

# NATURAL GAS WEEK®

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## FUEL COMPETITION

### Higher Prices Unlikely to Cut Gas' Power-Gen Share

Will gas lose power-generation market share to coal or renewables if prices surge to an average of \$3.00–\$3.50 per million Btu next year as many analysts predict? Probably not, three experts in energy analysis say.

While price-induced gas-to-coal switching was common just a few years ago, the declining coal fleet has made that phenomenon less likely in most markets. And the price of gas is only one of several factors that govern when gas-fired power is dispatched.

“I don’t see coal regaining lost market share. That ship has sailed already,” Charles McConnell, executive director for the Center for Carbon Management in Energy at the The University of Houston, told Energy Intelligence. “You’d really have to have gas at \$5/MMBtu and beyond for coal to continue being in the mix.”

US Energy Information Administration (EIA) data shows US coal consumption was down 30% from February 2019 to February 2020, while gas consumption was up 14%. Gas now accounts for 35%–40% of power production on average.

The real competition will be with renewables such as wind and solar, whose once-lofty prices continue sliding to be more competitive with gas. But there, too, price is not the most important factor, said Michelle Michot Foss, a fellow with Rice University’s Baker Institute. Deliverability is the key to winning that cage match, and gas still has the edge even with prices double their current levels.

On a dispatch basis, Foss said, price might have a marginal impact, but the use of renewables mainly hinges on their availability.

“Periodically, when wind is available you might get some erosion of gas burn. But you need the natural gas overall to ensure deliverability,” she said. So from an independent system operator (ISO) point of view, “gas capacity will become more essential because of the difficulty expanding battery storage.”

Utility-scale battery storage relies on expensive, unproven, even dangerous technology, Foss said (NGW Jul.22’19). And the

coronavirus pandemic has exposed another vulnerability — reliance on a tenuous global supply chain starting in China, which wind and solar companies rely on for components.

Meanwhile, McConnell noted that the global economic downturn has cut power consumption and it’s not likely to bounce back for 12 to 18 months. “And you don’t keep adding on to renewables if you have decreasing demand.” That’s especially true given the excess gas-fired capacity ready to pick up the slack, he said.

And despite widespread predictions of a gradual but significant gas price rebound, those projections might prove overly bullish for 2021 because of the gas demand destruction now under way, McConnell said, thereby strengthening gas’ competitive position with renewables.

The pandemic exposed that the recent rush to renewables was predicated not on their superiority to gas, he explained, but on “an economy running on all cylinders that had the luxury of adopting renewable portfolio standards, production tax credits, investment tax credits and all the things that are going to transform our renewable industry into a much more prevalent part of our energy mix.”

Pressure on US power companies to quickly decarbonize their portfolios has led the 10 of the largest US utilities to add 26 gigawatts of renewable generation since 2011 (NGW Nov.4’19).

But in a recession, the focus will return to costs and how best to produce and deliver power most economically. And McConnell is not convinced that renewables can deliver electricity cheaper than gas when all relevant costs are factored in. Otherwise, there would be no need to subsidize new capacity with “artificial mechanisms.”

“That’s hogwash,” McConnell said. “If it’s really less expensive, why wouldn’t people be building these things without tax credits?”

That is not to say that renewable generation isn’t a cheaper source of power in global markets where gas is often much more

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expensive than in the US. Even in the US, photovoltaic arrays and onshore wind rival gas generation in sunny and windy locations can be cheaper than gas generation (NGW Jun.24'19).

Nonetheless, John Villali, Energy Insights director for the technology research and advisory firm IDC, sees little risk for gas losing its 35%-40% share of electricity production in the US even in a \$3-\$4/MMBtu range. And any losses it might see against coal will be confined to regions where coal is still a mainstay, such as in the PJM and the Midcontinent ISOs, where coal has ticked up 1%-2%, the EIA reports.

“With this whole Covid situation and the expected decrease in electric demand there will be a little bit of a decrease in natural gas power generation, but I don’t think there will be a huge shift,” he told Energy Intelligence.

“There’s a lot of talk now about renewables taking over the makeup of the supply stack, but the reality is renewables are still a very small portion of the supply stack within North America,” he said. “So with natural gas prices where they are and with really no foreseeable future of high gas prices, from a generator’s

standpoint you may want to secure some long-term contracts with cheap gas, which would hopefully keep you competitive in the market and producing power.”

However, while gas will hold its power generating market share, gas generation capacity growth could be dictated by renewables, Villali said.

“I think the gas market will hold its ground as opposed to seeing substantial growth, but there is opportunity for long-term growth in the gas generation market, which will be different from what we saw in the gas generation buildout boom in the mid- to late 90s,” he said.

Where we then saw a lot of combined cycle baseload gas plants built, the next wave of gas capacity will be modern quick start peaking units that will work in tandem with renewables, especially in those regions of the US with heavy concentrations of wind and solar capacity, such as California and Texas, he explained.

*Tom Haywood, Houston*