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Analysis: U.S. 'war on coal' may be good fight for some manufacturers

CHICAGO | BY JAMES B. KELLEHER



When the Obama administration unveiled new emission regulations for coal-fired power plants earlier this year, the National Association of Manufacturers (NAM) blasted the proposed rules, saying they would hurt its members "twice" - as energy users and as polluters "next in line" for such rules.

Last Tuesday, a NAM-supported effort to challenge the rules cleared an important hurdle when the U.S. Supreme Court agreed to hear arguments in the case. The regulations, which critics call a "war on coal," will cost industry "tens of billions of dollars per year," according to the petition to the high court.

But the proposed carbon caps, which come as the United States is on the brink of a potential power plant construction boom, could be a billion-dollar bonanza for the manufacturers that supply utilities and others with the pumps, boilers and turbines used to generate power.

It's impossible to say with certainty how the rules will affect the finances of individual manufacturers. With some companies, such as Caterpillar Inc (CAT.N), gains from sales to utilities scrambling to meet the new regulations will likely be offset by reduced revenue from coal miners.

But between now and 2040, the country will need to build 340,000 megawatts of generating capacity - or the equivalent of 15 of China's massive Three Gorges Dam - to meet growing demand from consumers and replace retiring plants, according to the U.S. Energy Information Administration (EIA).

No matter what the Supreme Court decides, given the concerns about carbon and its link to climate-changing greenhouse gases, as well as the high cost, long lead times and unease associated with nuclear power, industry experts say the future belongs to natural gas-fired power plants. Those emit half the carbon dioxide as coal plants and can meet the new rules - if they're upheld - without much investment.

The new rules "make you look real hard at natural gas," says Jim Norvelle, a spokesman for Dominion Resources Inc (D.N), one of the nation's largest electricity generators.

"No. 1, you can build it quickly. No. 2, it involves the least amount of emissions of all the fossil byproducts. Certainly less than coal."

Wind and solar farms, which emit no greenhouse gases, are expected to get a boost as well and will provide yet another possible windfall for manufacturers.

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manufacturers.

Some of the winners in this new landscape are more obvious than others. Ann Duignan, an analyst with JP Morgan, says the shift away from coal will "be a big plus" for traditional gas turbine suppliers such as General Electric ([GE.N](#)) and Siemens ([SIEGn.DE](#)).

But the growing importance of wind and other renewables could provide a boost to some unexpected manufacturers, including Caterpillar Inc ([CAT.N](#)) and Wärtsilä Corp ([WRT1V.HE](#)). These companies, while not big players in the utility space, make small, gas-fired reciprocating engines - "recips" for short - ideally suited for the small, backup plants that will be needed to maintain grid reliability as the industry incorporates more renewables into its portfolio.

The recips won't be the only solution utilities rely on - and technologies to store power using giant utility-scale batteries could ultimately make the backup plants unnecessary.

But until that happens, utilities will use offline backup gas-fired plants to maintain reliability. And increasingly, recips, not traditional turbines, are the preferred solution.

RENEWABLE BUT FICKLE

Wind has a lot going for it. It is renewable and clean and doesn't produce emissions linked to acid rain and greenhouse gases.

But it is notoriously fickle - the industry prefers the word "intermittent".

To deal with that volatility, utilities need offline backup plants that "can come online and respond very quickly to fill in any gaps that the wind leaves," says Kent Saathoff, an official with Electric Reliability Council of Texas, which runs the grid that serves 23 million customers in that state. Texas is the No. 1 U.S. state in terms of installed wind power capacity, according to data from the American Wind Energy Association.

For years, many utilities, including Luminant, the largest electricity producer in Texas, have relied on gas turbines - essentially small jet engines on a stand - to provide the backup power. But old-fashioned reciprocating engines from Caterpillar and Wartsilla - essentially big, natural gas-fueled versions of the internal combustion engine - are gaining favor, too.

Recips offer considerable advantages over traditional gas turbines, according to some users, including Kyle Nelson, a senior vice president and chief operating officer at Mid-Kansas Electric Co LLC, a cooperative that provides power to 200,000 people in central and western Kansas.

Both burn natural gas. Both create electric power. But turbines tend to be most efficient when they're making the most power. Reciprocating engines, on the other hand, are equally efficient at higher and lower loads.

That flexibility is important. "Typically, wind doesn't just all of a sudden quit. It kind of tails off," says Saathoff at the Electric Reliability Council of Texas.

Recips are also cheaper than turbines and customers who order them don't have to endure the long lead times that come with turbines.

Mid-Kansas is building a backup generating station - part of a growing array of such plants across the country's "wind belt." When the 107-megawatt station becomes operational next May it will be used to provide fast, flexible back-up power.

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At the heart of the facility are 12 natural gas-fired piston engines built by MWM, a Mannheim, Germany-based arm of Caterpillar's electric power division.

Similar plants, powered by similar engines built by Finland's Wärtsilä, have been constructed elsewhere.

"We really like the reciprocating engine power model," Nelson says. "They just look like sort of a Swiss Army knife - awfully handy from so many different angles."

'MOVES THE NEEDLE'

A project at a Delaware landfill shows another role reciprocating engines could play in coming years as companies scramble to meet the EPA rules. It also shows how lowering a plant's carbon footprint can make it more, not less, competitive.

The project captures methane coming off the Cherry Island dump to provide heat and power to industrial customers, using reciprocating engines built by Cummins Inc ([CMI.N](#)).

Croda International Plc ([CRDA.L](#)), which has a global goal of obtaining a quarter of its energy needs from non-fossil sources by 2015, is one customer.

Its 140-acre facility located about three miles from the landfill, is Croda's largest in the world, according to Kevin Gallagher, Croda's president for North America.

As a result of the project, the plant now gets 70 percent of its energy needs from renewable sources - and it hopes to raise that to 75 percent next year after a 770 kilowatt ground-based solar panel array is installed.

To Gallagher, the landfill project makes sense from an economic as well as environmental standpoint.

"It's a good business project with a very attractive payback - somewhere around six or seven years," Gallagher says.

"It saves us about 20 percent on our natural gas energy bill. And because we're such a large plant, it helps us to move the needle significantly for Croda as it tries to meet its carbon reduction target. It doesn't bring us to our global goal in one fell swoop, but it's a very important part of getting there."

(Editing by [Ed Tobin](#), [Christian Plumb](#) and [Ken Wills](#))



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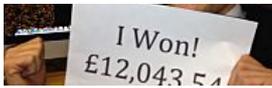
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