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Encouraging Energy Efficiency through the Clean Air Act

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Encouraging Energy Efficiency through the Clean Air Act

Moneen Nasmith

April 2013

Columbia Law School
Center for Climate Change Law
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Executive Summary

Energy efficiency measures provide tremendous opportunities for achieving effective and cost-friendly reductions in the emissions of greenhouse gases. In the absence of more comprehensive legislative efforts, proponents of energy efficiency projects can look to existing environmental laws for tools to promote and encourage energy efficiency and conservation. One such law is the federal Clean Air Act (“CAA”), which empowers the U.S. Environmental Protection Agency (“EPA”) to use a variety of mechanisms to address air pollution and protect the public health. Although the statute and its accompanying regulations are complex, the CAA provides a number of important avenues for advocates of energy efficiency programs.

One of the chief components of the CAA is the setting of National Ambient Air Quality Standards (“NAAQS”) for non-hazardous pollutants, which are set by EPA but generally implemented by the adoption of implementation plans by each state. These state implementation plans (“SIPs”) can include energy efficiency programs so long as they provide quantifiable, additional, enforceable, and permanent reductions of emissions of the pollutant being regulated. There also is the possibility of including emerging or voluntary energy efficiency measures in SIPs. Advocates who wish to promote these types of efforts can participate in the official comment period on the SIP at the state level, as well as the official comment period on EPA’s review of the SIP at the federal level.

The CAA also establishes permitting programs, each of which can provide a mechanism for including energy efficiency measures. These include extensive permitting requirements for new stationary sources of air pollution. Many of these permits require the imposition of different technology-based standards on permitted sources. Considerations of energy efficiency can play a critical role in determining what precise amount of emissions control technology a new source will be required to adopt to receive a permit. In some cases, offsetting emissions from energy efficiency projects also can be incorporated as permit conditions. As each permit is considered, advocates of energy efficiency measures can become involved by providing comments on the permit conditions and potentially challenging a permit that is insufficiently stringent.

In addition, the CAA uses technology-based standards that apply to specific categories of sources. As with the individual permits, there are opportunities to include energy efficiency measures as part of the conditions covered source categories must meet to undertake new construction, modification, or reconstruction. There also is significant potential for including energy efficiency programs as part of performance standards for existing sources if EPA amends the guidelines that currently establish the recommended standard of performance for existing sources in particular categories.

This White Paper aims to provide guidance on ways in which the CAA can be used to promote energy efficiency, by describing how advocates can participate in various actions under the CAA, as well as challenge final agency decisions that reflect insufficient consideration of the issue of energy efficiency and conservation. Proponents of energy efficiency projects who wish to take full advantage of the opportunities presented by the CAA also must pay close attention to state and federal environmental agency notices to ensure that they are aware of CAA developments that could provide these openings.

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Introduction

The Clean Air Act (“CAA”) empowers the Environmental Protection Agency (“EPA”) with a variety of mechanisms to address air pollution and protect the public health.¹ The statute, case law, rules, regulations, and agency guidance create a complex regime that governs emissions of hazardous and certain non-hazardous pollutants from stationary and mobile sources. Many of the tools used to curb emissions of air pollutants under the CAA also offer opportunities to promote and encourage energy efficiency and conservation. These include the development of state or federal implementation plans (“SIP” or “FIP”) and certain permitting activities such as new source review (“NSR”). Advocates of energy efficiency measures may wish to become involved in the proceedings for these and other actions under the CAA, mainly through submitting written and oral comments as plans and permits are developed. In addition, there are a number of potential avenues for challenging agency actions under the CAA through litigation.

This paper serves as a guide to participating in various actions under the CAA, as well as challenging final agency decisions that reflect insufficient consideration of the issue of energy efficiency and conservation. It begins by discussing opportunities for commenting and litigating in connection to state or federal implementation plans for attaining National Ambient Air Quality Standards (“NAAQS”) for non-hazardous air pollutants from stationary sources. It then discusses the role energy efficiency projects could play in permitting for new source review and new source performance standards for non-hazardous pollutants and permitting requirements for hazardous air pollutants.

I. Encouraging Energy Efficiency Through the SIP/FIP Process

The CAA empowers EPA to set NAAQS for each air pollutant that it determines is a threat to public health and the environment.² A NAAQS establishes a threshold for a pollutant, typically given in parts per billion of the pollutant within the ambient air. States are given the initial responsibility of developing a SIP that establishes how the NAAQS will be achieved within their borders.³ EPA then reviews each proposed SIP to determine whether it meets the criteria necessary to achieve the NAAQS. If it does, EPA will approve it and the SIP will become final. If the SIP fails to meet minimum standards,

¹ 42 U.S.C. §§ 7401-7671 (2012).

² *Id.* § 7409.

³ *Id.* § 7410(a)(1).

the state has an opportunity to correct the deficiencies or EPA may issue a Federal Implementation Plan (“FIP”) to ensure timely attainment of the NAAQS.

There is significant potential for energy efficiency and conservation measures to be considered as part of the SIP and/or FIP process. Programs incorporating such measures can curb a state’s emissions by, for example, reducing energy demand, thereby cutting the amount of energy generated. As much of the energy consumed in the United States is produced by burning fossil fuels, many of which emit pollutants covered by NAAQS, a reduction in production also curbs emissions and can help a state meet its NAAQS.

This section describes the opportunities in the SIP and/or FIP process to advocate that energy efficiency measures and projects be included within the final SIP or FIP. It begins by discussing the basis for considering energy efficiency and conservation in the SIP process, tracks the commenting opportunities at the state and federal level, and then concludes with a discussion of how to challenge an approved SIP or final FIP that fails to appropriately take energy efficiency and conservation into account.

A. Basis for Commenting on Energy Efficiency in SIPs or FIPs

The CAA does not itself require that energy efficiency be considered when a state is drafting a SIP or when EPA is drafting a FIP. However, energy efficiency and conservation may be useful tools that can help the state achieve the standards established in the NAAQS. EPA has stated that energy efficiency and renewable energy policies have the potential to achieve emissions reductions at a lower cost than traditional control measures.⁴ In light of this, EPA has issued guidance on how energy efficiency efforts may be appropriate components of a SIP under certain circumstances.⁵ The guidance provides significant details about how to obtain credit for emissions reductions from energy efficiency or renewable energy measures that will help the state achieve its NAAQS. Subsequently, EPA released a roadmap that further clarifies how to incorporate energy efficiency and renewable energy policies and programs into SIPs.⁶

⁴ EPA, Fact Sheet: Incorporating Energy Efficiency in State and Tribal Implementation Plans (available at <http://www.epa.gov/airquality/eere/20120703factsheet.html>).

⁵ Memorandum from Brian McLean, Director, Office of Atmospheric Programs, to Environmental Protection Agency for Regional Air Division Directors (Aug. 5, 2004) (available at http://www.epa.gov/ttn/oarpg/t1/memoranda/ereaserem_gd.pdf).

⁶ U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Outreach and Information Division, Roadmap for Incorporating Energy Efficiency/Renewable Energy Policies and Programs into State and Tribal Implementation Plans (July 2012) (available at <http://www.epa.gov/airquality/eere/manual.html>).

The roadmap provides two pathways for incorporating new energy efficiency programs into SIPs: the control strategy pathway and the emerging/voluntary measures pathway.

1. Control Strategy Pathway

For new energy efficiency programs to obtain credit as part of a control strategy within a SIP, advocates must demonstrate that the measure will provide 1) quantifiable, 2) additional, 3) enforceable, and 4) permanent reductions of emissions of the pollutant at issue in the NAAQS. The control strategy energy efficiency projects offer the most visible and direct option, are federally enforceable by EPA, and are enforceable against particular sources.⁷

To demonstrate that emissions reductions are quantifiable, there must first be a showing that the energy efficiency project will cause energy savings that will result in actual reductions in emissions. For example, will the proposed program displace demand for fossil-fuel generated electricity? Second, the reduction in demand must result in quantifiable emissions reductions that are in excess of those already being incorporated in the SIP/FIP. Third, the measures must be enforceable against a particular source or party, or be included under a voluntary policy where the state would be responsible for ensuring that the reductions occur. Fourth, the measure also must cause reductions throughout the time covered by the SIP.

An additional issue to be considered is whether the energy efficiency measure causes emissions reductions within the nonattainment area at issue in the NAAQS. Thus, for example, if the state buys most of its electricity from out-of-state producers, a reduction in demand by in-state consumers will create emissions reductions outside the state and outside the purview of the SIP. The emissions reduction must occur not only within the state, but also impact an area that is in “non-attainment” or that is currently failing to meet the NAAQS. EPA’s guidance provides more detailed information about these key issues and the kinds of evidence that can be developed to support a call for additional energy efficiency measures in a SIP.

⁷ U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Outreach and Information Division, Roadmap for Incorporating Energy Efficiency/Renewable Energy Policies and Programs into State and Tribal Implementation Plans 35 (July 2012) (available at <http://www.epa.gov/airquality/eere/pdfs/EEREmannual.pdf>).

2. Emerging/Voluntary Measures Pathway

Emerging or voluntary energy efficiency measures also may be incorporated into a SIP, although these may not be enforceable against particular sources.⁸ In addition, it may be more difficult to challenge states or EPA for failure to include such measures in a SIP or FIP. Although these measures must still meet the same above criteria as the control pathway, there is more flexibility for emerging and voluntary measures. However, the presumptive SIP credit limit for reductions from emerging or voluntary energy is 6% of the total amount of reductions required for attainment or maintenance.⁹

To be included in the SIP, the emissions reductions from such measures must be quantified, but emerging or voluntary measures may be bundled and their total reductions summed.¹⁰ In the case of bundling, it is the performance of the entire bundle that is considered for SIP evaluation purposes rather than the effectiveness of any particular measure. These measures also can be bundled together with non-energy efficiency measures.¹¹

In addition, the state must make an enforceable commitment to implement the portions of the measure for which a state agency is responsible; monitor, evaluate, and report at least every three years on the progress toward emission reductions; and remedy any SIP credit shortfall if the program does not achieve the project emission reductions.¹² The state also must certify that the programs are permanent and that they are creating additional reductions from those otherwise covered under the SIP.¹³

B. Examples of Energy Efficient Projects in SIPs

Substantive energy efficiency measures that have been included in SIPs vary. In Texas, the state passed a law requiring counties in ozone nonattainment zones to reduce electricity consumption by 5%.¹⁴ Resulting reductions in NO_x emissions in the Dallas-Fort-Worth area were subsequently credited under the state's SIP. The reductions were achieved by reducing demand of fossil-fuel generated electricity from energy efficiency measures taken in the construction of new single and multiple family

⁸ *Id.* at 37.

⁹ *Id.* at 37-38.

¹⁰ *Id.* at 37.

¹¹ *Id.*

¹² *Id.*

¹³ *Id.*

¹⁴ Tex. Health & Safety Code Ann. § 388.005 (West 2012).

homes.¹⁵ Louisiana received approval for reductions in NO_x emissions from the installation of energy-conserving equipment in office buildings in Shreveport.¹⁶ Connecticut also worked with its utilities to study emissions from the sources used to meet peak demand, and determined that many of these sources had the highest emissions rates for NO_x in the region. As a result, a variety of energy efficiency projects such as the use high-efficiency air conditioners and fluorescent lighting that would reduce peak demand were included in the state's 8-hour ozone SIP in 2007.¹⁷

Other suggestions have been made in the context of reducing greenhouse gas emissions (no NAAQS have been issued for greenhouse gases) that also could have an effect on the emission levels of co-pollutants that are subject to NAAQS. These include sector-specific improvements that would reduce the electricity consumed by sources such as cement plants and refineries.¹⁸ Existing coal-fired power plants also can reduce fuel consumption and emissions by performing modifications and heat upgrades.¹⁹

C. Commenting Opportunities at the State Level

States are required to issue new SIPs in response to new or revised NAAQS.²⁰ EPA also can issue a "SIP Call" if it finds that a SIP or group of SIP programs are substantially inadequate to meet existing NAAQS.²¹ For example, in December 2010, EPA promulgated a finding that the SIPs of 13 states were substantially inadequate to meet CAA requirements because they did not sufficiently address the deterioration of air quality from greenhouse gas- emitting sources.²² As a result, EPA issued a SIP Call that required each of the 13 states to revise its SIP to correct for the inadequacies.

States also may choose to revise their SIPs of their own accord to reflect changing circumstances.²³ In addition, EPA is required to approve or disprove new or revised SIPs, thus there may be an additional round of revisions that take place at the state level before EPA finalizes the SIP.

¹⁵ U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Outreach and Information Division, Roadmap for Incorporating Energy Efficiency/Renewable Energy Policies and Programs into State and Tribal Implementation Plans, Appendix K: State, Tribal and Local Examples and Opportunities 8-9 (July 2012) (available at <http://www.epa.gov/airquality/eere/pdfs/appendixK.pdf>).

¹⁶ *Id.* at 9.

¹⁷ *Id.* at 10.

¹⁸ 73 Fed. Reg. 444345, 44491 (July 30, 2008).

¹⁹ *Id.* at 44492.

²⁰ 42 U.S.C. § 7410(a)(1) (2012).

²¹ *Id.* § 7410(k)(5).

²² 40 C.F.R. § 52.

²³ *Id.* § 51.104(a).

In all cases, specific procedures must be followed that include opportunities for submitting comments and potential participating in hearings. Because a new or revised SIP will first be promulgated as a state statute, regulation or other requirement, the state must comply with its own administrative and environmental laws to pass the new or revised SIP.

The CAA also imposes the procedural requirement that SIPs be developed after “reasonable notice and public hearings.”²⁴ EPA has promulgated regulations that provide more detailed requirements about the SIP process which apply both when the initial SIP is drafted and for any revisions. The state must provide the public with notice of the SIP drafting. EPA’s regulations do not specify at exactly what point in the process notice must be provided. However, “reasonable notice” must include the ability of the public to inspect the proposed plan or revision, as well as any compliance schedules.²⁵

The state also must provide a 30 day period during which the public has the opportunity to submit written comments and request a public hearing on the SIP.²⁶ If a public hearing is held, there must be 30 days notice given, along with prominent advertisement of the hearing in the affected area. The state also must make the proposed SIP or revision available for public inspection in at least one location in each affected region.²⁷

EPA’s procedural requirements for SIPs only set the minimum standards for the state. The state has the ability to petition EPA for approval of a different set of State procedures to govern SIP notice and comment.²⁸ The state also may choose to provide additional opportunities for the public to be heard, including the chance to submit written comments after a public hearing. As such, it is important to check with the state agency tasked with addressing air pollution to determine the exact procedures that govern the SIP process in that state.

For reasons that will be discussed in more detail below in the Section IV, it is important that advocates of energy efficiency programs become involved at each stage of the SIP process in order to preserve their ability to sue. This should include participating at public hearings and submitting written comments. It is, therefore, important to carefully monitor the relevant state agency’s website to keep track of all

²⁴ 42 U.S.C. § 7410(a)(1) (2012).

²⁵ See 40 C.F.R. § 51.102(d)(2).

²⁶ *Id.* § 51.102-104.

²⁷ *Id.*

²⁸ *Id.* § 50.102(g)(2).

potential commenting opportunities. In addition, EPA's website²⁹ and the Federal Register³⁰ are good sources of information about new NAAQS, SIP Calls, or the rejection of a state's previously-submitted SIP.

D. Commenting Opportunities at the Federal Level

Once a state has completed the drafting process, it will submit the SIP to EPA for approval. The SIP does not go into effect until EPA determines the SIP meets the minimum completeness criteria established by EPA.³¹ EPA's decision of whether the SIP is acceptable or not is made pursuant to a formal rulemaking process governed by the Administrative Procedure Act ("APA"). The APA requires the inclusion of a notice and comment period that will be discussed in more detail below.³² This rulemaking procedure is another opportunity for proponents of energy efficiency projects to submit comments. If it is felt that the SIP does not adequately incorporate energy efficiency programs, it will be important to use this notice and comment period to oppose the SIP and inform EPA why it should refuse to approve it.

Interested parties can track the progress of a SIP submission in several ways. As noted above, the relevant state agency will likely provide information regarding when it submits a SIP to EPA for approval. In addition, EPA provides a list of individuals at its regional offices who can be contacted in order to receive notification of EPA's receipt of

²⁹ <http://www.epa.gov/>.

³⁰ <https://www.federalregister.gov/>.

³¹ The Completeness Criteria include the following: 1) Administrative Materials: (a) a formal letter of submittal requesting EPA approval of the plan or revision thereof, (b) evidence that the State has adopted the plan in the State code or body of regulations or issued the permit, order, consent agreement in final form, (c) evidence that the State has the necessary legal authority under State law to adopt and implement the plan, (d) a copy of the actual regulation or document submitted for approval and incorporation by reference into the plan, (e) evidence that the State followed all of the procedural requirements of the State's laws and constitution in conducting and completing the adoption/issuance of the plan, (f) evidence that public notice was given of the proposed change consistent with procedures approved by EPA, (g) certification that public hearing(s) were held in accordance with the information provided in the public notice and the State's laws and constitution, if applicable and consistent with the public hearing requirements in 40 C.F.R. § 51.102, (h) compilation of public comments and the State's response thereto and 2) Technical Support: (a) Identification of all regulated pollutants affected by the plan, (b) identification of the locations of affected sources, (c) quantification and estimation of the changes of allowable and actual current emissions from affected sources, (d) demonstration that the NAAQS, prevention of significant deterioration increments, reasonable further progress demonstration, and visibility are protected if the plan is approved and implemented, (e) modeling information to support the proposed revision, (f) evidence that emission limitations are based on continuous emission reduction technology, (g) evidence that the plan contains emission limitations, work practice standards and recordkeeping/reporting requirements to ensure emission levels, (h) compliance/enforcement strategies, (i) special economic and technological justifications required by any applicable EPA policies, or an explanation of why such justifications are not necessary. 40 C.F.R. § 51, Appendix V.

³² 5 U.S.C. § 553 (2012).

a SIP.³³ Notice of EPA's proposed or final rulemaking with respect to SIPs can be found on its website or in the Federal Register.

If EPA determines that the SIP is inadequate and the state fails to correct the deficiency or if the state fails to submit a SIP within 2 years of the NAAQS being promulgated, EPA may draft and ultimately approve a FIP. Similar to its approval or rejection of the SIP, the FIP process is governed by the APA.

Under the APA, EPA must publish a notice of proposed rulemaking in the Federal Register that includes the time, place, and nature of the rulemaking proceedings and the substance of the proposed rule. EPA also must give interested parties an opportunity to submit written comments. EPA's final rule must contain a statement addressing the issues raised in the public comment. As with the SIP process at the state level, energy efficiency advocates should participate in the federal hearings and submit written comments in order to preserve their ability to bring suit if the final SIP or FIP fails to properly incorporate energy efficiency measures.

E. Challenging a SIP or FIP that Fails to Appropriately Incorporate Energy Efficiency

If a SIP process or the SIP itself is seen as defective (e.g., does not contain sufficient provisions that address energy efficiency), there are several opportunities to challenge the SIP. As mentioned above, the SIP can be challenged in front of EPA as it makes the determination of whether to approve the SIP. In addition, the SIP may be challenged on procedural grounds under state law in a state court after it has been submitted to EPA.³⁴ Such a challenge would only be appropriate if there was an allegation that the state had failed to follow the appropriate procedures mandated by state law during the drafting and approval of the SIP. Parties must take care to follow applicable state procedures for challenging the SIP process or risk not being able to sue. Thus, it is important to clearly understand and follow state regulations regarding such objections before filing a case in court.

At the federal level, any final determination made by EPA (rejection of a SIP, approval of a SIP, or adoption of a FIP) can be challenged on procedural and substantive grounds in federal court. Again, it is important to follow the appropriate procedures for challenging EPA's failure to follow the required procedures under the APA.

³³ Environmental Protection Agency, Regional Contacts, (May 31, 2002), <http://www.epa.gov/otaq/stateresources/transconf/contacts.htm>.

³⁴ See *Sierra Club v. Ind.-Ky. Elec. Corp.*, 716 F.2d 1145 (7th Cir. 1983).

A critical issue when challenging a SIP or FIP on substantive grounds, i.e., that the Plan does not have sufficient energy efficiency measures, is whether the party bringing the challenge has standing to do so. Interested parties should consult legal counsel to determine whether they meet the requirements under federal law to challenge the approval of a SIP by EPA, and whether there are others who might.

II. Encouraging Energy Efficiency Through Permitting Decisions

Under the CAA, EPA and some states are required to make a variety of permitting decisions with respect to stationary sources of air pollution. Whether it is the state agency or EPA that issues these permits will depend on whether EPA has found the state program to be sufficiently robust and has decided to delegate its permitting authority to the state for administration. The permitting decisions include issuing permits for new sources or major modifications to existing sources, new source performance standard permits, and permits for the release of hazardous air pollutants. All entail opportunities for promoting energy efficiency projects.

A. Permitting under New Source Review

Stationary sources of non-hazardous air pollution are required to obtain permits prior for the construction of new sources or the major modification of an existing source. This process is commonly referred to as New Source Review (“NSR”) and is intended to keep new or modified sources from degrading existing air quality and ensure that new sources take advantage of new pollution control technologies. There are three types of pre-construction permits: A) Prevention of Significant Deterioration (“PSD”) permits that are required for major³⁵ new sources or modifications in an area that is in attainment with the NAAQS;³⁶ B) nonattainment NSR permits that are required for new major sources or modifications being made in a non-attainment region; and C) minor source permits.

1. Prevention of Significant Deterioration

There are several phases to the PSD permit process. The applicant will first

³⁵ There are 28 categories of sources listed under §169(1) for which the PSD-NSR threshold is 100 tons per year. For all other covered sources, the threshold is 250 tons per year. Under the Tailoring Rule, the PSD permitting is initially limited to facilities emitting more than 25,000 tons per year of carbon dioxide or other greenhouse gas equivalents. 75 C.F.R. § 31514.

³⁶ 42 U.S.C. § 7465(a)(4) (2012).

prepare a submission and send it to the relevant authority. The agency then issues a preliminary determination as to whether to grant or reject the application. If it approves the application, the agency will issue a draft permit that may be commented on. If it denies the application, it will issue a rejection. The comment period generally lasts for 30 days, unless the agency determines there is significant public interest. The public may submit written comments and may request a public hearing. During this time, advocates of energy efficiency may submit proposals for adopting technological alternatives that would reduce emissions of pollutants. The process culminates in the issuance of a final permit.

One of the critical thresholds in the PSD permit process is the demonstration that the major new stationary sources or modifications to existing sources will be installing “best available control technology” or BACT.³⁷ BACT is determined by permitting agencies on a case-by-case basis. The agency must establish an emissions limitation that will achieve the maximum degree of emissions reductions through the application of production processes and available methods, systems, and techniques. In establishing BACT for a specific source, the state agency is permitted to consider the proposed control measure’s energy, environmental, and economic impacts.³⁸ However, if EPA has established a New Source Performance Standard (“NSPS”) for a particular source category, the BACT emissions limit chosen by the state agency for that same source category cannot be less stringent than the NSPS. NSPS will be discussed in more detail below.

EPA has issued guidance to assist state agencies in determining BACT.³⁹ In general, the agency must rank all available control technologies from most to least effective at controlling emissions of the pollutant at issue. The presumption is that the most effective technology will be adopted absent a showing by the permit applicant that technical considerations, or energy, environmental, or economic impacts make the most stringent technology “un-achievable.” If the permitting authority determines this to be the case, the most stringent option is eliminated and the next most stringent alternative is considered. This process continues until an “achievable” option is determined.

Energy efficiency and conservation measures have the potential to play a critical role in BACT determinations. EPA has previously suggested that the “presumptive focus

³⁷ *Id.* § 7475.

³⁸ *Id.* § 1659(3).

³⁹ Environmental Protection Agency, *New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Area Permitting* (draft, Oct. 1990), available at <http://www.epa.gov/ttn/nsr/gen/wkshpman.pdf>.

of BACT for CO₂ would be on energy efficiency.”⁴⁰ Advocates of such measures are well-placed to argue to permitting agencies that BACT should include elements that not only reduce emissions of particular pollutants but reduce overall emissions through the use of energy-saving equipment. One suggested framework for incorporating energy efficiency into the BACT determination is as follows:⁴¹

- (1) Identify energy efficient options: for example, comparing a unit’s energy performance to an existing benchmark to show additional energy savings or identifying how technologies could be combined to arrive at energy savings.
- (2) Eliminate technologically infeasible options: for example, options that are unreliable or incompatible with the applicant’s industry.
- (3) Rank the technically feasible energy efficient measures: this should be done according to each technology’s potential to reduce emissions of the pollutant at issue.
- (4) Evaluate the most effective energy efficient measures: this should include control effectiveness, emissions reductions impacts, economic impacts, and environmental impacts on other pollution and elements (e.g., water, solid waste, soil, etc.). The goal should be to provide the agency with the tools to assess all of the tradeoffs between the various energy efficient alternatives and provide clear justifications for eliminating or preserving the top control technologies.
- (5) Incorporate energy efficiency measures into the BACT emissions limit. This could include considering performance standards, operating limits, work practice standards, design requirements, as well as monitoring and compliance methods. In addition, consideration must be given about where the BACT analysis will apply: the individual equipment, entire production line, or entire facility.⁴²

Energy efficiency considerations are beginning to be incorporated into PSD permits. For example, in 2011, the Michigan Department of Environmental Quality granted Wolverine Power Supply Cooperative a PSD permit for a new 600MW coal-fired power plant and included provisions requiring Wolverine to “incorporate energy

⁴⁰ 73 Fed. Reg. 444345, 44509 (July 30, 2008).

⁴¹ Climate Change Work Group, New Source Review and Toxics Subcommittee, Clean Air Act Advisory Committee, Phase II Report of the Climate Change Work Group of the Permits, New Source Review and Toxics Subcommittee, Clean Air Act Advisory Committee (Aug. 5, 2010).

⁴² For discussion of incorporating energy efficiency into BACT determinations involving greenhouse gases, see Congressional Research Service, EPA’s BACT Guidance for Greenhouse Gases from Stationary Sources (2010), <http://www.fas.org/sgp/crs/misc/R41505.pdf>.

efficient equipment whenever practicable in the design” of its boilers.⁴³ More recently, EPA required the use of high-efficiency boilers and combustion practices in a greenhouse gas PSD permit for a natural gas processing facility.⁴⁴ These requirements were imposed pursuant to the finding that BACT for reducing greenhouse gas emissions included the use of highly efficient combustion and running dual-fueled engines on electricity obtained through the grid.⁴⁵

As with the SIP approval process, the approval of a permit that adopts a control technology without properly incorporating energy efficiency can be challenged in federal court if issued by EPA and in state court if issued by a state agency.

2. Non-attainment NSR Permits

Non-attainment NSR permits are required for the construction of major new stationary sources and modifications of existing stationary sources in non-attainment areas, or areas that have not met the emissions standard established by a NAAQS. In this case, to obtain a permit for construction, the new source must demonstrate the installation of the lowest achievable emission rate (“LAER”) technology, as well as emissions offsets.⁴⁶ LAER is the most stringent emissions limitation contained in the relevant state’s SIP for such a class or category of source or the most stringent emissions limitation achieved in practice by such a class or category of source.⁴⁷ Offsets are emissions reductions which must offset the emissions increase from the new source or modification and provide a net air quality benefit.⁴⁸

The process for reviewing and awarding construction permits in non-attainment areas is the same as for PSD permits and requires an opportunity for public comments and participation. Because the standard for emissions controls is even more exacting, proponents of energy efficiency measures may have a greater opportunity to have them incorporated into permitting decisions. In addition, the requirement that the project’s

⁴³ Michigan Department of Environmental Quality, Air Quality Division, Permit to Install Issued to Wolverine Power Supply Cooperative (July 29, 2011), <http://www.deq.state.mi.us/aps/downloads/permits/PubNotice/317-07/Remand/317-07FinalCorr.pdf>.

⁴⁴ EPA, Prevention of Significant Deterioration Permit for Greenhouse Gas Emissions Issued to Energy Transfer Co. (Mar. 21, 2012), http://www.epa.gov/earth1r6/6pd/air/pd-r/ghg/etc_jackson_draftpermit.pdf. EPA took over Texas’ greenhouse gas permitting program in early 2011.

⁴⁵ EPA did not, however, analyze upstream emissions from this electrical generation as part of its BACT assessment.

⁴⁶ 42 U.S.C. § 7410(a)(2)(C) (2012).

⁴⁷ EPA, Nonattainment NSR Basic Information (last visited September 2, 2012, 2:25 PM), <http://www.epa.gov/nsr/naa.html>.

⁴⁸ *Id.*

emissions be offset provides another avenue for energy efficiency and conservation projects.

3. Minor Source Permits

Minor source permits are for pollutants from stationary sources that do not require PSD or non-attainment NSR permits. As part of their SIP, states are charged with establishing a minor NSR permit requirements, as long as the requirements meet minimum standards.⁴⁹ As such, the opportunity to incorporate greater numbers of energy efficiency measures into minor source NSR permits occurs during the SIP process. Please see the section on SIPs for greater details.

III. New Source Performance Standards

The CAA also mandates that EPA develop technology-based standards which apply to specific categories of stationary sources.⁵⁰ Any new, modified, or reconstructed facilities falling within particular source categories are required to use additional emissions-reducing technology and are subject to compliance requirements. Source categories currently covered by NSPSs include manufacturers of glass, cement, rubber tires and wool fiberglass. In addition, there is a new proposed NSPS for fossil-fuel fired electric generating units.⁵¹

The NSPS standards are based on the best demonstrated technology (“BDT”). BDT are determined on an industry-by-industry basis and consider economic costs and other factors, such as energy use.⁵² Similar to NSR proceedings, the technology-based determinations in NSPS actions can incorporate energy efficiency measures. Were EPA to develop a new NSPS standard for an additional source category, advocates of energy efficiency could participate in the formal agency action that would be required to adopt such standards. For example, the new proposed NSPS for fossil-fuel fired plants suggests adopting an emissions standard that would “in general eliminate designs without a steam reheat cycle and similar lower efficiency designs.”⁵³ In addition, the proposed NSPS standards will require new coal-fired sources to “achieve the

⁴⁹ EPA, Minor NSR Basic Information (last visited September 2, 2012, 2:40 PM), <http://www.epa.gov/nsr/minor.html>.

⁵⁰ 42 U.S.C. § 7411 (2012).

⁵¹ 40 C.F.R. § 60.

⁵² EPA, Air Quality Management - New Source Performance Standards (Sept. 3, 2012, 3:31 PM), <http://www.epa.gov/eogapti1/course422/apc4c.html>.

⁵³ *Id.* at 115.

supercritical efficiency level” for an initial period.⁵⁴

Performance standards also must be established for any existing categories of sources of air pollution that endanger the public health or welfare.⁵⁵ When EPA issues a NSPS, it also is required to regulate existing sources in the same category.⁵⁶ EPA first issues an “emission guideline” that establishes a recommended standard of performance for states to apply to the sources within their borders and represents the “best system of emission reduction.”⁵⁷ Each state adopts and submits to EPA a plan that contains an emission standard and compliance schedule for existing sources in the category.⁵⁸ Then EPA either approves the plan or issues a federal plan. As with the processes discussed above, there is opportunity for the public to intervene and comment on these plans.

There could be significant opportunities for energy efficiency to be considered in state plans for existing sources if EPA amended its emission guidelines. The Natural Resources Defense Council (“NRDC”) published a report recommending that EPA change its emission guidelines to include a flexible compliance option for existing power plants in an effort to curb greenhouse gas emissions.⁵⁹ This compliance option would allow end-use energy efficiency savings generated from approved energy efficiency programs to count towards meeting the performance standard. NRDC specifies that any emissions reductions that would count in its proposed program must be “permanent, quantifiable, surplus, and enforceable.”⁶⁰ This would require states to calculate a baseline electricity savings from existing programs and develop transparent methodologies for calculating additional energy savings that allows for independent verification.⁶¹

Real opportunity exists for demand-side energy efficiency programs to reduce emissions of greenhouse gases from existing sources. Various states have already undertaken programs with binding annual energy savings targets. Energy efficiency programs in Nevada, Hawaii, Rhode Island, Minnesota, and Vermont all achieved energy

⁵⁴ *Id.* at 137.

⁵⁵ 42. U.S.C. § 7411(d) (2012).

⁵⁶ *See id.*

⁵⁷ 40 C.F.R. § 60.22.

⁵⁸ *Id.* § 60.24.

⁵⁹ NRDC, Closing the Power Plant Carbon Pollution Loophole: Smart Ways the Clean Air Act Can Clean Up America’s Biggest Climate Polluters 15 (Dec. 2012).

⁶⁰ *Id.*

⁶¹ *Id.* at 16.

demand reductions equivalent to 1 percent or more of electricity sales in 2009.⁶² Such cuts to demand would have important impacts on reducing greenhouse gas emissions.

iv. Conclusion

There is growing realization that energy efficiency can contribute in important ways to the CAA's goal of reducing air pollution that threatens the public health. Proponents of energy efficiency projects should pay close attention to state and federal environmental agency notices to ensure that they are aware of CAA developments that could provide opportunities to advance energy efficiency programs. For these advocacy efforts to be successful, there must be a showing of how energy efficiency efforts will result in quantifiable emissions reductions that would not otherwise occur and that are in the appropriate geographical area. Careful attention therefore must be paid to measuring and monitoring mechanisms that do not create an undue burden on implementers but effectively show the real benefits of energy efficiency.

⁶² American Council for an Energy-Efficiency Economy, "2011 State Scorecard" 17 (2011) (available at: www.aceee.org/research-report/e115).