

CLOSING THE LEAKAGE LOOPHOLE IN THE CLEAN POWER PLAN

A NextGen Climate America Policy Brief

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EPA finalized the performance standards for the Clean Power Plan on August 3, 2015. This vital and life-saving rule provides the first ever regulation to prevent fossil fuel power plants from dumping an unlimited amount of climate-wrecking carbon pollution into our air. The finalized performance standards established the legally required level of environmental performance for these power plants – the basic minimum amount of pollution reductions Americans (and the rest of the world) can expect from the rule. But, when the rule plays out in real life, small details about accounting and enforcement can make a big difference in whether that required minimum level of performance actually materializes.

States have the option to implement the rule in whatever way makes the most sense given their local circumstances, but EPA recognizes that many states have asked for guidance on how to administer their Clean Power Plan on a day-to-day basis, and that some other states may refuse altogether to develop a plan. For the states that refuse to protect their citizens' health and climate by writing their own plan, EPA will step in and administer the Clean Power Plan by regulating power plants directly, bypassing the state government.

That's why, along with the final performance standard, EPA issued a proposed version of what a federal plan would include, which also serves as a model rule for states looking for guidance on how to draft their own plan. Just like with the Clean Power Plan performance standards themselves, EPA requested public comments on how to improve this proposed federal plan and model rule.

Unfortunately, one of the implementation plans proposed by EPA fails to follow EPA's own final guidelines. Instead, it would allow generators to shift pollution from existing sources to new natural gas power plants and claim they are in compliance by pointing to the reduced emissions from existing sources while ignoring the emissions from new sources.

This kind of shell game is known as emissions leakage.

Last year, NextGen Climate America and many other Americans and organizations [commented to EPA](#) in 2014 that, as part of the final performance standards, EPA should require states to demonstrate that their plans will not result in [leakage](#). That is, states should have to show that they are not using accounting tricks that will make it seem like they are following the rules, but that actually result in more carbon pollution than the performance standard allows.

EPA listened: states are now required to address leakage in their state plans. Unfortunately, EPA's proposed federal plan and model rule still contains a major leakage

loophole that needs to be closed. That's why NextGen Climate America has submitted a comment to EPA suggesting several common sense fixes that will make sure the Clean Power Plan lives up to its name, and results in clean power, not shell games.

HOW DOES EPA'S LEAKAGE LOOPHOLE WORK?

Leakage can occur when a state employs a rate standard or a mass standard, but EPA's proposed federal plan and model rule for states employs a version of the mass standard that is particularly vulnerable to leakage. This vulnerability exists because the proposed federal plan caps pollution only from existing sources, caps it at a very high level, and fails to ensure there isn't a massive increase in pollution from new sources.

The result is that EPA is proposing a partial cap, which can be compared to a partially-closed cap on a water bottle. It works better than no cap, but not nearly well enough.

To understand how this partial cap works and why it is so vulnerable to leakage, it is helpful to understand how EPA derived the standards and the various options for implementing the standards.

EPA chose the partial cap as a potential implementation scheme from among four main options states may choose from when implementing the Clean Power Plan:

- A. separate rates for coal and gas plants,*
- B. a blended rate standard based on each state's mix of coal and gas plants,*
- C. a mass based limit only on existing power plants, and*
- D. a mass based limit with new source complement.*

Option C is most vulnerable to leakage because it is a partial cap, which leaves new sources effectively uncontrolled.

EPA established final performance standards by assessing the level of pollution reduction that can be achieved by applying the "best system of emissions reduction" available for existing power plants. EPA established separate rate standards for coal and gas plants. From there, they developed the other versions of the standards that states can adopt, including the mass standard.

By employing the suite of measures included in this system (including replacing dirty power with RE, efficiency improvements at coal plants, and optimizing the existing gas fleet to reduce reliance on coal), both coal and gas plants can improve their performance. Gas plants can meet the standard by cutting their net pollution to 771 pounds of carbon dioxide per megawatt-hour of electricity by 2029 (compared to an average performance of 900-1000 lbs/MWh today), and coal plants can meet the standard by getting to 1305 lbs/MWh (compared to about 2200 lbs/MWh today).

Coal and gas plants may choose to meet these standards by purchasing compliance credit from new low- and no-carbon energy resources, like wind, solar, energy efficiency, and increased utilization at existing nuclear plants. When EPA translated these rate standards into mass standards, they attempted to determine the total pollution levels if all of the expected new renewable power in the country came online and sold these compliance credits to existing power plants.

EPA's way of calculating the mass standard for existing plants has two important implications for leakage: First, existing power plants produce the most electricity they possibly can while still meeting the standard. Second, a lot of new renewable energy comes online. These two facts, combined, mean that almost all of the new electricity needs in our country would be met by existing power plants, new renewables, and energy efficiency.

That means almost no new natural gas power plants would be needed between now and 2030.

Based on this conversion, EPA offered states two options for implementing a mass standard.

Option 1: To keep things simple and provide even incentives for all generators, states can adopt the mass standard for existing sources described above, plus a small “new source complement” to allow for the tiny amount of new generation from natural gas power plants that may be needed between now and 2030.

Option 2: States may adopt the mass standard that covers existing sources, leaving pollution from new sources completely uncapped. If states adopt this option, they must take the extra step of proving that they are not getting leakage from this partial cap. EPA included a few tweaks to how compliance allowances are distributed that are intended to prevent leakage.

EPA has adopted Option 2, which caps pollution only from existing power plants, with no limit on pollution from future plants, as its proposed approach to a mass-based federal plan. They are offering this approach as a presumptively approvable approach for states to adopt in their state plans. The problem is, EPA’s proposed method for preventing leakage in this approach is inadequate.

WHY IS THE MASS STANDARD SO PRONE TO LEAKAGE?

The problem with EPA’s approach to limiting leakage under Option 2’s “partial cap” approach is that this form of limiting pollution is missing some essential brakes on leakage that are intrinsic to the rate standard approach.

Under the rate standard, there is no fixed upper limit on the amount of pollution from existing power plants, but every unit of energy from an existing coal plant needs to be coupled with new energy from zero-carbon sources. So the more electricity we get from existing sources, the more renewables and efficiency come online. Similarly, if a coal plant retires in the context of a rate standard, that coal power would be replaced by a mix a lower-emitting resources. As a result, the overall environmental performance of the power sector is unlikely to get worse, even if fewer renewables come online than might have otherwise come online in order to supply that coal plant’s demand for compliance credit.

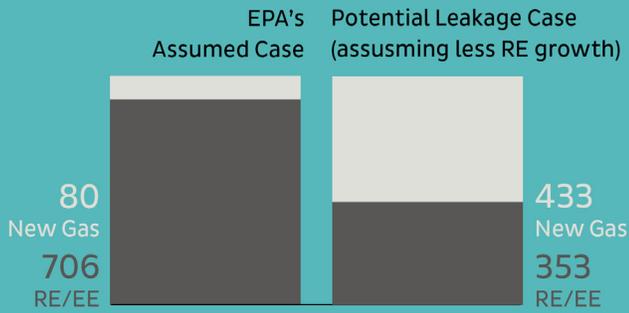
But in the mass standard, these automatic brakes don’t exist.

If a coal plant retires, the remaining power plants can just run less efficiently, without the cap on pollution from these plants getting any tighter. Meanwhile, that plant’s retirement means there are fewer megawatt-hours of electricity on the grid, which makes room for new gas power plants to come online and increase overall pollution.

Even without coal retirements, there is still no guarantee that the combination of existing fossil plants, new renewables, and energy efficiency meet as large a portion of our future electricity demand as EPA assumed in its translation of the rate standard into a mass standard. Since existing fossil units don’t necessarily need to buy compliance credits from these clean resources in order

MEETING FORECASTED GROWTH

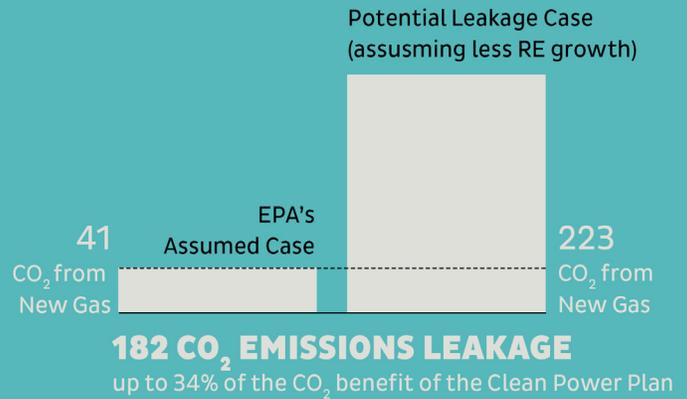
in Electricity Generation (million MWh)



*Total forecasted growth 786 MMWh in both cases

FORECASTED CO₂ EMISSIONS

from New Electricity Generators (million tons)



*CO₂ from existing sources is 1668 Mt in both cases

to dilute their overall emissions rate, the clean resources might develop more slowly than EPA assumed. In this case, again, our increased electricity demand would be met by more new gas plants.

Either way, the result is the same: existing sources emit the full mass limit, but new gas units emit at levels far in excess of the small new source complement.

Multiple expert analysts have used electricity sector simulation models like the ones utilities use when planning what resources to build or retire. This modeling has determined that the fix EPA offered would not prevent [huge increases](#) in new gas generation and in pollution from these new plants. These models show that all this new gas results in [far more carbon pollution](#) from the electric sector than would occur under EPA's finalized standards of performance, as measured either by the rate standard or by Option 1 for adopting a mass standard, including the new source complement.

HOW CAN EPA PATCH THIS LEAK?

EPA has several tools at its disposal that can help to address the leakage problem in the proposed federal plan and model rule.

Any implementation plan put in place by either states or the EPA must result in environmental performance at least as good as what is achieved by the best system of emissions reduction. Since EPA's proposed version of a mass plan performs so much worse than the rate standard, due to inadequate leakage protections, EPA should issue supplementary guidance indicating that any finalized federal plan will adopt more effective anti-leakage measures, and that state plans must also adopt more protective leakage prevention.

NextGen Climate America has suggested three tools that EPA can use either separately or in some combination to help solve the problem.

First, EPA can expand both the size and the scope of one tool it has already proposed: a renewable set-aside in the mass compliance allowance distribution. In the proposed rule, EPA sets aside 5% of all allowances for

new renewable resources. The rest is given away for free to existing pollution-emitting fossil plants. This 5% amount appears to have been arbitrarily chosen, and recent expert electricity sector modeling indicates that it is inadequate to address leakage.

Instead, EPA should examine options for increasing the size of this set-aside. In the rate standard, all new zero-carbon generation is eligible to earn compliance credits, which it can sell to fossil generators. EPA could better match the incentives created in the rate standard and more closely approach the required level of environmental performance by increasing the renewable set-aside to a level that actually matches the amount of new renewable energy they factored into setting the mass standards.

Second, EPA could address the leakage where it occurs: at new natural gas plants. EPA could monitor new natural gas generation. Where generation and pollution from these new plants exceeds the levels reflected in EPA's proposed new source complement, EPA may hold mass allowances in reserve so that they can not be claimed by existing fossil power plants. This way, if new gas plants over-emit, existing plants would have to emit less.

Third, EPA should abandon its proposed approach of allocating virtually all mass allowances to existing fossil power plants on the basis of how much they have historically polluted. Instead, allowances should be allocated to all of the same resources that are eligible to participate in compliance credit trading in the rate standard: fossil units get a portion, but so do all new renewables and verified efficiency improvements. Furthermore, they should not be allocated based on past pollution: that approach just rewards the dirtiest resources, instead of incentivizing the growth of cleaner resources.

Each of these three options can help to reduce leakage, but EPA should employ electricity system simulation models to find the right mix of policies to eliminate it

altogether, and it should require states adopting a mass plan that resembles the federal plan to do the same.

Of course, there is a fourth option available to states that is much more administratively straightforward than any of the three suggestions here, and that requires no modeling to ensure that leakage (at least this variety of leakage) is prevented: states are free to implement a mass plan that covers both new and existing sources under the mass standard plus the new source complement.

The law requires that plans achieve equivalent environmental performance, and covering all sources creates a level playing field for incumbent and new generators. If states are truly going to comply with the legal requirement of preventing leakage, adopting the new source complement is the easiest way to do it.