Ercot Power Market Outlook 2024: Booming Demand

Unstoppable load beats out record renewables

Nathalie Limandibhratha

Tom Rowlands-Rees

Helen Kou

September 3, 2024

Executive summary

The power market in Texas is poised to look very different in a few short years as record solar build and growth in industrial demand redefine hourly system and price dynamics. BloombergNEF expects around-the-clock electricity prices to climb to $82 per megawatt-hour by 2030, almost double the level seen in 2023, as rapid load growth outstrips renewables build.

- Power consumption across the region operated by the Electric Reliability Council of Texas (better known as Ercot) is growing at an unparalleled pace. Peak demand is expected to climb to 118 gigawatts by 2030 in our base-case scenario, 39% higher than today.
- With electricity demand across Ercot already breaking records due to heat waves and winter storms, Texas faces a critical challenge in meeting the power needs of its rapidly growing industries. Residential demand is set to take a backseat to booming new around-the-clock load from industrials, driven by the electrification of oil and gas production, and rapid expansion of data centers. The Far West zone, home to the Permian Basin, is set to account for 17% of system-wide electricity demand by 2030.
- Ercot is poised to become the leader in solar power capacity in the US by the end of the decade, overtaking California as its installed capacity is expected to triple. But battery storage additions in the Lone Star State are lagging, which means electricity prices around the middle of the day, when solar is in abundance, will drop, and Texas will soon look similar to California's signature "duck curve".
- Solar's depression of midday power prices, coupled with the around-the-clock profile of industrial load, will result in on-peak prices becoming cheaper than off-peak prices in 2026. Wind will have the strongest merchant revenues of clean power, thanks to strong generation at night soon being in sync with premium off-peak prices.
- Load growth is set to outstrip the rate of renewables build in Texas. Ercot's planned power supply is barely enough to meet BNEF's base-case demand forecast, especially during peak hours on summer days when solar fades. The reserve margin – the ratio of total resources to load – is expected to drop from 20% in 2023 to 1% in 2030. To meet forecast electricity demand, new gas plants or batteries paired with renewables must come online. Beyond these peak hours, BNEF sees annual thermal generation from coal and gas increasing to meet load growth.
- *(The labels for the chart on Texas' installed power capacity mix on slide 15 were updated on October 31, 2024, to show the capacity of nuclear.)*

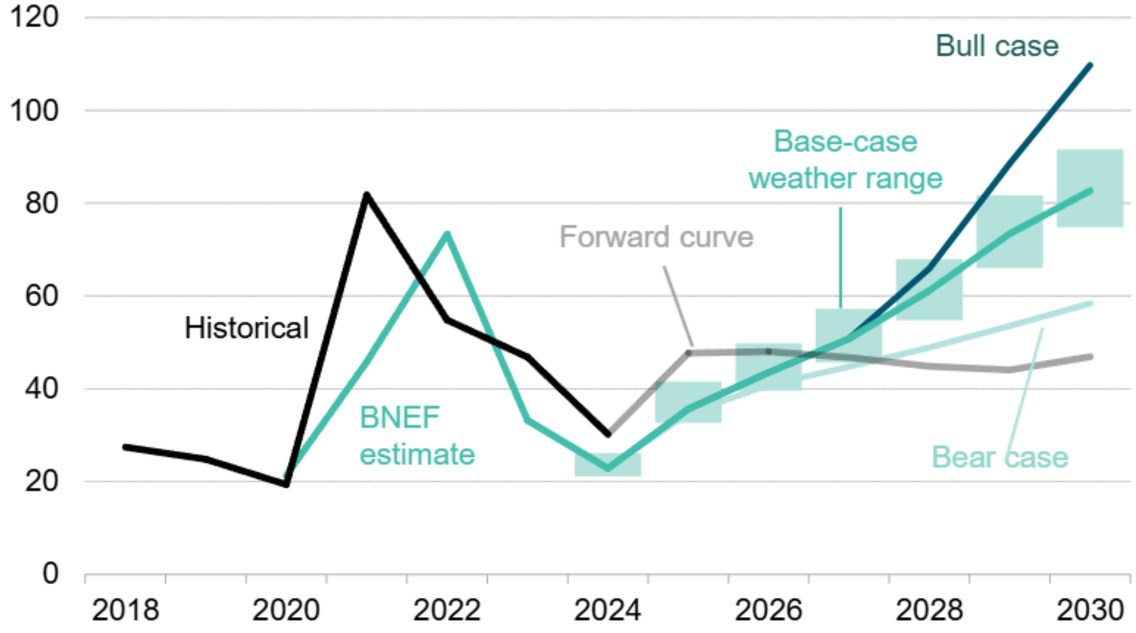
118GW Forecast summer peak load in Ercot in 2030

68GW Estimated solar, wind and energy storage additions across Ercot through 2030

$136/MWh Projected around-the-clock power price in Ercot for August 2030

Forecast average around-the-clock power price in Ercot's North Hub

$ per megawatt-hour (nominal)



Source: BloombergNEF. Note: Ercot is the Electric Reliability Council of Texas. Forecast begins in August 2024. "Forward curve" refers to Ercot North Hub fair value on August 22, 2024; "BNEF estimate" is BNEF's estimate of implied heat rate, multiplied by Houston Ship Channel gas price (historical spot price and fair value on August 22, 2024). Our forecast methodology can be found in the Appendix.