

Never Let the Truth Get in the Way of a Good Storyⁱ

The Union of Concerned Scientists (UCS) released a report falsely accusing electric utilities of harming ratepayers. UCS alleges that harm is caused by utilities deciding on their own when to turn coal-fired electric generating units on and off, rather than leaving that decision to independent system operators (ISOs).ⁱⁱ UCS has raised this issue of “self-commitment” (aka “self-scheduling”) before, as have the Sierra Club and other environmental organizations that are opposed to the use of coal to generate electricity.ⁱⁱⁱ Each time this accusation is made, it has been refuted by grid operators, utility commissions, and utilities.

Well, it's déjà vu all over again.^{iv}

This time UCS focused on the Midcontinent Independent System Operator (MISO). MISO is one of several large, mostly multi-state, electricity markets in which power plant operators (the utilities) can choose to either self-commit (decide themselves) or allow each ISO's market algorithm to make the commitment decision (economic commitment). According to UCS, this flexibility to choose allows regulated utilities to benefit by generating electricity from coal-fired power plants that is more expensive than the market price for electricity, but yet they earn a regulated rate of return on these alleged above-market costs. UCS claims this practice hurts the utility's ratepayers. (UCS failed to mention that natural gas, nuclear, wind and hydro within MISO also self-commit.)

This is an interesting conspiracy theory, but it's not true. For one thing, MISO has refuted the charge that self-commitment of coal-fired units has led to uneconomic results.^v For another, three utilities that belong to MISO have projected that their ratepayers have actually saved money from self-commitment. One of these utilities estimated the savings to be \$250 million per year.^{vi}

There are sound reasons for coal-fired generating units to self-commit.

Committing an electricity generator means turning it on at its minimum output level. *Dispatching* a committed generator means increasing its power output to the level necessary to serve load. Individual generating units are committed and dispatched based on electricity demand forecasts and operating costs, decisions that can be made by either the MISO market operator or the owner of the power plant. The majority of coal-fired units in MISO opt to self-commit because the approach used by MISO to commit power plants is not able to properly consider the cost and operating characteristics of coal-fired generators:

- MISO operates a daily power market and determines which units to commit and dispatch over one 24-hour period at a time.^{vii} Large coal-fired generators can incur significant costs to start from a standstill and can take several hours to reach their minimum output level. If the cost and time necessary to start are considered over several days instead of a single day, the units can be very economical. Therefore, utilities self-commit coal-fired generating units outside of the single-day market commitment algorithms that cannot value them properly.
- Daily market commitment and dispatch decisions can lead to frequent cycling of units, especially those designed for baseload operation, which results in excessive wear and tear that can be detrimental to reliability and can increase maintenance costs. Self-committing units reduces the wear and tear of frequent cycling.
- Self-scheduling is often done to perform tests after unit maintenance and repairs, or to test emissions control equipment. These decisions to self-schedule are not driven by market economics.
- Self-scheduling generators can help utilities manage the risk of transmission congestion in their service areas.
- Dispatchable generators, such as coal units, are needed to provide essential reliability services, such as voltage support, frequency control, and ramping. A generating unit providing essential reliability services must be online and operating at least at its minimum level of output.

These reasons for self-committing coal-fired generating units are well-understood by MISO and its market participants. Since at least 2016, MISO has acknowledged the need for a market commitment model that incorporates a multi-day horizon, and it continues to study the issue.^{viii} MISO also noted that the essential reliability services needed for a stable grid (and provided in part by coal generation) are not well-addressed by market prices, stating, “Day-Ahead and Real-Time products and prices may not reflect reliability needs and costs incurred to manage increasing variability and uncertainty of growing renewable portfolio.”^{ix} Self-committing allows utilities to provide their own essential reliability services that the market may not reliably provide.

Coal-fired generating units in MISO operate economically.

MISO has directly refuted the charge that self-commitment has led to uneconomic results and has pointed out that over 90% of the electricity generated by coal is *dispatched economically by MISO itself, not by utilities.*^x In April of this year, MISO noted, “Some claim that self-commitment of coal-fired resources results in prolonged run times and uneconomic outcomes for end use customers. Further, they say self-commitment distorts the markets by allowing coal units to displace lower-cost renewables and other resources from the grid. In fact, the vast majority of all self-

committed coal generation in MISO is actually dispatched economically — meaning it is the *lowest-cost resource* option that MISO markets have available at the time to serve load.”^{xi} (Emphasis added.)

Not only are coal-fired generating units run economically, they are run according to market demand as much any other type of generation in MISO. In other words, they run because they are needed, not because they are self-committed.

We can see this by observing how closely changes in power generation correlate with changes in electricity demand. In 2018, this correlation between coal-fired generation and electricity demand was 87% in MISO — the same as natural-gas fired generation.^{xii} This means that that power demand — and therefore market price — largely explains the operation of both coal-fired and natural gas-fired units, regardless of whether the units were committed by the market or by the utility. All other classes of generation were less correlated with market demand, as the table below shows. Notably, wind generation was negatively correlated with load, meaning that as power demand increases, wind generation tends to decrease.

Correlation between hourly load and generation in MISO, 2018

Gas	Coal	Other	Hydro	Nuclear	Wind
87%	87%	61%	57%	20%	-20%

Self-committing coal-fired units can benefit ratepayers.

UCS calls for state utility commissions to investigate the self-commitment of coal-fired units, but this has already happened in several states. Those investigations have refuted the claim that self-commitment is uneconomic and harms ratepayers. Instead of finding harm, the investigations found benefits from self-commitment. For example:

- Ameren Missouri found that in 2016-2018, during periods in which the utility self-scheduled their coal units, buying that same power from the market would have cost an additional \$250 million per year.^{xiii}
- Xcel Energy found that its self-scheduled generating units saved ratepayers more than \$500 million in generating costs rather than buying power from the market in 2017 and 2018.^{xiv}
- Minnesota Power similarly showed that self-scheduling their single coal-fired plant led to a \$23 million benefit compared to buying power from the market during 2017 and 2018.^{xv}

Conclusion

We could spend more ink explaining why we disagree with USC's conclusions, but you get the basic point: self-committing coal-fired power plants is not a trick to rip off ratepayers. Rather, it benefits ratepayers and helps maintain the reliability of the electricity grid.

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ⁱ Quote attributed by some sources to Mark Twain.

ⁱⁱ Union of Concerned Scientists, *Used But How Useful: How Electric Utilities Exploit Loopholes, Forcing Customers to Bail Out Uneconomic Coal-Fired Power Plants*, May 2020.

ⁱⁱⁱ See, e.g., Sierra Club, *Playing With Other People's Money: How Non-Economic Coal Operations Distort Energy Markets*, October 2019.

^{iv} Quote attributed by everyone to Yogi Berra.

^v MISO Market Subcommittee, *Forward Market Mechanism*, April 9, 2020.

^{vi} Ameren filing in Missouri Public Utility Commission docket EW-2019-0370.

^{vii} "Under MISO's FERC-approved Tariff, MISO's markets, by design, do not optimize commitments beyond day ahead markets." MISO, "MISO 'self-commitment' trends: Most coal generation is dispatched economically," April 2020, <https://cdn.misoenergy.org/202004%20Self-Commitment%20MISO%20Trends%20443759.pdf>.

^{viii} MISO Market Subcommittee, *Forward Market Mechanism*, April 9, 2020.

^{ix} *Ibid.*

^x *Ibid.*

^{xi} MISO, "MISO 'self-commitment' trends: Most coal generation is dispatched economically," April 2020, <https://cdn.misoenergy.org/202004%20Self-Commitment%20MISO%20Trends%20443759.pdf>.

^{xii} Hourly data from <https://www.misoenergy.org/markets-and-operations/real-time--market-data/market-reports/#t=10&p=0&s=MarketReportPublished&sd=desc>.

^{xiii} Ameren filing in Missouri Public Utility Commission docket EW-2019-0370.

^{xiv} Xcel Energy filing in Minnesota Public Utility Commission docket 17-492.

^{xv} Minnesota Power filing in Minnesota Public Utility Commission docket 17-492.