



DATA CENTER & LARGE LOAD PRESENTATION

PRESENTED BY:
CPS Energy

This presentation contains current estimates and plans that are subject to change without notice. This information has been provided for discussion purposes only and should not be relied upon for any other purpose.

5/30/2024
Informational Update

AGENDA

- State of the State / Utility
- Large Load Interconnection Impacts
- What We Are We Doing Today
- Options We Are Evaluating Moving Forward

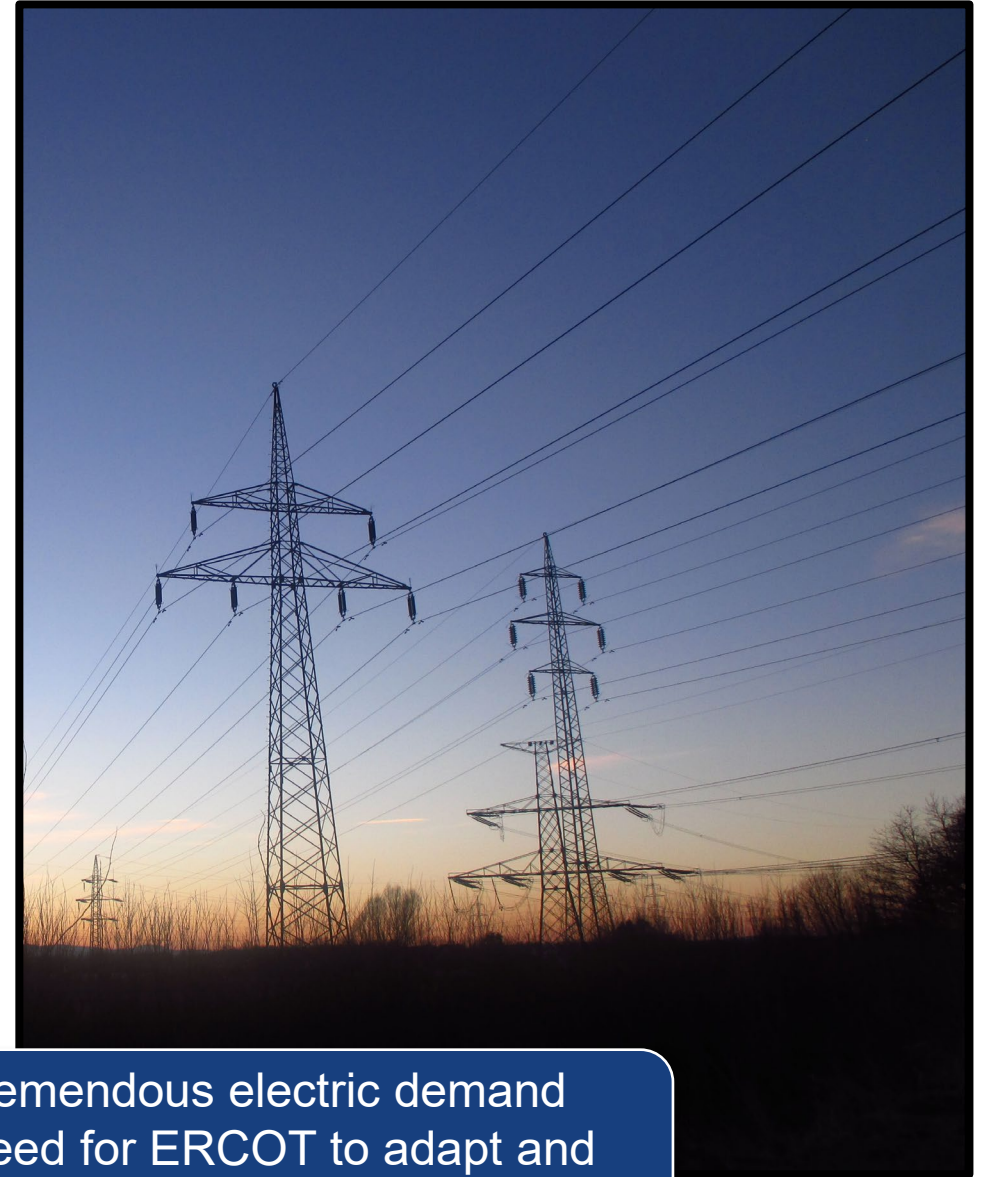


STATE OF THE STATE

ERCOT

- ERCOT anticipates **~152 GW** of new load by 2030
- There are ~1,775 active generation interconnection requests* in the queue totaling **~346 GW**

* Note: Not all interconnection requests will advance to commissioning phase

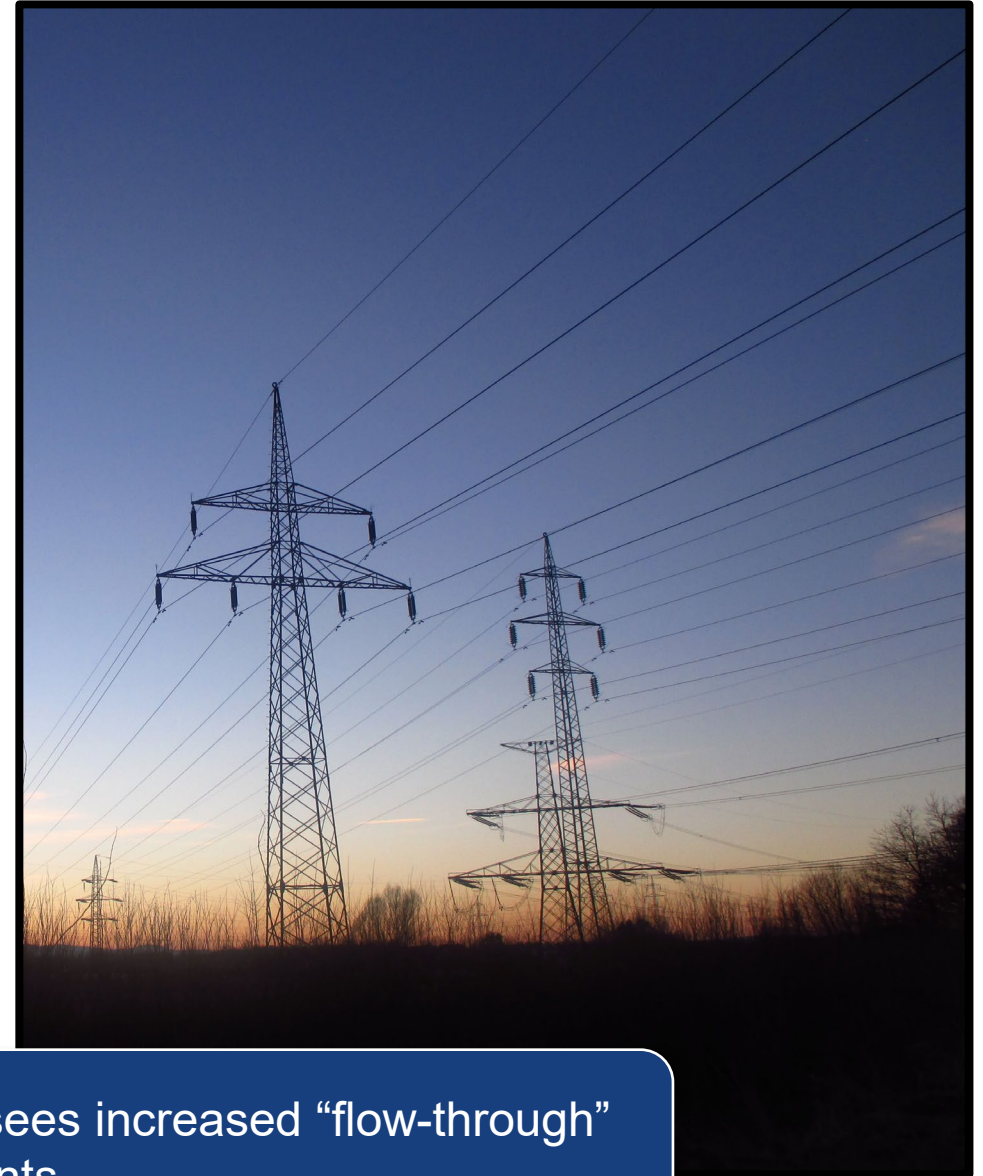


The ERCOT region is forecasted to experience tremendous electric demand growth in the next 5-7 years, which is driving the need for ERCOT to adapt and plan differently for the future.

STATE OF THE STATE

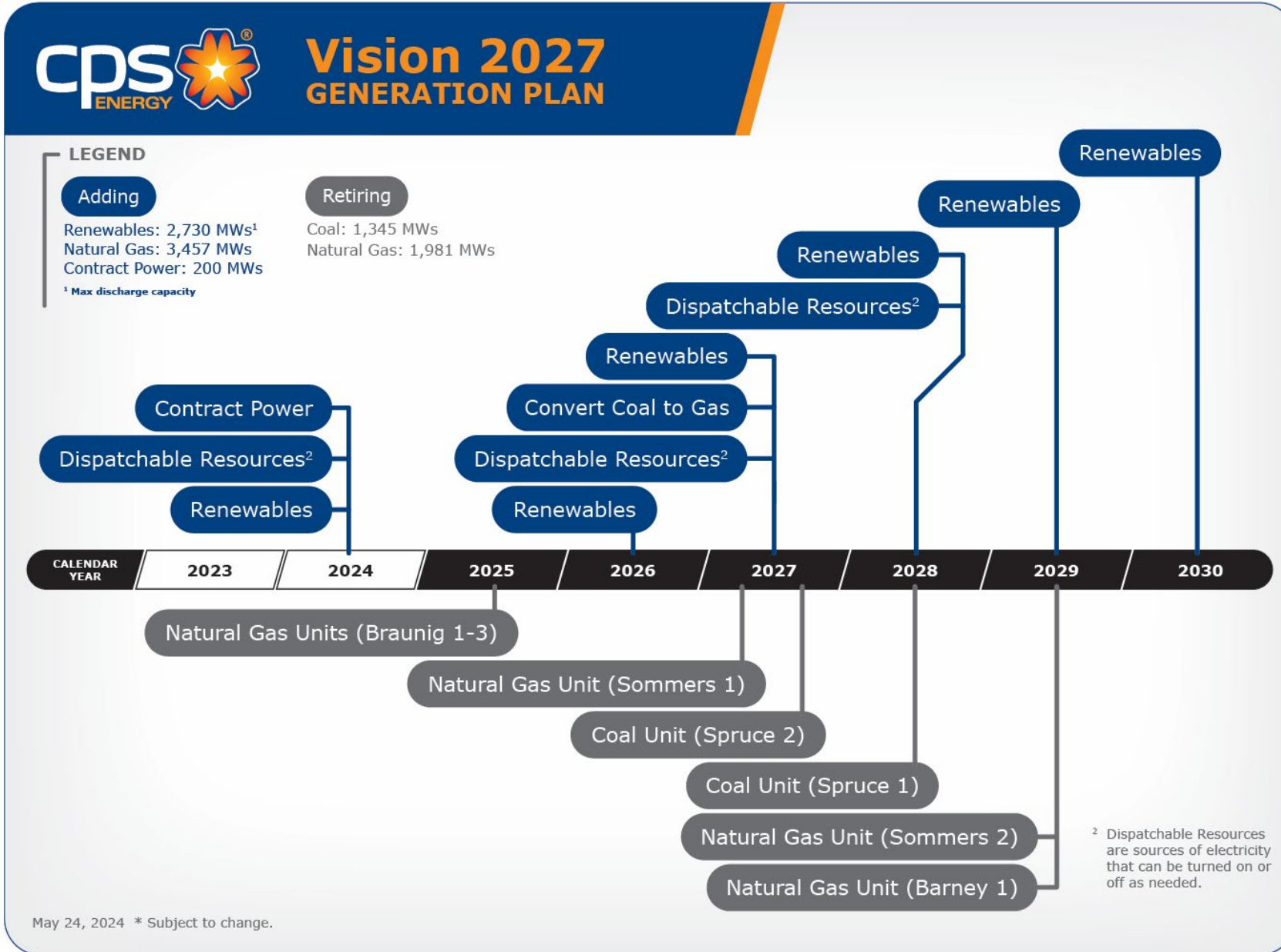
ERCOT

- Through HB 5066, Prospective Loads are now included in Planning Forecasts beginning in January 2024
- Impacts:
 - ~**40GW** increase
 - Increased Transmission Constraints throughout Texas
- Transmission lines outside CoSA now requires PUC Approval (2015)



San Antonio, in the state's geographic center, sees increased "flow-through" transmission constraints.

STATE OF THE UTILITY



2.7 GW

Net Increase

STATE OF THE UTILITY

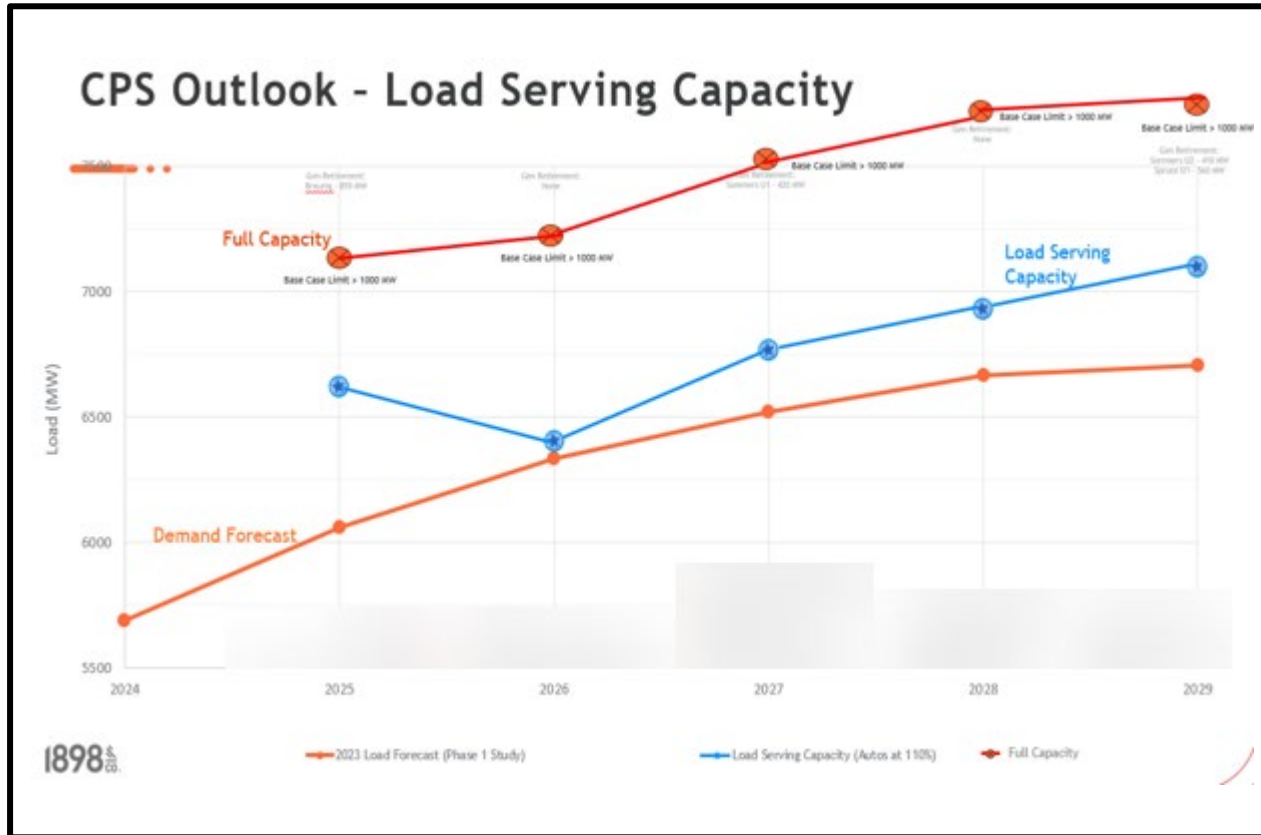
TRANSMISSION CAPACITY STUDIES UNDERWAY

- All studies performed by CPS Energy have the potential to generate transmission projects that affect system capability to serve large loads, including:
 - Annual Planning Assessment performed for NERC requirements
 - Interconnection Studies for generation, transmission & end-user (large load, wholesale power, etc.)
 - Operational Analysis Studies
- Third Party studies underway:
 - **Stability Study:** Hitachi performing reactive power analysis for generation retirement scenarios, IROL studies & multiple generation interconnection studies.
 - **Load Serving Study:** 1898 Co. (B&M) performing phase 1 of system capacity analysis to confirm system capabilities to serve large loads into the future
 - **Future Phase 2:** 1898 Co. (B&M) phase 2 of system capacity analysis will utilize the latest cases & load forecasts and is planned to begin July 2024

Multiple studies are underway to ensure long-term system reliability is maintained. Future studies will be ongoing and include targeted Non-Wire Alternatives to provide load relief.

STATE OF THE UTILITY

PHASE 1 CAPACITY STUDY

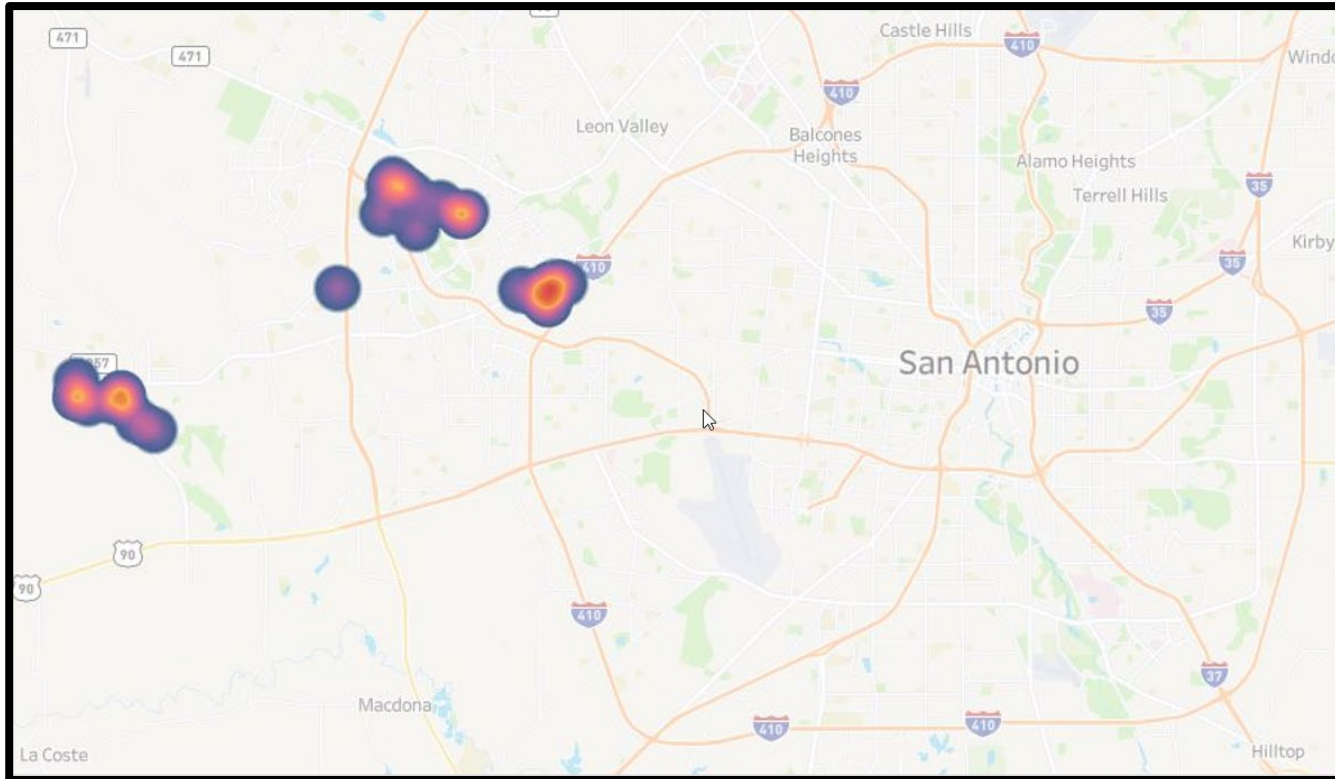


- CPS Energy recently conducted a load-serving capacity study
- Beyond 2025, CPS Energy has sufficient capacity to meet the Load Demand of the next 5 years (including natural load growth)

Under optimum scenarios, CPS Energy has enough capacity to meet energy needs.

STATE OF THE UTILITY

PHASE 1 CAPACITY STUDY

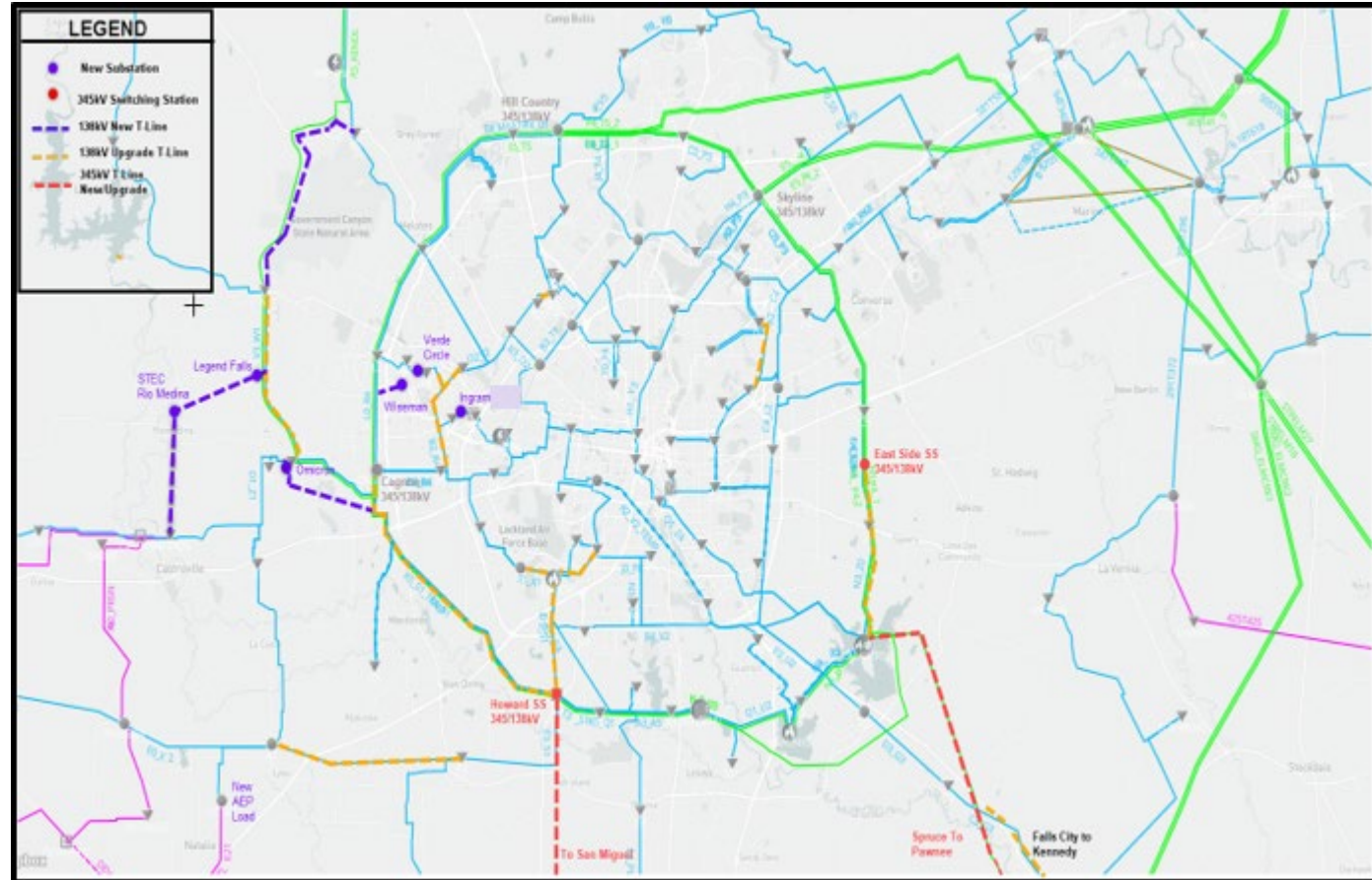


- There are pockets of the grid that observe capacity constraints
- These are driven by growth in areas with limited supply

Transmission Capacity Studies must consider contingency (worst-case) scenarios. This is to ensure reliability and to avoid blackout conditions.

Building New Transmission Lines

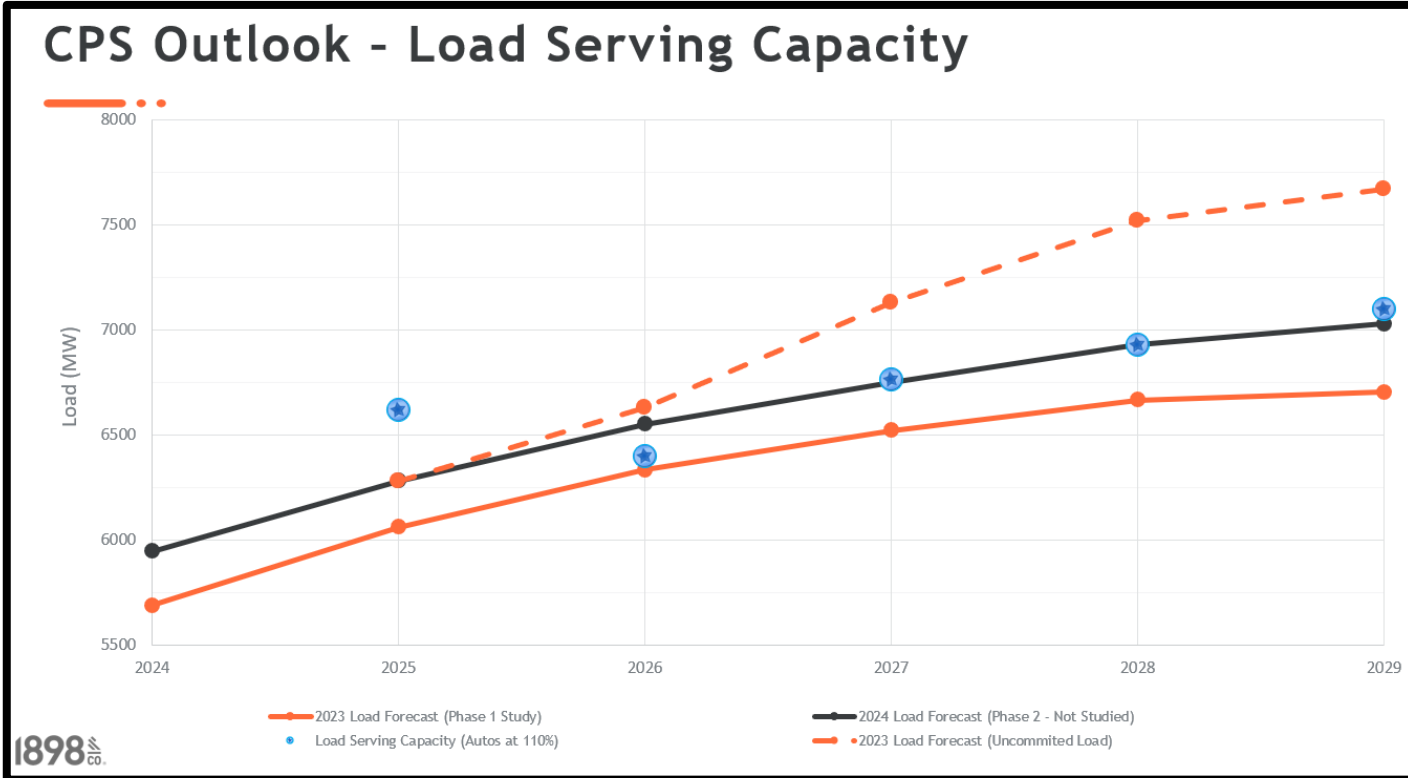
- ERCOT approved 2 new 345kV/138kV switching stations & 15 new or upgraded transmission lines
- CPS Energy estimates that **\$1.3B** will be required in the next 5 years to increase grid capacity



CPS Energy expects to add ~1 GW of load-serving capacity by 2029.

WHAT WE ARE DOING TODAY

PHASE 2 CAPACITY STUDY



- A Phase 2 study will begin July 2024 and consider the ERCOT cases plus CPS Energy large load additions
- New steady-state cases will be posted to ERCOT portal this Summer

Multiple studies underway to ensure long-term system reliability.

KEY FACTORS

Economic Expansion/Load Growth

- Demand is escalating as new large loads are added to the system faster and in greater sizes than historical interconnections

Transmission Constraints

- Generation mix is geographically dispersed from load centers

Supply Chain Lead Times

- Substation Transformer lead times can exceed 2+ years



CPS Energy has seen substantial and rapid load growth, which is creating new challenges on the transmission system.

Reviewing Large Load Interconnection Process

- Improve visibility of the interconnection queue and timeline
- Align with industry best-practices for large load interconnection processes
- Update capacity studies with latest information
- State Policy Maker Discussions



We are reviewing the large load interconnection process to improve transparency, adopt best practices, and engage with policymakers.

WHAT WE ARE DOING TODAY

ENHANCING ACCESS TO CUSTOMIZED ENERGY SOURCES

- Green Tariff is an important tool for large load customers to meet ambitious sustainability goals
 - Allows customers to source energy through renewable PPAs
- Update effort underway
 - Revised demand charge to recognize the value of avoided generation cost
 - Less stringent backup gen requirements
- Modifications require Board and City Council approval



On-Site Power Generation

- Natural Gas Turbine / Combined Cycle
- Microgrid (Solar + Storage)
- Customer-Owned / Co-operative Substation Construction
- Fuel Cell

New Customer Offerings

- Flexible Interconnection
- Peak Load Curtailment

Expanding Grid Enhancing Technologies

- Targeted Expansion of DLR Implementation
- Targeted Expansion of Advanced Conductor Implementation



CPS Energy is currently exploring new technologies and process improvements to adapt to changing grid requirements.

On-Site Power Generation

Natural Gas Turbine / Combined Cycle
Microgrid (Solar + Storage)
Customer-Owned / Co-operative Substation Construction
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KEY TAKEAWAYS



CPS Energy is actively identifying large load interconnection system constraints and developing plans to address them



CPS Energy will continue working to provide visibility to the interconnection process with realistic timeframes



CPS Energy is committed to partnering with customers to find and implement mutually beneficial solutions



CPS Energy is engaging state policy leaders on potential legislative/regulatory reforms

CPS Energy will work individually with customers to find the right path forward solution(s).

- 1. Continued Updates/Dialogue**
- 2. Customer Data with Detailed Load Ramps**
- 3. On-going Collaboration Towards Developing a New Solution to a New System Challenge**



THANK YOU

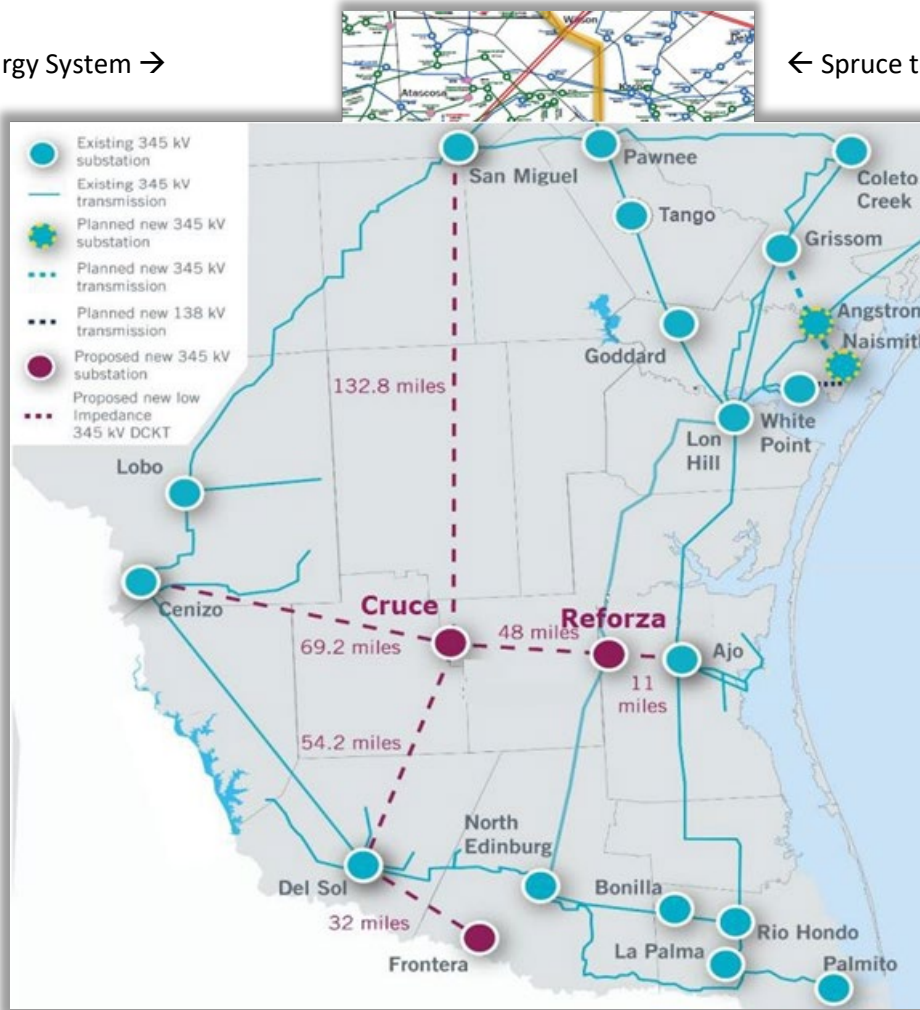


APPENDIX

HIGH RENEWABLES PROJECT DRIVERS

CPS Energy System →

← Spruce to Pawnee



Lower Rio Grande Valley (LRGV) Area Projects

- **High Renewables in South**

- New Wind @ Tango and Goddard
- More wind and solar coming
- Direction of Power flows is from South to North

- **New Projects in LRGV Area (ERCOT BOD Approved Dec 2021)**

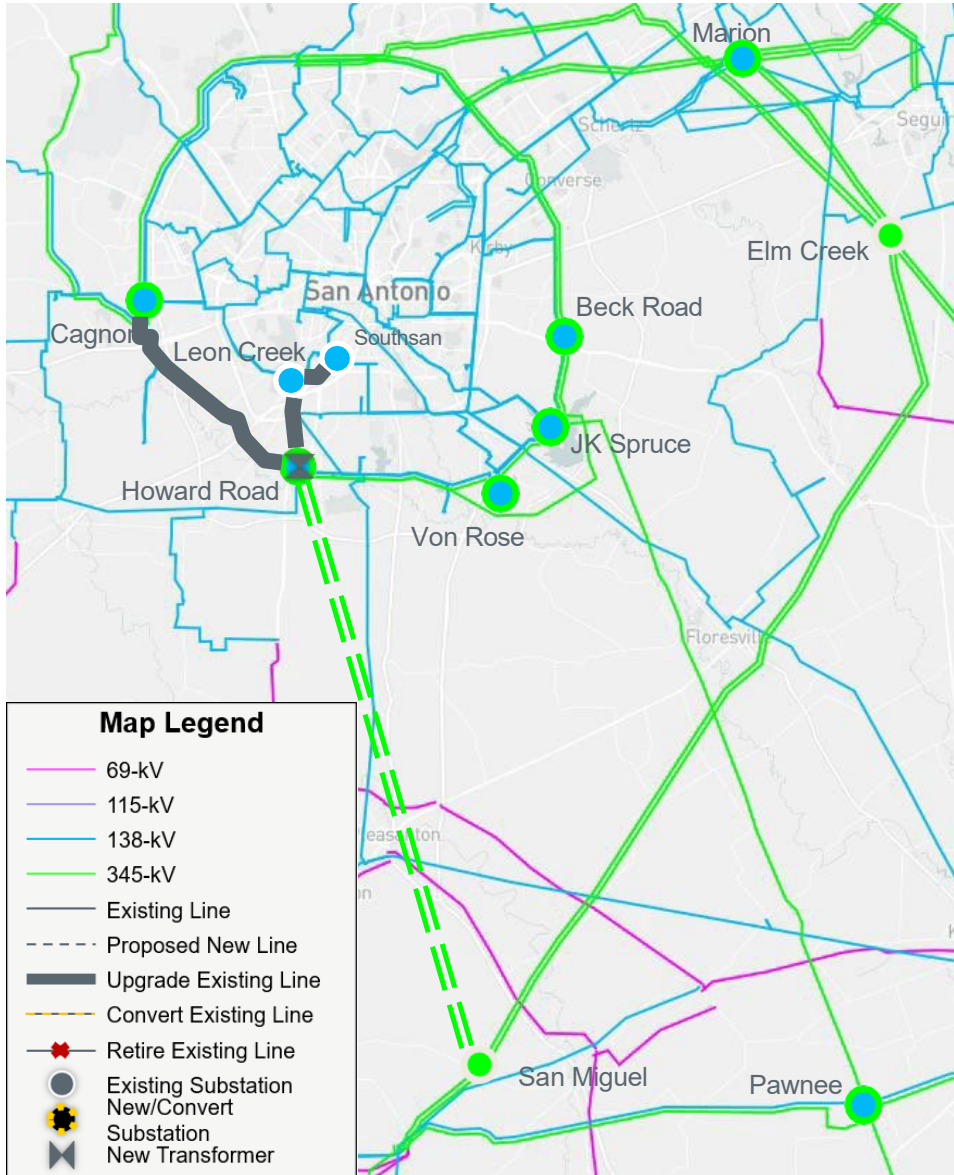
- 3 new 345 kV Substations: Reforzar, Cruce, Forza
- 6 new 345 kV Transmission Lines: These create superhighways for power flow from generation south to the San Antonio load center
- Expected in-service FY2028 Peak

- **Generation Retirements**

- Future CPS Energy generation retirements exacerbate the observed NERC & ERCOT criteria violations

Source: ERCOT

ERCOT BOARD APPROVAL FOR CPS ENERGY



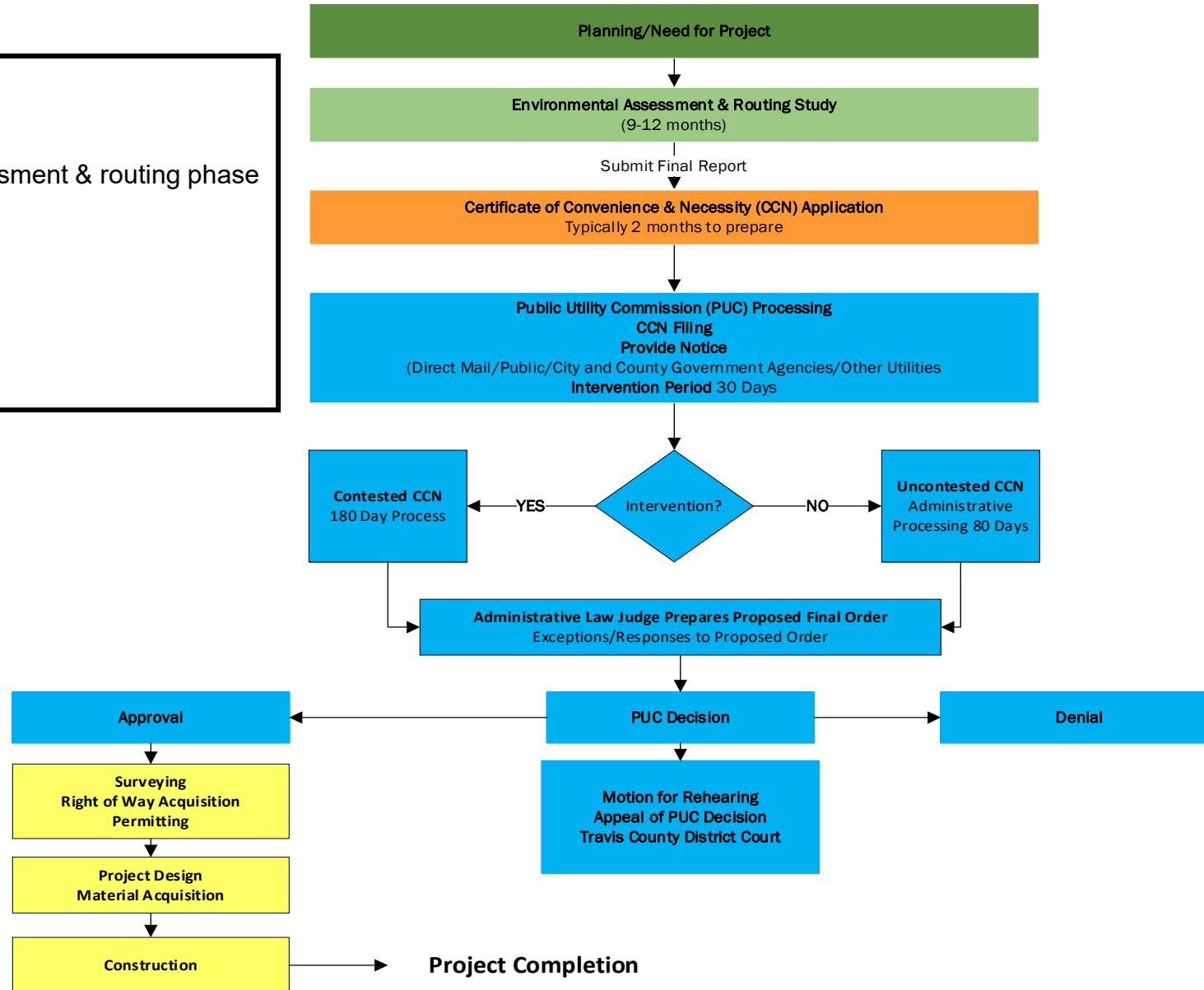
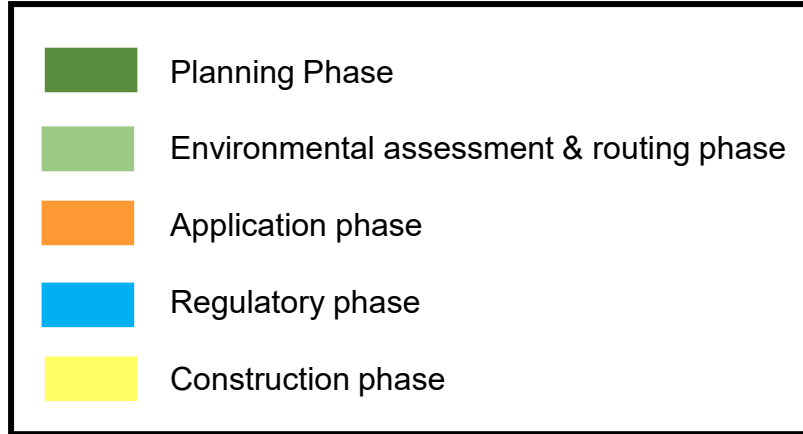
Source: ERCOT



ERCOT Board Approves San Antonio South Reliability Project

The ERCOT Board of Directors met on August 31, 2023, and provided endorsement for the CPS Energy San Antonio South Reliability Project. This project will provide a new 345 kV transmission line path into San Antonio to be energized prior to summer peak of 2027. This new 50-mile path will enable more renewable generation power in south Texas and will support our growing customer demand growth well into the future.

LICENSING PROCESS FOR NEW TRANSMISSION FACILITIES



ERCOT & NERC REGULATION

TRANSMISSION SYSTEM

NERC

- NERC standards were enforced in 2007 in response to the 2003 Northeast Blackout, which left 50 million people without electricity.
- NERC TPL-001 standard enforces that the transmission system must be planned to consider pre-defined planning events (contingencies)
- Failure to comply with these standards can result in fines up to \$1M per day per event

ERCOT

- ERCOT Planning Guide Section 4 defines additional planning events specific to the ERCOT region.

Corrective Action Plans are not allowed to assume firm load shed as a solution to overloaded transmission facilities under these planning events.