



Clean Air Act: Electricity Sector and Greenhouse Gas Standards

March 12, 2021

Congress may continue to examine [Clean Air Act \(CAA\)](#) authorities and climate change issues as it [deliberates on legislation and conducts oversight](#) of the U.S. Environmental Protection Agency (EPA).

The Biden Administration has committed to reducing greenhouse gas (GHG) emissions using various policy tools to achieve a “[carbon pollution-free electricity sector](#)” by 2035. Multiple factors, including economics, technology, and energy and climate policies, could play a role in future GHG emission levels. Many say both legislative and executive actions would be necessary to decarbonize the electricity sector by the Administration’s target date.

Electricity Sector GHG Emissions

Since 1990, GHG emissions from [fossil fuel](#) combustion have [accounted for 74%-78% of total U.S. GHG emissions](#). The electricity sector historically accounted for the largest percentage of U.S. GHG emissions from fossil fuel combustion, but has been surpassed by the [transportation sector](#) since 2016.

Carbon dioxide (CO₂) emissions from fossil fuel combustion in the electricity sector declined by 25% between 2008 and 2018. Multiple factors, [including overall economic conditions and electricity market developments](#), played a role in this decline. One [key factor](#) involves the U.S. electricity generation portfolio. The contributions of different fuels and energy sources within the portfolio changed in recent years, which in turn altered emission levels.

Clean Air Act

Since the 1970s, EPA has promulgated rules under CAA Section 111 and other CAA authorities to limit non-GHG emissions, such as [sulfur dioxide](#), [nitrogen oxides](#), and [mercury](#), from power plants. In the past decade, EPA has used CAA Section 111 authority to promulgate regulations addressing GHG emissions from these sources.

[CAA Section 111](#) requires EPA to establish nationally uniform, technology-based performance standards for categories of industrial facilities, also called stationary sources, that cause or contribute significantly

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IN11633

to air pollution that may endanger public health or welfare. [Section 111\(b\)](#) directs EPA to establish maximum emission levels ([New Source Performance Standards](#), or NSPS) for new and modified major [stationary sources](#). To set the NSPS, EPA determines the [best system of emission reduction](#) (BSER) that has been “[adequately demonstrated](#),” taking into account costs and any non-air-quality health and environmental impact and energy requirements.

Once EPA promulgates NSPS under [Section 111\(b\)](#), [Section 111\(d\)](#) requires EPA to promulgate regulations for existing sources. The [Section 111\(d\)](#) rules set procedures for states to submit plans establishing performance standards for existing sources that would be subject to NSPS if they were new, barring an exclusion under [Section 111\(d\)](#).

New Power Plants

In 2015, EPA promulgated [GHG performance standards for new and modified power plants](#) under CAA [Section 111\(b\)](#) concurrent with the [111\(d\)](#) standards for existing plants (discussed below). The 2015 GHG NSPS for new and modified power plants relied partly on carbon capture and sequestration (CCS). In 2018, [EPA proposed, among other things](#), to replace the BSER determination for new coal units (i.e., partial CCS) with a determination that BSER for these units would be the most efficient demonstrated steam cycle in combination with best operating practices. To date, EPA has not finalized the proposed revisions to BSER or the GHG NSPS for new and modified units. The 2015 GHG NSPS for new and modified power plants remains in effect.

Existing Power Plants

EPA has promulgated two rules under CAA [Section 111\(d\)](#) authority to limit GHGs from existing power plants—the 2015 Clean Power Plan (CPP) and the 2019 Affordable Clean Energy (ACE) rule. As discussed below, neither rule is in effect.

CPP

The [2015 CPP](#) set national performance standards for CO₂ emissions from existing fossil-fuel-fired power plants. One national performance standard would have applied to existing electric steam generating units (which are mostly coal), and the other would have applied to existing stationary combustion turbines (e.g., natural gas combined cycle units). EPA based [these standards on the BSER](#), which the agency determined based on a collection of measures: (1) improving the [heat rate](#) at coal-fired units, (2) shifting generation from coal-fired units to lower-emitting natural gas units, and (3) shifting generation from fossil fuel units to renewable energy generation. The CPP also set [individual state targets](#). States were to determine how to reach these goals.

The CPP was the subject of ongoing litigation and was never implemented. EPA [repealed the CPP](#) in 2019. EPA based the repeal on a change in its legal interpretation of its authority under CAA [Section 111](#) from its interpretation in the CPP. EPA concluded that the 2015 CPP [exceeded CAA statutory authority](#) in setting the BSER as a combination of *on- and off-site* emission reduction measures that applied to the entire existing source category.

ACE

EPA finalized new emissions guidelines for existing coal-fired power plants in the [2019 ACE rule](#). The ACE rule applied [a narrower interpretation](#) than the CPP of the BSER, defining it as on-site “[heat rate improvement](#)” measures, also known as efficiency improvements, for existing coal-fired units. EPA identified six candidate technologies along with operating and maintenance practices that states were to

evaluate in establishing a standard of performance for each source in their state plans under CAA Section 111(d).

In January 2021, a federal appellate court [vacated and remanded the ACE rule](#), directing EPA to reconsider its interpretation of its CAA Section 111(d) authority to regulate GHGs from existing power plants. The court also vacated the CPP repeal but stayed its mandate until the EPA responds to the court's remand in a new rulemaking action.

Issues for Congress

The CPP and the ACE rule [presented different legal interpretations](#) of EPA's CAA authority. These interpretations could raise broader questions about EPA's approach to regulating GHG emissions under the act.

A related issue is [what role existing CAA authority would play](#) in meeting various GHG targets. It is [uncertain whether existing CAA authority](#) could achieve the more ambitious targets supported by some Members and stakeholders. Congress may consider current and future GHG emissions targets and whether and how the CAA authorities could be used to reduce emissions in the electricity sector or support complementary policies to meet emissions goals.

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