

Retail 2.0 in PJM

Unlocking latent capacity with price-responsive residential load

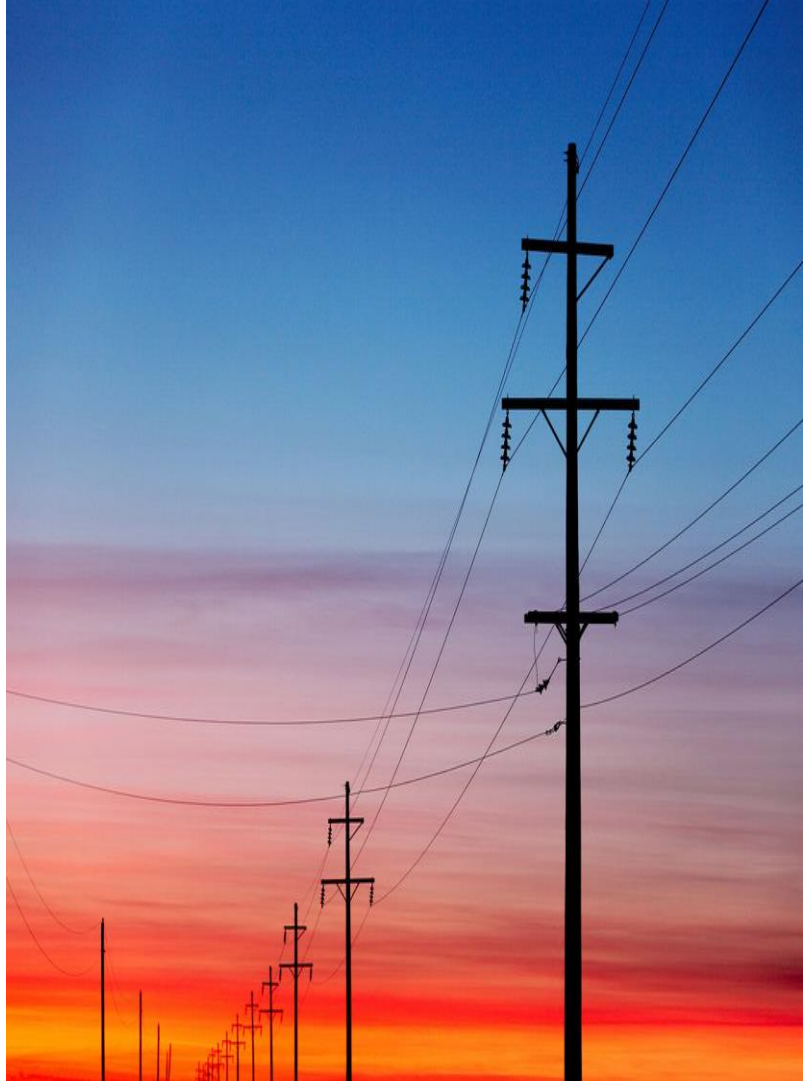


DISTRIBUTED GRID

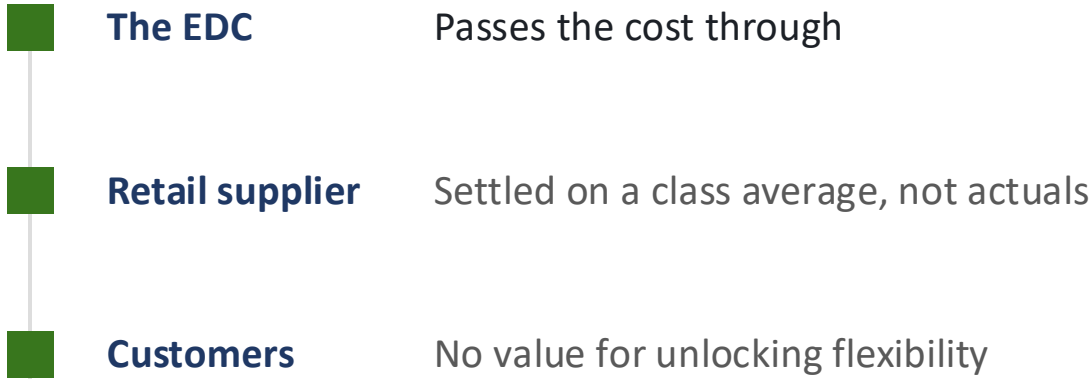
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Bad residential load shapes have no financial impact on stakeholders



The single most important barrier to a sloping demand curve is the lack of financial incentive to create them.
This all boils down to not settling LSEs on actual load information.

This is NOT a demand response proposal

Demand response

- Episodic (crisis-only)
- Requires enrollment
- Called as an event
- M&V, baseline issues
- A registered resource that clears in the PJM Capacity Auction

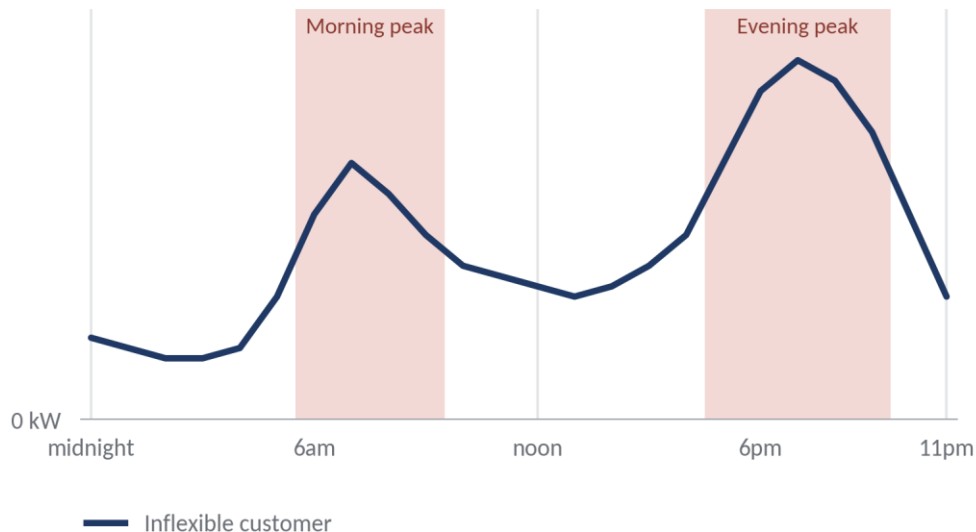
Price-driven flexibility

- Continuous
- Requires no PJM enrollment
- Driven by price
- The same metered interval data PJM already uses to calculate load obligations and settlements

Baselines no longer matter because the goal is to make the meter go to zero during critical hours (even better, negative).

Nor does any of this create a unique payment. All of it flows through traditional settlement processes, if settlements were cleared on actual interval meter data.

An inflexible customer buys energy when it is expensive



- Residential customers buy significantly more volume during the worst times of the year
- Commercial and industrial customers are much less temperature sensitive at those times
- This is why residential load shapes matter most for lowering prices

A flexible customer buys energy when it is cheap and stops buying when it is not



What the retailer is doing

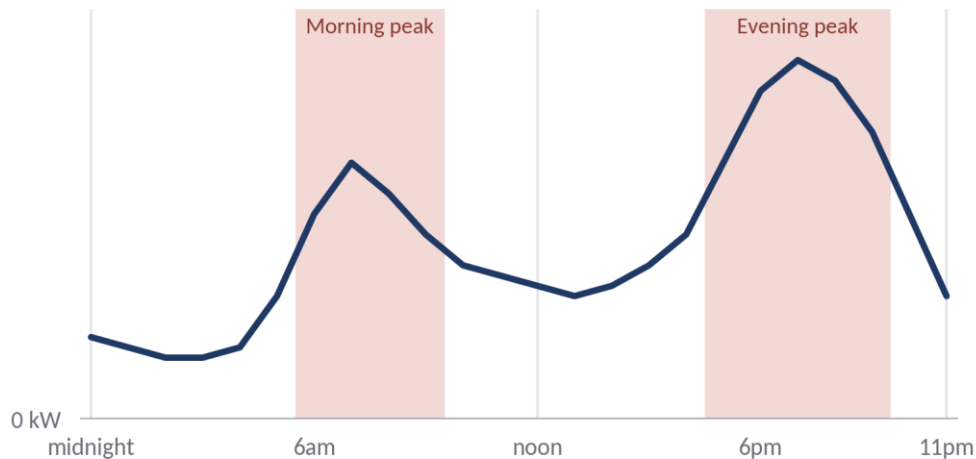
Pre-heating and pre-cooling overnight, absorbing cheap midday solar, and cutting roughly half of demand through the evening super-peak.

Why the peak hour matters

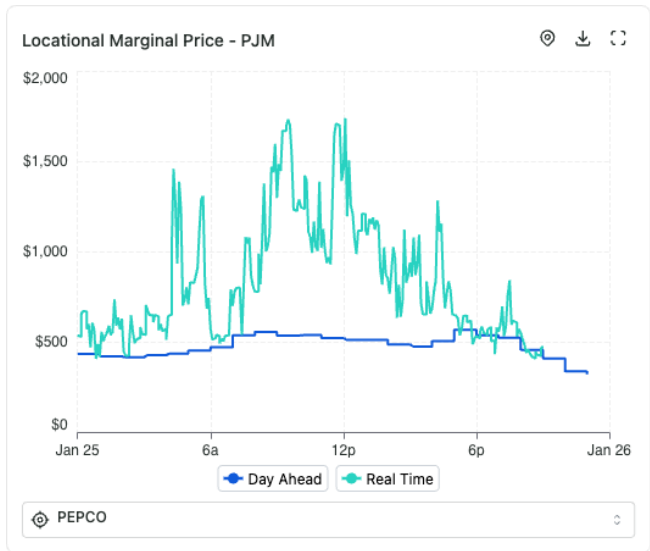
During tight conditions the supply curve becomes nearly vertical, so the last increment of demand sets the price paid on every megawatt-hour cleared.

Where a supplier is settled on the class average, the work of shifting a customer's load remains completely uncompensated.

But it doesn't matter how much work an LSE does, they still pay for this load shape



Winter Storm Fern produced the exactly signal a flexible retailer needs



PJM LMP, PEPCO zone, January 25 2026. Day-ahead against real time.

\$1,500+/MWh

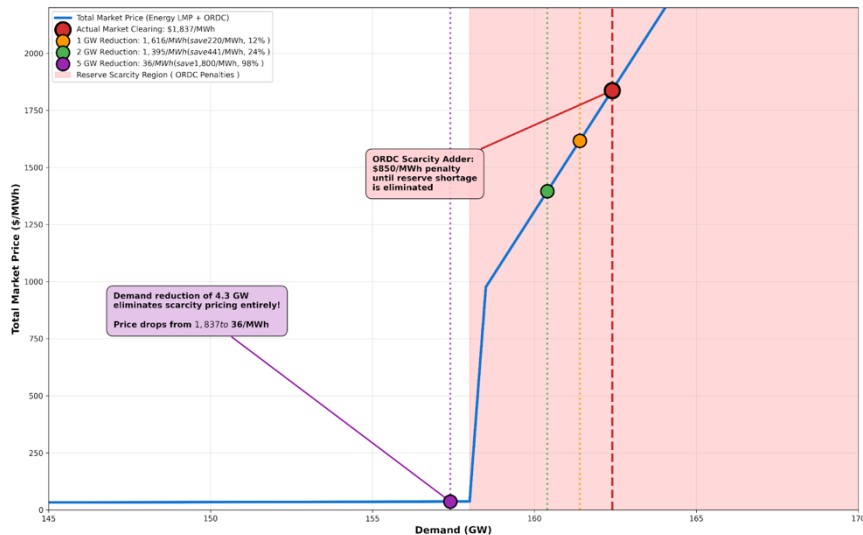
real-time LMP across the morning, against about \$500 day-ahead

No residential supplier got paid for responding

Settlements cleared on class average profiles regardless of how much the LSE works to shift.

There is no link between price signals and financial outcomes for LSEs who flex.

Flexible customers reduce aggregate demand, and wholesale market prices clear cheaper for all customers



Energy: shifting load off the peak clears a lower price for everyone.

Capacity: batteries used as a hedge shift the demand curve left.

This leftward shift is created by market forces of competition for the best load shape.

None of this asks PJM to procure, credit, or compensate anything outside of the status quo.

No PJM utility settles residential load on its actual shape in Settlement A

Settlement A

No EDC settles on actual load shape.

Residential load goes to PJM on class profiles: one average shape for the whole class.

Settlement B

Very few EDCs settle on actuals in Settlement B.

The reconciliation runs about 60 days later.

Best Case: Interest free loan granted by a flexible LSE given to PJM

What it costs a flexible supplier

- Moving load off the 6 p.m. peak earns nothing
- Load shape management is uninvestable

Markets that settle on actuals

- ERCOT
- Great Britain
- Australia
- Denmark
- Norway

PJM market reform without settlement reform means prices will not reach most load serving entities

Four changes states control

	Settlement	EDCs submit each residential customer's actual interval data in Settlement A instead of class profiles.
	Data access	Suppliers get 15-minute data within 24 hours through an API, with the customer's consent.
	Capacity	A customer's capacity obligation drops as soon as verified behind-the-meter equipment is installed, trued up later at the zonal capacity price. Allow negative PLCs and pooling.
	Billing	Suppliers can send their own bill, including utility distribution charges. The commission keeps full authority over consumer protection.

Also: faster behind-the-meter permitting, same-day switching, and bills that show customers what flexibility saved them.

Flexible customers can receive 25% or more off standard rates

Octopus Energy

Unlock our cheapest energy rate with **Intelligent Octopus** for smart thermostats

The smart plan that gives you one of the lowest energy rates in Texas with savings up to 30% off your energy costs

What is Intelligent Octopus?

Intelligent Octopus is a smart feature for Octopus Energy customers that automates your energy usage, saving you money while keeping your house comfortable. **For every month you're connected, you'll get a discounted energy rate that equals about \$300 in savings annually. Some customers may save even more.**



Up to 30% off the standard rate for a connected thermostat

As of 08/10/25, Wayback Machine.

Base Power



Energy + Backup

TIME-OF-USE (TOU) SUPPLY RATE

On-peak rate: 25% savings vs. ComEd PTC

7.8¢ /kWh

Off-peak rate: 27% savings vs. ComEd PTC

7.6¢ /kWh

Current rates

BACKUP BATTERY

\$695 **\$95**

One-time installation

Save at least 25% vs. ComEd's Price to Compare

\$95 installation fee and
25% savings to ComEd's
PTC

Private capital funds it, with no utility program budget and no cost socialized across the rate base.

Load shape is the fastest cost lever states control to reduce costs

The problem

- Residential load shape has no financial impact on anyone
- Settlement A runs on class averages, not actual meter data
- Suppliers that shift load earn nothing for it

What states should do

- Settle residential load on actuals in Settlement A
- Give suppliers 15-minute data within 24 hours
- Allow negative PLCs for customers who export
- Allow supplier-consolidated billing

What it produces

- Prices fall for everyone in PJM, not just participants
- Capacity arrives in months instead of years
- Retailers pay for the hardware out of wholesale values

PJM market reform without settlement reform means prices will not reach most load serving entities.