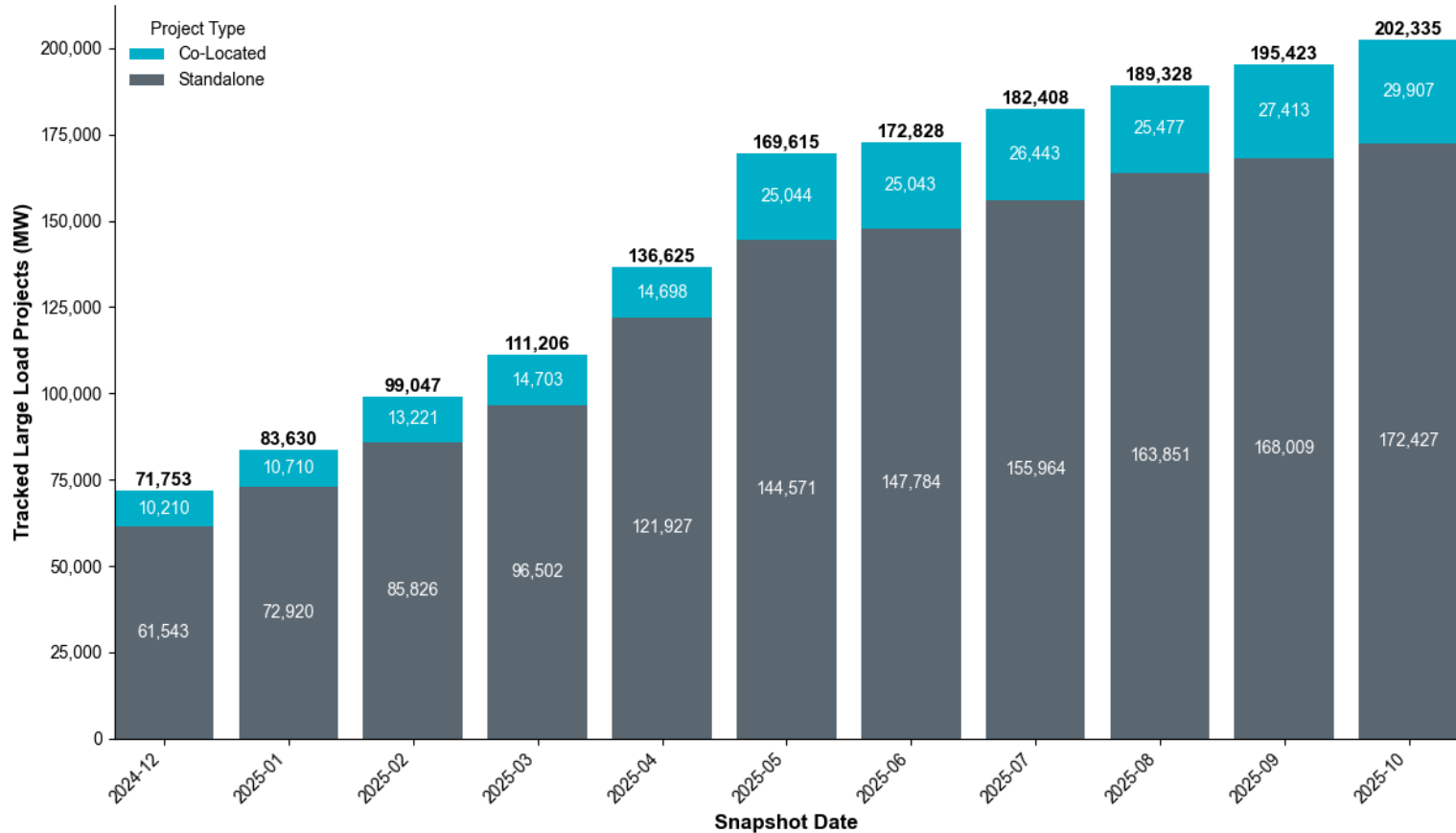




Co-Located Electricity Generation, Data Centers, and Opportunities for Flexibility

Sai Moorthy

Large Load Queue – Past 12 Months



Changes since September Queue Update

- ERCOT notes the amount of load tracked has increased by 130.6 GW (182%) in the past 10 months.
- From presentation to ERCOT Technical Advisory Committee, October, 2025: [LLWG-Report.zip](#)

Large Load : ≥ 75 MW

Co-Located load + generation – Current ERCOT Context

ERCOT context : **Co-Located load + generation = Private Use Network (PUN)**

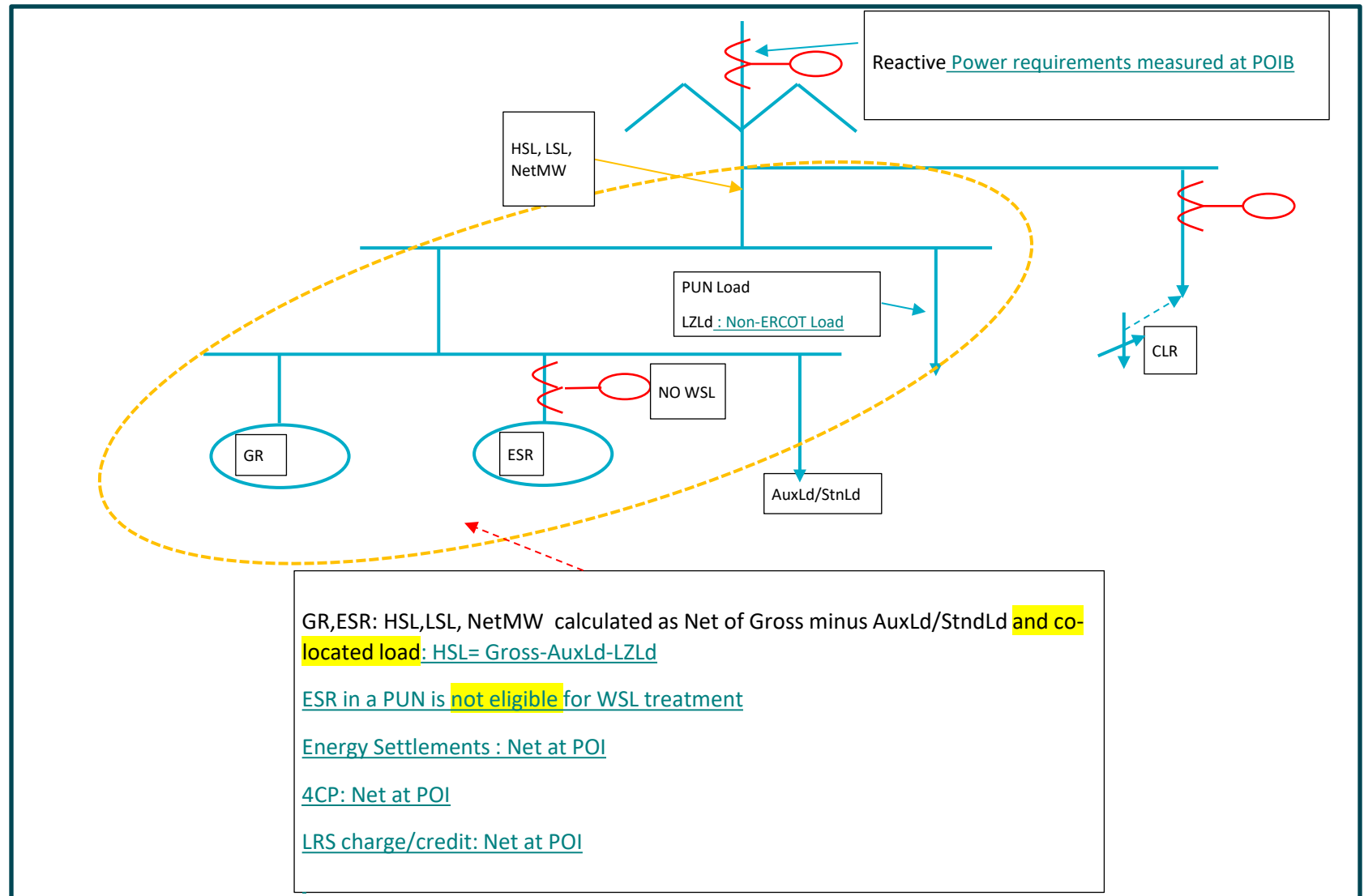
- Private Use Network (PUN):

A site that has Behind-The-Meter (BTM) generation and load, where the generation (including batteries) is designed to synchronously connect to the transmission grid and operate

- A site that has Load with only backup generation that **does not operate synchronously connected to grid** (e.g. diesel backup) is **not considered to be co-located** and is treated as a load only site for ERCOT interconnection/planning studies, and operations

- Backup generation is not included in ERCOT network models

PUN Setup



ERCOT: Private Use Network (PUN)

- Energy Settlements, uses, as volume (MWh), the net energy consumption or injection as measured at the Point Of Interconnection (POI) for each 15-minute Settlement Interval (SI)
- PUN Load Transmission cost (TCOST) allocation is calculated based on the net energy consumption as measured at the POI, during the Four-Coincident Peak SI (4CP)
- PUN Load Load-Ratio-Share (LRS) charges and credits, uses, as volume (MWh), the net energy consumption as measured at the POI, for each 15-minute SI
- Generation (including batteries) have the **option** of registering with ERCOT as a Generation Resource (GR)/ Energy Storage Resource (ESR) or Settlement Only (not participate in ERCOT markets)
 - PUN GR/ESR can only offer to sell **surplus MW** capacity into the market after serving BTM PUN load
 - Batteries (ESR or Settlement-Only) are NOT eligible for Whole-Sale-Load treatment
 - PUN setup may incentivize registering BTM generation and batteries with ERCOT as Settlement Only instead of a full-fledged market Resource. **With Settlement Only, ERCOT does not have the same visibility and control as with a market Resource.**

ERCOT Large Load Interconnection Process

- See Appendix-1 for Current ERCOT Large Load Interconnection Process and other related information
- Interim Large Load Interconnection Process to ensure NERC criteria are met (effective March 25, 2022) – Standalone Load ≥ 75 MW, Co-Located Loads ≥ 20 MW in the next two years
- Interconnection Studies (not exhaustive list) that determine permissible MW consumption amounts for Large Load interconnection requests involve:
 - Steady State studies (N-1, N-1-1). Power Flow, Contingency Analysis studies: Large Load is currently modeled as fixed MW
 - Short Circuit Studies
 - Dynamic Studies (requires dynamic load models). The studies involve, Stability analysis, Voltage Ride Through analysis, Frequency Ride Through analysis, Sub Synchronous Oscillation (SSO) analysis

ERCOT Large Load Interconnection Process – (cont'd)

- Large Loads that co-locate with existing generation, or “Bring-Your-Own-Generation (BYOG)” may not be able to energize at desired MW consumption levels due to N-1, N-1-1 type studies, even if the co-located generation is at a separate “nearby” bus.
- Interconnection study changes under discussion
 - Cluster Studies performed by TSPs to shorten time taken for reliability studies (determining interconnection MW consumption limit)
 - **Accounting for load flexibility in interconnection/planning studies:**

If interconnecting load entity registers the load as a Controllable Load Resource (CLR), then in interconnection/planning studies, the load is modeled as curtailable and can potentially result in higher permissible interconnection MW consumption limit as the CLR

Approved Nodal Protocol Revision Request [NPRR118](#)

Submitted **(NEW)** Planning Guide Revision Request [PGRR134](#)

Upcoming Policy changes: 2025 Texas Senate Bill 6

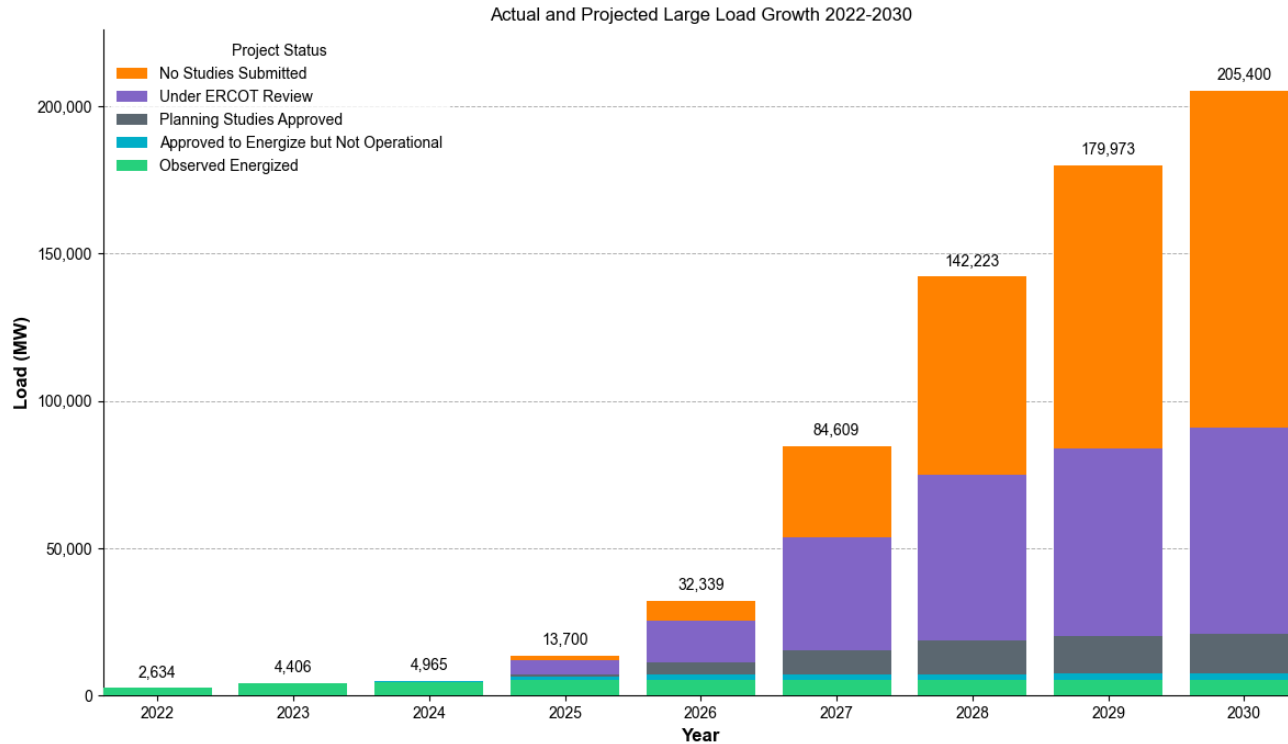
- Texas legislature in 2025, passed Senate Bill 6 (SB6: [Text of 2025 Texas Senate Bill 6](#)) into law that:

Establishes interconnection, operational, and cost-allocation framework for Large Loads (Standalone and co-located)

- Public Utility Commission of Texas (PUCT) has opened multiple projects to address the rules changes required to implement SB6. More projects will be opened soon. Currently the projects related to SB6 are:
 - [58479](#): Rulemaking for Net Metering Arrangements Involving a Large Load Co-Located with an Existing Generation Resource Under PURA §39.169
 - [58480](#): Rulemaking to Establish Large Load Forecasting Criteria Under PURA §37.0561
 - [58481](#): Rulemaking to Implement Large Load Interconnection Standards Under PURA §37.561
 - For more information on the PUCT projects listed above, go to URL below and type in project number in the “Control Number” field
[Interchange – Search](#)

Appendix-1

Current Large Load Interconnection Queue



- **Observed Energized** – Projects that have received Approval to Energize from ERCOT Operations and are fully operational. Represented by all time non-simultaneous peak load consumption.
- **Approved to Energize but Not Operational** – Projects that have received Approval to Energize from ERCOT Operations but are not observed to be operational.
- **Planning Studies Approved** – Projects that have received ERCOT approval of required interconnection studies. Any MWs that were not approved are reclassified as No Studies Submitted.
- **Under ERCOT Review** – Projects that have studies under review by ERCOT.
- **No Studies Submitted** – Projects that are tracked by ERCOT but that have not yet provided sufficient information for ERCOT to begin review. Additionally, MWs that were not approved by ERCOT after review of planning studies are included in this category until a path to interconnect these MWs is identified, or the customer cancels the interconnection request.

Project Status	2022	2023	2024	2025	2026	2027	2028	2029	2030
No Studies Submitted	0	0	0	1,714	6,995	30,886	67,232	96,116	114,246
Under ERCOT Review	0	0	0	4,720	13,875	38,461	56,379	63,767	70,162
Planning Studies Approved	0	0	0	637	4,268	8,061	11,411	12,589	13,491
Approved to Energize but Not Operational	0	100	154	1,395	1,967	1,967	1,967	2,267	2,267
Observed Energized	2,634	4,306	4,811	5,234	5,234	5,234	5,234	5,234	5,234
Total (MW)	2,634	4,406	4,965	13,700	32,339	84,609	142,223	179,973	205,400

From presentation to ERCOT
Technical Advisory Committee,
October, 2025

ERCOT Large Load Interconnection Process – Additional Information

- ERCOT Planning Guide: [Current Planning Guide](#)
 - Existing large load interconnection process (co-located or stand alone)
[CurrentLoadInterconnectionRequirementReview](#)
- Interim Large Load Interconnection Process (effective March 25, 2022):
https://www.ercot.com/files/docs/2022/04/14/InterimLargeLoadInterconnectionProcess_LFLTFLTF.pptx
 - This process applicable to:
 - New loads not co-located with a Resource with total demand within the next two years of 75 MW or greater;
 - Existing loads no co-located with a Resource increasing total demand by 75 MW or greater within the next two years
 - New loads co-located with a Resource with total demand within the next two years of 20 MW or greater; or
 - Existing loads co-located with a Resource increasing total demand by 20 MW or greater within the next two years
- Approved (in process of being implemented): “Interconnection Requirements for Large Loads and Modeling Standards for Loads 25 MW or Greater”
 - Nodal Protocol Revision Request NPRR 1234: [NPRR1234 Issue](#)
 - Planning Guide Revision Request PGRR115: [PGRR115 Issue](#)

Appendix-2

Large Loads: Senate Bill 6 Overview

Text of Texas Senate Bill 6

Establishes interconnection, operational, and cost-allocation framework for Large Loads

Large Load Interconnection Standards (PURA 37.0561)

- PUC may define Large Load MW threshold, not to exceed **75 MW**
- PUC must establish standards **“designed to support business development in this state while minimizing the potential for stranded infrastructure costs and maintaining system reliability.”**
Standards must require:
 - Financial security for transmission upgrades and flat screening study fee of at least \$100,000
 - Proof of site control
 - Disclosure of any “substantially similar,” mutually exclusive interconnection requests in Texas
 - Disclosure of information about backup generation
- PUC must establish criteria for including Large Loads in ERCOT’s load forecasts

Review of Net-Metering Arrangements (PURA 39.169)

- ERCOT must evaluate **transmission and resource adequacy impacts** of net-metering arrangements involving a new Large Load and any ERCOT-registered Generation Resource in existence on 9/1/25
- PUC must review ERCOT’s study and approve, deny, or impose conditions on a proposed net-metering arrangement; must require existing generation to be available **“in advance of an emergency condition”**

Senate Bill 6 Overview – cont'd

Emergency Curtailment of Large Loads with Backup Generation (PURA 37.0561(e))

- ERCOT may direct curtailment of any Large Load that has backup generation serving $\geq 50\%$ of its load
- ERCOT must establish deployment trigger; can be “before or during an energy emergency alert” but only after ERCOT deploys “all available market services, except for frequency responsive services”

Clarification on Firm Load Shed for Large Loads (PURA 39.170(a))

- Requires transmission voltage customers to be curtailed during firm load shed
- Utilities must install equipment or technology
- Applies to customers connected after 12/31/25

Large Load Demand Management Service (PURA 39.170(b))

- ERCOT must create service “to competitively procure demand reductions from large load customers” for deployment “in the event of an anticipated emergency condition”
- ERCOT must provide 24-hour notice of deployment
- Price-responsive customers excluded from participation

Cost Allocation

- By 12/31/26, PUC must conduct an evaluation of transmission system cost allocation to “ensure that all loads appropriately contribute to” costs of providing transmission service
- PUC must ensure that Large Loads “contribute to” the costs of interconnecting the load

SB6 : EEA Timeline for Controlled Outages

