

TAC Report

| | | | |
|--|---|-------------------|--|
| NPRR Number | 611 | NPRR Title | Modifications to CDR Wind Capacity Value |
| Timeline | Normal | Action | Recommended Approval |
| Date of Decision | August 28, 2014 | | |
| Proposed Effective Date | November 1, 2014 | | |
| Priority and Rank Assigned | Not applicable. | | |
| Nodal Protocol Sections Requiring Revision | 3.2.6.2.2, Total Capacity Estimate | | |
| Other Binding Documents Requiring Revision or Related Revision Requests | None. | | |
| Revision Description | <p>This Nodal Protocol Revision Request (NPRR) proposes modifications to the Capacity, Demand, and Reserves (CDR) methodology for calculating the capacity value of wind during peak Load periods. The new approach calculates the wind capacity value as the average historical wind availability during the top 20 peak Load hours over a multi-year period, expressed as a percentage of installed wind capacity, rather than the effective Load carrying capability as determined by a loss of Load expectation study. This NPRR also proposes to calculate the wind capacity values for both the summer and winter Peak Load Seasons, as well as for wind Resources located in non-coastal and coastal wind regions.</p> | | |
| Reason for Revision | <p><input type="checkbox"/> Addresses current operational issues.</p> <p><input checked="" type="checkbox"/> Meets Strategic goals (tied to the ERCOT Strategic Plan or directed by the ERCOT Board).</p> <p><input type="checkbox"/> Market efficiencies or enhancements</p> <p><input type="checkbox"/> Administrative</p> <p><input type="checkbox"/> Regulatory requirements</p> <p><input type="checkbox"/> Other: (explain) (please select all that apply)</p> | | |
| Credit Work Group Review | ERCOT Credit Staff and the Credit Work Group (Credit WG) have reviewed NPRR611 and do not believe that it requires changes to credit monitoring activity or the calculation of liability. | | |
| Procedural History | <p>➤ On 3/26/14, NPRR611 and an Impact Analysis were posted.</p> <p>➤ On 4/10/14, PRS considered NPRR611.</p> | | |

TAC Report

| | |
|----------------------------------|---|
| | <ul style="list-style-type: none"> ➤ On 7/3/14, ERCOT comments were posted. ➤ On 7/10/14, WMS comments were posted. ➤ On 7/17/14, PRS again considered NPRR611. ➤ On 8/14/14, PRS considered the 7/17/14 PRS Report and Impact Analysis for NPRR611. ➤ On 8/28/14, TAC considered NPRR611. |
| PRS Decision | <p>On 4/10/14, PRS unanimously voted to table NPRR611 and to refer the issue to WMS. All Market Segments were present for the vote.</p> <p>On 7/17/14, PRS unanimously voted to recommend approval of NPRR611 as amended by the 7/10/14 WMS comments and as revised by PRS. All Market Segments were present for the vote.</p> <p>On 8/14/14, PRS voted to endorse and forward the 7/17/14 PRS Report and Impact Analysis for NPRR611 to TAC. There was one abstention from the Investor Owned Utility (IOU) Market Segment. All Market Segments were present for the vote.</p> |
| Summary of PRS Discussion | <p>On 4/10/14, participants discussed how the desire for the Generation Adequacy Task Force (GATF) to review NPRR611.</p> <p>On 7/17/14, participants discussed the definition of coastal region wind and whether further edits are needed.</p> <p>On 8/14/14, there was no discussion.</p> |
| TAC Decision | On 8/28/14, TAC unanimously voted to recommend approval of NPRR611 as recommended by PRS in the 8/14/14 PRS Report. All Market Segments were present for the vote. |
| Summary of TAC Discussion | On 8/28/14, there was no discussion. |
| ERCOT Opinion | ERCOT supports approval of NPRR611. |

| Business Case | |
|----------------------------------|--|
| Qualitative Benefits | <ul style="list-style-type: none"> • The proposed methodology improves data and process transparency, as well as the ability to update the wind capacity value on a more frequent basis, by virtue of basing the calculations on historical operations data rather than on running a complex reliability model to get probabilistically derived values. |
| Quantitative Benefits | |
| Impact to Market Segments | |
| Credit Implications | No. |
| Other | |

TAC Report

| Sponsor | |
|-----------------------|--|
| Name | Peter Warnken |
| E-mail Address | Pete.warnken@ercot.com |
| Company | ERCOT, Inc. |
| Phone Number | (512) 248-6705 |
| Cell Number | (512) 585-2246 |
| Market Segment | Not applicable |

| Market Rules Staff Contact | |
|----------------------------|--|
| Name | Kelly Landry |
| E-Mail Address | klandry@ercot.com |
| Phone Number | 512-248-4630 |

| Comments Received | |
|-------------------|---|
| Comment Author | Comment Summary |
| ERCOT 070314 | Proposed edits consistent with consensus at the 6/24/14 GATF meeting. |
| WMS 071014 | Endorsed NPRR611 as amended by the 7/3/14 ERCOT comments and as revised by WMS. |

| Comments |
|----------|
|----------|

Please note that baseline Protocol language in Section 3.2.6.2.2 has been updated due to the incorporation of NPRR588, Clarifications for PV Generation Resources, into the July 1, 2014 Protocols.

| Revised Proposed Protocol Language |
|------------------------------------|
|------------------------------------|

3.2.6.2.2 *Total Capacity Estimate*

The total capacity estimate shall be determined based on the following equation:

$$\text{TOTCAP}_{s,i} = \text{INSTCAP}_{s,i} + \text{PUNCAP}_{s,i} + \text{WINDCAP}_{s,i,r} + \text{HYDROCAP}_{s,i} + \text{SOLARCAP}_{s,i} + \text{RMRCAP}_{s,i} + \text{DCTIECAP}_{s,i} + \text{SWITCHCAP}_{s,i} + \text{MOTHCAP}_{s,i} + \text{PLANNON}_{s,i} + \text{PLANIRR}_{s,i,r} - \text{UNSWITCH}_{s,i} - \text{RETCAP}_{s,i}$$

The above variables are defined as follows:

TAC Report

| Variable | Unit | Definition |
|-----------------------------------|----------|---|
| TOTCAP _{s, i} | MW | <i>Total Capacity</i> —Estimated total capacity available during the Peak Load Season <i>s</i> for the year <i>i</i> . |
| INSTCAP _{s, i} | MW | <i>Seasonal Net Max Sustainable Rating</i> —The Seasonal net max sustainable rating for the Peak Load Season <i>s</i> as reported in the approved Resource Registration process for each operating Generation Resource for the year <i>i</i> excluding WGRs, hydro Generation Resource capacity, solar unit capacity, Resources operating under RMR Agreements, and Generation Resources capable of “switching” from the ERCOT Region to a non-ERCOT Region. |
| PUNCAP _{s, i} | MW | <i>Private Use Network Capacity</i> —The Private Use Network capacities as provided to ERCOT pursuant to Section 3.10.7.3, Modeling of Private Use Networks. |
| <u>WINDPEAKPCT_{s, r}</u> | <u>%</u> | <u><i>Seasonal Peak Average Wind Capacity as a Percent of Installed Capacity</i>—The average wind capacity available for the summer and winter Peak Load Seasons <i>s</i> and region <i>r</i>, divided by the installed capacity for region <i>r</i>, expressed as a percentage. The Seasonal Peak Average, derived from COPSettlement data, is first calculated as the average capacity during the 20 highest system-wide peak Load hours for a given year’s summer and winter Peak Load Seasons. The final value is the average of the previous 10 eligible years of Seasonal Peak Average values. Eligible years include 2009 through the most recent year for which COP data is available for the summer and winter Peak Load Seasons. If the number of eligible years is less than 10, the average shall be based on the number of eligible years available. This calculation is limited to WGRs that have been in operation as of January 1 for each year of the period used for the calculation.</u> |
| WINDCAP _{s, i, r} | MW | <i>Existing Effective Load-Carrying Capability of WGRs Capacity</i>—The capacity available for all existing WGRs for the summer and winter Peak Load Seasons <i>s</i>, year <i>i</i>, and region <i>r</i>, multiplied by WINDPEAKPCT for summer and winter Peak Load Seasons <i>s</i> and region <i>r</i>. -average wind capacity available as determined from historical Settlement data, during the 20 peak Load hours for each preceding year starting in 2011 and up to a five year period, for the Peak Load Season <i>s</i> for the year <i>i</i>. -effective Load-carrying capability of all existing WGRs as determined by ERCOT for the Peak Load Season <i>s</i> for the year <i>i</i>. This calculation is limited to WGRs that have been in operation as of January 1 for each year of the period used for the calculation. |
| HYDROCAP _{s, i} | MW | <i>Hydro Unit Capacity</i> —The average hydro Generation Resource capacity available, as determined from the COP, during the highest 20 peak Load hours for each preceding three year period for Peak Load Season <i>s</i> and year <i>i</i> . |
| SOLARCAP _{s, i} | MW | <i>Solar Unit Capacity</i> —100% of the nameplate capacity for operational solar units until a threshold value of 200 MWs of registered wholesale installed solar capacity is reached for Peak Load Season <i>s</i> and year <i>i</i> . Once the 200 MW threshold value is reached, the average solar unit capacity available, as determined from the COP, during the highest 20 peak Load hours for each preceding three year period for Peak Load Season <i>s</i> and year <i>i</i> . |
| RMRCAP _{s, i} | MW | <i>Seasonal Net Max Sustainable Rating for Generation Resource providing RMR Service</i> —The Seasonal net max sustainable rating for the Peak Load Season <i>s</i> as reported in the approved Resource Registration process for each Generation Resource providing RMR Service for the year <i>i</i> until the approved exit strategy for the RMR Resource is expected to be completed. |
| DCTIECAP _{s, i} | MW | <i>Seasonal Net Max Sustainable Rating for DC Tie Resource</i> —The average DC Tie capacity imported into the ERCOT Region during the highest 20 peak Load hours for each preceding three year period for Peak Load Season <i>s</i> and year <i>i</i> . |

TAC Report

| Variable | Unit | Definition |
|---------------------------|------|---|
| SWITCHCAP _{s, i} | MW | <i>Seasonal Net Max Sustainable Rating for Switchable Generation Resource</i> —The Seasonal net max sustainable rating for the Peak Load Season <i>s</i> as reported in the approved Resource asset registration process for each Generation Resource for the year <i>i</i> that can electrically connect (i.e., “switch”) from the ERCOT Region to another power region. |
| MOTHCAP _{s, i} | MW | <i>Seasonal Net Max Sustainable Rating for Mothballed Generation Resource</i> —The Seasonal net max sustainable rating for the Peak Load Season <i>s</i> as reported in the approved Resource Registration process for each Mothballed Generation Resource for the year <i>i</i> based on the lead time and probability information furnished by the owners of Mothballed Generation Resources pursuant to Section 3.14.1.9, Generation Resource Return to Service Updates. If the value furnished by the owner of a Mothballed Generation Resource pursuant to Section 3.14.1.9 is greater than or equal to 50%, then use the Seasonal net max sustainable rating for the Peak Load Season <i>s</i> as reported in the approved Resource registration process for the Mothballed Generation Resource for the year <i>i</i> . If the value furnished by the owner of a Mothballed Generation Resource pursuant to Section 3.14.1.9 is less than 50%, then exclude that Resource from the Total Capacity Estimate. |
| PLANNON _{s, i} | MW | <p><i>New, non-Wind Generating Capacity</i>—The amount of new, non-wind IRR generating capacity for the Peak Load Season <i>s</i> and year <i>i</i> that: (a) has a Texas Commission on Environmental Quality (TCEQ)-approved air permit, (b) has a federal Greenhouse Gas permit, if required, (c) has obtained water rights sufficient to operate the Resource, and (d) has a signed Standard Generation Interconnect Agreement (SGIA), or a public, financially-binding agreement between the Resource owner and TSP under which generation interconnection facilities would be constructed; or for a Municipally Owned Utility (MOU) or Electric Cooperative (EC), a public commitment letter to construct a new Resource. Exclude new, non-wind generating capacity that has met the requirements of (a), (b), (c) and (d) above in which ERCOT has received written Notification from the developer that the new capacity will not proceed with construction.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><i>[NPRR588: Replace the variable definition above with the following upon system implementation:]</i></p> <p><i>New, non-IRR Generating Capacity</i>—The amount of new, non-IRR generating capacity for the Peak Load Season <i>s</i> and year <i>i</i> that: (a) has a Texas Commission on Environmental Quality (TCEQ)-approved air permit, (b) has a federal Greenhouse Gas permit, if required, (c) has obtained water rights sufficient to operate the Resource, and (d) has a signed Standard Generation Interconnect Agreement (SGIA), or a public, financially-binding agreement between the Resource owner and TSP under which generation interconnection facilities would be constructed; or for a Municipally Owned Utility (MOU) or Electric Cooperative (EC), a public commitment letter to construct a new Resource. Exclude new, non-IRR generating capacity that has met the requirements of (a), (b), (c) and (d) above in which ERCOT has received written Notification from the developer that the new capacity will not proceed with construction.</p> </div> |

TAC Report

| Variable | Unit | Definition |
|---------------------------------|-------------|---|
| PLANIRR _{<i>s,i,r</i>} | MW | Effective Load Carrying Capability of New IRR Capacity — The effective Load carrying capability of new IRR capacity as determined by ERCOT for the Peak Load Season <i>s</i> and year <i>i</i> that has For new WGRs, the capacity available for the summer and winter Peak Load Seasons <i>s</i> , year <i>i</i> , and region <i>r</i> , multiplied by WINDPEAKPCT for summer and winter Load Season <i>s</i> and region <i>r</i> . For new solar units, 100% of the nameplate capacity units until a threshold value of 200 MWs of registered wholesale installed solar capacity is reached for summer Peak Load Season <i>s</i> and year <i>i</i> . Once the 200 MW threshold value is reached, the average solar unit capacity available, as determined from the COP, during the highest 20 peak Load hours for each preceding three-year period for summer Peak Load Season <i>s</i> and year <i>i</i> . New IRRs must have an SGIA or other public, financially-binding agreement between the Resource owner and TSP under which generation interconnection facilities would be constructed or, for a MOU or EC, a public commitment letter to construct a new IRR. |
| UNSWITCH _{<i>s, i</i>} | MW | Capacity of Unavailable Switchable Generation Resource—The amount of capacity reported by the owners of a switchable Generation Resource that will be unavailable to ERCOT during the Peak Load Season <i>s</i> and year <i>i</i> pursuant to paragraph (2) of Section 16.5.4, Maintaining and Updating Resource Entity Information. |
| RETCAP _{<i>s, i</i>} | MW | Capacity Pending Retirement—The amount of capacity in Peak Load Season <i>s</i> of year <i>i</i> that is pending retirement based on information submitted on a Notification of Suspension of Operations form (Section 22, Attachment E, Notification of Suspension of Operations) pursuant to Section 3.14.1.11, Budgeting Eligible Costs, but is under review by ERCOT pursuant to Section 3.14.1.2, ERCOT Evaluation, that has not otherwise been considered in any of the above defined categories. |
| <i>i</i> | None | Year. |
| <i>s</i> | None | <u>Summer and winter</u> Peak Load Seasons <u>for year <i>i</i>.</u> |
| <i>r</i> | <u>None</u> | <u>Coastal and non-coastal wind regions. WGRs are classified into regions based on the county that contains their Point of Interconnection (POI). The coastal region is defined as the following counties: Cameron, Willacy, Kenedy, Kleberg, Nueces, San Patricio, Refugio, Aransas, Calhoun, Matagorda, and Brazoria. The non-coastal region consists of all other counties in the ERCOT Region.</u> |