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| NPRR Number | [975](http://www.ercot.com/mktrules/issues/NPRR975) | NPRR Title | Load Forecast Model Transparency |
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| Date | January 23, 2020 |
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| Submitter’s Information |
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| Market Segment | Not Applicable |

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| Comments |

ERCOT understands that Texas Competitive Power Advocates (TCPA) desires ERCOT to provide an explanation when ERCOT selects a load forecast that is a significant “outlier” on either side of the average of the Load forecasts produced by ERCOT’s several load forecast models. These explanations will allow Market Participants to better understand and respond to the factors that are driving ERCOT to select the outlier forecasts. The level of specificity of the explanations that ERCOT will be able to provide, without significant impact on its operations, is inversely related to the frequency with which ERCOT will have to produce such an explanation.

ERCOT has evaluated the trigger proposed by TCPA, which would require an explanation during every forecast update (hourly) when the selected forecast for any of the next 168 hours is more than 2% higher than the average of all of ERCOT’s load forecasts. This trigger would result in much more frequent explanations than ERCOT is able to provide with any specificity, primarily due to larger differences between forecasts in off-peak hours.

In these comments, ERCOT proposes an alternative triggering mechanism that would focus on true outlier occurrences in peak load hours. Since ERCOT typically selects a particular load forecast model for an entire day, this should provide a reasonable indication of why a particular “outlier” forecast model was selected for that day, while reducing the number of explanations that might need to be entered to a level that appears to be manageable within ERCOT’s current operations.

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| Revised Proposed Protocol Language |

3.12.1 Seven-Day Load Forecast

(1) ERCOT shall use the Seven-Day Load Forecast to predict hourly Loads for the next 168 hours based on current weather forecast parameters within each Weather Zone. Preparation for Day-Ahead Operations requires an accurate forecast of the Loads for which generation capacity must be secured. The Seven-Day Load Forecast must have a “self-training” mode that allows ERCOT to review historic Load data and provide the ability to retrain the Seven-Day Load Forecast algorithm.

(a) ERCOT will use a variety of Load forecast models and will select the Load forecast model that best fits the expected conditions for each hour of the next 168 hours as the Seven-Day Load Forecast for that hour and may update this selection as expected conditions change.

(b) If the selected forecast used for DRUC for the peak demand hour of any of the next seven days is more than the greater of 2000 MW or 4% above or below the average of the forecast models of the group for that hour, ERCOT shall produce and post to the MIS Public Area an explanation of why the outlier Load forecast model was selected for that hour.

(2) The inputs for the Seven-Day Load Forecast are as follows:

(a) Hourly forecasted weather parameters for the weather stations within the Weather Zones, which are updated at least once per hour; and

(b) Training information based on historic hourly integrated Weather Zone Loads.

(3) ERCOT shall review the forecast suggested by Seven-Day Load Forecast and shall use its judgment, if necessary, to modify the result prior to implementation in the Ancillary Service capacity Monitor, Day-Ahead Reliability Unit Commitment (DRUC), Hour-Ahead Reliability Unit Commitment (HRUC), and Resource adequacy reporting.

**Additional Info for WMWG**

Using the same dataset used for my October WMWG presentation (first 9 months of 2019), we evaluated how often we would need to communicate an explanation using TCPA’s proposed “2% above or below the average of the forecast models of the group for any hour of the next 168 hours” trigger.   Due to the potential for larger differences in the off-peak hours, this trigger would have resulted in the need to enter an explanation well over 10% of the time.  This would certainly result in the need to provide an explanation that is somehow automated and provides only generic information about the reason that forecast was selected.

We arrived at the proposed approach and triggers to lower that number to the point that it would result in only true outliers needing an explanation, based on discussion at stakeholder meetings in which it was communicated that is what TCPA was really looking for.

Using this approach, we looked at how many times we would have had to enter an explanation (using the same 9 month dataset).  The results for the proposed trigger (as well as some alternatives), for different numbers of days in advance, are shown in the table below.

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|   | Number of Time Intervals (hours) using DRUC time forecasts and comparing peak hour based on trigger shown below | 1-d | 2-d | 3-d | 4-d | 5-d | 6-d | 7-d |
| 1 | greater of 5% or 2500 MW | 0 | 2 | 3 | 4 | 3 | 3 | 3 |
| 2 | 2500 MW | 0 | 4 | 4 | 4 | 4 | 3 | 5 |
| 3 | greater of 4% or 2000 MW | 3 | 8 | 5 | 4 | 6 | 10 | 12 |
| 4 | 2000 MW | 3 | 12 | 9 | 7 | 8 | 11 | 13 |

We believe we can handle the expected number of explanations that will be needed under the proposed trigger. It is our understanding that TCPA is generally agreeable to this approach and trigger.