



## STEC Medina Load Project – ERCOT Independent Review (EIR) Scope

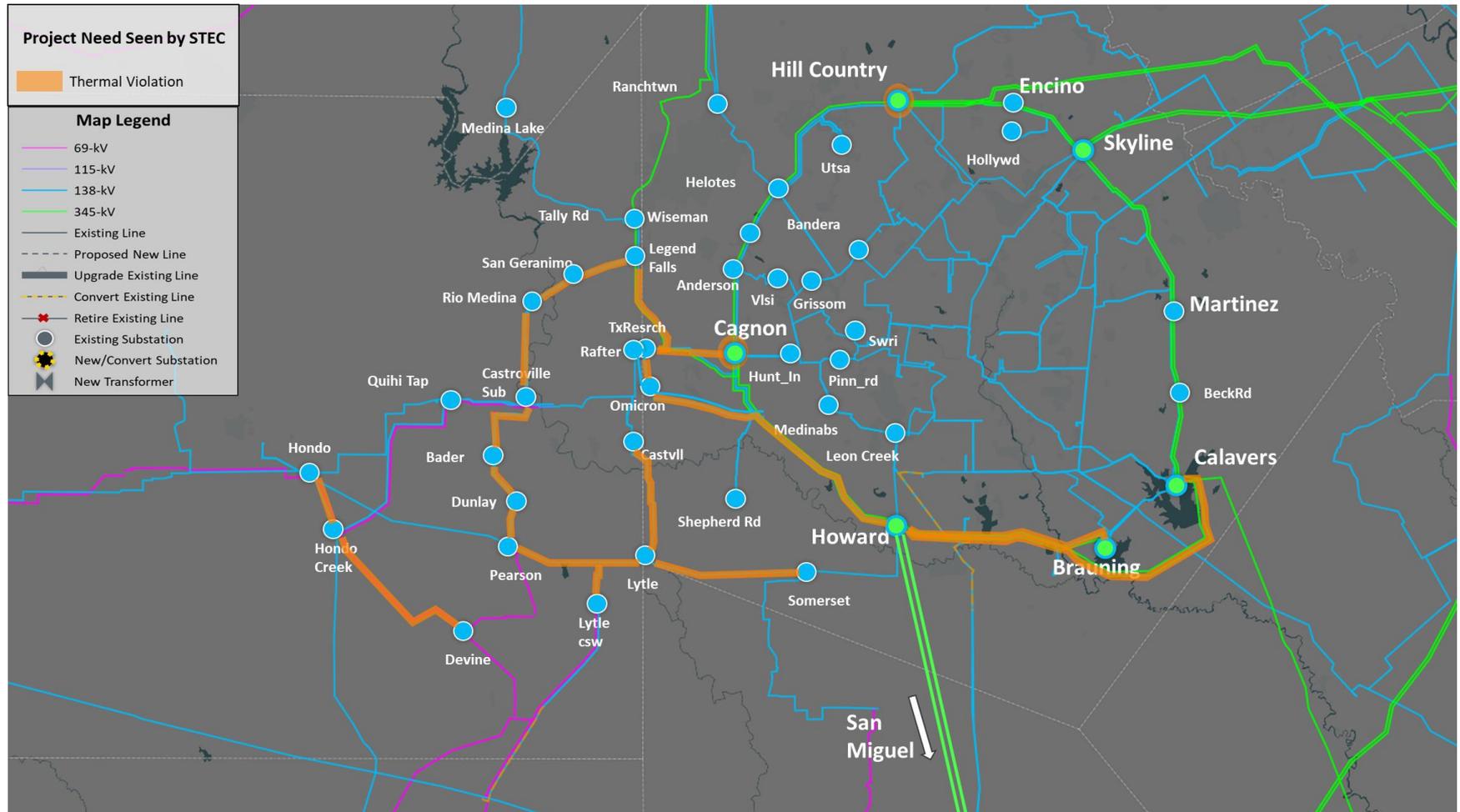
Abishek Penti

RPG Meeting  
February 2, 2026

# Introduction

- STEC submitted the Medina Load Project for Regional Planning Group (RPG) review in December 2025.
  - This Tier 1 project is estimated to cost \$492 million and will require a Certificate of Convenience and Necessity (CCN)
  - Estimated in-service date (ISD) is June 2031
  - To address the reliability concerns seen by STEC with addition of approximately 1 GW Load
- ERCOT will incorporate this ERCOT Independent Review (EIR) into the ongoing EIR for the CPS Large Load Project (25RPG020)

# Study Area Map with the violations as seen by STEC



# Project Proposed by STEC

- Add the second 138 kV circuit to the existing Pearson to Castroville corridor, which includes the following line segments: Pearson to Dunlay, Dunlay to the new STEC Alsatian station, new STEC Alsatian station to Bader, and Bader to Castroville, with a rating of 426/474 MVA Normal/Emergency rating.
- Construct a new STEC-owned Alsatian 345/138 kV station on the Bader to Pearson 138 kV line approximately 0.8 miles from the Bader station with two parallel 345/138 kV autotransformers with at least 675/675 MVA Normal/Emergency rating.
- Install a new 162 MVAR capacitor bank on the 138 kV side of the new STEC-owned Alsatian 345/138 kV station (Rodgers and Edwards POI).
- Construct a new CPS Energy-owned three-terminal 345 kV switching station on the Kendall to Cagnon 345 kV line approximately 5 miles from Cagnon station.
- Construct a new 345 kV transmission line from CPS Howard station to the new STEC-owned Alsatian 345/138 kV station with at least 1746/1746 MVA Normal/Emergency ratings. This line will have a single circuit installed with double circuit capable structures and will require a CCN.

# Project Proposed by STEC

- Construct a new 345 kV transmission line from a new CPS 345 kV switching station in the Cagnon to Kendall 345 kV transmission line to the new STEC-owned Alsatian 345/138 kV station with at least 1746/1746 MVA Normal/Emergency ratings. This line will have a single circuit installed with double circuit capable structures and will require a CCN.
- Install a new capacitor bank with at least 19.2 MVAR at STEC's Natalia 69 kV station.
- Rebuild STEC's Palo Duro to Dilley 138 kV line with a conductor rated at least 312/312 MVA Normal/Emergency rating.
- Install a new capacitor bank with at least 134 MVAR at AEP's Lytle 138 kV station.
- Install a new capacitor bank with at least 5.6 MVAR at AEP's Asherton 138 kV station.
- Rebuild CPS Energy's Bandera to Hamilton Wolf 138 kV line with conductors rated at least 371/371 MVA Normal/Emergency rating.
- Rebuild CPS Energy's Cachena to Elm creek 345 kV line with conductors rated at least 1250/1250 MVA Normal/Emergency rating.

# Project Proposed by STEC

- Rebuild CPS Energy's Howard to Spruce 345 kV line with conductors rated at least 1580/1580 MVA Normal/Emergency rating.
- Rebuild CPS Energy's Howard to Braunig 345 kV with conductors rated at least 1457/1457 MVA Normal/Emergency rating.
- Rebuild CPS Energy's/AEP's Lytle to Lytle 138 kV line with conductors rated at least 354/354 MVA Normal/Emergency rating.
- Upgrade CPS Energy's Hill Country 345/138 kV autotransformers #3 and #4 to at least 740/740 MVA Normal/Emergency rating.

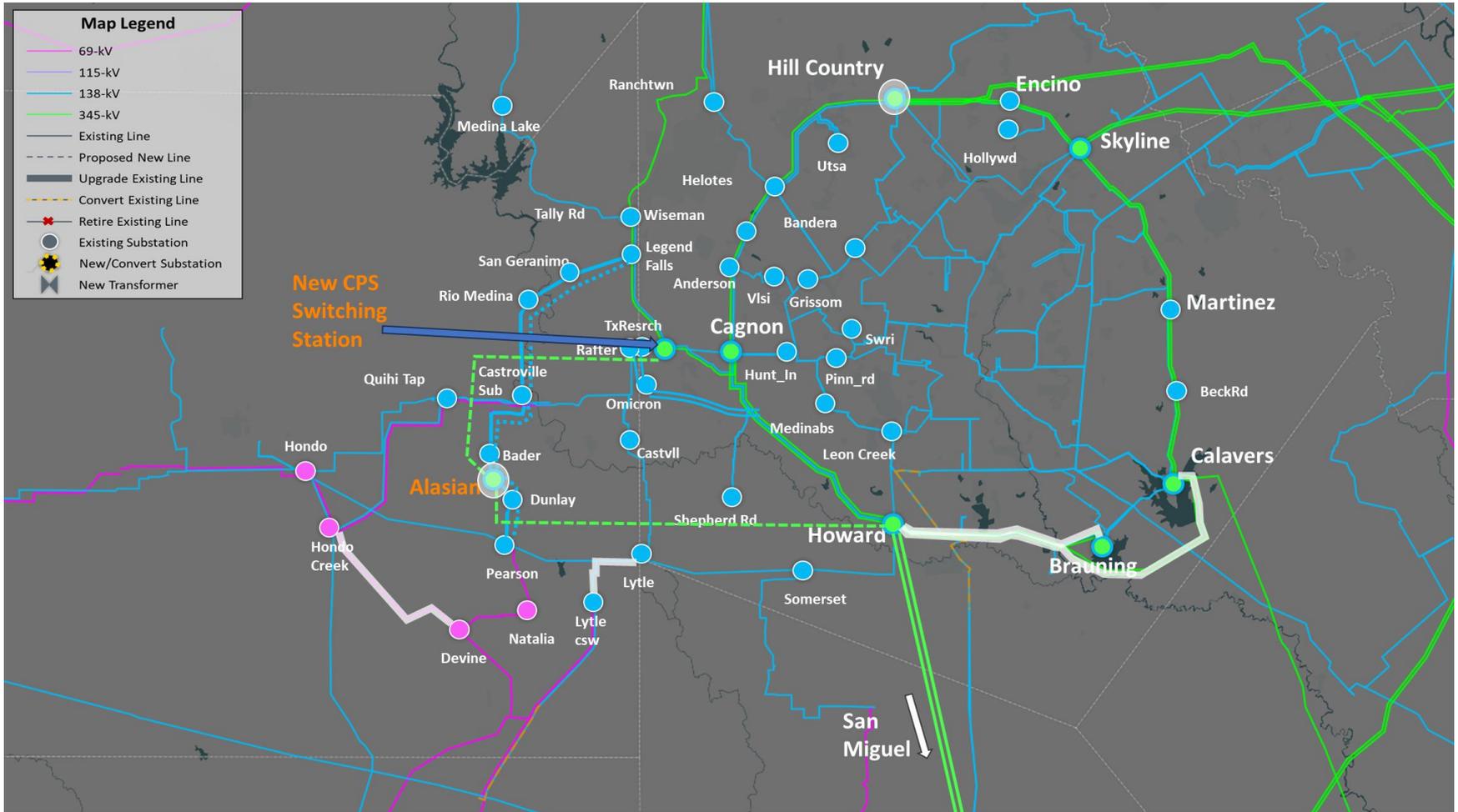
# Additional Project Upgrades Proposed by STEC

- Install a third 345/138kV autotransformer in parallel at the new Alsatian 345/138 kV station with at least 675/675 MVA Normal/Emergency rating.
- Add the second 138 kV circuit along the existing Legend Falls to STEC Castroville corridor, which includes the following line segments: Legend Falls to San Geronimo new station, San Geronimo to Rio Medina, and Rio Medina to Castroville, with a rating of 426/474 MVA Normal/Emergency rating.
- Install an additional 223 MVA of reactive support at the new Alsatian 345/138 kV Station.
- Install a new capacitor bank with at least 55.01 MVA at Pearsall Switching Station 69 kV bus.
- Rebuild STEC's Hondo Creek to Devine 69 kV line with conductors rated at least 109/109 MVA Normal/Emergency rating.
- Install a new capacitor bank with at least 9.2 MVA at CPS Energy's Somerset 138kV station.
- Rebuild AEP's Big Foot to Pleasanton 138 kV line with conductors rated at least 147/147 MVA Normal/Emergency rating.

# Additional Project Upgrades Proposed by STEC

- Rebuild CPS Energy's Lytle to Somerset 138 kV line with conductors rated at least 339/339 MVA Normal/Emergency rating.
- Rebuild CPS Energy's Omicron to Rafter 138 kV line with conductors rated at least 642/642 MVA Normal/Emergency rating.
- Rebuild CPS Energy's Cagnon to Texas Research 138 kV with conductors rated at least 465/465 MVA Normal/Emergency rating.

# Project Proposed by STEC



# Study Assumptions Base Case

- Study Region
  - Bexar county in South Central Weather Zone, focusing on the transmission elements near the Medina, Atacosa, Bandera, Kendal, Comal, Wilson and Guadalupe Counties.
  - Monitor surrounding counties that are electrically close to the area
- Steady-State Base Case
  - Final 2025 Regional Transmission Planning (RTP) 2031 summer peak case was used as a seed case, posted in Market Information System (MIS), will be updated to construct the summer peak load study base case
    - Case: 2025RTP\_2031\_SUM\_12222025
    - Link: <https://mis.ercot.com/secure/data-products/grid/regional-planning>

# Study Assumptions – Transmission

- Based on the October 2025 Transmission Project and Information Tracking (TPIT) posted on MIS, projects with in-service dates before June 1, 2031, within the study area will be added to the study base case if not already modeled in the case
  - TPIT Link: <https://www.ercot.com/gridinfo/planning>
  - See Appendix A for a list of transmission projects added
- Transmission projects identified in the 2025 RTP as placeholder projects within the study area will be removed to develop the study base case
  - See Appendix B for a list of placeholder projects removed
- The following projects are also included in the base case development
  - CPS Helotes 345/138-kV Switching Station and Autotransformer Addition at Eastside Switching Station Project and Reactive Power Planning Project

# Study Assumptions – Generation

- New generation that met Planning Guide Section 6.9(1) condition with Commercial Operation Date (COD) before the end of June 1, 2031, 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 the December 2025 Generator Interconnection Status (GIS) report posted in MIS in January 2026
  - GIS Link: <https://www.ercot.com/gridinfo/resource>
  - See Appendix C for a list of generation projects added
- Generation will be dispatched consistent with the 2025 RTP methodology
- All recent retired/indefinitely mothballed units will be reviewed and opened (turned off), if not already reflected in the 2025 RTP final case

# Study Assumptions – Load & Reserve

- Load in study area
  - New loads in the study area will be added to the study base case
- Reserve
  - Load outside of study Weather Zone(s) will be adjusted to maintain the reserve consistent with the 2025 RTP

# Contingencies & Criteria

- Contingencies for Study Region
  - NERC TPL-001-5.1 and ERCOT Planning Criteria
  - Link: <http://www.ercot.com/mktrules/guides/planning/current>
    - P0 (System Intact)
    - P1, P2-1, P7 (N-1 conditions)
    - P2-2, P2-3, P4, and P5 (345-kV only)
    - P3: G-1+N-1 (G-1: Leon Creek U1, San Miguel U1, Sunray Solar U1, JK Spruce U1 Units)
    - P6: X-1+N-1 (X-1: Cagon, Hill Country, Howard 345/138-kV transformer)
- 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
    - Planned maintenance outage
    - Long-Term Load-Serving Capability Assessment
  - TSP(s) will provide Cost and Feasibility Assessment
- Generation Addition and Load Scaling Sensitivity Analyses
  - Planning Guide Section 3.1.3(4)
- Subsynchronous Oscillation (SSO) Assessment
  - Nodal Protocol Section 3.22.1.3(2)
- Congestion Analysis
  - 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

- Tentative Timelines
  - Status updates at future RPG meetings
  - Final recommendation – Q2 2026

*Thank you!*



Stakeholder comments also welcomed through:

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# Appendix A – Transmission Projects

- List of transmission projects added to study base case

RPG/TPIT No	Project Name	Tier	Project ISD	TSP
67329	San Miguel to Cruce 345 kV lines	Tier 1	Dec-26	STEC
99207	Rebuild (5.4 miles) Cagnon to VLSI transmission line to at least 698MVA	Tier 1	May-28	CPS
99857	LCRATSC_Gooseneck_Substation_Addition	Tier 1	Sep-28	LCRATSC
99922	Green Valley Substation Addition	Tier 1	Dec-28	LCRATSC
91312	Austrop - Zorn Transmission Line Upgrade	Tier 1	May-29	LCRATSC
98595	Solstice to Howard: Construct New 765 kV Single Circuit Line	Tier 1	Dec-30	AEP TNC
81594	Dunlay substation	Tier 2	Apr-26	STEC
71917	Upgrade STEC castroville to Pearson to 138kV	Tier 2	Apr-26	STEC
73098	Castroville Cut-in 138 kV	Tier 2	Oct-26	ETT
81590	Rio Medina substation	Tier 2	Jan-27	STEC
85008	Add Rio Medina - Legend Falls Tline	Tier 2	Jul-27	STEC
99784	Lytle: Expand 345 kV Station	Tier 2	Nov-30	AEP TCC
61404	Boerne Split-Welfare Transmission Line Upgrade	Tier 3	Jan-26	LCRATSC
76576	Asherton to Uvalde: Convert to 138 kV	Tier 3	Mar-26	AEP TCC
76569	Asherton: Rebuild 138 kV station	Tier 3	Dec-26	AEP TCC
61406	Kendall - Welfare Transmission Line Upgrade	Tier 3	Jun-27	LCRATSC
91392	Bergheim_Autotransformer_Upgrade	Tier 3	Dec-27	LCRATSC

# Appendix A – Transmission Projects Cont.

- List of transmission projects added to study base case

RPG/TPIT No	Project Name	Tier	Project ISD	TSP
100285	Comfort_Kendall_Transmission_Line_Upgrade	Tier 3	May-28	LCRATSC
67915	Asherton to West Batesville: Rebuild 138 kV Line	Tier 3	Nov-31	AEP TCC/ETT
99187	This involves moving Harmony to a different bus/bay at Hill Country to alleviate the loading on HC auto 3 & 4.	Tier 4	Jan-26	CPS
44946	CPSE_New_Scenic_Loop_138kV_Load_Serving_Station	Tier 4	Jan-26	CPS
80319	Devine: Install Cap Bank	Tier 4	Mar-26	ETT
71319	Upgrade Pearsall Station	Tier 4	May-26	STEC
99904	Install a new 138kV transmission line approximately .1 miles long to connect the generator's interconnection facilities to Leon Creek Switchyard.	Tier 4	May-26	CPS
99185	This involves moving Potranco to a different bus/bay at Cagnon to alleviate the loading on Cagnon auto 3 & 4.	Tier 4	May-26	CPS
45029	Grandview Highland Hills Rebuild	Tier 4	Jun-26	CPS
76242	Lytle: Construct New 138 kV Terminal	Tier 4	Aug-26	ETT
73063	Big Foot to Lytle: Convert to 138 kV	Tier 4	Aug-26	AEP TCC
72268	CPSE_New Ingram Rd Substation	Tier 4	Oct-26	CPS
45136	CPSE_New Midtown Substation	Tier 4	Dec-26	CPS
92743	Rebuild ~3 miles of double-ckt from VLSI to Grissom transmission line with normal and emergency ratings of at least 478MVA	Tier 4	May-27	CPS

# Appendix A – Transmission Projects Cont.

- List of transmission projects added to study base case

RPG/TPIT No	Project Name	Tier	Project ISD	TSP
100257	Hill Country Auto #4 will be replaced Summer 2027 to a 10% impedance auto.	Tier 4	May-27	CPS
91708	New San Geronimo Substation	Tier 4	Jul-27	STEC
80315	Big Foot to Pearsall: Convert to 138 kV	Tier 4	Dec-27	AEP TCC
80317	Dilley Switch to Pearsall: Convert to 138 kV, Reroute from Dilley to Dilley Switch, Rebuild Dilley to Dilley Switch 69 kV, and Double Circuit Dilley Switch to Pearsall with Dilley to Dilley Switch	Tier 4	Dec-27	AEP TCC
99802	Aetos: Construct New 138 kV Station	Tier 4	Dec-27	AEP TCC
73100	Asherton to Piloncillo: Rebuild 138 kV Line	Tier 4	Dec-27	AEP TCC
76768	Upgrade Pearson -Pearsall	Tier 4	May-28	STEC
45125	Quintana Rd to South San Rebuild	Tier 4	May-28	CPS
2308	36th St to Merida - 138 kV Transmission Line Rebuild	Tier 4	May-28	CPS
81659	Lytle: Construct New 138 kV Terminal	Tier 4	Dec-28	AEP TCC/ETT
3021	Sulphur Springs - New 138kV Substation	Tier 4	May-29	CPS
4320	CPSE_Brooks to Chavaneaux MLSE	Tier 4	Jan-30	CPS
2304	Chavaneaux_Chavaneaux Tap Rebuild (Brooks to Chavaneaux ckt)	Tier 4	Jan-30	CPS
1549	Devine Switch breaker addition	Tier 4	Dec-30	STEC

# Appendix A – Transmission Projects Cont.

- List of transmission projects added to study base case

RPG/TPIT No	Project Name	Tier	Project ISD	TSP
45068	Merida to Harlandale Rebuild	Tier 4	May-31	CPS
57910	Uvalde to West Batesville: Rebuild 138 kV Line	Tier 4	Nov-31	AEP TCC
50647	CPSE_Merida to Westside MLSE	Tier 4	Jan-32	CPS
76790	Upgrade Pearsall Auto	Tier 4	May-32	STEC
2306	Randolph - 138 kV Substation Equipment Upgrade	Tier 4	Jun-32	CPS
3334	Fort Sam to Kirby and Fort Sam to Tenth Street MLSE Upgrade	Tier 4	Dec-32	CPS
73364	CPSE_New_Omicron_Substation	Tier 4	Oct-25	CPS
88046	Rebuild Omicron to Rafter	Tier 2	Oct-25	CPS
55873	Upgrade Moore to Hondo Creek 138 kV line	Tier 2	Dec-25	STEC
70536	New 138 kV Verde Circle Substation	Tier 4	Dec-25	CPS

# Appendix B – Transmission Projects

- List of transmission projects removed from the study base case

TPIT No	Project Name	County
2025-SC07	Medina (5305) to 36th St (5427) 138-kV Line Upgrade	Bexar
2025-SC11	Lytle (5290) Area 138-kV Line Upgrades	Medina
2025-SC15	Omicron (5326) Area 138-kV Line Additions and Upgrades	Bexar
2025-SC16	Hamwolf (5187) to Bandera (5020) 138-kV Line Upgrade	Bexar
2025-SC17	Martinez (5295/5294) 345/138-kV Transformer Addition	Bexar
2025-W03	Carver (60412) to Poblano (8009) 69-kV to 138-kV Line Conversion	Edwards, Sutton, Uvalde

# Appendix C – New Generation Projects to Add

GINR	Project Name	Fuel	Projected COD	Max Capacity (~MW)	County
21INR0334	Nightfall Solar	SOL	06/30/2026	180.9	Uvalde
23INR0479	Taormina Storage	BAT	05/26/2029	231.9	Bexar
24INR0533	Padua Grid BESS Unit 2	BAT	03/16/2026	150.9	Bexar
26INR0407	Rock Creek BESS	BAT	03/29/2028	251.1	Kendall
28INR0024	Padua Grid BESS Unit 3	BAT	05/15/2026	201.4	Bexar