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March 20, 2014

The Honorable Gina McCarthy
Administrator
United States Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Administrator McCarthy,

Since President Obama announced his climate action plan in June 2013, the Environmental Protection Agency (EPA) has made an unprecedented effort to gather input from stakeholders prior to proposing a rule to regulate greenhouse gases from existing power plants under Section 111(d) of the Clean Air Act. Xcel Energy Inc. appreciates EPA's efforts and its willingness to provide our industry with opportunities to help shape a reasonable and workable Section 111(d) rule. We have provided input to EPA in many forms; our outreach to EPA on Section 111(d) extends back almost three years, well before the President's announcement.

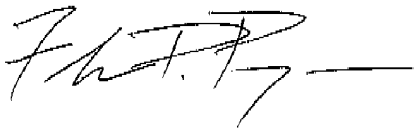
In our prior outreach to the Agency, Xcel Energy has emphasized the importance of broad state flexibility and credit for preexisting and continuing emission reduction programs. The company is pleased that many of the concepts that we have advocated appear to have broad support among state, industry and environmental parties. As EPA moves toward proposal of the rule in June 2014, many states and other parties have indicated a desire for more practical guidance from EPA on the methods that they may use to comply. In particular, states seek guidance on practical and legally justifiable ways of leveraging the carbon emissions reductions made through state clean energy programs and crediting early action.

To respond to our states' interests and provide EPA with a practical pathway for implementation, we have prepared a brief overview of a flexible approach to the

Section 111(d) rule. Enclosed with this letter are three Exhibits: (1) a description of Xcel Energy and some of the environmental accomplishments we have achieved through our work with our states; (2) a framework for our Section 111(d) approach in a sequential, question-and-answer format; and (3) a simplified example showing how states may choose to implement the rule. This material is intended to help EPA and states develop a workable program that credits cost-effective emission reductions from state clean energy programs and rewards and encourages the early actions that many states and utilities (and their customers) have undertaken. We believe that the concepts contained in this material are workable in every state, regardless of fuel mix, geography, economy or structure of the electricity market.

Thank you for the opportunity to provide this material. As EPA develops its proposal, we respectfully submit this input for your consideration. Please contact me at 303-294-2108 or Jack Ihle, Director of Environmental Policy for Xcel Energy, at 303-294-2262 if you have any questions.

Sincerely,



Frank P. Prager
Vice President, Policy & Strategy
Xcel Energy Inc.

cc: Janet McCabe, Acting Assistant Administrator
Joseph Goffman, Special Counsel
William Bumpers, Esq.
Jack Ihle, Xcel Energy Inc.
Nick Martin, Xcel Energy Inc.

Exhibit 1
Xcel Energy Inc.
State Clean Energy Program Achievements

Xcel Energy is an electric and natural gas utility with 2013 revenues of $10.9 billion. Based in Minneapolis, Minnesota, we provide a comprehensive portfolio of energy-related products and services to approximately 3.4 million electricity customers and 1.9 million natural gas customers in Minnesota, Wisconsin, North Dakota, South Dakota, Michigan, Colorado, Texas, and New Mexico.

Environmental leadership is core to our vision, balanced with delivering reliable energy at an affordable price. As of 2013, we had reduced our companywide CO_2 emissions by 20% since 2005, and we are on track to reach 31% below 2005 levels by 2020. We have achieved these reductions through:

- Renewable energy additions that meet or exceed aggressive RPS mandates in several of our states. Xcel Energy has been the nation's No. 1 provider of wind energy for nine years running. Our fleet includes important components of hydro and biomass electricity, and we are rapidly expanding our solar energy portfolio.
- Industry-leading energy efficiency and demand-side management programs.
- Fleet modernization initiatives, such as the Colorado Clean Air-Clean Jobs Act. These programs were implemented in cooperation with our state public utility commissions and legislatures in Minnesota and Colorado and target coal-fired power plants for retirement or repowering.

We have achieved these reductions while ensuring a safe and reliable electric system and maintaining electricity rates in all our operating regions below the national average.

Figure 1 shows our current mix of owned and purchased power, with a 31% carbon-free component. Figure 2 illustrates Xcel Energy's reductions in total CO_2 emissions and CO_2 intensity since 2005. Figure 3 shows – in this example, for our Public Service Colorado operating company, but similar charts are available for our other operating companies – the relative contributions of each emission reduction strategy.

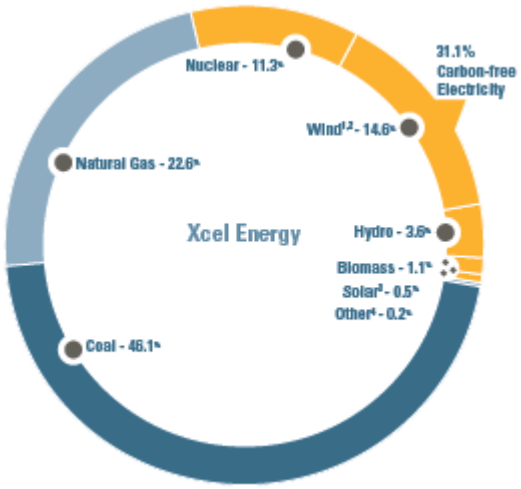


Figure 1: 2013 owned and purchased energy

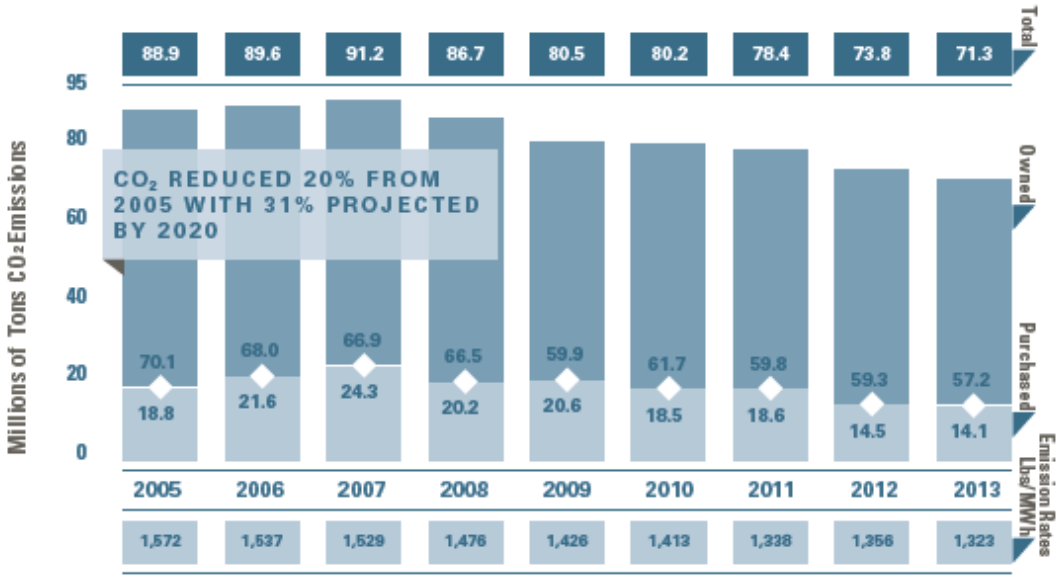


Figure 2: Xcel Energy CO_2 emissions and CO_2 intensity, 2005 to 2013

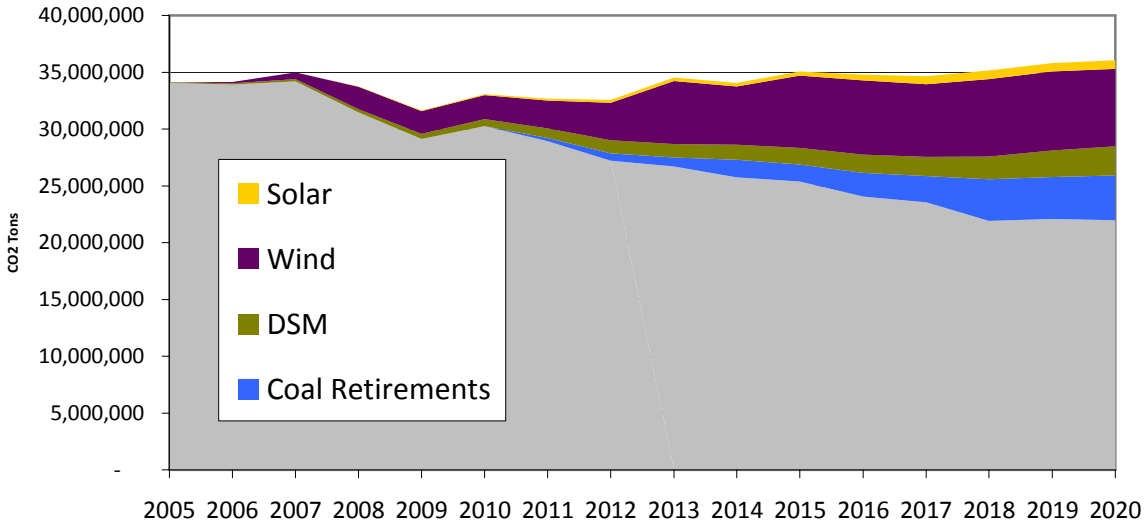


Figure 3: CO_2 reductions for Public Service Colorado. Gray area shows actual and expected CO_2 emissions, which have declined 22% since 2005 and are projected to be 35% below 2005 by 2020. The other wedges show the relative contributions of each strategy.

This figure illustrates the value of a clean energy portfolio approach to reducing emissions. Xcel Energy believes that such an approach can serve as an environmentally effective and cost-effective model to achieve CO_2 reductions from existing power plants under Section 111(d).

Exhibit 2
Xcel Energy's Proposed Section 111(d) Implementation Framework

1. How would EPA set emissions reductions guidelines?

Section 111(d) requires EPA to create a "procedure" under which states submit plans to establish "standards of performance" for existing sources that would be subject to Section 111(b) new source standards if they were new. While there is some disagreement among stakeholders regarding the degree of reduction that EPA may mandate under Section 111(d), we believe certain things are not controversial: EPA's role is to give the states guidelines (a "procedure") that they may use to evaluate GHG emission reductions from power plants within their borders. These guidelines should be broadly applicable throughout the nation, i.e. they should not be dependent on the economic, geographic or market issues applicable within the individual states. (As described below, these issues are best addressed by the states themselves in a subsequent step in the process.) Finally, the guidelines should establish a method to allow states to translate the standard of performance into a per-unit-of-generation emissions rate for each covered plant (e.g. lb CO_2/MWh) during the compliance year(s).

2. What kind of data do states need to gather regarding emissions from their power plants?

Once EPA's guidelines are in hand, the state role begins. States, probably acting through their environmental agencies, would first identify and categorize the existing electric generating units covered by the rule – the "jurisdictional units."[1] They would then inventory these units' emissions of carbon dioxide, including emissions from the baseline years discussed below. For most plants, the historic CO_2 emissions data should be readily available from emissions data reports submitted under 40 CFR Part 75. States should also identify the methodology used to measure future GHG emissions and assure that the data are both accurate and consistent with the emissions information used during the baseline years.

3. How may states design the emission reduction program based on EPA's guidance?

[1] We use the term "jurisdictional unit" to mean any electric generating unit that, if it were new, would be subject to the new source performance standard under Section 111(b). Thus, based on the proposed Section 111(b) rule, a jurisdictional unit would include existing coal or natural gas combined cycle units. It would exclude oil-fired units or natural gas simple cycle peaking units supplying less than one third of their potential electric output to the grid. A new unit subject to the new source emissions standards under Section 111(b) would be a non-jurisdictional unit.

The Clean Air Act requires that states establish standards of performance in accordance with EPA's Section 111(d) procedure. As indicated above, by applying EPA's guidelines, states should be able to identify a target emissions rate for each jurisdictional unit identified under step 2. Once the target emission rate for each jurisdictional unit is identified, states have broad discretion regarding how to design a plan to meet the requirements of the rule. For example, states may choose to develop a rate-based reduction program. This plan would be designed to reduce emissions at all covered plants individually or collectively to achieve the target emissions rate for the covered sources. In the alternative, states may choose to create a mass-based reduction program in their state plan, in which they set specific tonnage targets for the covered sources based on the target emissions rate. We focus on the mass-based approach below. Either of these approaches (or variations on these approaches) are authorized under the state flexibility inherent in Section 111(d); either may have advantages or disadvantages for states depending on the specific circumstances of their energy and economic situations.

4. What kinds of emission reduction strategies are available to states?

Xcel Energy's experience in Minnesota, Colorado and other states indicates that a wide variety of strategies can be effective in reducing emissions. We have employed renewable energy, energy efficiency and conservation, and coal plant retirement and repowering to put our company on track to achieve a 31% reduction in CO_2 emissions from 2005 levels by 2020. Other states have employed different and effective methods, including cap and trade programs (e.g. the Regional Greenhouse Gas Initiative or California's AB 32), nuclear plant efficiency uprate programs, and offsets, among others.

By granting states the primary authority to develop standards of performance using plans similar to state implementation plans, Section 111(d) grants states authority to employ any of these strategies, as well as any others that they believe will be effective and appropriate. As they develop their Section 111(d) plans, states will apply their unique understanding of the technical and economic intricacies of the electric systems in their states to create plans that are both low-cost and environmentally effective. Indeed, only states, probably acting through their public utilities commissions, have the expertise and capabilities necessary to develop many of these programs. These plans are likely to focus on strategies that will not necessarily require reduction in emissions at every jurisdictional unit.

Moreover, many states have already made significant investments in reducing their emissions; states undertook these investments in part to prepare for climate change regulation. A failure to credit these early reductions would effectively require electric customers in proactive states to pay twice for compliance. Section 111(d) and good

climate policy should allow states and EPA to credit these early action programs. Below, we discuss a simple method for doing so using an early baseline period.

5. How would states use clean energy programs to develop a Section 111(d) mass-based emission reduction plan?

A mass-based plan has the virtue of simplicity: once a state-wide emissions tonnage goal is established, the state need only demonstrate that, by applying clean energy programs, emissions from its power plants will meet the goal. No special calculation or emission factors are necessary.

A mass-based emission reduction plan works as follows: as indicated above, states would use EPA guidance to identify stack-by-stack rate-based targets for their jurisdictional units. That guidance should allow states to establish a baseline period (for example the average emissions from the years 2004-2006) from which to calculate the mass reduction targets from jurisdictional units. Using the inventory described above, the state would identify the emissions, generation and emissions rate for each plant during the baseline period. To set the reduction target, states would reduce the emissions rate for each jurisdictional unit to the target rate according to the Section 111(d) guidelines. Next, the state would multiply the target emissions rate for each jurisdictional units by the baseline generation and add up the total target tons of CO_2 for the covered sources in the state. By doing so, the state would create a state-wide, mass-based target for the compliance year(s).[2]

This method does not require any specific accounting for retired plants – they are given a rate-based standard and a mass-based target regardless of whether they continue to operate. Retirements simply cause fewer emissions in the pool of plants covered by Section 111(d). By the same token, certain electric generating units outside the baseline are jurisdictional for purposes of Section 111(d): they were built before the applicable date of the Section 111(b) new source performance standards for GHGs, but came on line after the applicable baseline period established under a state's the Section 111(d) plan. If Colorado were to establish 2004-2006 as a baseline, Xcel Energy's Comanche 3 unit would fall into this category; it came on line in 2010. These units would not be included in the baseline, but their emissions would nonetheless count against the statewide goal.

Please see Exhibit 3 for a simplified illustration of how a state may translate a rate-based standard into a mass-based program. As that exhibit makes clear, a mass-based program can offer substantial advantages for states and utilities that are using a variety

[2] This step effectively holds the capacity factors of the plants constant from baseline to the compliance year.

of clean energy programs to reduce carbon emissions. First, as the example illustrates, the translation from rate-based standards to mass-based targets can be simple. Second, the mass-based approach naturally accommodates emissions reduction programs within the utility system, such as end-use efficiency programs and new renewable energy supplies. These programs displace fossil generation and emissions and are inherently counted in the mass-based system without the need to account for the specific effectiveness of the programs or the exact fossil generation they will displace. Third, the program design automatically credits past retirements and incentives further retirements.

However, although mass-based programs may have significant advantages for many states, Section 111(d) does not require states to use mass-based approaches in developing their plans. Some states may choose to implement the Section 111(d) program through rate-based methods to better manage growing energy demand. Many of the concepts discussed in this document would also work in a rate-based program, and EPA should allow states or utilities the option of a rate-based program.

6. How does a state develop its plan?

First, EPA should clarify through its Section 111(d) guidance that a broad variety of credible state clean energy programs are acceptable in state plans to achieve compliance with applicable performance standards.

The state would work with its public utility commission, environmental regulator and other state institutions to develop the plan. The state would analyze whether its current resource plans and state clean energy programs would meet its emission targets. If the current programs are achieving sufficient progress in reductions, the state would submit its plans as described in the response to Question 7 below. If the resource plans show that the current plans and state clean energy programs would not meet the Section 111(d)-based targets, the state would consider whether to adopt more or more stringent clean energy programs or whether plant-based measures may be necessary.

7. What does a state submit in its plan?

The state plan submission could be relatively simple, especially for a mass-based approach. The state would submit a few key items:

- An inventory of covered units, their emissions, generation and emissions rate in the baseline period
- A determination of the appropriate Section 111(d) standard to apply to each unit, per the EPA guidance.

- A translation of the Section 111(d) standard by unit to a utility-wide or statewide mass-based limit.
- A description of the various clean energy programs (such as renewable standards, efficiency standards, plant retirements and other reduction activities) that will allow the state to achieve the mass-based limit in the target year. This description may be accompanied by forecasting or similar modeling efforts already performed by utilities and submitted into public utility commission integrated resource planning processes. The total emissions of the utility or state as reduced by these programs would need to be credibly demonstrated to meet or beat the mass limit.

8. How does EPA evaluate a state plan?

The environmental, economic and political success of the Section 111(d) program depends on the ability of states to find flexible and cost-effective clean energy programs to achieve emission reductions. EPA should not undercut the opportunity for success by imposing overly burdensome oversight on the states as they develop and implement their plans. Consequently, EPA should give deference to the states in evaluating and approving plans that can reasonably and credibly be expected to meet the mass-based target. If the state resource planning modeling shows that the emissions will meet the target, and the state economic regulator has approved the resource plan and its forecast emissions, the state's action should be a sufficient demonstration to EPA that the Section 111(d) plan can be approved.

9. How does EPA monitor progress?

Once a plan has been approved, EPA's role in monitoring the state's progress in meeting the emission reduction requirements of the program is simple: states should submit to EPA a simple annual report showing the jurisdictional units' current and expected emissions. That report would also describe the state's emission trajectory to meet the compliance year mass emissions limit. The state may submit further qualitative or quantitative analysis to demonstrate that it continues to meet its target. EPA would not need to require the state to achieve a specific emission limit by year as long as the emissions are reasonably following a trajectory that will result in the target being achieved in the compliance year(s).

10. What does EPA do if the plan a state submits is not satisfactory?

Although states under this program would have a powerful incentive to design their own flexible state plans to fulfill their Section 111(d) obligations, a few states may not submit a plan or may submit a plan that does not comply with the statute. This

scenario is specifically addressed in Section 111(d), which provides that EPA may create its own federal plan if a state plan is not "satisfactory."

EPA can help states by including in the 111(d) guidelines specifics on what constitutes an approvable state plan. EPA will also benefit from receiving 50 state plans and can use this tapestry of approaches to advise states whose initial submission is not satisfactory. However, EPA should strike a careful balance, providing guidance on what elements are required for approval but not dictating to states what they must do or limiting the scope of implementation pathways states can use, as long as their plan achieves equal or greater reductions to the performance standards. Under the "cooperative federalism" model of the Clean Air Act, and especially Section 111(d) with its greater deference to states, EPA should not substitute its judgment for any state's judgment that a plan will achieve the needed emissions reductions. Moreover, if a state provides a reasoned and well-supported basis for a finding that, because of energy, reliability or cost concerns, it cannot achieve the level of emission reductions that EPA prefers, EPA under Section 111(d) should defer to the state's judgment and allow the state to implement an alternative approach. We believe the states, with their greater experience, data, and state stakeholder processes, can design the most cost-effective and equitable pathways to achieve reductions.

If, however, a state submits a plan that, without adequate justification, does not meet the required targets, EPA should not jump immediately to a federal plan. It should first provide the state with an opportunity for revision and re-submittal. EPA should prepare its own plan only if, after good faith effort, the Agency concludes that the state will not submit a satisfactory plan. At that point, consistent with its authority under Section 111(d) and its expertise, EPA should not attempt to create state clean energy programs to reduce emissions. It should design the plan based on plant-specific targets for jurisdictional units, taking into account the factors identified in Section 111, including energy, economic, and environmental factors and the remaining useful life of the source.

11. What happens if the state plan is accepted but the state fails to enforce its provisions?

Section 111(d) also allows EPA to enforce a federal plan if a state fails to do so. However, EPA should strive to avoid exercising this authority and work to encourage states to implement their approved plans effectively. First, EPA should allow for a multi-year compliance period. As GHG emissions are currently not directly controllable and many factors can affect generation levels and dispatch requirements, setting compliance on a three to five year basis would help avoid unexpected exceedances in any given year. Second, through annual emissions monitoring and reporting by the states, EPA should have early warning that reductions may not be

trending toward the target. As an early warning measure, EPA could set an "exceedance threshold," for example 105% of the emissions expected in a non-target year. If state-level power sector emissions surpass the exceedance threshold, EPA should work with the state to encourage the development of a new state plan with additional emission reduction measures (or additional stringency in the current ones) to achieve the target by the target year.

As authorized by Section 111(d), EPA may exercise its authority to implement a federal plan if a state refuses to enforce its approved plan. However, EPA must recognize the limits of its authority in implementing such a federal plan. Most importantly, EPA does not have the authority to require or enforce renewable energy standards, customer energy efficiency programs or other clean energy programs; only states and their economic regulators are in a position to address such measures. EPA should do what it has clear authority to do: regulate power plants subject to Section 111(d). As in the case described above where a state fails to submit an approvable plan, a federal plan in this case should be based on plant-specific targets for jurisdictional units, taking into account energy, economic, and environmental factors and the remaining useful life of the source. In exercising this authority, EPA should ensure that its plan would not disrupt the reliability of the electric system within the state.

12. How do states address interstate issues in their plans?

Section 111(d) is clear that the required emission reduction plans must be developed on a state-by-state basis. EPA has no authority under the statute to require states to join interstate emission reduction efforts. Each state has discretion to choose whether and how to engage with its neighbors. However, in many circumstances, states may choose to join joint interstate emission reduction programs. State flexibility under Section 111(d) is broad, and states should be able to design programs to account for the interstate nature of electricity generation.

EPA should give states enough flexibility to solve such issues in their state plans. Although utilities are planned and regulated at a state level, they often serve regions encompassing more than one state. For decades, state public utility commissions and air regulators have managed this reality. While this arrangement is not always perfect, states have found ways to apportion utility costs and benefits to customers in different states, including environmental costs and benefits. Section 111(d) may raise state and regional issues, but these issues are neither unique nor new. States can satisfactorily resolve these issues through existing state public utility commissions and environmental regulatory institutions.

Some of the regional organizations that may further facilitate collaboration between states include independent system operators, regional greenhouse gas trading programs, regional Governors' associations, and other multi-state organizations. For example, several Northeastern states participate in the Regional Greenhouse Gas Initiative, an interstate emissions trading program, and will likely want to incorporate this program into their plans. Similarly, several Midwest utilities are discussing ways to incorporate greenhouse gas programs into wholesale power markets overseen by Regional Transmission Organizations. These and other programs may form the basis for regional components of state plans.

Under a mass-based approach, a state that joins an interstate plan might prefer to establish emission targets for the broad group of participating states rather than an individual state target. EPA should allow states to do so. Provided that the interstate plan allows EPA to track compliance in the same way as an individual state plan, the Agency should approve a participating state's submission of the interstate plan as the core of its individual state Section 111(d) plan.

Exhibit 3
Simplified Example of Mass-Based Program Implementation

This example illustrates a state-level, equivalency-driven, mass-based approach to 111(d) implementation. We show how a state using a clean energy portfolio approach – in this case, increased renewable energy, DSM, and a coal plant retirement – could achieve CO_2 reductions that exceed what would be achieved through application of stack-by-stack emission rate limits. The development of rate-based performance standards for each regulated source category is still the first step, but these standards are translated by the state into a flexible, mass-based reduction program. Built into the program design is recognition of the state's early action in CO_2 reduction. Program performance is monitored simply by tracking statewide CO_2 emissions; the program does not require quantification, reporting and attribution/crediting of CO_2 avoidance from renewable energy or energy efficiency.[1]

This fictional state meets its electricity demand in the baseline period (here 2004-06) with three power plants:

		Baseline period 2004-2006		
Fuel and type	**Capacity (MW)**	**Capacity factor (%)**	**Generation (MWh)**	**CO_2 emissions rate (lbs/MWh)**
Pulverized coal	500	80	3,504,000	2,200
Pulverized coal	200	80	1,401,600	2,200
NGCC	600	40	2,102,400	1,100
Total			**7,008,000**	

STEP 1: Set the target[2]

EPA provides its Section 111(d) guidance to the state, and the state, using this guidance and examining its jurisdictional units (i.e. existing plants in the regulated source categories), establishes rate-based emission performance standards. In this example, based on illustrative EPA guidance, coal plants must reduce emissions by 200 lbs/MWh and gas plants by 100 lb/MWh, so the emission performance standards are:

- **2,000 lbs/MWh** for the two pulverized coal plants

[1] This tracking of state clean energy programs may well be done by states in enforcing their programs, but it is not appropriate for EPA to step into this role in enforcing state programs under Section 111(d).

[2] These targets are examples only and are not meant to suggest or advocate any specific emissions standard. EPA has created precedent for a rate-based emission performance standard (lbs/MWh) in its proposed new source standards under Section 111(b). 79 Fed. Reg. 1430 (January 8, 2014).

- **1,000 lbs/MWh** for the NGCC plant

We assume EPA releases its draft rule in 2014 and final rule in 2015, and that the state establishes these targets in a state plan submitted to EPA in 2016. For purposes of illustration, we assume compliance is required beginning in 2025.

STEP 2: Inventory in-state jurisdictional units in baseline period

Next, the state inventories emissions and generation from the regulated sources during a baseline period. We here assume this is an average of three years (2004-2006) prior to the state's early action to reduce CO_2 emissions.

- Coal plant #1: 500 MW * 8,760 hrs/yr * 80% * 2,200 lb/MWh * (1/2000 lb per ton) = 3,854,400 tons[3]
- Coal plant #2: 200 MW * 8,760 hrs/yr * 80% * 2,200 lb/MWh * (1/2000 lb per ton) = 1,541,760 tons
- NGCC plant: 600 MW * 8,760 hrs/yr * 40% * 1,100 lb/MWh * (1/2000 lb per ton) = 1,156,320 tons

Thus the total average annual emissions during the baseline period are **6,552,480 tons**.

STEP 3: Create mass budget in target year(s)

The state multiplies generation at each regulated source in the baseline period by the emission performance standard, holding capacity factor equal to the baseline period. We here assume 2025 is the first target year. In practice, EPA could allow a range of target years (e.g. 3- or 5-year compliance periods) and use averaging to allow for higher emissions in atypical years.

- Coal plant #1: 500 MW * 8,760 * 80% * 2,000 lb/MWh * (1/2000 lb per ton) = 3,504,000 tons
- Coal plant #2: 200 MW * 8,760 * 80% * 2,000 lb/MWh * (1/2000 lb per ton) = 1,401,600 tons
- NGCC plant: 600 MW * 8,760 hrs/yr * 40% * 1,000 lb/MWh * (1/2000 lb per ton) = 1,051,200 tons

Thus the state's mass budget in 2025 is **5,956,800 tons**. This was derived from stack-by-stack application of the emission performance standard, but compliance need not be achieved in this way, as long as the state plan can demonstrate equal or better reductions.

[3] All emissions expressed in short tons.

Step 4: Design the state plan

State agencies (environmental regulator, public utility commission, etc.) collaborate to design a 111(d) state implementation plan achieving CO_2 reductions equal to or better than the target. The state plan is based on a clean energy portfolio approach including renewable energy, DSM, and retirement of one of the coal plants.[4]

- Coal plant #1 capacity factor declines from 80% in 2005 to 70% in 2025.
  - 500 MW * 8,760 * 70% * 2,200 lb/MWh * (1/2000 lb per ton) = 3,372,600 tons
- Coal plant #2 is retired before 2025= 0 tons
- NGCC plant capacity factor increases from 40% in 2005 to 62% in 2025 to replace lost generation from the coal plants.
  - 600 MW * 8,760 hrs/yr * 62% * 1,100 lb/MWh * (1/2000 lb per ton) = 1,783,624 tons

Total state emissions in 2025 are thus **5,164,224 tons**.

Step 5: Track progress

The state tracks actual emissions at the regulated sources and reports performance to EPA. No specific quantification, reporting or verification of the CO_2 avoidance from renewable energy and DSM is needed; these measures simply reduce operation of the regulated sources, which is captured in annual emissions reporting.

- Targeted 2025 emissions (mass budget derived from application of emission performance standard) = **5,956,800 tons**
- Actual 2025 emissions through state clean energy programs = **5,164,224 tons**

Conclusions

The clean energy portfolio approach in the state plan reduces CO_2 emissions by significantly more than stack-by-stack application of the emission performance

[4] To simulate the resource planning aspects of the state plan, we first make the assumption that DSM programs offset new load growth, so that total 2025 generation must match generation in the baseline period (7,008,000 MWh). This assumption is only for simpler calculations, not inherent in the design; we could assume some level of load growth beyond that offset by DSM. We then assume the lost generation from reduced operation of coal plant #1 and retirement of coal plant #2 is replaced by increased operation of the NGCC plant, as well as increased renewable energy generation. To provide at least 7,008,000 MWh in 2025, we add 200 MW of wind to the system (operating at 40% capacity factor) and run the NGCC plant at 62% capacity factor. This results in roughly 10% wind energy on the system – less than the level actually achieved in 2013 across the Xcel Energy utility system. These assumptions are representational only. Greater or lesser levels of load growth, renewables, DSM, and retirements, as chosen by the state for their unique conditions, could achieve similar emissions reductions.

standard. Total emissions under Section 111(d) jurisdiction are reduced 21% from the baseline period, whereas stack-by-stack application of the rate-based reduction targets would have only led to roughly 9% reductions. The program is flexible, environmentally effective and cost-effective, incentivizing added renewable energy and DSM, as well as the retirement of an older coal plant and its replacement by cleaner sources of electricity.

The state did not need to engage in expensive modeling to forecast mass emissions reductions from EPA's reduction target, or from the clean energy programs. The simple capacity factor method avoids this modeling. No counting of CO_2 avoidance from renewables or DSM is required; only the emissions at the regulated sources matter to achieve the environmental objective.