

**U.S. HOUSE OF REPRESENTATIVES  
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY  
FULL COMMITTEE**

**HEARING CHARTER**

*The Administration's Climate Plan: Failure by Design*

Wednesday, September 17, 2014  
10:00 a.m. – 12:00 p.m.  
2318 Rayburn House Office Building

**PURPOSE**

The Committee on Science, Space, and Technology will hold a hearing entitled *The Administration's Climate Plan: Failure by Design* on Wednesday, September 17<sup>th</sup>, in Room 2318 of the Rayburn House Office Building. The hearing will examine the role of science in the Administration's Climate Action Plan, the EPA's proposed greenhouse gas regulations for existing power plants, and other EPA rules currently under consideration by the Administration. The hearing will discuss the scientific and economic impact analyses incorporated Administration's Climate Action Plan; the scientific, technological and legal hurdles to meeting the Administration's carbon-reduction goals as well as the economic and energy security impacts of meeting those goals; and how the Administration reconciled scientific and technological concerns raised by federal science agencies, scientific advisory boards and committees, as well as the American public in formulating the Administration's Climate Action Plan and EPA's proposed greenhouse gas regulations for existing power plants among a host of other EPA regulations.

**WITNESS LIST**

- **The Honorable John Holdren**, Director, Office of Science and Technology Policy, Executive Office of the President
- **Ms. Janet McCabe**, Acting Assistant Administrator, Office of Air and Radiation, U.S. Environmental Protection Agency

**BACKGROUND**

***Global Carbon Emissions***

Sources of carbon emissions are global in nature. According to the Energy Information Agency (EIA), while the global emissions of carbon dioxide from the consumption of energy have increased annually, the United States has reduced emissions in recent years by over 500 million metric tons from 2007 to 2011.<sup>1</sup> In 2011, China emitted over 8.7 billion metric tons of

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<sup>1</sup> U.S. Energy Information Administration, International Energy Statistics, Available at: <http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=90&pid=44&aid=8>

carbon, accounting for over a quarter of the world’s carbon pollution.<sup>2</sup> In 2007, the United States was responsible for roughly 20% of global emissions, but by 2011, this had dropped to 16.8%.<sup>3</sup>

In September 2014, the EIA released a report titled *International Energy Outlook 2014*, which documents both current and future global energy consumption and emissions.<sup>4</sup> Figure 1 below illustrates the historical emissions of developed countries [OECD<sup>5</sup>] and non-developed countries [non-OECD] since the 1990s and projects carbon emissions through 2040. The report finds that, while OECD countries like the United States have leveled or reduced emissions, non-OECD countries have contributed the largest amounts to global carbon emissions since the mid-2000s. As the graph indicates, non-OECD countries will continue to constitute an increasingly larger share of global emissions through at least 2040.<sup>6</sup> Non-OECD countries are estimated to account for 69% of global carbon emissions in 2040, while OECD countries will make up 31%.<sup>7</sup> The continued use of fossil fuels is predicted to be the major source of carbon emissions as developing countries continue to support their economic growth.<sup>8</sup>

Figure 140. World energy-related carbon dioxide emissions, 1990-2040

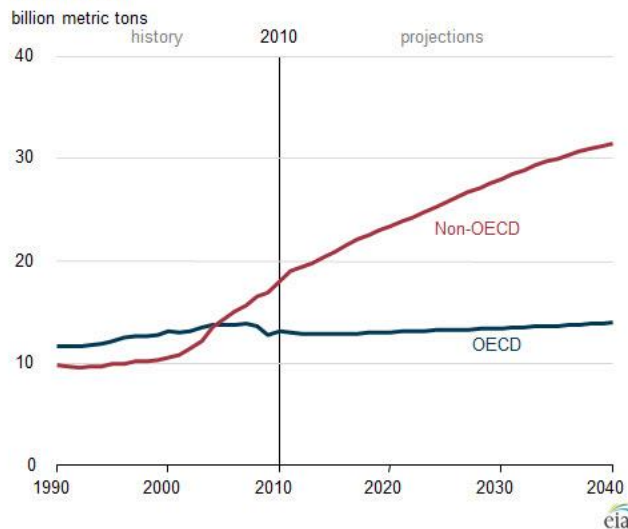


Figure 1 Source: Energy Information Administration, Available at: Energy Information Administration, Available at [http://www.eia.gov/forecasts/ieo/pdf/0484\(2014\).pdf](http://www.eia.gov/forecasts/ieo/pdf/0484(2014).pdf)

<sup>2</sup> U.S. Energy Information Administration, International Energy Statistics, Available at: <http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=90&pid=44&aid=8>

<sup>3</sup> Ibid.

<sup>4</sup> U.S. Energy Information Administration, International Energy Outlook 2014, Available at: [http://www.eia.gov/forecasts/ieo/pdf/0484\(2014\).pdf](http://www.eia.gov/forecasts/ieo/pdf/0484(2014).pdf)

<sup>5</sup> The Organization for Economic Co-Operation Development promotes policies that improve the economic and social well-being of people around the world. Members of OECD are generally the most developed countries around the world. Non-OECD countries are generally still emerging economically. More information available at: <http://www.oecd.org/about/membersandpartners/>

<sup>6</sup> U.S. Energy Information Administration, Energy-Related Carbon Dioxide Emissions, Overview, International Energy Outlook 2014, Available at <http://www.eia.gov/forecasts/ieo/emissions.cfm>

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

## ***The President's Climate Action Plan***

The White House released the President's Climate Action Plan in June 2013. The plan outlines various executive actions that the President and his Administration plan to take to reduce carbon pollution in America, prepare the United States for the impacts of climate change, and lead international efforts to combat climate change.<sup>9</sup>

In the Climate Action Plan, the President proposes to issue regulations and technology based standards to reduce carbon emissions.<sup>10</sup> This year EPA proposed regulations on new and existing power plants.<sup>11</sup> EPA has plans to issue regulations for refineries and other industry sectors.<sup>12</sup>

The plan also supports a goal of doubling renewable electricity generation by 2020<sup>13</sup> and modernizing the electric grid.<sup>14</sup> In addition, the plan takes aim at the transportation sector, building on passenger vehicle fuel economy standards by increasing standards for heavy-duty vehicles.<sup>15</sup> Likewise, the plan proposes to reduce greenhouse gas emissions from homes, businesses, and factories through new energy efficiency standards.<sup>16</sup>

The President's Climate Action Plan outlines initiatives to prepare America for the impacts of climate change.<sup>17</sup> The plan establishes state, local, and tribal task forces on climate preparedness.<sup>18</sup> The plan proposes to protect our economy and natural resources by identifying vulnerabilities of key sectors to climate change. It also promotes land and water conservation, agricultural sustainability, drought management, reduction of wildfire risks, and preparations for future floods.<sup>19</sup>

The plan also proposes to work with other countries to help take action to address climate change through multilateral engagements with major world economies and expanding bilateral cooperation with major emerging economies.<sup>20</sup> Finally, the President's Climate Action Plan will lead efforts to address climate change through international negotiations, specifically the United Nations Framework Convention on Climate Change.<sup>21</sup>

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<sup>9</sup> Executive Office of the President, The President's Climate Action Plan, June 2013, Available at: <http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf>

<sup>10</sup> Ibid, Page 6.

<sup>11</sup> U.S. Environmental Protection Agency, Regulatory Actions, Carbon Pollution Standards, Available at: <http://www2.epa.gov/carbon-pollution-standards/regulatory-actions>

<sup>12</sup> U.S. Environmental Protection Agency, Regulatory Agendas and Regulatory Plans, Available at: <http://www2.epa.gov/laws-regulations/regulatory-agendas-and-regulatory-plans#background>

<sup>13</sup> Executive Office of the President, The President's Climate Action Plan, June 2013, Page 6.

<sup>14</sup> Ibid, Page 7.

<sup>15</sup> Ibid, Page 8.

<sup>16</sup> Ibid, Page 9.

<sup>17</sup> Ibid, Page 12.

<sup>18</sup> Ibid, Page 14.

<sup>19</sup> Ibid, Page 15.

<sup>20</sup> Ibid, Page 17.

<sup>21</sup> Ibid, Page 21.

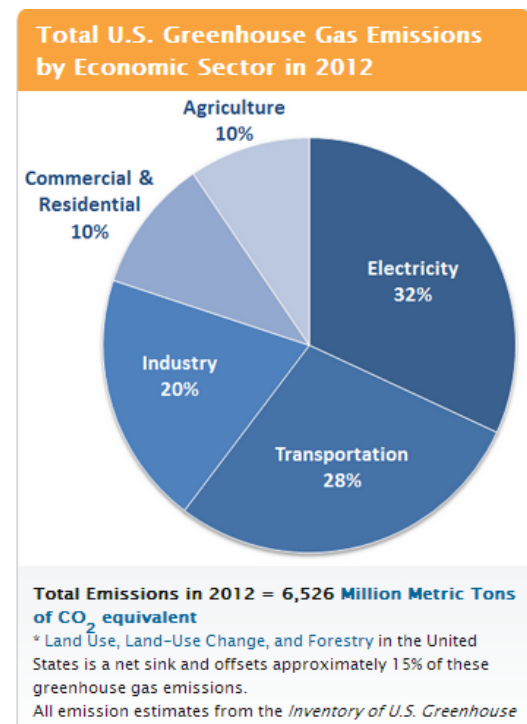
## EPA Regulations

Following the Supreme Court's 5-4 decision in *Massachusetts v. EPA*,<sup>22</sup> the Agency promulgated numerous standards and proposed rules aimed at reducing greenhouse gas (GHG) emissions. These include:

- 2009 *Endangerment Finding*, where "EPA determined that greenhouse gases endanger the health and welfare of Americans,"<sup>23</sup>
- *Light Duty Vehicle Rule*, in which "EPA coordinated with the National Highway Traffic Safety Administration to develop harmonized regulations to reduce greenhouse gas emissions and improve the fuel economy of light-duty vehicles,"<sup>24</sup> and
- *Tailoring Rule*, where "EPA set greenhouse gas emission thresholds to define when permits under the New Source Review Prevention Significant Deterioration (PSD) and title V Operating Permit programs are required for new and existing industrial facilities."<sup>25</sup>

Climate science—and regulatory actions informed by such science—are among the most complex and controversial issues facing policymakers. President Obama has increasingly signaled his intention to propose significant, new executive actions and regulatory measures aimed at addressing climate concerns.<sup>26</sup>

According to EPA, power plants are the Nation's largest source of carbon pollution and "account for roughly one-third of all domestic greenhouse gas emissions in the United States."<sup>27</sup> (See Figure 2)



**Figure 2.** Source: U.S. EPA Available at <http://www.epa.gov/climatechange/ghgemissions/sources.html>

<sup>22</sup> *Massachusetts v. U.S. Environmental Protection Agency*, 549 U.S. 497 (2007) available at: <http://www.supremecourt.gov/opinions/06pdf/05-1120.pdf>.

<sup>23</sup> U.S. Environmental Protection Agency, "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule." Dec. 2009. Available at: <http://www.gpo.gov/fdsys/pkg/FR-2009-12-15/pdf/E9-29537.pdf>.

<sup>24</sup> U.S. Environmental Protection Agency, "Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards; Final Rule." May 2010. Available at: <http://www.gpo.gov/fdsys/pkg/FR-2010-05-07/pdf/2010-8159.pdf>.

<sup>25</sup> See e.g. U.S. Environmental Protection Agency. "Prevention of Significant Deterioration and Title V Greenhouse gas Tailoring Rule Step 3 and GHG Plant wide Applicability Limits; Final Rule" July 2012. Available at: <http://www.gpo.gov/fdsys/pkg/FR-2012-07-12/pdf/2012-16704.pdf>.

<sup>26</sup> See: <http://www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change> and <http://www.whitehouse.gov/climate-change> for examples.

<sup>27</sup> U.S. Environmental Protection Agency, News Release, June 2014, Available at: <http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceac8525735900400c27/5bb6d20668b9a18485257ceb00490c98!OpenDocument>

## **POWER PLANT REGULATORY CONTEXT**

Section 111 of the Clean Air Act (CAA) establishes a unique technology-based mechanism for controlling emissions from “stationary sources” (i.e., power plants). Section 111 provides authority for EPA to promulgate standards which apply to new and modified sources. Specifically, EPA is directed to set standards based on “the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost. . .) the Administrator determines has been adequately demonstrated.”<sup>28</sup> In setting the standard, EPA is given some flexibility in that “emission limits may be established either for equipment within a facility or for an entire facility.”<sup>29</sup>

Section 111 lays out different approaches for new and existing sources. Under Section 111(b), the EPA has the authority to develop a “federal program to address new, modified and reconstructed sources by establishing standards of performance.”<sup>30</sup> In contrast, EPA explains that “section 111(d) of the Act requires states to develop plans for *existing* sources of noncriteria pollutants (i.e., a pollutant for which there is no national ambient air quality standard) whenever EPA promulgates a standard for a new source.”<sup>31</sup>

### ***New Power Plants***

EPA first proposed a New Source Performance Standards (NSPS) for emissions for carbon dioxide (CO<sub>2</sub>) from power plants in April 2012. However, after more than 2.5 million comments on the original proposal, EPA decided that a new approach was warranted and rescinded the original proposal.<sup>32</sup> Consequently, on September 20, 2013 Administrator Gina McCarthy announced EPA’s re-proposed CO<sub>2</sub> NSPS for new fossil fuel-based electric generating units (EGUs).

Under EPA’s NSPS proposal, the Agency concluded that Carbon Capture and Storage (CCS) has been adequately demonstrated as a technology for controlling CO<sub>2</sub> emissions in full-scale commercial applications at coal-fired EGUs, while reaching the opposite conclusion—that CCS is not adequately demonstrated—in the case of gas-fired EGUs. Based on this determination, EPA proposed an emissions limit for coal-fired sources of 1,100 lb CO<sub>2</sub>/MWH and proposed standards for natural gas combined cycle sources from 1,000 to 1,100 lb CO<sub>2</sub>/MWH depending on the size and type of unit. EPA did not include modified and reconstructed plants in the proposed rule. EGUs that primarily fire biomass are exempted from

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<sup>28</sup> Clean Air Act § 111(a)(1), 42 USCA § 7411(a)(1) (2006).

<sup>29</sup> U.S. Environmental Protection Agency, Background on Establishing New Source Performance Standards Under the Clean Air Act, Available at: <http://www2.epa.gov/sites/production/files/2013-09/documents/111background.pdf>

<sup>30</sup> U.S. Environmental Protection Agency, Fact Sheet: Reducing Carbon Pollution From Power Plants, Available at: <http://www2.epa.gov/sites/production/files/2013-09/documents/20130920technicalfactsheet.pdf>

<sup>31</sup> U.S. Environmental Protection Agency, Region 7 Air Program, Section 111(d) Plans, Available at: <http://www.epa.gov/Region7/air/rules/111d.htm>

<sup>32</sup> Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units, Proposed Rule, Preamble p. 14-5, Sep. 20, 2013. Available at: <https://www.federalregister.gov/articles/2014/01/08/2013-28668/standards-of-performance-for-greenhouse-gas-emissions-from-new-stationary-sources-electric-utility#h-18>

the proposed rule.<sup>33</sup> Find more information on CCS and EPA’s carbon rules in hearing held last March: <http://science.house.gov/hearing/subcommittee-energy-and-subcommittee-environment-joint-hearing-science-capture-and-storage>.

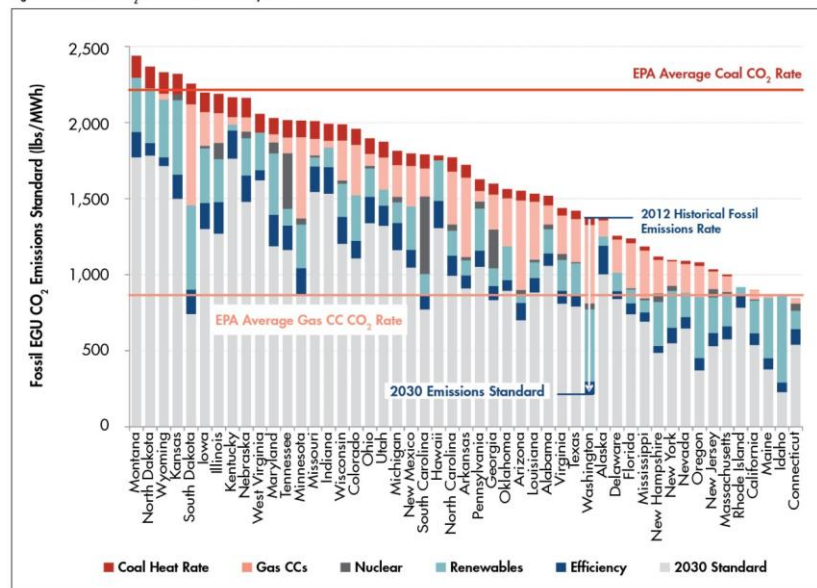
### Existing Power Plants

On June 2, 2014, EPA issued its “Clean Power Plan” under section 111(d), which addressed carbon emissions from existing fossil-fueled power plants. Just prior to EPA’s release, President Obama made these regulations the focus of his Weekly Radio Address.<sup>34</sup>

EPA explains the key difference between section 111(d), for existing power plants, and 111(b) for new and modified plants: “Section 111(d)’s mechanism for regulating existing sources differs from the one that CAA section 111(b) provides for new sources because CAA section 111(d) contemplates states submitting plans that establish ‘standards of performance’ for the affected sources and that contain other measures to implement and enforce those standards.”<sup>35</sup>

The Agency believes the proposed Clean Power Plan will “lower the carbon intensity of power generation in the United States by approximately 30% in 2030 from carbon dioxide emissions levels in 2005. The agency predicts that under the Clean Power Plan, electricity bills will decline by “roughly 8 percent”<sup>36</sup> and that the amount of U.S. electricity generated by coal-fired EGUs will decline by at least 25%. To achieve this goal, EPA is giving each state a numerical carbon reduction target, based on the state’s existing power generation portfolio.”<sup>37</sup> (See Figure 3.)

Figure 2: Fossil EGU CO<sub>2</sub> emissions standards by state



Source: The Brattle Group

<sup>33</sup> *Id.* at 30, fn. 8.

<sup>34</sup> <http://www.whitehouse.gov/blog/2014/05/31/weekly-address-reducing-carbon-pollution-our-power-plants>

<sup>35</sup> U.S. Environmental Protection Agency, *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, Proposed Rule, 79 FR 34832, June 2, 2014.

<sup>36</sup> U.S. Environmental Protection Agency, News Release, June 2014, Available at: <http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceac8525735900400c27/5bb6d20668b9a18485257ceb00490c98!OpenDocument>

<sup>37</sup> Congressional Research Service, *EPA’s Proposed Greenhouse Gas Regulations: Implications for the Electric Power Sector*. June 23, 2014. Available at: <http://www.crs.gov/pdfloader/R43621>.

Specifically, EPA set each state's required level of carbon reduction assuming that each state could recognize a set level of carbon reductions through the use of four "building blocks." Broadly speaking, the four blocks encompass:<sup>38</sup>

1. Installing technologies to increase efficiency at power plants.
2. Giving Natural Gas Combined-Cycle plants priority over steam-boilers.
3. Building new renewable power generation.
4. End-user efficiency technologies and programs that reduce power demand.

EPA proposes that these building blocks represent the "best system of emissions reduction" that has been adequately demonstrated for fossil-fuel power plants regulated under the EPA rule.

According to EPA, the proposed rule will be "implemented through a state-federal partnership under which states identify a path forward using either current or new electricity production and pollution control policies to meet the goals of the proposed program. The proposal provides guidelines for states to develop plans to meet state-specific goals to reduce carbon pollution and gives them the flexibility to design a program that makes the most sense for their unique situation."<sup>39</sup>

### ***Modified Power Plants***

On the same day as the 111(d) "Clean Power Plan," EPA also unveiled a separate 111(b) "Modified Source Proposal," in which EPA explained:

*For more than four decades, the EPA has used its authority under CAA section 111 to set cost-effective emission standards that ensure newly constructed, reconstructed and modified stationary sources use the best performing technologies to limit emissions of harmful air pollutants. In this proposal, the EPA is following the same well-established interpretation and application of the law under CAA section 111 to address GHG emissions from modified and reconstructed fossil fuel-fired electric steam generating units and natural gas-fires stationary combustion turbines.*<sup>40</sup>

The proposed rule for Modified Sources only applies to fossil-fueled power plants that undergo major modifications or reconstruction. In contrast with the broad approach EPA utilized for existing power plants, this proposal identifies a "combination of best operating practices and equipment upgrades" as the "best system of emission reduction" and arrives at a unit specific standard requiring 2% efficiency gains.

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<sup>38</sup> U.S. Environmental Protection Agency, *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, Proposed Rule, 79 FR 34832, June 2, 2014.

<sup>39</sup> U.S. Environmental Protection Agency, News Release, June 2014, Available at: <http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceac8525735900400c27/5bb6d20668b9a18485257ceb00490c98!OpenDocument>

<sup>40</sup> U.S. Environmental Protection Agency, "Carbon Pollution Standards for Modified and Reconstructed Stationary Sources: Electric Utility Generating Units; Proposed Rule." June 2014. Available at: <http://www.gpo.gov/fdsys/pkg/FR-2014-06-18/pdf/2014-13725.pdf>.

## **ADDITIONAL READING**

CONGRESSIONAL RESEARCH SERVICE. *Climate Change and Existing Law: A Survey of Legal Issues Past, Present, and Future*. March 10, 2014. Available at <http://www.crs.gov/pdfloader/R42613>.

CONGRESSIONAL RESEARCH SERVICE. *EPA's Proposed Greenhouse Gas Regulations: Implications for the Electric Power Sector*. June 23, 2014. Available at <http://www.crs.gov/pdfloader/R43621>.

CONGRESSIONAL RESEARCH SERVICE. *EPA's Proposed Greenhouse Gas Regulations for Existing Power Plants: Frequently Asked Questions*. July 3, 2014. Available at <http://www.crs.gov/pdfloader/R43572>.

U.S. ENVIRONMENTAL PROTECTION AGENCY. *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, Proposed Rule*. 79 FR 34832. June 2014. Available at <http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule>.

U.S. ENVIRONMENTAL PROTECTION AGENCY. *Carbon Pollution Standards for Modified and Reconstructed Stationary Sources: Electric Utility Generating Units, Proposed Rule*. 79 FR 34960. June 2014. Available at <http://www.gpo.gov/fdsys/pkg/FR-2014-06-18/pdf/2014-13725.pdf>.

U.S. ENVIRONMENTAL PROTECTION AGENCY. *Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units, Proposed Rule*. 40 CFR Part 60. Sep. 20, 2013. Available at <http://www2.epa.gov/carbon-pollution-standards/2013-proposed-carbon-pollution-standard-new-power-plants>.