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Hearing on Oil and Gas New Source Performance Standards (NSPS) and National Emission

Standards for Hazardous Air Pollutants (NESHAPs)

Committee of Environment and Public Works

U.S. Senate

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Chairman Carper, Ranking Member Barrasso, and members of the Subcommittee, I appreciate the opportunity to appear before you today regarding the U.S. Environmental Protection Agency's (EPA) recently issued New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants for the Oil and Gas Industry. These cost-effective standards will significantly reduce emissions of harmful air pollutants from the oil and gas sector, are achievable through technologies and practices that are already being used by leading states, cities, and companies, and will result in substantial cost savings through reduced waste and increased recovery of natural gas.

A year ago, the President set a bold but achievable goal of reducing oil imports by a third in a little over a decade. In the last year alone, we have already cut net oil imports by ten percent – or a million barrels a day – thanks to booming domestic oil and gas production, more efficient cars and trucks, and a world-class refining sector that last year made the United States a net exporter of gasoline, diesel and other fuels for the first time in 60 years. These efforts have put the United States

on pace to meet our goal by the end of the decade. Domestic oil and natural gas production has increased every year President Obama has been in office. In 2011, American oil production reached the highest level in nearly a decade and natural gas production reached an all-time high.¹

Natural gas plays a key role in our nation's clean energy future, and the Obama Administration is committed to ensuring that the development of this vital resource occurs safely and responsibly. On April 17, 2012, EPA issued regulations, required by the Clean Air Act, that are cost-effective and that reduce harmful air pollution from the oil and natural gas industry, while allowing continued, responsible growth in U.S. oil and natural gas production. The final rules include the first federal air pollution standards for natural gas wells that are hydraulically fractured, along with requirements for several other sources of pollution in the oil and gas industry, such as storage tanks and natural gas processing facilities, that currently are not regulated at the federal level. Based on public comment, EPA made a number of changes to the proposed rules to increase compliance flexibility while maintaining comparable environmental benefits, streamlining notification, recordkeeping and reporting requirements, and strengthening accountability.

Benefits of the New Standards for the Oil and Gas Industry

The New Source Performance Standards and the National Emission Standards for Hazardous Air Pollutants for the Oil and Gas Industry will allow continued, responsible growth in U.S. oil and natural gas production while reducing harmful air pollution from the oil and natural gas industry. President Obama's April 13, 2012, Executive Order Supporting Safe and Responsible Development of Unconventional Domestic Natural Gas Resources states: "[I]t is vital that we take full advantage of our natural gas resources, while giving American families and communities confidence that natural

¹ EIA, U.S. Petroleum Supply Monthly, Released June 5, 2012; and EIA, Natural Gas Monthly, Released May 31, 2012.

and cultural resources, air and water quality, and public health and safety will not be compromised.” EPA’s oil and gas standards, which are required by the Clean Air Act, do just that. These standards will reduce ozone- or smog-forming air pollution and cancer-causing air toxic emissions, providing health benefits to Americans across the country. Combined, these rules are expected to reduce between 190,000 and 290,000 tons of Volatile Organic Compound (VOC) emissions, and 12,000 to 20,000 tons of air toxic emissions each year. While summer violations of the ambient air quality standards for ozone are common in large metropolitan areas, winter ozone has become a problem in some areas where significant natural gas production occurs.² For example, parts of the Upper Green River Basin in Wyoming were recently designated nonattainment for ozone for the first time ever due to wintertime exceedances. The oil and gas standards will reduce these ozone-forming emissions.

The standards are cost-effective, relying on proven technology and practices that industry leaders already are using today at about half of the fractured natural gas wells in the United States.³ EPA’s analysis of the rules shows a net cost savings to the regulated industries of \$11 to \$19 million annually when the rules are fully implemented in 2015; and as explained below, EPA’s standards achieve these savings largely by reducing waste of valuable natural gas that otherwise would escape into the air.

The Standards for the Oil and Gas Industry are Needed to Protect Public Health

The oil and gas industry is a significant source of VOC emissions, which contribute to the formation of ground-level ozone, or smog. In 2009, about 1.1 million wells were producing oil and

² Schnell et al. (2009), Rapid photochemical production of ozone at high concentrations in a rural site during winter; and Carter and Seinfeld (2012), Winter ozone formation and VOC incremental reactivities in the Upper Green River Basin of Wyoming

³ Based on the total methane reductions reported to EPA’s Natural Gas Star Program in 2008-2010. Detailed information can be found in the Background Supplemental Technical Support Document for the Final New Source Performance Standards. April 2012. Docket ID EPA-HQ-OAR-2010-0505-4550.

natural gas in the United States.⁴ The majority of new gas wells drilled today use a process known as hydraulic fracturing or “fracking.” In this process, a mixture of water, chemicals and a “proppant” (usually sand) is pumped into a well at extremely high pressures to fracture rock and allow natural gas to escape. An estimated 11,400 new wells are fractured each year.⁵ EPA estimates another 1,400 existing wells are re-fractured to stimulate production or to produce natural gas from a different production zone. Data provided to EPA show that some of the largest air pollution emissions in the natural gas industry occur in both urban and rural areas of the country, as natural gas wells that have been fractured are being prepared for production.

These standards will achieve nearly a 95 percent reduction in emissions of VOCs from more than 11,000 new hydraulically fractured gas wells each year. The VOC emission reductions from wells, combined with emission reductions from storage tanks and other equipment, are expected to help reduce ozone- or smog-forming air pollution in areas where oil and gas production occurs. Exposure to ozone is linked to increased asthma attacks, hospital admissions and emergency room visits, and premature death. These rules will additionally protect against potential cancer risks from emissions of several toxic air pollutants, including benzene.

As a co-benefit, the technologies and practices that capture and reduce emissions of VOCs and toxic air pollutants also reduce methane emissions. Methane, which is the primary component of natural gas, is an ozone precursor as well as a greenhouse gas that is more than 20 times as potent as carbon dioxide (CO₂). EPA estimates that these standards will result in reducing methane emissions by up to 1 to 1.7 million tons – or the equivalent of about 19 to 33 million metric tons of CO₂.

⁴ EIA. U.S. Energy Information Administration, Annual Energy Review 2010.

⁵ EIA. Annual Energy Outlook 2011 Reference Case (successful completions in tight sands, shale, coalbed methane formations in 2015)

Rules Support Oil and Gas Production

EPA's Natural Gas STAR Program is a voluntary partnership with U.S. oil and gas companies, started in 1993, to promote proven, cost-effective technologies and practices that improve operational efficiency and reduce methane emissions. Through this Program, participating companies identify and implement emission reducing technologies and practices based on corporate goals and resources and then report those activities to EPA on an annual basis. Building in part on this longstanding work, EPA sought technical advice from the regulated industry to develop the new standards. After considering extensive comments on our proposed rules, EPA made changes in the final rules to ensure that pollution reductions are achieved without slowing natural gas production. Specifically, the final rules establish a transition period during which industry can control VOC emissions from hydraulically fractured wells using one of two approaches. During the transition period that extends until January 1, 2015, VOC emissions can be controlled either through flaring (essentially burning off the gas) or through the use of a proven process – known as a “reduced emissions completion” or “green completion” – which captures natural gas that otherwise escapes to the air. Green completions are conducted using special equipment that separates gas and liquid hydrocarbons from the flowback that comes from the well as it is being prepared for production. The gas and hydrocarbons can then be treated and sold. This process avoids wasting gas by routing the captured gas into a pipeline. The estimated revenues from selling the captured gas, which currently is wasted, are expected to offset the costs of compliance while significantly reducing pollution from this expanding industry. After January 1, 2015, most wells covered by EPA's standards will be required to use green completions. New exploratory (“wildcat”) wells or delineation wells are exempt because they are not near a pipeline to bring the gas to market, and low pressure wells are

exempt because gas cannot be routed to a gathering line from these wells. This approach will provide the time necessary for industry to order and manufacture enough equipment to conduct green completions.

Green completions are required in Wyoming and Colorado, as well as in some cities, including Fort Worth and Southlake, Texas. Additionally, data provided to EPA's Natural Gas STAR program and through the public comment process show that a number of companies are using green completions voluntarily. In creating these rules, we made a special effort to ensure the program aligns with existing programs in states that require green completions, and to respect states' choices on how to regulate them in the future. EPA's rules build on the emission reductions that state, local, and oil and gas industry leaders already are achieving, helping to level the playing field across the industry and to ensure that this win-win practice is used in all states where gas wells are fractured.

The Clean Air Act

EPA's new standards for the oil and gas industry represent another important addition to the Clean Air Act's longstanding and continuing success story. For more than 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.⁶ They also enhanced productivity by preventing 13 million

⁶ 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

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.⁷

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 original Act was passed, the Gross Domestic Product of the United States grew by more than 200 percent.⁸ It is misleading to say that 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.⁹ Another study that examined four regulated

Council on Clean Air Compliance Analysis, an independent panel of distinguished economists, scientists and public health experts.

⁷ Ibid.

⁸ Bureau of Economic Analysis, National Economic Accounts, "Table 1.1.5. Gross Domestic Product," <http://bea.gov/national/index.htm#gdp>

⁹ 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/erm.nsf/vwAN/EE-0565-01.pdf/\\$file/EE-0565-01.pdf](http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0565-01.pdf/$file/EE-0565-01.pdf)

industries (pulp and paper, refining, iron and steel, and plastic) concluded: “We find that increased environmental spending generally does not cause a significant change in employment.”¹⁰

The EPA’s updated public health safeguards under the Clean Air Act will encourage investments in technology 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.¹¹ 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,¹² larger than exports of sectors such as plastics and rubber products.¹³ 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.¹⁴

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

¹⁰ 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.

¹¹ Manufacturers of Emissions Control Technology (http://www.meca.org/cs/root/organization_info/who_we_are)

¹² 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](http://web.ita.doc.gov/ete/eteinfo.nsf/068f3801d047f26e85256883006ffa54/4878b7e2fc08ac6d85256883006c452c/$FILE/Full%20Environmental%20Industries%20Assessment%202010.pdf) (accessed February 8, 2011)

¹³ U.S. Census Bureau, Censtats Database, International Trade Data--NAICS, http://censtats.census.gov/naic3_6/naics3_6.shtml (accessed September 6, 2011)

¹⁴ 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).

program.¹⁵ Over the past seven years, the Institute for Clean Air 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.¹⁶

Conclusion

This administration's "all of the above" approach to American energy includes a strong focus on responsibly increasing domestic oil and gas production. Domestic natural gas production has never been higher while domestic oil production, currently at an eight-year high, will help to continue to reduce our nation's vulnerability to the ups and downs of the global markets. EPA's recent Clean Air Act standards for the oil and gas industry help to support this policy. These standards support responsible oil and natural gas exploration and production while protecting public health and the environment. They also help to level the playing field, requiring wells across the country to use cost-effective and proven technologies that leading states, cities, and companies already are using. Finally, they encourage operators to capture and sell natural gas that currently escapes into the air, resulting in more efficient operations, while reducing harmful emissions that can impact air quality in surrounding areas and nearby states. In short, these win-win standards protect public health in a way that supports responsibly increasing domestic production, and the standards ultimately pay for themselves as industry captures more of a valuable natural resource.

¹⁵ International Brotherhood of Boilermakers, *Boilermaker Labor Analysis and Installation Timing*, March 2005, EPA Docket OAR-2003-0053 (docket of the Clean Air Interstate Rule).

¹⁶ 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).