

## Carbon Pollution Standards for Existing Power Plants: State Opportunities and Potential Benefits

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States will play a significant role in the development of carbon pollution performance standards for existing sources under Clean Air Act Section 111(d), and President Barack Obama has called on the Environmental Protection Agency (EPA) to build on the leadership that many states, cities, and companies have already shown in achieving emission reductions from the power sector.

States can work with EPA to develop a flexible framework that allows for state plans to incorporate and build on existing state programs. These programs are already achieving significant carbon pollution reductions, delivering economic and health benefits, and driving the transformation to a cleaner electric system that can meet future energy needs.

### *I. Clean Air Act Provides Major Role to States, Opportunity to Build On Current State Programs*

Clean Air Act Section 111(d) provides states a significant role in regulating carbon pollution from existing power plants. Similar to the State Implementation Plan (SIP) process for traditional ambient air pollutants, states will establish performance standards in plans that they submit for approval to EPA.

#### **States can Build on Successful State Clean Energy and Climate Programs**

In directing EPA to build on current state plans, President Obama identified a variety of state clean energy and climate programs as examples.<sup>1</sup> States could potentially use the following types of programs – which are already achieving significant carbon pollution reductions – as a starting point for their state plans:

- **Energy Efficiency and Renewable Energy Programs:** More than 35 states have set energy efficiency or renewable energy targets.<sup>2</sup> In some states, such goals are driving significant reductions in carbon pollution.
  - Minnesota's renewable energy standard and energy efficiency standard have driven a 17.4% reduction in the state's carbon pollution since 2005.<sup>3</sup>
  - California's renewable standard avoided 3.5 million metric tons of CO<sub>2</sub> equivalent in 2011 alone, while appliance and building energy efficiency standards avoided more than 3 million tons.<sup>4</sup>
- **State-Driven Clean Energy Planning:** Several states have laws and utility planning processes that promote significant shifts to clean energy.
  - Colorado's Clean Air, Clean Jobs Act required utilities to develop plans that reduce air pollution emissions from dirtier plants; Colorado utilities are now expected to achieve a 29 percent reduction in carbon pollution by 2018.<sup>5</sup>
  - Integrated resource plans for the Tennessee Valley Authority and Georgia Power increase efficiency and renewable resources and reduce reliance on older fossil fuel plants.<sup>6</sup>
- **Regional Greenhouse Gas Initiative (RGGI):** Nine northeast and mid-Atlantic states have been operating a power-sector cap-and-trade program since 2009.
  - These states have together reduced carbon pollution in the region by 36 percent from 2005 to 2011.<sup>7</sup>
  - Participating states have raised \$1.35 billion from allowance auctions, and are investing this revenue into energy efficiency and clean energy programs in these states that benefit consumers.<sup>8</sup>
- **Comprehensive, Economy-wide GHG Approach:** California has a comprehensive, economy-wide program to reduce GHG emissions pursuant to its Global Warming Solutions Act (AB 32).
  - California's suite of policies includes a multi-sector cap-and-trade program, a renewable portfolio standard requiring 33 percent renewable energy by 2030, and state-level GHG performance standards.

## II. State Programs are Already Achieving Major Economic, Health Benefits

- **Demand-side energy efficiency investments** reduce overall customer electricity spending, while creating local jobs and stimulating local economies, as bill savings are spent on other goods and services.
  - In 2010, RGGI states achieved an average of \$2.30 in benefits for every dollar of RGGI auction revenues invested in energy efficiency.<sup>9</sup>
- **Renewable energy standards and investments** create new jobs, new manufacturing activity, and new local industries. Investment in clean energy creates 3 times more jobs than equivalent investment in fossil fuels.<sup>10</sup>
- **States participating in RGGI have realized a \$1.6 billion net benefit** from investments they have made with allowance auction revenue, according to an independent analysis.<sup>11</sup> RGGI saves customers nearly \$1.1 billion on electricity bills through efficiency investments, and creates 16,000 jobs region-wide.
- **Reducing carbon pollution also provides significant health benefits.**
  - Strategies that reduce carbon pollution also reduce traditional air pollutants and toxics, including mercury and pollutants—SO<sub>2</sub> and NO<sub>x</sub>—that cause particulate matter and ozone pollution.
  - For example, reducing 1,000 tons of SO<sub>2</sub> and NO<sub>x</sub> is estimated to prevent several premature deaths and provide health benefits of \$28-75 million and \$2.3-6.2 million, respectively.<sup>12</sup>
- **There is strong bipartisan public support** for investing in lower carbon energy, renewable energy, and energy efficiency. According to a February 2013 poll conducted by the Georgetown Climate Center, 87 percent of Americans want EPA to establish and enforce GHG emission reduction targets for power plants and large industries; of those, 51 percent prefer EPA take an approach that provides flexibility to the states. This poll and others show the public strongly prefers energy generation from clean, renewable energy sources like wind and solar over traditional fossil fuels such as coal and oil.<sup>13</sup>

## III. A Strong, Flexible Program is Needed to Meet Future Energy Needs, Transform Energy System

- **Electricity demand is expected to increase in the United States in the long term; in the same time frame, very significant reductions in carbon pollution will be needed to address climate change.**
  - Total U.S. electricity demand is projected to increase by 28 percent from 2011 to 2040.<sup>14</sup>
  - Electricity generation is the nation's largest source of carbon pollution, approximately 40 percent of U.S. emissions.<sup>15</sup>
  - Scientific consensus indicates the need to reduce carbon pollution 80 percent by 2050 to stabilize global temperature.<sup>16</sup>
- **A flexible federal performance standard is the best available option for cost-effectively transitioning to a low-carbon energy sector.**
  - **Flexibility** allows for use of the most cost-effective options, including demand-side energy efficiency, changes in dispatch across the electricity system, and renewable energy investments.

<sup>1</sup> Remarks by President Barack Obama, June 25, 2013, <http://www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change>.

<sup>2</sup> Center for Climate and Energy Solutions, U.S. Climate Policy Maps, <http://www.c2es.org/us-states-regions/policy-maps>.

<sup>3</sup> U.S. EIA, Minnesota State Profile and Energy Estimates: Carbon Dioxide, [http://www.eia.gov/electricity/data/state/emission\\_annual.xls](http://www.eia.gov/electricity/data/state/emission_annual.xls).

<sup>4</sup> CalEPA, GHG Reduction Report Card 10, 16 (2013), [http://www.climatechange.ca.gov/climate\\_action\\_team/reports/2013\\_CalEPA\\_Report\\_Card.pdf](http://www.climatechange.ca.gov/climate_action_team/reports/2013_CalEPA_Report_Card.pdf).

<sup>5</sup> Colorado Department of Public Health and Environment, [www.cdphe.state.co.us/](http://www.cdphe.state.co.us/).

<sup>6</sup> Tennessee Valley Authority Integrated Resource Plan, <http://www.tva.com/environment/reports/irp/>; Georgia Public Service Commission, Georgia Power 2013 Integrated Resource Plan and Expands Use of Solar Energy, <http://www.psc.state.ga.us/GetNewsRecordAttachment.aspx?ID=250>.

<sup>7</sup> Congressional Research Service, RGGI Report 5 (2013), <https://www.fas.org/spp/crs/misc/R41836.pdf>.

<sup>8</sup> RGGI, Inc., News Release, 38.7 Million CO<sub>2</sub> Allowances Sold At 20th RGGI Auction, [http://www.rggi.org/docs/Auctions/20/PR060713\\_Auction20.pdf](http://www.rggi.org/docs/Auctions/20/PR060713_Auction20.pdf).

<sup>9</sup> Synapse Energy Economics, Energy Benefits from 2010 RGGI Action Revenues Investments (2012), <http://www.synapse-energy.com/Downloads/SynapseReport.2012-02.RAP.RGGI-Energy-Efficiency-Benefits.10-027A.pdf>.

<sup>10</sup> PERI, The Economic Benefits of Investing in Clean Energy (2009),

[http://www.peri.umass.edu/fileadmin/pdf/other\\_publication\\_types/green\\_economics/economic\\_benefits/economic\\_benefits.PDF](http://www.peri.umass.edu/fileadmin/pdf/other_publication_types/green_economics/economic_benefits/economic_benefits.PDF).

<sup>11</sup> The Analysis Group, The Economic Impacts of the Regional Greenhouse Gas Initiative (2011), <http://www.analysisgroup.com/RGGI.aspx>.

<sup>12</sup> EPA, RIA, Proposed GHG Standards for New EGUs at 5-25 (2011), <http://www.epa.gov/airquality/cps/pdfs/20120327proposalRIA.pdf>.

<sup>13</sup> Georgetown Climate Center (2013), <http://www.georgetownclimate.org/polling-results>.

<sup>14</sup> U.S. EIA, AEO 2013 at 71 (2013), [http://www.eia.gov/forecasts/aeo/pdf/0383\(2013\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf).

<sup>15</sup> EPA, U.S. GHG Emissions Inventory: 1990-2011 at 2-20 (Apr. 12, 2013), <http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2013-Main-Text.pdf>.

<sup>16</sup> IPCC Working Group III Assessment Report at 776 (2007), <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter13.pdf>.