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Committee on Environment and Public Works

Subcommittee on Clean Air and Nuclear Safety

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Hearing Titled "Oversight: Review of the Environmental Protection Agency's Mercury and Air Toxics Standards (MATS) for Power Plants"

Chairman Carper, Ranking Member Barrasso, and members of the Subcommittee, I appreciate the opportunity to testify before you today on EPA's Mercury and Air Toxics Standards.

On December 16, 2011, EPA finalized the Mercury and Air Toxics Standards (MATS), the first national standards to protect American families from power plant emissions of mercury and other toxic air pollution like arsenic, acid gas, nickel, selenium, and cyanide. The standards will slash emissions of these dangerous pollutants by relying on widely available, proven pollution controls that are already in use at more than half of the nation's coal-fired power plants.

MATS will save thousands of lives and prevent more than 100,000 heart and asthma attacks each year while providing important health protections to the most vulnerable, such as children and older Americans. We do not have to choose between the significant public health benefits from reducing air pollution from power plants and a strong, reliable electric grid. Nor do we have to choose between clean, healthy air and robust economic growth and job creation. We can reduce harmful pollution while growing the U.S. economy and ensuring the reliable delivery of electricity to our families and businesses. As President Obama recently stated, "And because we acted, we're going to prevent thousands of premature deaths, thousands of heart attacks and cases of childhood asthma...We're creating healthier communities. But that's not all. Safeguarding our environment is also about strengthening our economy. I do not buy the notion

that we have to make a choice between having clean air and clean water and growing this economy in a robust way. I think that is a false debate."[1]

EPA received hundreds of thousands of public comments strongly supporting our Mercury and Air Toxics Standards to protect children and families from mercury and other toxic pollution. Some of the comments that EPA received during the public comment process allowed us to make changes to the standards that make them clearer, more flexible, and less expensive, while maintaining human health protections that will provide tangible benefits to American families for generations to come

Cleaning up the power sector is overdue

In 1990, three source categories made up approximately two-thirds of total U.S. mercury emissions: power plants, municipal waste combustors (MWCs), and medical waste incinerators (MWIs). Since then, MWCs have reduced their emissions by 96% and MWIs have reduced their emissions by over 98%. Many other major sources categories, such as cement plants and steel manufacturers, are also reducing their mercury emissions.

The power plant rules EPA has developed are necessary to protect public health and the environment from the pollution these plants produce – a need that both Republican and Democratic administrations have recognized for decades. For over 20 years, since President George H.W. Bush proposed what became the Clean Air Act Amendments of 1990, power plant clean-up has been the continuous policy of the U.S. government under two Democratic and two Republican presidents.

Over the years, many power plants have invested in modern pollution controls to reduce their emissions and have contributed to the significant progress this country has made in providing healthy air to our citizens. Many other power plants, however, have delayed investments in pollution control equipment that have been widely available for years – including equipment to reduce emissions of mercury and other toxic air pollutants. As a result, power plants remain the country's largest source of mercury and sulfur dioxide (SO_2) emissions, and the largest stationary source of nitrogen oxide (NO_X) emissions.[2] Power plant pollution contaminates the fish we eat; damages our nation's sensitive lakes, rivers, and streams; and is

[1] http://www.whitehouse.gov/the-press-office/2012/01/10/remarks-president-epa-staff
[2] EPA National Emissions Inventory (2008) http://www.epa.gov/air/emissions/index.htm

linked to tens of thousands of premature deaths and hundreds of thousands of asthma attacks each year.

MATS is needed to protect public health

In 2011, EPA issued two long-overdue rules to reduce air pollution from power plants – MATS and the Cross State Air Pollution Rule.[3] Both of these affordable, technologically achievable rules will provide enormous public health benefits for Americans that are significantly greater than the costs.

The Mercury and Air Toxics Standards, the topic of today's hearing, are required by the 1990 Clean Air Act Amendments. They are designed to reduce emissions of mercury, other toxic metals such as cadmium, nickel and arsenic, acid gases, and other toxic air pollutants. Mercury, depending on the form and dose, may cause neurological damage in children who are exposed before birth and is also associated with impacts on children's cognitive thinking, memory, attention, language, and fine motor and visual spatial skills. Metals such as arsenic, chromium, and nickel cause cancer and other health risks. Acid gases cause lung damage and contribute to asthma, bronchitis and other chronic respiratory diseases, especially in children and the elderly. Until these standards were finalized in December 2011, there were no national requirements to reduce mercury and other air toxic emissions from power plants.[4] These overdue national standards will level the playing field and help modernize the fleet of aging power plants.

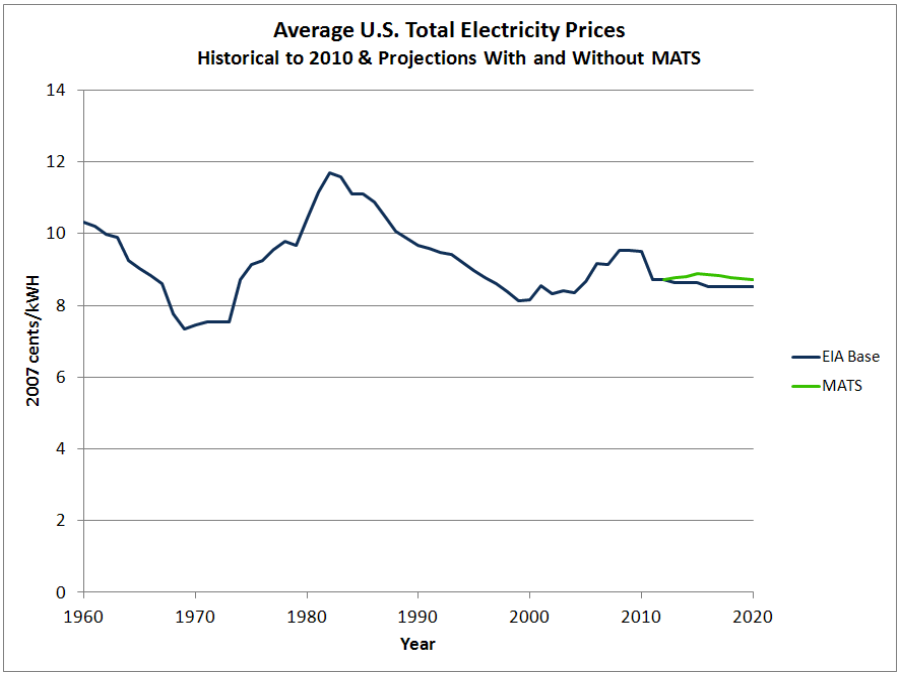
The final MATS will eliminate 20 tons of mercury emissions and hundreds of thousands of tons of acid gases and toxic pollutants each year. The control equipment that reduces emissions of these toxics also will reduce fine particle pollution. Based on the reductions in fine particle pollution, we project that in 2016 these standards will prevent approximately:

- 4,200 to 11,000 premature deaths
- 4,700 heart attacks
- 130,000 cases of childhood asthma symptoms
- 6,300 cases of acute bronchitis among children
- 5,700 emergency room visits and hospital admissions

[3] This was called the "Transport Rule" when it was proposed.
[4] The last Administration's rule attempting to limit national mercury emissions from power plants was overturned in court in 2008 for failing to meet the requirements of the Clean Air Act.

• 540,000 days of work missed due to respiratory illness.[5]

In total, the annual public health benefits from MATS are estimated to be $37 to $90 billion. These benefits will continue each year after the control equipment is in place. In addition, there are many health effects associated with toxic air pollution (like mercury, chromium, nickel and arsenic) that EPA is unable to quantify. We also cannot yet quantify the benefits of MATS for outdoor recreational enthusiasts, or in preventing adverse effects on fish, birds, mammals and ecosystems. If we were able to quantify all of these effects, the benefits would potentially exceed the costs by an even larger margin than we currently estimate.



MATS is affordable

EPA's modeling indicates the annual cost of implementing MATS will be approximately $9.6 billion, significantly less than the estimated annual benefits of $37-90 billion. EPA's modeling for the final standards indicates that any change in retail electricity prices will be very small (approximately 3% on a national basis) and will not cause prices to rise even to 1990 levels. In fact, as shown in Figure 1, EPA's modeling shows that after both MATS and the Cross State Rule (in the base case) are implemented, electricity rates are projected to stay well within the range of normal historical fluctuations and below levels seen as recently as 2009. In addition, the updated standards will support thousands of good jobs for American workers who will be

[5] These benefits are from emissions reductions achieved solely by the final Mercury and Air Toxics Standards, and not from the Cross State Rule or any other emissions reduction regulation. When EPA estimated the benefits for MATS, we included the Cross State Air Pollution Rule (known then as the Transport Rule) in the baseline for our analysis, so these estimates represent the incremental benefits of MATS alone.

hired to build, install, and operate the equipment to reduce health-threatening emissions of mercury, acid gases, and other toxic air pollutants. EPA estimates that investments made to comply with MATS will provide 8,000 long term jobs in the power sector and 46,000 short term construction jobs.

MATS is achievable and will not "turn out the lights"

There were three primary concerns among the stakeholders who raised implementation concerns about MATS during the public comment period: a) the magnitude and technical feasibility of pollution control retrofits needed to comply with the standards; b) the time available to complete necessary installations and retrofits; and c) the effect of the standards on electric reliability before and after the compliance deadlines. Of these three related issues, the last one has received the greatest amount of public and Congressional attention.

In response to stakeholder comments EPA received on operational concerns related to the magnitude and technical feasibility of retrofits required by the standard, we made a number of substantive changes to the compliance requirements. These changes include switching to a filterable particulate matter (PM) emissions limit and providing sources the option to use a more flexible facility-wide averaging approach as long as it provides equivalent reductions in mercury. We are also providing separate sub-categories of standards for limited use and non-continental oil-fired units, as well as more achievable new source standards. These changes maintain reductions in air toxics while making implementation easier and less costly.

EPA also paid close attention to comments raised by stakeholders regarding the time available to achieve compliance with MATS, as well its impacts on electric reliability. Before MATS was finalized, EPA and the Department of Energy (DOE) conducted several analyses of its effects on electric generation resources.[6] EPA's and DOE's analyses demonstrate that the vast majority, if not all, sources will be able to meet the MATS requirements within the time frames provided under the Clean Air Act – which I discuss at greater length below.

EPA's resource adequacy analysis continues to demonstrate that only a modest amount of generating capacity will become uneconomic to operate under the MATS standards, and removal

[6] Environmental Protection Agency (2011). "Resource Adequacy and Reliability in the IPM Projections for the MATS Rule" http://www.epa.gov/ttn/atw/utility/revised_resource_adequacy_tsd.pdf
Department of Energy (2011). "Resource Adequacy Implications of Forthcoming EPA Air Quality Regulations" http://energy.gov/sites/prod/files/2011%20Air%20Quality%20Regulations%20Report_A_120911.pdf

of this capacity will not adversely affect capacity reserve margins in any region of the country. In addition, new capacity will be added between now and 2015. The analysis projects that, as a result of MATS, plant operators will choose to retire less than one half of one percent (4.7 gigawatts (GW)) of the more than 1,000 GW that make up the nation's electric generating capacity. This retiring generation capacity is an average of more than fifty years old, relatively inefficient, and does not have modern pollution controls installed. It should be noted that over the last few years low natural gas prices and an aging coal generation fleet have been pushing the industry towards less reliance on coal and greater reliance on natural gas. David Sandalow, DOE Assistant Secretary for Policy and International Affairs, summarized the DOE analysis as "demonstrat[ing] that new EPA rules – which will provide extensive public health protections from an array of harmful pollutants – should not create resource adequacy issues[7]." In addition, a recent Congressional Research Service report (January 2012)[8] reviewed industry data on planning reserve margins and potential retirement of units that do not currently meet the standards and concluded, based on these data "that, although the rule may lead to the retirement or derating of some facilities, almost all of the capacity reductions will occur in areas that have substantial reserve margins."

EPA took steps in the final MATS standards to address stakeholder concerns that compliance with MATS could not be achieved within the maximum three-year compliance date authorized under the statute. In the final rule, EPA described in detail the wide range of situations where we believe an additional year for compliance could be granted by permitting authorities. This fourth year - in addition to the three years provided to all sources - is provided by the Clean Air Act as needed to complete installation of control technologies. EPA suggests that permitting authorities make this fourth year broadly available to sources that require it to complete their compliance activities, including installing pollution control equipment, constructing on- or off-site replacement power, and upgrading transmission. EPA is also encouraging the fourth year to be available as needed to units that continue to operate for reliability purposes while other units are installing pollution controls. As described in more detail below, EPA has reached out to states and permitting authorities to help ensure that the fourth year for compliance is broadly available. We believe that requests for the fourth year extension

[7] http://energy.gov/articles/energy-department-releases-study-electricity-system-ahead-proposed-epa-air-quality
[8] James E. McCarthy, January 9, 2012. "EPA's Utility MACT: Will the Lights Go Out?" http://www.eenews.net/assets/2012/01/19/document_gw_03.pdf

for air toxic standards are being handled well by states and encourage them to continue processing these requests as they have done in the past. EPA staff, including both our headquarters and regional offices, are available to quickly provide assistance and answer any questions as needed. As a result, EPA estimates that sources generally will have until spring of 2016 to comply – one year longer than our analysis indicates is necessary for most sources.

Although EPA's analysis indicates that most, if not all, sources can comply within three years, and that the fourth year should be available in the broad range of situations described above, EPA is also providing a clear pathway for units that are shown to be critical for electric reliability to obtain a schedule to achieve compliance within up to an additional year beyond the four years mentioned above. This pathway is set forth in a policy memorandum from EPA's Office of Enforcement and Compliance Assurance.[9] As stated above, EPA believes there will be few, if any, situations in which this pathway will be needed. In addition, in the unlikely event that there are situations where sources that do not fall into any of these categories cannot come into compliance on a timely basis, EPA will address them on a case-by-case basis, at the appropriate time, to determine the appropriate response and resolution. This is consistent with its longstanding historical practice under the Clean Air Act.

As part of the Administration's commitment to maximize flexibilities under the law, MATS was accompanied by a Presidential Memorandum that directs EPA to take a number of steps to ensure continued electric reliability. These steps include: 1) working with State and local permitting authorities to make the additional year for compliance with MATS provided under section 112(i)(3)(B) of the Clean Air Act broadly available to sources; 2) working with the Department of Energy, the Federal Energy Regulatory Commission, State utility regulators, Regional Transmission Organizations, the North American Electric Reliability Corporation and regional electric reliability organizations, other grid planning authorities, electric utilities, and other stakeholders, as appropriate to promote early, coordinated, and orderly planning; and 3) making available to the public, including relevant stakeholders, information that describes the process for identifying circumstances where electric reliability concerns might justify allowing additional time to comply. EPA is in the process of taking a number of steps to implement the directives in this memo.

[9] EPA Memorandum December 16, 2011. "The Environmental Protection Agency's Enforcement Response Policy For Use of Clean Air Act Section 113(a) Administrative Orders in Relation To Electric Reliability and the Mercury and Air Toxics Standard" http://www.epa.gov/compliance/resources/policies/civil/erp/mats-erp.pdf

EPA is actively engaging power plants and other entities that will be involved in getting power plants retrofitted while maintaining the reliability of the electric grid. EPA has held, and will continue to hold, a series of discussions with the Department of Energy, the Federal Energy Regulatory Commission, State utility regulators, Regional Transmission Organizations, the North American Electric Reliability Corporation, regional electric reliability organizations, and other grid planning authorities to promote early compliance planning, to support orderly implementation of the MATS standards, and to ensure that any potential, localized reliability concerns are identified and addressed. EPA has started and will continue discussions with power plant owners and operators to help them understand their responsibilities under the standards and their role in early, coordinated, and orderly planning. EPA is conducting specific outreach to stakeholders with unique concerns such as rural electric cooperatives, public power facilities, and investor-owned utilities. In addition, EPA will also engage in outreach to states and permitting authorities to help ensure that the fourth year for compliance is broadly available and that the process for sources to request and states to grant the extensions is clear and straightforward.

The nation's power grid is strong and resilient because numerous agencies and organizations fulfill their obligations to maintain the nation's electric reliability. As discussed above, EPA has already been working and will keep working with these organizations so that they can take the necessary steps to continue to fulfill this obligation while ensuring smooth implementation for MATS. Key steps include early planning and early notification of compliance plans by affected sources, system operators, and state and federal regulators. One regional transmission organization, PJM Interconnection, which operates a competitive wholesale electricity market and manages the high-voltage electricity grid to ensure reliability for more than 58 million people in the eastern U.S., has already begun asking its members for MATS compliance planning information. Over the 40 year history of the Clean Air Act, these stakeholders – working together with State and Federal regulators – have had an outstanding track record of substantially reducing pollution while maintaining reliability. We remain confident that, together, we have the tools to address any challenges that may arise in connection with the implementation of the MATS standards.

The Clean Air Act

The Cross State and MATS rules will continue the decades-long Clean Air Act success story. For 40 years, the Clean Air Act has fostered steady progress in reducing the threats posed by pollution and allowing us all to breathe easier. In 2010 alone, programs implemented pursuant to the Clean Air Act Amendments of 1990 are estimated to have reduced premature mortality risks equivalent to saving over 160,000 lives; spared Americans more than 100,000 hospital visits; and prevented millions of cases of respiratory problems, including bronchitis and asthma attacks.[10] They also enhanced productivity by preventing 13 million lost workdays; and kept kids healthy and in school, avoiding 3.2 million lost school days due to respiratory illness and other diseases caused or exacerbated by air pollution.[11]

However, few of the emission control standards that gave us these huge gains in public health were uncontroversial at the time they were developed and promulgated. Most major rules have been adopted amidst claims that that they would be bad for the economy and bad for employment. In contrast to doomsday predictions, history has shown, again and again, that we can clean up pollution, create jobs, and grow our economy all at the same time. Over that same 40 years since the Act was passed, the Gross Domestic Product of the United States grew by more than 200 percent.[12] It is misleading to say that enforcement of the Clean Air Act is bad for the economy and employment. It isn't. Families should never have to choose between a job and healthy air. They are entitled to both.

Some may find it surprising that the Clean Air Act also has been a good economic investment for our country. A study led by Harvard economist Dale Jorgenson found that implementing the Clean Air Act actually increased the size of the US economy because the health benefits of the Clean Air Act lead to a lower demand for health care and a healthier, more productive workforce. According to that study, by 2030 the Clean Air Act will have prevented 3.3 million lost work days and avoided the cost of 20,000 hospitalizations every year.[13] Another

[10] USEPA (2011). The Benefits and Costs of the Clean Air Act from 1990 to 2020. Final Report. Prepared by the USEPA Office of Air and Radiation. February 2011. Table 5-6. This study is the third in a series of studies originally mandated by Congress in the Clean Air Act Amendments of 1990. It received extensive peer review and input from the Advisory Council on Clean Air Compliance Analysis, an independent panel of distinguished economists, scientists and public health experts.

[11] Ibid.

[12] Bureau of Economic Analysis, National Economic Accounts, "Table 1.1.5. Gross Domestic Product," http://bea.gov/national/index.htm#gdp

[13] Dale W. Jorgenson Associates (2002a). *An Economic Analysis of the Benefits and Costs of the Clean Air Act 1970-1990. Revised Report of Results and Findings.* Prepared for EPA. http://yosemite.epa.gov/ee/epa/eerm.nsf/vwAN/EE-0565-01.pdf/$file/EE-0565-01.pdf

study that examined four regulated industries (pulp and paper, refining, iron and steel, and plastic) concluded that, "We find that increased environmental spending generally does not cause a significant change in employment."[14]

The EPA's updated public health safeguards under the Clean Air Act will encourage investments in labor-intensive upgrades that can put current unemployed or under-employed Americans back to work. Environmental spending creates jobs in engineering, manufacturing, construction, materials, operation, and maintenance. For example, EPA vehicle emissions standards directly sparked the development and application of a huge range of automotive technologies that are now found throughout the global automobile market. The vehicle emissions control industry employs approximately 65,000 Americans with domestic annual sales of $26 billion.[15] Likewise, in 2008, the United States' environmental technologies and services industry of 1.7 million workers generated approximately $300 billion in revenues and led to exports of $44 billion of goods and services,[16] larger than exports of sectors such as plastics and rubber products.[17] The size of the world market for environmental goods and services is comparable to the aerospace and pharmaceutical industries and presents important opportunities for U.S. industry.[18]

Jobs also come from building and installing pollution control equipment. For example, the U.S. boilermaker workforce grew by approximately 35 percent, or 6,700 boilermakers, between 1999 and 2001 during the installation of controls to comply with EPA's regional nitrogen oxide reduction program.[19] Over the past seven years, the Institute for Clean Air

[14] Morgenstern, R. D., W. A. Pizer, and J. S. Shih. 2002. "Jobs versus the Environment: An Industry-Level Perspective." *Journal of Environmental Economics and Management* 43(3):412-436.
[15] Manufacturers of Emissions Control Technology (http://www.meca.org/cs/root/organization_info/who_we_are)
[16] DOC International Trade Administration. "Environmental Technologies Industries: FY2010 Industry Assessment. http://web.ita.doc.gov/ete/eteinfo.nsf/068f3801d047f26e85256883006ffa54/4878b7e2fc08ac6d85256883006c452c/$FILE/Full%20Environmental%20Industries%20Assessment%202010.pdf (accessed February 8, 2011)
[17] U.S. Census Bureau, Censtats Database, International Trade Data--NAICS, http://censtats.census.gov/naic3_6/naics3_6.shtml (accessed September 6, 2011)
[18] Network of Heads of the European Environment Protection Agencies, 2005. "The Contribution of Good Environmental Regulation to Competitiveness." http://www.eea.europa.eu/about-us/documents/prague_statement/prague_statement-en.pdf (accessed February 8, 2011).
[19] International Brotherhood of Boilermakers, *Boilermaker Labor Analysis and Installation Timing,* March 2005, EPA Docket OAR-2003-0053 (docket of the Clean Air Interstate Rule).

Companies (ICAC) estimates that implementation of just one rule – the Clean Air Interstate Rule Phase 1 – resulted in 200,000 jobs in the air pollution control industry.[20]

Conclusion

As we did more than two decades ago during debate of the Clean Air Act Amendments of 1990, we are hearing claims that our rules will lead to potential adverse impacts on electric reliability. Our analysis and past experience indicate that warnings of dire consequences of moving forward with these important rules are exaggerated at best. For example, during development of the 1990 Clean Air Act Amendments, one utility warned of unrealistic compliance dates and issues with electrical reliability. Industry estimated at the time that the cost of the new requirements for sulfur dioxide would be $7.5 billion per year; in reality, the cost of achieving the reductions was around $1.5 - 2 billion per year – a fraction of the costs estimated by those seeking to prevent enactment of that landmark legislation.[21] The resulting emission reductions are providing substantial health and ecosystem benefits with a monetized value of between $170 billion and $430 billion per year (2008$).[22] The dire predictions were not true then, and industry's remarkably similar claims about the current Clean Air Act regulations are not true now.

EPA's final MATS standards are data-driven, will reduce emissions of toxic air pollutants from power plants, and will lead to healthier communities and a safer environment. Public review and comment ensured that all interested stakeholders had an opportunity to look at the details of the standards and weigh in – ultimately helping EPA to write a better, more effective regulation. The adjustments between the proposed and final standards maintain reductions in air toxics while making implementation easier and less costly. For 40 years, we have been able to implement the Clean Air Act, grow the American economy, and keep the lights on. MATS will not change that.

Thank you for the opportunity to testify today. I look forward to your questions.

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[20] November 3, 2010 letter from David C. Foerter, Executive Director of the Institute of Clean Air Companies, to Senator Thomas R. Carper (http://www.icac.com/files/public/ICAC_Carper_Response_110310.pdf (accessed February 8, 2011).

[21] National Acid Precipitation Assessment Program Report to Congress 2011: An Integrated Assessment http://www.whitehouse.gov/sites/default/files/microsites/ostp/2011_napap_508.pdf . All costs reported in $2000

[22] Ibid