

#### BEC Hamilton County Conversion Project – ERCOT Independent Review Study Scope

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#### Introduction

- BEC submitted the Hamilton County Conversion Project for Regional Planning Group (RPG) review in February 2025
  - This Tier 2 project is estimated at \$90.0 million and will require a Convenience and Necessity (CCN)
  - Estimated in-service date (ISD) is Fall 2030
  - Is a GTC Exit Strategy for the Hamilton GTC
- This project is currently under ERCOT Independent Review (EIR)



#### **Study Area Map**



#### **Proposed Project by BEC**

- Convert existing Hasse to Gustine 69-kV transmission line to operate as a 138-kV transmission line with normal and emergency ratings of 418 MVA or greater, approximately 14.0-mile;
- Convert the existing Gustine, Energy, Energy Switch, Waring, Indian Gap, Pottsville, Hamilton, Gatesville, Fort Gates Switch, Fort Gates, Gatesville TDC Switch, Leon Junction, Poage 69-kV substations to 138-kV operation;
- Rebuild existing Gustine to Energy Switch 69-kV transmission line as a 138-kV doublecircuit transmission line with normal and emergency ratings of 524 MVA or greater at 138-kV operation and 262 MVA or greater at 69-kV operation, approximately 5.1-mile;
- Rebuild existing Energy Switch to Energy 69-kV transmission line as a 138-kV doublecircuit transmission line with normal and emergency ratings of 524 MVA or greater at 138-kV operation and 262 MVA or greater at 69-kV operation, approximately 1.0-mile;
- Rebuild existing Energy Switch to Indian Gap 69-kV transmission line as a 138-kV double-circuit transmission line with normal and emergency ratings of 524 MVA or greater at 138-kV operation and 262 MVA or greater at 69-kV operation, approximately 6.6-mile;



#### **Proposed Project by BEC cont'd**

- Convert existing Gustine to Pottsville 69-kV transmission line to operate a 138-kV transmission line with normal and emergency ratings of 238 MVA or greater, approximately 11.0-mile;
- Convert existing Pottsville to Hamilton 69-kV transmission line to operate as a 138-kV transmission line with normal and emergency ratings of 238 MVA or greater, approximately 7.6-mile;
- Install two 138/69 kV autotransformers at the existing Pancake 69-kV substation with normal and emergency ratings of 60 MVA;
- Convert existing Hamilton to Pancake 69-kV transmission line to operate as a 138-kV transmission line with normal and emergency ratings of 238 MVA or greater, approximately 21.9-mile;
- Convert existing Pancake to Gatesville 69-kV transmission line to operate as a 138-kV transmission line with normal and emergency ratings of 238 MVA or greater, approximately 4.0-mile;
- Convert existing Gatesville to Fort Gates 69-kV transmission line to operate as a 138-kV transmission line with normal and emergency ratings of 238 MVA or greater, approximately 7.5-mile;



#### **Proposed Project by BEC cont'd**

- Rebuild existing Fort Gates Switch to Fort Gates 69-kV transmission line as a 138-kV double-circuit transmission line with normal and emergency ratings of 524 MVA or greater at 138-kV operation and 262 MVA or greater at 69-kV operation, approximately 2.0-mile;
- Convert existing Fort Gates to Santa Fe Switch 69-kV transmission line as a 138-kV transmission line with normal and emergency ratings of 238 MVA or greater, approximately 3.9-mile;
- Install two 138/69 kV autotransformers at the existing Santa Fe Switch 69-kV with normal and emergency ratings of 60 MVA;
- Rebuild existing Santa Fe Switch to Gatesville TDC Switch 69-kV transmission line as a 138-kV double-circuit transmission line with normal and emergency ratings of 524 MVA or greater at 138-kV operation and 262 MVA or greater at 69-kV operation, approximately 0.8-mile;
- Move existing Gatesville TDC Switch to Gatesville Army 69-kV tie line to connect to Santa Fe Switch creating the Santa Fe Switch to Gatesville Army 69-kV tie line;



#### **Proposed Project by BEC cont'd**

- Convert existing Santa Fe Switch to Leon Junction 69-kV transmission line to operate as a 138-kV transmission line with normal and emergency ratings of 238 MVA or greater, approximately 4.0-mile;
- Convert existing Leon Junction to Poage 69-kV transmission line to operate as a 138-kV transmission line with normal and emergency ratings of 238 MVA or greater, approximately 24.4-mile;
- Retire Poage autotransformer (Installed from Temple Area Improvements RPG).



#### **Proposed Project by BEC**



# **Study Assumptions – Base Case**

- Study Area
  - North Central (NC), focusing on transmission in Comanche, Hamilton, Coryell, and Bell Counties
  - Monitor surrounding counties that are electrically close to the area
- Steady-State Base Case
  - Final 2024 Regional Transmission Planning (RTP) 2030 summer peak case will be updated to construct the study base case posted in Market Information System (MIS)
    - Case: 2024RTP\_2030\_SUM\_12202024
    - Link: <u>https://mis.ercot.com/secure/data-products/grid/regional-planning</u>



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# **Study Assumptions – Transmission**

- Based on the Transmission Project and Information Tracking (TPIT) published on MIS in February 2025, projects within the study area with in-service dates prior to Fall 2030 were added to the study base case if not already modeled in the case
  - TPIT Link: <u>https://www.ercot.com/gridinfo/planning</u>
  - See Appendix A for the list of transmission projects added
- Transmission projects identified in the 2024 RTP in the study area that have not been approved by RPG will be removed from the study base case
  - See Appendix B for the list transmission projects that have been backed out



# **Study Assumptions – Generation**

- New generation that met Planning Guide Section 6.9(1) condition with Commercial Operation Date (COD) before the Fall 2030 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 Generator Interconnection Status (GIS) report published in MIS in February 2025.
  - Link: <u>https://www.ercot.com/gridinfo/resource</u>
  - See Appendix C for the list of generation projects added to the case
- All generation will be dispatched consistent with the 2024 RTP methodology
- All recent retired/indefinitely mothballed units will be reviewed and opened (turned off), if not already reflected in the 2024 RTP Final cases



# Study Assumptions – Load & Reserve

- Loads in study area
  - Load level in the study area will be maintained consistent with the 2024 RTP case
- Reserve
  - Load outside of NC Weather Zones may be adjusted to maintain the reserve consistent with the 2024 RTP



# **Study Assumptions – Economic Study**

- 2024 RTP economic study base case for 2029 will be used for this study
- 2024 RTP economic study assumptions will be maintained in this study
  - Financial Assumptions in February 2024 RTP meeting
    - o <u>https://www.ercot.com/calendar/02122024-RPG-Meeting</u>
  - Economic Assumptions in March 2024 RTP meeting
    - o <u>https://www.ercot.com/calendar/03182024-RPG-Meeting-\_-Webex</u>
  - Stability Interface Limits in July 2024 RTP meeting

o <u>https://www.ercot.com/calendar/07162024-RPG-Meeting</u>



# **Contingencies & Criteria**

- Contingencies for study region
  - NERC TPL-001-5.1 and ERCOT Planning Criteria
  - Link: <u>http://www.ercot.com/mktrules/guides/planning/current</u>
    - P0 (System Intact)
    - o P1, P2-1, P7 (N-1 conditions)
    - P2-2, P2-3, P4, and P5 (345-kV only)
    - P3 (G-1+N-1: G-1 Grizzly Ridge Solar S1, Panda Temple C1, Logans Gap Wind W1)
    - P6-2 (X-1+N-1: X-1 Hasse X1, Comanche Switch X1, Temple Switch X1)
- 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

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# **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
  - The economic analysis will be performed to identify the potential cost savings for this project using the economic 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
    - o Planned maintenance outage
    - Long-Term Load-Serving Capability Assessment
  - ERCOT protocols defined in Protocol 3.11.2(5) will be followed to perform the production cost savings test and consumer revenue reduction test.
- 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 the future RPG meetings
  - Final Recommendation Q2 2025







# Appendix A – Transmission Projects Added

TPIT/RPG No	Project Name	Tier	Project ISD	County(s)
78173	BEPC_27TPIT78173_Trimmier_Capacitor	Tier 4	3/15/2027	Bell
78179	BEPC_27TPIT78179_DingDong_Capacitor	Tier 4	3/15/2027	Bell



# **Appendix B – Transmission Backed Out**

RTP Project ID	Project Name	County(s)
2024-NC12	Knob Creek Switch (3413) to Salado Switch (3699) 345-kV Line Upgrade and Substation Rebuilds	Bell
2024-NC37	Bell East (3687) to Salado Switch (3699) 345-kV Line Addition and Substation Rebuilds	Bell, Williamson
2024-NC43	Temple Switch (3415) to Belton (3610) 138-kV Line Upgrades	Bell
2024-NC60	Bell County East Switch (3687) to Littlepond (3377) and Bell County East Switch (3687) to Brangus Switch (3705) 345-kV Line Upgrades and Substation Rebuilds	Milam, Bell
2024-NC92	Killeen (3423) 138-kV Cap Bank Addition	Bell



# Appendix C – Generation Added

GINR	Project Name	Fuel	Project COD	Capacity (~MW)	County
23INR0079	Chillingham Storage	OTH	5/1/2025	153.9	Bell
23INR0249	Limewood Solar	SOL	12/31/2025	204.6	Bell
23INR0344	Hermes Solar	SOL	9/30/2025	100.4	Bell
23INR0469	Big Elm Storage	OTH	8/15/2026	100.8	Bell
24INR0166	Stillhouse Solar	SOL	9/1/2025	210.8	Bell
24INR0365	Hermes Storage	OTH	9/30/2025	100.4	Bell

