



# The Consumer Case for the EPA's Clean Power Plan

## Key Points

- The U.S. Environmental Protection Agency (EPA) has proposed a rule to curb carbon pollution from existing power plants by 30 percent from 2005 levels by 2030. The proposal is called the Clean Power Plan. The EPA expects to finalize the plan in June 2015. The deadline for public comment is Dec. 1.
- The plan is an important step forward in responding to climate change. But the EPA should strengthen it. The climate science demands that we reduce greenhouse gas emissions more—and more quickly—if we hope to avoid catastrophic scenarios. Stronger carbon reductions are feasible and economical, and they would make the rule even more beneficial to consumers.
- Some industry groups claim that the rule will harm consumers by raising the cost of electricity. But the rule is extraordinarily beneficial to consumers:
  - The plan will lower consumers' electricity bills, create jobs and boost the economy.
  - Climate change poses devastating threats, including damage to private property and infrastructure, harm to agriculture and water supplies (leading to shortages and price spikes), and increased pests and disease. By mitigating climate change, the Clean Power Plan reduces these harms and benefits consumers tremendously.
  - The plan will have major side benefits in addition to mitigating climate change. Because the plan limits some of the dirtiest sources of electric

power, it will curb harmful pollutants like mercury and sulfur dioxide in addition to carbon, significantly boosting public health.

- The plan as proposed is too modest regarding energy efficiency and renewable energy. Energy efficiency and renewables are two of the most important tools for combating climate change and benefiting electricity consumers. We can do much better than the EPA proposal anticipates, and the agency should require more.

## The Basics of the Clean Power Plan

On June 2, 2014, the U.S. Environmental Protection Agency (EPA) proposed to limit carbon pollution from existing power plants.<sup>1</sup> The proposal aims to reduce carbon emissions by 30 percent from 2005 levels by 2030. It is a significant step toward a more sustainable emissions path for the U.S., although much more assertive action is needed to avert catastrophic climate change. The deadline for public comments on the EPA proposal is Dec. 1, 2014, and the agency aims to finalize the rule by June 2015. Congressional Republicans generally oppose the rule and have vowed to block it now that they have gained control of the U.S. Senate in addition to the U.S. House of Representatives. However, it is unlikely that the president will sign legislation attempting to repeal the EPA's authority or funding to write rules on carbon pollution.

Under the proposal, which the EPA calls the Clean Power Plan, the EPA sets targets for carbon-emission reductions for each state, and the states design compliance plans. They can comply individually or form regional groups to comply. The EPA envisions four general tools for meeting its target: (1) greater efficiency at coal-fired power plants; (2) switching some power generation from coal to natural gas; (3) switching some generation to renewable energy sources and nuclear power (or maintaining some nuclear generation that is scheduled to retire); and (4) improving end-user energy efficiency. Most, if not all, states will need to combine all of these measures.

Public Citizen is engaging in the debate over the Clean Power Plan to fill a critical void—that of consumer voices. Industry groups, most prominently the U.S. Chamber of Commerce, have argued that carbon-pollutions rules would hurt consumers by raising their utility bills and hampering the economy. The Chamber does not represent consumers, and it is wrong. This memorandum provides the real facts.

## How Consumers Benefit

### Benefits from Mitigating Climate Change

Climate change is already hurting consumers, and vulnerable populations such as the elderly and those with low incomes are hit worst. The harms range from damage to critical infrastructure and agriculture to water shortages and increased disease.<sup>2</sup> Social and individual costs will continue to rise rapidly in the absence of meaningful action. The Clean Power Plan will mitigate these effects, benefitting consumers tremendously by lowering costs for electricity and other goods and services, reducing taxpayer costs for infrastructure damage other climate-related problems and improving public health. It is extraordinarily difficult to quantify this broad range of benefits, but researchers have tried. The EPA estimates that reducing carbon

emissions under the Clean Power Plan will provide global benefits of \$4.7 billion to \$92 billion annually.<sup>3</sup> Benefits to the U.S. economy might range from 7 to 23 percent of those figures, although it is difficult to accurately disaggregate domestic and global benefits.<sup>4</sup>

### Other Economic Benefits

The plan also offers significant benefits for consumers in addition to those from mitigating climate change. Some are economic. The EPA projects that efficiency measures in the plan will lead to electric bills being 8.4 percent lower by 2030 than under a business-as-usual scenario.<sup>5</sup> A key point is that the cost of electricity will go up slightly, but we will use less—therefore saving money overall.<sup>6</sup> Industry groups have attempted to mislead the media, the public and elected officials by seizing on the projected rise in electricity prices and ignoring the projected decline in actual bills.<sup>7</sup> The reality is that the EPA projects consumer bills will rise slightly at first, by 3.2 percent in 2020, then decline by 5.3 percent by 2025 and 8.4 percent by 2030.<sup>8</sup>

The EPA also estimates that the Clean Power Plan will create roughly 105,000 jobs in 2020 alone, largely because of investments in energy efficiency.<sup>9</sup>

### Other Health Benefits

The plan will also boost public health. By reducing our reliance on some of the dirtiest power plants, it will curb emissions of not just carbon dioxide, but also pollutants such as sulfur dioxide, nitrogen oxides, mercury and hydrogen chloride.<sup>10</sup> A recent study of a scenario similar to the EPA plan found that each year, it would prevent 3,500 premature deaths (nine each day), 1,000 hospital admissions for heart and lung disease, and 220 heart attacks.<sup>11</sup> The EPA also projects that the plan will provide numerous other health benefits that are too difficult to quantify, such as reductions in cancer and lost IQ points from mercury exposure.<sup>12</sup>

## Overall: Significant Net Benefit

Overall, the EPA estimates that its rule will boost the economy by \$26 billion to \$84 billion per year.<sup>13</sup> It is worth noting that these estimates are almost certainly low. As already noted, there are many projected benefits of the rule that the EPA did not attempt to quantify or monetize. Also, regulations under the Clean Air Act historically have proved far more beneficial and less costly than what is forecast when they are created.<sup>14</sup> The total benefits of Clean Air Act rules from 1970 to 1990, for instance, were 43 times greater than the costs.<sup>15</sup> In 2010, the ratio of benefits to costs was 26 to 1.<sup>16</sup> These facts haven't stopped industry from predicting economic doom at the prospect of each new proposal to curb air pollution. The bottom line is that the Clean Power Plan will be phenomenally beneficial to consumers—not just because it will mitigate catastrophic climate change, but because it also will lower electricity bills, boost the economy and improve public health.

## How States Should Serve Consumers Under the Plan

Because states will implement the Clean Power Plan, their decisions will determine exactly how well the plan serves consumers. States can do several things to maximize the benefits to ordinary and low-income consumers:

- Strengthen bill payment assistance programs and other measures that ensure low-income households have uninterrupted access to utility service.
- Use energy efficiency as much as possible to meet state carbon reduction targets, and design efficiency programs to ensure that utilities pass savings to consumers. If states provide incentive payments to utilities for efficiency programs, the payments

should be triggered only by real, demonstrated improvements in efficiency, not merely money spent or declines in energy use due to other causes.

- Promote renewable energy. Encourage utilities to buy power from renewable sources where it is cost-competitive with or cheaper than fossil fuels and nuclear power. Support consumers adopting smaller-scale renewable energy sources, like rooftop solar panels, in a manner that is equitable and fair by adopting low-income targets and strong consumer protections in solar lease contracts.
- When establishing energy efficiency and renewable energy programs, include consumer representatives in the decision-making process. Consumer representatives will advocate lower-cost solutions that benefit consumers.
- Pay for consumer representatives who will participate effectively in utility proceedings. This type of “intervenor funding” helps put consumers on equal footing with utilities and industrial energy consumers in complex proceedings that set electricity rates.

## Alternatives to Dirty Energy

### Energy Efficiency

Energy efficiency—using less power to do the same or more—is by far the cheapest and most effective way to curb carbon emissions. Efficiency measures can reduce emissions dramatically, and they pay for themselves. A 2014 study found that energy efficiency programs return \$1.41 to \$4 for every dollar spent, or an average of \$2.67.<sup>17</sup> For these reasons, states should focus on energy efficiency first and use it as much as possible to comply with the EPA rule.

As introduced, the EPA's proposed rule is too modest

on efficiency. One shortcoming is that it suggests states should improve efficiency by just 1.5 percent annually. In fact, three states already are improving by 1.5 percent or more each year, and another nine states have laws that require them to set that pace by 2020.<sup>18</sup> A 2014 study by the American Council for an Energy-Efficient Economy (ACEEE) noted that states can cost-effectively achieve 2 percent annual improvements.<sup>19</sup>

A second shortcoming is that the proposal omits three important sources of efficiency gains: building codes, appliance standards, and combined heat and power (CHP) systems.<sup>20</sup> The ACEEE study mentioned above found that when we include these measures, we can reduce U.S. carbon emissions by 26 percent from 2012 levels by 2030 through energy efficiency alone, even using the more modest target of 1.5 annual improvement.<sup>21</sup> By contrast, the EPA proposal aims for a 30 percent reduction from 2005 levels using not just energy efficiency, but also other emission-reduction strategies like improving coal-fired power plants and switching from coal to natural gas, nuclear power and renewables.<sup>22</sup> In effect, ACEEE estimates that we could meet 73 percent of the EPA's target using energy efficiency alone,<sup>23</sup> improving by just 1.5 percent annually rather than 2 percent.

Clearly, we can do better than what the EPA has proposed. The agency seems to be aware of this possibility, as it has requested feedback on whether it should target a 2 percent rate of improvement and whether it could include building codes and appliance standards in its efficiency targets.<sup>24</sup> The public may have a great opportunity to influence the EPA on these questions.

### Renewable Energy Sources

The Clean Power Plan promotes renewable energy production, although at present it is much too modest in this area. A recent analysis found that states can produce nearly double the amount of renewable en-

ergy that the EPA suggests they should target.<sup>25</sup> This conclusion is based on the actual growth of renewable energy in recent years, as well as state-law requirements for future growth. By 2030, the study found, renewable sources could provide 23 percent of U.S. electricity rather than the 12 percent that the EPA assumes. By using this more realistic estimate, the EPA could make the Clean Power Plan significantly more effective. It could reduce carbon emissions 40 percent from 2005 levels by 2030 rather than just 30 percent.

Making the transition to renewable energy is critical to consumers. In the long run, renewable energy sources will be the cheapest by far, as they produce energy from free resources like the sun and wind.

In the short term, the price of renewables is falling rapidly, and in many areas they are already out-competing older, dirty energy sources:

- Solar photovoltaic costs continue to plummet, from \$3.80/watt in 2008 to \$0.86/watt in mid-2012.<sup>26</sup> They already are competitive in roughly 16 percent of the market.<sup>27</sup>
- New renewable energy generation outpaced all other sources except natural gas in 2013, and it was not far behind natural gas. Wind, solar and water made up 37.3 percent of new generation. Natural gas accounted for 46.5 percent; coal, just 9.9 percent. There was no new nuclear generation.<sup>28</sup>
- An administrative law judge with the Minnesota Public Utilities Commission concluded in January 2014 that a proposed solar generation project was more cost-effective than building a similar-sized natural gas power plant in the state.<sup>29</sup>
- In July 2014, the city of Austin, Texas, signed a 25-year power purchase agreement with Recurrent Energy to supply the city from a new 150 MW solar photovoltaic power plant at just under 5 cents per kilowatt-hour—a rate lower than the rate for fossil-

fuel-generated electricity, which means that consumers will pay less under the deal.<sup>30</sup>

## The Role of Coal

Some in the coal industry attempt to blame the closing of coal-fired power plants on EPA rules when the plants are actually being closed because they are no longer competitive in electricity markets. For example, in 2011, coal utility American Electric Power (AEP) blamed the shutdown of a quarter of its coal-fired generating capacity on EPA proposals. But a week before issuing that statement, AEP chairman and CEO Mike Morris told Wall Street investors that the shutting down of the coal power plants was a win-win for shareholders and customers because the plants were expensive and therefore rarely used: “As you know, those are high-cost plants and dispatch infrequently.”<sup>31</sup>

The Congressional Research Service recently dismissed the so-called “war on coal,” concluding that market conditions—not EPA rules—were to blame for coal’s decline:

The primary impacts of many of the [EPA] rules will largely be on coal-fired plants more than 40 years old that have not, until now, installed state-of-the-art pollution controls. Many of these plants are inefficient and are being replaced by more efficient combined cycle natural gas plants, a development likely to be encouraged if the price of competing fuel—natural gas—continues to be low, almost regardless of EPA rules.<sup>32</sup>

Ironically, despite its declining competitiveness, coal is priced artificially low: Its market price does not reflect the harms that burning coal inflicts on health and the environment. When the full health, environmental and carbon costs of coal are calculated, the cost of generating electricity from coal is 170 percent higher.<sup>33</sup>

## Conclusion

As the Dec. 1 deadline for public comments approaches, we encourage consumers to [urge the EPA to enact a strong standard](#).

### ENDNOTES

<sup>1</sup> See U.S. EPA, *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, 79 FED. REG. 34,830 (June 18, 2014).

<sup>2</sup> See U.S. GLOBAL CHANGE RESEARCH PROGRAM, HIGHLIGHTS OF CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT (2014).

<sup>3</sup> EPA, REGULATORY IMPACT ANALYSIS FOR THE PROPOSED CARBON POLLUTION GUIDELINES FOR EXISTING POWER PLANTS AND EMISSION STANDARDS FOR MODIFIED AND RECONSTRUCTED POWER PLANTS ES-18 (2014), <http://pubc.it/1xh00ev> (hereinafter “RIA”).

<sup>4</sup> GOVERNMENT ACCOUNTABILITY OFFICE (GAO), DEVELOPMENT OF SOCIAL COST OF CARBON ESTIMATES 12-13 (2014).

<sup>5</sup> RIA at 3-43.

<sup>6</sup> 79 FED. REG. at 34,934.

<sup>7</sup> For a discussion of one such “study” by the fossil-fuel-funded group 60 Plus Association, see <http://pubc.it/1sZEeOa>.

<sup>8</sup> RIA at 3-43.

<sup>9</sup> The EPA projects a net increase of 25,900 to 28,000 jobs in the electricity, coal and natural gas sectors and 78,800 from energy efficiency investments. 79 FED. REG. at 34,935.

<sup>10</sup> RIA at ES-9-10.

<sup>11</sup> See JOEL SCHWARTZ ET AL., HEALTH CO-BENEFITS OF CARBON STANDARDS FOR EXISTING POWER PLANTS 3 (2014), <http://pubc.it/1vw8Eru>.

<sup>12</sup> RIA at ES-11-12.

<sup>13</sup> 79 FED. REG. at 34,940-41.

<sup>14</sup> Daniel J. Weiss & Miranda Peterson, *Utilities Wrong Again About Pollution Safeguard Costs*, Mar. 19, 2014, <http://pubc.it/11FrIqY>.

<sup>15</sup> EPA, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT, 1970 TO 1990 (1997).

<sup>16</sup> EPA, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT FROM 1990 TO 2020 (2011).

<sup>17</sup> ACEEE, THE BEST VALUE FOR AMERICA’S ENERGY DOLLAR: A NATIONAL REVIEW OF THE COST OF UTILITY ENERGY EFFICIENCY PROGRAMS 24 (2014).

<sup>18</sup> EPA, TECHNICAL SUPPORT DOCUMENT FOR CARBON POLLUTION GUIDELINES FOR EXISTING POWER PLANTS: EMISSION GUIDELINES FOR GREENHOUSE GAS EMISSIONS FROM EXISTING STATIONARY SOURCES: ELECTRIC UTILITY GENERATING UNITS 5-33 (2014).

<sup>19</sup> ACEEE, CHANGE IS IN THE AIR 5 (2014).

<sup>20</sup> Combined heat and power systems generate electricity and useful thermal energy in a process that is vastly more efficient than generating electric power and heat separately. See ACEEE, COMBINED HEAT AND POWER AND CLEAN DISTRIBUTED ENERGY POLICIES 1 (2009), <http://pubc.it/102EMFI>.

<sup>21</sup> ACEEE, CHANGE IS IN THE AIR, at iv-v.

<sup>22</sup> 79 FED. REG. at 34,832, 34,835.

<sup>23</sup> Emissions from the U.S. electric power sector were 2,445.7 teragrams (Tg) in 2005 and 2,064 Tg in 2012. See EPA, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS 1990-2012 2-22 (2014). EPA proposes a 30 percent reduction from 2005, which is 733.71 Tg, while ACEEE proposes a 26 percent reduction from 2012, which is 536.64 Tg. In absolute terms, ACEEE's proposed reduction (536.64 Tg) is 73.1 percent of the EPA's (733.71 Tg).

<sup>24</sup> 79 FED. REG. at 34,875.

<sup>25</sup> See UCS, STRENGTHENING THE EPA'S CLEAN POWER PLAN (2014), <http://pubc.it/1qoslux>.

<sup>26</sup> EDISON ELECTRIC INSTITUTE, DISRUPTIVE CHALLENGES: FINANCIAL IMPLICATIONS AND STRATEGIC RESPONSES TO A CHANGING RETAIL ELECTRIC BUSINESS 4 (2014), <http://pubc.it/1DfpdsU>.

<sup>27</sup> *Id.*

<sup>28</sup> OFFICE OF ENERGY PROJECTS, U.S. FEDERAL ENERGY COMM'N, ENERGY INFRASTRUCTURE UPDATE 4 (Dec. 2013), <http://pubc.it/1wMEw8r>.

<sup>29</sup> David Shaffer, *Massive Solar Plan for Minnesota Wins Bid over Gas*, MINNEAPOLIS STAR TRIBUNE, Jan. 2, 2014, <http://pubc.it/1stWfkr>.

<sup>30</sup> Nora Ankrum, *AE's Solar Deal: 'Game Changer'*, AUSTIN CHRONICLE, July 4, 2014, <http://pubc.it/1BGij3a>.

<sup>31</sup> Amy Harder, *Power Company Contradicts Itself on EPA Rules*, NATIONAL JOURNAL, June 15, 2011, <http://pubc.it/ZydbMa>.

<sup>32</sup> JAMES E. MCCARTHY & CLAUDIA COPELAND, EPA'S REGULATION OF COAL-FIRED POWER: IS A "TRAIN WRECK" COMING? (2011), <http://pubc.it/1pldlbk>.

<sup>33</sup> MICHAEL GREENSTONE & ADAM LOONEY, PAYING TOO MUCH FOR ENERGY? THE TRUE COSTS OF OUR ENERGY CHOICES 19 (2012), at <http://pubc.it/1wiHbZ9>.