FRENCH-AMERICAN CHAMBER OF COMMERCE

FACC NOTE

ERCOT Roundtable : Growth & Reliability

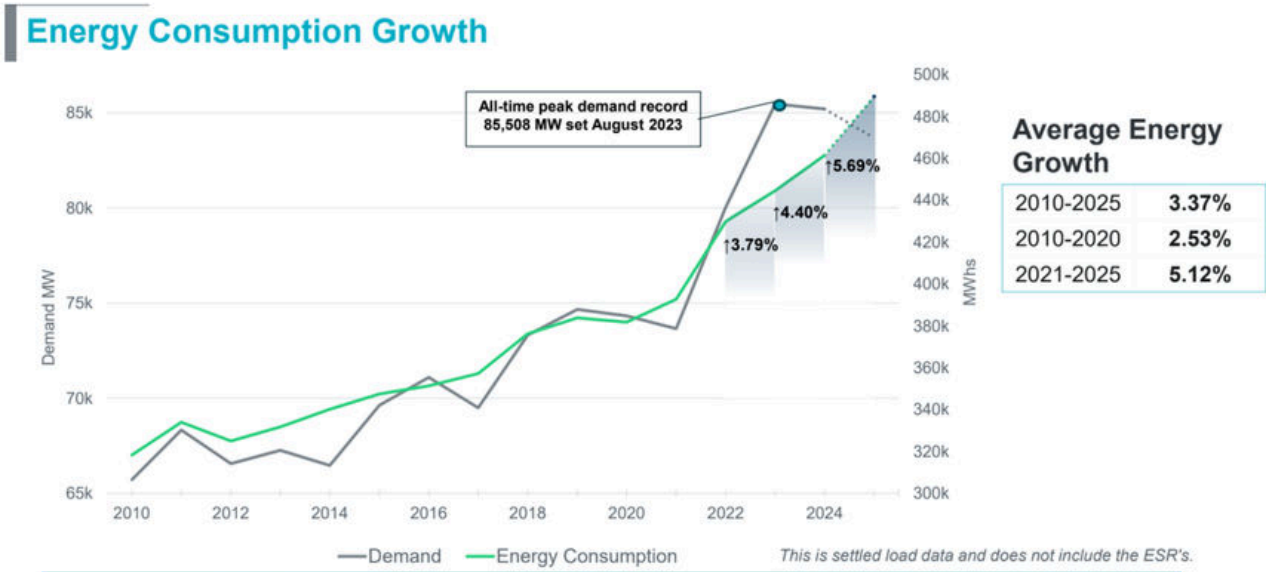
At a recent FACC Texas roundtable with ERCOT, Schneider Electric, policymakers and major industry players, discussions focused on a clear reality: Texas demand is growing ~5% annually, driven largely by data centers now representing over 70% of large-load interconnection requests. With more than 450 GW of generation projects in the queue, dominated by solar and storage, and transmission investment tripling, the ERCOT model is being pushed to balance speed, volatility and reliability in real time.

From scarcity pricing signals to congestion constraints and the need for flexible large loads, the market is entering a new execution phase where infrastructure and operational design will be decisive.

Growth and Reliability in Texas

Aligning Market Design with a New Demand Paradigm

Hyperscale data centers, artificial intelligence infrastructure, industrial reshoring, petrochemical expansion and cryptocurrency operations are reshaping the Texas electricity landscape at unprecedented speed. As a result, Texas is now experiencing one of the fastest electricity demand expansions in the industrialized world. After reaching a historic peak of 85,508 MW in August 2023, the ERCOT system has been recording sustained annual demand growth of approximately 5 percent (as shown in the graph below). Projections suggest that installed capacity could approach 105 GW by summer 2026.



Key Takeaway: While ERCOT hasn't set a new all-time peak demand record since August 2023 (85,508 MW), energy consumption continues to increase year over year.

The structural challenge is not whether the system can adapt, but how market design, infrastructure planning and investment signals can be aligned with the pace of demand growth.

In this context, the French-American Chamber of Commerce of Texas convened a strategic roundtable on grid reliability and the impact of data centers. Hosted by Schneider Electric, with contributions from TotalEnergies, Engie and Capgemini, the discussion highlighted the depth of French engagement across the power value chain, from grid equipment and renewables to battery storage, digital systems and intelligent automation, directly connected to the state's energy and digital transformation.

While capacity expansion remains essential, the challenge is no longer purely quantitative. A system historically designed around dispatchable thermal generation must now accommodate rising renewable penetration, large-scale battery deployment and the integration of highly concentrated, inflexible and rapidly scaling loads, particularly hyperscale data centers.

The ERCOT market is therefore undergoing a structural stress test. Reliability expectations have intensified since Winter Storm Uri, political scrutiny has increased, and debates around market design adjustments continue. The critical issue is not simply how to add megawatts, but how to align investment signals, operational flexibility and regulatory clarity within a market framework originally built for a different generation mix and load profile.

In this rapidly evolving environment, dialogue between grid operators, policymakers, industrial consumers and technology providers is foundational to maintaining Texas' competitiveness and energy reliability over the coming decade.

A unique market architecture :

Balancing speed, exposure, and scarcity pricing

ERCOT manages the Texas power grid, which is largely autonomous and connected to other states only through a few direct current (DC) ties. As a result, Texas is not directly subject to federal regulation and can set its own rules.

The market operates under an "energy-only" model: generators are paid only for the electricity they inject into the grid, not for their available capacity. During periods of high demand, prices can reach $5,000 per MWh, sending strong signals to encourage investment.

Investment decisions therefore depend directly on expected energy market revenues. Generators and storage systems plan their participation independently, while ERCOT intervenes only when necessary to ensure grid reliability. The market has two main components:

- The Day-Ahead Market: production is scheduled the day before, with binding financial commitments.
- The Real-Time Market: every five minutes, ERCOT adjusts generation based on demand, grid constraints, and operational limits, issuing dispatch instructions to all generators, including renewables and storage.

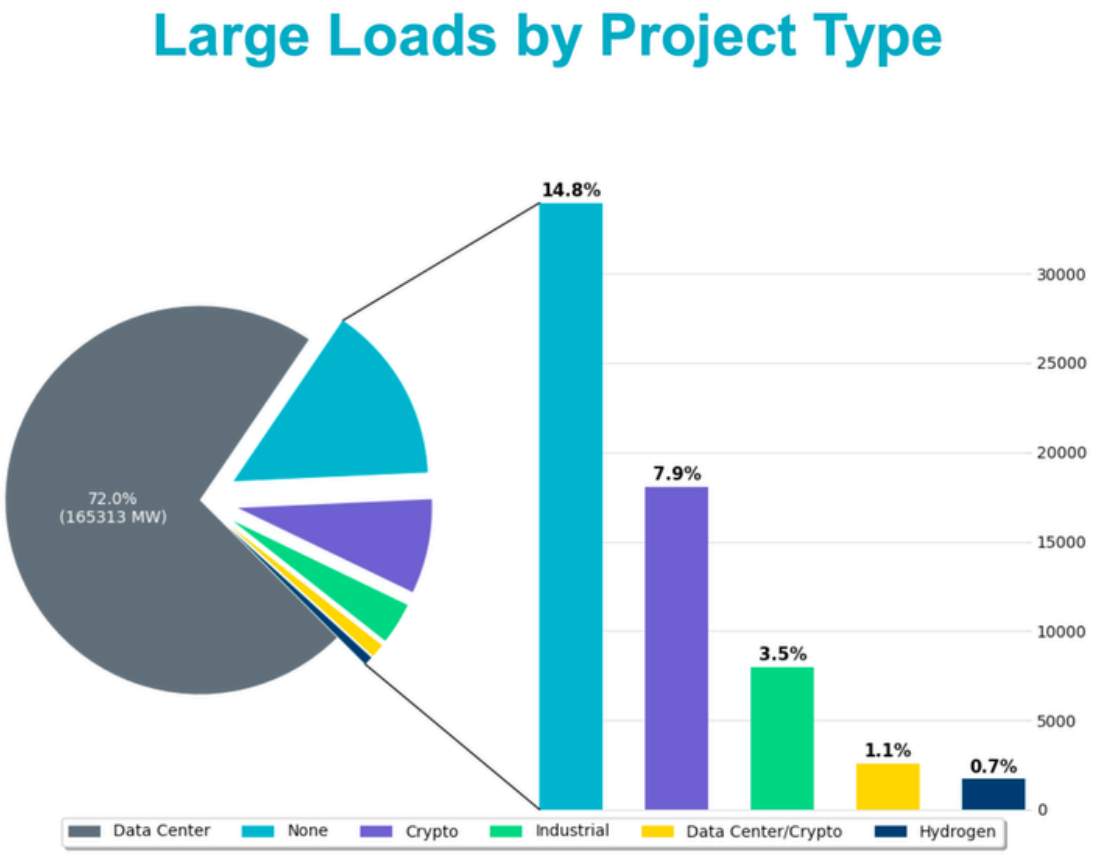
This structure allows new generation and transmission lines to be deployed faster than in other U.S. states. However, it requires generators and operators to manage price volatility and the complexity of real-time operations with precision.

Demand Growth and Interconnection Pressure

Energy consumption continues to increase year over year

Large load interconnection requests have expanded dramatically, with approximately 232 GW of large loads currently seeking connection to the system. Roughly seventy-two percent of these are data centers, reflecting the exponential growth of AI-driven computational demand. Industrial loads and crypto operations represent additional significant components.

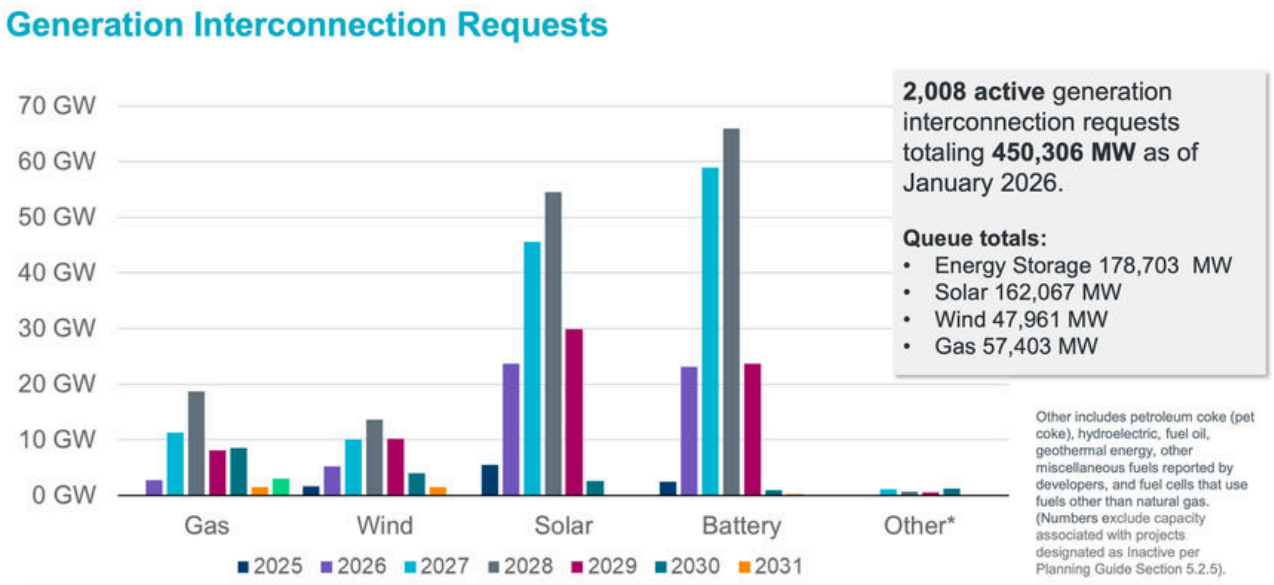
As shown in the figure below, data centers account for the majority of large load interconnection requests, underscoring the concentration of demand and the strategic challenges this creates for grid planning and flexibility.



To contextualize scale, one megawatt of power is sufficient to serve approximately 250 households. A single 500 MW data center cluster therefore represents the equivalent load of roughly 125,000 homes. When such facilities request interconnection in areas where transmission infrastructure supports only a fraction of that capacity, the grid faces either the need for significant upgrades or a requirement for flexible load design.

On the generation side, ERCOT is currently managing more than 450 GW of active generation interconnection requests across approximately 2,000 projects. Solar and battery energy storage dominate the queue, collectively representing more than three quarters of proposed capacity. Wind and gas remain present but no longer lead new development.

As illustrated in the chart below, solar and battery projects account for more than 76% of generation interconnection requests, highlighting the rapid expansion of renewable and storage capacity on the Texas grid through 2026–2031.



> Key Takeaway: Solar and Energy Storage account for more than 76% of the amount of generation seeking interconnection in the ERCOT grid.

This dual pressure from both supply and demand sides is reshaping grid planning assumptions and accelerating infrastructure investment.

Transmission and Resilience

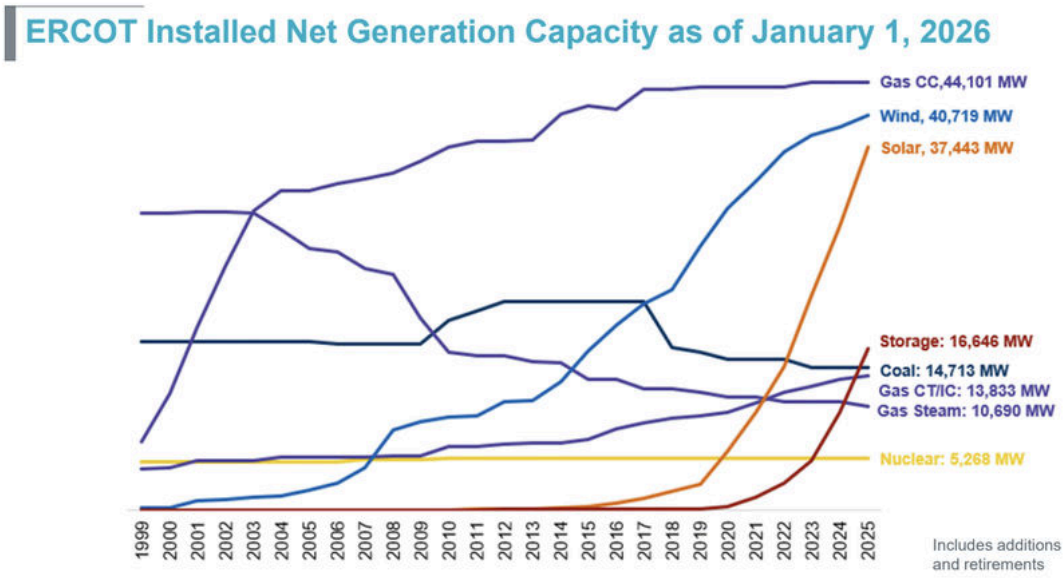
The New Strategic Pillars

One of the key insights from the roundtable concerns transmission investment. Texas plans to allocate $14 billion in 2025, nearly three times the historical average, to develop new 765 kV high-voltage corridors, essential for transporting electricity from generation-rich areas to high-demand hubs, particularly around large data center clusters. Unlike generation assets, these costs are socialized across all consumers, and the Public Utility Commission of Texasis currently reviewing cost allocation frameworks.

Transmission is no longer purely a technical issue; it has become a central economic and strategic variable for project feasibility and site selection.

Winter Storm Uri highlighted the critical importance of reliability. Since then, ERCOT has strengthened cold-weather standards and gained greater authority to inspect generation facilities.

The generation mix is evolving rapidly to better absorb output fluctuations: ERCOT is transitioning from conventional dispatchable resources to inverter-based renewables. To manage this volatility, ERCOT relies heavily on dispatchable natural gas and battery energy storage systems. Storage is growing at triple-digit rates year-over-year and has become central to the procurement of ancillary services (as shown in the graph below).



Notes: Capacity totals are based on the Installed Capacity Ratings for generating units. "Other" comprises of Biomass, Hydro, and Diesel. Planned generation projects are added to installed capacity after approval for synchronization to ERCOT Grid. Totals include Private-Use Network generators that export to the ERCOT grid, Distribution Generation Resources, Settlement-Only Distribution Generators, Unavailable Switchable Capacity, Extended Outage Units, and Seasonal Mothballed Units but not Indefinite Mothballed Units.

Ancillary services, such as Regulation Service and Contingency Reserve, act as the system's "shock absorbers" and are increasingly essential in a context of high renewable penetration and rapidly expanding loads.

Emerging Technologies and Strategic Considerations

The state has allocated $100 million to explore Small Modular Reactor (SMR) technologies as a potential future source of reliable, carbon-free capacity. Co-located configurations are also being tested to accelerate deployment while reducing interconnection bottlenecks. Demand response remains underdeveloped but is becoming essential: large facilities must now be flexible, able to reduce consumption on instruction. ERCOT revises its procedures every six months, making operational agility the new standard.

For investors, developers, and industrial stakeholders, Texas presents both rapid opportunities and complex challenges: strong price signals, fast interconnection, and significant load growth, but also exposure to volatility and infrastructure constraints. French and European companies active in generation, storage, transmission, SMRs, or demand-side optimization find both a laboratory and a strategic opportunity in the state.