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| PGRR Number | [107](https://www.ercot.com/mktrules/issues/PGRR107) | PGRR Title | Related to NPRR1180, Inclusion of Forecasted Load in Planning Analyses |
| Date of Decision | | November 20, 2024 | |
| Action | | Recommended Approval | |
| Timeline | | Normal | |
| Estimated Impacts | | Cost/Budgetary: None  Project Duration: No project required | |
| Proposed Effective Date | | Upon implementation of Nodal Protocol Revision Request (NPRR) 1180, Inclusion of Forecasted Load in Planning Analyses | |
| Priority and Rank Assigned | | Not applicable | |
| Planning Guide Sections Requiring Revision | | 3.1.2.1, All Projects 3.1.3, Project Evaluation 3.1.4.2, Use of Regional Transmission Plan 3.1.7, Steady State Transmission Planning Load Forecast 4.1.1.1, Planning Assumptions | |
| Related Documents Requiring Revision/Related Revision Requests | | NPRR1180 | |
| Revision Description | | This Planning Guide Revision Request (PGRR) aligns the Planning Guide with NPRR1180. PGRR107 revises the Planning Guide to address recent amendments to P.U.C. Subst. R. 25.101, Certification Criteria, which became effective on December 20, 2022. Specifically, PGRR107 incorporates the requirement in P.U.C. Subst. R. 25.101(b)(3)(A)(ii)(II) for any review of project need conducted by ERCOT to incorporate the historical load, forecasted load growth, and additional load seeking interconnection, in ERCOT’s analysis, while recognizing that ERCOT’s Regional Transmission Plan will include only that load that ERCOT has determined to be credibly supported by quantifiable evidence of load growth. PGRR107 also requires a Regional Planning Group (RPG) project submitter to provide such information to ERCOT, when available, for inclusion in ERCOT’s planning analyses. | |
| Reason for Revision | | [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 1 – Be an industry leader for grid reliability and resilience  [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 2 - Enhance the ERCOT region’s economic competitiveness with respect to trends in wholesale power rates and retail electricity prices to consumers  [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 3 - Advance ERCOT, Inc. as an independent leading industry expert and an employer of choice by fostering innovation, investing in our people, and emphasizing the importance of our mission  General system and/or process improvement(s)  Regulatory requirements  ERCOT Board/PUCT Directive  *(please select ONLY ONE – if more than one apply, please select the ONE that is most relevant)* | |
| Justification of Reason for Revision and Market Impacts | | This PGRR aligns the Planning Guide with the Protocols, as revised by NPRR1180. | |
| ROS Decision | | On 6/8/23, ROS voted to table PGRR107 and refer the issue to the Planning Working Group (PLWG). There was one abstention from the Independent Generator (Calpine) Market Segment. All Market Segments participated in the vote.  On 9/9/24, ROS voted unanimously to recommended approval of PGRR107 as amended by the 8/28/24 ERCOT comments as revised by ROS. All Market Segments participated in the vote.  On 10/3/24, ROS voted unanimously to table PGRR107. All Market Segments participated in the vote.  On 11/7/24, ROS voted unanimously to endorse and forward to TAC the 10/3/24 ROS Report and 10/16/24 Impact Analysis for PGRR107. All Market Segments participated in the vote. | |
| Summary of ROS Discussion | | On 6/8/23, participants reviewed PGRR107. Participants raised questions regarding how the proposed provisions would apply to areas such as interconnection agreements, and requested additional discussion.  On 9/9/24, participants reviewed the 8/28/24 ERCOT comments.  On 10/3/24, participants reviewed the 9/24/24 ERCOT comments.  On 11/7/24, participants reviewed the 10/16/24 Impact Analysis for PGRR107. | |
| TAC Decision | | On 11/20/24, TAC voted to recommend approval of PGRR107 as recommended by ROS in the 11/7/24 ROS Report. There were four abstentions from the Consumer (2) (Residential Consumer, OPUC), Cooperative (GSEC) and Independent Power Marketer (IPM) (SENA) Market Segments. All Market Segments participated in the vote. | |
| Summary of TAC Discussion | | On 11/20/24, participants expressed concern that estimated load values used in planning studies may not materialize as predicated and stressed the importance of using quality data to calculate load forecasts so that they are as accurate as possible. | |
| TAC Review/Justification of Recommendation | | Revision Request ties to Reason for Revision as explained in Justification  Impact Analysis reviewed and impacts are justified as explained in Justification  Opinions were reviewed and discussed  Comments were reviewed and discussed (if applicable)  Other: (explain) | |
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| **Opinions** | | | |
| Credit Review | | Not applicable | |
| Independent Market Monitor Opinion | | The IMM conditionally supports PGRR107 in concept however the details of the robustness and use of data in developing inputs to the planning analysis are important. IMM support is contingent upon ERCOT's ability to apply reasonable methods to the data they are provided in order to produce the most accurate forecast for use in planning analysis. | |
| ERCOT Opinion | | ERCOT supports approval of PGRR107. | |
| ERCOT Market Impact Statement | | ERCOT Staff has reviewed PGRR107 and believes it appropriately aligns the Planning Guide with NPRR1180, which incorporates the requirement in P.U.C. Subst. R.25.101(b)(3)(A)(ii)(II) for any reliability-driven transmission project review conducted by ERCOT to account for historical Load, forecasted Load growth, and additional Load seeking interconnection. | |

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| **Comments Received** | |
| **Comment Author** | **Comment Summary** |
| ERCOT 071423 | Expressed concern the broad scope could introduce uncertainty and reduce the transparency of the future transmission need and associated projects identified in the ERCOT annual Transmission Planning Assessment and would require ERCOT and Transmission Service Providers (TSPs) to spend significant additional time and resources to meet the obligation under both North American Electric Reliability Corporation (NERC) Reliability Standard and ERCOT planning criteria |
| Oncor 101323 | Incorporated ERCOT independent review of forecasted Load growth, greater detail on the types of information a TSP may provide to ERCOT, and clarified Section 4.1.1.1 and restored language in paragraph 5(a) |
| ERCOT 121323 | Revised language related to Load data provided by TSPs |
| ERCOT 071524 | Aligned terminology with the 7/15/24 ERCOT comments submitted for NPRR1180 that created the term “Substantial Load” |
| ERCOT 082824 | Replaced various instances of the term “Load” with the uncapitalized term “load” |
| ERCOT 092424 | Indicated ERCOT intends to complete the Impact Analysis for PGRR107 prior to the 11/6/24 ROS meeting |
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| **Market Rules Notes** | |

Please note the baseline Planning Guide language in the following section(s) has been updated to reflect the incorporation of the following PGRR into the Planning Guide:

* PGRR098, Consideration of Load Shed in Transmission Planning Criteria (unboxed 8/1/24)
  + Section 4.1.1.1

Please note that the following PGRR(s) also propose revisions to the following section(s):

* PGRR115, Related to NPRR1234, Interconnection Requirements for Large Loads and Modeling Standards for Loads 25 MW or Greater
  + Section 4.1.1.1
* PGRR118, Related to NPRR1246, Energy Storage Resource Terminology Alignment for the Single-Model Era
  + Section 3.1.2.1
  + Section 3.1.3
  + Section 4.1.1.1

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| Proposed Guide Language Revision |

**3.1.2.1 All Projects**

(1) The submittal of each transmission project (60 kV and above) for RPG Project Review should include the following elements:

(a) The proposed project description including expected cost, feasible alternative(s) considered, transmission topology and Transmission Facility modeling parameter data, and all study cases used to generate results supporting the need for the project in electronic format (powerflow data should be in PTI Power System Simulator for Engineering (PSS/E) RAWD format). Also, the submission should include accurate maps and one-line diagrams showing locations of the proposed project and feasible alternatives;

(b) Identification of the SSWG, Dynamics Working Group (DWG), or Regional Transmission Plan powerflow cases used as a basis for the study and any associated changes that describe and allow accurate modeling of the proposed project;

(c) Description and data for all changes made to the SSWG base cases or Regional Transmission Plan cases used to identify the need for the project, such as Generation Resource unavailability and area peak load forecast;

(d) A description of the reliability and/or economic problem that is being solved;

(e) Information that supports any load values that differ from the load forecast used in the base cases identified in (b), above, including any relevant historical load information or evidence demonstrating that a submitted load value is Substantiated Load;

(f) A description of the Subsynchronous Resonance (SSR) impact of the proposed project to the generation facilities in the system pursuant to Protocol Section 3.22.1, Subsynchronous Resonance Vulnerability Assessment, and potential SSR Countermeasure plan for any identified SSR vulnerability, if applicable;

(g) Desired/needed in-service date for the project, and feasible in-service date, if different;

(h) The phone number and email address of the single point of contact who can respond to ERCOT and RPG participant questions or requests for additional information necessary for stakeholder review; and

(i) Analysis of rejected alternatives, including cost estimates, and other factors considered in the comparison of alternatives with the proposed project.

(2) Both transmission and distribution solutions to performance deficiencies may be considered where applicable.

(3) If there is any other information, not included above, that the submitting party believes is relevant to consideration of the need for any submitted project, the submitting party should include that information in the project submission.

***3.1.3 Project Evaluation***

(1) ERCOT and the RPG shall evaluate proposed transmission projects using a variety of tools and techniques as needed to ensure that the system is able to meet applicable reliability criteria in a cost-effective manner. For most proposed projects, several alternatives will be identified to meet the reliability criteria or other performance improvement objectives that the proposed project is designed to meet. The project alternative with the expected lowest cost over the life of the project is generally recommended, subject to consideration of the expected long-term system needs in the area, including, as applicable, any evidence of Substantiated Load, and subject to consideration of the relative operational impacts of the alternatives.

(2) In some cases, one alternative may be to dispatch the system in such a way that all reliability requirements are met, even without the proposed transmission project or any transmission alternative, resulting in a less efficient dispatch than what would be required to meet the reliability requirements if the proposed project was in place. Consideration of the merits of this alternative relative to the proposed transmission project is more complex. To facilitate the discussion and consideration of these alternatives, ERCOT has adopted certain definitions and practices, described in paragraph (4) of Protocol Section 3.11.2, Planning Criteria, and Sections 3.1.3.1, Definitions of Reliability-Driven and Economic-Driven Projects, and 3.1.3.2, Reliability-Driven Project Evaluation below.

(3) In conducting an independent review of any project, ERCOT may, in its discretion, make adjustments to the planning case to ensure that the case reaches a solution. When conducting an independent review of any project classified as Tier 1 pursuant to Protocol Section 3.11.4, Regional Planning Group Project Review Process, ERCOT must provide reasonable advance notice to the RPG of any proposed adjustments and an opportunity for stakeholder comment on them.

(4) As part of its independent review of any project classified as Tier 1 pursuant to Protocol Section 3.11.4, ERCOT shall:

(a) Perform a generation sensitivity analysis. The generation sensitivity analysis will evaluate the effect that proposed Generation Resources in or near the study area will have on a recommended transmission project. Generation Resources that have signed Standard Generation Interconnection Agreements (SGIAs) but were not included in the study cases because they did not meet all of the requirements for inclusion in the cases pursuant to Section 6.9, Addition of Proposed Generation to the Planning Models, will be included in the sensitivity analysis. ERCOT shall not consider the results of the generation sensitivity analysis in determining project need during its independent review of the project; and

(b) Evaluate impacts related to the load scaling used in the study on any constraints resulting in project recommendations. The results of this evaluation shall be included in the final recommendations in the independent review.

(5) ERCOT’s independent review shall incorporate and consider historical load and any Substantiated Load.

**3.1.4.2 Use of Regional Transmission Plan**

(1) If a project submitted for RPG review is included in the Regional Transmission Plan, and no changes are identified which would affect the need for the proposed project through the comment period described in Section 3.1.5, Regional Planning Group Comment Process, then the Regional Transmission Plan may serve as the ERCOT Independent Review of the proposed project.

(2) Tier 1, 2, and 3 projects that are included in the Regional Transmission Plan should be submitted for RPG Project Review at an appropriate lead time. Generally, this lead time should be sufficient to allow the review to be completed before the TSP reaches the decision point at which it must initiate the engineering and procurement in order to meet the required in-service date, but not farther in advance than is necessary. In general, these lead times will be three to four months for Tier 3 projects and six to seven months for Tier 1 and 2 projects.

(3) Tier 1, 2, and 3 projects that are included in the Regional Transmission Plan but do not reach this decision point before the development of the next year’s Regional Transmission Plan begins will be removed from the case used to develop the Regional Transmission Plan and will be re-evaluated as a part of the development of this subsequent Regional Transmission Plan.

***3.1.7*** ***Steady State Transmission Planning Load Forecast***

(1) ERCOT shall use the following process for determining the load level to be used in the starting base cases for the Regional Transmission Plan and in the steady-state evaluation of a Tier 1 or Tier 2 project pursuant to Protocol Section 3.11.4, Regional Planning Group Project Review Process:

(a) ERCOT will compare the ERCOT 90/10 load forecast with the summed SSWG bus-level load forecast for each Weather Zone.

(b) If the ERCOT 90/10 load forecast is higher, ERCOT will use this forecast for the Weather Zone.

(c) If the SSWG load forecast for a Weather Zone is higher than or equal to the ERCOT 90/10 load forecast, ERCOT will use the ERCOT 90/10 load forecast plus any additional historical load and Substantiated Load submitted by the Transmission and/or Distribution Service Providers (TDSPs) for the Weather Zone.

4.1.1.1 Planning Assumptions

(1) A contingency loss of an element includes the loss of an element with or without a single line-to-ground or three-phase fault.

(2) A common tower outage is the contingency loss of a double-circuit transmission line consisting of two circuits sharing a tower for 0.5 miles or greater.

(3) Unavailability of a single generating unit includes an entire Combined Cycle Train, if no part of the train can operate with one of the units Off-Line as provided in the Resource Registration data.

(4) The contingency loss of a single generating unit shall include the loss of an entire Combined Cycle Train, if that is the expected consequence.

(5) The following assumptions may be applied to planning studies:

(a) Reasonable variations of load forecast, including forecasted load growth based on Substantiated Load;

(b) Reasonable variations of generation commitment and dispatch applicable to transmission planning analyses on a case-by-case basis may include, but are not limited to, the following methods:

(i) Production cost model simulation, security constrained optimal power flow, or similar modeling tools that analyze the ERCOT System using hourly generation dispatch assumptions;

(ii) Modeling of high levels of intermittent generation conditions; or

(iii) Modeling of low levels of or no intermittent generation conditions.

(6) Assumed Direct Current Tie (DC Tie) imports and exports will be curtailed as necessary to meet reliability criteria in planning studies.

(7) Manual System Adjustments shall not increase the amount of consequential load loss following a common tower outage, or the contingency loss of a single generating unit, transmission circuit, transformer, shunt device, FACTS device, or DC Tie Resource or DC Tie Load, with or without a single line-to-ground fault.