Comments of the National Mining Association on Regulating Greenhouse Gases Under the Clean Air Act Docket ID EPA-HQ-OAR-2008-0318

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a-and-r-Docket@epa.gov

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The National Mining Association (NMA) appreciates this opportunity to comment on the Advance Notice of Proposed Rulemaking (ANPR) concerning potential regulation by the Environmental Protection Agency (EPA) of greenhouse gas (GHG) emissions under the federal Clean Air Act (CAA).[1] NMA believes that the CAA is ill-suited for addressing climate change and that regulation of GHGs under the CAA in its current form will result in highly inefficient and wasteful regulation with extremely high costs for little or no societal benefit. The CAA is a regulatory straightjacket that will not allow the nation to reduce GHG emissions in a flexible and cost-effective manner and without triggering highly undesirable unintended consequences.

NMA is committed to playing a constructive role in the development and adoption of policies and technologies to address global climate change concerns and the inextricably linked issues of domestic and global energy supply and security, economic growth and development, and other environmental and social issues. We will continue to work with Congress and the new Administration to fashion a responsible and balanced approach on climate polices.

Using the CAA is not a sustainable solution—environmentally, economically or politically—for addressing climate change concerns. We strongly urge EPA to defer further action on CAA regulation of greenhouse gases so that our elected representatives can decide how the nation should address climate change concerns. Only Congress can address the proper balance between economic growth, energy independence and environmental goals. As we explain later, the Supreme Court's decision *in Massachusetts v. EPA*, 127 S. Ct. 1438 (2007), does not preclude EPA from deferring action. If EPA, however, decides to press forward and usurp Congress' role, the agency must take the time to understand the numerous consequences before it makes an endangerment finding—not the least being effectively delegating our national economic, energy and industrial policies and priorities to one agency, third parties and the courts. A wrong step by EPA in an area with such overarching implications for every sector of the economy could seriously undermine efforts by the country to restore job creation and economic growth.

I. Introduction and Overview of Comments.

A. Who We Are and Why We Are Concerned.

NMA is a national trade association of mining and mineral processing companies whose membership includes the producers of most of the nation's coal, metals, industrial and agricultural minerals; the manufacturers of mining and mineral processing machinery, equipment

[1] *Regulating Greenhouse Gas Emissions under the Clean Air Act*, 73 Fed. Reg. 44,354 (July 30, 2008).

and supplies; and the engineering and consulting firms, financial institutions and other firms serving the mining industry. It is not hyperbole to say that the mining industry will be one of the sectors of our economy most affected by the climate change proposals discussed in the ANPR. Because the electricity generation sector is a large source of the nation's GHG emissions and because coal fuels so much of the nation's electric production, proposals to reduce GHG emissions – including those set forth in the ANPR – often have the purpose or at least would have the effect of dramatically reducing coal usage and therefore coal mining.

Nonfuel minerals and metals mining and processing will also be directly and profoundly affected by CAA regulation of GHGs because these industries are highly energy-intensive. Spending on energy and electricity by both the nonferrous metals manufacturing and metal mining sectors represents up to 30 percent of their total costs. These companies are highly sensitive to increased energy costs that GHG regulation may create. At the same time, they have no ability to pass increased energy costs on to customers because metals and minerals prices are largely set in international markets, often on commodities exchanges, reflecting international supply and demand. Thus, U.S. GHG regulation, where it is not matched by foreign regulation, can create a tremendous competitive disadvantage for these companies that will lead to the leakage of jobs, economic development and emissions overseas.

Mining is a fundamental aspect of the American economy and thus the impacts of GHG regulation on the mining industry must be closely scrutinized. For instance, every American uses an average of 47,000 pounds of newly mined materials each year. Everyday items that Americans take for granted, as well as manufactured goods vital to our national security, would not exist without mined materials. Telephones are made from as many as 42 different minerals, including aluminum, beryllium, coal, copper, gold, iron, limestone, silica, silver, talc and wollastonite. A television requires 35 different minerals, and more than 30 minerals are needed to make a computer. A military jet requires many critical minerals including titanium, nickel, cobalt and tantalum.

As EPA knows, coal is fundamental to how the nation produces electricity. Approximately 50 percent of electricity is derived from combusting coal. Coal can also provide substantial amounts of transportation fuels and syngas to displace significant amounts of imports of crude oil, refined products and natural gas. Coal is also by far the nation's most abundant source of energy, constituting 94 percent of the nation's fossil fuel resources. The U.S. has produced more than 1 billion tons of coal annually for each of the last 14 years. The country has nearly 268 billion tons of recoverable coal reserves, according to the Energy Information Administration, which is a 240-year supply at current rates of use.

The mining industry is also a major direct and indirect source of jobs and economic development in the U.S. The U.S. coal mining industry directly employs nearly 120,000 people in 23 states. For each coal mining job, an additional 3.5 jobs are created elsewhere in the economy. NMA estimates 50,000 new employees will be needed in coal mining over the next ten years to meet increasing demand and to replace retiring workers. In addition, about 300,000 people work directly in minerals mining throughout the U.S. Employment in industries that support mining, including manufacturing, engineering and environmental and geological consulting, accounts for nearly 1.6 million jobs. The average miner makes $60,000 per year in salary, not including overtime, bonuses and benefits. NMA estimates that in the next five to ten

years, the minerals mining industry will need approximately 55,000 new miners across the U.S. in order to meet increased demand and to replace retiring mine employees.

At risk if inappropriate GHG regulations are promulgated, is the mining industry's contribution to the national economy. In 2005, the mining industry paid approximately $21.3 billion in taxes, royalties and fees to federal, state and local governments. Nearly $50.6 billion was paid to mining industry employees in direct and indirect wages and benefits. Mining provides nearly a half-trillion dollars annually in direct and indirect economic impact. According to U.S. Geological Survey analysis, the major industries that consume processed mineral materials added an estimated $2.21 trillion to U.S. GDP in 2007. Minerals and materials processed from minerals account for exports worth as much as $68 billion per year.

B. New Technologies and Infrastructure Are the Key.

NMA believes that any meaningful effort to achieve long-term, sustainable reductions in global GHG emissions will depend on the development and deployment of new energy technologies, including advanced clean coal technologies and carbon capture and storage (CCS). The rapid development, demonstration and widespread deployment of such technologies are essential to any reasoned and effective effort towards achieving GHG emission reduction goals while maintaining a stable and growing economy and advancing the nation's desire to achieve energy independence. NMA believes that these goals can only be achieved if coal remains a significant fuel for electric generation, particularly given the nation's current economic crisis.

GHG emission reduction targets and timetables must be harmonized with realistic assumptions as to the availability of CCS technology and infrastructure on a wide scale and on a commercially and technologically demonstrated basis. Attempting to achieve GHG emission reduction goals before the necessary technology and infrastructure is available will result in high energy costs, with rippling impacts throughout the economy, and will impede effort to restore the country to economic prosperity and energy independence. Indeed, one of our primary reasons for opposing GHG regulation under the CAA is that the CAA does not provide incentives to promote the rapid commercialization of CCS technology, a fact highlighted by the very limited discussion of CCS technology in the ANPR. Only Congressional legislation can make sure proper incentives are provided so that the necessary technology and infrastructure will be available, affordable and deployable concurrent with emission reduction goals.

C. The CAA Is the Wrong Way to Regulate GHG Emissions.

The ANPR sets forth a dizzying array of potential CAA programs that could be triggered to address GHG emissions in every sector of the economy. The length of the document and sheer volume of supporting information highlights the hugely complex nature of the contemplated regulation. The complexity matches the subject area, as the task of controlling GHG emissions is directly tied to overall U.S. energy and economic policy, because carbon dioxide emissions are the inevitable result of the combustion of fossil fuels and because fossil fuels represents 70 percent of the nation's energy usage. As EPA has stated, "virtually every sector of the U.S. economy is either directly or indirectly a source of GHG emissions."[2]

[2] 68 Fed. Reg.52,922, 52,928 (Sept. 8, 2003).

The CAA is completely ill-suited to address the important and highly complicated policy decisions necessary to address climate change. The fundamental CAA programs are rigid and antiquated; they were adopted in 1970 and 1977 to address primarily the direct effects of local and regional air pollution. The CAA is not designed to address globally-circulating and well-mixed GHGs, where international emissions significantly exceed U.S. emissions and where the emissions of developing countries are currently, and will continue to be, on an upward trajectory regardless of any CAA regulation. EPA's own analyses of climate change legislation highlighted how little impact such legislation would have on atmospheric GHG concentrations given international emissions.[3] The same result will be obtained under CAA regulation – indeed, the result will be worse under the CAA because Congressional legislation, if designed correctly, can integrate and time U.S. efforts with those of the rest of the international community, whereas CAA regulation is not linked to international action.[4]

EPA states in the ANPR that it desires to adopt innovative, flexible and market-based approaches to reducing GHG emissions, such as cap-and-trade programs, but such approaches are unlikely to be possible within existing CAA structures. For instance, the ANPR identifies key considerations that should guide GHG regulation under the CAA as including, among others, "cost-effectiveness and economic efficiency considerations," "equity considerations (i.e., distributional effects)," "policy flexibility over time," "incentives for innovation and technology development," "competitiveness/emissions shifts," "unintended consequences" and "suitability of tool for the job."[5] These policy considerations, however, cannot easily be shoe-horned into the CAA statutory structure, a fact which the U.S. Court of Appeals for the D.C. Circuit has pointed out in a number of recent cases in which EPA tried to use flexible and innovative approaches. For instance in *North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir. 2008), the Court

[3] See EPA MiniCAM modeling study. Recent data shows that the emissions from China alone have surpassed those of the United States. The forecast of the International Energy Agency (IEA) in 2004 (International Energy Outlook 2004) projected that China's emissions would equal U.S. emissions by 2030. In fact, China's emissions (IEO 2007) reached those of the U.S in 2007! The error in the forecast was over 60% in only three years. China's emissions are forecast by both the Energy Information Administration (EIA) EIA to be 11,000 mmtc (11 billion tons carbon) by 2030 as compared with U.S. emissions of 8,000 mmtc. Some have predicted that China's emissions will equal the Rest of the World emissions by 2040. These data have profound implications for EPA's *"what if"* analysis of "Endangerment." Any model that EPA relies upon for global projections (MiniCAM, MAGICC, FUND) must be transparently validated against these revised forecasts.

[4] In October 2007, EPA (Office of Atmospheric Programs) presented its analysis of S. 1766, the Bingaman-Specter bill. The various scenarios made assumptions about "International Action" that include China, India, and Russia. There is insufficient transparency in the analysis to understand whether the baseline projections of emissions from China and India are calibrated to the most recent projections. This Information Quality Act requirement remains an issue for future analysis by EPA. The range of reductions in global CO_2 concentrations by 2095 is ~ 23-25 ppm as a result of US legislation capping carbon. The analysis was conducted before EISA 2007 was passed into law. World concentrations of CO_2 are projected to be 694-696 ppm if the U.S. implements cap legislation. The additional global loading of non- CO_2 gases is an additional ~100 ppm for a total of ~800 ppm equivalent. The concentration of CO_2 from all U.S. automobiles is approximately 5 ppm, or ~ 0.6% of total global concentration. The contribution of emissions from new U.S. vehicles would be substantially lower. But, the question remains, do the unverified models have enough "skill" to predict this *de minimus* impact versus what we know to be substantial natural variability? EPA must conduct a full independent third party analysis of the capability of U.S. models, not foreign models, to determine if there is any usable model.

[5] 73 Fed. Reg. at 44,409.

instructed EPA to follow the literal language of the CAA and to disregard its own "pursuit of equity . . . and improper reason." *Id.* at 921. Thus, the *North Carolina* decision struck down EPA's cap-and-trade program in the Clean Air Interstate Rule (CAIR) as being in excess of EPA authority, even though that program was widely supported by environmental parties, industry and governments as an efficient and equitable way of addressing regional air pollution.

Given the statutory requirements of the CAA regulatory programs, ***NMA believes it is likely that EPA (a) will be forced to implement a number of regulatory programs that the ANPR clearly indicates EPA does not want to implement and (b) will not be able to implement the regulatory programs, such as cap-and-trade, that EPA thinks are preferable.*** As discussed in more detail below, a high degree of risk exists that EPA will not be able to prevent the triggering of Prevention of Significant Deterioration (PSD) or nonattainment New Source Review (NSR) permitting for quite a large number of very small sources of carbon dioxide emissions. The inclusion of so many small sources will entirely swamp the permitting system, result in gridlock to the detriment of both large and small sources, and will impede, if not outright prevent, much of the new construction activity the nation needs to regain economic growth. There is also a significant risk that EPA will not be able to prevent the triggering of National Ambient Air Quality Standards (NAAQS) attainment requirements, which EPA itself recognizes is a wholly irrational approach to reducing GHG emissions. Indeed, NAAQS attainment requirements could stop economic growth in this country entirely. Similar risks exist if other CAA programs are triggered.

Some stakeholders believe these risks can be managed through EPA's adoption of New Source Performance Standards (NSPS) for a limited number of source categories, such as powerplants. NMA disagrees. The sheer number of pages the ANPR devotes to rationalizing how PSD and NAAQS requirements could be limited or eliminated through administrative interpretation is indicative of the uncertainty and risk in this area. In any event, the impacts if EPA is wrong about its latitude to administratively interpret the requirements – forcing the country to comply with PSD regulation of large numbers of small GHG-emitters or forcing the country into NAAQS regulation – are so extreme that it is not worth taking the chance.

D. EPA Must Carefully Consider the Economic Consequences of Regulation, Even if PSD Regulation of Small Sources and NAAQS Regulation are Not Triggered.

If EPA is determined to proceed with CAA regulation, NMA urges it to consider the effect its actions will have on the national economy and energy independence and security. Fundamentally, if EPA imposes emission reduction requirements that are not timed to coincide with realistic dates for CCS and other advanced technology and infrastructure availability, and instead causes fuel-switching away from coal, the consequences will be extremely grave. Specifically:

- EPA's own analysis of cap-and-trade programs shows very large compliance costs, lost jobs and reduced GDP, much of it as a result of increased energy costs. At the very least, these same costs will likely result from CAA regulation, and the costs could be significantly higher if NAAQS attainment requirements are triggered. ***NMA calls on EPA, before it proceeds to rulemaking, to conduct a thorough economic***

analysis of the cost of CAA regulation under all of the various programs discussed in the rulemaking, using a variety of assumptions as to relevant variables, in order to understand the consequences of regulation before it formulates specific regulatory proposals.

- ***The ANPR does not devote adequate attention to the effect of GHG regulation on the nation's energy independence and security goals.*** If emission reduction requirements do not permit continued utilization of coal for electric generation, large-scale fuel-switching to natural gas will occur, resulting in greatly increased imports of liquefied natural gas (LNG) from countries that are either actively or potentially hostile to the U.S. The ANPR also fails to address the deleterious impact of GHG regulation on the production of liquid transportation fuels and syngas from coal that can minimize imports of crude oil, petroleum products and natural gas.

- ***The ANPR does not give meaningful attention to the prospect that CAA regulation of GHG emissions could damage the reliability of the electric grid***. The country is rapidly approaching a situation in which it will have inadequate electric generation to meet electric demand. GHG regulation that results in reduced operation of the existing fleet of coal-fired generation and prevents deployment of additional coal-fired generation will worsen the supply-demand imbalance and imperil the reliability of the electric grid.

- ***The ANPR does not adequately consider the prospect that GHG regulation could result in the leakage of jobs (including jobs in the mining industry), economic development and emissions overseas, which would harm the nation's international competitiveness and offset domestic GHG reductions.***

- ***Finally, the ANPR does not adequately address the likelihood of duplicative and wasteful regulation, as EPA regulations overlap state and other federal requirements, resulting in multiple and perhaps conflicting compliance burdens.***

E. In Sum.

The CAA is fundamentally the wrong approach to GHG regulation. NMA therefore urges EPA to defer further GHG rulemaking until Congress determines how the nation will proceed on climate change. If EPA is nevertheless determined to proceed in advance of our nation's lawmakers, NMA urges it to take the time to understand the many possible consequences before making an endangerment finding and committing itself to regulation of a character and a cost that the agency may not fully appreciate.

We discuss all of the above points in more detail below.

II. GHGs Cannot Be Regulated Efficiently and Cost-Effectively under the CAA, and Highly Negative Consequences Are Likely to Result if EPA Tries.

NMA believes that the ANPR sets forth an unrealistic view of what is legally required under the CAA. We attach a legal memorandum discussing CAA statutory requirements and discuss the key points below.

A. EPA Likely Lacks Authority to Undertake a Cap-and-Trade Program.

The ANPR expresses a clear preference for EPA to adopt a market-based cap-and-trade program as the most efficient method of cost-effectively reducing GHG emissions and posits EPA authority to adopt such a program under Sections 110 and Section 111 of the CAA.[6] The ANPR, however, was written before the D.C. Circuit decision in *North Carolina v. EPA.* The three-judge panel in that case unanimously ruled that EPA does not have authority under Section 110 to adopt an interstate cap-and-trade program. *North Carolina v. EPA*, 531 F3d 896, 929 (D.C. Cir. 2008). Although EPA filed a petition for rehearing asking the Court to reconsider its decision, the Court asked for briefs from the original petitioners in that case only on the question of remedy. Thus, the decision is effectively final on the cap-and-trade issue.

The ANPR's discussion of potential authority to implement a cap-and-trade program under Section 111 refers to EPA having adopted such a program as part of the Clean Air Mercury Rule (CAMR).[7] As the ANPR states, the D.C. Circuit overturned that rule without ruling on the question of EPA authority under Section 111 to undertake cap-and-trade. But the ANPR neglects to mention that environmental parties vociferously challenged EPA's cap-and-trade authority under Section 111 on the ground that cap-and-trade does not meet the definition of an NSPS. Thus, EPA's cap-and-trade authority under Section 111 is, at least, questionable, and any attempt to implement that program for GHGs will be subject to challenge. Given the amount of time and effort EPA spent on both the CAMR and CAIR rules, only to have them reversed in court years later, EPA should carefully consider whether it wishes to invest considerably more time and effort formulating a GHG cap-and-trade program when the ultimate outcome is likely to be the same.

Apart from the question of basic legal authority, the ANPR gives short shrift to the technical difficulties and extensive policy judgments that would be required in designing a GHG cap-and-trade program. Would allowances be auctioned or allocated? What would the targets and timetables be? What source categories would be covered? What cost containment measures would there be? The nation has debated a national cap-and-trade program for years and has not been able to reach consensus. There is no reason to expect EPA to be able to do what Congress has so far failed to do. Indeed EPA should not be expected to address these questions, which involve issues suited for the peoples' elected representatives, not appointed regulators.

Considerable legal doubt also exists as to cap-and-trade design issues. For instance, does EPA have authority to auction allowances? Nothing in Section 111 indicates any such authority.

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[6] 73 Fed. Reg. at 44,409.

[7] 73 Fed. Reg. at 44,368.

None of the cap-and-trade programs EPA has implemented or attempted to implement under either Section 110 or Section 111 (e.g., the NO_X SIP Call, CAIR, CAMR) entailed auctioning allowances.[8] Even if EPA had auction authority under Section 111, what authority would govern disposition of the auction proceeds, a sum that could run into the trillions of dollars over time? Could a Section 111 program include the use of offsets, and where would that authority come from? Another fundamental legal question is whether EPA has authority to include multiple source categories in a single cap-and-trade program. The language of Section 111 suggests that EPA must create separate NSPS for each regulated source category. Would EPA implement multiple cap-and-trade programs, and would that be an efficient means of regulation?

In sum, attempting to implement a cap-and-trade program under the CAA would be fraught with legal and policy problems and would likely collapse under its own weight.

B. NSPS Rulemakings Will Be Highly Complicated, Costly and Controversial and Will Lead to Extensive Litigation.

The most likely type of regulation that EPA would adopt under the CAA for stationary sources would appear to be the promulgation of traditional command-and-control NSPS. The agency should be under no illusion, however, as to the difficulty of adopting such standards for the many source categories of GHGs.

The ANPR takes the view that EPA can "prioritize" NSPS rulemakings so that it can begin promulgating NSPS for the biggest GHG-emitting source categories before moving to other source categories.[9] This view appears to be contradicted by the repeated use of the word "shall" in Section 111, although we recognize that EPA's history under Section 111 is one of not attempting to promulgate NSPS for all source categories at once. Nevertheless, the process of adopting NSPS for any one individual source category is very complex and consumes significant administrative resources. Even the development of NSPS for only the few source categories examined by the relevant technical support document would demand substantial legal, technical, scientific and administrative resources of the agency. ***Finally, as the history of the CAA implementation demonstrates, the agency's ability to prioritize its rulemakings is exposed to great risk of being jeopardized by judicial intervention responding to litigation seeking to compel agency action at a faster pace and for different sources.***

A "standard of performance" is defined under Section 111(a)(1) as "a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated."[10] This standard has come to be known as "best demonstrated technology" or "BDT." As can be seen, under

[8] EPA has limited authority to auction allowances under the Title IV program, but only because Congress gave it explicit authority to do so in Section 416.

[9] 73 Fed. Reg. at 44,488.

[10] 42 U.S.C. 7411(a).

BDT, both the availability and cost of technology are factors the Administrator must consider in setting a standard of performance.

Establishing BDT is not an easy task. The U.S. Court of Appeals for the D.C. Circuit has stated that the BDT standard is a very broad standard indeed. According to the Court, "[t]he language of section 111 . . . gives EPA authority . . . to weigh cost, energy, and environmental impacts in the broadest sense at the national and regional levels and over time as opposed to simply at the plant level in the immediate present." *Sierra Club v. Costle*, 657 F.2d 298, 330 (D.C. Cir. 1981). The Court stated that "'section 111 of the Clean Air Act, properly construed, requires the functional equivalent of a NEPA impact statement.'" *Id*. at 331 (*quoting Portland Cement v. Ruckelshaus*, 486 F.2d 375, 384 (D.C. Cir. 1973)).

In a 1980 case involving the limestone industry, the Court noted the "rigorous standard of review under section 111" applied by reviewing courts. *National Lim Ass'n v. EPA*, 627 F.2d 416, 429 (D.C. Cir. 1980). The Court stated that the "sheer massiveness of impact of the urgent regulations," considered in that and other cases had "prompted the courts to require the agencies to develop a more complete record and a more clearly articulated review for arbitrariness and caprice" than had been applied in previous cases. *Id*. at 451 n.126.

If massiveness of regulatory impact was a concern in a limestone industry case not involving GHGs, that concern would be magnified many times in promulgating GHG standards of performance across a large number of source categories. A plethora of issues would be relevant in setting GHG standards, with EPA weighing the cost, energy and environmental impacts of GHG regulation "in the broadest sense at the national and regional levels and over time" as if it were preparing an Environmental Impact Statement. A large number of parties would be interested given the overwhelming importance of the issues.

In sum, establishing NSPS would be highly complex, controversial and time-consuming. Quick results, to say the least, cannot reasonably be expected.

C. EPA Regulation Risks Unleashing PSD Requirements for a Very Large Number of Small Emitters, Creating Regulatory Gridlock in the PSD Program and Impeding New Construction Needed for Economic Recovery.

Possibly the most objectionable aspect of EPA regulation of GHGs under the CAA is the consequences that will ensue under the PSD program. As the ANPR states, the program applies to sources which emit regulated pollutants above the statutory 100/250 tons per year (tpy) threshold.[11] Such sources must obtain PSD permits before undertaking new construction or modifying existing facilities in a way that results in an emissions increase.

A very large number of buildings and facilities emit more than 250 tpy of carbon dioxide solely because they utilize natural gas or oil for heating. As stated in an EPA staff technical support document, buildings of approximately 68,000 square feet will exceed the threshold.[12]

[11] 73 Fed. Reg. at 44,501.

[12] EPA, *Estimates of Facilities That Emit CO2 in Excess of 100 and 200 TPY Thresholds* at 5 (2008) (Document ID EPA-HQ-OAR-2008-0318-0077).

As a result, numerous buildings and facilities that have never been regulated before under CAA programs will become subject to PSD permitting, including many office and apartment buildings; hotels; enclosed malls; large retail stores and warehouses; colleges, hospitals and large assisted living facilities; large houses of worship; product pipelines; food processing facilities; large heated agricultural facilities; indoor sports arenas and other large public assembly buildings; restaurants, bakeries, breweries, and wineries; and many others.

Obtaining a PSD permit is a very difficult undertaking that generally takes more than a year (even given the present PSD permit load), requires the hiring of lawyers and consultants, and can cost hundreds of thousands of dollars or more. As the ANPR states, "there have been significant and broad-based concerns about PSD implementation over the years due to the program's complexity and the costs, uncertainty, and construction delays that can sometimes result from the PSD permitting process."[13]

The ANPR recognizes that regulating GHGs could, in the ANPR's words, "overwhelm permitting authorities," as the number of new permit applications multiplies.[14] While NMA agrees that permitting entities will be overwhelmed, we think that EPA has understated the extent of the problem. As discussed in the attached NMA legal memorandum, EPA's estimate of a ten-fold increase in permit applications does not include applications for permit modifications, which EPA recognizes could significantly exceed the number of applications for new construction.[15] It is also based on the assumption that the 100/250 tpy threshold is measured only in terms of a facility's actual emissions rather than its potential to emit (PTE) as required by the statute. Moreover, the ANPR appears to significantly understate the number of sources that currently emit (actual emissions) more than 250 tpy. Although EPA puts that number at about 235,000 sources,[16] the U.S. Chamber of Commerce sponsored a study, included with its comments in this docket, estimating that number at 1.2 million.[17]

The ANPR also presents an unrealistic assessment of EPA's ability to "streamline" the permitting process so as to avoid regulatory gridlock from an overwhelmed permit system. The ANPR's discussion of the potential for EPA to administratively increase the 250 tpy threshold to some larger number[18] ignores the fact that the numerical threshold is in the statute and therefore cannot be changed by EPA. EPA's discussion of the possibility of using "general permits" and "presumptive BACT" also ignores statutory language requiring case-by-case BACT determinations and public hearings on each PSD application. In any event, the language of the PSD statutory provisions does not provide specific authority for either concept. At a minimum,

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[13] 73 Fed. Reg. at 44,501.

[14] 73 Fed. Reg. at 44,507.

[15] 73 Fed. Reg. at 44,502.

[16] EPA, *Estimates of Facilities That Emit CO2 in Excess of 100 and 200 TPY Thresholds* at 2 (2008) (Document ID EPA-HQ-OAR-2008-0318-0077).

[17] Portia M.E. Mills & Mark P. Mills, U.S. Chamber of Commerce, *A Regulatory Burden, The Compliance Dimension of Regulating CO_2 as a Pollutant* (2008).

[18] 73 Fed. Reg. at 44,505-07.

then, an EPA attempt to use "general permits" or "presumptive BACT" is fraught with legal uncertainty.

Moreover, the timing of adoption of a "general permit" program or "presumptive BACT" requirements would be critical. Unless the program is in place at the time EPA first regulates GHGs under any CAA program, small sources, at that time, will be forced to comply with the full panoply of pre-construction permit requirements. Easy adoption of a "general permit" program should not be assumed, given that it has not been done before in a PSD context and the controversy that will arise in attempting to define "presumptive BACT" limits for different categories of small sources. Thus, establishing a general PSD permitting program could take a great deal of time, particularly if, as expected, EPA and the public were simultaneously addressing a host of other GHG regulatory initiatives.

Furthermore, "presumptive BACT" and "general permit" requirements established by EPA, or any other revisions to the PSD regulations to accommodate GHG applicability, would not be self-executing in most states. States acting under their own "non-delegated" permit authority would have to adopt these new provisions into law, probably through rulemakings, possibly through legislation. This significantly raises the difficulty of having an effective "general permitting" program in place at the time that EPA proceeds with GHG regulation.

Most fundamentally, PSD permitting of small GHG-emitting sources is pointless from an environmental perspective precisely because these sources do not emit meaningful amounts of GHGs. The efficient use of energy by residential and commercial buildings would more effectively be encouraged by general building code energy efficiency requirements.

In sum, the risk to the economy if EPA is wrong about its ability to effectively streamline PSD permitting is very high. As the ANPR states, "[i]f the transition were not effectively managed, an overwhelmed permit system would not be able to keep up with the demand for new pre-construction permits, and construction could be delayed on a large number of projects under this scenario."[19] ***The last thing the U.S. needs at this point is a program that prevents new construction of buildings because the builders' PSD permit applications await action by overburdened state and federal regulators.***

D. EPA GHG Regulation Risks Creating a Mandate for NAAQS Regulation.

The ANPR plainly expresses a preference not to regulate GHGs through the NAAQS program, but its analysis of EPA's authority not to do so if it otherwise regulates GHGs is unrealistic. Similarly, the ANPR understates the consequences of NAAQS regulation if that program is initiated for GHGs.

If EPA makes an endangerment finding for GHGs in any context, it would appear that EPA would be legally compelled under Section 108(a)(1) of the CAA to establish a GHG NAAQS, given that GHGs are emitted by numerous and diverse mobile and stationary sources. The ANPR hypothesizes authority not to establish a GHG NAAQS under Section 108(a)(1)(c) on the theory that EPA could, in its discretion, simply decide not to issue GHG air quality

[19] 73 Fed. Reg. at 44,507.

criteria.[20] That theory was explicitly rejected in *Natural Resources Defense Council v. Train*, 545 F.2d 320 (2d Cir. 1976). The ANPR's only attempt to distinguish *Train* is to argue that it was decided before *Chevron U.S.A. v. Natural Resources Defense Council*, 467 U.S. 837 (1984),[21] which is the seminal modern case setting forth the standards for judicial review of agency action. *Chevron*, however, has never been interpreted as automatically invalidating cases decided before it. Indeed, in another section of the ANPR, EPA relies heavily on *Alabama Power v. EPA*, 636 F.2d 323 (D.C. Cir. 1979),[22] which was also decided before *Chevron*. Thus, EPA may have great difficulty avoiding promulgating a GHG NAAQS if it finds endangerment.

NAAQS regulation of GHGs, however, would be futile. States would be entirely unable to attain or maintain a NAAQS, given that GHGs circulate and mix globally in the atmosphere and given that U.S. emissions are only about 20 percent of the world's emissions, a number that is declining and will decline even more over time. Yet the statute requires that states be penalized, including through the loss of highway funding, for failing to comply with NAAQS requirements.

Despite its futility, NAAQS regulation would likely trigger severe regulatory consequences. The ANPR posits scenarios where the NAAQS are set either above or below current atmospheric concentrations – and thus the entire country is either in attainment or nonattainment, respectively – and where EPA sets either a primary health-based NAAQS or a secondary welfare-based NAAQS.[23] All of these scenarios entail highly negative consequences, as discussed in more detail in our attached legal memorandum. For instance, even if EPA were to undertake the least restrictive NAAQS regulation, by promulgating a secondary NAAQS above current atmospheric concentrations, states would still be required to adopt maintenance provisions in state implementation plans. ***In order to maintain attainment, these provisions would have to be highly restrictive because of the need to offset increasing international emissions. In the end, however, given the relative amount of U.S. and foreign GHG emissions, no even remotely reasonable levels of restrictions could maintain attainment. The states would inevitably slide into nonattainment and be in violation of their SIPs and the statute.***

The most likely scenario for NAAQS regulation, however, is the most stringent – promulgation of a primary NAAQS below the level of current atmospheric concentrations, resulting in the entire country being in nonattainment. The notion that EPA would not have to promulgate a primary NAAQS is contradicted by the ANPR's discussion of the health effects of climate change. *See* 73 Fed. Reg. at 44,426-27 (discussing climate change effects on "respiratory infection, aggravation of asthma, and potential premature death," "additional human health concerns include a change in the range of vector-borne diseases, and a likely trend towards more intense hurricanes"). Similarly, EPA will likely be required to set a NAAQS at levels below current atmospheric levels, given statements in the ANPR that deleterious climate

[20] 73 Fed. Reg. at 44,477 n.229.

[21] 73 Fed. Reg. at 44,477.

[22] 73 Fed. Reg. at 44,506-08.

[23] 73 Fed. Reg. at 44,367.

change effects are occurring now. *See* 73 Fed. Reg. at 44,427 ("The scientific record shows there is compelling and robust evidence that observed climate change can be attributed to the heating effect caused by global anthropogenic GHG emissions," citing "changes in precipitation patterns, sea level rise, extreme hot and cold days, sea ice, glaciers, ecosystem functioning and wildlife patterns").

The consequences of designating the country as a nonattainment area for a primary NAAQS would be extreme, to say the least. Instead of PSD permitting requirements as discussed above, the even more draconian nonattainment NSR permitting program would be triggered. Sources emitting more than 100 tpy of GHGs would be required to obtain permits before they undertook construction activity, ***and those permits would require them to obtain offsets for their GHG emissions and to control those emissions using Lowest Achievable Emission Reduction (LAER) technology, which does not allow for the consideration of cost in determining control requirements.*** These requirements could effectively stymie economic growth. Moreover, the entire country would be required to achieve attainment of the standards within, at most, ten years, leading to requirements for hugely unrealistic emission reductions within a very short time frame. ***Even if such reductions were even remotely feasible, they would have no measurable effect on atmospheric GHG concentrations.***

E. EPA Does Not Have the Resources to Undertake All of the GHG Programs That Will Be Required if It Decides to Regulate.

The discussion above only touches the surface of programs that will be triggered by GHG regulation. Because GHG regulation will touch every facet of the economy, EPA will be faced with the prospect of numerous simultaneous rulemakings, not just in the NSPS, PSD and NAAQS programs discussed above, but under the various Title II programs as well. As set forth in the ANPR, all facets of transportation will be subject to regulation, including light duty vehicles, heavy duty vehicles, locomotives, ships, boats, motor cycles and airplanes, as well as almost anything with an engine, from a fork lift to a lawn mower. EPA is already facing multiple petitions to regulate GHGs from many of these sources. Each of these rulemakings will be controversial, will require significant staff resources, and will likely be litigated. Put simply, regulating in this fashion is neither rational nor feasible.

III. The Key to Cost-Effectively Reducing GHG Emissions Is the Development of New Technology and Infrastructure.

NMA appreciates EPA's request for information regarding whether CCS technologies have been adequately demonstrated to be available in electric power and other sectors.[24] NMA believes that in order to achieve long-term, sustainable reductions in global GHG emissions, it is essential to rapidly develop, demonstrate and deploy new energy technologies, including CCS. CCS technology applied to a modern conventional coal-based power plant could reduce carbon dioxide emissions to the atmosphere by approximately 80-90 percent compared to a plant without CCS.

[24] 73 Fed. Reg. at 44,492.

Economic growth is closely tied to energy availability and consumption, particularly lower-cost fuels such as coal. While the use of coal and other fossil fuels results in the release of carbon dioxide, CCS technologies balance economic growth, energy independence and environmental concern – retaining coal as an affordable source of electricity, liquids and syngas in a carbon constrained world.

CCS technologies have the potential to reduce overall greenhouse gas mitigation costs and increase flexibility in reducing GHG emissions. According to the Intergovernmental Panel on Climate Change (IPCC), application of carbon sequestration technologies could reduce the costs of stabilizing carbon dioxide concentrations in the atmosphere by 30 percent or more compared to scenarios where such technologies are not deployed.[25]

As EPA is aware, there are numerous sources of information concerning CCS technology which NMA will not reiterate here. J. Edward Cichanowicz prepared a paper for the Utility Air Regulatory Group (UARG), titled "A Review of Carbon Capture and Sequestration (CCS) Technology for use in discussion regarding Regulation of Greenhouse Gases Under the Clean Air Act." UARG has submitted that paper in conjunction with its comments on the ANPR. NMA believes that the analysis and conclusions drawn by Mr. Cichanowicz in his paper accurately summarize the state of the industry.

NMA would like to emphasize that although CCS technology is extremely promising, it has not yet been demonstrated on a widespread scale and is not yet commercially available at a reasonable cost. Because of the technical and economic challenges of commercializing CCS, including the necessary transportation infrastructure, significant Congressional support in the nature of funding and incentives will be necessary to fulfill this technology's promise.

Many of NMA members are members of the Coal Utilization Research Council (CURC). CURC has partnered with the Electric Power Research Institute (EPRI) to create the CURC-EPRI Clean Coal Technology Roadmap. With successful technology development and increased federal funding, CURC-EPRI project that future pulverized coal and integrated gasification combined cycle systems will be highly competitive, and both will be able to cost effectively capture and store carbon dioxide. On the other hand, current research and development funding is inadequate, and demonstration funding is almost non-existent. CURC-EPRI project that CCS can become cost-competitive in the 2020 to 2025 timeframe, assuming necessary funding support. CURC-EPRI project that $17.5 billion is needed to implement their roadmap, with $10.5 billion derived from the federal government and the remaining $7 billion from industry.[26]

Other barriers to CCS technology development must also be removed. At present, uncertainty over siting requirements and long-term liability issues associated with the underground storage of carbon dioxide have deterred project developers, financiers and insurers from moving forward with CCS. CCS as a tool for mitigating carbon dioxide emissions and ensuring a secure and affordable energy supply for America represents a vital public interest that

[25] Intergovernmental Panel on Climate Change, *Special Report on Carbon Dioxide Capture and Storage* (2005).

[26] Further information on the CUR-EPRI Roadmap is available on the CURC website, http://www.coal.org/userfiles /File/ Final_CURC-EPRI_Roadmap,_2008.pdf.

merits a federal-level program to clarify and resolve these long-term liability issues and to clear the way for the rapid and widespread commercialization of the technology. Some of the key issues that must be resolved in order to foster widespread commercialization of CCS include:

- Determining responsibility for post-closure monitoring;
- Understanding the world-wide escalation of costs;
- Managing the technological uncertainties;
- Avoiding application of the federal Superfund program to injections of carbon dioxide as a waste and CCS activities as waste disposal to avoid triggering expensive "cradle to grave" regulations of the Resource Conservation and Recovery Act (RCRA);
- Resolving property rights issues, including pore space ownership, trespass and interstate issues relating to carbon dioxide pipeline transportation and placement; and
- Creating an acceptable legal, regulatory, infrastructure and risk management framework for the transport and long-term storage of carbon dioxide.

EPA is currently accepting comments on its proposed rule outlining requirements for carbon dioxide geologic sequestration (GS) wells.[27] NMA has joined with other impacted industry organizations to form the Carbon Capture and Storage Alliance (CCS Alliance). The CCS Alliance will be providing comments on the proposed UIC program intended to serve as constructive proposals for augmenting the UIC program and encouraging further development of successful GS projects. Importantly, EPA regulation must be enabling, not obstructive.

NMA urges EPA not to utilize the CAA to promulgate restrictions on GHG emissions based on an assumption that CCS technology and infrastructure will be available sooner than is realistically possible. Any model that EPA uses to analyze policy options must recognize that economics alone is not a determinant for whether CCS will achieve widespread deployment on an assumed timetable. As discussed below, such restrictions will have highly negative effects on energy prices and availability and on the economy. Indeed, the fact that EPA does not have authority to itself provide the necessary funding and incentives for CCS demonstrates the inappropriateness of regulating GHGs under the CAA and the necessity for Congress to address the climate change issue instead. Congress can include CCS funding as a part of a comprehensive climate change package and can therefore link whatever emission restrictions it imposes to the availability of CCS technology.

[27] 73 Fed. Reg. 43503 (July 25, 2008).

IV. Given the Potentially Enormous Cost of GHG Regulation under the CAA, EPA Cannot Proceed to Rulemaking Unless It Produces a Thorough Analysis of Costs under a Wide Array of Assumptions and Across the Full Gamut of Potential Regulatory Approaches.

The ANPR contains little if any information on the cost of regulating GHGs under the CAA. Owing to the very large number of programs discussed in the ANPR and the lack of guidance provided as to which of these programs will become applicable and to what extent, it is impossible at this point for stakeholders to supply their own cost estimates. NMA therefore urges EPA not to proceed to rulemaking until it has done a comprehensive analysis of potential cost impacts. The agency should not commit itself to a process that could impose potentially enormous costs with no measurable benefit on the public without first understanding the economic consequences and the reality of global unconstrained emissions growth.[28]

The necessity of a comprehensive cost analysis is particularly critical given the differing points of view among stakeholders concerning the legal requirements for regulation. As discussed above, some stakeholders believe EPA has discretion to pick and choose the types of regulation it wishes to implement whereas others, including NMA, believe there is significant risk that EPA may be forced into very extensive regulation, including under the PSD and NAAQS programs. The fact that the ANPR discusses so many potentially applicable CAA programs, including PSD and NAAQS, indicates that EPA believes that applicable regulatory requirements could be very broad indeed.

EPA's cost analysis must be as broad as the potential regulation. The cost of each potentially applicable program must be assessed under a number of different assumptions as to the stringency of program requirements and other variables that could affect cost estimates. In particular, EPA must examine scenarios where (a) every stationary source emitting more than the 100/250 tpy is subject to PSD or Nonattainment NSR requirements, (b) GHG-emitting sources are subject to Section 112 HAPs regulation, and (c) EPA sets either or both primary and secondary NAAQS for GHGs and the entire nation is either in attainment or nonattainment.

NMA is concerned that the cost of regulation may spiral beyond the ability of EPA to control. EPA is aware of the high cost estimates that have been made of nationally proposed legislation, including by EPA itself. EPA regulation under the CAA may be even more costly because it could be even more stringent than the proposed legislation. For instance, many of the national legislative proposals would require 50-70 percent reductions of GHG emissions by 2050. ***Yet NAAQS regulation could require even steeper and faster reductions, since states are required to attain a NAAQS within ten years. Thus, even if it takes EPA more than five years to set a NAAQS, the compliance schedule will be considerably more accelerated than 2050.***

[28] Such an economic analysis is required by Executive Orders 12866 and 13211, as well as the Regulatory Flexibility Act, 5 U.S.C. § 601, as amended by the Small Business Regulatory Enforcement Act, Pub. L. 104-121, and Title II of the Unfunded Mandates Reform Act, Pub. L. 104-4. NMA urges EPA to produce and submit for public comment the necessary economic analysis and an "energy effects" analysis before it commits to regulation through an endangerment finding and before it proposes a Notice of Proposed Rulemaking. The economic analysis is so fundamental to determining the proper regulatory course that the analysis should be done before the agency formulates specific regulatory proposals.

Moreover, although nationally proposed regulation typically does not cover the entire economy, CAA regulation would, making CAA regulation potentially more costly than legislative proposals.

The ANPR appears to dismiss cost concerns by hypothesizing that EPA could possibly adopt a cap-and-trade program as a way of efficiently regulating GHG emissions in a manner that minimizes costs.[29] ***This statement ignores the fact that, as shown above, EPA likely does not have authority to adopt a GHG cap-and-trade program, and it does not consider the possibility that a CAA cap-and-trade program might have to be much more stringent than the programs proposed in Congress because of NAAQS requirements.*** More fundamentally, EPA's statement ignores how costly the nationally proposed cap-and-trade programs would be. It is useful to review estimates of the cost of complying with the nationally proposed cap-and-trade programs to put EPA's statement in context, and to understand how hugely expensive CAA regulation will be if EPA is obligated to adopt even more stringent programs under the statutory NAAQS requirements.

For instance, according to EPA's own March 2008 analysis of the Lieberman-Warner bill:[30]

- Annual GDP is modeled to be between 0.9% ($238 billion) and 3.8% ($983 billion) lower in 2030 and between 2.4% ($1,012 billion) and 6.9% ($2,856 billion) lower in 2050 than in the Reference Scenario. Consumption is modeled to be between 0.9% ($180 billion) and 1.4% ($233 billion) lower in 2030 and between 2.1% ($670 billion) and 3.3% ($843 billion) lower in 2050 than in the Reference Scenario.

- <u>In scenarios that limit the availability of enabling technologies, the estimated cost of additional reductions increases by over 80 percent. In scenarios that do not allow the use of domestic offsets and international credits, costs increase by over 90 percent.</u>

- The average annual growth rate of consumption is ~0.08 percentage points lower than the reference case. In 2030 per household average annual consumption is ~$1,375 lower and gasoline prices increase ~$0.53 per gallon. In 2050 per household average annual consumption is ~$4,377 lower and gasoline prices increase ~$1.40 per gallon.

Other studies also showed extremely high costs. In a study of the Lieberman-Warner bill performed by CRA International on behalf of NMA:[31]

- "Green energy" jobs added to the economy will be overwhelmed by the net loss in jobs in declining sectors and the overall economy, starting with nearly 4 million jobs

[29] 73 Fed. Reg. at 44,409-10.

[30] The United States Environmental Protection Agency's Analysis of Senate Bill S.2191 in the 110th Congress, the Lieberman-Warner Climate Security Act of 2008, March 2008, http://www.epa.gov/climatechange/economics/economicanalyses.html#s2191.

[31] *See* CRA International, *Economic Analysis of the Lieberman-Warner Climate Security Act of 2007 Using CRA's NRA-NEEM Model*, April 2008, http://www.nma.org/pdf/040808_crai_presentation.pdf.

lost in 2015 alone, and growing on a year-by-year basis to more than 7 million jobs lost in 2050.

- The overall cost of the bill to the average household of 2.6 persons will exceed $2,300 annually in 2015, which approximates the amount households now spend annually on healthcare.

- The economy will suffer from large year-over-year losses in GDP through 2050 because of the high costs of compliance in the early years and the limited availability of zero carbon technologies throughout the economy in the later years when caps require near-zero emissions. By 2050, GDP losses accumulate to $5.3 trillion (present value 2007$).

- Household consumption and the standard of living are squeezed as resources are diverted to compliance-based investments and higher costs for transportation fuels and electricity.

- Motor fuel prices increase to extraordinary levels in the early years (2015-2020), while in later years, retail electricity prices increase to cover high fuel costs and increased capital expenditures for new generation technologies and carbon dioxide allowance prices.

- Coal use will decline by more than 60 percent before carbon capture and storage (CCS) technology becomes widely available.

Other analyses show similar results.[32] The Congressional Budget Office (CBO) undertook an analysis of various studies (MIT, CRA, EPA-IGEM, EPA-ADAGE) of the impact of S. 2191 last April.[33] The results indicated costs of roughly $1.2 trillion over the period 2009 to 2018. The study included an estimate of the carbon dioxide emission price out to 2050 ($220 metric ton carbon dioxide equivalent). The full cost for S.2191 estimated by CBO is roughly $5-7 trillion through 2050.

The key driver in all of these studies is increased energy costs, including increased energy costs caused by the decline in the use of coal for electric generation caused by the

[32] For instance, in a study performed by the American Council on Capital Formation and the National Association of Manufacturers, the Lieberman-Warner bill (S.2191) was projected to result in a 0.8-1.1% loss of GDP by 2020 ($151-$210 billion per year) and a loss of GDP of 2.5-1.6% by 2030 ($631-669 billion per year). Household income is projected to decline by $739-$2,927 in 2020 and between $4,022 and $6,572 in 2030. This in turn leads to job losses of between 1.2 million to 1.8 million and 3 million to 4 million by 2030, net of new jobs that may be created by increased spending on renewable energy, energy efficiency, and CCS. See *Analysis of the Lieberman-Warner Climate Security Act (S.2191) Using the National Energy Modeling System (NEMS/ACCF/NMA)*, 2008. The Heritage Center for Data Analysis[32] examining a scenario of 70 percent emission reductions by 2050, found cumulative GDP losses of nearly $7 trillion in 30 years, single-year GDP losses exceeding $600 billion; and annual job losses exceeding 800,000 in some years. See Kreutzer and Campbell, *CO2-Emission Cuts: The Economic Costs of the EPA's ANPR Regulations*, Oct. 29, 2008.

[33] *See CRA Report for Congress, Climate Change: Costs and Benefits of S.2191* (May 15, 2008).

mismatch between the timing of emission reduction requirements and the availability of CCS technology. EPA's November 2007 study recognized this fact:

> Detailed electricity sector modeling suggests many existing coal plants are no longer economic to run and operate. Economy-wide models indicate that fossil fuel usage peaks in 2010 with a slow decline to 2050.[34]

This timing mismatch is likely to be greatly exacerbated, with even greater cost impacts, under CAA regulation given the faster compliance deadline in the NAAQS program. Moreover, all studies of the costs of cap and trade programs are highly sensitive to the timing of the future availability of CCS and other technologies that may replace coal. Delays in these technologies raise costs even more, as EPA's 2007 study recognized:

> In economy-wide modeling, other non-fossil generation (e.g. biomass, wind and solar) plays a significant role under S. 2191. In the core scenarios, nuclear power grows by ~150% by 2050 from 2005 levels. In scenarios where technologies were constrained, i.e., nuclear power growth limited to ~ 75%, delay of CCS deployment until 2030 or limited use of biomass for electricity generation, costs were significantly higher: GHG allowances prices increased more than 80% in 2030 and 2050 and GDP losses increased by more than 150% in 2030 and 80% in 2050.[35]

In sum, EPA must produce a realistic estimate of the cost of compliance with CAA regulation under a variety of potentially applicable CAA programs and considering a wide range of variables that could affect cost. ***Among these variables are: assumptions as to the stringency of the targets, recognizing NAAQS attainment deadlines; assumptions about what technologies are available and deployed when there are constraints on coal, recognizing that unfettered growth of nuclear and biomass power may not occur; and the availability (or unavailability) of natural gas imports as substitute fuel under cartel conditions.*** EIA conducted its analysis of S. 2191 with a set of assumptions that assume all of the above constraints. EPA must do the same. This information is critical for determining whether and how to regulate GHGs under the CAA.

V. The ANPR Does Not Give Meaningful Attention to the Prospect that CAA Regulation of GHGs Will Be Counter-Productive to the Nation's Energy Independence and Security Goals.

The ANPR does not adequately discuss the prospect that GHG regulation under the CAA will require reductions in the use of coal as a fuel for electric generation, as a fuel for

[34] The United States Environmental Protection Agency's Analysis of Senate Bill S.2191 in the 110th Congress, the Lieberman-Warner Climate Security Act of 2008, March 2008, http://www.epa.gov/climatechange/economics/economicanalyses.html#s2191.

[35] *Id.*

transportation in the form of coal-to-liquids, and as a substitute for natural gas in the form of coal-to-gas in a range of processes. Yet reduction in the use of coal will increase the nation's dependence on imported fuels in contradiction of the goal of energy independence and security. Again, coal is our largest domestic source of energy; we cannot realistically achieve energy independence in a growing economy if regulatory policies prevent the nation from exploiting this resource.

A. Electric Generation Sector.

For the electric generation sector, the most likely large-scale replacement for coal, particularly over the short and intermediate terms, is natural gas-fired generation. Yet conventional U.S. production of natural gas is flat or declining, and Canadian imports are declining. Imported LNG is already the fastest growing source of natural gas for the U.S., and those imports are likely to increase significantly if GHG regulation results in reductions in the use of coal.

The Department of Energy (DOE), in its comments on the ANPR, emphasized the danger that "regulating GHGs from stationary sources under the CAA could force a drastic shift in the U.S. power sector."[36] DOE warned in its comments that the result of switching from coal to natural gas would be increased imports of LNG at much higher prices. According to DOE:

> If CAA regulation of GHG emissions from stationary sources forces or encourages a continued move toward natural gas fired electric generating units, there will be significantly increased demand for natural gas. Given the limitations on domestic supplies . . . much of the additional natural gas needed likely would have to come from abroad in the form of [LNG]. The LNG would have to be purchased at world prices, currently substantially higher than domestic natural gas prices and generally tied to oil prices (crude or product)….***Among other effects, a large policy-forced shift towards increased reliance on imported LNG would raise energy security and economic concerns by raising domestic prices for consumers (including electricity prices) and increasing U.S. reliance on foreign sources of energy***.[37]

Indeed, even without national GHG regulation, the country is already experiencing another "dash to gas" to replace previously planned new coal-fueled electric generating stations that have been canceled or delayed in light of uncertainty as to national climate change policy. According to a very recent report by the North American Electric Reliability Corporation (NERC), 2008 projections of new gas-fired generation for the years 2008 to 2016 show a 20,000 MW increase as compared with projections just a year ago, for a total of more than 400,000 MW

[36] 73 Fed. Reg. at 44,369 (emphasis supplied).

[37] *Id*. at 44,369.

of new gas generation planned over this period. According to NERC, nearly all of the growth in peak load demand for this period is projected to come from gas.[38]

A report earlier this year by the National Energy Technology Laboratory (NETL) expressed the same concern. According to the report, "[b]y 2016, in the absence of 18 GW of forecasted new coal-fired plants, the addition of natural gas plants to supplant these kWh would demand 1.4 Tcf/year, or almost all of the presently forecasted LNG growth." If electricity growth is higher due to a better economy, an additional 2.3 Tcf of natural gas generation will be needed. The report noted that the only way to support these levels of LNG imports would be significant increases in natural gas prices. The report also noted that climate change regulation could exacerbate this situation, to the extent existing coal generation switches to natural gas to meet GHG emission reduction targets. The report further noted that consumption of natural gas by U.S. power generation could more than double by 2016, with the existing fleet of gas generators operating at higher capacity factors and new gas generation being built.[39]

The only way to meet this increased demand is through increased imports of LNG. Every major natural gas forecast projects that LNG will fill a significant portion of the U.S.'s future natural gas needs regardless of climate change regulation. EIA's 2007 annual assessment forecasted major increases in LNG imports into the U.S., constituting 50 percent of the incremental 2030 vs. 2004 gas supply, with LNG imports rising from 0.5 Tcf to 4.5 Tcf per year.[40] Other forecasters see major LNG imports into the U.S. rising to 5 Bcf/day to 15 Bcf/day from 2010 to 2020. As stated by NETL:

> Since 2001, perceptions of natural gas supply and consumption have been successively ratcheted down, without any assurance the decline has halted. Nonetheless, recognition of the extremely difficult natural gas supply situation facing the United States has not been fully appreciated in recent energy and climate change analyses. Policies that encourage the use of natural gas to substitute for coal in power generation could very well lead to spectacular price increases for households and industry. *As prices are pushed higher the need for more LNG will create closer links to the world oil price, setting the stage for the marginal price of U.S. electricity to be set by the whims of foreign oil/LNG suppliers, for the first time in U.S. history. This blind eye towards U.S. energy security extends to the inability to recognize that the nation's coal supply could help the U.S. forestall this situation.* The current opposition to baseload power, and in particular coal-fired plants, in anticipation of climate change legislation, will have serious and damaging implications for the reliability of electricity

[38] North Am. Elec. Reliability Corp., *Climate Policy Critical to Grid Reliability*, (Nov. 10, 2008) (available at http://www.nerc.com).

[39] *See* Nat'l Energy Tech. Lab., *Natural Gas and Electricity Costs and Impacts on Industry – A White Paper on Expected Near-Term Cost Increases* (April 28, 2008) (emphasis supplied).

[40] *See* U.S. Dept. of Energy, *Annual Energy Outlook 2007* 42 (2007).

> supply and the viability of the U.S. economy in the initial, costly period of adjustment to a carbon control paradigm.[41]

GHG regulation will also likely cause increased reliance on LNG imports as a result of the increased cost that domestic natural gas producers will experience in complying with GHG emission reduction requirements. For instance, in a study for the American Petroleum Institute, ICF International estimated that the Lieberman-Warner bill would cause overall U.S. natural gas production to decline from base case projections by about 3-4% in 2012, about 5% to more than 6% in 2020, to over 12% in 2030 depending on mitigation assumptions. Over the 2010-2030 period, about 20.4-30.8 Tcf of natural gas production would be lost, which is roughly equal to one and one-half years worth of production.[42]

The effect would be same on petroleum refining, as the increased cost moves refining overseas, leading to increased imports of refined petroleum products. According to ICF, GHG emission reduction requirements under the Lieberman-Warner bill would reduce U.S. refinery input by about three million barrels a day off a base case level of about 18.5 million barrels a day in 2020. Total U.S. imports of crude oil plus refined petroleum products are estimated to shift from about 15% refined petroleum products in the 2020 base case to about 29% under Lieberman-Warner.[43]

Increased reliance on LNG imports is obviously at odds with the nation's energy independence and security goals. In addition to the concerns about having to import more rather than less energy, is the problem the nation has with the probable sources of imported energy. Russia, Iran, Qatar, Saudi Arabia, United Arab Emirates, Nigeria, Algeria, Venezuela and Iraq collectively control 75 percent of world natural gas supplies, ***with Russia, Iran and Venezuela being the three largest suppliers of new incremental reserves***. The three largest suppliers have more "monopoly power" in natural gas than OPEC has in oil. The U.S. competes to import LNG with the European Union and Japan, as well as China and India, which creates significant upward pressure on prices and great uncertainty as to supply availability. The concentration of gas reserves in a handful of hostile or potentially hostile countries ensures that the U.S. will face a long-term struggle for supplies in the international LNG markets. As noted by the EIA, "[g]eopolitical developments likely will continue to play a major role in energy prices and supplies, as has been the case in Nigeria and elsewhere. Lastly, and perhaps most importantly, the degree of competition from other countries will be a crucial variable that determines the actual flows of LNG to the United States."[44]

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[41] *See* Nat'l Energy Tech. Lab., *Natural Gas and Electricity Costs and Impacts on Industry – A White Paper on Expected Near-Term Cost Increases* 11 (April 28, 2008) (emphasis supplied).

[42] ICF International, *Addendum to Impact Assessment of Mandatory GHG Control Legislation on the Refining and Upstream Segments of the U.S. Petroleum Industry – Lieberman/Warner Climate Security Act of 2007* (April 2008).

[43] *Id.*

[44] Damien Gaul & Kobi Platt, U.S. Department of Energy, *Short-Term Energy Outlook Supplement: U.S. LNG Imports – The Next Wave* 8 (2007) (available at www.eia.gov/emeu/steo/pub/pdf/LNG Jan2007.pdf).

Concerns that geopolitics will influence U.S. access to overseas natural gas supplies intensified last month when Russia, Iran and Qatar – at a meeting in Iran – announced an intention to create a natural gas cartel modeled on OPEC that will control 60 percent of world natural gas supplies. As quoted in the October 22, 2008 *The Guardian*, "Alexey Miller, chairman of Russia's Gazprom, said they were forming a 'big gas troika' and warned that the era of cheap hydrocarbons had come to an end. 'We are united by the world's largest gas reserves, common strategic interests and, which is of great importance, high cooperation potential in tripartite projects,' he explained." According to Gholamhossein Nozari, Iran's petroleum minister, "'[t]here is a demand to form this gas OPEC and there is a consensus to set up gas OPEC.'"[45]

B. Transportation Sector.

In addition to coal's vital role in the electric sector, coal can also be converted to provide substantial amounts of transportation fuels and synthesis gas to displace significant amounts of imported crude oil, refined products, and natural gas. In a March 2006 report to the Secretary of Energy, the National Coal Council forecast production of 4.6-5.6 million barrels per day (2.6 million barrels/day of liquids directly and 2-3 million barrels per day indirectly (EOR)) and 4 trillion cubic feet per year by 2025:

- Coal to Liquids (CTL): Application of coal-to-liquids technologies would move the United States toward greater energy security and relieve cost and supply pressures transportation fuels by producing 2.6 million barrels per day of liquids (ultra low sulfur diesel, jet fuel and gasoline). Coal to EOR Production from Injected CO_2 (CTEOR)

- Enhanced oil recovery (EOR) from injection of captured CO_2 could potentially lead to production of an additional 2 to 3 million barrels of oil per day, based on a technically recoverable reserve base of up to 89 billion barrels in 10 basins. Captured CO2 can also be used to produce methane from coalbeds.

- Coal to Synthesis Gas (CTG): Using coal to produce NG and as replacement for NG in chemical processes would ease supply pressures by providing an alternative to at least 15% of America's annual NG consumption, or the equivalent of 4 trillion cubic feet (Tcf) per year.

- Coal to Ethanol (CTEtOH): Increasing the use of coal for heat and electricity in the production of ethanol would reduce costs and displace oil and NG by significant amounts while utilizing an additional **40 million** tons of coal per year, thereby freeing up NG for other uses and relieving price pressures.

- Coal to Hydrogen (CTH2): Development of a fleet of coal-to-hydrogen plants would mean that coal could satisfy at least 10% of the nation's transportation

[45] Terry Macalister, *Russia, Iran and Qatar Announce Cartel that will Control 60% of World's Gas Supplies*, The Guardian (Oct. 22, 2008) (available at http://www.guardian.co.uk/business/2008/oct/22/gas-russia-gazprom-iran-qatar).

needs with FreedomCAR efficiencies.[46]

C. Conclusion.

The possibility that aggressive climate change regulation might result in significant increases in imported energy counsels great caution in how EPA approaches GHG regulation under the CAA. Because coal is the nation's most abundant source of energy, it is foolish to think that we can reduce foreign sources of energy without continuing to use coal. Again, the key to reducing domestic GHG emissions without having the perverse effect of increasing our dependence on foreign energy suppliers is to properly sequence GHG reduction requirements with the development of technology and infrastructure to capture and store carbon dioxide emissions.

VI. The ANPR Does Not Give Meaningful Attention to the Prospect that CAA Regulation of GHGs Could Damage the Reliability of the Electric Grid.

EPA's consideration of GHG regulation under the CAA occurs at a time when the nation faces the need for significant new investment in electric generation and transmission infrastructure in order to maintain system reliability. Regulation that prevents the existing fleet of coal-fired electric generating stations from operating, or that disincents the use of coal for new generating stations, may lead to service disruptions as electric supply becomes unable to meet electric demand.

NERC's *2007 Long-Term Reliability Assessment* reached the following conclusions:

- Long-term capacity margins on the nation's transmission system are inadequate to protect these systems from interruptions such as brownouts or blackouts. Absent immediate investments, this condition will worsen over the next decade.

- Projected increases in peak demand for electricity exceed projected additions of generation capacity.

- The areas of greatest concern are California, the Rocky Mountain states, New England, Texas, the Southwest, and the Midwest.

According to NERC, generation reserve margins have declined steeply from 30-40 percent in the early 1990s to only 17 percent last year. Minimum requirements are generally 12-15 percent. NERC projects that this trend will continue, with margins falling below minimum requirements by 2010. Some regions of the country – the Rocky Mountain states, Texas, the Southwest and New England – are projected to fall below minimum reserve requirements by next year.

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[46] See http://nationalcoalcouncil.org/Documents/NCC_Report_Vol1.pdf.); http://nationalcoalcouncil.org/Documents/NCC_Report_Vol2.pdf.

Significant new generation must be added to the system, 120 GW by 2016, according to NERC. Yet NERC found that U.S. generation capacity is expected to grow by only eight percent between 2007 and 2016, far short of the projected load growth of 18 percent during that period.

Renewable resources, particularly wind generation, are projected to grow significantly in future years. Yet wind generation, while it will be an important part of a national portfolio of generation resources, cannot be relied on to meet all or most of future load growth. Wind is an intermittent resource and historically operates at capacity factors of about 30 percent. While newer wind turbines are expected to operate at higher capacity factors, nevertheless wind cannot supply round-the-clock electricity and indeed tends to operate the least when it is needed most during peak periods of electric usage when it is hottest or coldest.

The U.S. transmission system also faces a significant need for new infrastructure investment. According to NERC data, the U.S. may require more than 14,500 miles of new transmission lines by 2016. According to its 2006 *National Electric Transmission Congestion Study*, the U.S. Department of Energy found a number of critical congestion areas in both the Western and Eastern Interconnections. Because of congestion, grid operators may have to curtail service to consumers in some areas in order to protect the reliability of the grid as a whole. Higher costs result, and unless major new transmission is built, the risk of blackouts or brownouts increases.

Given the challenges facing reliability of the nation's electric system, EPA must be very careful in addressing climate change not to take action that will exacerbate reliability concerns. The system is rapidly moving into deficit; it is not capable of absorbing reduced electric generation from the nation's fleet of coal-fired powerplants or disincentives to the construction of new coal-fired powerplants. Coal must remain an important part of the nation's electric system in order for that system to provide electricity reliably to consumers. ***Once again, rapid and wide scale deployment of CCS technology is the key to reducing GHG emissions from coal-fired generation; if EPA attempts to force GHG regulation that prevents coal-fired powerplants from operating or being built before CCS technology and its infrastructure is commercially available, the reliability of the nation's electric system will be imperiled.***

VII. GHG Regulation Could Also Result in Leakage of Jobs Overseas, Including in the Mining Industry, Harming International Competitiveness and Offsetting Any GHG Reduction Gains.

The ANPR asked for comment on the impact of domestic GHG regulation on leakage and international competitiveness.[47] This is a particular concern for NMA members in the metals and minerals industries given that those industries are highly energy intensive. Spending on energy and electricity by both the nonferrous metals manufacturing and metal mining sectors represents up to 30 percent of their total costs. Their competitiveness is therefore highly sensitive to increases in energy costs.

At the same time, these sectors, along with other energy and GHG intensive industries, particularly those in the commodities sectors, are traded and priced subject to global market

[47] 73 Fed. Reg. at 44,354.

conditions. For instance, many metal and mineral commodities are traded on international markets, such as the London Metals Exchange (LME) and the New York Commodities Exchange (COMEX), or sold under negotiated contracts. In general, prices for commodities reflect global supply and demand conditions, and costs of supplying a commodity vary greatly depending on factors such as ore quality, technology, input costs and distances to markets. Like most markets, commodity markets consist of individual firms that are price-takers, and the world price is determined by global supply and demand conditions.

Because prices for commodities are typically set by international markets, the affected industries have limited ability to pass on the net compliance costs to their customers. Thus, unlike other industries NMA's members cannot pass increased energy costs resulting from GHG regulation downstream.

As a result, the ability of these industries to maintain competitiveness can be adversely affected if they are required to incur substantial costs not borne by competitors in countries not subject to similar climate policies. EPA GHG regulation therefore will create incentives for these industries to locate overseas to areas that do not regulate GHGs at all or with less stringency than EPA's regulations. U.S. competitiveness and jobs will be damaged, without a reduction in GHG emissions.

At a minimum, EPA must carefully study the effect of any GHG regulations it proposes on the domestic mining and minerals industries. Any proposals EPA makes must contain measures to prevent these impacts from occurring.

Beyond direct and negative impacts to the mining industry, it is difficult to provide concrete information in response to the ANPR's question about the effect of regulation on leakage and international competitiveness given the array of programs discussed in the ANPR. However, any regulation that increases domestic energy costs damages international competitiveness; and the extremely aggressive regulation that EPA may undertake under, for instance, the NAAQS program could have extremely serious competitiveness consequences. For instance, NMA discussed above the likelihood that GHG regulation that reduces the use of coal will result in increased imports of natural gas. This will, of course, increase the nation's trade imbalances. High natural gas costs will also create demand destruction in manufacturing and offshoring of manufacturing jobs, a fact that we have already seen in the petrochemical and other industries. According to the Industrial Energy Consumers of America, high natural gas prices significantly contributed to loss of more than three million manufacturing jobs (19 percent) since 1990.[48]

In sum, NMA urges EPA to undertake a comprehensive analysis of the effect the numerous CAA programs it is considering for GHG regulation will have in this area. Special attention should be given to energy-intensive industries, such as the mining industry, which produce commodities priced in international markets.

[48] Legislative Proposals to Reduce Greenhouse Gas Emissions – An Overview Before the Subcomm. on Energy and Air Quality of the House Comm. on Energy and Commerce, 110th Cong. (2008) (statement of Paul N. Cicio, Pres., Indus. Energy Consumers of Am.).

VIII. CAA Regulation Will Inevitably Lead to Duplicative, Overlapping and Inefficient Regulation.

CAA regulation of GHGs will be inherently inefficient because it will likely duplicate other state and federal climate change programs. The most obvious example are the various state and regional cap-and-trade programs, such as the Regional Greenhouse Gas Initiative, or "RGGI" program, and similar programs that are being considered for adoption by other states to limit utility GHG emissions. EPA NSPS for the utility industry would be in direct conflict with those programs. The purpose of a cap-and-trade program is to attain sector-wide reductions in the most efficient and economical way by allowing the market to determine which individual sources should make reductions. That purpose is undermined if EPA were to require source-by-source reductions under NSPS. Similarly, assuming EPA adopted its own cap-and-trade program, such a program would overlap state programs and potentially subject industry to multiple cap-and-trade requirements.

Plainly, Congress is the appropriate entity to develop a unified set of climate change regulations. The nation is unlikely to make progress in reducing GHG emissions in a cost-effective manner unless it adopts a single nationwide approach that provides industry with a uniform set of requirements to which it must adhere.

IX. The Supreme Court Decision Does Not Prevent EPA from Taking the Time Necessary to Carefully Examine the Economic, Energy and Policy Consequences of CAA Regulation.

Although EPA has been criticized for not acting quickly in response to *Massachusetts v. EPA*, in fact only a little more than a year has passed since the agency received the remand from the D.C. Circuit. On a matter of this complexity, EPA is fully justified in taking the time it needs to weigh the regulatory options and their various consequences. The *Massachusetts* court did not establish any deadline for EPA action on remand and, to the contrary, held that "EPA no doubt has significant latitude as to the manner, timing, content, and coordination of its regulations with those of other agencies."

Indeed, the D.C. Circuit has already rejected an attempt to mandamus immediate EPA action. *Massachusetts v. EPA*, No. 03-1361 (D.C. Cir. Jun. 26 2008) (*per curium*). As stated in the separate statement of Judge Tatel, concurring in part and dissenting in part, "[n]othing in Section 202(a), the Supreme Court's decision in *Massachusetts v. EPA*, or our remand order imposes a specific deadline by which EPA must determine whether a particular air pollutant poses a threat to public health or welfare." Slip op. at 2; *See also S.F. Chapter of A. Philip Randolph Inst. v. EPA*, No. 07-04936, 2008 U.S. Dist. LEXIS 27794 at *10-11 (N.D. Cal. Mar. 28, 2008) (also rejecting attempt to compel EPA action). The agency is thus under no legal obligation to act quickly.

NMA understands that many are arguing for quick action on an endangerment finding and believe that EPA can issue regulations fairly quickly. These arguments ignore the high risk that, for reasons discussed above, EPA will not be able to control the types of regulation that will be triggered once it starts down the regulatory path. A finding of endangerment triggers an obligation to regulate, and those regulations may have to be extremely broad indeed. EPA must

understand the full consequences of its actions before it commits to regulation through an endangerment finding.

X. EPA's Endangerment Analysis Is Flawed.

A. EPA's Analysis Violates the Information Quality Act.

The ANPR's endangerment analysis, including both the ANPR summary discussion and the Technical Support Document for Endangerment Analysis for Greenhouse Gas Emissions under the Clean Air Act, Sixth Order Draft (June 4, 2008) ("EPA Endangerment TSD"), relies on two source documents: the United Nations Intergovernmental Panel on Climate Change ("IPCC") report and the National Oceans and Atmospheric Administration ("NOAA") Unified Synthesis Report ("USR") published under the auspices of the United States Climate Change Science Program.

These documents, however, do not meet the requirements of the Information Quality Act, 44 U.S.C. § 3516, *et seq.*("IQA"); the Office of Management and Budget's Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies, 67 Fed. Reg. 8452 (February 22, 2002) ("OMB Guidelines"); and the Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency (updated as of 2005 ("EPA Guidelines").

Section 515 of the IQA directs federal agencies to maximize "the quality, objectivity, utility, and integrity" of information they prepare and disseminate and it requires agencies to adopt and follow implementing guidelines.

The OMB Guidelines note that the Act applies to the "creation, collection, maintenance, and dissemination of information." The basic standard of care is that information must be "accurate, clear, complete, and unbiased." Stricter and even more rigorous quality standards apply when the information is "influential," meaning it will "have a clear and substantial impact on important public policies ...." 67 Fed. Reg. at 6460.

EPA has adopted the same provisions in the EPA Guidelines, adding that "influential" data must involve "the best available science and supporting studies conducted in accordance with sound and objective scientific practices." EPA Guidelines at §§5.1, 6.1-6.2, 6.4.

The significant flaws of EPA's endangerment analysis under these authorities are as follows:

First, the IPCC report is not peer reviewed and is not based on transparent models.

Second, the USR is incomplete and at this point is the result of a flawed scientific process. It was published for comment on July 17, 2008, with only 8 of the 21 underlying and supporting Synthesis and Assessment Products (SAPs) finalized. NOAA withdrew the USR after complaints about the lack of the SAPs and other deficits under the Information Quality Act. Over 500 pages of comments have been filed as "requests for correction" under the Information Quality Act.

Third, much of the scientific evidence put forth by the staff of the EPA in the proposed ANPR and the TSD omits significant climate science data published after 2006, as well as a comprehensive review of the best available in the peer reviewed scientific literature.

EPA is proposing to regulate greenhouse gas emissions from virtually every facet of commercial, industrial, and residential activity in the United States. Obviously, this is an important public policy. Thus the data upon which this policy is based must meet the most stringent and rigorous quality criteria. The ANPR data fails this test.

B. EPA's Analysis Fails to Consider the Detrimental Effects to Health that Will Result from Increased Energy Costs.

One of the most widespread and strongest research findings in the field of medical population statistics is that the higher the social and economic status (holding age and sex constant), the lower the probability of illness and mortality. This theory has been well documented over decades of research.[49] The World Health Organization, the World Bank, and other noted institutions agree with this fact. EPA must consider this information in its endangerment analysis.

For energy costs, the theory has been demonstrated and developed in D.E. Klein & R.L. Keeney, *Mortality Reductions from Use of Low-Cost Coal-Fueled Power: An Analytical Framework* (Nov. 2005); *see also* M. Harvey Brenner, *Health Benefits of Low-Cost Energy, An Econometric Case Study*, Environmental Manager (Nov. 2005). As set forth in the Klein and Keeney report, in the 1980s, the noted political scientist Aaron Wildavsky formulated the concept of the "richer is safer" (also referred to as "wealthier is healthier"). In essence, this link between wealth and health relies on two facts. ***First, when individuals incur higher costs of regulatory actions – such as higher prices for their energy use – less of their income is available for other purposes. Second, individuals tend to use additional disposal income in ways that on average reduce their health and safety risks and therefore reduce deaths. Accordingly, when higher energy costs reduce the disposable income available for other purposes, this can increase other health and safety risks to individuals.***

Money spent on energy costs is not available to meet other household needs. With more income, individuals tend to spend more on health care for themselves and their children, purchase more safety equipment, eat a more nutritious diet and take other actions that decrease the likelihood of premature death by illness or accident. Conversely, individual reductions in disposal income tend to increase health and safety risks and the resulting deaths. ***Similarly, higher unemployment has been shown to have an adverse effect on safety, health and longevity.***

[49] *See, e.g.*, M. Harvey Brenner, *Commentary: Economic Growth is the Basis of Mortality Rate Decline in the 20th Century--Experience of the United States 1901-2000* 34 INT. J. EPIDEMIOL 1214-21 (2005); M. Harvey Brenner, *Personal Stability and Economic Security* 8 SOC. POLICY 2-4 (2000).

There are many mechanisms that support the richer-is-safer and wealthier-is-healthier concepts. Some are directly due to individuals' actions and others are due to societal action. Here are a few examples:

- When individuals have less disposable income, on average the following occur: nutrition is typically poorer, babies will have less prenatal health care, adults may forgo physical exams and preventative medical expenses (e.g., pap smears) and postpone safety purchases (e.g., home fire alarms), and individuals are less likely to attend smoking clinics to stop smoking or spend as much to reduce stress.

- A general increase in the standard of living influences societal structure. Health and safety are improved via social mechanisms such as education. With more disposable income, students from poor families will more likely complete high school and attend college. Better education changes both one's knowledge about what is safe and healthy and one's practice to pursue them. For example, sanitary procedures are improved, homes are "child-proofed" to reduce accidents, and more people start wearing seat belts.

- A wealthier society leads to the development of a better and more diverse medical research establishment, to larger markets to stimulate creation of safer products, to an infrastructure of health clubs and many opportunities for exercise, and to the societal resilience to rapidly and efficiently attack new unforeseen problems threatening our collective health and safety.

The fact that additional disposable income is used in ways that on average improve health and reduce the mortality risks of individuals applies to statistical averages and not necessarily to any specific individual whose behavior and risks contribute to those averages. For some individuals, additional income facilitates riskier and/or unhealthier activities. However, over broad populations the pattern is clear.

In most cases, reduced household income will mean cutting back on expenditures, including some that may have a direct impact on health and longevity. This is particularly true for lower-income homes with fewer surplus resources. For example, less disposable income may necessitate dropping insurance coverage, foregoing or delaying medical care, or denying children access to better schools or advanced education. In some cases, reduced household incomes may lead to poor nutrition or the family having to live in unsafe conditions. These are just a few of the factors that can lead to lesser health and increased mortality. Collectively, there are measurable health and mortality risks associated with significant reductions in household incomes and higher unemployment that can result from increased power costs.

These estimates of lesser health and increased mortality are not spread evenly across the population; the most vulnerable in our society are often the hardest hit. ***Increases in energy costs are regressive because, as data and research by the U.S. Department of Energy show, low-income families must spend a greater percentage of their household earnings to cover energy-related expenditures. Further, lower-income families incur a greater mortality risk than do higher-income families when income is reduced.*** As a result, the health and mortality

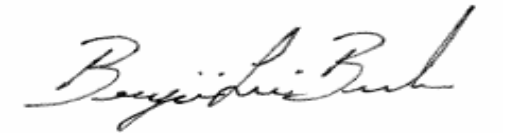
impacts are highly concentrated in lower income groups. These disproportionate effects would disadvantage certain minority communities where the average household incomes may be lower.

X. Conclusion.

The CAA is not designed to effectively address the complex and global nature of GHG emissions and climate change. If the objective is to achieve sustainable reductions in GHG emissions, we submit that EPA must conclude that the CAA is inadequate to the task. In any event, NMA urges the agency to engage in a thorough and comprehensive analysis of the cost and consequences of regulation under all possible scenarios in which GHGs could be regulated under the Act.

NMA appreciates the opportunity to share our views with the agency. Should you have any questions, please feel free to contact me at (202) 463-2643 or via email at bbrandes@nma.org.

Sincerely,



Benjamin Brandes
Director, Air Quality
National Mining Association