



**Item 8: Independent Market Monitor
(IMM) 2023 State of the Market Report for
the ERCOT Electricity Markets**

Jeff McDonald, Ph.D.

Vice President, ERCOT IMM Director

Board of Directors Meeting

ERCOT Public

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2023 Energy Prices

Average real-time prices fell 13% from 2022

- Real-time energy value for 2023 was \$30 billion.
- Primary Price Movers: lower natural gas prices (-60%), adverse effects of the ECRS implementation prohibited further price decrease.
- Tighter range of prices across zones, as seen prior to 2022.

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy Prices (\$/MWh)									
ERCOT	\$26.77	\$24.62	\$28.25	\$35.63	\$47.06	\$25.73	\$167.88	\$74.92	\$65.13
Houston	\$26.91	\$26.33	\$31.81	\$34.40	\$45.45	\$24.54	\$129.24	\$81.07	\$64.72
North	\$26.36	\$23.84	\$25.67	\$34.96	\$46.77	\$23.97	\$206.39	\$75.52	\$68.55
South	\$27.18	\$24.78	\$29.38	\$36.15	\$47.44	\$26.63	\$187.47	\$72.96	\$63.34
West	\$26.83	\$22.05	\$24.52	\$39.72	\$50.77	\$31.58	\$105.27	\$65.53	\$61.62
Natural Gas Prices (\$/MMBtu)									
ERCOT	\$2.57	\$2.45	\$2.98	\$3.22	\$2.47	\$1.99	\$7.30	\$5.84	\$2.22

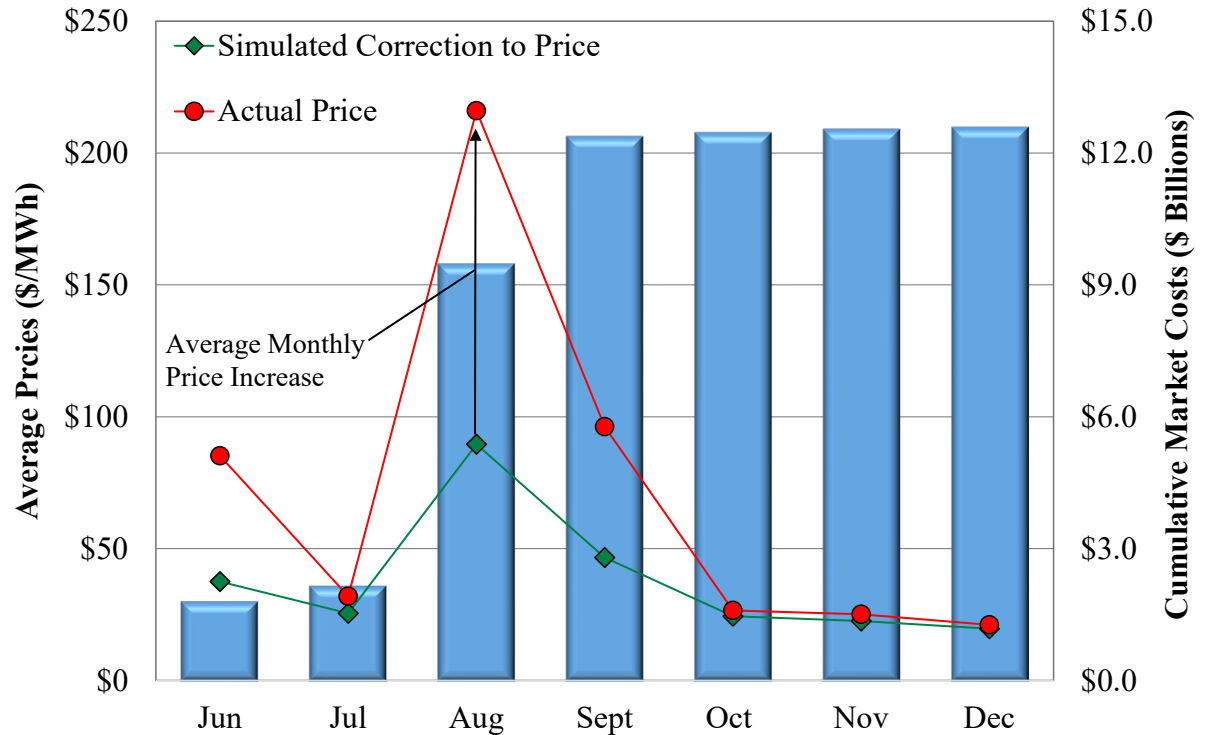
ECRS Impact on Price in 2023

ECRS

implementation
created considerable
excess cost in 2023

- Doubled real-time energy price for June - December
- Estimated excess cost was over \$12b

Price Impact of ECRS

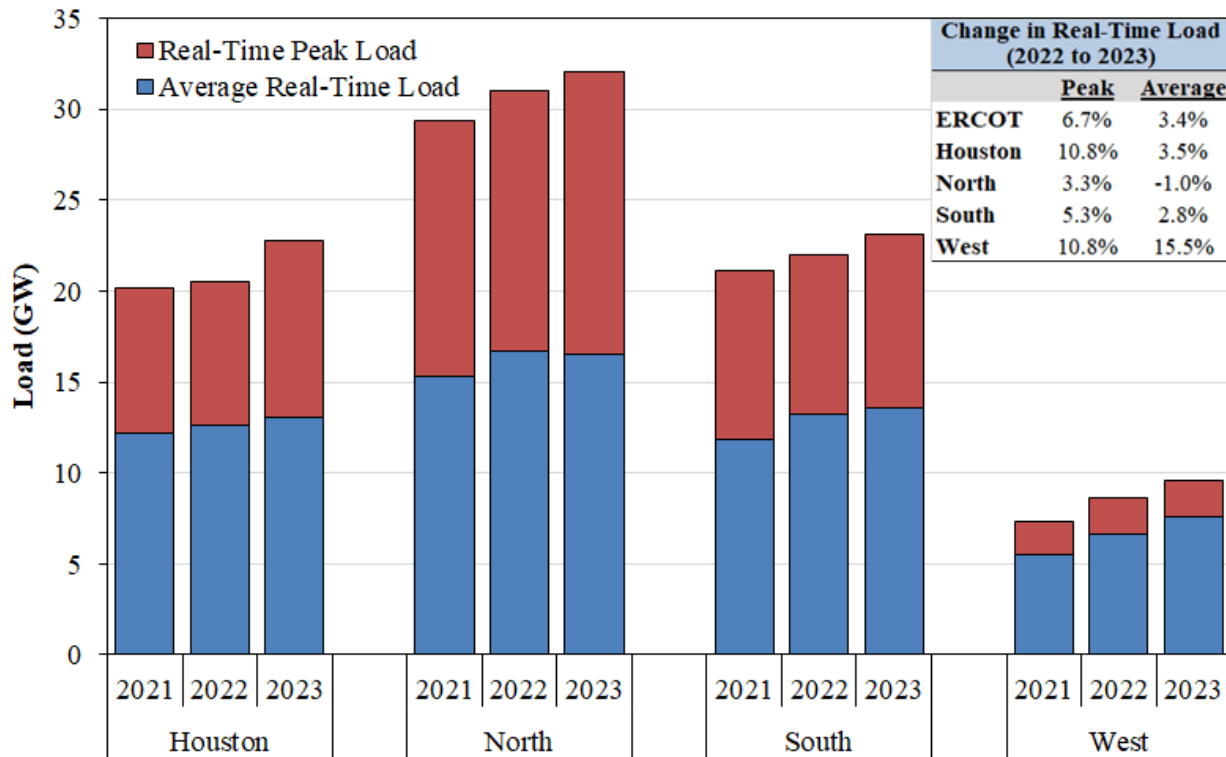


Load Trends

Total ERCOT load increased in 2023

- Average load in ERCOT grew 3.4% from 2022
- Record peak demand of 85.7 GW on August 10, 2023

Annual Load Statistics by Zone



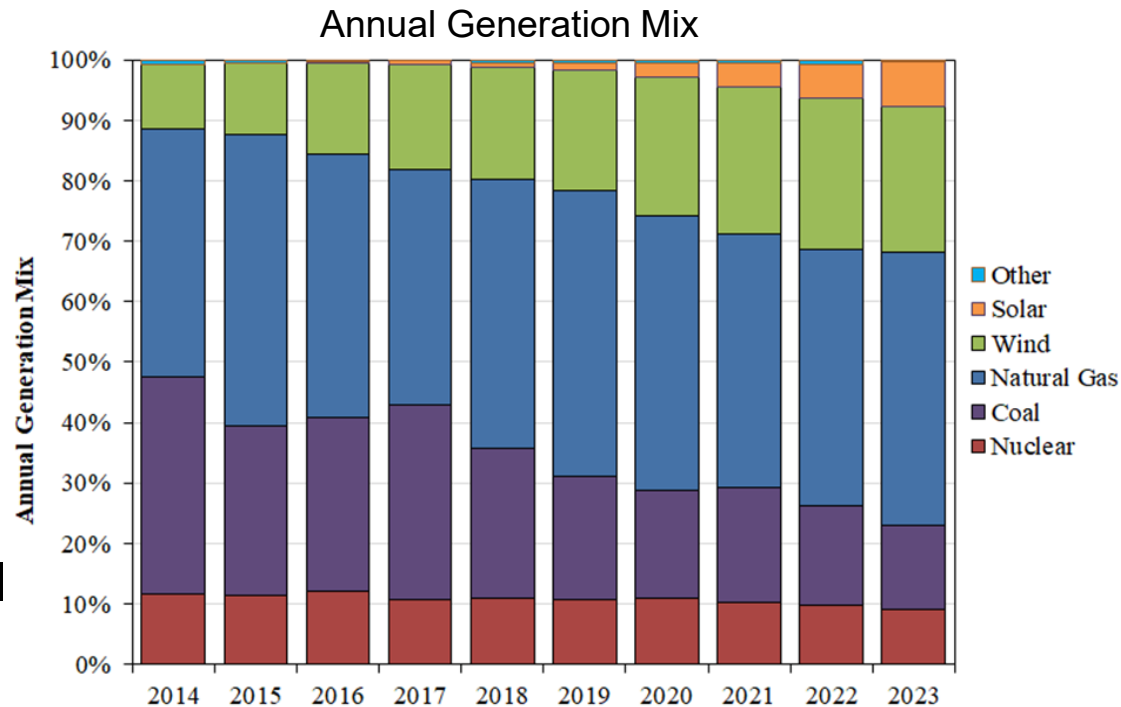
Supply Changes

Approximately 10,500 MW of new generation resources came online in 2023

- 1,800 MW of wind
- 5,800 MW of solar
- 1,900 MW of energy storage resources
- 970 MW of natural gas resources

The generation share from wind was 24.3% of the annual generation in 2023

- Solar contributed 7.3%
- Coal down from 16.6% in 2022 to 13.9% in 2023

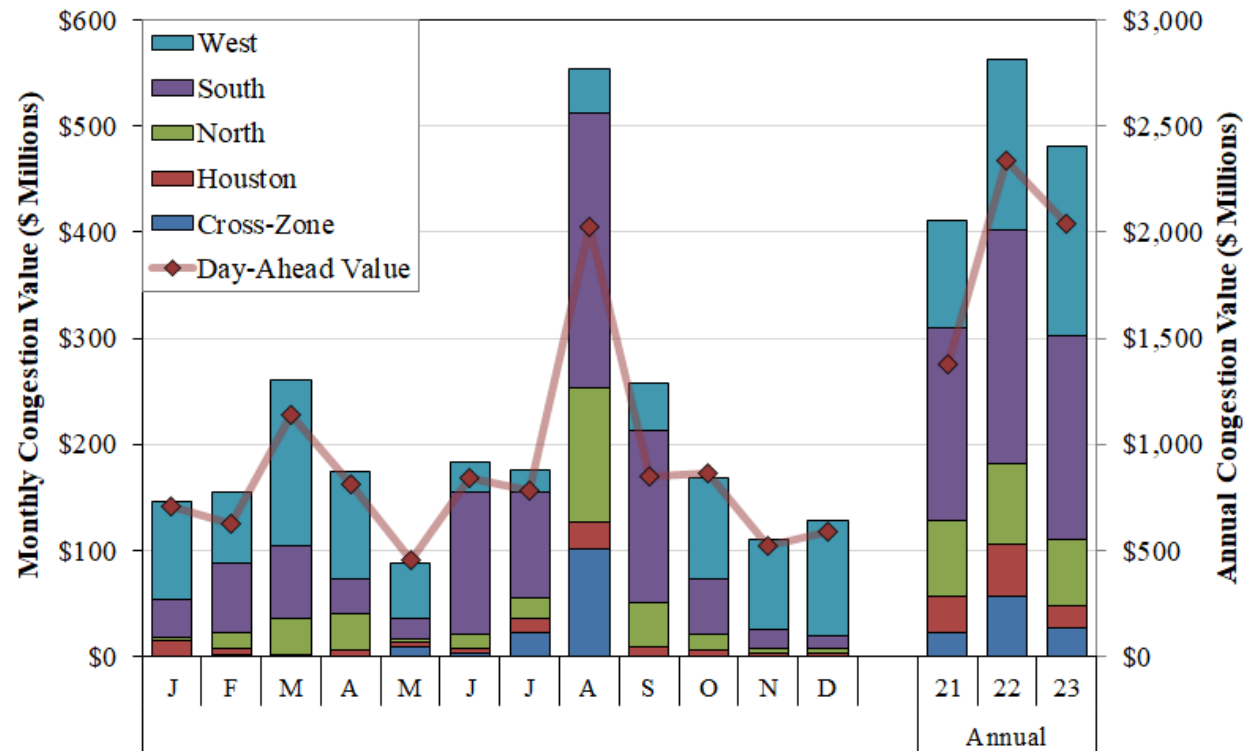


Transmission Congestion

Real-time congestion costs were down 15%, to \$2.4B

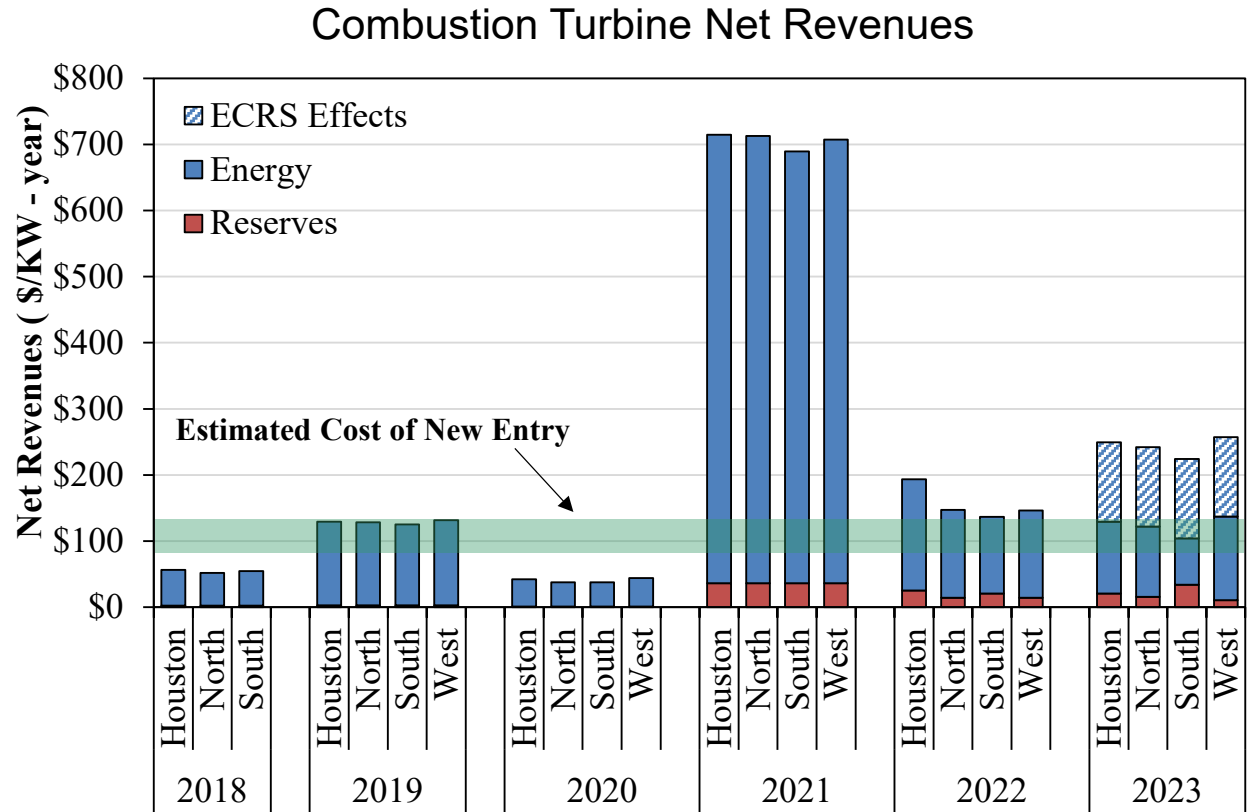
- Lower natural gas price contributed to decrease.
- West zone high cost from high renewable output and growth of oil and gas loads.
- Transmission upgrades relieved congestion cost in Houston area.

Congestion Cost by Zone



Net Revenues

- Gross revenues minus production costs were well above the estimated cost of new entry for a CT in all zones
- The effect of ECRS pushed net revenues from in the range of CONE to well above.



Recommendations

- 4 new recommendations
- Continue to prioritize implementation of RTC and single model for energy storage resources

Number	Brief Description
New Recommendations to Improve Market Performance	
2023-1	Increase a constraint's shadow price cap in real-time when appropriate
2023-2	Modify the Proxy Offer Curve for renewable resources without a submitted energy offer curve
2023-3	Improve the procurement and deployment of ECRS
2023-4	Improve the pricing and offer requirements of the Firm Fuel Supply Service
Additional Recommended Market Improvements from Prior Years	
2022-1	Implement a multi-interval real-time market
2022-3	Allow transmission reconfigurations for economic benefits
2022-4	Change the linear ramp period for ERS summer deployments to 3 hours
2022-5	Change historical lookback period for ORDC mu and sigma calculations
2021-1	Eliminate the "small fish" rule
2021-2	Implement an uncertainty product
2021-3	Reevaluate net metering at certain sites
2020-3	Implement smaller load zones that recognize key transmission constraints
2020-4	Implement a Point-to-Point Obligation bid fee
2019-2	Price ancillary services based on the shadow price of procuring each service
2015-1	Modify the allocation of transmission costs by transitioning away from the 4 Coincident Peak method.

Conclusion

Full 2023 State of the Market Report can be found at:

https://www.potomaceconomics.com/wp-content/uploads/2024/05/2023-State-of-the-Market-Report_Final_060624.pdf