Oncor and AEPSC Drill Hole to Sand Lake to Solstice 765-kV Line Project – ERCOT Independent Review Status Update

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RPG Meeting
November 11, 2025

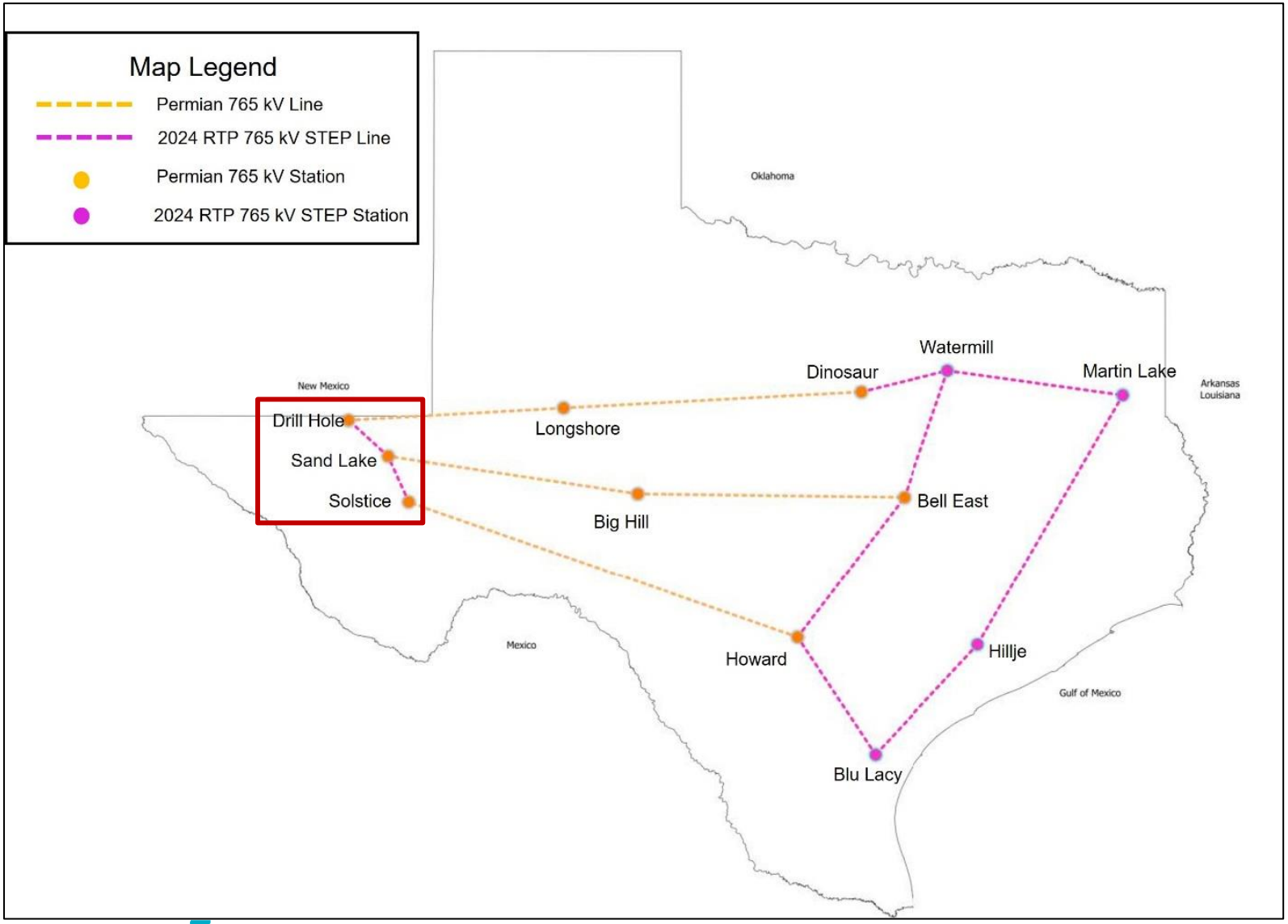
Introduction

- Oncor and American Electric Power Service Corporation (AEPSC) submitted the Drill Hole to Sand Lake to Solstice 765-kV Line Project for Regional Planning Group (RPG) review in July 2025
  - This Tier 1 project is estimated to cost $742.2 million and will require a Certificate of Convenience and Necessity (CCN) filing
  - Estimated in-service date (ISD) is Summer 2030
  - This project was identified and included in 2024 Regional Transmission Plan (RTP) in the Culberson, Ward, Reeves, and Pecos Counties in the Far West Weather Zone
  - This project aligns with the 2024 RTP 765-kV Strategic Transmission Expansion Plan (STEP) Core Plan
- Oncor provided an overview presentation and ERCOT provided the study scope at the September RPG Meeting
  - https://www.ercot.com/calendar/09252025-RPG-Meeting
- ERCOT provided the status update at the October RPG Meeting
  - https://www.ercot.com/calendar/10282025-RPG-Meeting
- This project is currently under ERCOT Independent Review (EIR)

Project Proposed by Oncor and AEPSC

- Install two 765-kV circuit breakers rated at 4000 A or greater in a breaker-and-a-half arrangement at the newly approved Drill Hole 765-kV Switch;
- Install four 765-kV circuit breakers rated at 4000 A or greater in a breaker-and-a-half arrangement at the newly approved Sand Lake 765-kV Switch;
- Install one 765-kV circuit breaker rated at 4000 A or greater in a double-bus, double-breaker arrangement at the newly approved Solstice 765-kV Switch;
- Construct a new Drill Hole to Sand Lake 765-kV single-circuit transmission line using a conductor rated at 5382 A or greater with normal and emergency ratings of at least 7602 MVA, which will require a new right of way (ROW), approximately 57.6-mile; and
- Construct a new Sand Lake to Solstice 765-kV single-circuit transmission line using a conductor rated at 5382 A or greater with normal and emergency ratings of at least 7602 MVA, which will require a new ROW, approximately 46.8-mile.

765-kV STEP Core Plan Proposed in 2024 RTP



Study Assumptions and Methodology

- The reliability need of this RPG project was identified and included in the 2024 RTP
- This RPG project aligns with the 2024 RTP 765-kV STEP Core Plan
- ERCOT will utilize the 2024 RTP study for this Independent Review and assess the need for further analysis
  - Reliability Analysis
  - Congestion Analysis
- ERCOT will perform additional evaluations in accordance with NERC TPL-001-5.1 and ERCOT Planning Criteria
  - Generation Addition and Load Scaling Sensitivity Analyses
    - Planning Guide Section 3.1.3(4)
  - Subsynchronous Resonance (SSR) Assessment
    - Nodal Protocol Section 3.22.1.3(2)

Reliability Analysis

- The 765-kV STEP Core Plan addressed the reliability issues identified in the 2024 RTP
- The 2024 RTP studies highlighted the benefits and cost effectiveness of the 765-kV STEP Core Plan
  - https://www.ercot.com/calendar/01272025-EHV-765-kV-ERCOT
  - Steady-state reliability studies
    - Significantly reduce power losses
    - Higher regional transfer capability
    - Sensitivity analysis with a reduced load level (~20 GW less overall load) showed major portions of the 765-kV STEP will still be needed to meet the reduced demand
  - Stability analysis
    - Increase the West Texas Export stability constraint limit
    - Improvement in system strength

Congestion Analysis

- Congestion analysis was also performed by using the 2024 RTP 2029 economic case for the 765-kV STEP Core Plan
  - 765-kV STEP Core Plan does not introduce significant new congestion in the study area
- The 2024 RTP studies showed that, in the long-term, 765-kV STEP Core Plan provides greater economic benefit than the traditional 345-kV plan
  - https://www.ercot.com/calendar/01272025-EHV-765-kV-ERCOT
  - Estimated in 2025 dollars, the TX 765-kV STEP reduces annual production cost by approximately $28 million and produces approximately $229 million more savings in consumer energy cost each year compared to the 345-kV plan in the long term

Generation Addition and Load Scaling Sensitivity Analyses

- Generation Addition Sensitivity Analysis
  - Per Planning Guide Section 3.1.3(4)(a), ERCOT performed a generation addition sensitivity by adding the new generation listed in Appendix A to the 2024 RTP 765-kV STEP Core Plan 2030 case. The additional resources were modeled following the 2024 RTP methodology. ERCOT determined relevant generators do not impact the Drill Hole to Sand Lake to Solstice 765-kV Line Project
- Load Scaling Sensitivity Analysis
  - Planning Guide Section 3.1.3(4)(b) requires an evaluation of the potential impact of load scaling on the criteria violations seen in this EIR. Starting 2024, ERCOT RTP adopted a new methodology of having one summer peak case for each study year with non-coincident peaks for each of the Weather Zones, which would eliminate the load scaling impact. The study case did not include load scaling as such load scaling sensitivity analysis is no longer needed

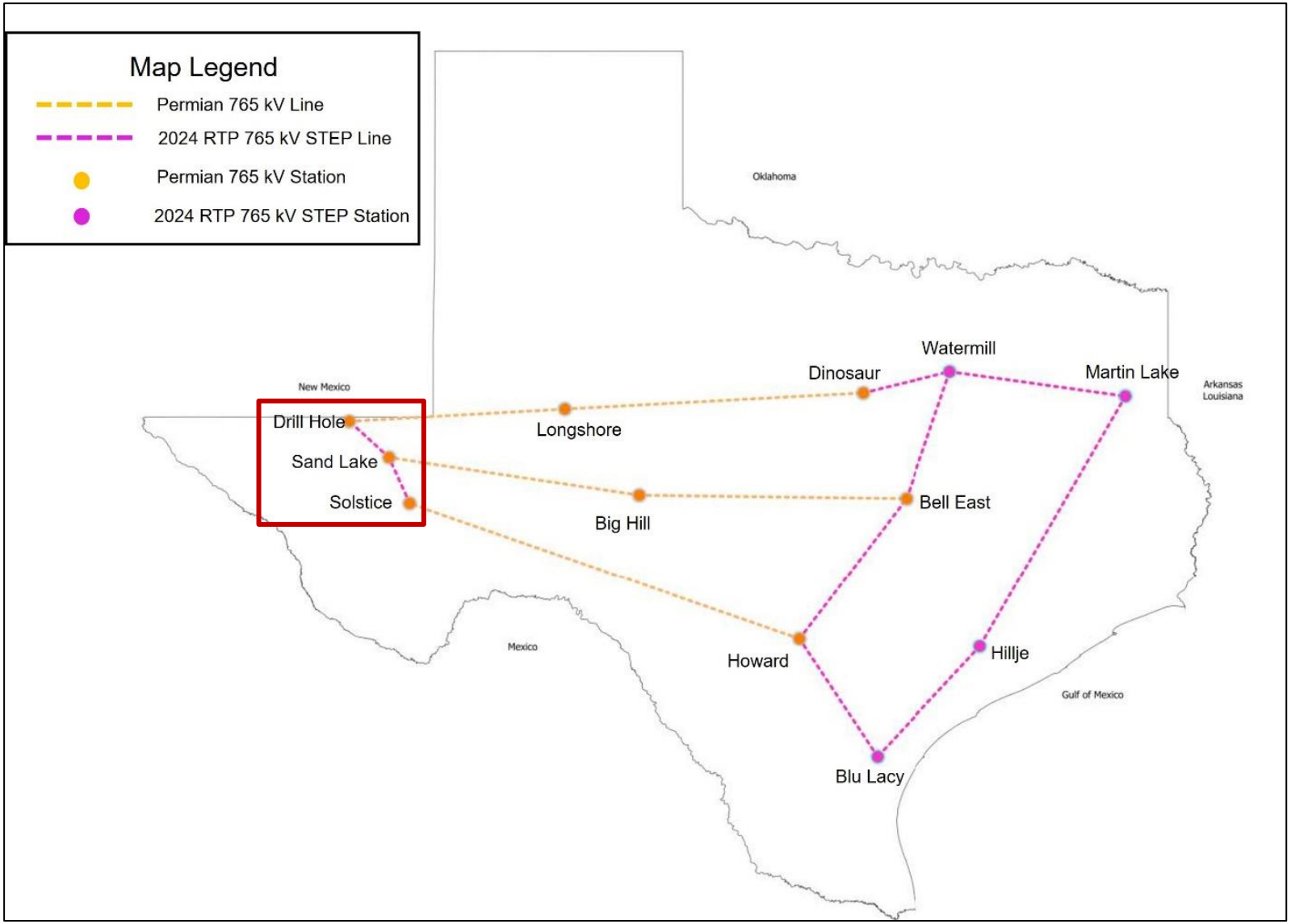
Subsynchronous Resonance (SSR) Assessment

- Subsynchronous Resonance (SSR) Assessment
  - Subsynchronous Resonance (SSR) Assessment was conducted for the Drill Hole to Sand Lake to Solstice 765-kV Line Project per Nodal Protocol Section 3.22.1.3
  - ERCOT found no adverse SSR impacts to the existing and planned generation resources at the time of this study

ERCOT Recommendation

- ERCOT recommends the Drill Hole to Sand Lake to Solstice 765-kV Line Project
  - Estimated Cost: approximately $742.2 million
  - Expected ISD: Summer 2030
    - The expected ISD is tentative and are subject to change based on requirements for various approvals, ROW acquisition, and/or construction progress
  - CCN filling will be required to
    - Construct the new 765-kV single-circuit transmission line from Drill Hole to Sand Lake, requiring approximately 57.6-mile new ROW; and construct the new 765-kV single-circuit transmission line from Sand Lake to Solstice, requiring approximately 46.8-mile new ROW

Map of ERCOT Recommended Project



ERCOT Recommended Project

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Next Step and Tentative Timeline

- Tentative timeline
  - EIR report to be posted in the MIS in November 2025
  - EIR recommendation to TAC in November 2025
  - Seek ERCOT Board of Directors endorsement in December 2025

Thank you!

Stakeholder comments also welcomed through:

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Appendix A – List of Units for Generation Addition Sensitivity Analysis

GINR	Project Name	Fuel	Projected COD	Max Capacity (~MW)	County
20INR0143	Tri-X Solar 1 SLF	SOL	12/01/2027	201.5	Crane
21INR0022	Red Holly Solar	SOL	06/01/2027	260.0	Dawson
21INR0029	Red Holly Storage 1	OTH	05/30/2028	50.0	Dawson
21INR0033	Red Holly Storage	OTH	05/30/2028	50.0	Dawson
21INR0265	Sisters Solar	SOL	05/31/2027	301.6	Ector
23INR0080	Soda Lake Solar 2 SLF	SOL	12/01/2027	201.7	Crane
23INR0340	Larkspur Energy Storage	OTH	05/05/2027	307.5	Upton
24INR0275	Picadillo BESS	OTH	12/15/2026	100.8	Martin
24INR0452	Longfellow Solar I	SOL	12/01/2026	178.2	Pecos
24INR0454	Longfellow Solar II	SOL	12/01/2026	207.4	Pecos
25INR0008	BasRanch (TEF - Due Diligence)	GAS	12/01/2028	1350.0	Ward
25INR0138	Champaign BESS	OTH	06/28/2027	201.1	Glasscock
25INR0143	Ariji BESS	OTH	06/28/2027	100.3	Howard
25INR0557	McCamey's Castle Battery	OTH	12/15/2025	409.6	Upton
26INR0359	Uva Creek Solar	SOL	08/25/2028	302.2	Borden
26INR0621	Juno 3 Solar	SOL	11/30/2027	500.0	Borden

Appendix A – List of Units for Generation Addition Sensitivity Analysis (cont.)

GINR	Project Name	Fuel	Projected COD	Max Capacity (~MW)	County
26INR0636	Lyra Storage	OTH	11/12/2026	500.0	Borden
27INR0056	Laurel Wind Energy Center	WIN	03/28/2027	311.6	Pecos
27INR0080	Laurel Storage Energy Center	OTH	03/28/2027	200.8	Pecos
27INR0355	Gardner Draw Solar	SOL	12/31/2027	200.0	Glasscock
27INR0434	Lyra Solar	SOL	09/15/2027	500.0	Borden
27INR0500	Antila Solar	SOL	11/30/2027	500.0	Borden