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Wind and Solar Energy Are Cheaper Than Electricity from Fossil-Fuel Plants

Even without subsidies, renewable energy is staying competitive with power from gas and coal

BY BENJAMIN STORROW & E&E NEWS



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Renewable Energy ▾

CLIMATEWIRE | Renewable energy doesn't need subsidies to compete with fossil fuels when it comes to building new power plants.

That's a key takeaway in Lazard's annual report on electricity generation costs. The investment bank's report measures the levelized cost of energy for various forms of electricity generation. The report is closely watched, and often criticized, in the energy industry, where it helps guide investment decisions.

This year's edition, which was released Monday, is notable because it comes as President Donald Trump and congressional Republicans are trying to eliminate tax credits for wind and solar. The political debate is playing out at a time when energy forecasters are projecting a rapid increase in electricity demand due to data centers and artificial intelligence.

Lazard calculates an energy resource's levelized cost, or LCOE, by dividing a project's lifetime energy production by its cost. This year's report concludes that renewables are the "most cost-competitive form of generation," even without subsidies.

"As such, renewable energy will continue to play a key role in the buildout of new power generation in the U.S," the bank wrote. "This is particularly true in the current high power demand environment, where renewables stand out as both the lowest-cost and quickest-to-deploy generation resource."

But that finding comes with an important caveat. Persistently low natural gas prices, rising renewable energy costs and higher electricity demand have made existing gas plants economically attractive compared with renewables, Lazard found. Onshore wind projects, for instance, have an LCOE ranging from \$37 per megawatt hour to \$86 per MWh.

Utility scale solar projects had a range of \$38 to \$78 per MWh. A new combined-cycle natural gas plant, by contrast, had a cost of \$48 to \$109. But an existing gas plant had a cost range of \$24 to \$39 per MWh. Even existing coal plants are potentially competitive, having a range of \$31 to \$114 per MWh. (New coal plants remain economically challenged at \$71 to \$173 per MWh.)

The result is that existing fossil fuel plants could generate more power to meet short-term rises in electricity demand, said Harrison Fell, an associate professor at North Carolina State University who tracks electricity markets.

"To the extent we need to add a lot more, wind and solar plus storage looks competitive to gas, even without subsidies," he said. "But if we're in a world with decreased regulation of coal-fired generation, for example, we could see some expansion of capacity there."

LCOE has long been a contentious metric in energy circles. Among its critics are analysts at [J.P. Morgan](#), academics at the [Massachusetts Institute of Technology](#) and, more recently, the environmental group [Clean Air Task Force](#). They argue that LCOE is an inadequate tool for measuring renewables and dispatchable technologies, like nuclear or gas, because it does not account for the systemwide costs of providing backup to wind and solar.

Lazard has sought to address those concerns by adding a new calculation to its report that accounts for the cost of providing backup power to wind, solar and short duration storage batteries. It finds that those prices range from as low as \$71 per MWh for unsubsidized wind in the Midwest to as high as \$164 for solar-plus-storage in the mid-Atlantic.

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[BENJAMIN STORROW](#) is a reporter for *Climatewire*.

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