



**Item 8: Independent Market Monitor (IMM)
2021 State of the Market Report for the
ERCOT Electricity Markets – REVISED**

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Board of Directors Meeting

ERCOT Public

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2021 Energy Prices

Average real-time energy prices up more than six-fold in 2021

- Winter Storm Uri had a significant impact
- Average natural gas prices up considerably

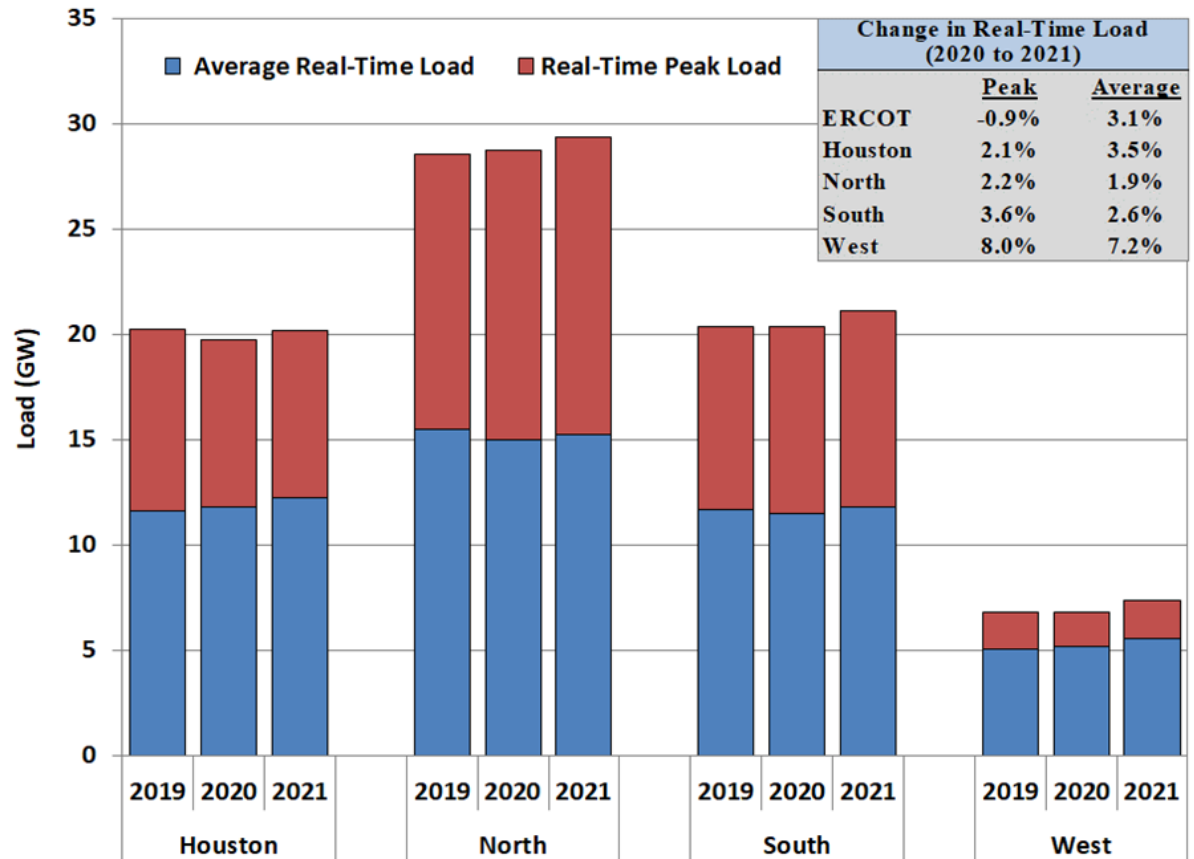
	2014	2015	2016	2017	2018	2019	2020	2021	2021 w/o Uri
(\$/MWh)									
ERCOT	\$40.64	\$26.77	\$24.62	\$28.25	\$35.63	\$47.06	\$25.73	\$167.88	\$40.73
Houston	\$39.60	\$26.91	\$26.33	\$31.81	\$34.40	\$45.45	\$24.54	\$129.24	\$42.78
North	\$40.05	\$26.36	\$23.84	\$25.67	\$34.96	\$46.77	\$23.97	\$206.39	\$41.57
South	\$41.52	\$27.18	\$24.78	\$29.38	\$36.15	\$47.44	\$26.63	\$187.47	\$39.98
West	\$43.58	\$26.83	\$22.05	\$24.52	\$39.72	\$50.77	\$31.58	\$105.27	\$35.51
(\$/MMBtu)									
Natural Gas	\$4.32	\$2.57	\$2.45	\$2.98	\$3.22	\$2.47	\$1.99	\$7.30	\$3.62

Load Trends

Total ERCOT load increased in 2021

- Up by more than 1,300 MW per hour on average

Annual Load Statistics by Zone

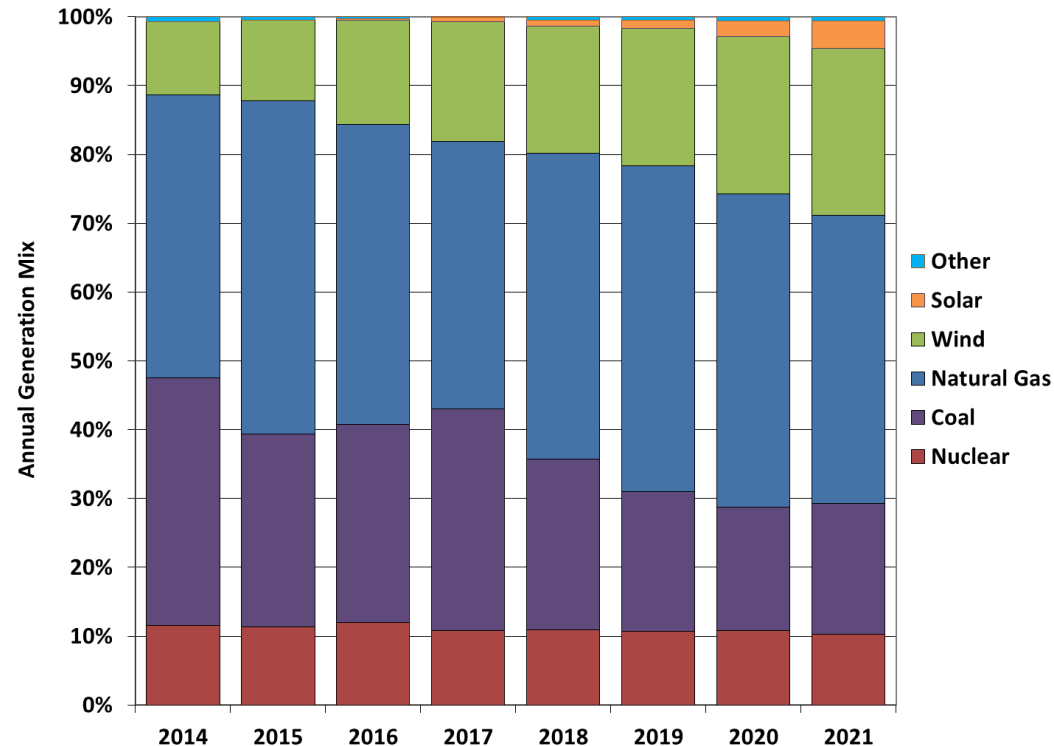


Supply

Approximately 8,800 MW of new generation resources came online in 2021

- Most were intermittent renewable resources with an effective peak serving capacity totaling 2,400 MW
- The remaining capacity was:
 - 660 MW from combustion turbines;
 - 70 MW from combined cycle; and
 - 820 MW of energy storage resources.

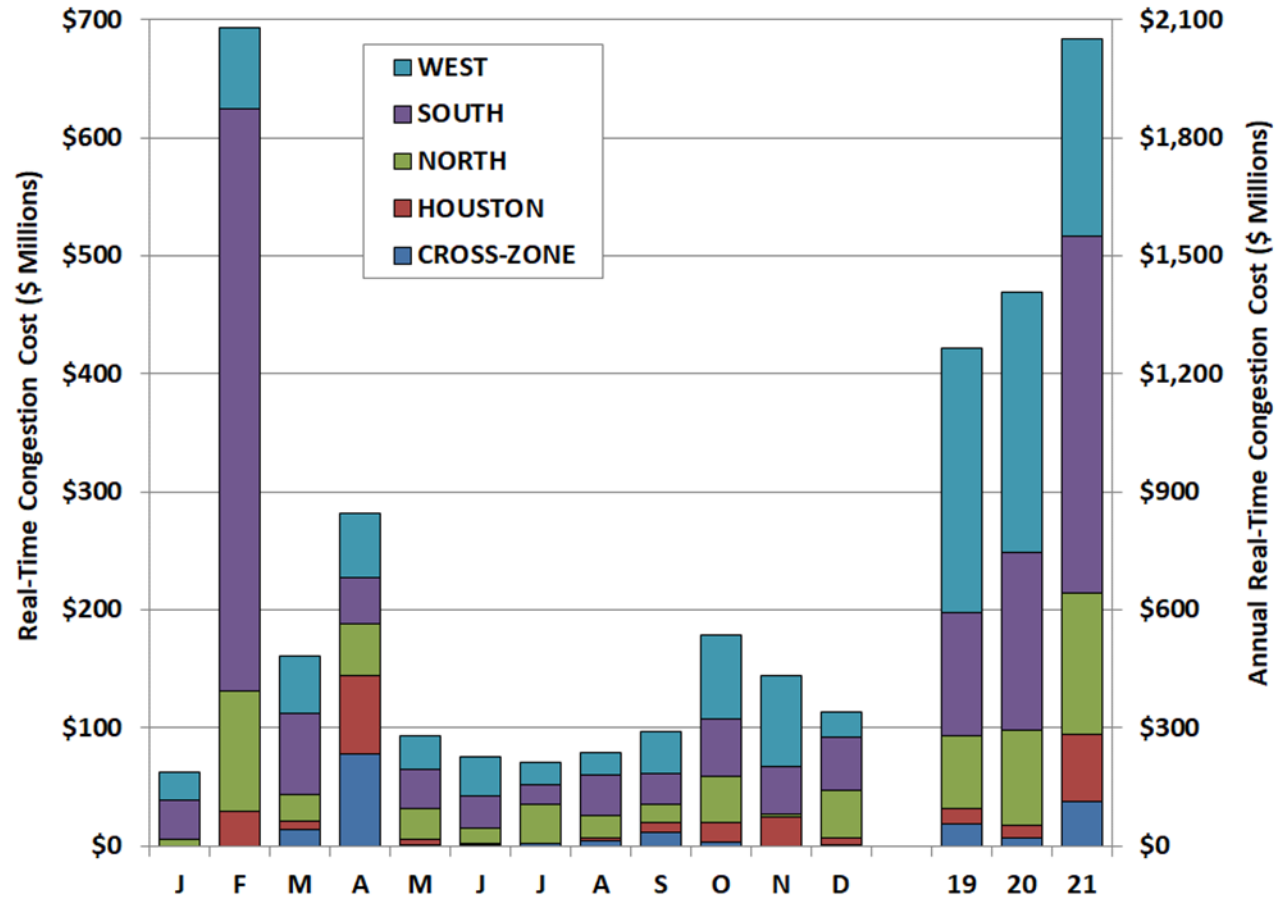
The percentage of total generation supplied by wind resources increased to more than 24% of all annual generation



Transmission Congestion

Real-time congestion costs were up 46%, to \$2.1B

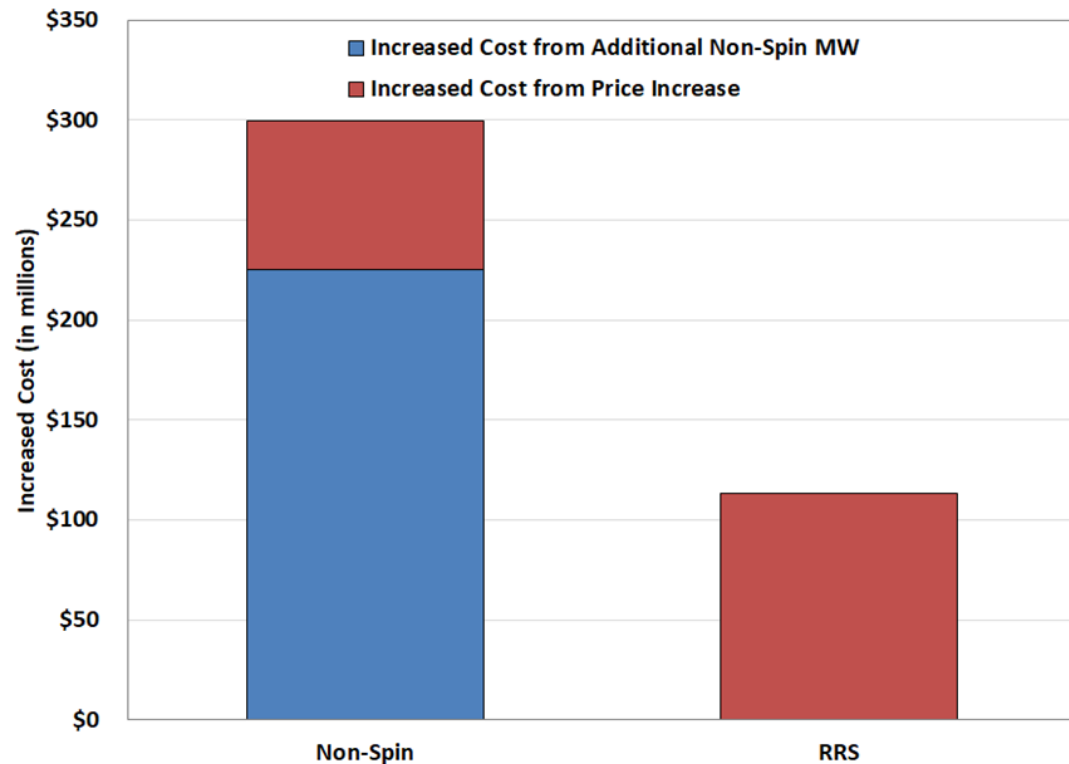
- High congestion in South zone during Uri
- Higher gas prices
- GTC contribution up (\$400M, from \$190M in 2020)



Operational Posture

The second half of 2021 was affected by ERCOT's operational changes

- Increased non-spinning reserve requirements;
- More routine use of RUC, including issuing instructions earlier in the day and committing more longer-lead time resources; and
- Adjusting the selection of forecasts to more frequently rely on the highest load forecast and the lowest wind and solar forecasts.



2022 Effects

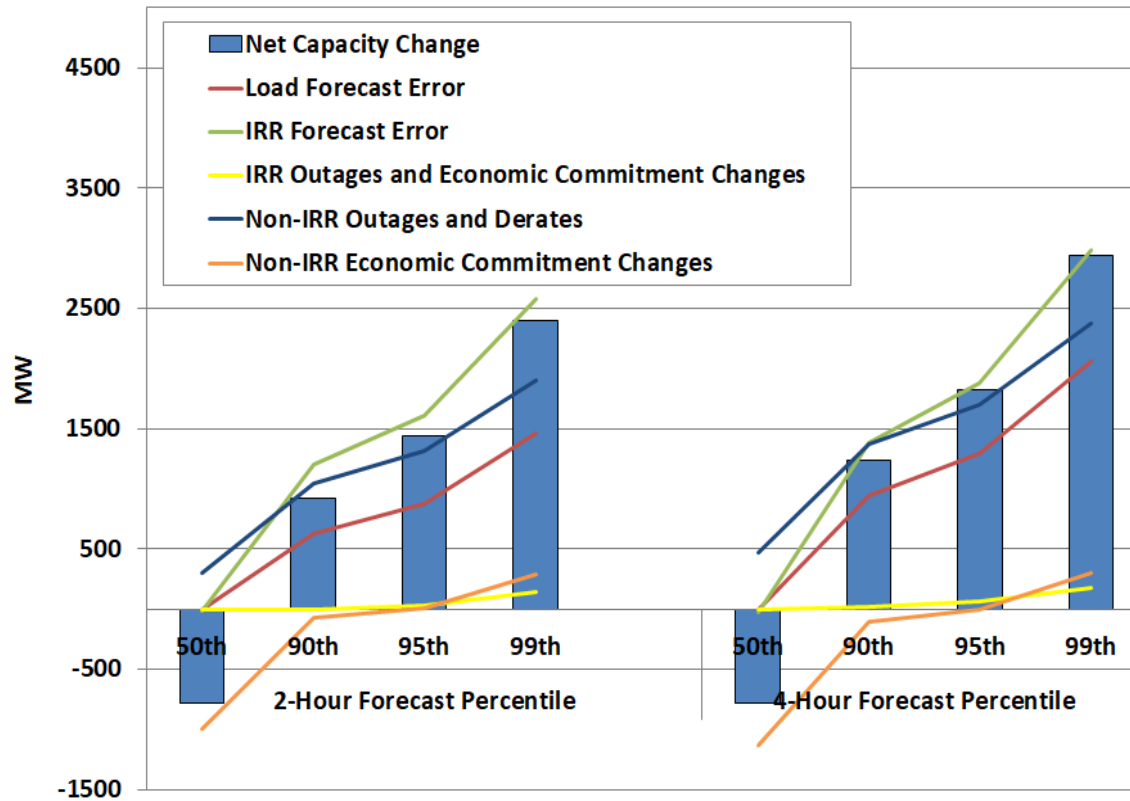
- The operational posture changes made in 2021 continue to impact market outcomes into 2022
 - We estimate \$210M-\$385M YTD* due to the increased non-spin procurement and its affect on ancillary services prices
- Due to frequent use of RUCs, the contribution of the reliability deployment price adder YTD** has been approx. \$460M
- Another change in 2022 is the Operating Reserve Demand Curve
 - System-wide offer cap lowered to \$5,000/MWh
 - Minimum contingency level increased to 3,000 MW effective January 1
 - We estimate the impact of this shift on energy costs to be approx. \$475M YTD**
 - For reference, the total ORDC adder impact in 2022 YTD* has been ~\$900M.

*as of 5/31/22

**as of 5/20/22

Key recommendations

- Prioritize implementation of Real-Time Co-optimization project
- Implement an uncertainty product (2- to 4-hour ancillary service)



Conclusion

Full 2021 State of the Market Report can be found [here](#)