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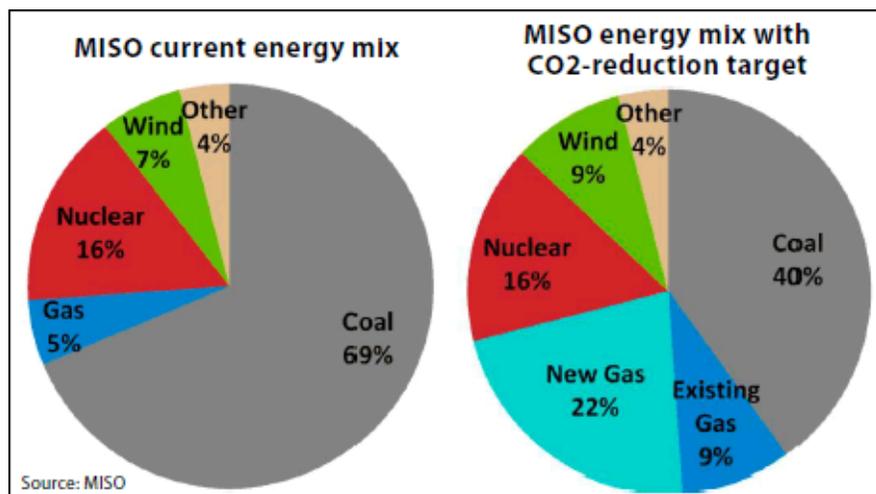
MISO sees EPA CO2 rule driving another 14 GW of coal retirements

By [Matthew Bandyk](#)

With coal-heavy states like Indiana and Michigan already retiring dozens of coal-fired power plants, the U.S. EPA's Clean Power Plan could lead to another 14 GW of coal at risk for retirement, according to the grid operator [Midcontinent Independent System Operator Inc.](#)

In addition, MISO's modeling of potential ways to comply with the EPA rule's required reductions in CO2 emissions shows that a more flexible, regional approach that relies on a greater use of natural gas could be significantly cheaper than the specific approaches laid out by the EPA, in some cases by billions of dollars a year.

MISO has released the initial [results](#) of its study of how much it will cost its region — which includes 15 states mostly throughout the Midwest and central U.S. — to make the needed CO2 cuts in line with the EPA requirements. The grid operator made a number of assumptions about a price placed on CO2 ranging from zero to \$50 per ton, the stringency of state standards to require renewables and the amount of nuclear retirements, all of which could make the rule easier or harder with which to comply. The study found that the lower cost of the compliance strategies could lead to 14 GW of additional coal retirements.



That would come on top of plant closures that observers such as FERC Commissioner Philip Moeller have [said](#) are squeezing MISO's reserves to the point where rolling blackouts are possible in several years. In a 2011 study, MISO found that the suite of then-known EPA rules, such as new cooling water standards and the Mercury and Air Toxics Standards, had already placed 12.65 GW of coal fleet capacity at risk.

The EPA has laid out several specific approaches for states to comply with the rule, dubbed "building blocks." MISO looked at the costs of several of these building blocks, such as improving the heat rates of coal plants, adding more wind power facilities, having natural gas-fired combined-cycle plants yield an annual 70% capacity factor and incorporating energy savings into a 20-year energy efficiency program. Together, MISO found that the building blocks would cost \$60 per ton of CO2. But a compliance strategy in which a CO2 reduction

target is set without a specific requirement on how to achieve the reductions would only cost \$38 per ton.

It also would lead to a greater reliance on natural gas compared to the building blocks approach. While MISO currently gets only 5% of its energy from gas, that would explode to 31% under the CO2 target approach and 24% under the building blocks approach.

The study also found that a strategy in which the MISO footprint tries to comply with the EPA rule as one region would save \$3 billion in annual compliance costs compared to trying to comply as several subregions.

The cost savings of both the regional and CO2 target strategies likely stem from their flexibility, MISO Vice President of System Operations and Market Services Todd Ramey said Sept. 17. "You can find more economic ways to achieve a goal compared to a limited set of prescribed approaches," he said. "If you expand the size of resources available over a large region, you can often find significant efficiencies in doing that."

The cost estimates do not take into account any investments needed to improve the electric grid or expand natural gas supply infrastructure.

Many of the changes to MISO's energy mix will be made by the utilities that actually own the power plants in MISO's region. These include [Xcel Energy Inc.](#), primarily in Minnesota, and [Duke Energy Indiana Inc.](#)

Scheduled coal capacity retirements through 2022 (MW) by ISO/RTO

ISO/RTO	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
California Independent System Operator	342	-	-	255	-	-	585	-	-	1,182
Electric Reliability Council of Texas Inc.	-	-	-	-	840	-	-	-	-	840
ISO New England Inc.	150	-	-	1,133	-	-	-	-	-	1,283
Midcontinent Independent System Operator Inc.	-	800	1,016	-	-	-	-	-	-	1,816
PJM Interconnection LLC	2,179	8,252	165	1,205	-	-	-	-	-	11,801
Southwest Power Pool Inc	-	15	1,080	-	-	-	-	-	-	1,095
Outside of ISO/RTO	184	4,484	201	2,765	350	-	670	254	219	9,127
Total	2,854	13,550	2,462	5,358	1,190	-	1,255	254	219	27,143

- indicates a zero value

Includes only coal units for which there has been a firm retirement date reported between 2013 and 2022.

As of March 5, 2014.

Source: SNL Energy



"Xcel Energy supports reasonable climate policy that gives states flexibility to design their own compliance programs and also recognizes their clean energy leadership." Xcel Energy Vice President of Policy and Strategy Frank Prager said in an email. "We are continuing to evaluate all of our compliance options, including regional approaches such as those identified by MISO, and we are working with our states and other stakeholders to find the best climate policies for our customers and the environment."

"It is too soon to tell what impact [the] EPA's proposed rule will have on our operations. We will be working closely with our states to evaluate the proposal and will be participating in the rulemaking process," Duke Energy Corp. spokesman Chad Eaton said.

Utilities are also concerned about the extent to which the EPA might have already taken certain planned CO2 reductions into account, thus making it harder to meet the requirements. Minnesota Power Inc. spokeswoman Amy Rutledge said the ALLETE Inc. subsidiary hopes that the EPA will give it credit for work already done to reduce CO2 emissions as the utility is converting several coal units to gas.