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American Electric Power Service Corporation (AEPSC) – Laredo Area Upgrade Project (26RPG004) – ERCOT Independent Review (EIR) Study Scope

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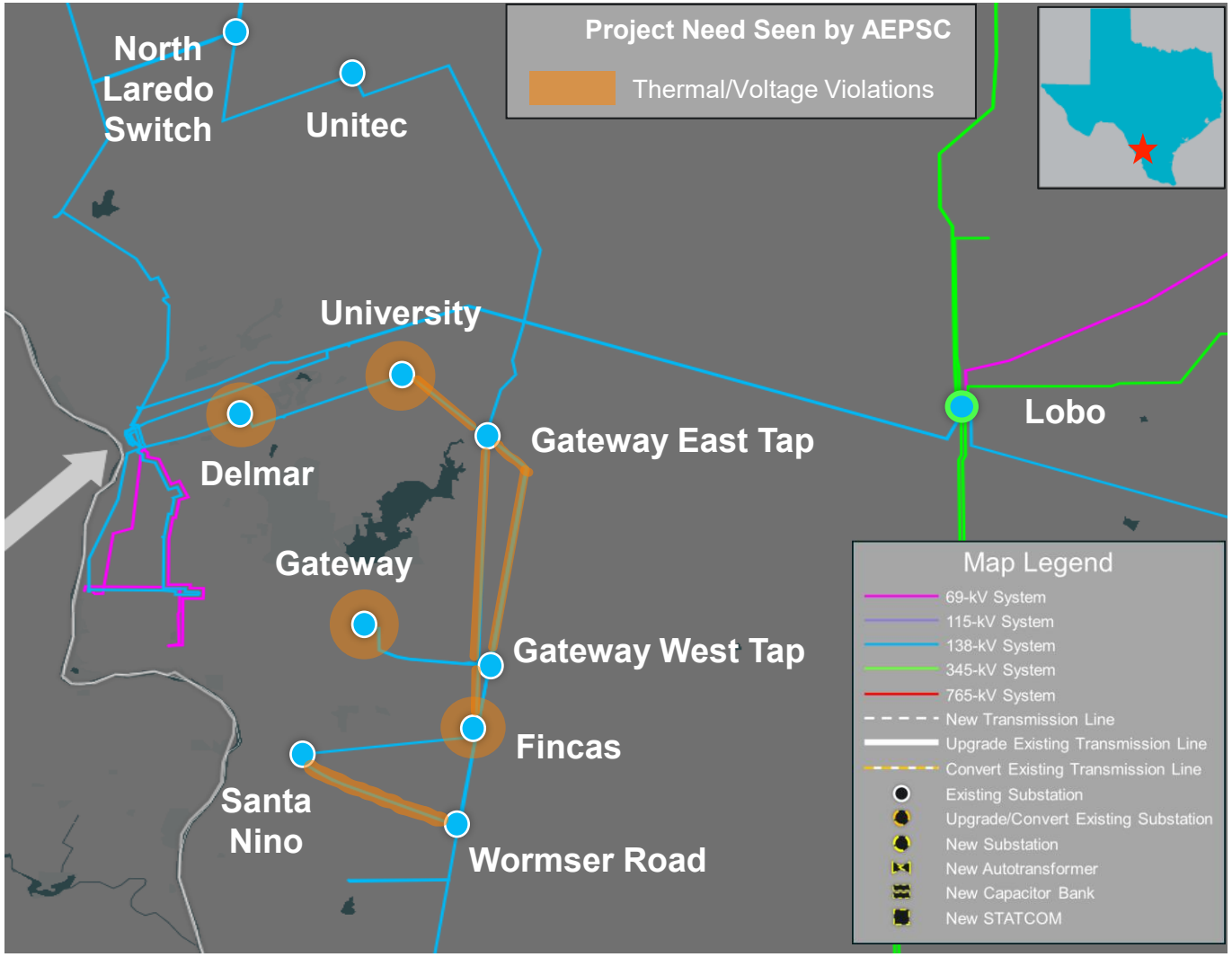
Introduction

American Electric Power Service Corporation (AEPSC) submitted the Laredo Area Upgrade Plan Project (26RPG004) for Electric Reliability Council of Texas' (ERCOT) Regional Planning Group (RPG) review in February 2026

- This is a Tier 2 project with an estimated cost of approximately $178.0 million and will require a Certificate of Convenience and Necessity (CCN)
- Estimated in-service date (ISD) is September 2029
- Addresses the thermal overloads and voltage violations seen by AEPSC in the Webb County in the South Weather Zone

This project is currently under ERCOT Independent Review (EIR)

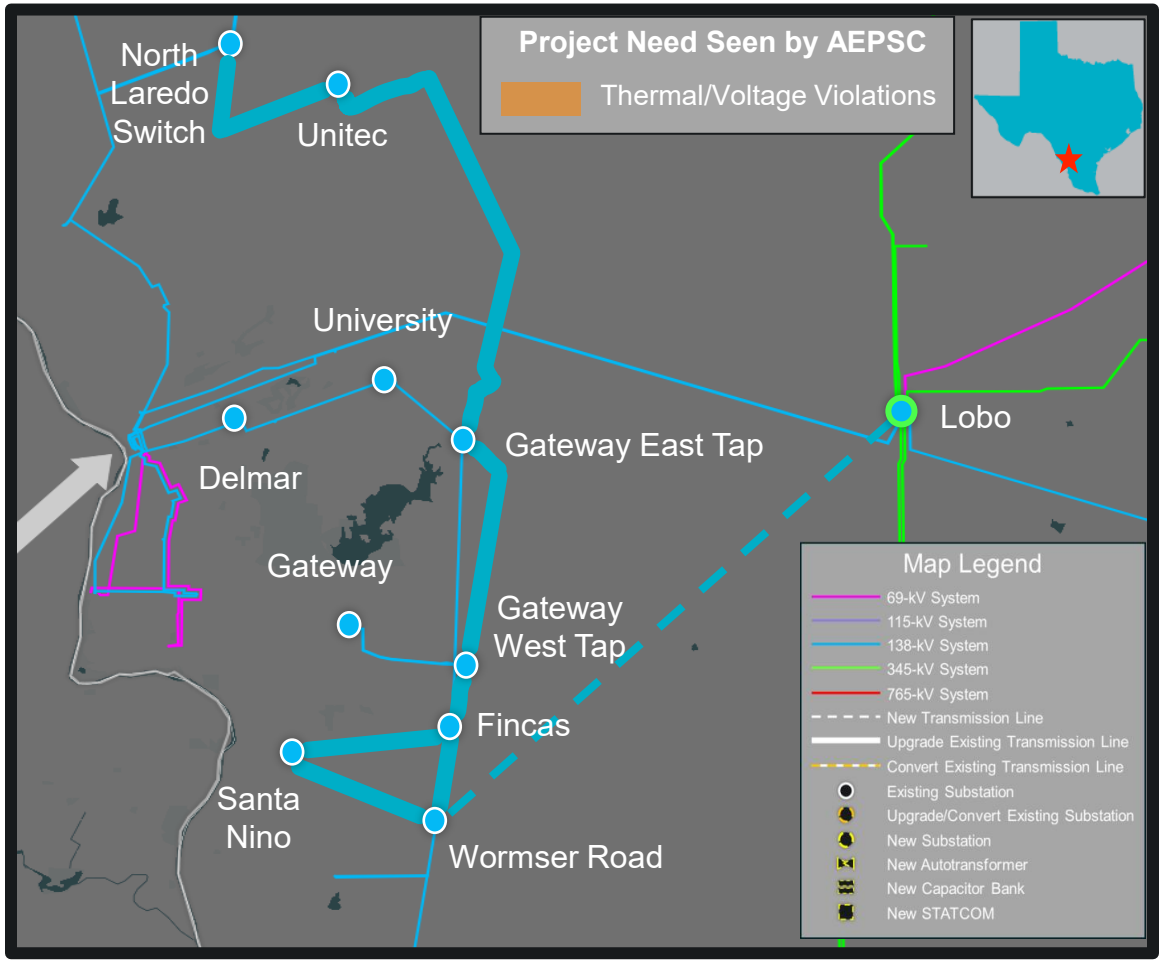
Study Area Map with Project Needs Seen by AEPSC



Proposed Project by AEPSC

Summary of Upgrades

- Construct a new 138-kV single-circuit transmission line for approximately 14.5 miles, requiring a new right of way (ROW)
- Rebuild existing 138-kV transmission lines for approximately 52.7 circuit miles
- Upgrade 138-kV substations as necessary to not limit any of the lines being rebuilt



Proposed Project by AEPSC (continued)

Upgrade Details

- Construct new Lobo to Wormser Road 138-kV single-circuit transmission line, which will require new ROW and need CCN, with normal and emergency ratings of at least 717 MVA, approximately 14.5 miles per circuit
- Rebuild existing North Laredo Switch to Unitec to Gateway East Tap 138-kV transmission line on existing ROW, with normal and emergency ratings of at least 717 MVA, approximately 14.5 miles on single-circuit, and 5.3 miles on double-circuit structures
- Rebuild existing Gateway East Tap to Wormser Road 138-kV double-circuit transmission line on existing ROW, with normal and emergency ratings of at least 717 MVA, approximately 3.4 miles per circuit
- Rebuild existing Fincas to Gateway West Tap 138-kV double-circuit transmission line on existing ROW, with normal and emergency ratings of at least 717 MVA, approximately 1.4 miles per circuit
- Rebuild existing Wormser Road to Santo Nino 138-kV double-circuit transmission line on existing ROW, with normal and emergency ratings of at least 478 MVA, approximately 3.3 miles per circuit
- Rebuild existing Fincas to Santo Nino 138-kV double-circuit transmission line on existing ROW, with normal and emergency ratings of at least 717 MVA, approximately 5.7 miles per circuit
- Upgrade all the 138-kV substations as necessary to not limit any of the lines proposed for rebuild

Study Assumptions

Study Region

- The project is located in the Webb County in the South Weather Zone and all transmission elements in counties those are electrically close will be monitored

Steady-State Base Case

- Final 2025 Regional Transmission Planning (RTP) 2030 summer peak load case, published on Market Information System (MIS) on December 22, 2025, will be updated to construct the study base case

Transmission Updates

- New transmission projects (listed in Appendix A), based on February 2026 Transmission Project and Information Tracking (TPIT) report and recently approved RPG project, will be added to the base case

Generation Updates

- New generation (listed in Appendix B) that met ERCOT Planning Guide Section 6.9(1) condition with Commercial Operation Date (COD) before the September 2029 (ISD) in the study area at the time of the study, but not already modeled in the RTP cases, will be added to the case based on February 2026 Generator Interconnection Status (GIS) report published in MIS in March 2026
- All generation will be dispatched consistent with the 2025 RTP methodology

Load and Reserve Updates

- Load level in the study area was kept consistent with the final RTP cases
- The reserve will be kept consistent with the 2025 RTP

Contingencies & Criteria

Contingencies for Study Region

- North American Electric Reliability Corporation (NERC) Reliability Standard TPL-001-5.1 and ERCOT Planning Criteria
  - P0 (System Intact)
  - P1, P2-1, P7 (N-1 conditions)
  - P2-2, P2-3, P4, and P5 (Extra High Voltage (EHV) only)
  - P3: G-1+N-1 (G-1: list in Appendix C)
  - P6-2: X-1+N-1 (X-1: list in Appendix C)

Criteria

- Monitor all 60-kV and above busses, transmission lines, and transformers in the study region (excluding generator step-up transformers)
- Thermal
  - Use Rate A for normal conditions
  - Use Rate B for emergency conditions
- Voltage
  - Voltages exceeding their pre-contingency and post-contingency limits
  - Voltage deviations exceeding 8% on non-radial load buses

Study Procedure

Need Analysis

- The reliability analysis will be performed to identify the need to serve the projected area load using the study base case

Project Evaluation

- Project alternatives will be tested to satisfy the NERC and ERCOT reliability requirements
- ERCOT may also perform the following studies
  - Maintenance Outage Evaluation
  - Long-Term Load-Serving Capability Assessment
- AEPSC will provide Cost Estimates and Feasibility Assessment

Additional Analyses

- Congestion analysis may be performed based on the recommended transmission upgrades to ensure that the identified transmission upgrades do not result in new congestion within the study area

Deliverables and Next Step

Tentative Timelines

- ERCOT will continue to evaluate proposed upgrades and the alternatives
- Provide status updates at the future RPG meetings
- ERCOT recommendation in Q3 2026

Key Takeaway: ERCOT recommendation in Q3 2026

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Thank you!
Questions/Comments?

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Appendix

- Appendix A – Transmission Projects Added
- Appendix B – Generation Added
- Appendix C – G-1 Generators and X-1 Transformers List

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Appendix A – Transmission Projects Added

TPIT/RPG	Project Name	Tier	Project ISD	County(s)
76569	Asherton: Rebuild 138 kV station	Tier 3	Apr-27	Dimmit
76576	Asherton to Uvalde: Convert to 138 kV	Tier 3	Jun-27	Dimmit
67320	Cruce to Reforzar: Construct New 345 kV Double Circuit Line	Tier 1	Sep-26	Jim Hogg
67318	Cruce: Construct New 345A kV Station	Tier 1	Nov-26	Jim Hogg
67322	Cenizo to Cruce: Construct New 345 kV Double Circuit Line	Tier 1	Nov-26	Webb
67324	Cruce to Del Sol: Construct New 345 kV Double Circuit Line	Tier 1	Nov-26	Jim Hogg
23RPG007	Asherton - Uvalde 138-kV Conversion Project	Tier 3	May-25	Dimmit, Uvalde, and Zavala
25RPG045	Alice Area Improvements Transmission Project	Tier 3	Apr-29	Jim Wells, Duval, Brooks

Appendix B – Generation Added

GINR	Project Name	Fuel	Project COD	Max-Capacity (~MW)	County
24INR0632	Cedro Hill Wind Repower	WIN	04/01/2026	159.9	Webb
25INR0109	Sun Cactus Solar	SOL	10/15/2027	120.6	Duval
27INR0126	Corvus Solar	SOL	11/12/2028	201.5	Webb
27INR0126	Corvus Solar	SOL	11/12/2028	201.5	Webb

Appendix C: List of G-1 Generators and X-1 Transformers Tested

Generator	Transformer
LAREDO CTG Unit 4	FOWLERTON 345/138-kV
LAREDO CTG Unit 5	LOBO AUTOTRANSFORMER-A 345/138-KV
FRONTERA ENERGY CENTER COMBINED CYCLE TRAIN	LOBO AUTOTRANSFORMER-B 345/138-KV