



Oncor – Temple Area Project ERCOT Independent Review Status Update

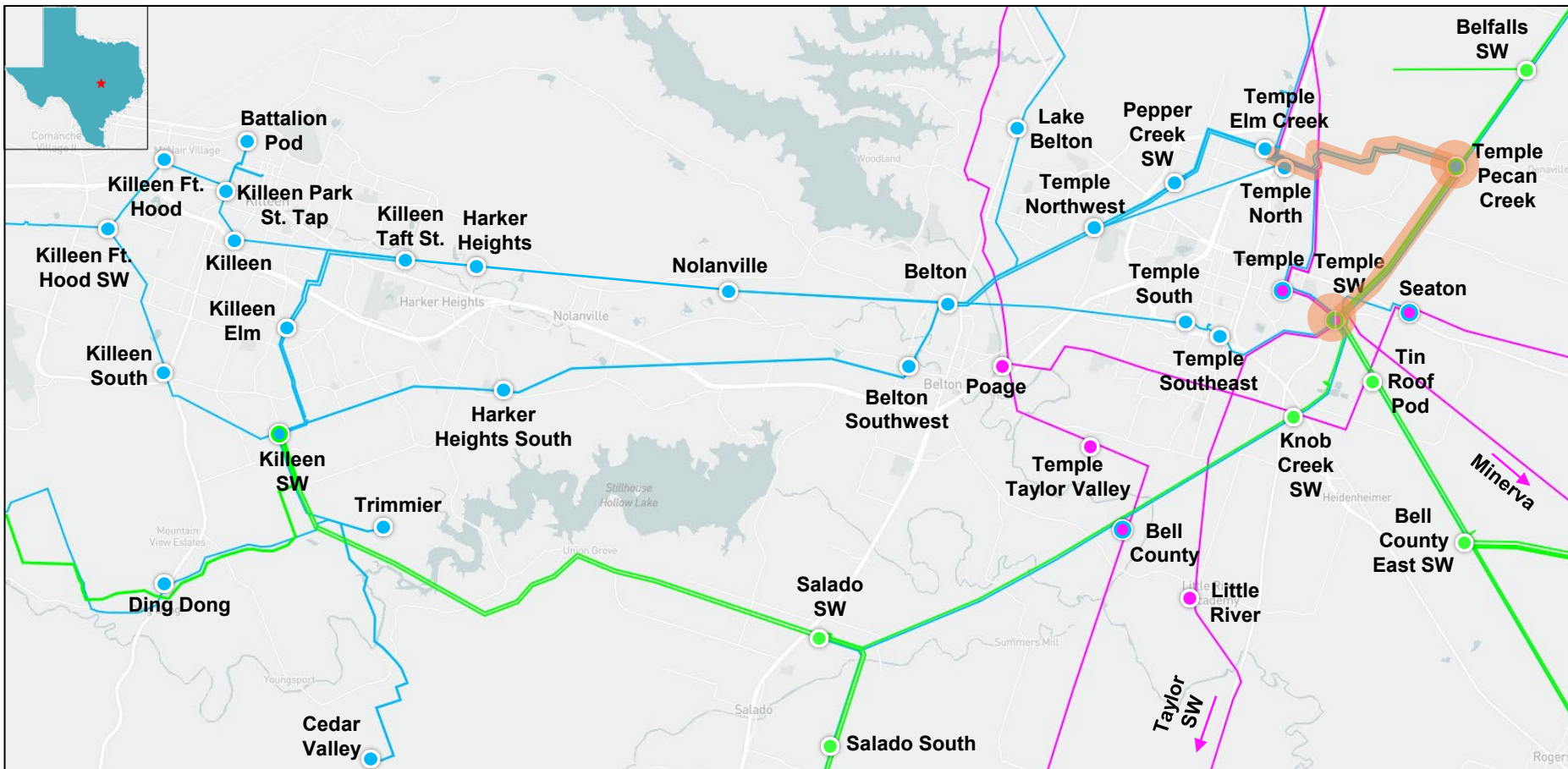
Tanzila Ahmed

RPG Meeting
March 18, 2024

Recap – Introduction

- Oncor submitted the Temple Area Project for Regional Planning Group (RPG) review in January 2024
 - This Tier 1 project is estimated to cost \$120.7 million, and filling of Certificate of Convenience and Necessity (CCN) is not required
 - Estimated in-service date is May 2026
 - This project addresses identified thermal violations, provides additional 345-kV sources, further networks transmission facilities, and enhances system reliability in the Temple area in Bell County
- Oncor presented project overview and ERCOT presented study scope for this ERCOT Independent Review (EIR) at the February RPG meeting
 - <https://www.ercot.com/calendar/02122024-RPG-Meeting>

Rcap – Study Area Map with Violations Seen by Oncor



Project Need Seen by ERCOT	
	Thermal Violation
	Aging Infrastructures
	TSP Criteria Violation

Voltage Legend	
	69-kV
	115-kV
	138-kV
	345-kV

Line Legend	
	Existing Line
	Proposed New Line
	Upgrade Existing Line
	Convert Existing Line
	Retire Existing Line

Substation Legend	
	Existing Substation
	New/Convert Substation
	New Transformer



Recap – Study Assumptions and Methodology

- Final 2023 Regional Transmission Planning (RTP) 2026 summer peak case for North and North Central (NNC) Weather Zones was used as the start case
- Transmission Updates
 - Three Tier 4 projects were added based on the February 2024 TPIT report
 - Transmission projects identified in the 2023 RTP in the study area that have not been approved by RPG were removed
- Generation update
 - New 6.9(1) generation were added based on the January 2024 GIS report
 - All generation were dispatched consistent with the 2024 RTP methodology
- Loads update
 - Loads in South Central (SC) Weather Zones were updated to create the study base case

Status Update

- Reliability Need Analysis
 - N-1
 - G-1+N-1
 - G-1: Comanche Peak Unit
 - G-1: Panda CC Train
 - X-1+N-1
 - X-1: Temple Switch, Temple Pecan Creek Switch, Killeen 345/138-kV autotransformers
 - X-1: Seaton and Bell County 138/69-kV autotransformers (sensitivity provided by TSPs)

Preliminary Results of Reliability Assessment – Need Analysis

- ERCOT conducted steady-state load flow analysis for the study base case according to the NERC TPL-001-5.1 and ERCOT Planning Criteria to identify project need

Contingency Category	Voltage Violations*	Thermal Overloads**	Unsolved Power Flow
N-0 (P0)	None	None	None
N-1 (P1, P2-1, P7)	None	None	None
G-1+N-1 (P3)	None	None	None
X-1+N-1 (P6-2)	31	6	None

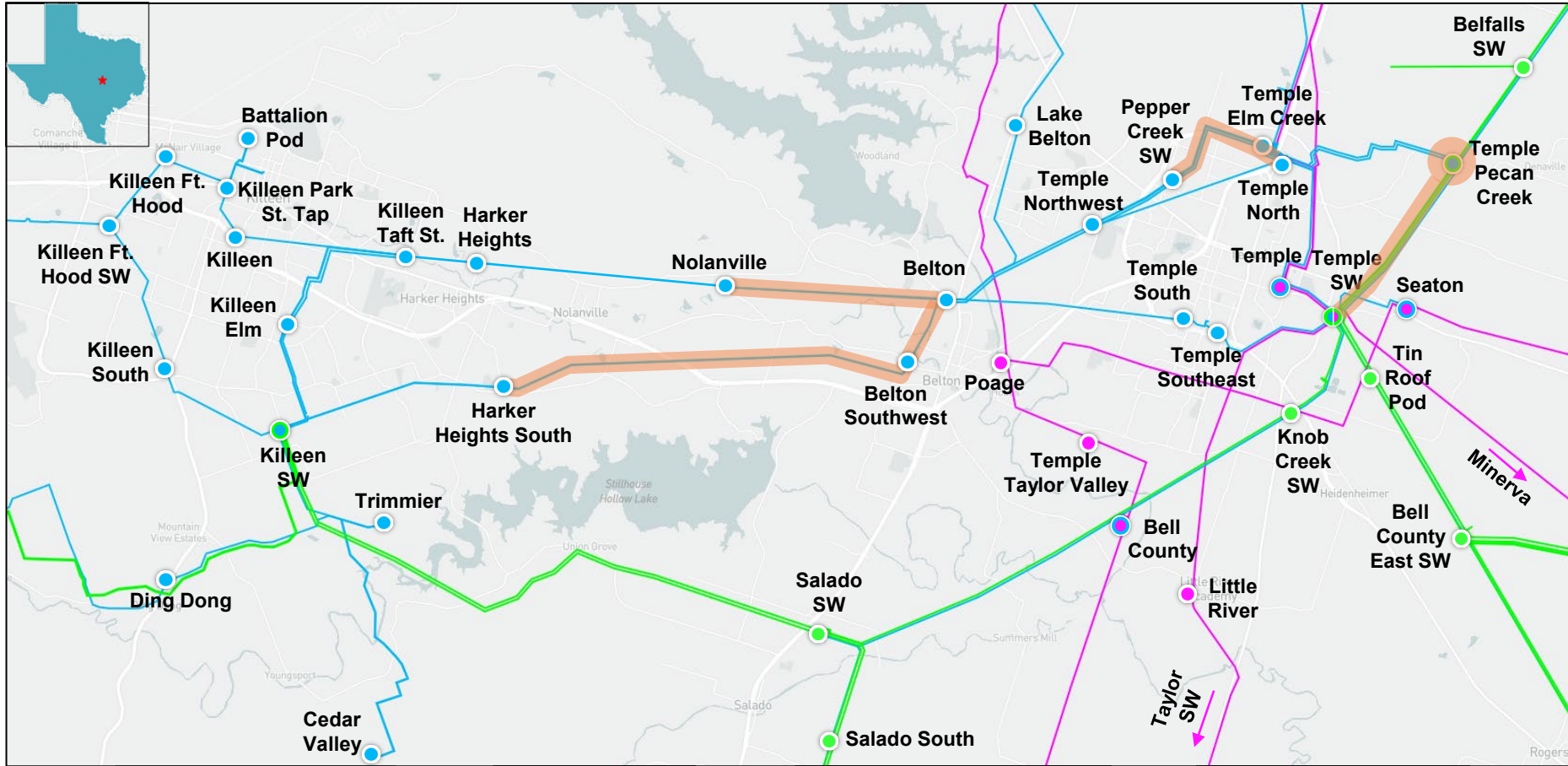
* G-1: Comanche Peak Unit and Panda CC Train

** X-1: Temple Switch, Temple Pecan Creek Switch, Killeen 345/138-kV autotransformers, Seaton and Bell County 138/69-kV transformers (sensitivity provided by TSPs)

Details of Thermal Overloads Seen in the Reliability Assessment – Need Analysis

Overloaded Element	Worst Contingency (N-1-1)	Length (miles)	Worst Overload (%)
Temple Pecan Creek SW – Temple SW 138-kV Line	Temple Switch 345/138-kV Autotransformers + Temple Pecan Creek – Temple Elm Creek 138-kV DCKT	4.4	120.81
Belton - Belton Southwest 138-kV Line	Killeen SW 345/138-kV Autotransformer 2 + Killeen SW 345/138-kV Autotransformer 1	2.0	115.90
Temple North 2 – Pepper Creek 138-kV Line	Killeen SW 345/138-kV Autotransformer 2 + Temple North 1 – Pepper Creek 138-kV Line	2.2	104.77
Belton Southwest – Harker Heights South 138-kV Line	Killeen SW 345/138-kV Autotransformer 2 + Killeen SW 345/138-kV Autotransformer 1	10.3	104.17
Temple Pecan Creek SW 345/138-kV Autotransformer	Temple Switch 345/138-kV Autotransformers + Knob Creek – Salado 345-kV Line	0.0	103.64
Belton - Nolanville 138-kV Line	Killeen SW 345/138-kV Autotransformer 2 + Killeen SW 345/138-kV Autotransformer 1	5.1	102.13

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Next Steps and Tentative Timeline

- ERCOT will continue to evaluate options and provide status updates at future RPG meetings
 - Reliability analysis on identified alternatives
 - Planned maintenance outage evaluation
 - Long-term load serving capability assessment
 - Cost estimates and feasibility assessment
- ERCOT may perform the following assessment on preferred Option
 - 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
 - Generation addition and load scaling sensitivity analyses
 - Planning Guide (PG) section 3.1.3 (4)
 - Subsynchronous Resonance (SSR) Assessment
 - Nodal Protocol Section 3.22.1.3(2)
- Tentative timeline
 - Status updates at future RPG meetings
 - Final recommendation – Q2 2024

Thank you!



Stakeholder comments also welcomed through:

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Appendix A – Transmission Projects Added

- List of Tier 4 projects added to the study base case

TPIT No	Project Name	TSP	From County
62666	Upgrade and convert McGregor - Waco West Line	Oncor	McLennan
66216	Upgrade and convert Waco West - Temple 69 kV Line to 138 kV	Oncor	McLennan
71912A	Rebuild the Killeen Fort Hood - Killeen Taft 138 kV Line	Oncor	Bell

Appendix B – RTP Projects Removed

- Transmission projects identified in the 2023 RTP in the study area that have not been approved by RPG were removed from the study base case

RTP Project ID	Project Name	TSP	County
2023-NC5	Temple Switch (3415) to Temple Southeast (3612) 138-kV Line Upgrade	Oncor	Bell
2023-NC17	Temple Southeast (3612) to Scott and White (3602) to Temple South (3611) 138-kV Line Upgrades	Oncor	Bell
2023-NC22	Nolanville (3617) to Harker Heights (3618) 138-kV Line Upgrade	Oncor	Bell
2023-NC34	Temple Pecan Creek (3412) - Temple Switch (3414) 345-kV Line Upgrade	Oncor	Bell
2023-NC36	Temple Belton 138-kV Line Upgrades	Oncor	Bell
2023-NC50	Harker Heights (3618) to Killeen Taft Street (3616) to Killeen Elm (13427) 138-kV Line Upgrades	Oncor	Bell
2023-NC51	Temple Area 138-kV Upgrades	Oncor	Bell
2023-NC57	Killeen Area 138-kV Capacitor Bank Additions	Oncor	Bell
2023-NC60	Temple Switch and Temple Pecan 345/138-kV Transformer Additions	Oncor	Bell
2023-NC61	Temple Pecan Area 138-kV Upgrades	Oncor	Bell

Appendix C – New Generation Added

- List of new generation to be added to the study base case

GINR	Project Name	Fuel	Projected COD	Capacity (MW)	County
20INR0208	Signal Solar	SOL	3/15/2025	51.8	Hunt
21INR0304	Halo Solar	SOL	6/20/2024	254.0	Bell
21INR0325	Sheep Creek Wind	WIN	1/31/2024	153.0	Callahan
21INR0368	Eliza Solar	SOL	11/1/2024	151.6	Kaufman
21INR0492	Stockyard Grid Batt	OTH	3/29/2024	150.6	Tarrant
21INR0515	Roadrunner Crossing Wind II SLF	WIN	1/20/2025	126.7	Eastland
22INR0260	Eliza Storage	OTH	11/1/2024	100.2	Kaufman
22INR0261	Dorado Solar	SOL	12/31/2025	406.3	Callahan
22INR0552	Sowers Storage	OTH	12/1/2025	206.1	Kaufman
22INR0555	Guevara Storage	OTH	7/15/2025	125.4	Rockwall
23INR0114	True North Solar	SOL	6/30/2024	238.3	Falls
23INR0124	Coral Storage	OTH	3/31/2024	99.0	Falls
23INR0159	Five Wells Storage	OTH	12/30/2023	220.8	Bell
23INR0349	Tokio Solar	SOL	8/25/2025	177.6	McLennan
23INR0367	Fewell Solar	SOL	9/9/2025	203.5	Limestone
24INR0010	Pinnington Solar	SOL	10/15/2025	666.1	Jack
24INR0015	Five Wells Solar	SOL	12/29/2023	322.8	Bell

Appendix C – New Generation to be Added (Cont.)

- List of new generation to be added to the study base case

GINR	Project Name	Fuel	Projected COD	Capacity (MW)	County
24INR0038	SP Jaguar Solar	SOL	6/30/2025	300.0	McLennan
24INR0039	SP Jaguar BESS	OTH	6/30/2025	300.0	McLennan
24INR0100	Sheep Creek Storage	OTH	7/1/2024	142.1	Callahan
24INR0138	Midpoint Storage	OTH	8/30/2025	52.2	Hill
24INR0139	Midpoint Solar	SOL	8/30/2025	103.8	Hill
24INR0140	Gaia Storage	OTH	7/31/2025	76.8	Navarro
24INR0141	Gaia Solar	SOL	7/31/2025	152.7	Navarro
24INR0295	Lucky Bluff BESS	OTH	5/31/2025	100.8	Erath
24INR0295	Lucky Bluff BESS	OTH	5/31/2025	100.8	Erath
24INR0312	Wigeon Whistle BESS	OTH	09/01/2024	122.9	Collin
21INR0302	Aureola Solar	SOL	06/28/2024	203.0	Milam
21INR0303	Mandorla Solar	SOL	11/29/2024	254.0	Milam
21INR0240	La Casa Wind	WIN	06/10/2025	148.4	Stephens
21INR0379	Ash Creek Solar	SOL	01/31/2025	417.74	Hill
23INR0070	Chillingham Solar	SOL	12/15/2024	352.39	Bell
23INR0403	Connolly Storage	OTH	08/15/2024	125.36	Wise