOU)
- 2010 CSCs for N\_S, S\_N, and N\_H the same as 2009
- 2010 CSCs for W\_N and N\_W changed to reflect 6 elements monitored for stability limit:
  - Graham – Cook Field
  - Jacksboro – Bowman
  - Graham – Tonkowa
  - Bowman – Graham
  - Comanche Switch – Red Creek
  - Graham – Long Creek
- 2010 definitions moves 128 MW of generation from North to West
- Also moves 602 MW of load – most (537MW) North to West

# Preview: next Board meeting

## ■ October

- 2010 CRE Recommendation
- Texas Renewables Integration Plan (TRIP) Workshop
- Report on effectiveness of PRR 763 Use of WGRPP as Planned Operating Level in Day-Ahead Resource Plan for WGRs