



# Rayburn Electric Cooperative Rand Area Loop - ERCOT Independent Review Study Scope

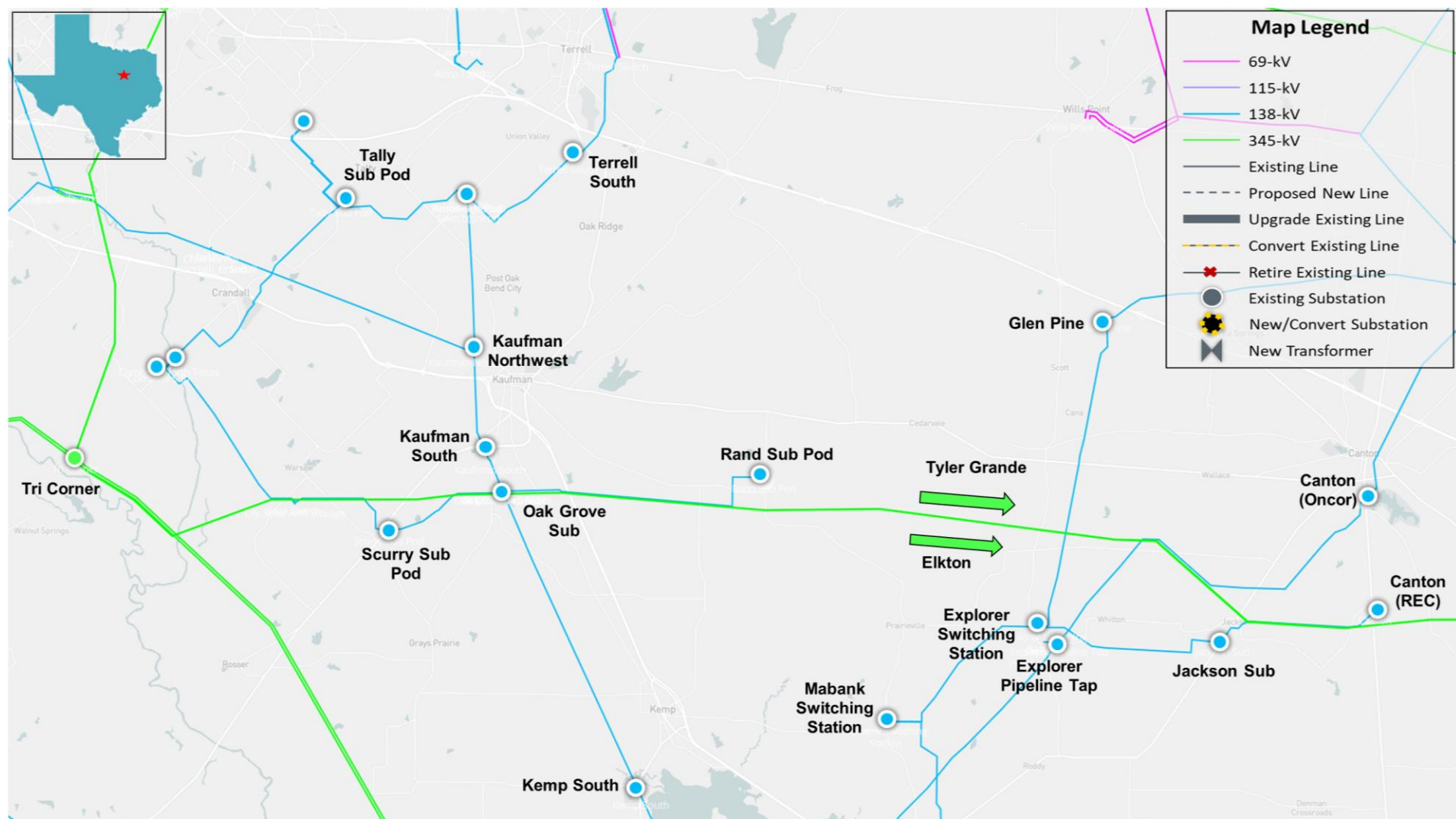
Abishek Penti

RPG Meeting  
June 11, 2024

# Introduction

- Rayburn Electric Cooperative (REC) submitted the Rand Area Loop Project for Regional Planning Group (RPG) review in May 2024
  - This Tier 2 project is estimated at \$32.2 million and will require a Convenience and Necessity (CCN)
  - Estimated completion date is April 2027
  - To address REC planning criteria to limit radial load to less than 20 MW
  - Provide “Looped Service” for REC Rand Station
- This project is currently under ERCOT Independent Review (EIR)

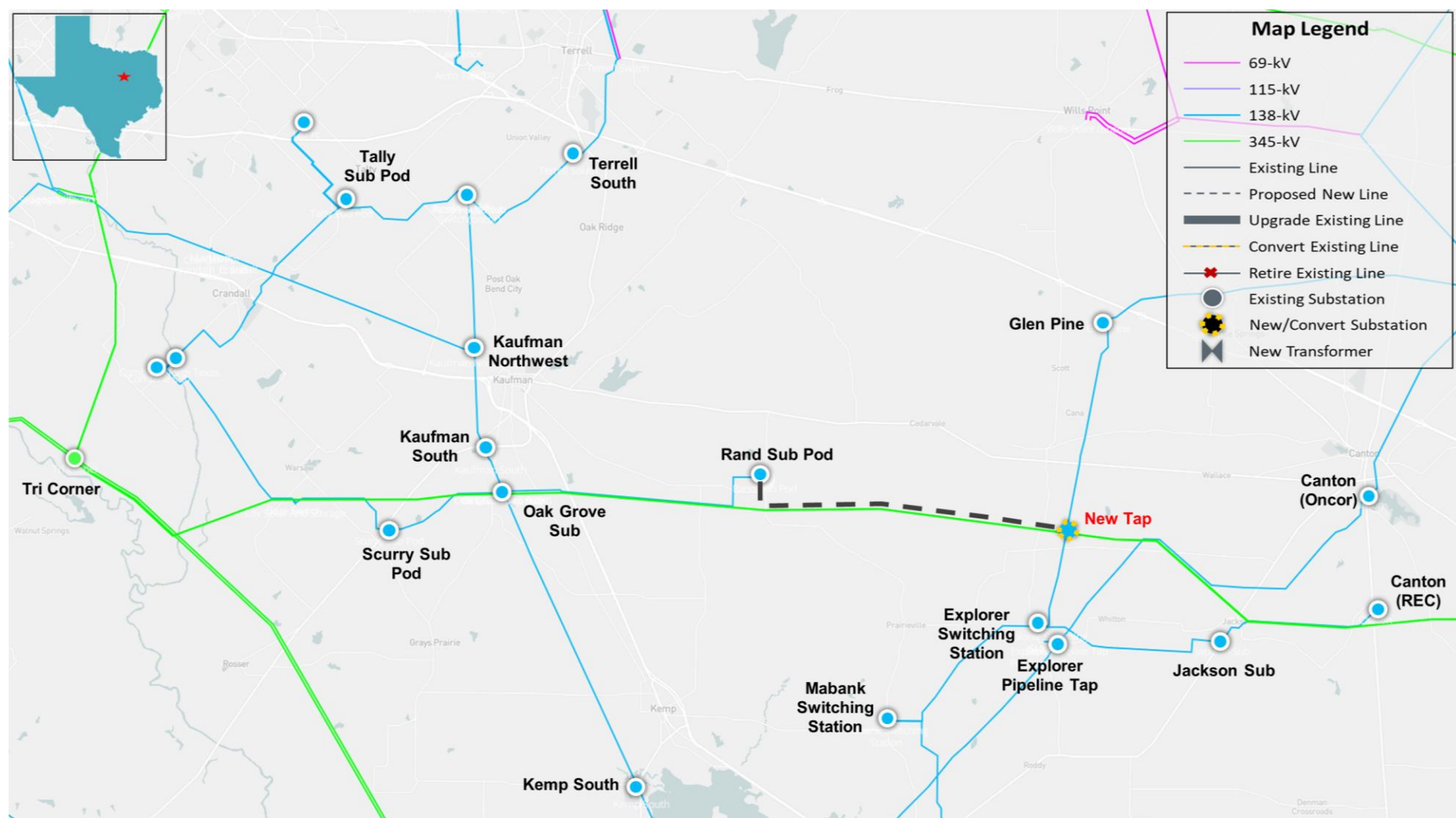
# Study Area Map with Project Need Seen by REC



# Project Proposed by REC

- Construct a new 138-kV Switchyard, with 3-breaker ring bus configuration, at a tap point between Explorer and Glen Pine
- Upgrade Rand 138-kV Switchyard to 3-breaker ring bus configuration
- Construct a new approximately 12.35-mile Rand to new Switchyard 138-kV transmission line with ratings of at least 669/752 MVA Normal/Emergency Rating

# Project Proposed by REC



# Study Assumptions – Base Case

- Study Area
  - North and North Central Weather Zones, focusing on transmission in the Rand area in Kaufman, Dallas, Ellis, Navarro, Henderson, Van Zandt, and Rockwall counties
- Steady-State Base Case
  - Final 2023 Regional Transmission Planning (RTP) 2028 summer peak case for North and North Central (NNC) Weather Zones, posted in Market Information System (MIS), will be updated to construct the study base case
    - Case: 2023RTP\_2028\_SUM\_EC\_12222023
    - Link: <https://mis.ercot.com/secure/data-products/grid/regional-planning>

# Study Assumption - Transmission

- Based on the Transmission Project and Information Tracking (TPIT) published on MIS in February 2024, projects within the study area with in-service dates prior to April 2027 were 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 the list of transmission projects added
- Transmission projects identified in the 2023 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 April 2027 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 May 2024
  - Link: <https://www.ercot.com/gridinfo/resource>
  - See Appendix C for the list of generation projects added to the case
- All generation will be dispatched consistent with the RTP methodology
- All recent retired/indefinitely mothballed units will be reviewed and opened (turned off), if not already reflected in the 2023 RTP Final cases



# Study Assumptions – Load

- Loads in study area
  - Load level in the study area will be adjusted to reflect assumed Winter Peak conditions based on Real-Time ERCOT North-Central and East Weather Zone Data
  - Radial load into Rand (REC) will total 33.9 MW
  - Newly approved loads in the study area will be added to the study base case

# 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 (EHV only)
    - P3: G-1+N-1 (G-1: Trinidad Unit 6)
    - P6: X-1+N-1 (X-1: 345/138-kV transformers at Elkton, Tyler Grande, Seagrove and Trinidad)
- 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 Rand and the surrounding 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
  - The TSP will provide the Cost Estimate and Feasibility Assessment
- 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 – Q3 2024

*Thank you!*



Stakeholder comments also welcomed through:

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# Appendix A – Transmission Projects Added

TPIT/RPG No	Project Name	Tier	Project ISD	TSP	County(s)
75567	Create_Magness_Bus	Tier 4	10/1/2024	RYBRN	Hunt
75628	Poetry 345 kV Switch	Tier 4	10/1/2024	ONCOR	Kaufman
71976	Watermill 138 kV Switch	Tier 3	Dec-24	ONCOR	Dallas
78371	Richardson East Switch – Richardson Spring Creek 138 kV Line Section	Tier 4	May-25	ONCOR	Dallas
78167	Add 2nd autotransformer at Trumbull	Tier 4	Nov-25	BEPC	Ellis
66218B	Hillsboro - Italy 69 kV Line	Tier 4	Dec-25	ONCOR	Ellis
66289A	Upgrade and convert Tyler - Athens 69 kV Line	Tier 3	Dec-25	ONCOR	Henderson
71980	Watermill 345 kV Switch	Tier 3	Dec-25	ONCOR	Dallas
76135	Hackberry Switch – DFW D-East 2 138 kV DCKT Line Section	Tier 3	Dec-25	ONCOR	Dallas
78367	Oncor_ME_Montfort-Shankle 138 kV Line	Tier 3	Dec-25	ONCOR	Navarro
78369	Rebuild Sam Switch - Venus Switch 345 kV DCKT	Tier 1	Dec-25	ONCOR	Ellis
71985	Cypress Water 138 kV Switch	Tier 3	Dec-25	ONCOR	Dallas
76652	Line Termination at Cypress Waters	Tier 4	Dec-25	ONCOR	Dallas
76728	Skyview 345/138 kV Switch	Tier 3	May-26	ONCOR	Dallas
78357	Wilmer 345/138 kV Switch	Tier 1	May-26	ONCOR	Dallas
72457	AddKiowaToQuinlanLine	Tier 2	Jun-26	RYBRN	Hunt
66289B	Upgrade and convert Tyler - Athens 69 kV Line	Tier 3	Sep-26	ONCOR	Smith
66218A	Hillsboro - Italy 69 kV Line	Tier 4	Oct-23	ONCOR	Ellis
70550	Create_GP_Solar_POI_Bus	Tier 4	1/1/2025	RYBRN	Van Zandt
5982	Relocate existing Shamburger North - Shamburger 138 kV Line	Tier 4	5/1/2026	ONCOR	Smith

# Appendix B – Transmission Backed Out

RTP Project ID	Project Name	TSP	County(s)
2023-E2	Canton Switch (3174) to Edgewood (3181) 138-kV Line Upgrade	ONCOR	Van Zandt
2022-NC5	New International Airport Switch 345/138-kV Station	ONCOR	Dallas
2022-NC7	Liggett Switch- DFW Area 138-kV Line Upgrades	ONCOR	Dallas
2023-NC4	Watermill Switch (2428) to Loop Nine Switch (22427) 345-kV Line Addition	ONCOR	Dallas
2023-NC6	Telico Area Upgrades	ONCOR	Ellis
2023-NC7	Four Brothers Switch -Tradinghouse - Outlaw - Lake Hall Switch - Sam Switch Area Improvements	ONCOR	Mclennan, Ellis
2023-NC9	Seagoville to Watermill 138-kV Line Upgrade	ONCOR	Dallas
2023-NC10	Prairie Creek to Mesquite North 138-kV Line Upgrade	ONCOR	Dallas
2023-NC11	Centerville Area Line Upgrades	GPL	Dallas, Collin
2023-NC16	Sardis Area 138-kV Line Upgrades	ONCOR	Ellis
2023-NC18	Tri Corner (2432) to Seagoville Switch (2433) to Forney Switch (2437) 345-kV Line Upgrade	ONCOR	Dallas
2023-NC19	Venus - Fort Smith - Sam Switch Double Circuit 345-kV Line Upgrades and Venus Kemp Ranch 345/138-kV Transformer Addition	ONCOR	Ellis
2023-NC20	Kemp South (2726) to Seven Points (3264) to Will White POI (3287) 138-kV Line Upgrade	ONCOR	Henderson
2023-NC21	Cedar Creek Pump (3263) to Mankin SW (3265) 138-kV Line Upgrade	ONCOR	Henderson
2023-NC23	Venus - Navarro - Jewett Area 345-kV Line Upgrades	ONCOR	Ellis
2023-NC24	Southside POI (230) to MCCree (832) 69-kV Line Upgrade	BEPC	Dallas
2023-NC28	Commerce Switch (1816) - Crossroads Switch (1844) 138-kV Line Upgrade	ONCOR	Hunt
2023-NC31	Parkdale Switch (2445) - Pleasant Grove Tap 1 (2960) 138-kV Line Upgrade	ONCOR	Dallas

# Appendix B – Transmission Backed Out

RTP Project ID	Project Name	TSP	County(s)
2023-NC32	Cedar Crest Switch (2486) - Buntin Drive (2985) 138-kV Line Upgrade	ONCOR	Dallas
2023-NC33	Sargent Road (2941) - Saint Augustine Tap 2 (2951) 138-kV Line Upgrade	ONCOR	Dallas
2023-NC38	Watermill 345/138-kV Transformer Upgrade	ONCOR	Dallas
2023-NC41	Watermill 138-kV Area Upgrades	ONCOR	Dallas
2023-NC42	Waxahachie Area 69-kV and 138-kV Line Upgrades	ONCOR	Ellis
2023-NC43	Wilmer 138/69-kV Transformer Upgrade	ONCOR	Dallas
2023-NC46	Desoto Switch (2424) to Parkerville Road (12425, 2425) 138-kV Line Upgrade	ONCOR	Dallas
2023-NC47	Carrollton Tarpley Road (2559) to Carrollton East (2578) 138-kV Line Upgrade	ONCOR	Dallas
2023-NC49	Greenville Avenue Switch (2882) to Greenville Avenue (12882) 138-kV Line Upgrade	ONCOR	Dallas
2023-NC52	Cedar Hill Switch (2422) to Fish Creek (2491) 138-kV Line Upgrade	ONCOR	Dallas
2023-NC53	Centerville Road Switch Area 138-kV Line Upgrades	ONCOR	Dallas
2023-NC63	DFW and Euless Area 138-kV Upgrades	ONCOR	Dallas



# Appendix C – Generation Added

GINR	Project Name	Fuel	Project COD	Capacity (MW)	County
20INR0208	Signal Solar	SOL	3/15/2025	51.8	Hunt
21INR0368	Eliza Solar	SOL	11/01/2024	151.7	Kaufman
22INR0260	Eliza Storage	Other	09/27/2024	100.4	Kaufman
22INR0549	Tanzanite Storage	Other	12/31/2024	265.8	Henderson
22INR0552	Sowers Storage	Other	12/01/2025	206.1	Kaufman
22INR0555	TE Smith Storage	Other	07/15/2025	125.36	Rockwall