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Chairman Carper, Ranking Member Vitter, and members of the Subcommittee, thank you for inviting me to testify today on EPA's recently proposed "Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone." This rule, known as the "Transport Rule," is an important step towards protecting public health, helping states reduce air pollution, and meeting our clean air standards. In my testimony I will provide the committee with some details about this rule and the new approach it represents for EPA, as well as information on the likely benefits of the rule for the American people.

Millions of people continue to breathe air that does not meet our national air quality standards. This unhealthy air is due to a combination of pollution from local and in-state sources, as well as pollution from upwind states that crosses state lines and is transported long distances from its original source. The recently-proposed Transport Rule addresses the upwind state sources of pollution. It represents a significant step that EPA is taking to fulfill our commitment to help states implement the "good neighbor" provision of the Clean Air Act on an on-going basis and with the exact same urgency that we and our state partners bring to local nonattainment planning obligations.

EPA's proposed Transport Rule implements a new methodological approach that helps states meet their obligations to reduce transported pollution. The rule enables the provisions of the Clean Air Act that require upwind states to eliminate emissions that significantly contribute to air quality problems in downwind states. The proposed rule would require significant reductions in sulfur dioxide (SO_2) and nitrogen oxides (NO_x) emissions from power plants in 31 states and the

District of Columbia. These reductions are required to help downwind states to attain and maintain compliance with the current national ambient air quality standards for fine particles ($PM_{2.5}$) and ozone. As you all are well aware, SO_2 and NO_x both react in the atmosphere to form fine particles; NO_x also contributes to the formation of ground-level ozone. The health effects of exposure to elevated levels of $PM_{2.5}$ and ozone include premature death, more asthma symptoms in those already suffering from that disease, and respiratory and cardiovascular diseases that are often serious enough to require hospitalization.

The emissions reductions required by the Transport Rule in upwind states would provide health and environmental benefits both in-state and in downwind states. We estimate that by 2014 the proposed Transport Rule will prevent 14,000 to 36,000 premature deaths annually, as well as provide many other health and environmental benefits. The portion of these health and welfare benefits that can be quantified total more than $120 to $290 billion annually in 2014. These benefits will far outweigh the estimated annual costs of $2.8 billion. The Transport Rule will help all but a very few areas in the eastern part of the country come into attainment with the 1997 $PM_{2.5}$ and ozone standards. In addition, the rule will make major strides toward helping states address nonattainment with the 2006 24-hour average $PM_{2.5}$ standard.

Controlling the interstate transport of pollution is important for several reasons. Interstate pollution transport increases pollution levels and health risks in the downwind state. From the standpoint of a downwind state, the pollution contribution of each upwind state adds up to a larger, cumulative degradation of the downwind state's air quality. The combined impact of pollution transport makes it necessary for the downwind state to obtain deeper pollution reductions to attain and maintain air quality standards, which increases costs of control in the downwind state and can delay or make it impossible to achieve the health-based air quality standards.

The proposed Transport Rule is designed to achieve reductions as quickly as possible to help states attain the 1997 ozone and $PM_{2.5}$ and 2006 $PM_{2.5}$ national ambient air quality standards (NAAQS). When final, this proposed rule will replace the Clean Air Interstate Rule (CAIR), which was designed to meet the same goal. However, the proposed Transport Rule is projected

to result in more emission reductions in 2012 and 2014 than what we had anticipated achieving under CAIR. The most significant reasons for this include: reductions in the Transport Rule to address the 2006 $PM_{2.5}$ NAAQS; reductions in the Transport Rule to eliminate emissions that interfere with maintenance of the NAAQS in downwind states; our methodology for determining significant contribution; and the Transport Rule does not allow use of the large Title IV SO_2 allowance bank for compliance in early years.

A July 2008 court decision vacated CAIR; subsequently, in December 2008, the court decided to keep the requirements of CAIR in place temporarily but directed EPA to issue a new rule to implement the Clean Air Act requirements concerning the transport of air pollution across state boundaries. In response to the court decision, EPA went back to the drawing board and developed a new rule that reflects each aspect of the court's decision, which, in turn, reflects the essential elements of EPA's obligations under the Clean Air Act. The rule focuses on identifying and remedying each state's significant contribution to downwind air quality problems, and, as required by both the court and the Clean Air Act, focuses on improving downwind air quality.

With this proposed Transport Rule, EPA is proposing a new methodology for determining upwind state emission reduction responsibility that is designed to be applicable to current and potential future ozone and $PM_{2.5}$ NAAQS. This methodology uses a multi-step process to analyze both costs and air quality impacts, identify the cost thresholds appropriate for the circumstances specific to this rulemaking, quantify reductions available in each state at those thresholds, and consider the impact of variability in power plant operations. This methodology is based on cost and air quality considerations that are common to any NAAQS, but also calls for evaluation of facts specific to a particular NAAQS level. As a result, in the future EPA will consider whether it is reasonable to require larger reductions in transported pollution from upwind states in the case of a revised, more health-protective NAAQS.

The Clean Air Act requires states to submit plans to eliminate significant interstate pollution transport before they submit plans to meet ambient air quality standards. This allows downwind states to know how many upwind state reductions will be required when they design their plans to meet the NAAQS. When EPA announced the proposal of this Transport Rule, we also stated

that we intend to follow this same process for addressing interstate transport of air pollution. From now on, each time a NAAQS is changed, EPA will evaluate whether interstate pollution transport contributes to the air quality problem, and, if so, whether new emission reductions will be required from upwind states. By determining the amount of emissions that upwind states must eliminate before state pollution transport plans are due, EPA will help the Clean Air Act to work as intended and help downwind states attain the health-based standards as soon as practical. EPA is undertaking a series of regulatory actions over the next 2 years that will affect the power sector in particular, as well as other sectors. For example, EPA has already begun the work necessary to apply the template proposed in the Transport Rule to the next ozone NAAQS. The Agency plans to quickly propose and finalize a transport rule to address that standard so that emission reductions can take place in time to help states attain the standard.

In addition, EPA is in the early stages of developing regulations under section 112 of the CAA that will require existing and new coal- and oil-fired power plants to meet emissions limits for mercury and other HAPs. Currently, we have a court-ordered deadline to issue a proposed rule for these sources by March, 2011, and issue a final rule by November, 2011. EPA anticipates that, as a result of these requirements, these power plants may also significantly reduce their emissions of SO_2.

Details about the Proposal

In the Transport Rule, EPA proposes to find that emissions of SO_2 and NO_x in 31 eastern states and the District of Columbia contribute significantly to nonattainment or interfere with maintenance in one or more downwind states. EPA is making this finding with respect to one or more of three air quality standards: the annual average $PM_{2.5}$ NAAQS promulgated in 1997, the ozone NAAQS promulgated in 1997, and the 24-hour average $PM_{2.5}$ NAAQS promulgated in 2006.

We are proposing a preferred approach, or remedy, to require power plants to reduce SO_2 and annual NO_x emissions in states that significantly contribute to downwind state $PM_{2.5}$ air quality problems, and to require power plants to reduce ozone-season NO_x emissions in states that significantly contribute to downwind state ozone air quality problems. In addition, we are taking

comment on two proposed alternatives that we feel are consistent with the court decision. In all approaches, we propose to set a pollution limit (or budget) for each of the 31 states and the District of Columbia. The difference among the approaches is in how sources must comply with those budgets.

Our preferred approach allows both intrastate trading and limited interstate trading among power plants but assures that each upwind state will meet its pollution control obligations under the "good neighbor" provision of the Act. This results in four programs:

- a program to limit ozone season emissions of NO_x in 25 states and the District of Columbia beginning in 2012
- a program to limit annual emissions of NO_x in 27 states and the District of Columbia beginning in 2012
- two programs to limit annual emissions of SO_2: one program that limits emissions in 27 states and the District of Columbia beginning in 2012, and one that further limits SO_2 emissions in 15 of those states beginning in 2014.

In the first alternative approach, we propose to allow trading only among power plants within each state. In the second alternative approach, we propose to specify the allowable emission limit for each power plant and allow some averaging. In addition, EPA is taking comment on alternative approaches, including a trading ratio approach that would take into account differences in cumulative downwind impact of emissions from various states but would not assure upwind reductions within a certain state.

The Transport Rule proposes a new, state-specific cost and air quality methodology for determining the amount of emission reduction each upwind state must achieve to eliminate its significant contribution to downwind nonattainment. The proposed methodology uses air quality analysis to determine whether a state's contribution to downwind air quality problems is above specific thresholds. If a state's contribution does not exceed those thresholds, its contribution is found to be insignificant and it is no longer considered in the analysis. If a state's contribution exceeds those thresholds, EPA takes a second step that uses a multi-factor analysis that takes into account both air quality and cost considerations to identify the portion of a state's contribution

that is significant or that interferes with maintenance. This second step of the methodology is a multi-step process that analyzes costs and air quality impacts, identifies appropriate cost thresholds, quantifies reductions available from power plants in each state at those thresholds, and considers the impact of variability in power plant operations.

As noted above, the first phase of emissions reductions in all 31 states and the District of Columbia would begin to take effect in 2012. Further emission reductions of SO_2 would take place in 15 of those states in 2014. If the Transport Rule is finalized as proposed, EPA projects that, by 2014, the proposed Transport Rule and other state and EPA actions would reduce power plant SO_2 emissions in 31 states and DC by 71 percent (6.3 million tons) compared to 2005 levels. Power plant NO_x emissions would drop by 52 percent (1.4 million tons). This includes reducing 300,000 tons of NO_x during the hot summer ozone season. In the states and DC covered by the proposed Transport Rule, in 2014, SO_2 emissions are projected to be 2.6 million tons per year annually and NO_x emissions would be 1.3 million tons per year. Ozone season NO_x emissions are projected be 600,000 tons per year. EPA anticipates that power plants may operate already installed control equipment more frequently, use low sulfur coal, or install control equipment such as low NO_x burners, selective catalytic reduction, or flue gas desulfurization to achieve these emission reductions. Many power plants began the process of contracting for and installing pollution control equipment and making other adjustments to their operations (e.g. switching to low-sulfur coal) that would reduce their emissions when CAIR was finalized in 2005.

To assure emissions reductions take place quickly, and to fulfill our legal obligations, EPA is proposing federal implementation plans, or FIPs, for each of the states covered by this rule. These plans would reduce air pollution that significantly affects another state. These replace the existing CAIR FIPs that have been remanded by the court. A state may choose to develop its own state implementation plan, or SIP, to achieve the required reductions for the 1997 ozone NAAQs, the 1997 $PM_{2.5}$ NAAQs, or the 2006 $PM_{2.5}$ NAAQs, or any combination of them. Once approved by EPA, any SIP developed by a state would replace the federal plan, and allow the states to choose which types of sources to control and how they should be controlled.

The reductions obtained through the Transport Rule FIPs will help all but a very few areas in the eastern part of the country come into attainment with the 1997 $PM_{2.5}$ and ozone standards. In addition, they will make major strides toward helping states address nonattainment with the 2006 $PM_{2.5}$ standard. In the case of some 1997 ozone and 2006 $PM_{2.5}$ downwind areas with projected nonattainment and maintenance problems, however, EPA was not able to fully define the level of significant contribution from each upwind state without further analysis. As a result, EPA is proposing the emission reductions our analyses have shown are necessary to eliminate significant contribution. At the same time, we are continuing to analyze whether more reductions might be needed for several 1997 ozone and all 2006 $PM_{2.5}$ nonattainment and maintenance areas. This decision not to delay the rule until the analyses are completed reflects EPA's obligation to respond to the court remand expeditiously and the importance of achieving emissions reductions to assist downwind attainment at the earliest practical dates.

EPA is working expeditiously to finish our analysis of these two issues. To the extent possible, EPA plans to finalize the Transport Rule with a full determination of, and remedy for, significant contribution and interference with maintenance for the 2006 $PM_{2.5}$ standard. In the case of the 1997 ozone standard, EPA intends to proceed as quickly as possible with additional rulemaking to fully address the residual significant contribution to nonattainment and interference with maintenance. At this time, we intend to work in parallel on this additional rulemaking and any additional reductions in interstate transport needed to address the upcoming 2010 ozone standard.

Benefits and Costs of the Proposal

SO_2 and NO_x contribute to the formation of fine particles. NO_x reacts with volatile organic compounds to form ground-level ozone. Both of these pollutants cause a series of human health effects and environmental damages, including premature mortality, chronic and acute bronchitis, heart attacks, hospitalizations, emergency room visits, asthma attacks, and lost days at work and school. The reductions in air pollution from the proposed Transport Rule would provide large health and environmental benefits. Assuming that all particulate matter species cause approximately the same harm per unit of mass, benefits would include annually preventing 14,000 to 36,000 premature deaths; 23,000 non-fatal heart attacks; 26,000 hospital and

emergency room visits; 240,000 cases of aggravated asthma; and 1.9 million days of missed work or school. While no clear scientific grounds exist for supporting differential effects estimates by particle type, recent evidence suggests the possibility that PM mixtures with higher concentrations of black carbon and specific metals might be more potent than the average $PM_{2.5}$ mixture. Avoiding "sick days" may be particularly important for the millions of Americans whose jobs do not provide paid sick leave and who can be at risk of losing their jobs if they miss work too often. Other benefits include reductions in mercury emissions, acidification of lakes, streams, and forest soils, and eutrophication of estuaries and coastal waters.

The proposed rule would yield at least $120 to $290 billion in annual benefits in 2014. Most of these quantified benefits are public health-related, but $3.6 billion are attributable to visibility improvements, mostly in eastern national parks and wilderness areas.

These quantified and unquantified benefits far outweigh the estimated annual costs of $3.7 billion in 2012 and $2.8 billion in 2014. The modest cost of the proposed Transport Rule means only modest effects on electricity generation. EPA estimates that in 2014, as a result of this proposed rule, average electricity prices will increase less than 2 percent, natural gas prices will increase less than 1 percent, and coal use will be reduced by less than 1 percent. A portion of the Transport Rule emissions reductions will come from plants operating existing control equipment that--without the Transport Rule--would not be required to operate; this contributes to the modest cost of the proposal.

Transport Rule and CAIR

EPA has been working to reduce interstate transport in regards to the 1997 ozone and $PM_{2.5}$ standards since the NO_x SIP Call was first issued in 1998. The Clean Air Interstate Rule (CAIR), which requires similar but fewer emission reductions as those in the proposed Transport Rule, was proposed in 2003 after several years of data collection and analysis, including extensive input from stakeholders, and finalized in 2005 (70 FR 25162). CAIR requires initial emission reductions from power plants for NO_x in 2009 and SO_2 in 2010; additional reductions of both pollutants are required in 2015.

In July 2008, the D.C. Circuit Court found CAIR unlawful (North Carolina v. EPA, 531 F.3d 896 (D.C. Cir. 2008)). The court first vacated CAIR but then remanded it to EPA without vacatur to "preserve the environmental values covered by CAIR" (North Carolina v. EPA, 550 F.3d 1176, 1178 (D.C. Cir. 2008)). As a result of the remand, the CAIR requirements remain in place while EPA develops replacement rules.

As I noted earlier, when CAIR was finalized in 2005, many power plants began the process of contracting for and installing pollution control equipment and making other adjustments to their operations (e.g. switching to low-sulfur coal) that would reduce their emissions. Many power plants had already begun operating that equipment in 2008 when CAIR was remanded; many more power plants were preparing to reduce their emissions within the next few years in anticipation of the CAIR compliance deadlines. These pollution control investments will now be used to meet the emission reduction requirements under the Transport Rule.

EPA anticipates that, under the proposed Transport Rule, power plants will meet the 2012 requirements by operating control equipment installed to meet CAIR requirements more frequently, using lower sulfur coal, or installing simple pollution control equipment such as low NO_x burners. By 2014, when the more stringent SO_2 emissions limits take effect, we project that some sources will install scrubbers (flue gas desulfurization) on approximately 14 gigawatts worth of coal-fired plant capacity.

Although the proposed Transport Rule takes advantage of, and expands upon, the pollution control investments made under CAIR, it is fundamentally different from CAIR in several important ways. These differences reflect the court's concerns with CAIR. EPA believes that each option proposed in the Transport Rule is consistent with court opinions interpreting the requirements of CAA section 110(a)(2)(D)(i)(I).

First, the methodology used to measure each state's significant contribution to another state emphasizes air quality as well as cost considerations and uses state-specific data and information. Second, the proposal gives independent meaning to the phrase "interfere with maintenance" in section 110(a)(2)(D) of the Clean Air Act. Third, the state budgets for SO_2, annual NO_x, and

ozone season NO_x are directly linked to the measurement of each state's significant contribution and interference with maintenance.

Fourth, the proposed remedy includes provisions to assure that all necessary reductions occur in each individual state. EPA proposes to allow within-state trading and limited interstate trading in a manner that ensures that each upwind state achieves its required emission reductions. Finally, the compliance deadlines are coordinated with the attainment deadlines for the relevant NAAQS.

Summary and Conclusion

This proposed Transport Rule recognizes that the Clean Air Act assigns responsibility to meet the clean air standards to both upwind and downwind states. This Transport Rule addresses upwind state responsibilities; at the same time, states and local agencies continue to work on local and in-state pollution control measures.

This proposal is the first of several rules EPA intends to issue over the next 2 years that will yield substantial health and environmental benefits for the public primarily through regulation of power plants. EPA expects that this set of requirements will yield substantial health and environmental benefits for the public, benefits that can be achieved while maintaining a reliable and affordable supply of electric power across the economy. In developing and promulgating these rules, the Agency will be providing the power industry with a much clearer picture of what EPA will require of it in the next decade. In addition to promulgating the rules themselves, the Agency will engage with other federal, state and local authorities, as well as with stakeholders and the public at large, with the goal of fostering investments in compliance that represent the most efficient and forward-looking expenditure of investor, shareholder, and public funds, resulting, in turn, in the creation of a clean, efficient, and modern power sector.

The comment period for the proposed Transport Rule will run for 60 days from the date of publication in the *Federal Register*, which will likely take place at the beginning of August. In addition, we plan to hold three public hearings on the rule. We will provide details on the timing and location for those hearings shortly in a *Federal Register* Notice.

As I have stated here before, my top priority at EPA is to work with you, with the power industry and other industry sectors, with the states, with community groups and environmental groups, and with the full range of experts from government, business, and universities to find the right path forward in crafting the laws and regulations needed to protect human health and the environment. I still believe that is the most important responsibility I have right now.

In closing, I would like to thank Senator Carper and other members of the committee for your strong leadership on these issues over the years. I am confident that we can make great strides to meet our shared goals.

Thank you. I look forward to answering your questions.