

Residential Load Flexibility

The Hidden Gem

Michael Lee

Residential Customers Important Stats

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|-------------|---|
| Consumption | <ul style="list-style-type: none">• 10-20 MWh/yr in Texas• Compares to 6-7 MWh/yr in Northeast (2-3x more)• Up to 50 MWh/yr - “Energy Transition” |
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| Thermostat | <ul style="list-style-type: none">• 60% of the volume• 80% of the cost• Need to completely rethink Energy Efficiency |
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| EV's | <ul style="list-style-type: none">• 3-7 MWh/yr for each additional EV• “Double the consumption” |
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| Lightbulbs | <ul style="list-style-type: none">• Don't matter! |
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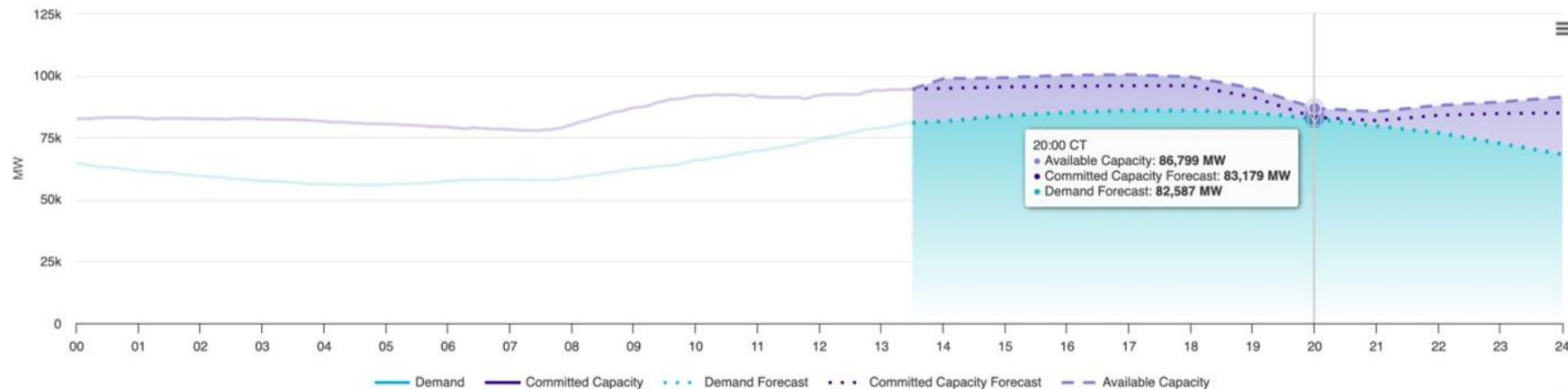
Supply and Demand

Supply and Demand is a graphical representation of the ERCOT system's current power supply (capacity) and demand using Real-Time data, as well as projected power supply (capacity) and demand from hourly forecasts and seasonal forecasts.

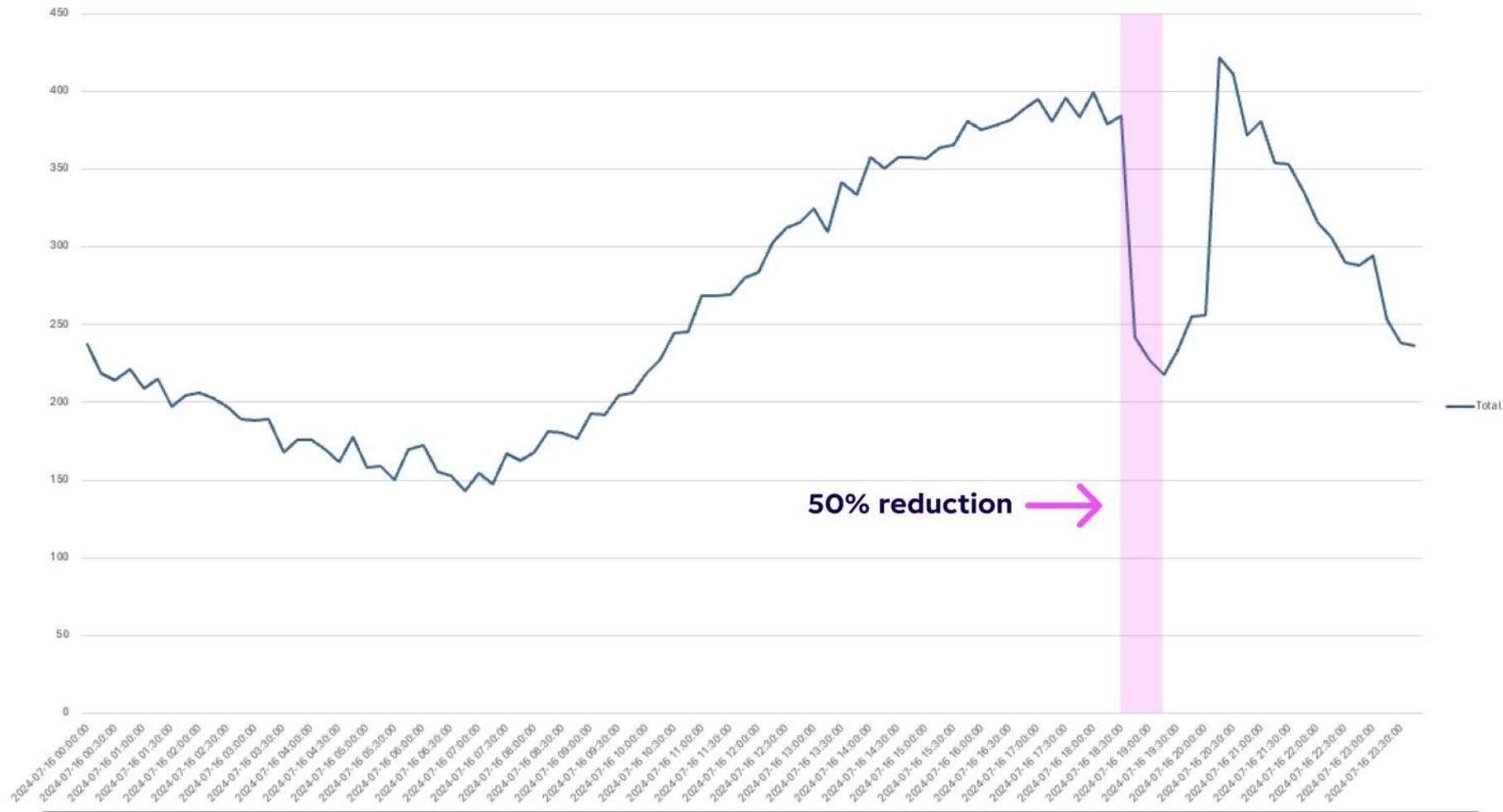
**Note: The 6-Day Forecast graph should only be used as a relative indication of future system conditions. Due to uncertainties associated with the longer-term nature of the forecasts used, both the Available Seasonal Capacity and Demand Forecast may adjust significantly as the Operating Day approaches.*

**Note: Capacity available from demand response programs is not reflected in the Current Day and the 6-Day Forecast graphs unless these programs have been deployed.*

Last Updated: Aug 20, 2024 13:30 CT



Total





Octopus Energy US 🇺🇸 @OctopusEnergyUS · Aug 22, 2024

We set a new peakload record this summer on August 20th with wholesale rates above \$2,000/MWh for over an hour 🤖

Our top earner for the day only exported ~21/kWh but exported at the right time, earning \$61 🌞

It's not always how much you export but when ⚡

SUNNY MONEY EARNINGS



See what our top 5 customers earned on August 20th

Customer	Exports	Earnings	\$/kWh
peach-gecko-336	20.65 kWh	\$61.25	\$2.97
glad-mule-73	16.49 kWh	\$36.27	\$2.19
sepia-pug-301	12.62 kWh	\$34.68	\$2.75
ice-jewel-517	70.16 kWh	\$31.39	\$0.44
plum-may-44	13.97 kWh	\$30.45	\$2.18

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Get big pay for your rays today 🌞💰

From 4 PM until about 8:30 PM you'll see higher than normal solar buyback prices.

If you have a home battery, we're expecting that the best time to export all your unused solar power from 7:30 PM to 8:30 PM 🔋⚡





Octopus Energy US



@OctopusEnergyUS · Sep 6, 2023



Our top 10 contestants' average export rate was 39¢/kWh with an overall contest average of 20¢/kWh 🤔💰📊 (Part 9)



Sunny Money Contest Leaderboard

1	peach-gecko-336	\$907 → Avg. exported 66¢/kWh
2	clean-okapi-475	\$784 → Avg. exported 30¢/kWh
3	anew-shade-158	\$747 → Avg. exported 35¢/kWh
4	lotus-heron-771	\$732 → Avg. exported 28¢/kWh
5	cream-rose-706	\$651 → Avg. exported 23¢/kWh
6	crisp-elm-223	\$637 → Avg. exported \$2.17/kWh
7	aqua-eagle-783	\$564 → Avg. exported 46¢/kWh
8	reed-bat-248	\$478 → Avg. exported 27¢/kWh
9	metal-owl-460	\$430 → Avg. exported \$1.09/kWh
10	grey-run-834	\$423 → Avg. exported 39¢/kWh



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The Big Opportunity

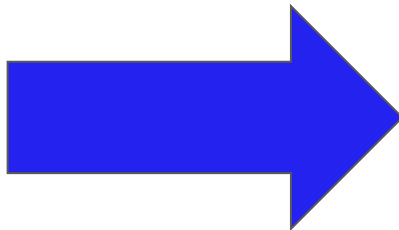
- Urban load pockets can have some of the most flexible loads
- How do we unlock the value of T&D for this flexibility?!
- How do we create distribution level ancillaries and PAY CUSTOMERS instead of paying construction firms?

The Challenge: IOUs / Muni's / Co-ops need to mature

- **IOUs** - not incentivized to create a more efficient system and wear little to no risk for bad load shapes
- **Muni's** - can city councils be OK with different rates for different people?
- **Co-op's** - which ones have the deepest talent pools to figure out this new model

The Challenge: Retail Needs to Mature

RETAIL 1.0
“Buy a hedge and sell a retail product”
“Short power, short gamma”
“SELL, SELL, SELL”
“Marketing” is focus
Profit from variable rates
Destroy Trust



RETAIL 2.0
Manage a load shape via APIs and data-centricity
“Short power, long gamma”
“CUSTOMER, CUSTOMER, CUSTOMER”
User Experience is focus
Profit from a load shape
Create Trust