
Coal Plays Essential Role During August Heat Wave

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During August 23-25, 2023, a severe heat wave affected 130 million people in 19 states and caused a significant increase in electricity demand. Energy Ventures Analysis (EVA) analyzed data on the performance of electricity resources in the three most affected ISO/RTOs – Midcontinent Independent System Operator (MISO, which covers all or parts of 15 states), Southwest Power Pool (SPP, which covers all or parts of 14 states) and ERCOT (most of Texas) – by comparing the performance of resources when electricity demand peaked with how they performed during the prior week. The difference (the incremental increase or decrease) between the two periods indicates the ability of resources to respond to the increased demand for electricity.

The heat wave increased electricity demand by 23% in MISO, 9% in SPP and 2.5% in ERCOT, compared to the week before. Across all three regions, the heat wave demonstrated the dependability of fossil fuels when more electricity was needed. ERCOT, MISO and SPP have significant amounts of renewables but were forced to rely even more on coal and natural gas when the heat wave peaked. In fact, wind generation declined substantially across all three regions and solar declined marginally. Nuclear plants were already operating at high capacity factors and, therefore, were limited in their ability to increase generation. The table below summarizes some of the results of the EVA analysis.

Incremental Change in Electricity Generation During Heat Wave

	MISO	SPP	ERCOT
Coal	<i>Increased 39%</i>	<i>Increased 35%</i>	<i>Increased 6%</i>
Gas	<i>Increased 46%</i>	<i>Increased 40%</i>	<i>Increased 14%</i>
Nuclear	<i>Slight decrease</i>	<i>No change</i>	<i>Marginal increase</i>
Wind	<i>Decreased 45%</i>	<i>Decreased 21%</i>	<i>Decreased 38%</i>
Solar	<i>Marginal decrease</i>	<i>Marginal decrease</i>	<i>9% decrease</i>

What the EVA report shows is that we need all electricity resources, especially fossil fuels, to ensure adequate supplies of electricity, especially during extreme weather. For that reason, premature coal retirements increase the risk of electricity shortages and other reliability problems.

Read the EVA report here <https://americaspower.org/issue/eva-report-august-2023-midwest-heatwave/>.