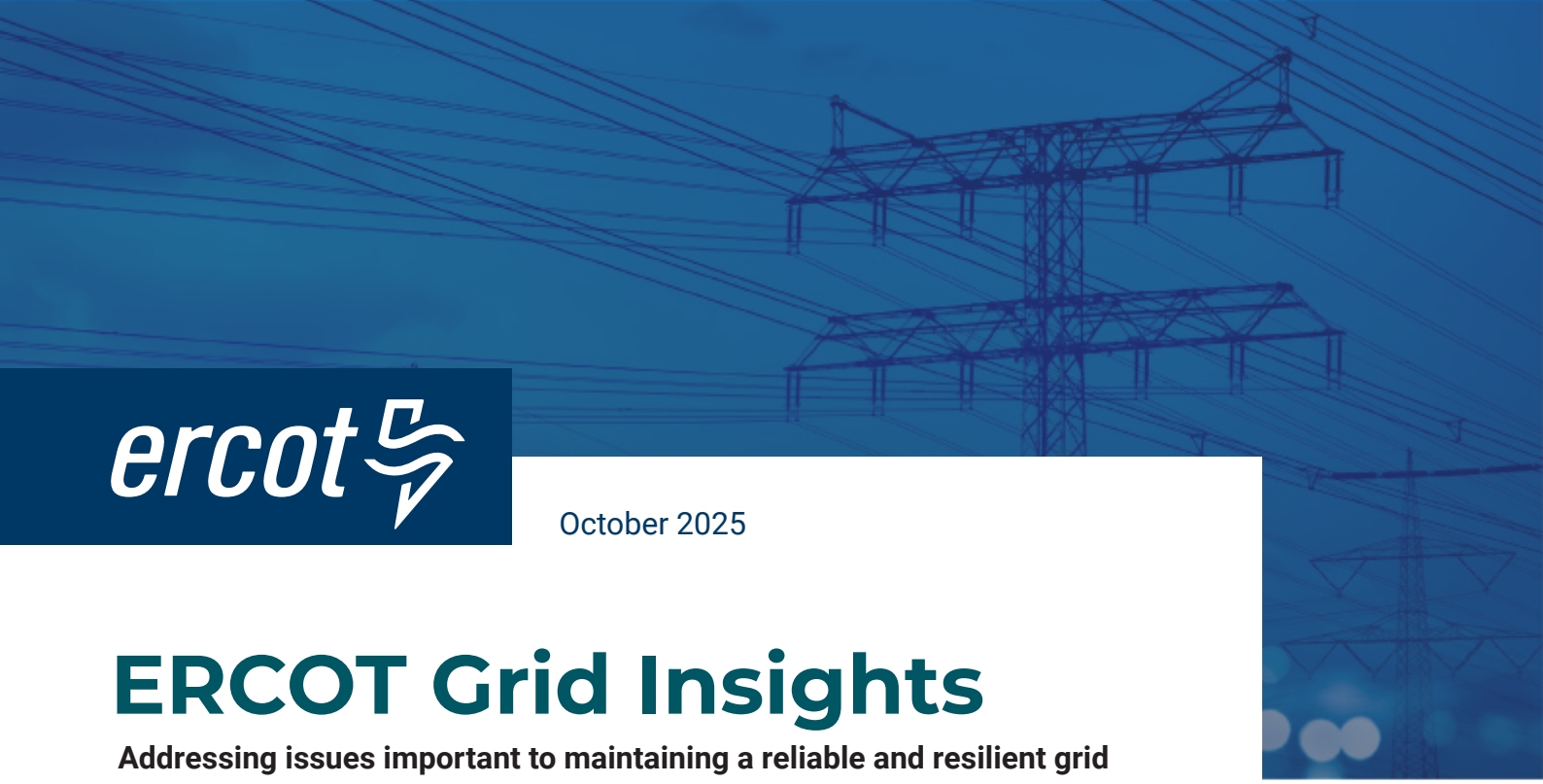


October 2025

ERCOT Grid Insights

Addressing issues important to maintaining a reliable and resilient grid

ERCOT Energy-Only Wholesale Market

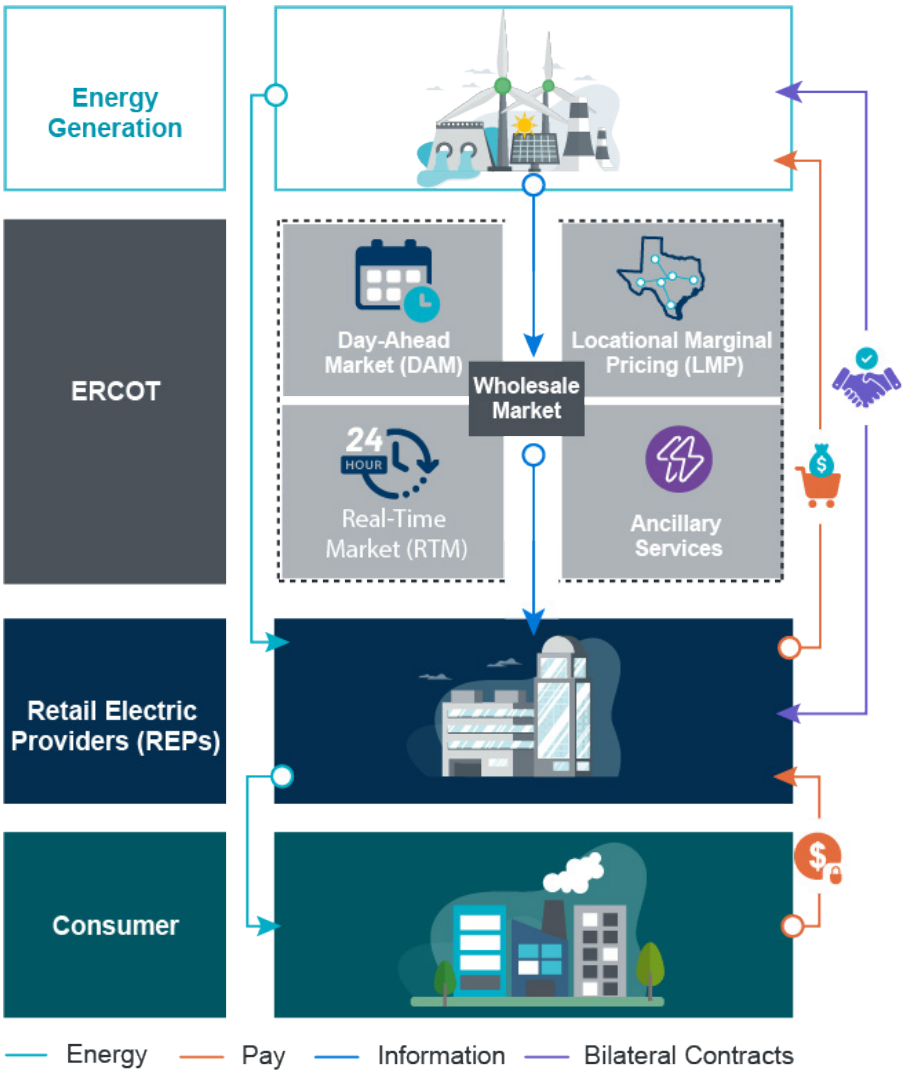
In this issue: An overview of ERCOT's energy-only wholesale market design and the key tools that shape electricity pricing in Texas. As one of the most unique electricity markets in the United States, ERCOT operates an energy-only wholesale market, which means that generators (e.g., wind, solar, and gas plants) are paid a wholesale dollar rate only for the electricity they deliver to the ERCOT System — not for simply having electricity available for delivery. In 1999, the passage of Senate Bill (SB) 7 by the Texas Legislature established the foundation of the deregulated electricity market in Texas, giving the Public Utility Commission of Texas (PUCT) the responsibility of developing the rules to implement deregulation. ERCOT's role is to facilitate the wholesale market (including settling financial transactions), as well as develop and implement market pricing mechanisms and demand response programs for the benefit of all stakeholders, including generators, cooperatives, municipalities, and residential consumers. ERCOT's primary role in the retail market is to facilitate customer switching in competitive areas of the ERCOT Region.

WHOLESALE ELECTRICITY PRICING

What: ERCOT operates an energy-only wholesale market that serves system load (demand) using the lowest-cost generation available. It facilitates the buying and selling of wholesale electricity within the ERCOT Region and employs several tools to determine wholesale electricity prices. These tools include the Day-Ahead Market (DAM) and the Real-Time Market (RTM), which establish Locational Marginal Prices (LMPs) for energy, as well as Market Clearing Prices for Capacity (MCPC) for other reliability products known as Ancillary Services. While ERCOT is the central clearing house for the wholesale market, energy providers representing supply, and electric providers representing customers, may also make bilateral arrangements outside of the centralized market.

How it Works

- **Day-Ahead Market (DAM):** Because it is difficult to forecast energy needs and generator availability for a specific day in the future, ERCOT runs a DAM to plan for the next day's electricity needs. In the DAM, Market Participants (energy providers and consumer representatives) submit bids to buy or offers to sell electricity a day in advance to plan for the next day's energy needs. ERCOT matches supply and demand, selecting the lowest-cost offers that can meet demand, and sets a market-clearing price for energy and Ancillary Services in each hour. This is a financial market, not a physical market, that allows Market Participants to hedge (or manage risk) against price volatility that may occur the next day in the Real-Time Market.
- **Real-Time Market (RTM):** While the DAM covers predicted needs based on Market Participant expectations, those predictions are not always 100% right. That's where the RTM comes in. Every five minutes, ERCOT uses updated supply and demand information and adjusts which generators are producing power. Like rideshare pricing, ERCOT adjusts which generators are producing power as conditions change — if demand surges or supply drops, prices increase in real-time to attract more drivers (power generators) to meet the demand. Generators submit offers to ERCOT that show how much electricity they are willing to produce and at what price. As in the DAM, ERCOT selects the cheapest available offers to meet current demand-factoring in grid reliability and how easily electricity can be transported from generators to consumers through transmission lines.



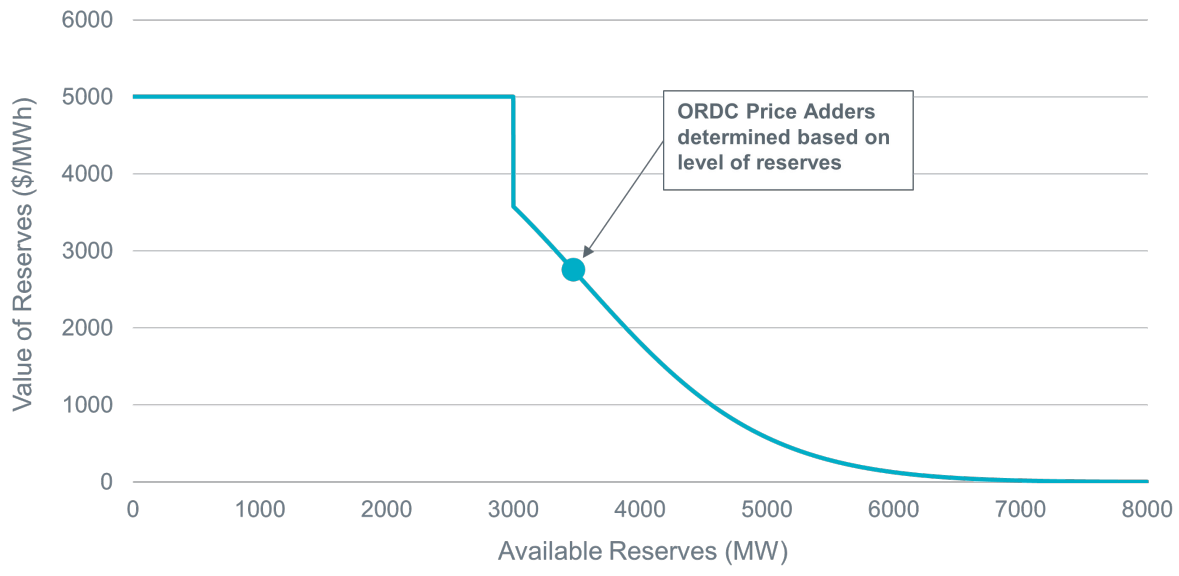
How power is bought and delivered through ERCOT's market.

- **Locational Marginal Pricing (LMP):** Electricity can't always flow freely across the grid due to constraints on the system — like driving on a highway during rush hour — which means that the cost to deliver electricity can vary by location. LMP is based on the cost of delivering electricity to specific locations at a specific time and on how much electricity is needed in an area and how easily it can be delivered factoring in transmission constraints. Prices vary by location in that if transmission lines are at their limits, more expensive generation may be needed, raising prices in that location. Prices vary by location to reflect transmission constraints and congestion and provide short- and long-term economic signals.
- **Ancillary Services:** Ancillary Services are reserves held back to help protect the electric grid should an issue arise. They are purchased in the DAM to ensure enough capacity is available for the next day and on standby if needed. Ancillary Services can be deployed quickly throughout the day to support increases or decreases in the supply and demand of electricity to help balance the grid during emergencies or when system needs are changing rapidly.

Grid Significance: The energy-only wholesale market design promotes reliable operations and investment by allowing wholesale prices to rise significantly during periods of high demand or low supply. This provides both near-term and long-term investment signals to support additional generation and demand response capabilities for customers who can reduce or modify electricity use in response to ERCOT instructions or signals during peak demand periods on the grid.

SCARCITY PRICING

What: Scarcity pricing in the ERCOT Region is a market mechanism designed to send strong price signals when demand for electricity is close to or exceeds available supply. The Operating Reserve Demand Curve (ORDC) is a pricing tool that ERCOT uses to adjust real-time electricity prices based on the amount of spare energy (reserves) the ERCOT System has available. The ORDC is particularly important during capacity scarcity — when electricity on the grid is in short supply.



The Operating Reserve Demand Curve (ORDC)

How it Works: As the amount of reserves decreases, the ORDC begins to increase the price of electricity — even if there's no immediate shortage — to reflect the growing risk of reliability issues. This means that when reserve power gets low, prices automatically rise, which gives generators signals to encourage them to stay online and attract fast-responding resources, like batteries, to provide energy and additional reserves to the grid. It can also incentivize customers to be ready to reduce their energy consumption.

Grid Significance: ERCOT reserves are generally maintained at or above 6,500 MW for a healthy cushion to operate the grid reliably. When reserves drop below the preferred margin of 6,500 MW, ERCOT starts deploying its grid reliability tools, like Ancillary Services, based on conditions. The ORDC is part of ERCOT's broader strategy to maintain reliability in a competitive market, which is critical during tight grid conditions.

Additional note: Texas' retail electricity market supports the wholesale energy market. In 1999, the Texas Legislature passed Senate Bill (SB) 7, which sought to introduce competition in Texas' electricity market by allowing consumers to choose their electricity provider in many areas across the state.