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Brazos Electric Cooperative (BEC) San Miguel to Marion 345-kV Rebuild Project (26RPG026) – ERCOT Independent Review (EIR) Study Scope

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Regional Planning Group (RPG) Meeting
August 18, 2026

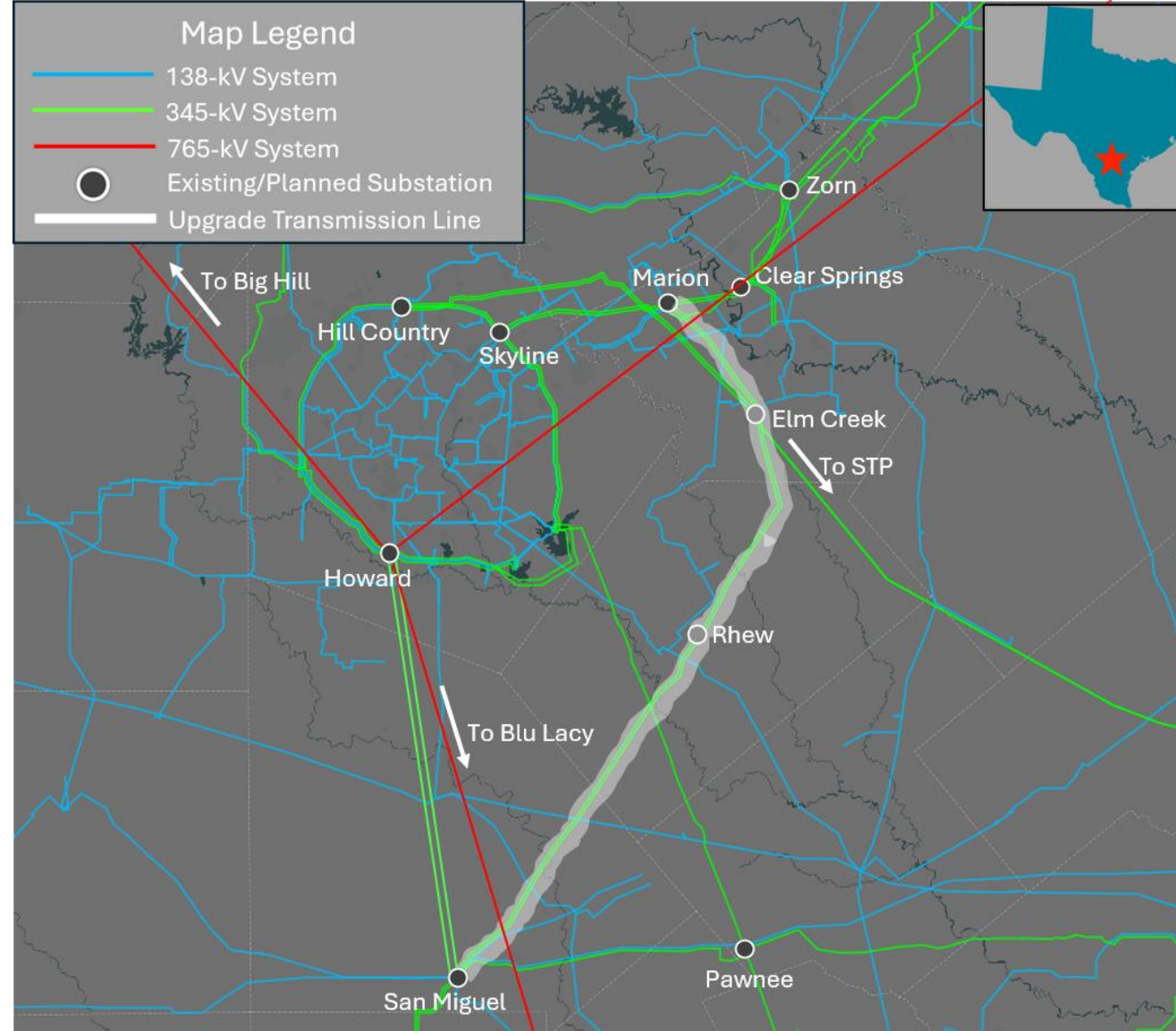
Introduction

Brazos Electric Cooperative (BEC) submitted the San Miguel to Marion 345-kV Line Rebuild Project for Electric Reliability Council of Texas' (ERCOT) Regional Planning Group (RPG) review in July 2026

- This is a Tier 1 project with an estimated cost of approximately \$261 million and would not require a Certificate of Convenience and Necessity (CCN)
- Estimated in-service date (ISD) is Spring 2031
- Addresses BEC aging infrastructure issues in the Atascosa, Wilson, Guadalupe, and Comal counties in the South and South Central Weather Zone due to the designed end of life of existing structures.
 - The existing structures of the San Miguel to Elm Creek to Miguel 345-kV double-circuit transmission lines were installed in 1980 and have exceeded their designed end of life.
- Addresses thermal overloads identified in the 2025 RTP Project (2025-SC20)

This project is currently under ERCOT independent Review (EIR)

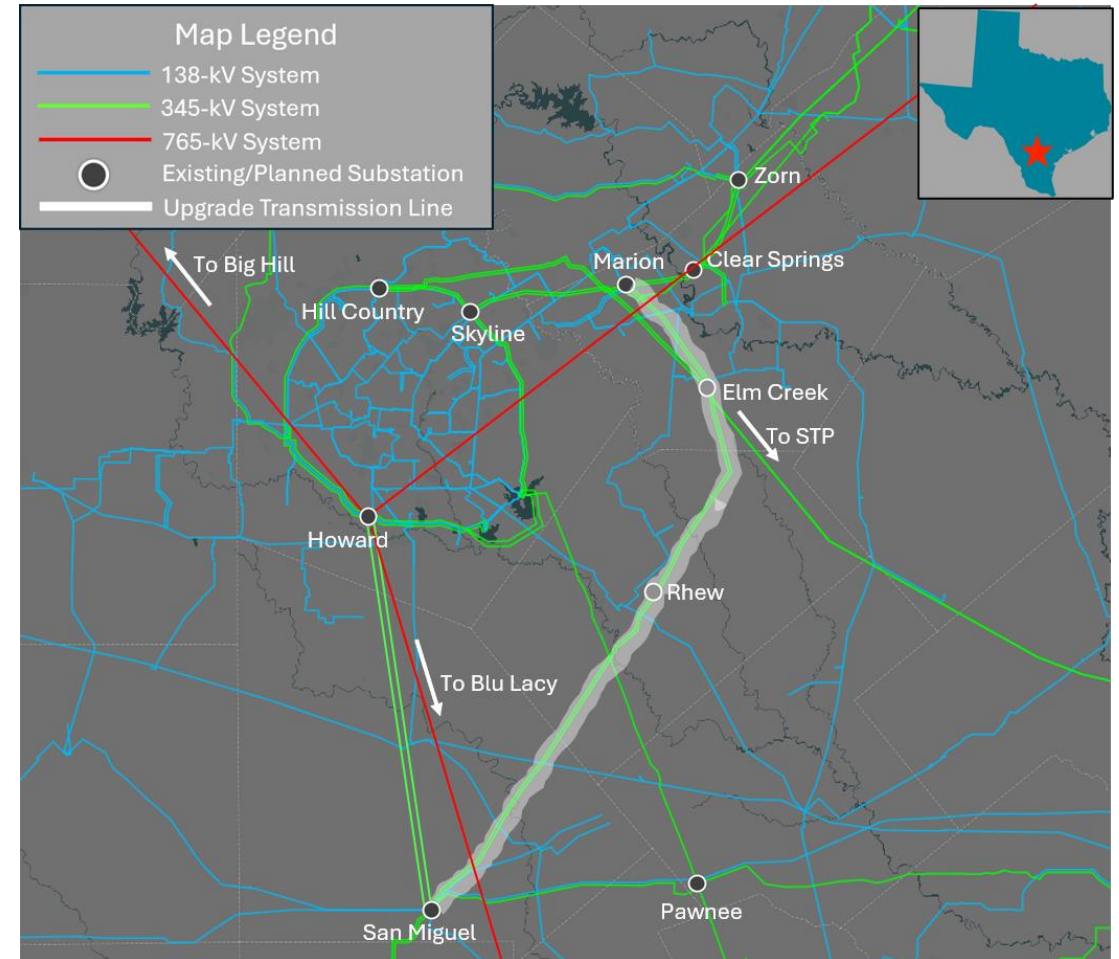
Study Area Map with Project Needs Seen by BEC



Proposed Project by BEC

Overall Project Summary

- Rebuild existing 345-kV double circuit transmission line segments, approximately 77.0 miles
- Upgrade equipment in existing substations



Proposed Project by BEC (continued)

Project Details

- Rebuild the planned San Miguel to Rhew substation 345-kV double-circuit transmission line using double-circuit structures on the existing right of way (ROW), with normal and emergency ratings of at least 2988 MVA and 2988 MVA respectively, for approximately 39.4 miles per circuit.
- Rebuild the planned Rhew to Elm Creek substation 345-kV double-circuit transmission line using double-circuit structures on the existing ROW, with normal and emergency ratings of at least 2988 MVA and 2988 MVA respectively, for approximately 24.0 miles per circuit.
- Rebuild the existing Elm Creek to Marion substation 345-kV double-circuit transmission line using double-circuit structures on the existing ROW, with normal and emergency ratings of at least 2988 MVA and 2988 MVA respectively, for approximately 13.9 miles per circuit.
- BEC will replace BEC owned 345 kV equipment in the LCRA TSC Marion substation to be capable of at least 5,000 A operation
- STEC will upgrade 345 kV equipment in the San Miguel substation to be capable of at least 5,000 A operation
- LCRA TSC will upgrade 345 kV equipment in the Marion substation to be capable of at least 5,000 A operation

Study Assumptions

Study Region

- The project is located in Atascosa, Wilson, Guadalupe, and Comal counties in the South and South Central Weather Zones and all the transmission elements that are electrically close will be monitored

Steady-State Base Case

- Final [2025 Regional Transmission Planning \(RTP\)](#) 2031 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 A1](#)), based on July 2026 [Transmission Project and Information Tracking \(TPIT\) report](#) and/or recently approved RPG project, will be added to the study base case
- Transmission projects (listed in [Appendix A2](#)) identified in the 2025 RTP in the study area that have not been approved by RPG will be removed

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 Spring 2031 (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 June 2026 [Generator Interconnection Status \(GIS\) report](#) published in MIS in July 2026
- All generation will be dispatched consistent with the 2025 RTP methodology

Load and Reserve Updates

- Load level in the study region will be kept consistent with the final RTP cases; and
- 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 buses, 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 in the study area 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
- TSP(s) will provide Cost Estimates and Feasibility Assessment

Additional Analyses may be considered for the ERCOT preferred option

- Generation Addition and Load Scaling Sensitivity Analyses
 - ERCOT Planning Guide Section 3.1.3(4)
- Subsynchronous Oscillations (SSO) Assessment
 - ERCOT Nodal Protocol Section 3.22.1.3(2)
- Dynamic Stability Analysis
- Congestion analysis may be performed based on the preferred 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

- Provide status updates at the future RPG meetings
- ERCOT recommendation in Q4 2026

Key Takeaway: ERCOT recommendation in Q4 2026

Thank you!

Questions/Comments?

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Appendix

- Appendix A1: Transmission Projects Added
- Appendix A2: Transmission Projects Removed
- Appendix B: Generation Projects to be Added
- Appendix C: G-1 Generators and X-1 Transformers List to be Tested

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Appendix A1: Transmission Projects Added

TPIT / RPG No	Project Name	Tier	Project ISD	County(s)
25RPG013	Reactive Power Planning Project	1	Oct-31	Bexar
25RPG017	Helotes 345/138-kV Switching Station and Autotransformer Addition at Eastside Switching Station Project	1	Oct-31	Bexar
84898	New Eastside Switching Station	1	Jun-29	Bexar
104639	LCRA TSC Lytton Springs - Zorn Transmission Line Upgrade	1	May-29	Caldwell
85008	Add Rio Medina - Legend Falls Tline	2	Jul-27	Medina
100676	Install a 50MVAR Capacitor Bank at the future Eastside Substation	2	Jun-29	Bexar
92890	Add Fresa load serving substation	4	Apr-27	Atascosa
109898	Construct New Alamo City 138kV Substation	4	May-27	Bexar
92743	Rebuild ~3 miles of double-ckt from VLSI to Grissom transmission line with normal and emergency ratings of at least 478MVA	4	May-27	Bexar
100257	Hill Country Auto #4 will be replaced Summer 2027 to a 10% impedance auto.	4	May-27	Bexar
91382	Henne_Kohlenberg_Transmission_Line_Addition	4	May-27	Comal
104557	Dale to Lockhart Transmission line overhaul	4	May-28	Caldwell
99827A	LCRATSC_Canyon-Gofort_Transmission_Line_Overhaul	4	May-28	Hays
99827B	LCRATSC_Canyon-Gofort_Transmission_Line_Overhaul	4	May-28	Hays
99827C	LCRATSC_Canyon-Gofort_Transmission_Line_Overhaul	4	May-28	Hays
100182	Henne_Zorn_Transmission_Line_Upgrade	4	May-28	Comal
99802	Aetos: Construct New 138 kV Station	4	May-28	Atascosa
100693	Install a 35.72MVAR Capacitor Bank at Legend Falls Substation	4	Jun-28	Medina
100678	Install a 50MVAR Capacitor Bank at Fratt Substation	4	Jun-28	Bexar
100691	Install a 50MVAR Capacitor Bank at Howard Substation	4	Jun-28	Bexar
91567	BEPC_TPIT91567_RHEW	4	Jun-28	Wilson
104460	Kingsbury Substation Addition	4	Oct-28	Guadalupe
104628	LCRATSC Joliet Substation Addition	4	Dec-28	Caldwell

Appendix A1: Transmission Projects Added (Cont'd)

TPIT / RPG No	Project Name	Tier	Project ISD	County(s)
109933	Install new 345kV transmission loop in conjunction with S-0996 Nockenut switchyard and 1st structure outside new switchyard for Point of Interconnect (POI)	4	Jan-29	Guadalupe
109966	The New Generation Facility will be looped into the 345 kV Elm Creek to South Texas Project (STP) circuit 1	4	May-29	Guadalupe
109950	Install a new 138kV transmission loop in conjunction with the S-1086 Taormina BESS switchyard project	4	May-29	Bexar
100687	Install a 50MVAR Capacitor Bank at Helotes Substation	4	Jun-29	Bexar
100702	Install a 28.57MVAR Capacitor Bank at Tallly Rd Substation	4	Jun-29	Medina
109972	Construct a new CPS Owned switchyard to connect new Lavender BESS Generation Project	4	Jul-29	Bexar
99857	LCRATSC_Gooseneck_Substation_Addition	4	Dec-29	Guadalupe
109958	Install a new 138kV transmission loop and switchyard to connect new Moonstone Solar PV Generation	4	Jan-30	Wilson
100165	Gristmill_Substation_Addition	4	May-30	Hays
99784	Surreal: Construct New 345 kV Station	4	Nov-30	Medina

Appendix A2: Transmission Projects Removed

RTP Project ID	Project Name	County(s)
nzal	Lytle (5290) Area 138-kV Line Upgrades	Medina
2025-SC20	Cachena (5068) to Elm Creek (5133) and Elm Creek (5133) to Marion (7044) 345-kV Line Upgrades	Guadalupe, Wilson
2025-SC09	Zorn (7180) Area 138-kV Line Upgrades	Comal, Guadalupe
2025-SC07	Medina (5305) to 36th St (5427) 138-kV Line Upgrade	Bexar
2025-SC17	Martinez (5295/5294) 345/138-kV Transformer Addition	Bexar
2025-SC05	Central Texas 345-kV Line Upgrades	Bastrop, Caldwell, Guadalupe, Travis

Appendix B: Generation Projects to be Added

GINR	Project Name	Fuel	Project COD	Max Capacity (~MW)	County
22INR0467	Bird Dog Energy Storage	OTH	09/30/2026	60.4	Live Oak
23INR0231	Hoke Solar	SOL	07/05/2027	95.29	Gonzales
23INR0232	Hoke Storage	OTH	07/05/2027	33.17	Gonzales

Appendix C: List of Generators and Transformers to be Tested

Generator	Transformer
CACHENA SOLAR SLF	MARION5 X2 (345/138-kV)
L_JOHNDUS_1Y	MIGUEL X1 (345/138-kV)
ELMCREEK_S2	ZORN X1 (345/138-kV)
FOWLERTONSW5_S1	