

TESTIMONY OF DANIEL A. LASHOF, Ph.D.  
DIRECTOR, CLIMATE AND CLEAN AIR PROGRAM,  
NATURAL RESOURCES DEFENSE COUNCIL

HEARING ON  
“THE PRESIDENT’S CLIMATE ACTION PLAN”  
BEFORE THE COMMITTEE ON ENVIRONMENT & PUBLIC WORKS  
U.S. SENATE  
JANUARY 16, 2014

Chairman Boxer and members of the Committee, thank you for inviting me to present NRDC’s views on federal efforts to address climate change under the President’s Climate Action Plan.

We have an obligation to protect our children and future generations from the effects of climate change by reducing emissions of carbon dioxide and other heat-trapping pollutants and by taking sensible steps to prepare for changes in climate that are no longer avoidable. Acting responsibly at home is also a prerequisite for the indispensable leadership that only the United States can provide internationally.

President Obama's historic Climate Action Plan will set us on the right track to cut dangerous pollution that threatens our health and well-being. It will help communities across the country prepare for more frequent and intense extreme weather, such as heat waves, heavy precipitation, drought, coastal flooding, and wildfires. And it will position the United States to provide the leadership the world needs.

The year 2012 was the hottest on record in the continental United States.<sup>1</sup> Severe drought destroyed livestock and livelihoods across the Southwest. Wildfires charred 9.3 million acres of forest.<sup>2</sup> Storm surges amplified by higher sea levels ravaged coastal communities in the East. Overall, extreme weather cost the U.S. economy \$140 billion,<sup>3</sup> of which the federal government's share amounted to \$96 billion. That's about \$1,100 per taxpayer and more than it spent on education or transportation.<sup>4</sup> These staggering sums give us a sense of the cost of inaction. Indeed, they make it clear that inaction is not a responsible option.

The centerpiece of the Climate Action Plan is a set of actions under existing federal laws by the Environmental Protection Agency (EPA), the Department of Energy (DOE) and other agencies to curb heat-trapping pollution and cut energy waste in order to cut total economy-wide

---

<sup>1</sup> National Oceanic and Atmospheric Administration (NOAA) and the National Climatic Data Center, *See* <http://www.ncdc.noaa.gov/billions/events>.

<sup>2</sup> United States Department of Agriculture: USDA Forest Service Update, March 2013, Wildfires of 2012

<sup>3</sup> National Oceanic and Atmospheric Administration (NOAA) and the National Climatic Data Center, *See* <http://www.ncdc.noaa.gov/billions/events>.

<sup>4</sup> Dan Lashof and Andy Stevenson. Who Pays for Climate Change? U.S. Taxpayers Outspend Private Insurers Three-to-One to Cover Climate Disruption Costs, published by NRDC, May 2013, available at: <http://www.nrdc.org/globalwarming/files/taxpayer-climate-costs-IP.pdf>.

U.S. greenhouse gas emissions 17% from 2005 levels by 2020.<sup>5</sup> President Obama committed to this benchmark during his first term in office, and reaffirmed it with the announcement of the Climate Action Plan. Other elements of the plan are to prepare for changes in climate that are no longer preventable by supporting community-based preparedness, resilience planning and investment, and developing bilateral and multilateral agreements to reduce climate change pollution worldwide. My testimony focuses primarily on the pollution reduction component of the Climate Action Plan.

To achieve the objectives of the Climate Action Plan the administration will need to take ambitious steps using all the tools at its disposal under current law to reduce carbon dioxide, methane and HFC pollution from major sources. The World Resources Institute (WRI) has identified a “go-getter” scenario in which the administration pursues reductions with the “highest ambition achievable without new congressional action.”<sup>6</sup> WRI’s analysis shows that meeting the 17% economy-wide emission reduction target will require significant cuts from the largest sources of heat-trapping pollution, particularly: carbon dioxide from power plants, methane from natural gas and oil extraction, and the use of hydrofluorocarbons (HFCs) in industrial and consumer applications. Further carbon dioxide emission reductions from the transportation sector, where the Obama Administration has already made important progress, will also play a role in reaching the 17% reduction goal.

---

<sup>5</sup> The President’s Climate Action Plan, June 2013, available at:

<http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf>.

<sup>6</sup> Nicholas Bianco, Franz Litz, Kristin Meek, and Rebecca Gasper. *Can The U.S. Get There From Here?*, published by the World Resources Institute, February 2013, available at: <http://www.wri.org/publication/can-us-get-there-here>.

**Carbon Dioxide Emissions from Power Plants.** Power plants in the United States release about 2.2 billion tons of carbon pollution each year.<sup>7</sup> This accounts for 40% of the nation's total carbon footprint, more than any other industry. Currently, power plants operate under federal limits on how much arsenic, mercury and soot they can release, but there are no national limits on dangerous carbon pollution. That's wrong and it needs to change.

The U.S. Supreme Court ruled in 2007<sup>8</sup> and again in 2011 that the Clean Air Act authorizes EPA to set sensible safeguards for carbon dioxide and other greenhouse gas pollutants to protect public health and welfare.<sup>9</sup> Following the law and the president's directive, EPA took an important step forward to carry out the Climate Action Plan when Administrator Gina McCarthy announced EPA's proposal under the Clean Air Act to set federal limits on carbon pollution from future power plants in September last year. That proposal is now open for public comment, following its publication in the Federal Register last week.

---

<sup>7</sup> U.S. Energy Information Administration.

<sup>8</sup> *Massachusetts v. EPA*, 549 U.S. 497 (2007). *Massachusetts* directly concerned carbon pollution from motor vehicles. In a companion case stemming out of a 2006 EPA decision refusing to issue standards for CO<sub>2</sub> from power plants, the U.S. Court of Appeals for the District of Columbia Circuit directed EPA to take action on power plants in light of the *Massachusetts* decision. *State of New York et al. v. EPA*, No. 06-1322 (Order, Sept. 24, 2007). In 2011 the parties reached a settlement agreement in the *New York* case with a schedule for EPA to act on CO<sub>2</sub> standards for both new and existing power plants. [www.epa.gov/airquality/cps/settlement.html](http://www.epa.gov/airquality/cps/settlement.html).

<sup>9</sup> In 2011 the Supreme Court confirmed EPA's responsibility to address carbon pollution from power plants under Section 111 in another climate change case, *American Electric Power vs. Connecticut*, 131 S.Ct. 2527 (2011).

In setting carbon pollution standards, EPA is continuing to do the job of protecting public health and welfare for which it was created more than 40 years ago by a bipartisan Congress. EPA's proposal signals that the era of unlimited carbon pollution is drawing to a close. The proposed standards for new coal plants are based on carbon capture and storage (CCS) technology that is now available and ready for use. EPA has proposed a standard that a system of partial carbon capture can easily achieve. Contrary to claims by naysayers, EPA has a wealth of data showing that CCS has been adequately demonstrated by experience in a variety of applications, including the Boundary Dam plant in Canada, which is designed to outperform the standard. The Kemper plant under construction in Georgia would also meet EPA's proposed standard, providing corroboration of its feasibility.

Electricity from new coal plants—with or without CCS—is considerably more expensive than energy efficiency or electricity supplied by new wind or natural gas combined cycle (NGCC) power plants. As a result, other than completion of a few plants already under construction, neither government nor industry forecasts anticipate construction of any new coal plants in the United States, whether or not carbon pollution standards are established. Nevertheless, EPA notes that there may be a few instances where despite these basic economics companies choose to build something other than the lowest-cost options. In that case, EPA estimates that the cost of power from a coal plant equipped with partial CCS would range from \$92 to \$110 per Megawatt-hour (MWh), which is comparable to the range for other non-NGCC baseload options of \$80 to \$130 per MWh. Thus, EPA concluded that the costs of CCS are consistent with the costs of other low-carbon baseload options, and that requiring any new coal

plants to meet the standard would not result in significant increases in electricity prices for consumers.<sup>10</sup>

EPA has also announced a schedule for development of guidelines to control carbon pollution from existing power plants, in cooperation with state clean air officials. EPA is conducting an extensive outreach process to provide ample opportunity for all voices to make their views known, ensuring that EPA considers perspectives from the full range of stakeholders. There will be a further opportunity for everyone to comment on EPA's proposed guidelines after they are proposed this June.

NRDC has proposed one option for how such standards could be designed and NRDC's analysis of this approach, using the same power sector model employed by EPA and many power companies, demonstrates that it is feasible to achieve significant emission reductions in carbon dioxide pollution from power plants with benefits for Americans that would far outweigh the modest costs of compliance. In its updated analysis of this proposal, NRDC demonstrated that by implementing guidelines that would permit compliance using a range of power system resources, states could reduce power sector carbon pollution by 23 to 30 percent from 2012 levels in 2020, with net benefits of \$30 to \$55 billion.<sup>11</sup>

---

<sup>10</sup> EPA, Regulatory Impact Analysis: Proposed Standards of Performance for GHG Emissions for New EGUs – Sept 20, 2013, available here: <http://www2.epa.gov/sites/production/files/2013-09/documents/20130920proposalria.pdf>.

<sup>11</sup> Dan Lashof, Even Bigger Reductions, Even Lower Costs, available at: [http://switchboard.nrdc.org/blogs/dlashof/even\\_bigger\\_carbon\\_reductions.html](http://switchboard.nrdc.org/blogs/dlashof/even_bigger_carbon_reductions.html), and NRDC preliminary results of updated analysis. *See* <http://switchboard.nrdc.org/blogs/dlashof/NRDC%20Carbon%20Pollution%20Standards%20UPDATED%20ANALYSIS%20BPC%20Workshop%20Dec%202013%20Rev1.pdf>.

It is critical that EPA carry out its responsibilities under the Clean Air Act and the Supreme Court's two climate change decisions. NRDC strongly opposes any efforts to repeal its Clean Air Act authority to set standards for carbon pollution, a view shared by two-thirds of registered voters nationwide according to a poll conducted by Hart Research and Chesapeake Beach Consulting in July, 2013.<sup>12</sup> Most recently, Chairman Whitfield and Senator Manchin have introduced a bill that would repeal EPA's authority to carry out carbon pollution standards for existing power plants and would allow the power sector to dictate the standards that could be adopted for new coal plants. This legislation would harm Americans by allowing unlimited excess carbon pollution from power plants for decades; pollution that would stay in the air for centuries, disrupting the climate we depend on to thrive as a modern civilization. Ironically, the legislation would not improve the lot of coal producers or communities in coal country. Rather, it would destroy the interest of U.S. power companies in seriously considering carbon capture and storage systems -- the one technology that could provide a pathway for more sustainable use of coal. The Senate should reject any legislation that would weaken the Clean Air Act or prevent EPA from carrying out the president's Climate Action Plan.

Another poorly-considered effort to block EPA from doing its job is the argument, set forth in a letter from four members of the House of Representatives, that the Energy Policy Act of 2005 prevents EPA from setting standards based on CCS because several CCS coal projects received government funding. This is an incorrect interpretation of the language, and EPA's proposal is in full compliance with the EPAct provision. The 2005 EPAct says that EPA cannot

---

<sup>12</sup> Hart Research Associates and Chesapeake Beach Consulting, Key Findings From Survey on Carbon Pollution and Climate Change, July 15, 2013. Available at [http://docs.nrdc.org/air/files/air\\_13071801a.pdf](http://docs.nrdc.org/air/files/air_13071801a.pdf)

determine that a technology is adequately demonstrated under the Clean Air Act "solely" because the technology was used at projects that have received some government funding. What that means is that if a government-funded project is the *only* evidence EPA has that a technology is viable, EPA cannot set a standard based just on those projects. EPA's conclusion that CCS is adequately demonstrated is based on a number of factors, including the following:

- Experience with large-scale industrial carbon capture going back to the 1930s and large-scale experience with transporting and injecting carbon going back to the 1970s;
- Studies by DOE and others demonstrating that the technologies are fully applicable to the power sector; and
- Several projects that are now moving forward that include the use of CCS.<sup>13</sup>

The fact that some projects have been supported by government funding does not undermine EPA's assessment that the industry has confidence this technology will work in real-world plants, and does nothing to weaken the grounds upon which EPA developed its proposed standard. As these projects go online, they will provide corroboration of the soundness of EPA's "adequately demonstrated" determination, which rests on other evidence.

**Methane Emissions from the Oil and Natural Gas Industry.** Emissions of methane take place today in the oil and gas sector when natural gas is accidentally leaked or intentionally vented into the air. The chief component of natural gas is methane, which is a highly potent heat-trapping pollutant, at least 34 times more potent than carbon dioxide, on a pound for pound

---

<sup>13</sup> EPA, Regulatory Impact Analysis: Proposed Standards of Performance for GHG Emissions for New EGUs – Sept 20, 2013, available at: <http://www2.epa.gov/sites/production/files/2013-09/documents/20130920proposalria.pdf>.

basis. Moreover, natural gas is composed of a number of other harmful pollutants which threaten public health, including volatile organic compounds (VOCs) that cause ground-level smog and hazardous air pollutants (HAPs).

Emissions control technologies and associated practices to significantly limit such pollution exist today, have been tried and tested, and are being used by some oil and gas producers in the field already<sup>14</sup>. These are cost-effective and often profitable, and can generate value for the broader economy by reducing the waste of a valuable resource.<sup>15</sup> But voluntary implementation of these profitable measures has not occurred comprehensively across the industry. Hence, it is important to establish emission control standards that will help to ensure environmental and community safety, while generating economic value. The recently-established EPA New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants for the oil and gas industry<sup>16</sup> are an important first step in the right direction. A recent study led by researchers from the University of Texas confirms that methane emissions from the oil and gas industry are significant, but that control measures such as those required in some cases by these standards can be very effective at reducing these emissions. However, the current

---

<sup>14</sup> Susan Harvey, Vignesh Gowrishankar and Thomas Singer, *Leaking Profits: The U.S. Oil and Gas Industry Can Reduce Pollution, Conserve Resources, and Make Money by Preventing Methane Waste*, published by NRDC, April 2012, available at <http://www.nrdc.org/energy/leaking-profits.asp>.

<sup>15</sup> *Id.*

<sup>16</sup> EPA, 40 CFR Parts 60 and 63, *Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews: Final Rule*, Federal Register, Vol. 77, No. 159, August 16, 2012, Page 49490-49600.

standards are limited to natural gas wells and don't address methane emissions directly. Much greater emission reductions can be achieved with more comprehensive and direct regulations.

Pursuant to the Climate Action Plan, the Administration will develop an interagency methane strategy that coordinates government action to analyze emissions data, and identify, improve and implement best practices to reduce methane emissions, in collaboration with other sectors of the economy. Specifically, NRDC urges EPA to use its authority under Section 111 of the Clean Air Act to establish standards that require reductions in methane pollution from new and existing sources in the oil and gas industry. This includes establishing standards that specifically regulate methane emissions and cover (i) existing equipment, in addition to new and modified ones; (ii) all types of wells from which natural gas can be produced; and (iii) sources of methane emissions across the entire natural gas supply chain. Such standards will help protect the air we breathe, reduce global warming pollution and prevent the waste of a valuable energy commodity.

**The Use and Emission of HFCs.** Another key initiative of the Climate Action Plan is phasing down the production and use of HFCs both domestically and internationally. Pound for pound, HFCs are hundreds to thousands of times more efficient at trapping heat than carbon dioxide. The U.S. has already joined Mexico and Canada to propose a global HFC phase-down under the Montreal Protocol and has been party to bilateral and multilateral discussions on proposals to manage HFCs. In a breakthrough in June and September, President Obama reached important agreements with Chinese President Xi committing both countries to phasing down HFCs under the Montreal Protocol. The leaders of the G-20 agreed to similar steps on HFCs in September, and more than 110 governments have endorsed negotiating an HFC agreement.

EPA’s analysis of the global benefits of phasing down HFCs shows that the opportunity is considerable—more than 90 billion tons of CO<sub>2</sub>-equivalent emissions could be avoided by 2050, equaling more than two year’s current worldwide emissions of all forms of heat-trapping pollution<sup>17</sup>. EPA has also concluded that less climate-destructive alternatives are available and that there are reasonable phase-down trajectories that could reduce HFC consumption in the U.S. in accordance with schedules proposed during international negotiations.

The President’s climate plan directs EPA to cut HFCs in the U.S. using the Clean Air Act’s “significant new alternatives program” (SNAP), by identifying and approving climate-friendly chemicals while prohibiting certain uses of the most harmful HFCs. NRDC has petitioned EPA to act quickly on some of the biggest opportunities to reduce HFC use. For example, it is time for EPA to end the use of HFC-134a in new car air conditioners. HFC-134a is 1300 times more powerful in trapping heat than carbon dioxide. It can be replaced with an EPA-approved coolant called HFO-1234yf, which does 1/325<sup>th</sup> as much climate damage (its potency is just 4 times that of carbon dioxide). Similar opportunities to move to climate-friendlier alternatives exist in commercial refrigeration and a range of other consumer goods. Leadership here at home, and bilaterally with China, will bring big dividends in the Montreal Protocol negotiations.

---

<sup>17</sup> Benefits of Addressing HFCs Under the Montreal Protocol, EPA, June 2013, available at: [http://www.epa.gov/ozone/downloads/Benefits\\_of\\_Addresssing\\_HFCs\\_Under\\_the\\_Montreal\\_Protocol\\_6-21-2013.pdf](http://www.epa.gov/ozone/downloads/Benefits_of_Addresssing_HFCs_Under_the_Montreal_Protocol_6-21-2013.pdf).

**Carbon Dioxide Emissions from Vehicles.** The transportation sector accounts for roughly one-third of national carbon dioxide emissions, and is the second largest emitter behind power plants. In its first term, the Obama Administration finalized clean car and fuel-efficiency standards for light-duty vehicles and the first-ever fuel-efficiency standards for heavy-duty vehicles.<sup>18</sup> This standard built on the success of the Administration’s previous standards for cars and light-duty trucks, and will reduce carbon pollution, address climate change and strengthen the economy. Combined, the Administration’s standards will cut carbon emissions from new cars and light trucks in half by 2025, reducing carbon dioxide emissions by 6 billion metric tonnes over the life of the program—more than the total amount of carbon dioxide emitted in the U.S. in 2010. Still, to reach the goal specified in the Climate Action Plan, we must continue to clean up the transportation sector with a special focus in the near term on emissions from freight trucks.

To achieve the necessary long-term reductions in carbon pollution from the transportation sector, the Administration must expand on its successes and continue the progress set in motion in the first term. Freight trucks are the fastest growing source of carbon pollution in the transportation sector. Without tighter standards, the EIA projects that on-road freight trucks will increase carbon dioxide emissions at an average rate of 1.2 percent per year between 2011 and 2040.

---

<sup>18</sup> See Environmental Protection Agency and National Highway Traffic Safety Administration, “2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards”, 77 FR 62624, October 15, 2012, and Environmental Protection Agency and National Highway Traffic Safety Administration, “Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles”, 76 FR 57106, September 15, 2011.

Action under the President’s Climate Action Plan will put heavy-duty vehicles, including freight trucks, on a cleaner road into the future, with lower fuel consumption that will save drivers money while cutting carbon pollution. The Administration is preparing to release the second phase of the heavy-duty truck fuel efficiency standards as an integral component of the Climate Action Plan. Based on analysis by the National Academies of Science,<sup>19</sup> known cost-effective technologies can achieve fuel consumption and carbon pollution reductions of 5 percent per year, a rate similar to that being achieved with cars and light trucks. A recent NAS report stated,

“The fuel-saving technologies that are already available on the market generally result in increased vehicle cost, and purchasers must weigh the additional cost against the fuel savings that will accrue. In most cases, market penetration is low at this time. Most fuel saving technologies that are under development will also result in increased vehicle cost, and in some cases, the cost increases will be substantial. As a result, many technologies may struggle to achieve market acceptance, despite the sometimes substantial fuel savings, unless driven by regulation or by higher fuel prices.”<sup>20</sup>

Under strong standards, new trucks in 2025 could consume roughly 40 percent less fuel than the average 2010 truck. With these improvements, oil consumption from the on-road U.S. trucking

---

<sup>19</sup>National Research Council. *Technologies and Approaches to Reducing the Fuel Consumption of Medium- and Heavy-Duty Vehicles*. Washington, DC: The National Academies Press, 2010.

<sup>20</sup> *Id.*

fleet would be cut by 1 million barrels per day in 2030, reducing CO2 emissions by about 200 million tons per year, relative to what would occur if truck technology did not improve.<sup>21</sup>

**Conclusion.** U.S. emissions of carbon dioxide and other heat-trapping pollutants have decreased significantly during the last five years as our use of energy has become more efficient and as we have shifted our energy mix toward cleaner fuels. As a result, the United States' commitment to reduce our annual contribution to global warming pollution by 17 percent by 2020 is within reach. Provided that Congress does not prevent EPA and other agencies from doing their jobs, and provided that those agencies are ambitious in implementing the President's Climate Action Plan, we can build on the progress to date and achieve this goal through cost effective standards to reduce carbon dioxide emissions from power plants and vehicles, methane emissions from oil and gas operations, and HFC emissions from the chemical and consumer products industries. Doing so will create new markets for technological ingenuity and will put the United States on track to the much deeper emission reductions needed to forestall out-of-control climate disruption and protect our health and the future our children inherit.

Thank you.

---

<sup>21</sup> American Council for Energy-Efficient Economy (ACEEE), "Further Fuel Efficiency Gains for Heavy-Duty Vehicles", September 25, 2013. Available at <http://aceee.org/fact-sheet/heavy-duty-fuel-efficiency>.