Permian Basin Evaluation - Study Scope

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RPG Meeting
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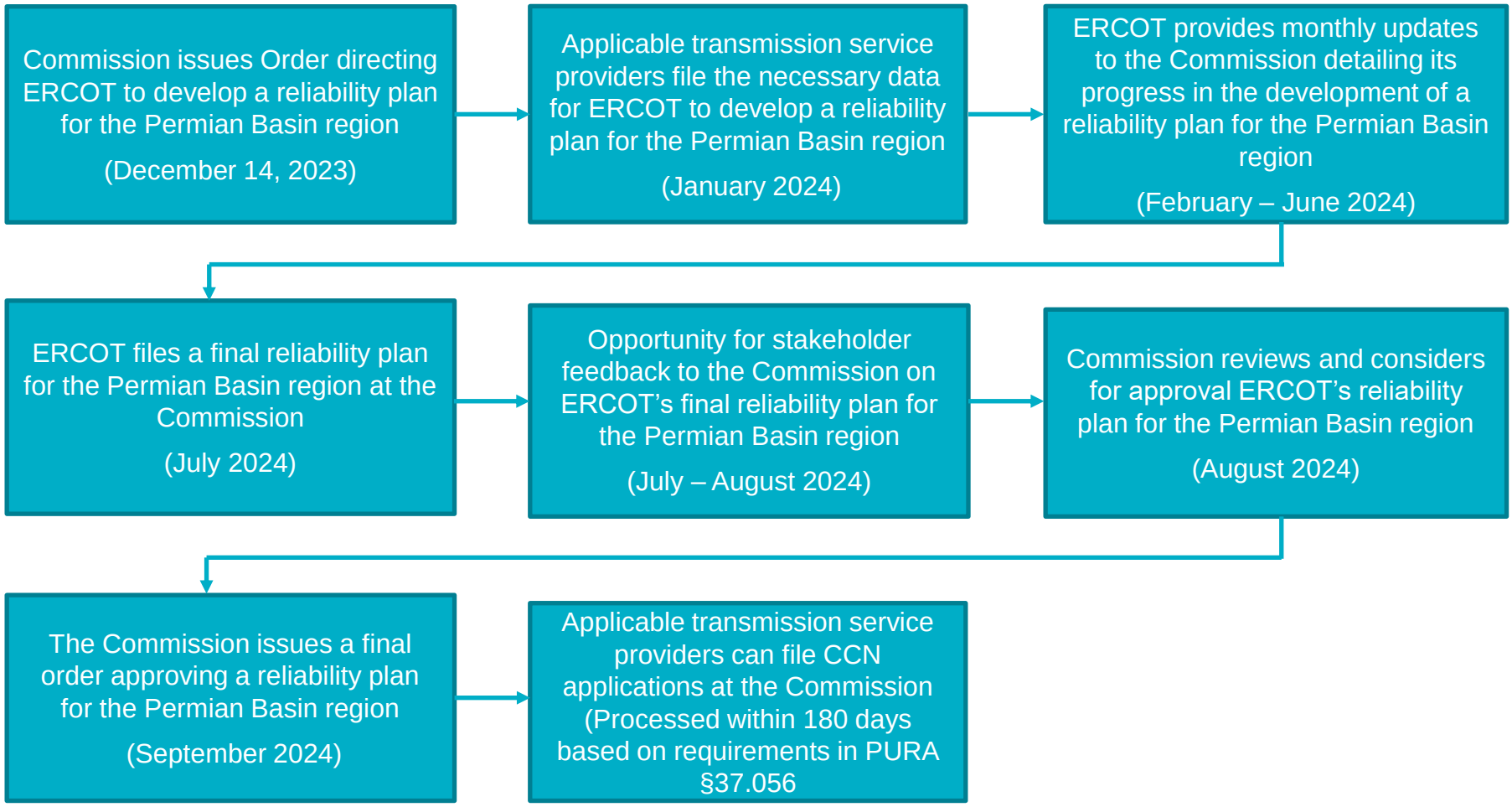
Introduction

- Significant progress has been made to address the high demand growth in the Permian Basin area
  - Delaware Basin Load Integration Study in 2019
  - Permian Basin Load Interconnection Study in 2021
- In part, H.B. 5066 (May 2023) requires the PUCT to direct ERCOT to develop a Reliability Plan for the Permian Basin region and that the plan must:
  - Address extending transmission service to areas where mineral resources have been found
  - Address increasing available capacity to meet forecasted load for the next decade
  - Provide available infrastructure to reduce interconnection times in areas without access to transmission service
- PUCT Order Project No. 55718 (December 2023)
  - Procedural Process and Timeline
  - Not later than July 2024, ERCOT must file a final reliability plan at the Commission in this project, and after opportunity for stakeholder feedback, and Commission will review and approve a reliability plan for the Permian Basin region
  - The applicable transmission service providers (TSPs) responsible for constructing the transmission infrastructure in the Commission-approved reliability plan can then move forward with filing the necessary applications for certificate of convenience and necessity (CCN) at the Commission

Procedural Process and Timeline per PUCT Order Project No. 55718



This timeline is contingent upon ERCOT receiving the necessary data from the applicable transmission service providers in January 2024. Accordingly, a delay in ERCOT's receipt of the necessary data will result in a corresponding adjustment to the timeline identified herein.

Study Assumptions and Methodology

- Steady-state reliability analysis to identify
  - Transmission upgrades that may be necessary to connect and reliably serve the local oil and gas loads in the Permian Basin region
  - Transmission import to meet the forecasted load
- Load forecast
  - The bus level load from TSPs based on the 2023 S&P Global study (presented in March 2023 RPG meeting) will be used for this study
  - Additional load provided by TSPs

Study Assumptions – Base Case

- Study Region
  - The Permian Basin region within ERCOT system, which include most the counties in Far West Weather Zone plus ten counties in West Weather Zone and one county in North Weather Zone
- Steady-State Base Case
  - The 2029 West/Far West (WFW) summer peak preliminary final case from the 2023 Regional Transmission Planning (RTP), posted Market Information System (MIS) in October 2023, will be used as the starting base case in order to develop study cases for year 2030 and 2038
    - Case: 22SSWG_2029_SUM_WFW_10252023
    - Link: https://mis.ercot.com/secure/data-products/group-reports/transmission-service-providers?id=PG7-148-M

Study Assumption - Transmission

- Based on the October 2023 Transmission Project and Information Tracking (TPIT) posted on ERCOT website, RPG approved Tier 1, Tier 2, and Tier 3 projects as well as Tier 4 projects with in-service dates on or before summer 2030 and 2038 within the study area will be added to the study base case if not already modeled in the starting case
  - TPIT Link: https://www.ercot.com/gridinfo/planning

Study Assumptions – Generation

- New generation that met Planning Guide Section 6.9(1) condition with Commercial Operation Date (COD) before June 2030 and 2038 at the time of the study, but not already modeled in the starting case, will be added to the study base case based on the December 2023 Generator Interconnection Status (GIS) report posted on January 3, 2024
  - GIS Link: https://www.ercot.com/gridinfo/resource
- Solar generation in the study area will be turned off since the load growth in the area is mainly expected to operate as a constant load
- Battery and wind generation added will be dispatched consistent with the 2023 RTP methodology
- All recent retired/indefinitely mothballed units will be reviewed and turned off, if not already reflected in the starting case

Study Assumptions – Load & Reserve

- Load in study area
  - The bus level load for year 2030 and 2038 was provided by TSPs serving loads in the Permian Basin area which includes
    a. Load levels forecasted in the 2023 S&P Global Permian Basin study
    b. Load currently served by temporary on-site generation not already accounted for in the S&P Global Permian Basin Study
    c. Additional load currently seeking interconnection that is not otherwise included in a or b, as determined by the electric utility with the responsibility for serving the load. This should expressly include demand yet to sign a full interconnection agreement
  - The reactive consumption of the projected load will be based on
    - Historical power factors for the load connecting to existing load serving stations
    - Power factor of 0.97, historical recorded performance of existing oil and gas load in the Permian Basin area, for load connecting to existing non-load serving stations or new stations
    - Power factors based on the load specific information for the additional load seeking interconnections
- Reserve
  - Load outside WFW weather zones may be adjusted to maintain the reserve consistent with the 2023 RTP

Contingencies and Criteria

- Contingencies
  - NERC TPL-001-5.1 and ERCOT Planning Criteria
  - Link: https://www.ercot.com/mktrules/guides/planning/current
    - P0 (System Intact)
    - P1, P2-1, P7 (N-1 condition)
    - P2-2, P2-3, P4, and P5 (EHV only)
    - P3 (G-1+N-1: G-1 of Permian Basin all five units, Odessa combined cycle train 1)
    - P6-2 (X-1+N-1: X-1 of Riverton, Sand Lake, and Solstice 345/138-kV transformers)
- Criteria
  - Monitor all 60-kV and above buses, transmission lines, and transformers in the study area (excluding generator step-up transformers)
  - Thermal
    - Use Rate A for pre-contingency conditions
    - Use Rate B for post-contingency conditions
  - Voltage
    - Voltages exceeding their pre-contingency and post-contingency limits
    - Voltage deviations exceeding 8% on non-radial load busses

Deliverables and Timeline

- The study is expected to be completed in June 2024 and the final report is ready in July 2024
- Status updates at future RPG meetings
- Tentative Timelines

Deliverables	Tentative Timeline
Load Update by TSPs	January 2024
Review the Data Provided by TSPs	January 2024
Develop Study Base Case and Conduct Reliability Analysis	February 2024
Study Potential Transmission Solutions and Propose Final Reliability Plan	March – June 2024
Final Report	July 2024

Thank you!

Stakeholder comments also welcomed through:

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