



Item 5.2: System Planning and Weatherization Update – **REVISED**

Woody Rickerson

Vice President, System Planning and
Weatherization

Reliability and Markets Committee Meeting

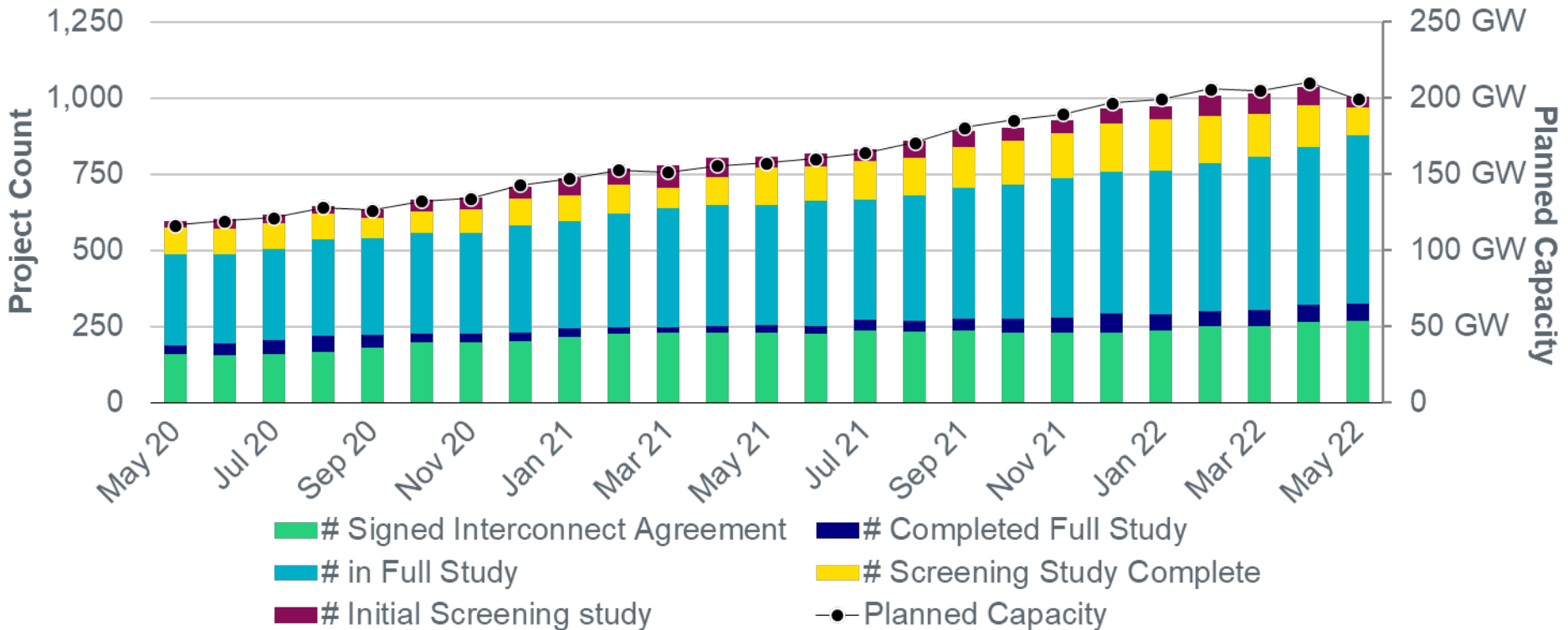
ERCOT Public

June 20, 2022

Revised 6/20/2022 to clarify availability of map on slide 10

Generation Interconnection Report

- ERCOT is tracking 1,017 active generation interconnection requests totaling 199,119 MW as of May 31.
 - This includes 106,920 MW of solar, 19,544 MW of wind, 58,249 MW of battery, and 12,888 MW of gas projects; 64 projects were categorized as inactive, up from 57 inactive projects in April 2022.



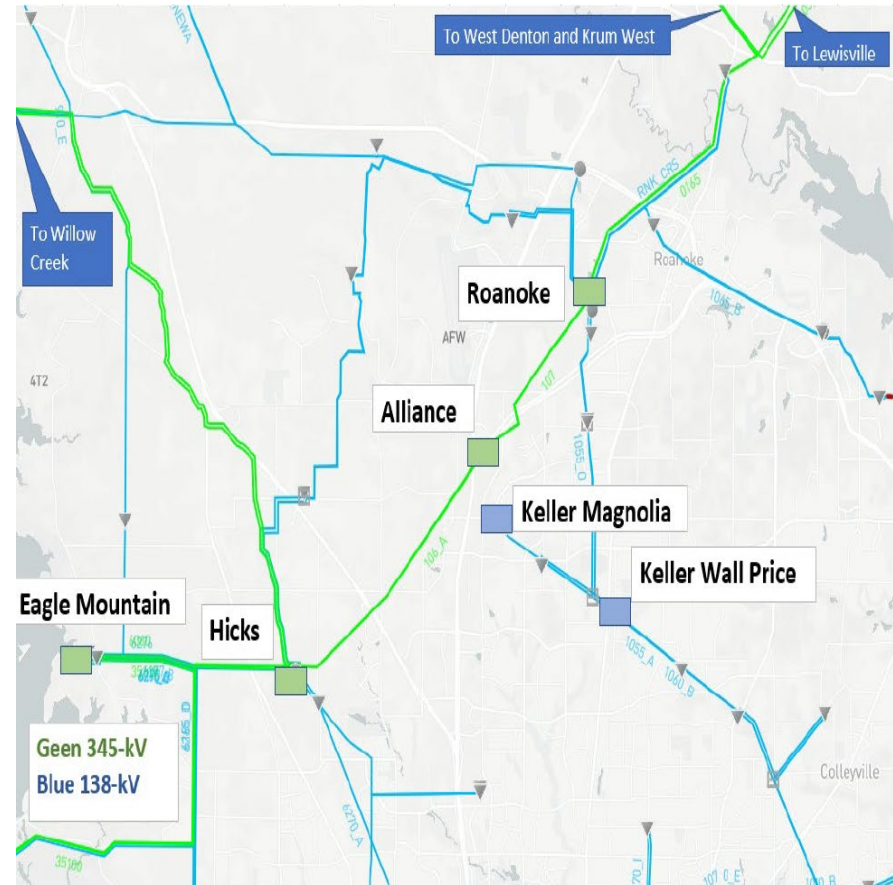
Tier 1 RPG Projects Under ERCOT Independent Review

- **Roanoke Area Upgrades Project**
 - Tier 1 project that is estimated to cost \$285.9 million
 - Project need: Reliability issues driven by rapid load growth in Roanoke area
 - The proposed in-service date is May 2025
 - Certificate of Convenience and Necessity (CCN) is required
- **Hays Energy – Kendall Corridor Transmission Line Rehabilitation Projects**
 - Tier 1 project that is estimated to cost \$399.9 million
 - Project need: Aging infrastructure issue driven by aging/obsolete conductor
 - The proposed completion dates range from May 2024 to May 2025
 - CCN is not required
- **Bearkat – North McCamey – Sand Lake 345-kV Transmission Line Addition Project**
 - Tier 1 project that is estimated at \$477.6 Million
 - Project need: Reliability issue driven by rapid oil and gas load growth in the Delaware Basin area
 - The proposed in-service date is June 2026
 - CCN is required

Tier 1 RPG Projects Under ERCOT Independent Review

- **Roanoke Area Upgrades Project**

- Oncor submitted the project for Regional Planning Group review in February 2022. This is a Tier 1 project that is estimated to cost \$285.9 million.
- Project need: Reliability issues driven by rapid load growth in Roanoke area, existing capacity limitations and forecasted thermal and voltage violations, increase thermal capacity, and operational flexibility in Roanoke area
- Some of the major components in the proposed project include three new 345 kV switching stations, two new 138 kV switching stations and approximately 28 miles of associated transmission
- The proposed in-service date is May 2025, and Oncor has expressed a need for “critical status designation”
- Three new transmission lines included in this proposal will require applications for amendments to Oncor’s CCN
- This project is currently in the ERCOT Independent Review



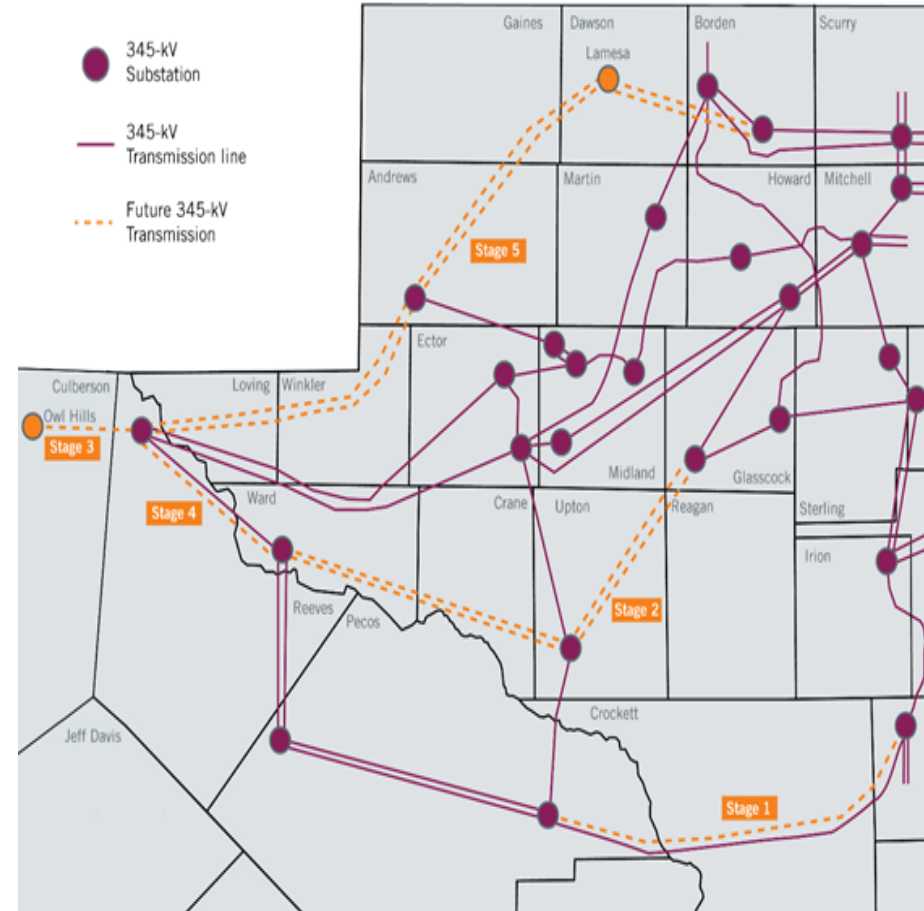
Tier 1 RPG Projects Under ERCOT Independent Review

- **Hays Energy – Kendall Corridor Transmission Line Rehabilitation Projects**
 - LCRA TSC submitted the projects for Regional Planning Group review and comment in March 2022. The projects was submitted as Tier 3, and ERCOT determined to categorize the project as Tier 1 project primarily due to the estimated cost of \$399.9 million
 - Project need: Aging infrastructure issue driven by aging/obsolete conductor
 - The proposed project involves rebuilding the 345-kV and 138-kV double-circuit transmission line from Hays Energy to Kendall
 - Proposed project completion dates range from May 2024 to May 2025
 - No CCN is required according to LCRA TSC
 - This project is currently in the ERCOT Independent Review



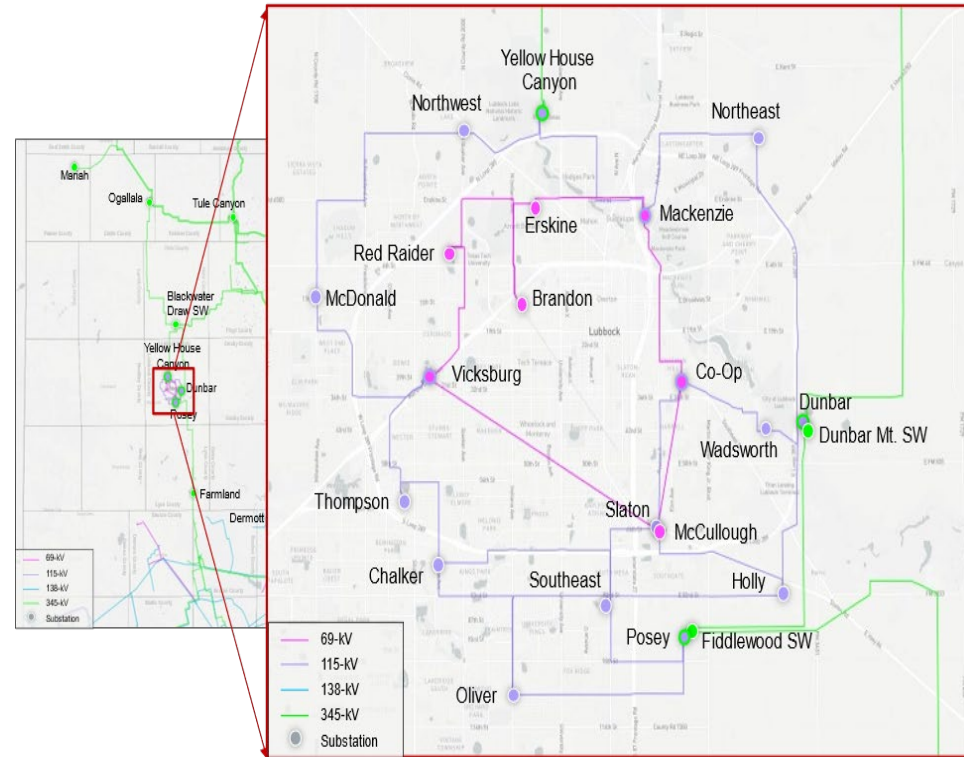
Tier 1 RPG Projects Under ERCOT Independent Review

- **Bearkat – North McCamey – Sand Lake 345-kV Transmission Line Addition Project**
 - LCRA TSC, WETT, and Oncor jointly submitted the project for Regional Planning Group review in April 2022. This is a Tier 1 project that is estimated at \$477.6 Million
 - Project need: Reliability issue driven by rapid oil and gas load growth in the Delaware Basin area
 - The project (Stage 2 in the map) is one of the long lead time upgrades in the road map developed in the Delaware Basin Load Integration Study in order to provide capability to import power into the region
 - Proposed in-service date is June 2026. LCRA TSC, Oncor, and WETT have requested a need for “critical status designation”
 - CCN is required to build the new lines
 - This project is currently in the ERCOT Independent Review



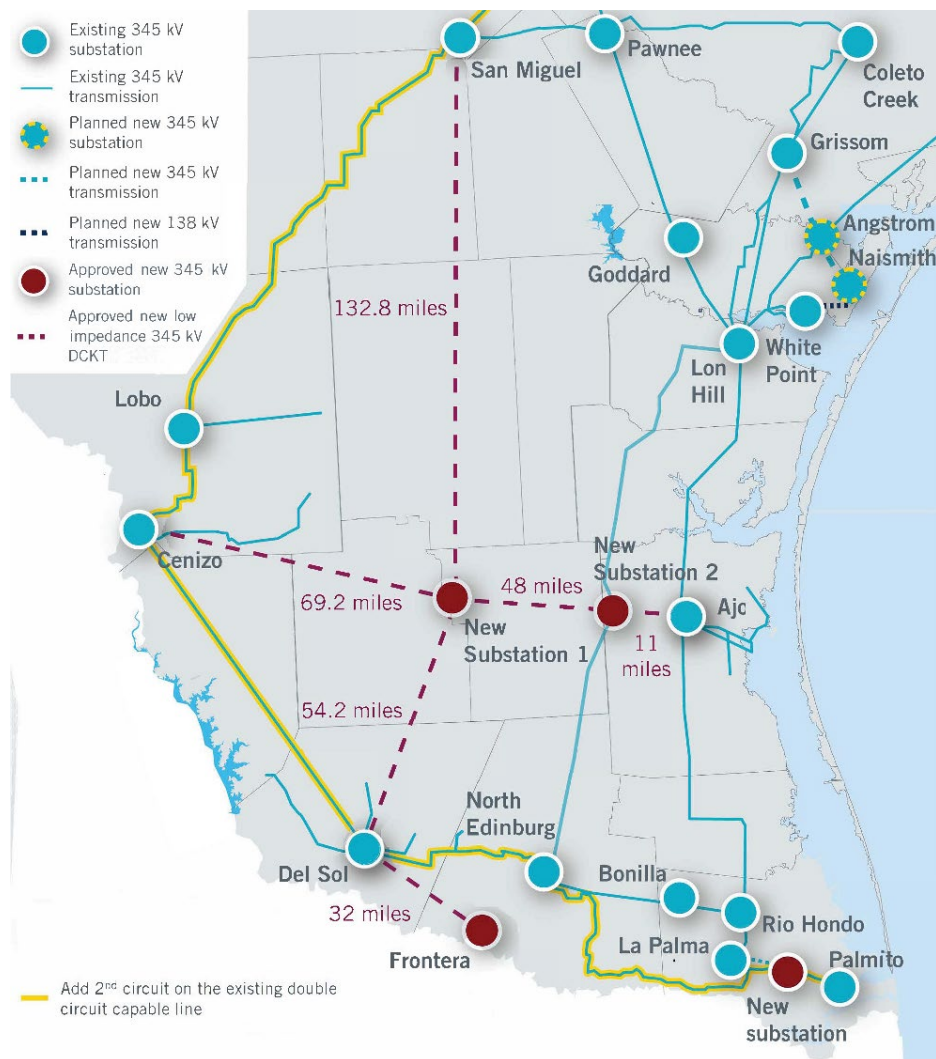
Lubbock Power & Light (LP&L) Remaining Load Integration

- LP&L integrated ~70% of its total loads into ERCOT System by on May 31, 2021 and plans to fully integrate the remainder of the LP&L load by May 2023
- On June 3, 2021, LP&L filed a Supplement to Quarterly Update with the Public Utility Commission of Texas in Project No. 48113 indicating that it had taken certain actions to further LP&L's goal to "fully connect its system to ERCOT"
- According to the latest information provided by LP&L, the total load including the remainder (~188 MW) is estimated to be approximately 609 MW (Year 2024) - 627 MW (Year 2028)
- ERCOT completed the independent study, and no reliability issues were observed
- ERCOT concluded that the new LP&L and Oncor transmission project additions designed, constructed, and placed in service to support the initial LP&L load integration would sufficiently support LP&L's entire load



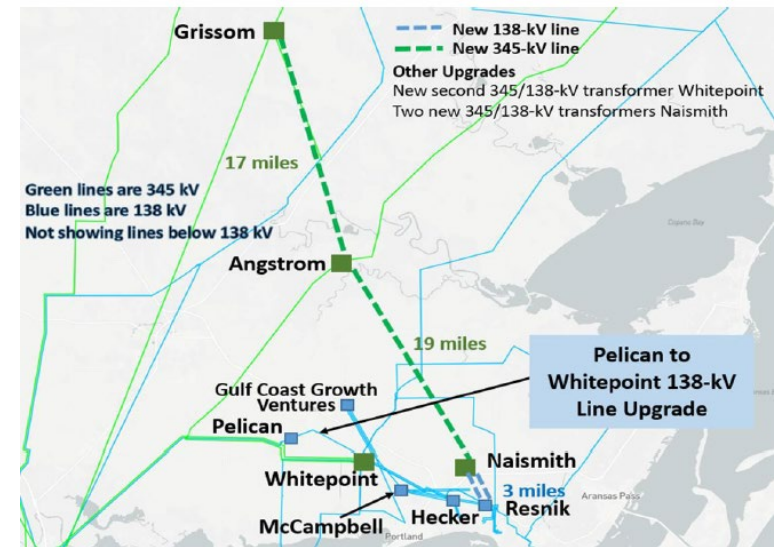
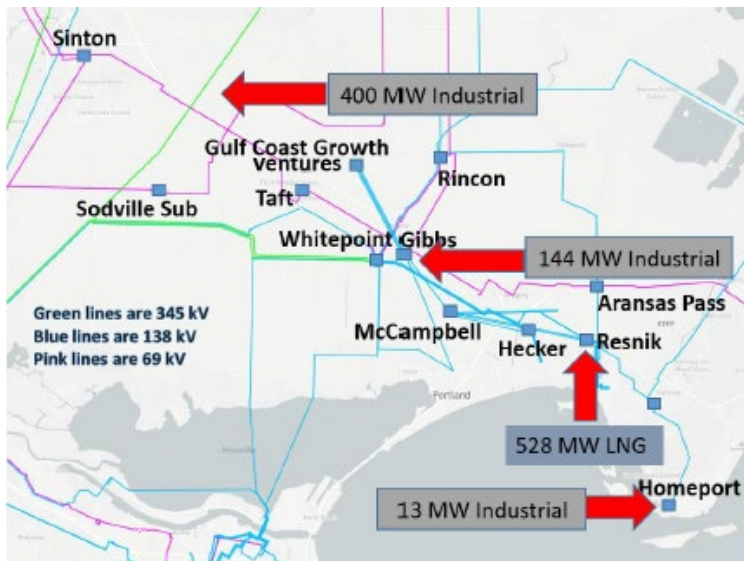
Lower Rio Grande Valley System Enhancement Project

- The majority of Lower Rio Grande Valley (LRGV) loads are in Cameron, Hidalgo, Starr, and Willacy counties
- There is limited existing conventional generation capacity and no planned conventional generation in the LRGV. In addition, more than 7 GW of renewable generation is expected to connect in the LRGV area. Therefore, sufficient transmission capacity is imperative to reliably support the import and export needs for LRGV load growth and generation development
- ERCOT has identified reliability needs in the LRGV by 2027 under normal conditions and today under high-impact weather conditions beyond Business as Usual (BAU)
- Two major transmission improvement projects were ordered and endorsed in 2021 to meet reliability needs and provide system resilience to the LRGV. The improvements are expected to be implemented by 2027

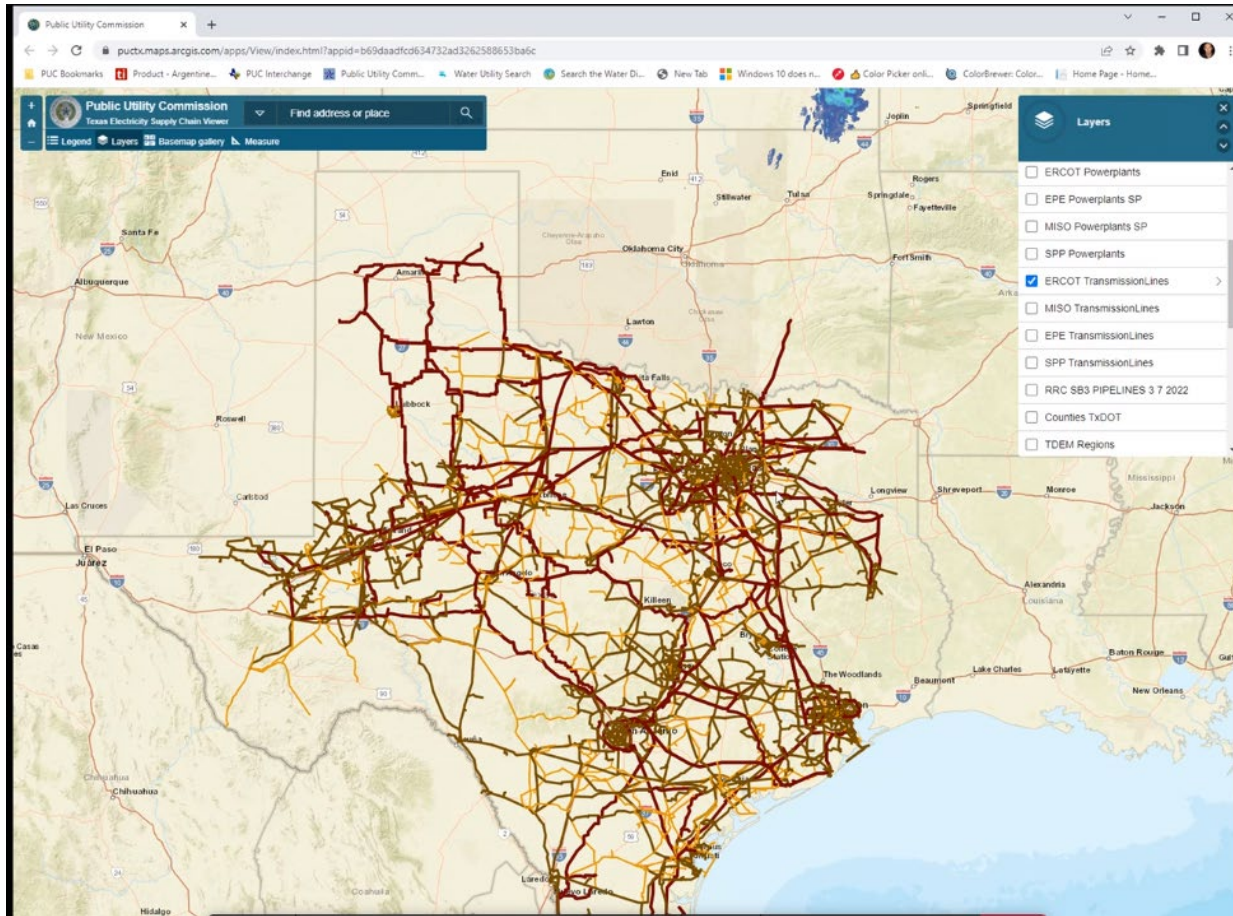


Corpus Christi North Shore Project

- American Electric Power (AEP) submitted the Corpus Christi North Shore project for Regional Planning Group (RPG) review in October 2019
- The purpose of the project is to address potential reliability issues driven by the addition of 1,085 MW of new, financially committed industrial load
- ERCOT performed an independent review of the project and identified multiple NERC and ERCOT reliability planning criteria violations
- The project was endorsed in 2020 to meet reliability needs. The improvements are expected to be implemented by 2024



Electric Supply Chain Map *(not publicly available)*



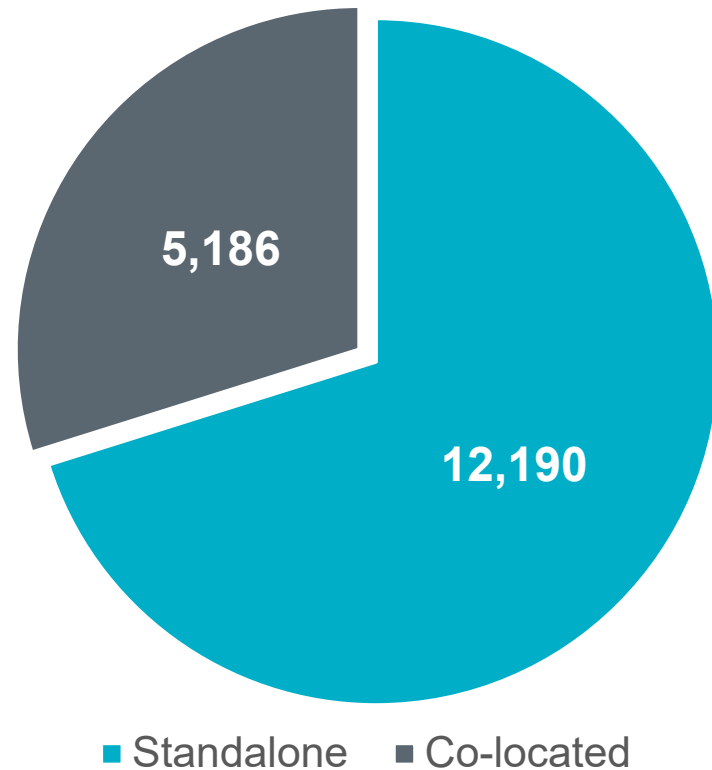
Map image includes only ERCOT transmission level information

- PUCT, Texas RRC, TDEM and ERCOT, have completed building the Electric Supply Chain Map.
- This Map is available to State Emergency Operations staff.
- This Map identifies key information needed to respond to grid emergencies and will be updated and maintained going forward under an MOU between all agencies.

Large Flexible Load Taskforce

- This is a new area of work not experienced in any grid to this extent. Expect new rules to be needed in Planning, Operations and Market rules to ingrate this increase in load.
- TAC approved the Large Flexible Load Task Force at its most recent meeting.
- Meetings started in April and have been well attended.
- Participation in these meetings has been high and comprised of National and International companies looking to locate in Texas.
- Issues have been assigned with Key stakeholders assigned to work on the solutions.
- PUCT has provided guidance on concepts it expects to be addressed.

MWs of Forecasted LFL Load



Summer Weatherization Site Visits

- Purpose: Evaluate completeness of summer weather preparation activities as required by 16 TAC § 25.362, 16 TAC § 25.53, and ERCOT Nodal Protocol §§ 3.21 and 22
- Selection Criteria: Resources met one or more of the following criteria
 - Large facilities critical to system reliability
 - History of outages or derates during hot weather
 - Use of cooling systems affected by hot weather
 - New resources
 - Resources providing ancillary services
 - Located in areas frequently requiring import of generation
- How Many: 35 Facilities comprising 127 separate generation resources are planned for inspection
 - 110 thermal, 12 wind, 4 solar, 1 storage
 - Represents more than 27,000 MW of capacity

PUCT Phase II Weatherization Rule

- PUC staff posted its proposal for publication on the draft Phase II weatherization rule (16 TAC § 25.55)
- The rule proposes
 - To require weather emergency preparation measures reasonably expected to ensure sustained operation during winter and summer
 - To use a 95th – percentile min/max temperature standard for both hot and cold weather requirements by ERCOT weather zones
 - That generation entities and Transmission Service Providers (TSPs) submit declarations of weather preparedness to ERCOT twice per year with notarized attestations as to their accuracy and veracity
 - That ERCOT be required to inspect each generation resource at least once every three years
 - That ERCOT be required to inspect at least 10% of TSP substations or switchyards at least once every three years
 - That ERCOT be required to conduct an historical weather study at least every five years, beginning 11/1/26