Insight

The CLEAN Future Act's Clean Electricity Standard

EWELINA CZAPLA | MARCH 3, 2021

Executive Summary

- House Energy and Commerce Committee Democrats introduced the Climate Leadership and Environmental Action for our Nation's (CLEAN) Future Act in an effort to achieve economy-wide net zero emissions by 2050.
- To address power-sector emissions, the bill relies on a Clean Electricity Standard (CES), which would create a credit-trading system that would lead to the elimination of emissions from this sector by 2035.
- The CES's success relies on the adoption of technology that is currently too costly to implement or has not yet been commercialized.

Introduction

On Tuesday, the House Energy and Commerce Committee leadership introduced the Climate Leadership and Environmental Action for our Nation's (CLEAN) Future Act.[1] The over 900-page bill aims to achieve net zero emissions within every area subject to the Committee's jurisdiction, including power, transportation, buildings, and industrials. The bill aims to "achieve net zero greenhouse gas pollution no later than 2050, with an interim target of reducing pollution by 50 percent from 2005 levels no later than 2030." The bill seeks to achieve these targets by instituting mandates, providing grants, or providing additional grants to existing programming.

Under this bill, the power sector would be mandated to adhere to a Clean Electricity Standard (CES). The mandate would require retail electricity suppliers to increase the proportion of clean electricity in their supply each year beginning in 2023 until 2035, at which point they could supply only clean energy. In addition, the CES requires prevailing

wages for construction workers and the right to organize for employees of power generators. Beyond the CES, the bill seeks to increase investment in clean energy, distributed energy resources, grid infrastructure, and microgrids, and to expedite the expansion of the transmission system.

With a majority of electricity in the United States generated using fossil fuels, the bill's success relies on the adoption of technology to capture carbon dioxide emissions.

Clean Electricity Standard

The Environmental Protection Agency (EPA) would implement the CES through a credit system. Initially, the EPA would issue credits following an EPA determination of the carbon intensity of the electricity consumed by a retailer, where low-carbon electricity would receive credits. The EPA would not issue negative credits for carbon-intensive electricity. As new sources of generation are built, additional credits would be issued.

Carbon intensity is the carbon dioxide equivalent emissions associated with the generation of one megawatt-hour of electricity. Carbon dioxide equivalent is the number of metric tons of carbon dioxide emissions with the same global warming potential over a 20-year period as one metric ton of another greenhouse gas. This allows for the consideration of different emissions' impacts using a standardized measure.

Electricity generators would then trade and bank credits in a national market. Beginning in 2023, each retail electric supplier would submit credits to the EPA annually. The number of credits required would be determined by multiplying the megawatt-hours consumed by the minimum percentage of zero emission electricity for the calendar year. The minimum percentage of zero emission electricity would increase each year. In particular, the bill calls for 84 percent in 2031 increasing to 100 percent by 2035. This system would allow those retailers who provide consumers with relatively higher quantities of low-carbon power to sell credits to those who are reliant on fossil fuel generated power. Retailers who are unable to meet the requirements of the credit program may submit alternative compliance payments which escalate in price annually.

For generators relying on fossil fuels, carbon intensity would be calculated by not only including emissions at the point of fuel consumption but also upstream emissions associated with the fuels' extraction, including flaring, as well as processing and transportation. Under the bill, the EPA would promulgate rules to determine how to account for these upstream emissions. The EPA would also issue credits for carbon capture, which would eventually be required for any fossil fuel generation that intends to operate under the trading program in the next 14 years. Similarly, credits would be issued for direct air capture of carbon dioxide.

Uncertain Results

Broadly, the creation of an emissions trading system could lead to an unanticipated result rather than the reductions sought in the timeline. The market could fail to operate as anticipated, not only as it responds to unprecedented conditions, but also because the prices and conditions established by a central authority, in this case the EPA, may fail to align with reality. The European Emissions Trading System, for example, has had limited success in reducing carbon emissions while increasing consumer costs despite the European Commission's Energy Directive to encourage renewable generation.[2]

A majority of electricity generation in the United States relies on fossil fuels, particularly natural gas and coal.[3] Many of these generating facilities, specifically those that consume natural gas, were constructed recently and have economic lives that stretch beyond the timeline proposed by the CLEAN Future Act. The average capacity-weighted age of natural gas-fueled generation facilities in the United States is 22 years while coal is 39 years.[4] As a result, these facilities will need to install carbon capture technology in order to continue operating as the mandated minimum percentage of zero emission electricity increases under the CLEAN Future Act.

Thus far, carbon capture technology has been adopted in the United States largely as a part of enhanced oil recovery rather than for the purposes of capturing emissions at the smokestack. Direct air capture, on the other hand, has yet to be commercialized in the United States. Its expanded adoption may rely on the appeal of the 45-Q tax credit, which calls for not only the capture of carbon dioxide but also its sequestration.[5] The adoption of the technology could raise prices for retail consumers, particularly if market conditions don't improve and the mandate stands. Similarly, increased wages for construction workers and the employees of generating facilities could increase costs for consumers. In addition, such increased costs could discourage developers from constructing new generation facilities.

Conclusion

The CLEAN Future Act relies on the development of additional mandates and the creation of an emissions trading system as part of its CES. These policies have proven ineffective in the past, as AAF has explained, and could result in increased consumer costs with limited reductions in emissions.

[1] https://energycommerce.house.gov/newsroom/press-releases/ec-leaders-introduce-the-clean-future-act-comprehensive-legislation-to

[2] https://www.euractiv.com/section/emissions-trading-scheme/news/emissions-trading-system-failures-sour-energy-policy-efforts/ ; https://www.cei.org/wp-content/uploads/2011/12/matt-sinclairs-ets-study-oct-09.pdf

[3] https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php

[4] https://www.eia.gov/todayinenergy/detail.php?id=30872

[5] https://www.americanactionforum.org/insight/new-regulation-provides-clarity-for-carbon-capture/