Creating the Customer Powered Grid Across Texas

Demand-Side Management Options in ERCOT

To maintain grid reliability and help organizations in Texas offset their energy use and spend, ERCOT offers the following demand-side energy management programs:

Demand Response Programs

- **Emergency Response Service (ERS)**
  ERS is a peak load reduction program that pays organizations for using less energy when the grid is stressed or when electricity prices are high. ERS is ERCOTs entry-level program and the most flexible because it provides customers with options of seasonal months and daily time intervals of which to participate and includes no penalties. Qualified loads and generators (including aggregations of loads and generators) across the grid either reduce consumption or increase generation when called upon. When participants provide an agreed-upon amount of megawatts within 30 minutes, they help prevent or alleviate an actual or anticipated Energy Emergency Alert (EEA) event.

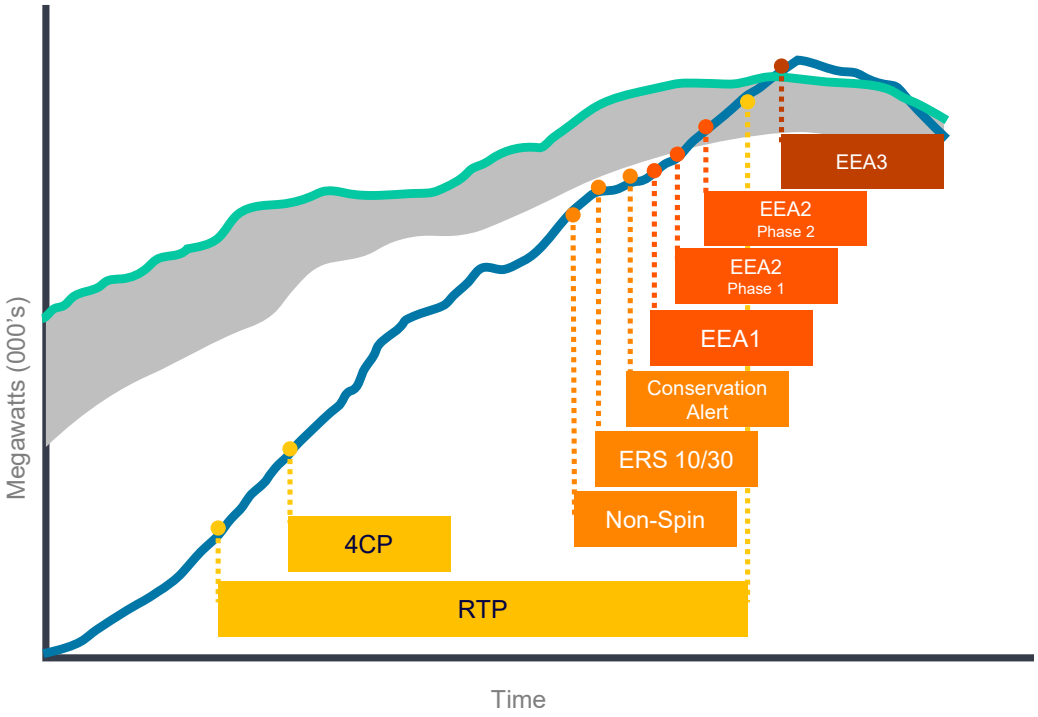
- **Load Resource (LR)**
  One of the more financially rewarding ERCOT programs, LR is a daily procured ancillary service, which gives customers unlimited upside revenue potential based on ERCOT's energy market. With this program load reduction value is equal to an increase in generation by a power plant. Customers are required to curtail non-critical load within 10 minutes or instantaneously if frequency goes below 59.7 Hertz.

- **ERCOT Contingency Reserve Service (ECRS)**
  ECRS is similar to LR with a required response time of 10 minutes. With this ancillary service program, resources act as a shock absorber to the grid, balancing demand and generator fluctuations to maintain stability.

Demand Management Programs

- **4CP Management**
  Every month your business is charged a fee—called a peak charge or, more specifically in Texas, a 4CP charge—based on how much electricity an organization consumed during the period when electricity demand on the grid was at its highest. 4CP management involves curtailing energy consumption during periods of peak system load, thereby lowering 4CP value, which in turn reduces 4CP power charges the following year.

ERCOT Sequence: "Arsenal" for Grid Defense



Emergency Alert Progression

When the grid is stressed, ERCOT takes these steps to avoid blackouts across the state.

Real Time Pricing (RTP)	Relies on basic economics to deter electricity consumption. As demand rises and approaches the reserve margin, prices start to rise. Large consumers monitor the real-time price and determine it's more economically sound to stop consuming (and producing in the commercial sector) given the escalating electricity prices.
4CP Management	Involves curtailing consumption during periods of peak system load. Charges are based on consumption during periods of highest demand. In summer months, about 1,500 MW of "peak-chasing" load can be curtailed by consumers seeking to lower 4CP charges the following year. Typically, this load will come off the grid 3-6pm during the year's hottest days.
Non-Spinning Reserves	Procures 4,500 MW of non-spinning reserve in the day-ahead market and up to an additional 2,000 MW on days with high demand forecasted or uncertainty such as an estimated lack of wind or sun that could lead to wind and solar power resources being unable to produce electricity.
ERS 30	ERS (Emergency Response Service) ERS 30 may be called by ERCOT at this point (<3,000 MW reserves for 30 min) prior to public conservation alerts.
Conservation Alerts	When demand infringes the 3,000 MW mark of the reserve margin, ERCOT issues a series of public address announcements urging consumers to voluntarily shed their load.
EEA 1	With EEA (Energy Emergency Alert) 1, ERCOT operator's authority calls on all available power supplies.
EEA 2, Phase 1 (SOP)	ERCOT can reduce demand on the system by interrupting power from large industrial customers with contractual agreements. SOP winter/summer resources can be used.
EEA 2, Phase 2 (LR, ECRS)	Risk of rotating outages. ERCOT Contingency Reserve Service escalates to a Power Warning, which allows operators to dispatch Load Resources, providing LR-RRS and ECRS.
EEA 3	Controlled outages in progress. Warnings of rolling blackouts to all areas of ERCOT grid. If the capacity shortage is not relieved using voluntary and contractual demand response, ERCOT will instruct utilities to rotate power outages to prevent statewide blackouts.

Contact CPower's Texas team to learn more: 844-276-9371

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