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Cheap batteries could soon replace gas plants — study

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Declining costs could poise batteries to replace many natural gas peaker plants, according to a new study. AES Corp.

Power stored in lithium-ion batteries could soon become cheaper than power produced by natural gas-fired "peaker" plants, with that advantage growing in coming years, according to an analysis today from Bloomberg New Energy Finance.

That's because of the global increase in electric vehicle production, which is bringing down the cost of battery packs. Over the last year alone, the levelized cost of electricity from lithium-ion fell some 35 percent per megawatt-hour, BNEF said.

The cost decline effectively means that the efforts to cut emissions from the transportation sector are accelerating the power sector's transition to cleaner sources, because battery technologies are useful in both.

"The main driver for this is obviously the manufacturing ramp-up for electric vehicles," said Tifenn Brandily, an energy economics analyst at BNEF.

The report is the latest analysis from an energy research firm that sees battery storage eventually subverting gas plants' status as a preferred source of quick-start power during times of peak demand. Last spring, Wood Mackenzie wrote that batteries would beat out gas peakers by 2022 in much of the United States.

In some parts of the United States, that's already the case. By 2021, battery dominance will occur across a broader swath of the country, according to Brandily.

"This is not looking good for peaking plants," he said.

In subsequent years, batteries will gain an advantage on a widening number of gas plant types. By 2025, combined-cycle plants in the United States — the more efficient option for generating power over longer periods — could start losing out against batteries with a four-hour storage capacity.

A decade later, batteries could provide a large enough share of power to challenge combined-cycle plants — even if the renewable power delivered by batteries is no longer subsidized.

"The tipping point for combined gas happens in 2035," said Brandily.

The BNEF analysis also found significant cost declines, globally, for offshore wind power, thanks to government auctions for power production in Europe. The United States is following a similar track, with states enacting mandates for offshore wind development and the federal government auctioning off lease blocks.

"Its cost decline in the last six months is the sharpest we have seen for any technology," said Elena Giannakopoulou, the firm's head of energy economics.

The study also found that in several Asian countries where renewables have been noncompetitive, particularly in Southeast Asia and Japan, some wind and solar projects are now on par with the least-competitive coal plants.

"We expect renewables to become even more competitive going forward in those markets. And that will change the outlook for coal," said Brandily.

The report’s findings seemed to contrast with comments made by Dan Brouillette, deputy secretary of Energy, at a BNEF summit in New York last night.

Asked about the growing list of states that have adopted 100 percent decarbonization goals for their power supply, Brouillette called it a "fine goal" but warned that it would require new storage technologies.

"We still need to solve the storage problem. We're moving along a good pace, but I hope we’ll move at a quicker pace," he said.

Brouillette also seemed to suggest that lithium-ion batteries would soon be displaced by another type of battery. Most industry analysts see lithium-ion as an entrenched incumbent that's unlikely to lose its centrality in coming years.

"We'll probably move away from lithium-ion pretty soon," said Brouilette. "So we're excited about that."