House Committee on Oversight and Government Reform

Hearings on "Rhetoric vs. Reality: Does President Obama Really Support an "All-of-the-Above" Energy Strategy?"

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The Impact of the Administration's Policies on Coal

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Introduction

My name is Peter Glaser. I am a partner in the Washington, D.C. office of the law firm of Troutman Sanders LLP. Although I represent clients in the coal industry, my testimony today is my own and does not necessarily represent the views of any of my clients. I am not being compensated by any client for this testimony.

Based on a review of this Administration's policies towards coal, it can only be concluded that coal does not represent a portion of the Administration's "all-of-the-above" energy policy. In other words, when the Administration says it is pursuing an "all-of-the-above" energy strategy, it does not include coal in the "all-of-the-above." This conclusion is plain from a review of the policies the Administration, and particularly the Environmental Protection Agency (EPA or Agency), is implementing as to new and existing coal-fueled electric generating stations, in the use of coal in manufacturing and industrial boilers, as well as in the permitting of coal mines.

EPA's policies are having their intended effect. The Agency now has one rule that effectively prohibits the construction of new coal-fueled electric generation and another proposed rule that will accomplish the same result. It is in the process of implementing a suite of

power sector regulations that is leading to a large number of retirements of existing coal-fueled electric generation. And it is making it extremely difficult to permit coal mines in Appalachia.

EPA's anti-coal policies are motivated by what appears to be the misplaced conclusion that such policies are needed to protect the public health and welfare. EPA, however, is misguided. EPA's own statistics show that over the last several decades, even as the use of coal for electric generation has increased, emissions of traditional pollutants from coal-fueled generation has steadily declined. This is because coal has become a steadily cleaner fuel as pollution control technology has developed.

Moreover, EPA has far overstated the health and welfare benefits its rules are creating. The best case in point is EPA's Mercury and Air Toxics Standards (MATS) rule, where EPA estimated a demonstrably preposterous $33 to $99 billion in annual benefits in 2016 based mostly on the claim that the rule will prevent between 4,200 and 11,000 premature deaths per year. But close analysis reveals that only between $500,000 and $6 million per year of those benefits actually results from reducing the hazardous air pollutants the rule was designed to control. The rest of the benefits come from what EPA calls the "co-benefit" or reducing fine particle concentrations in the atmosphere, as control technologies utilities install to control acid gases (for which EPA is unable to monetize any benefits at all) also reduce sulfur dioxide emissions. But EPA's hugely overstated benefit numbers for reducing fine particle concentrations in the air result from a string of suspect assumptions, including the double-counting of benefits that occur from the regulations the Agency has adopted to directly control sources of fine particle matter. And virtually all of the benefits EPA attributes to the MATS rule result from reducing fine particle concentrations to a level below that in the fine particle National

Ambient Air Quality Standards (NAAQS), even though EPA set the NAAQS at a level that it concluded is protective of human health with a margin of safety.

Instead of promoting the public health and welfare, EPA's anti-coal regulations will actually harm the public health and welfare. Studies show that the rules will cause very large costs to electric ratepayers, will eliminate jobs (even net of "green jobs" created), and will harm the economy. These costs will disproportionately fall on those least able to afford them. Lower-income electric consumers and senior citizens living on fixed incomes will be forced to curtail the use of electricity, which means they will reduce air conditioning usage in the summer, which is a direct health hazard. Higher energy costs also reduce the ability of lower-income and fixed-income people to pay for health care and good nutrition, and those who lose their jobs because of EPA's misguided energy policies will likely lose their health insurance.

EPA's policies also affect the reliability of the electric grid, threatening blackouts which tend to occur when the weather is hottest and air conditioning is needed the most. Blackouts represent a serious threat to both public health and public safety. EPA's estimates of the number of retirements its rules will cause are dramatically understated, far below even the number of retirements that have already been announced as a result of EPA's regulations. Yet EPA has never produced a valid study of how its regulations will affect the reliability of the grid, and indeed it has disregarded recommendations from the Federal Energy Regulatory Commission that it cumulatively assess the effect of all of its regulations on grid reliability.

In the end, EPA fails to grasp that coal is good for the economy and good for Americans. As global economic conditions become increasingly competitive, America must look to where it has competitive advantages as compared with other countries. Coal is one of our competitive strengths. There is more heating value in American coal reserves than in Saudi oil reserves.

Coal is comparatively low-cost to produce and transport, its price has been low and stable over time, it is easy to stockpile, and it has been the bedrock of the American electric system for a long time. It would be a serious mistake to think that America can be competitive without coal. Certainly some of our main international competitors, including India and China, do not see the need to reduce coal usage. To the contrary, they are significantly increasing their use of coal.

In sum, this Administration, and particularly EPA, has been actively adverse to coal, and that policy hurts America.

Administration's Policies Prevent the Construction of New Coal-Fueled Electric Generation

EPA now has one final rule and one proposed rule that, unless changed or overturned in court, will prevent the construction of new coal-fueled electric generation in the United States. The first is the now-final MATS rule and the second is the proposed greenhouse gas New Source Performance Standards rule for new electric generating units ("GHG NSPS rule").

EPA's MATS rule sets standards for hazardous air pollutant (HAP) emissions from new coal plants at such a stringent level that vendors of air pollution control equipment have told EPA that they cannot guarantee that their equipment will control emissions to the level of those standards. In a petition to EPA to reconsider the rule, the Institute for Clean Air Companies (ICAC), a trade association for "approximately 100 companies that comprise nearly all the suppliers of air pollution control equipment and systems as well as measurement and detection equipment," told EPA that the mercury standard for new coal generators is set at a level that cannot be detected by pollution control measurement systems. As a result, "ICAC member companies are not in a position to offer commercial guarantees to their customers to meet this particular standard." ICAC concludes that "[t]his standard will make it nearly impossible to

construct new coal-fired EGUs because financing of such units requires guarantees from equipment suppliers that all emission limits can be met."

Babcock and Wilcox, a leading pollution control equipment vendor, concurred as to all three MATS rule standards for new coal generation: "As a leading supplier of HAPs emissions control equipment as well as emissions monitoring systems for the US electric utility industry, Babcock & Wilcox Power Generation Group, Inc. (B&W) asserts that the particulate matter (PM), HCl and mercury emission limits established for new units are not measurable with sufficient accuracy for reliable control of the emissions reduction systems and sustainable long term emissions compliance."

Recognized industry expert Ralph E. Roberson concurs. In February 2012 testimony before the Subcommittee on Energy and Power of the House Committee on Energy and Commerce, Roberson testified that "EPA's new-unit standards will prevent the construction of new coal-fired EGUs…. I am convinced that no pollution equipment vendor will offer guarantees that their equipment will meet these standards. Absent those guarantees, developers will be unable to obtain financing of the hundreds of millions of dollars that this equipment will cost. And absent that financing, new units will not get constructed."

EPA's proposed GHG NSPS would also kill new coal-fueled units. The rule sets a performance level for new coal units equivalent to what EPA says a combined cycle natural gas combustion turbine can meet – 1000 lbs. CO2/MWh. Yet EPA recognizes that even a modern, efficient supercritical coal plant can only meet a standard of 1800 lbs. CO2/MWh. EPA says that a coal plant with carbon capture and storage (CCS) could meet the 1000-lb. standard, but it also recognizes that CCS technology is not commercially competitive. It cites to Department of Energy/National Energy Technology Laboratory "estimates that using today's commercially

available CCS technologies would add around 80 percent to the cost of electricity for a new pulverized coal (PC) plant." CCS is a technology that holds promise, but it has not been demonstrated to be commercially available at scale. As important, the basic legal and regulatory architecture is not in place to make CCS a reality. There is no comprehensive permitting system for storing CO2 underground for the very long time periods required, nor is there a liability structure in place to cover potential liabilities over this long term. A July 22, 2009 paper prepared for the American Public Power Association entitled *Geologic CO2 Sequestration, Issue Spotting and Analysis White Paper*, details the numerous legal and regulatory impediments that must be resolved before CCS can become a commercial reality. Nearly three years later, these impediments remain unresolved. As the Administration's CCS task force explains:

> In addition to the challenges associated with cost, these projects will need to meet regulatory requirements that are currently under development. Long-standing regulatory programs are being adapted to meet the circumstances of CCS, but limited experience and institutional capacity at the Federal and State level may hinder implementation of CCS-specific requirements. Key legal issues, such as long-term liability and property rights, also need resolution.

See Executive Summary: Report of the Interagency Task Force on Carbon Capture and Storage August 2010*,* at 2. Hence, for EPA to say that new coal generation can be built if it uses CCS is no different than EPA saying that no new coal plants can be built for the foreseeable future.

EPA states in the proposed GHG NSPS rule that the rule will incent CCS and that CCS costs will come down over time as more units are built, but the opposite is the case. It may be true in general that the cost of the first unit in a new industry is high, while the cost of the thousandth unit is lower, but that maxim won't apply in an industry where no one is allowed to build coal plants. There will be no way to get from the first unit to the thousandth unit.

EPA also states that new coal plants installing CCS can average their emissions over 30 years to meet the 1000-lb. standard. EPA states that a new unit meeting an 1800-lb. standard in

the first ten years of operation will be deemed to meet the standard over 30 years if it eventually installs CCS and its 30-year average emission are 1000 lbs. But this proposal is just a mirage. No unit can get financed if it will violate EPA standards in 10 years unless it installs technology that, at best, is only projected to be available in 10 years. Lending institutions putting more than a billion dollars at risk will require considerably more certainty than the *possibility* that the unit will avoid violating regulatory standards if in 10 years CCS technology proves to be ready both commercially and as matter of law and regulation.

The GHG NSPS seems to be motivated by the unfounded assumption that combined cycle natural gas plants emit less GHGs than coal plants. But there is a significant basis to question that assumption. Research indicates that, considered on a life-cycle basis, natural gas plants may emit as much of or more GHGs than coal plants. See Howarth, Santoro, Ingraffea, Methane and the greenhouse-gas footprint of natural gas from shale formations, A letter. Climatic Change, DOI 10.1007/s10584-011-0061-5; Howarth, Santoro, Ingraffea, Venting and leaking of methane from shale gas development: response to Cathles et al. Climatic Change, DOI 10.1007/s10584-012-0401-0; Tollefson, Air sampling reveals high emissions from gas field, Nature, Feb. 2012, p. 139.

Finally, EPA identifies what it says are 15 currently proposed coal units that it says would be grandfathered from the effect of the proposed GHG NSPS so long as they commence construction within one year of the date of the proposed GHG NSPS. But these units are subject to an EPA regulatory Catch-22. On the one hand, under the proposed GHG NSPS, they must begin construction within the one-year period or they will be subject to what even EPA concedes are project-killing CCS requirement (applying those standards "would likely result in the loss of [these project's] sunk costs and would likely cause multi-year delays, or even abandonment of

their plans to construct"). On the other hand, however, for the reason set forth above, EPA's MATS rule standards prevent these units from commencing construction. So as things now stand, these 15 units are caught in a regulatory bind that threatens their ability to construct and will result in their loss of tens of millions of dollars in sunk investment.

In sum, then, the clearest example of coal not being a part of the Administration's "all-of-the-above" energy strategy are these two rules that prevent new coal-fueled facilities from being built.

Administration's Policies Are Reducing the Use of Coal for Electric Generation

This Committee is by now familiar with the numerous regulations that EPA has adopted, proposed or is about to propose that, in toto, are leading to numerous retirements of coal-fueled electric generators, increasing the cost of electricity to consumers, and jeopardizing the reliability of the supply of electricity in the United States. In addition to the MATS Rule and the proposed GHG NSPS for new coal generators discussed above, EPA has (a) promulgated, based on its climate change "endangerment finding," the first-ever GHG regulations governing air quality permitting of large industrial and manufacturing facilities, including coal generators; (b) promulgated the Cross-State Air Pollution Rule (CSAPR), directed against coal-fueled generators in most states in the eastern two-thirds of the country; (c) adopted new and more stringent ambient air quality standards for nitrogen dioxide and sulfur dioxide; (d) proposed regulations governing the disposal of coal combustion residuals; (e) proposed regulations of cooling water intake structures; (f) will soon propose new air quality standards both for ozone and particulate matter; (g) will soon propose "guidelines" requiring states to develop GHG performance standards for coal-fueled electric generators; and (h) will soon propose effluent guidelines applicable to coal generators.

EPA has dramatically understated the impact of these regulations. For instance, EPA estimated that the MATS rule would cause 4.7 GW of coal-fueled generation to retire and the CSAPR rule would cause another 4.8 GW to retire. Yet as of today, with the CSAPR rule stayed in court and the MATS rule 3-year compliance period only having started to run, the number of retirements already announced far exceeds these EPA estimates. The National Mining Association tracks public announcements of retirements and has found that owners of coal-fueled units have announced that 57 power plants with 25.1 GW of power will retire specifically as a result of EPA's regulations. A large number of financial institutions and other third-party experts have determined that probably 30-60 GW of capacity will retire, with one financial institution estimate exceeding 80 GW.

EPA says that many of the units that are retiring would have retired anyway for economic reasons, principally low natural gas prices. But this conclusion is implausible. Currently low natural gas prices would only incent these units to run less or to be placed on stand-by, not retire. Prudent utilities would keep these units available against the likelihood that gas prices, which have proven to be very volatile in the past, will increase again in the future. What is forcing these units to retire permanently and prematurely is that they cannot meet EPA's MATS, CSAPR and impending additional standards without investing hundreds of millions of dollars of pollution control equipment.

Economic Impacts of the EPA Rules

EPA's anti-coal agenda is likely to create hugely negative impacts for electric consumers. In a September 2011 study performed for the American Coalition for Clean Coal Electricity (ACCCE) entitled *Potential Impacts of EPA Air, Coal Combustion Residuals, and Cooling Water Regulations*, the National Economic Research Associates (NERA) analyzed the impact of

four EPA rules – the MATS rule, CSAPR, the coal combustion residuals rule and the cooling water intake structures regulation. It noted the following effects:

- **Retirements**. It estimated ***39 GW of prematurely retired capacity by 2015*** among the current coal-fired power plants. This estimate represents additional retirements above those in the reference case (i.e., retirements predicted without the four regulations in place) and accounts for ***about 12 percent of the 2010 U.S. coal-fired electricity generating capacity***. This estimate does not include the potential effects of other potential requirements – notably potential greenhouse gas emission regulations.

- **Energy Market Effects**. Costs are projected to be approximately $21 billion (in 2010$) per year over the period from 2012 to 2020. The costs represent a total of ***$127 billion*** (present value in 2010$ as of January 1, 2011) over the period from 2012 to 2020. ***Capital costs for environmental controls and replacement capacity are about $104 billion.*** These costs include compliance costs for coal units that do not retire, capital costs for new capacity that would replace retiring coal units, and changes in fuel costs.

- **Natural Gas Prices**. The regulations are predicted to increase natural gas-fired generation by 19.7 percent on average over the period and increase Henry Hub natural gas prices by 10.7 percent on average. The increases in natural gas prices would lead to an ***estimated average increase in costs of about $8 billion per year for residential, commercial and industrial natural gas consumers***, which translates into ***an increase of $52 billion over the 2012-2020 period*** (present value in 2010$ as of 2011 discounted at 7 percent).

- **Electricity Prices**. Average U.S. ***retail electricity prices are projected to increase by an average of 6.5 percent over the period 2012 to 2020***, with prices in certain regions increasing considerably more than that.

- **Jobs**. Over the period from 2012 to 2020, about ***183,000 jobs per year are predicted to be lost***, net of "green jobs" created, due to the effects of the four regulations. The cumulative effects mean that over the period from 2012 to 2020, ***about 1.65 million job-years of employment would be lost***.

- **GDP and Income**. ***U.S. GDP would be reduced by $29 billion each year*** on average over the period, with a ***cumulative loss from 2012 to 2020 of $190 billion*** (2010$). ***U.S. disposable personal income would be reduced by $34 billion each year*** on average over the period, with a ***cumulative loss from 2012 to 2020 of $222 billion*** (2010$). The average annual loss in disposable personal income per household is $270, with a cumulative present value loss of about $1,750 (2010$) over the period from 2012 to 2020.

A more recent NERA analysis for ACCCE analyzed just the effects of the MATS rule. NERA used EPA's retrofit assumptions and costs to project the following impacts of the final MATS rule. It found:

- Compliance costs for the electric sector in 2015 are **$10.4 billion** (2010$). By comparison, EPA estimated compliance costs of $9.7 billion (2010$) in 2015. Total compliance costs based on NERA's analysis are **$94.8 billion.** EPA declined to provide total compliance costs, despite requests from Congress.

- Additional capital investments by the electric sector total **$84 billion** between 2012 and 2015. This represents an increase of 30 percent in electric sector capital requirements which, according to NERA, could cause financing challenges, credit downgrades and higher costs of borrowing.

- Labor wages decline significantly, which results in the loss of **180,000 to 215,000 jobs** in 2015. In addition, GDP losses total as much as **$112 billion**. Total household disposable income is reduced by as much as **$71 billion**. The largest annual loss in household income occurs in 2012.

Impacts of the EPA Rules on the Reliability of the Electric Grid

The wave of retirements caused by EPA's rules – combined with the fact that most coal-fueled units that are not retiring must be temporarily pulled from service in the next 2-3 years to install extensive pollution control equipment – threatens to undermine the reliability of the electric grid and to increase electric rates to consumers. The North American Electric Reliability Corporation (NERC), in its most recent long-term assessment of grid reliability, termed EPA regulation the number one risk to reliability. According to NERC, 1350 electric generating units at 525 stations will be required by these rules either to install controls or retire in the next several years.

This risk is being experienced across the gird, and the issue is not just whether the lights will stay on but how much it will cost to keep the lights on. Both the Electric Reliability Corporation of Texas (ERCOT), which is responsible for grid operations in most of Texas, and the Southwest Power Pool, which is responsible for grid operations in all or parts of 8 southwestern states, concluded that CSAPR threatens the ability of those organizations to keep the lights on. According to an SPP September 9, 2011 letter to EPA on CSAPR, there will be "negative implications to the reliable operation of the electric grid in the SPP region ***raising the***

possibility of rolling blackouts or cascading outages that would likely have significant impacts on human health, public safety and commercial activity." (Emphasis supplied.)

The Midwest Independent System Operator (MISO), which is responsible for interstate grid operations in a region consisting of all or parts of 11 U.S. states and the Canadian province of Manitoba estimates that 61 of 71 GW of baseload coal in the MISO region will require some action to comply with EPA's regulations over the next three years or sooner. Of those 61 GW, 13 GW are at immediate risk of retirement, according to MISO. MISO estimates that it will cost ratepayers $33 billion to retrofit or replace the 61 GW. MISO describes reserve margins as "plummeting." For example, "[r]etirement of 13 GW of coal-fired generation would cause MISO's current projected reserve margin for 2016 to plunge to 8.3 percent – 9.1 percent short of our required 17.4 percent reserve margin."

The problem may be similar in the 13-state (and District of Columbia) PJM region, where, according to PJM, 14 GW of generation have already announced plans to retire between May 2012 and 2015, "enough generation to produce enough power to supply Indiana's needs for a year." To alleviate the reliability problem, PJM recently approved nearly $2 billion to fund the cost of 130 separate electric transmission upgrades during this period. This is an unprecedented number of projects occurring simultaneously in the region, and with transmission development always being controversial and some of these projects requiring new rights-of-way, the prospect that all of these projects will not get built in time is concerning.

The recent PJM capacity auction for 2015-16 may be a harbinger of things to come. Capacity prices for PJM have been significantly increasing in the last several annual auctions, so that capacity payments for electricity delivered in 2015 – the year the UMACT takes effect – would be $137 per megawatt/month for most of PJM as compared to $16 today. This effect is most pronounced in northern Ohio, including Cleveland, which has significant transmission

bottlenecks. In this area, capacity prices in the most recent auction skyrocketed to $357. These high capacity prices may occur in other regions to the extent PJM transmission upgrades do not keep up with EPA-forced coal plant retirements, and new bottlenecks emerge.

EPA's response to all of this is to say that any grid reliability problems are local and can be solved. It is true that, as EPA belatedly recognizes, the perhaps the greatest problem its regulations pose to grid reliability is "local" in the sense that many of the retiring units, although they don't run frequently, are needed for local reliability reasons – in order to provide voltage support and black-start capability, and to provide critical additional power to the grid on the hottest days of the year. But calling a problem "local" does not mean it is confined to someone's neighborhood. Last year's blackout in San Diego and other areas of the southwest that affected more than a million people began with the actions of a single utility worker in Yuma, Arizona. The Northeast blackout of 2003 that affected an estimated 10 million people in Ontario and 45 million people in eight U.S. states began with conditions on one utility's system in the same area of northern Ohio where the current bottleneck exists.

Failure to Study and Adequately Address Grid Reliability Problem

Perhaps the most interesting facet of how EPA's regulations will affect the grid is that no one, not EPA, not FERC or anyone else, has attempted to study what the actual impact will be – and therefore what the cost of maintaining grid reliability will be. EPA's assessment of the effect its own rules will have on grid reliability consists of rule-by-rule resource adequacy analyses that examine whether the number of retirements that EPA (under)predicts will cause regional generation to fall below reserve requirements. In conducting that assessment, EPA assumed that power on the grid flows freely within broad regions and between regions. But that assumption is demonstrably wrong, as the grid is subject to bottlenecks that impede the flow of

power and local reliability requirements that require local generation or additional transmission. As the Federal Energy Regulatory Commission (FERC), NERC, regional transmission organizations (RTOs) and Independent System Operators (ISOs), and others have told EPA, the key concern for grid reliability is where retirements occur, as a unit in a particular location that is forced to retire could cause cascading reliability problems even in a region with overall excess power reserves. As FERC Chairman Wellinghoff testified at a September 14, 2011 hearing before the Subcommittee on Energy and Power of the House Energy and Commerce Committee, ***regional and national resource adequacy studies of the type EPA conducted are "irrelevant" in assessing reliability***. (Emphasis added). And as FERC Commissioner Moeller stated in an August 1, 2011 response to Senator Murkowski, referring to issues that relate to localized reliability concerns, "[a]ccording to the information that I received from Commission staff, they have pointed out to EPA that a reliability analysis should explore transmission flows on the grid, reactive power deficiencies related to closures, loss of frequency response, black start capability, local area constraints, and transmission deliverability." Yet this study was never done.

Moreover, although FERC itself rejected requests that it perform the needed reliability analysis, FERC strongly recommended to EPA on several occasions that EPA cease examining reliability impacts piecemeal on a rule-by-rule basis and instead examine the impact of all the EPA rules cumulatively. As summarized by FERC Chairman Wellinghoff in responses to questions from the Energy and Power Subcommittee following its September 14, 2011 hearing:

> Question: Why did Commission staff take the position that it was important to cumulatively assess the impact of all the upcoming EPA regulations? During meetings with EPA staff, did EPA explain its preference for completing "individual best case studies" (as opposed to a cumulative assessment), as suggested in the documents accompanying the Commission's July 27th letter?
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> Answer: ***Commission staff took this position because the effects to system reliability are based on the cumulative impact of all the proposed regulatory factors. I do not know why EPA did not do a cumulative assessment***.

(Emphasis added).

And according to notes of the FERC Office of Electric Reliability**,** EPA's analysis "focused only on the effects that the Transport Rules would have on the nation's electric generation capacity—specifically the reduction of coal plants [and] did not consider the cumulative impact from additional legislative initiatives, including water restrictions, coal ash byproduct sequestration or any renewable generation mandates" (note of 10/20/10 meeting with EPA in material produced by FERC for Senate Energy Committee); ***FERC OER "wants EPA to use a holistic approach when studying the impacts of the EPA rule … whereas EPA would like to do individual best case studies"*** (note of 11/4/10 meeting with EPA in material produced by FERC for Senate Energy Committee, emphasis added).

In order to deal with local reliability concerns, EPA has put a mechanism in place under which a unit needing more time to retire or install controls can ask EPA's Office of Enforcement and Compliance Assurance (OECA) for additional time to comply with the MATS rule. But this mechanism is likely to be ineffective. Under the MATS rule, utilities must install controls or retire within three years, with the possibility of a fourth year if granted by the applicable air permitting agency. Many utilities say they need more than four years. The OECA mechanism ostensibly is designed to give units a fifth year, but it doesn't do so. Under the mechanism, OECA states that it will issue an "administrative order" allowing a unit needed for reliability to keep running. But what OECA really means is that any unit that has not installed the necessary controls within three years (or four years if the permitting agency grants the extension) and keeps operating will be in violation of the Clean Air Act but that OECA will not seek to impose penalties as a result. But even if OECA does not seek to impose penalties, the unit will nevertheless be exposed to citizens suits for violating the Clean Air Act. Moreover, OECA says it won't even act on applications for the fifth year until the fifth year has begun, meaning that if

OECA denies the application the unit will be in violation of the Clean Air Act and subject to EPA enforcement action as well as citizens' suits. Additionally, referring to the possibility that OECA might issue an administrative order regarding the fifth year, OECA states, in its own italics to emphasize the point, *"EPA reserves the right to act at variance with these policies and to change them at any time without public notice."* Under these circumstances, EPA's fifth-year mechanism is wholly insufficient to address the serious reliability problem.

The Administration's Reliance on Natural Gas to Replace Coal Is Imprudent

It is no secret that the country is experiencing a repeat of the 1990s-era "dash for gas," with the country becoming increasingly dependent on natural gas for electric generation. The 1990s experience did not end well, with gas prices sharply increasing and a wave of bankruptcies by companies that had bet on sustained low natural gas prices.

We are told that this time will be different because of what is described as the fracking paradigm shift. Gas prices have dropped to very low levels, recently below even $2/MMBTU, although they have bounced back to over $2.50 since then. But will these low gas prices last, and what are the consequences if it doesn't? I am not a geologist and so cannot offer an opinion on how much fracked gas will be available in future years. But I have been in the energy industry long enough to realize that overreliance on one fuel for electric generation is a very bad idea. No one's crystal ball is good enough to predict the future. Utilities are forced to make very long-term, very capital-intensive resource decisions based on imperfect information and inherently unknowable projections of future energy prices. Just a few years ago, natural gas prices were above $13, now they are low. A review of Energy Information Administration (EIA) 10-year projections of natural gas prices over the last several decades will reveal that EIA has

frequently been wrong, often dramatically so. This is not the fault of EIA; they would be the first to admit that predictions are based on assumptions that often prove to be wrong.

Against this back-drop, it is a very bad idea for utilities to go all-in on natural gas. If natural gas prices begin to rise because of increased demand, yet we have shut down significant coal capacity, there will be no choice but to continue to use gas and pass the costs on to the consumers. Building substitutes for natural gas generation will take a long time, and meanwhile the ratepayer is exposed. And rising natural gas prices because of increased utility demand doesn't just harm electric ratepayers. It harms those who use natural gas for home-heating as well. Thus, over-dependence on natural gas is a double whammy for consumers who will face both increased electric and heating bills.

In contrast to historically fluctuating natural gas prices, coal prices have proved steady and low over time. Coal is this country's most abundant energy source – there is more heating value in America's coal than there is in Saudi Arabia's oil. It is hard to imagine any energy independence policy that excludes coal.

Of course, all sources of energy should be allowed to compete on a level playing field. If there has truly been a paradigm shift in natural gas supplies, then natural gas can prove its advantage in the market over time. I would still argue that there is an independent value in resource diversity, but ultimately the market will have a very large influence on utility resource decisions. But the problem we are facing today is not one of markets. It is EPA's thumb on the scales that is forcing utilities to retire large amounts of coal power and replace it with natural gas. This is wrong-headed. The government should not pick winners and losers in energy markets. History shows that such efforts are doomed to failure.

It is also more than a little ironic that the Administration's anti-coal policies create such an incentive for generators to switch from coal to natural gas when EPA itself is only beginning to address how it will regulate fracking. Many people wonder whether the Administration will ultimately make fracking regulation considerably more stringent in the future. The Sierra Club has begun a "Beyond Natural Gas" campaign in which it labels natural gas "[d]irty, dangerous, and run amok." According to the Sierra Club, "[n]atural gas drillers exploit government loopholes, ignore decades-old environmental protections, and disregard the health of entire communities. Fracking,' a violent process that dislodges gas deposits from shale rock formations is known to contaminate drinking water, pollute the air, and cause earthquakes. If drillers can't extract natural gas without destroying landscapes and endangering the health of families, then we should not drill for natural gas." The Sierra Club goes on to say that "[f]ossil fuels have no part in America's energy future – coal, oil, and natural gas are literally poisoning us. The emergence of natural gas as a significant part of our energy mix is particularly frightening because it dangerously postpones investment in clean energy at a time when we should be doubling down on wind, solar and energy efficiency."

Even assuming that natural gas proves to be as abundant as some are predicting, the infrastructure problems of bringing the amount of natural gas that is needed to market are daunting and have received insufficient attention. According to a July 2010 study by the Aspen Environmental Group for the American Public Power Association entitled *Implications of Greater Reliance on Natural Gas for Electricity Generation*, "[i]f all existing coal fired generation were to switch to gas today, overall natural gas demand would total 36 Tcf per year, or half again as much as today. Two-thirds of the natural gas produced in the U.S. would serve

electric power plants, compared to just under one-third today." As a result, according to the study:

> To deliver the 60 or so Bcf we use each day from the supply basins where gas is produced to the end-users who will burn it, we use 300,000 miles of natural gas transmission pipelines and associated facilities that provide 130 Bcf per day interregional transfer capability. Nearly half the capacity we have today was built AFTER the industry achieved its previous peak demand of 22+ Tcf in 1972. The new capacity was needed in part to increase flexibility and to serve shifting regional markets, but primarily it was needed because old supply areas depleted and new ones were developed in other regions. ***Estimates of new pipeline capacity required range from $106 Billion to $163 Billion in one industry study. This study escalates those estimates to $348 Billion should all coal-fired generation need to be replaced with natural gas-fired generation.*** In looking at existing capacity, states would find the interstate pipeline capacity coming into their state sufficient to serve existing demand plus the demand that would result from converting existing coal-fired generation to gas.

On February 3, 2012, FERC Commissioner Moeller asked for comments on the need for better coordination between natural gas and electricity markets. As Commissioner Moeller stated:

> As we have seen over the last few years, natural gas is being used much more heavily in electricity generation. This trend appears likely to accelerate as coal-powered generation is retired, renewable energy resources require more backup by natural gas plants, and low natural gas prices encourage more use of gas. ***And recent problems, most importantly, the southwest outage in February 2011, suggest that more resources need to be allocated to planning for the increased use of natural gas to generate electricity***.

(Emphasis added.) Increased reliance on natural gas thus creates its own set of issues for ensuring that both the physical and regulatory infrastructure is in place to ensure that EPA's dramatic push to close coal plants does not undermine system reliability. But these issues are far from solved and indeed are only just being addressed.

Little Benefits from EPA Regulations to Public Health and Welfare

Despite inflicting massive costs on American consumers, the EPA regulations achieve very little in health and welfare benefits. Indeed, the benefits of the MATS rule may be among

the most puffed of any rule anywhere. EPA claims that the rule will create $33 to $99 billion in annual benefits in 2016 based mostly on the claim that the rule will prevent between 4,200 and 11,000 premature deaths per year (in 2016). But only an infinitesimal amount of these benefits result from reducing the hazardous air pollutants that are the subject of the rulemaking. According to EPA, the benefit of reducing mercury emissions is only between $500,000 and $6 million per year, and the agency was unable to quantify the benefits of reducing the other hazardous air pollutants regulated by the rule.

In fact, virtually all of the rule's benefits are the "co-benefit" that EPA says is created by reducing sulfur dioxide emissions. Since the control technologies needed to reduce acid gas emissions, one of the HAPs the rule requires utilities to control, simultaneously reduces sulfur dioxide emissions (which are not directly targeted by the rule), the rule will result in the reduction of both acid gas and sulfur dioxide emissions, Yet virtually all of the benefits of the rule stem from reducing sulfur dioxide emissions, which in turn reduces fine particle concentrations in the air (thus, according to EPA, preventing 4,200 and 11,000 premature deaths per year), whereas EPA was unable to monetize any benefits from reducing acid gas emissions. But EPA's asserted fine particle benefits are so overstated as to be meaningless. I commend the Committee to two sets of testimony submitted to the Subcommittee on Energy and Power of the House Committee on Energy and Commerce on February 8, 2012, one by Anne E. Smith, Ph.D., Senior Vice President of NERA Economic Consulting, and one by Dr. Julie Goodman, a board-certified toxicologist and a Principal at Gradient, an environmental consulting firm in Cambridge, Massachusetts, who also teaches a graduate-level epidemiology course at the Harvard School of Public Health. These two sets of testimony provide a comprehensive debunking of EPA's claims of health benefits from reducing fine particle emissions.

I would highlight two of the issues here. First, fine particle matter is regulated under a host of EPA regulatory programs, including the National Ambient Air Quality Standards (NAAQS) program. Hence, any benefits EPA claims from reducing fine particle matter as a co-benefit of regulating hazardous air pollutants is double-counting benefits that will be created from directly regulating fine particles under these other programs.

Second, although EPA is required to set the fine particle NAAQS at a level that protects human health with an adequate margin of safety and without regard to compliance costs, the large majority of benefits EPA claims from the co-benefit of reducing fine particles in the MATS rule stems from reducing fine particles to levels below the NAAQS. This is a logical fallacy. EPA cannot simultaneously set the fine particle NAAQS at a level protective of human health and then claim thousands of lives saved by reducing fine particles to levels below the NAAQS.

As Dr. Smith shows, nearly all of the 11,000 deaths that EPA says will be avoided by the MATS rule are in areas that are already in attainment with the current fine particle annual NAAQS of 15 μg/m3. Under current EPA policy, all of those estimated deaths would be deaths of people living in areas that are protected with an "adequate margin of safety" from PM2.5 risks. The 15 μg/m3 annual fine particle NAAQS is under review now, and it is possible that the standard will be reduced, perhaps to as low as between 11 to 13 μg/m3. But even if the standard is so reduced, between 94% and nearly 100% of the 11,000 mortality benefits that EPA has estimated from the MATS rule will still occur at levels below that standard.

The Administration's Anti-Coal Policy Will Impair Public Health and Welfare

EPA claims that its anti-coal policies will protect public health and welfare, but the opposite is the case. These policies will impair public health and welfare. The reason is that

these policies will raise costs to consumers, and the effect will be felt by those least able to afford them. Dollars spent on higher energy bills will in turn crowd out dollars that would otherwise be available to pay for good nutrition and health care. Jobs lost because of higher energy costs means less money for health insurance. It is a truism that wealth equals health, and it is equally true that health will deteriorate as energy costs rise, particularly for lower income people and those living on fixed incomes.

In a report prepared for the American Coalition for Clean Coal Electricity entitled *Energy Cost Impacts on American Families*, 2001-2012, attorney and economist Eugene Trisko reported that energy cost increases fall disproportionately on those least able to afford them. Key findings of this report are:

- In 2010, the median household income of U.S. families was $49,445. Slightly more than one-half of U.S. households have average pre-tax annual incomes below $50,000. In 2001, families with gross annual incomes below $50,000 spent an average of 12% of their average after-tax income of $21,834 on residential and transportation energy. By 2005, energy costs rose to 16% of their average aftertax income of $22,682. In 2012, these households are projected to spend 21% of their average after-tax income of $22,390 on energy.

- Family incomes have not kept pace with the rising costs of energy. Since 2007, the U.S. Census Bureau reports that real (inflation-adjusted) median household income has declined by 6% (from $52,823) and is 7% below the median household income peak ($53,252) that occurred in 1999.

- Poverty rates have increased to historic highs along with the declining long-term trend in family incomes. The number of people in poverty in 2010 was the largest number in the 52 years since the Census Bureau began to publish poverty statistics. Poverty is more prevalent among some minority groups. Some 27% of Blacks and 26% of Hispanics lived in poverty in 2010, compared with 15% for the overall population.

- Higher gasoline prices account for nearly four-fifths of the increased cost of energy for consumers since 2001. In nominal dollars, average U.S. household expenditures for gasoline will grow by 136% from 2001 to 2012, based on EIA gasoline price projections for 2012. In comparison, residential energy costs for heating, cooling, and other household energy services will increase on average by 43%, from $1,493 in 2001 to a projected $2,131 per household in 2012.

- Electricity is the bargain among all consumer energy products. Among consumer energy goods and services, electricity has maintained relatively lower annual average price increases compared to residential natural gas and gasoline. Electricity prices have increased by 51% in nominal dollars since 1990, well below the 72% rate of inflation in the Consumer Price Index. The nominal prices of residential natural gas and gasoline have nearly doubled and tripled, respectively, over this period.

- Virtually all of the residential electricity price increases over the past two decades have occurred since 2000. These increases are due in part to additional capital, operating and maintenance costs associated with meeting clean air and other environmental standards.

- Lower-income families are more vulnerable to energy costs than higher-income families because energy represents a larger portion of their household budgets. Energy is consuming one-fifth or more of the household incomes of lower- and middle-income families, reducing the amount of income that can be spent on food, housing, health care, and other necessities.

- In 2010, 62% of Hispanic households and 68% of Black households had average annual incomes below $50,000, compared with 46% of white households and 39% of Asian households. Due to these income inequalities, the burdens of energy price increases are imposed disproportionately on Black and Hispanic households. Fixed-income seniors are a growing proportion of the U.S. population, and are among the most vulnerable to energy cost increases due to their relatively low average incomes. In 2010, the median gross income of 25.4 million households with a principal householder aged 65 or older was $31,408, 36% below the national median household income.

These increased costs to lower income people cause not just economic harm but harm to their health as well. Studies show that greater use of coal-fueled electricity helps free up a family's disposable income for good nutrition, quality medical care and other smart lifestyle choices that lead to improved health. A 2002 study by researchers Daniel E. Klein and Ralph L. Keeney found that coal prevents at least 14,000 to 25,000 premature deaths each year due to low-cost electricity. A 2007 study by Dr. M. Harvey Brenner, a professor of Health and Policy Management at Johns Hopkins University, confirmed the Klein-Keeney findings. Brenner concluded that if coal were removed from the energy mix, the result would be approximately 170,000 to 368,000 premature deaths in the United States.

EPA Hostility to the Use of Coal for Industrial and Manufacturing Processes

Although coal is mostly used in this country for electric generation, it is also used as fuel in industrial and manufacturing processes. Yet here too EPA is trying to discourage or outright eliminate the use of coal. EPA issued and is now reconsidering regulations that would regulate hazardous air pollutant emissions from industrial boilers. As promulgated, these regulations would eliminate coal as a boiler fuel.

This was intentional. EPA's original proposal was explicitly designed to encourage coal-fired boilers to switch to natural gas and to discourage natural gas-fired boilers from switching to coal. EPA did not propose a MACT standard for natural gas-fueled boilers because "proposing emission standards for gas-fueled boilers and process heaters that result in the need to employ the same emission control system as needed for the other fuel types would have the negative benefit of providing a disincentive for switching to gas as a control technique (and a pollution prevention technique) for boilers and process heaters in the other fuel subcategories." At the same time, according to EPA, establishing MACT standards for natural gas-fueled boilers would "have the negative effect of providing an incentive for a facility to switch from gas (considered a "clean" fuel) to a "dirtier" but cheaper fuel (i.e., coal)."

This fuel-switching rationale disappeared when the rule was finalized, perhaps because it is an improper one under the relevant statutory authority and was a bit too revealing about EPA's agenda to use its regulations to ensure fuel-switching from coal to gas. But the effect is the same: EPA is trying to make sure that coal is not used as a boiler fuel.

This is unfortunate because the energy-intensive industrial and manufacturing community wants to make sure coal remains an available fuel for industry. This community is particularly concerned that the renewed dash for gas will ultimately drive up gas prices, which will produce

two negative effects for the U.S. industrial and manufacturing sectors. First, many in this sector use natural gas as a feedstock (for instance, to produce fertilizer or plastics) and as a primary boiler fuel. Second, many in this industry are electric-intensive (for instance, the steel and aluminum industries), and driving up natural gas prices will drive up electricity prices. In both instances, the result will be to increase costs to the industrial and manufacturing sectors, making them less competitive against foreign firms.

EPA's Actions Against Coal Mine Permitting

Coal mining operations require various permits to commence operations, including oftentimes Clean Water Act (CWA) Section 404 permits, issued by the Army Corps of Engineers (Corps) for the discharge of dredge or fill material, and CWA Section 402 permits, issued by either states with primacy or the U.S. Environmental Protection Agency (EPA) for the discharge of pollutants into waters of the United States. A timely and efficient CWA permit review process is therefore critical to the success of mining enterprises since new permits are necessary to expand existing operations or begin new operations.

Last September, this Committee released a staff report, "How Obama's Green Energy Agenda is Killing Jobs," that examined this Administration's radical new process for obtaining Clean Water Act permits for coal mines. Specifically, EPA has:

- Impermissibly instituted a new de-facto water quality standard for conductivity for CWA Section 402 permits over the objections of states with primacy over their Section 402 programs.. Relying upon a draft agency report, EPA imposed a presumptive threshold for conductivity in streams – a level that was derived from data that did not follow the agency's standard methodology and that states have not deemed necessary to meet applicable water quality standards.

- Initiated so-called "Enhanced Coordination Procedures" (ECP) that unlawfully expanded EPA's jurisdiction pursuant to CWA Section 404 and held up more than 100 permit applications that were ready to be issued by the Corps. The ECP impermissibly allowed EPA to commandeer the CWA Section 404 process by placing itself as the initial

screener, and for practical purposes the final decision maker, for all Section 404 Appalachian surface coal mining applications filed with the Corps.

- Issued a Memorandum of Understanding (MOU) that set forth a series of actions designed to disrupt the timely and orderly processing of coal mine permits. The MOU: discourages the use of streamlined general permits for coal mines; increases EPA interference in Corps' CWA Section 404 permit decisions and states' CWA Section 402 permit decisions; unnecessarily escalates state-federal tensions under the Surface Mining Control and Reclamation Act (SMCRA); and vacates a Bush era Office of Surface Mining (OSM) regulation known as the stream buffer zone rule that provided much needed clarity concerning SMCRA applications for both surface and underground mines that encounter stream channels.

The stream buffer zone rule was finalized in 2008 after the federal government spent five years and more than $5 million on developing the rule that governs how and whether mining activities are permitted near perennial and intermittent streams. The rule was a clarification of the longstanding regulatory interpretation of a prior rule and added significant environmental protections.

Yet, before the rule went into effect, OSM unsuccessfully attempted in early 2009 to vacate the rule and, instead, launched a new rulemaking process that includes significant and sweeping changes to coal mining regulatory programs well beyond the scope of the stream buffer zone rule.

By its own admission and testimony, OSM has already wasted more than $4.4 million on this project, and poured another $900,000 into the project because it did not agree with its own contractor's report, which showed that the agency's rewrite of existing regulations would likely cost tens of thousands of jobs. ENVIRON International Corporation recently completed an analysis on behalf of National Mining Association (NMA) on the anticipated economic impacts associated with the proposed rewrite of the stream buffer zone rule, which found that direct mining jobs at risk of loss are predicted to be between 55,120 and 79,870, with the majority of these job losses being in the Appalachian region and total number of jobs at risk, including

mining and linked sector employment is between 133,441 and 273,227. The House Natural Resources Committee is currently conducting an investigation into OSM's rewrite of the stream buffer zone rule. Despite all of the controversy and predictions by its own analysts of tens of thousands of potential job losses, OSM continues to move forward with a proposed rule.

On Oct 6, 2011, the U. S. District Court for the District of Columbia ruled in *NMA v. Jackson* that EPA unlawfully changed the CWA Section 404 permitting process for coal mines. The court held that EPA and the Corps had unlawfully obstructed the issuance of CWA permits by allowing EPA to usurp the Corps' CWA authority and creating a de facto moratorium on surface and underground coal mining within the Central Appalachian region.

NMA has also challenged the EPA and Corps' detailed guidance on Appalachian surface coal mining, issued on April 1, 2010. Like EPA's other actions described above, the guidance amounts to an attempt by EPA to unlawfully interject itself into both state-authorized CWA permitting processes as well as the SMCRA permitting process.

In short, EPA has exceeded its authority by improperly expanding its role, displacing the Corps and encroaching upon the role reserved to the states under the CWA and SMCRA. EPA's actions are creating massive uncertainty in the coal mining industry, putting jobs in Appalachia at risk, and threatening our domestic energy security.

Conclusion

Coal is not part of this Administration's "all-of-the-above" energy policy. To the contrary, to the detriment of America's best interests, EPA's policies have been directly adverse to coal.

I appreciate the opportunity to submit this testimony.

Committee on Oversight and Government Reform
Witness Disclosure Requirement – "Truth in Testimony"
Required by House Rule XI, Clause 2(g)(5)

Name:

1. Please list any federal grants or contracts (including subgrants or subcontracts) you have received since October 1, 2009. Include the source and amount of each grant or contract.

None.

2. Please list any entity you are testifying on behalf of and briefly describe your relationship with these entities.

None.

3. Please list any federal grants or contracts (including subgrants or subcontracts) received since October 1, 2009, by the entity(ies) you listed above. Include the source and amount of each grant or contract.

None

I certify that the above information is true and correct.

Signature: Date: 5/30/12

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