ENERGY INNOVATION
POLICY & TECHNOLOGY LLC

GridLAB

www.energyinnovation.org

98 Battery Street, Suite 202
San Francisco, CA 94111

In Montana, EPA's CO2 rules for power plants can reduce emissions while ensuring grid reliability

Key Takeaways

- **EPA's proposed limits on greenhouse gas emissions from existing coal-fired power plants and new gas plants are crucial tools for meeting U.S. climate goals in the electricity sector.**
- **The power grid can meet the requirements of EPA's proposed rule without compromising reliability; accelerated deployment of reliable portfolios of clean energy resources can meet the grid's reliability needs cost-effectively, while EPA's proposed rule supports reliability by providing utilities and states flexibility in how emissions limitations are met.**
- **The proposed EPA rules create pathways for Montana to leverage its exceptional wind resources and regional coordination to reliably and cost-effectively replace its aging, high-cost Colstrip coal plant, saving customers money and reducing pollution.**
- **Congressional support is critical to make sure EPA's rules withstand opposition and result in cost-effective emissions reductions in the electricity.**

Overview

In May 2023, EPA proposed limits on greenhouse gas (GHG) emissions for existing coal-fired power plants, and new gas-fired power plants. These regulations represent EPA's most significant action to limit GHGs to date, and are a crucial tool to reduce greenhouse gas emissions. EPA projects that under the rule, coal generation will fall to nearly zero by 2035, and share of electricity from clean energy will grow from 40 percent today to 67 percent by 2035. In particular, the GHG limits for existing coal and new gas are essential to preserve in their proposed form if we hope to meet our climate goals.

Maintaining grid reliability and enhancing resilience is critical to American security and constituents' livelihoods as we reduce carbon emissions. EPA's proposed rules are designed to ensure that the U.S. electricity sector continues to provide affordable and reliable electricity service to customers, while significantly reducing emissions. However, several high-profile utilities and grid operators have voiced concerns about EPA's proposed rules' impact on reliability, particularly around plants closing before replacement resources are in place. In November 2023, EPA called to stakeholders for additional input on the issue of grid reliability, noting significant dissonance in comments received, calling for concrete suggestions. This followed FERC's technical conference in which stakeholders sparred over the same issue. While some utilities and grid operators argue for maximum flexibility to comply with the rules, the concerns raised around reliability can be addressed without compromising the integrity of EPA's proposed rules. In fact, the rules provide an opportunity for clear timelines around plant closures, enabling a smoother transition where customers are guaranteed the cheapest, cleanest, and most reliable power.

Why reliability won't be threatened

The power grid can meet the requirements of EPA's proposed rule without compromising reliability. Existing technology including wind, solar, storage, and transmission capacity increases, can be deployed together to meet the grid's reliability needs, even with resource retirements or modifications spurred by EPA's proposed rule. [1] Three large U.S. regions have already demonstrated that power systems can be reliably operated with no or very low amounts of coal—New York, New England, and California – while an additional 40+ utilities, covering 20% of national electricity demand, have already proposed or approved plans to their regulators to move off coal by 2035 and largely replace this energy and capacity with clean resources. Energy Innovation reviewed six peer-reviewed studies from the National Renewable Energy Laboratory, UC Berkeley, Princeton, and Telos Energy, which showed in aggregate we can reach a 70-100 percent clean, coal-free clean electricity system by 2035 while maintaining adequate resources to match supply and demand. We also surveyed the literature on local operational reliability impacts, finding replacement resources can more than supplement local reliability concerns if grid operators use them to their full capabilities.[2]

The proposed 111 rules also provide significant flexibility to states and utilities if legitimate reliability concerns arise. The rule for new gas allows new gas plants that operate infrequently to add system flexibility and meet growing peak demand. Coal plants can operate at lower capacity factors through 2035, and can blend with gas through 2040, giving utilities the better part of two decades to comply. Individual states with immovable financial or reliability concerns can petition EPA exceptions for specific plants under the "remaining useful life and other factors" (RULOF) exception throughout the compliance period. Existing gas rules, if they remain, provide significant flexibility for most of the existing gas fleet change operational profiles to support grid reliability needs.

Utility and system operators raising reliability concerns are also inhibiting the pace of clean energy additions through outdated planning, procurement and grid interconnection processes, highlighting the necessity of strong, clear 111 rules to ensure utility incentives align around the clean energy transition Americans deserve. The key barrier to reliability isn't technology, it's whether utilities and markets can add new resources at the pace and scale required to address the grid's reliability needs. Fortunately, policy fixes are available that these entities can implement immediately to fix these problems and supercharge clean energy additions. In particular, focus on proactive utility planning for retirement, better regional transmission planning under current and pending FERC rules, and proactive application of Inflation Reduction Act incentives can get us there. More support from Congress on streamlining transmission cost allocation and permitting akin to Reps. Casten and Levin's Clean Electricity and Transmission Acceleration Act would provide additional tools to address reliability needs.

How will Montana's utilities and consumers be affected?

Montana is blessed with some of the nation's best wind energy resources and roughly 50% of the state's electricity generation comes from wind or hydroelectricity. Montana's Colstrip power plant produces much of the rest of the state's power, and is one of the country's highest polluting power plants.[3] At the same time, regional wind resources are available that can provide power at roughly half the cost of operating the plant, according to Energy

[1] See generally, O'Boyle et al., Maintaining A Reliable Grid Under EPA's Proposed 111 Rules Restricting Power Plant Emissions, Energy Innovation. November 2023. https://energyinnovation.org/publication/maintaining-a-reliable-grid-under-epas-proposed-111-rules-restricting-power-plant-emissions/.

[2] Milligan Grid Solutions, "Sources of Grid Reliability Services," https://milligangridsolutions.com/Sources%20of%20Essential%20Reliability%20Grid%20Services%20Fact%20Sheet.pdf

[3] Colstrip is the 10th largest coal plant in the US in terms of CO2 emissions, and 4th largest in terms of NOx emissions. Based on data from EPA Air Markets Program Data.

Innovation analysis.[4] Colstrip is owned by multiple utilities that operate across the Northwest, the majority of which have plans to exit their share of the plant by 2025, while replacing this coal capacity primarily with new renewable energy and energy storage resources.

Montana consumers are increasingly left holding the responsibility for Colstrip, inheriting the plant's high operating costs and regulatory liabilities. However, a recent report found that the reliability contribution from the plant can be replaced through a combination of better regional coordination and new wind and energy storage resources,[5] enabling a cleaner and more efficient grid and leveraging Montana's nation-leading wind energy resources. In addition, proposed new transmission capacity in Montana could better link the state with market regions to the east, supporting Montana's resource adequacy and enabling integration of regional wind resources.[6] EPA's proposed rules provide several pathways for compliance, with different timelines, and can provide certainty around which Montana utilities can plan and procure new resources and infrastructure needed to support low-cost, clean, reliable power for customers.

How Congress can help

Congressional support for this rule ensures that the U.S. has the policy tools we need to achieve our GHG emissions reduction goals. Research clearly indicates reliability won't be threatened by the rules, which come with huge consumer, health, and economic benefits. A near coal-free electricity system is more than feasible, and the rules will create the certainty needed to manage the transition to clean electricity while new resources provide the capacity and reliability services we need to maintain a reliable system. Congress has a key role to play in supporting EPA's rules, protecting the rules from potential Congressional Review Act challenges. Congress should also preserve support for clean energy under the Inflation Reduction Act that will support investment in new resources while reducing costs for customers. In addition, support for complementary federal legislation that makes building and permitting transmission easier can also help. We are happy to answer any questions you have about the EPA rules, grid reliability, and the impacts on your state and region.

For more information, please contact:

Mike O'Boyle - Senior Director, Electricity at Energy Innovation: michael@energyinnovation.org

[4] Energy Innovation, "Coal Cost Crossover 3.0," January 2023, https://energyinnovation.org/publication/the-coal-cost-crossover-3-0/

[5] GridLab, "Assessing Resource Adequacy in Montana," December 2023.

[6] Utility Dive, "Allete, Grid United plan $2.5B transmission line linking Western, Eastern interconnections", January 2023, https://www.utilitydive.com/news/allete-grid-united-transmission-line-dakota-montana/641590/