



Using EPA Clean Air Act Authority to Build a Federal Framework for State Greenhouse Gas Reduction Programs

– The National Climate Coalition

The Context for EPA Action

The National Climate Coalition (NCC) recognizes the need for Congressional action to address the nation's long-term climate and energy goals. Stabilizing greenhouse gas concentrations in the atmosphere ultimately will require the transformation of our energy and transportation systems. Such an ambitious program must harmonize multiple national priorities, including economic growth, energy independence, national security, energy reliability and affordability. Achieving these goals will require continuous private sector innovation, investment and large-scale deployment of clean energy technologies, with the engagement and support of multiple federal and state departments and agencies, according to their respective expertise and jurisdiction. Ultimately, to be successful, such a comprehensive effort can only be built on the foundation of effective Congressional action.

Such an ambitious, coordinated approach is, however, unlikely to occur in the near term. Instead, in light of EPA's legal responsibility to regulate greenhouse gas (GHG) emissions under the Clean Air Act, due to the US Supreme Court decision in *Mass v EPA*¹ and subsequent EPA actions (e.g., the endangerment finding), the nation faces the challenging task of enacting such regulations in ways that are most consistent with the overall national priorities identified above. The National Climate Coalition was formed by private sector businesses to carefully consider the most appropriate form of EPA action, consistent with both the Act and these important national goals. The NCC believes that section 111 of the Act is the most appropriate tool for EPA to implement a reasonable transitional GHG reduction program, pending more comprehensive Congressional action. In particular, paragraph (d) of section 111 provides a framework that, if properly designed and implemented through a federal-state partnership, could stimulate substantial GHG reductions and facilitate the private sector's development of clean energy technologies.

How Should EPA Use Section 111(d)?

First, it is important to state that section 111(d) is not a tool to reshape the entire energy economy. It gives neither EPA nor the states authority to impose draconian costs on emitters or require the deployment of technologies that are not yet commercially proven and available. It does not allow EPA to impose any particular federal system of regulation on states that prefer to take their own path forward.

¹ *Massachusetts v. Environmental Protection Agency*, 549 U.S. 497, 127 S.Ct. 1438 (2007) (finding that EPA had statutory authority to regulate emissions of greenhouse gases from new motor vehicles because such gases fit within the Act's definition of "air pollutant" and remanding to the Agency for determinations regarding endangerment and manner of regulation).

It does, however, authorize EPA to provide the states with guidance on the level of cost-effective GHG emission standards, and to offer the states implementation pathways by which major GHG sources in those states can improve their energy efficiency and reduce GHG emissions at reasonable cost. These EPA 111(d) guidelines and thoughtful model rules can facilitate states' ability to:

- use a uniform national platform for reporting GHG emissions, for tracking and accounting for GHG reduction programs, and for crediting appropriate surplus GHG reducing actions and appropriate early actions by states, sources and others;
- work together towards efficient regional or national GHG reduction programs that are consistent with the regulatory structure of the power sector entities within the state (e.g., rate regulated integrated utilities or competitive markets at wholesale and/or retail) and of other energy sector sources;
- reduce the financial impact of achieving the guidelines through voluntary investments in renewable energy, demand-side reductions, energy storage, the retirement and repowering of less-efficient sources, and carbon capture and sequestration (CCS); and
- stimulate priority cleantech investments within each state through the use of funds generated by alternative compliance payments under a state alternative compliance program.

Form of 111(d) Standards

Although section 111(d) directs states to develop their own plans to implement performance standards for GHG emissions, EPA must first make certain threshold determinations to guide and frame state actions. As with other programs under the Act, EPA must base its guidance on data regarding sources within regulated source categories, evaluating currently available emission reduction opportunities at those sources and determining both the cost of such opportunities and their potential positive and negative impacts on the overall energy system, among other considerations. In order to make the determinations required by the Act, EPA will need to group sources according to their common characteristics. This is particularly important because emissions performance and emission reduction opportunities will differ according to fuel, power generation technology and other source-specific factors (e.g., manner of use, age).

Some individual sources are likely to be better able to reduce their emissions per unit of production, e.g. through on-site efficiency improvements, than others. Other sources may not be able to do so at all. Accordingly, EPA will need to decide whether to identify reductions individually for each source or to allow the use of averaging, banking and trading (ABT) so that the subcategories as a whole can meet anticipated reduction targets within appropriate cost-effectiveness boundaries. The NCC believes that such an ABT approach is warranted under the relevant portions of the Act, and offers one way for EPA's guidance to give states the opportunity to implement regulations under section 111(d) in a cost-effective manner.

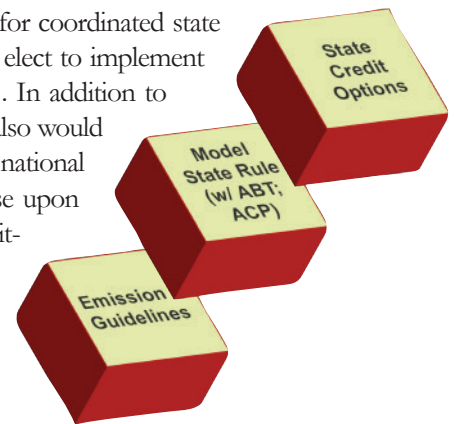
Unlike criteria pollutant programs, for which each nonattainment area has a limited carrying capacity to guide a determination of what level of emissions can be allowed while still meeting the ambient air quality standards, there is no comparable basis for EPA to set binding overall emission budgets for addressing GHG emissions. EPA will almost certainly be restricted to determining what GHG emissions rate per activity level, or carbon intensity, can be achieved at certain types of sources, considering available technology options and cost.

To reflect these considerations, we recommend that EPA's 111(d) guidelines:

- sub-categorize sources according to fuel and technology type;
- express performance as an **emissions rate** – i.e., a level of emissions per unit of production;²
- select targeted reductions based on EPA's determination regarding what can be achieved by facilities within individual fuel and technology subcategories (e.g., coal, gas) based on the best currently available systems for controlling emissions within an appropriate cost range;³ and
- recognize the benefit of allowing sources to average their emissions across multiple units. Because other market-based mechanisms such as inter-source trading and banking would encourage further or early emission reductions, maximize a source's compliance flexibility and reduce cost, EPA should encourage the use of averaging, banking and trading (ABT) as a component of any 111(d) program, consistent with the inclusion of these features in many prior programs.⁴

A Building Block Approach and State Equivalent Programs

Under the NCC proposal, EPA would develop the basic building blocks for coordinated state action while leaving to the states the choice of approach (i.e., whether to elect to implement one or more of, or its own program instead of, the federal components). In addition to promulgating the emissions performance guidelines for state action, EPA also would develop the regulatory infrastructure. This infrastructure would include national GHG reporting and accounting rules, a model rule available for state use upon election, a federal trading and tracking system and uniform federal credit-generation protocols for qualified voluntary activities (e.g., demand-side efficiency, renewable power, energy storage, carbon capture and sequestration (CCS)) and guidance regarding appropriate levels for an alternative compliance payment feature that states could use to support additional clean energy investments.



² EPA has considerable experience with rate-based programs, which it has used to remove lead from gasoline and to reduce emissions from various categories of mobile sources. *See, e.g.*, EPA, Regulation of Fuel and Fuel Additives; Gasoline Lead Content; Final rule, 50 Fed. Reg. 9,386 (Mar. 7, 1985; implementing the final segment of a lead phase-out program that EPA launched in 1973); EPA, Final Rule for New Gasoline Spark-Ignition Marine Engines, 61 Fed. Reg. 52088 (Oct. 4, 1996); Final Rule, NHTSA, Average Fuel Economy Standards Passenger Cars and Light Trucks Model Year 2011; Final Rule, 74 Fed. Reg. 14196 (Mar. 30, 2009); EPA and NHTSA, 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards; Final Rule, 77 Fed. Reg. 62624 (Oct. 15, 2012).

³ Section 111(d) requires EPA to consider relative cost-effectiveness in setting existing source standards and does not allow the agency to force technologies that are not yet commercially available. H. Rep. 95-294, at 11 (1977) (“standards adopted for existing sources under section 111(d) of the act are to be based on available means of emission control (not necessarily technological”). EPA may set standards that encourage technology advancement and ongoing improvement, but these must be bounded by cost and energy considerations. 42 USC 7411(a)(1); *see Essex Chemical Corp. v. EPA*, 486 F.2d 427, 433-34 (D.C. Cir. 1973).

⁴ Almost all of EPA's rate-based programs have included ABT components for just these purposes. *See, e.g.*, EPA, Regulation of Fuel and Fuel Additives; Final Rule, 47 Fed. Reg. 49322 (Oct. 29, 1982); EPA, Regulation of Fuels and Fuel Additives; Banking of Lead Rights; Final rule, 50 Fed. Reg. 13,118 (Apr. 1, 1985); EPA, Final Rule for New Gasoline Spark-Ignition Marine Engines, 61 Fed. Reg. 52088 (Oct. 4, 1996); EPA, Control of Air Pollution From New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements; Final Rule, 65 Fed. Reg. 6,698 (Feb. 10, 2000) (“Today's action also introduces an averaging, banking, and trading program to provide flexibility for refiners and ease implementation of the gasoline sulfur control program.”); 77 Fed. Reg. at 62,628 (compliance flexibilities for 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards include credit averaging, banking and trading).

Program Component	EPA Actions
Emissions Guidelines	EPA sets fuel- and technology-specific emissions performance standards based on a determination of what rate reductions can be achieved at the regulated unit with commercially-available, cost-effective technology.
Regulatory Infrastructure	EPA develops the regulatory infrastructure encouraging, but not requiring, national uniformity: <ul style="list-style-type: none"> • Uniform national GHG reporting and accounting • Model federal rule for state election • Federal trading/tracking system upon state election (Trading) • Uniform federal protocols for crediting qualifying investments (Credits)
State Equivalency Criteria	EPA identifies alternative paths states may use to demonstrate that their programs meet federal Guidelines.

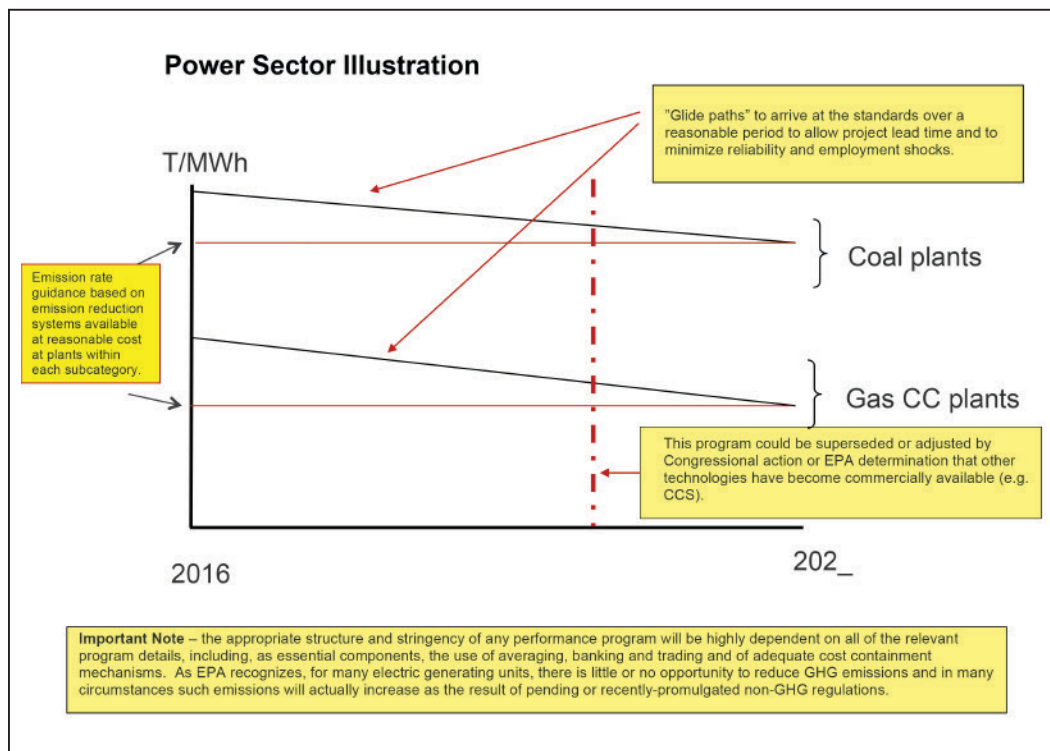
Program	State Options
Basic choices	<ol style="list-style-type: none"> 1. Implement model rule; 2. Participate in regional program (e.g., WCI, RGGI); 3. Implement individual state program; or 4. Implement a combination of the above.
State Credit Program Options (using federal-developed or – approved protocols)	<p>Credit incremental investment in:</p> <ul style="list-style-type: none"> • Demand-side energy efficiency • Renewable (low-carbon) electricity generation • Renewable (low-carbon) fuel supply • Carbon capture and sequestration (CCS) • Energy storage
Averaging, Banking and Trading (ABT)	The model rule would authorize ABT to ensure cost-effectiveness and to provide compliance flexibility for existing sources that cannot meet the emissions performance standard.
Cleantech Fund	The model rule also would include a ceiling-price alternative compliance payment (ACP) to fund state-directed cleantech investment.

Although state programs would be required to enforce compliance with minimum reporting, accounting and performance rules, states would remain free to choose how to achieve equivalent GHG reductions from regulated sectors. States would have the option of electing to implement the model rule (including ABI), one or more of the credit generation protocols and an alternative compliance program associated with a state clean technology investment fund. Alternatively, states could choose any path that satisfies any one of three “equivalency” tests, including:

1. *Rate-based equivalency* – a demonstration that the state program achieves equivalent or better carbon intensity for the regulated sector;
2. *Mass-based equivalency* – a demonstration that the state program achieves equal or greater emission reductions relative to what would be achieved by the default federal approach;
3. *Market price-based equivalency* – a demonstration that the state program reflects a carbon price, through a cap and trade program, carbon tax or other approach, that is comparable to or above the cost-effectiveness benchmark used by EPA in establishing the performance expectations for the regulated sector.

Power Sector Example

For illustration purposes only, we assume that EPA will determine that in the near term, electric generating units within a subcategory can, on average, improve on-site efficiency and reduce their per-megawatt-hour (MWh) GHG emission rate by some amount (e.g., <1-5% depending on the subcategory, the age of the plant, operating conditions, among other factors). Under such a scenario, EPA could establish carbon intensity standards up to 5% below the current average performance for each subcategory (i.e., at the 45th percentile point of the MWh-weighted average emission rate within the plant or fuel type subcategory).⁵ Using such an approach, regulated units with emission rates in excess of the standard would be required either to reduce their carbon intensity through the implementation of such efficiency improvements or to purchase credits from other regulated units with emission rates below the standard (or from available off-site credit programs -- see below).



⁵ The NCC envisions EPA’s guidance establishing “glide paths” that would gradually phase in such standards over a multi-year period.

As noted elsewhere, given that many individual facilities simply cannot meaningfully reduce their emissions at all, and in fact may experience increases in emissions due to compliance with recently-adopted EPA regulations for other pollutants, a facility's ability to access emission reductions from other more energy efficient generating units or alternative credit-generating investments (e.g., renewable power, end-use energy efficiency) will be absolutely critical for the success of any program.

As with other ABT programs, at the end of each compliance period, the regulated source would calculate its GHG emissions for all covered units that it owns or operates and compare them to allowable emission levels determined by multiplying the total megawatt hours generated for the period times the target carbon intensity expressed in pounds of CO₂-equivalent per megawatt-hours. Where the total emissions are less than allowable levels, the source would be authorized to sell its unused credits for compliance use by other sources. If the amount exceeds allowable levels, then the source would need to purchase or obtain sufficient credits from other sources to make up its shortfall.

Clean Technology Fund

EPA guidance should include, for state election, a clean technology fund that both provides an alternative compliance option for regulated sources, at an appropriate ceiling price, and that supports investment in desired clean technologies.

As President Clinton recognized in 1997 when EPA implemented revised ozone and fine particulate standards,⁶ EPA can achieve dual objectives of assuring against unanticipated high compliance costs and of investing in clean technologies by allowing sources an alternative compliance option of paying into a clean technology investment fund. Although EPA would develop the framework for such a program, States would choose whether to implement the fund within its jurisdiction, would collect the funds and would identify those investments that best match its energy objectives.

Interactions Among EPA Regulations

For EPA's 111(d) program to be effective, EPA must harmonize, or at a minimum consider and address the interaction of, multiple regulations that will affect regulated sectors. The most significant interactions will be with the new source review (NSR) program⁷ and the recently-proposed new source performance standard under section 111(b). EPA can ensure smooth operation of its 111(d) program and minimize or avoid costly overlap of multiple regulations by clarifying the interaction of these programs with the 111(d) program.

EPA should design the 111(d) program so that it satisfies any 111(b) requirement for modified sources. Section 111(b) requires that EPA develop standards for new and modified sources within regulated categories. EPA already has issued proposed standards for new electric generating units. If EPA were to promulgate **both** modified unit standards under section 111(b) and existing source standards or guidelines under section 111(d), then this would create dual and potentially conflicting regulatory programs for the same sources (i.e., for existing sources that are modified). EPA can avoid this problem by designing a 111(d) program that encourages and rewards emission reductions. The NCC proposal envisions the use of gradually-declining carbon intensity standards such that a source would naturally implement actions that reduce its GHG emissions and allow it to generate credits

⁶ See Presidential Documents, 62 Fed. Reg. 38421, "Memorandum of July 16, 1997, Implementation of Revised Air Quality Standards for Ozone and Particulate Matter," in particular, page 38429 (discussion of Clean Air Investment Fund as an alternative compliance option).

⁷ References to "NSR" in this document are intended to include both the nonattainment new source review (NNSR) and the prevention of significant deterioration (PSD) programs under the Act.

that it can sell in the marketplace. Using such an approach would help incentivize modifications that achieve substantial reductions in GHG emission rates, and could make it unnecessary for EPA to develop separate modified unit standards under section 111(b).

EPA also will need to clarify the interaction of the 111(d) program with the existing NSR program for modified sources. Because the 111(d) program will be designed to encourage existing units to reduce their emissions by making on-site efficiency improvements, there is a significant risk that regulated units will trigger NSR as they make such modifications.⁸ To avoid penalizing a source for improving efficiency, EPA should develop a streamlined NSR review process. Under such an approach, EPA would establish screening tools to confirm that already well-controlled sources or sources whose “net emissions increases” will stay below attainment-related significance thresholds comply with NSR.

Customer Side Efficiency

Many observers note that some of the cheapest and most immediate GHG reductions are indirect emission reductions that result, not from controlling a unit’s emissions directly, but indirectly from reducing the overall end use of electricity in homes and businesses, and thus contributing to reduced utilization of electric generation across the interconnected wholesale power grid. From this perspective, overall emission reductions are, to a degree, correlated with consumers installing or using more energy-efficient heating, lighting and air conditioning, and similar measures. Of course, the actual impact of any such measures on GHG emissions depends on technically and economically complex issues, e.g., whether the efficiency measures are coupled with expanded energy expenditures, which could nullify their emission reductions; whether the efficiency measures displace high or low carbon intensive electricity generation (e.g., gas, coal or nuclear and renewable generation), which factors can cause wide variability in the GHG reductions due to demand-side measures in different states and regions and at different times of the day or year; and whether the reductions are “additional” or are merely occurring at a spontaneous and natural rate of adoption. Some have suggested that these types of emission reductions should be considered to be part of the best system of emission reductions (BSER) on which EPA bases its emission performance standard guidance. Assuming EPA could ensure that the causal connections between truly incremental efficiency enhancements and resulting net incremental GHG reductions were established in an accurate and non-arbitrary manner, this approach would nonetheless have the effect of making the owners of GHG emitting resources responsible for reducing the electricity consumption of completely independent customers.

But 111(d) does not authorize EPA to impose such an obligation on a stationary source. That would be tantamount to requiring car manufacturers or fuel suppliers to compel or otherwise induce individual drivers not to drive their cars as a condition of meeting the EPA’s performance standards for vehicle miles traveled (VMT) or emissions. No one disputes that VMT reductions can be an effective way of making progress towards attainment, but EPA has never considered itself to have the authority to impose that obligation on car or fuel manufacturers. And 111(d) simply does not give it such unprecedented power with respect to power plant owners.

States, however, are not without tools to encourage more efficient use of electricity. Indeed many states already have implemented demand-side management (DSM) programs, subject to cost-effectiveness tests, to reduce the need for new electric generation facilities; and FERC has authorized various market mechanisms that allow demand-side resources to compete with power plants to help ensure reliability. *See, e.g.,* California Public Utilities Commission, Statewide Integrated Demand-Side Management (IDSMS) program established pursuant to CPUC Decision D.09-09-047; Indiana Utility

⁸ The argument for such NSR applicability is that a more efficient unit will be dispatched more and its higher activity level could result in a net increase in emissions of one or more pollutants.

Regulatory Commission Cause No. 42693 (requiring all electric utilities under Commission jurisdiction to undertake DSM efforts and achieve 2% annual reduction in total electricity sales by 2019). These programs are properly within the jurisdiction of state Public Utility Commissions and the FERC.

While EPA lacks the legal authority to require such indirect emission reductions from stationary sources, it may be able to encourage and reward states that implement programs that effectively use enhanced energy efficiency programs to effectively and demonstrably achieve measureable, incremental emission reductions beyond the ongoing natural or baseline adoption rate. One such approach would be for EPA to establish credit generation protocols that allow states with high-performing energy efficiency programs to generate credit for decremental energy consumption and verifiable resulting net emission reductions. Additionality could be achieved by crediting only efficiency achieved beyond a suitable benchmark that reflects an ongoing natural rate of adoption and that adjusts for any increased use of electricity due to reductions in its effective cost; while real emission reductions could be verified by a suitable analytical approach that estimates the actual changes in dispatch due to the net improvements in energy efficiency.

Such an approach would have material benefits. It would reward and provide financial assistance to states that succeed in encouraging energy efficiency initiatives that actually result in significant, incremental GHG emission reductions. And it would thus achieve the same end-use efficiency-driven GHG reductions that EPA otherwise would achieve if it had the authority to mandate such measures. But this approach would avoid the significant legal risk that EPA would face if it sought for the very first time to compel stationary sources to reduce customer demand.⁹

Applying 111(d) to Other Sectors

EPA already has committed by consent decree to consider whether and how it should implement emissions performance standards under section 111 for the refining sector. And it may take up other sectors as well. Each sector may raise unique issues that warrant careful consideration.

As EPA already appears to have recognized, the refining, specialty chemical manufacturing, and other highly-specialized industrial sectors are significantly more complex than the power sector. They use a wide variety of feedstocks and intermediate stocks, generate multiple products (e.g., various transportation fuels, chemicals and other products), and use often highly-individualized processes to refine and produce materials. The complexities and variety across these sectors make it particularly difficult for EPA to establish generally-applicable performance standards even if it uses multiple categories and subcategories. EPA has taken the correct first step of gathering data regarding the refining sector and of analyzing refining processes before identifying appropriate next steps. EPA will need to take the same approach for other complex and specialized sectors that it considers.

Given the difficulties posed by the refining sector and other complex sectors, the NCC recommends that the appropriate second step for EPA would be to establish initial energy efficiency and work practice standards. These can be developed once EPA has concluded its data gathering and analysis and without the need to set generalized performance standards. Such standards could include facility self-audits and energy-efficiency inventories. As EPA undoubtedly will recognize as it evaluates

⁹ It should be noted that, even if EPA were to embed demand-side reductions in a stationary source's emissions performance standard, there would be endless legal and practical problems with attempting to credit states and sources with GHG reductions from the customer side. The most significant challenge would be in determining which of the many state programs, and what specific elements thereof, could be considered "surplus" or "additional" for purposes of crediting the state or source. This problem is avoided, or at least significantly reduced, if EPA were to set appropriate DSM credit performance benchmarks for voluntary state credit programs.

refinery performance, several US refineries already achieve very high levels of primary efficiency as each refiner has an existing economic incentive to preserve the energy potential of its feedstock in its final products and otherwise to maximize the energy efficiency of its processes.

If Congress does not displace the 111(d) program by the time EPA is better prepared to address GHG emissions from the refining, specialty chemical manufacturing and similarly complex sectors, then the NCC recommends that EPA work with the refining, specialty chemical manufacturing and other complex industries to establish appropriate complexity-weighted performance standards that would reflect the significant differences among facilities operating in such highly-specialized industrial sectors, including differences in feedstocks and intermediate stocks, processes and products. This third-phase program also should implement ABT and other cost-effective mechanisms.

Trade-Exposed Sectors

Some of the sectors EPA may regulate under section 111 (e.g., refining, specialty manufacturing) are likely to face severe global competition. In such circumstances, there will be material risk that regulating US entities will result in leakage, or in the transfer of significant economic activity to other jurisdictions due to the rising cost of doing business in the US. The EPA should consider using its existing authority under section 115 of the Clean Air Act to ensure reciprocity from its trading partners before it implements a 111 program for any such sector.

Protecting US Technological Leadership

The EPA should be careful to ensure that GHG regulation does not impede, and in fact enables, US companies' ability to advance our innovation and leadership in such sectors as power generation, refining, alternative energy, green chemistry, and industrial manufacturing technologies. While well-devised EPA 111(d) guidelines and model rules can stimulate priority cleantech investments (as previously described), they must also protect this and other technology development by appropriately limiting the impact of GHG regulatory requirements on research and development activities. The existing research and development exclusion in Clean Air Act Section 112(c)(7) would serve as a model approach for EPA to consider in any 111(d) GHG standards or guidelines, so as to protect US technological leadership.



The National Climate Coalition

The National Climate Coalition is a multi-industry coalition that was formed in 2008 to provide input to EPA regarding GHG regulation under the Clean Air Act and whose members have included companies in the aerospace and electronics, automotive, cement, consumer products, electricity generation, manufacturing, oil refining and renewable energy sectors.

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