



On August 3, President Obama and EPA announced the Clean Power Plan – a historic and important step in reducing carbon pollution from power plants that takes real action on climate change. Shaped by years of unprecedented outreach and public engagement, the final Clean Power Plan is fair, flexible and designed to strengthen the fast-growing trend toward cleaner and lower-polluting American energy. With strong but achievable standards for power plants, and customized goals for states to cut the carbon pollution that is driving climate change, the Clean Power Plan provides national consistency, accountability and a level playing field while reflecting each state’s energy mix. It also shows the world that the United States is committed to leading global efforts to address climate change.

## WHAT IS THE CLEAN POWER PLAN?

- The Clean Power Plan will reduce carbon pollution from power plants, the nation’s largest source, while maintaining energy reliability and affordability. Also on August 3, EPA issued final Carbon Pollution Standards for new, modified, and reconstructed power plants, and proposed a Federal Plan and model rule to assist states in implementing the Clean Power Plan.
- These are the first-ever national standards that address carbon pollution from power plants.
- The Clean Power Plan cuts significant amounts of power plant carbon pollution and the pollutants that cause the soot and smog that harm health, while advancing clean energy innovation, development and deployment, and laying the foundation for the long-term strategy needed to tackle the threat of climate change. By providing states and utilities ample flexibility and the time needed to achieve these pollution cuts, the Clean Power Plan offers the power sector the ability to optimize pollution reductions while maintaining a reliable and affordable supply of electricity for ratepayers and businesses.
- Fossil fuels will continue to be a critical component of America’s energy future. The Clean Power Plan simply makes sure that fossil fuel-fired power plants will operate more cleanly and efficiently, while expanding the capacity for zero- and low-emitting power sources.
- The final rule is the result of unprecedented outreach to states, tribes, utilities, stakeholders and the public, including more than 4.3 million comments EPA received on the proposed rule. The final Clean Power Plan reflects that input, and gives states and utilities time to preserve ample, reliable and affordable power for all Americans.

## WHY WE NEED THE CLEAN POWER PLAN

- In 2009, EPA determined that greenhouse gas pollution threatens Americans' health and welfare by leading to long-lasting changes in our climate that can have a range of negative effects on human health and the environment. Carbon dioxide (CO<sub>2</sub>) is the most prevalent greenhouse gas pollutant, accounting for nearly three-quarters of global greenhouse gas emissions and 82 percent of U.S. greenhouse gas emissions.
- Climate change is one of the greatest environmental and public health challenges we face. Climate impacts affect all Americans' lives – from stronger storms to longer droughts and increased insurance premiums, food prices and allergy seasons.
- 2014 was the hottest year in recorded history, and 14 of the 15 warmest years on record have all occurred in the first 15 years of this century. Recorded temperatures in the first half of 2015 were also warmer than normal.
- Overwhelmingly, the best scientists in the world, relying on troves of data and millions of measurements collected over the course of decades on land, in air and water, at sea and from space, are telling us that our activities are causing climate change.
- The most vulnerable among us – including children, older adults, people with heart or lung disease and people living in poverty – may be most at risk from the impacts of climate change.
- Fossil fuel-fired power plants are by far the largest source of U.S. CO<sub>2</sub> emissions, making up 32 percent of U.S. total greenhouse gas emissions.
- Taking action now is critical. Reducing CO<sub>2</sub> emissions from power plants, and driving investment in clean energy technologies strategies that do so, is an essential step in lessening the impacts of climate change and providing a more certain future for our health, our environment, and future generations.

## BENEFITS OF IMPLEMENTING THE CLEAN POWER PLAN

- The transition to clean energy is happening faster than anticipated. This means carbon and air pollution are already decreasing, improving public health each and every year.
- The Clean Power Plan accelerates this momentum, putting us on pace to cut this dangerous pollution to historically low levels in the future.
- When the Clean Power Plan is fully in place in 2030, carbon pollution from the power sector will be 32 percent below 2005 levels, securing progress and making sure it continues.
- The transition to cleaner sources of energy will better protect Americans from other harmful air pollution, too. By 2030, emissions of sulfur dioxide from power plants will be 90 percent lower compared to 2005 levels, and emissions of nitrogen oxides will be 72 percent lower. Because these pollutants can create dangerous soot and smog, the historically low

levels mean we will avoid thousands of premature deaths and have thousands fewer asthma attacks and hospitalizations in 2030 and every year beyond.

- Within this larger context, the Clean Power Plan itself is projected to contribute significant pollution reductions, resulting in important benefits, including:
  - Climate benefits of \$20 billion
  - Health benefits of \$14-\$34 billion
  - Net benefits of \$26-\$45 billion
- Because carbon pollution comes packaged with other dangerous air pollutants, the Clean Power Plan will also protect public health, avoiding each year:
  - 3,600 premature deaths
  - 1,700 heart attacks
  - 90,000 asthma attacks
  - 300,000 missed work days and school days

## HOW THE CLEAN POWER PLAN WORKS

- The Clean Air Act – under section 111(d) – creates a partnership between EPA, states, tribes and U.S. territories – with EPA setting a goal and states and tribes choosing how they will meet it.
  - The final Clean Power Plan follows that approach. EPA is establishing interim and final carbon dioxide (CO<sub>2</sub>) emission performance rates for two subcategories of fossil fuel-fired electric generating units (EGUs):
  - Fossil fuel-fired electric steam generating units (generally, coal- and oil-fired power plants)
  - Natural gas-fired combined cycle generating units
- To maximize the range of choices available to states in implementing the standards and to utilities in meeting them, EPA is establishing interim and final statewide goals in three forms:
  - A rate-based state goal measured in pounds per megawatt hour (lb/MWh);
  - A mass-based state goal measured in total short tons of CO<sub>2</sub>;
  - A mass-based state goal with a new source complement measured in total short tons of CO<sub>2</sub>.
- States then develop and implement plans that ensure that the power plants in their state – either individually, together or in combination with other measures – achieve the interim CO<sub>2</sub> emissions performance rates over the period of 2022 to 2029 and the final CO<sub>2</sub> emission performance rates, rate-based goals or mass-based goals by 2030.

- These final guidelines are consistent with the law and align with the approach that Congress and EPA have always taken to regulate emissions from this and all other industrial sectors – setting source-level, source category-wide standards that sources can meet through a variety of technologies and measures.

## STATE PLANS

- The final Clean Power Plan provides guidelines for the development, submittal and implementation of state plans that establish standards of performance or other measures for affected EGUs in order to implement the interim and final CO<sub>2</sub> emission performance rates.
- States must develop and implement plans that ensure the power plants in their state – either individually, together, or in combination with other measures – achieve the equivalent, in terms of either or rate or mass, of the interim CO<sub>2</sub> performance rates between 2022 and 2029, and the final CO<sub>2</sub> emission performance rates for their state by 2030.
- States may choose between two plan types to meet their goals:
  - Emission standards plan– includes source-specific requirements ensuring all affected power plants within the state meet their required emission performance rates or state-specific rate-based or mass-based goal.
  - State measures plan– includes a mixture of measures implemented by the state, such as renewable energy standards and programs to improve residential energy efficiency that are not included as federally enforceable components of the plan. The plan may also include federally enforceable source-specific requirements. The state measures, alone or in conjunction with federally enforceable requirements, must result in affected power plants meeting the state’s mass-based goal. The plan must also include a backstop of federally enforceable standards for affected power plants that fully meet the emission guidelines and that would be triggered if the state measures fail to result in the affected plants achieving the required emissions reductions on schedule. States may use the final model rule, which EPA proposed on August 3, for their backstop.
- In developing its plan, each state will have the flexibility to select the measures it prefers in order to achieve the CO<sub>2</sub> emission performance rates for its affected plants or meet the equivalent statewide rate- or mass-based CO<sub>2</sub> goal. States will also have the ability to shape their own emissions reduction pathways over the 2022-29 period.
- The final rule also gives states the option to work with other states on multi-state approaches, including emissions trading, that allow their power plants to integrate their interconnected operations within their operating systems and their opportunities to address carbon pollution.

- The flexibility of the rule allows states to reduce costs to consumers, minimize stranded assets and spur private investments in renewable energy and energy efficiency technologies and businesses.
- States can tailor their plans to meet their respective energy, environmental and economic needs and goals, and those of their local communities by:
  - relying on a diverse set of energy resources;
  - protecting electric system reliability;
  - providing affordable electricity; and
  - recognizing investments that states and power companies are already making.

## EMISSIONS TRADING

- One cost-effective way that states can meet their goals is emissions trading, through which affected power plants may meet their emission standards via emission rate credits (for a rate-based standard) or allowances (for a mass-based standard).
- Trading is a proven approach to address pollution and provides states and affected plants with another mechanism to achieve their emission standards. Emission trading is a market-based policy tool that creates a financial incentive to reduce emissions where the costs of doing so are the lowest and clean energy investment enjoys the highest leverage.
- Market-based approaches are generally recognized as having the following benefits:
  - Reduce the cost of compliance
  - Create incentives for early reduction
  - Create incentives for emission reductions beyond those required
  - Promote innovation, and
  - Increase flexibility and ensure reliability
- In addition to including mass-based state goals to clear the path for mass-based trading plans, the final rule gives states the opportunity to design state rate-based or mass-based plans that will make their units “trading ready,” allowing individual power plants to use out-of-state reductions – in the form of credits or allowances, depending on the plan type – to achieve required CO<sub>2</sub> reductions, without the need for up-front interstate agreements.
- EPA is committed to supporting states in the tracking of emissions, as well as tracking allowances and credits, to help implement multi-state trading or other approaches.

## RELIABILITY ASSURANCE

- The final rule has several features that reflect EPA’s commitment to ensuring that compliance with the final rule does not interfere with the industry’s ability to maintain the reliability of the nation’s electricity supply:

- A long compliance period, and phased-in reduction requirements, providing sufficient time and flexibility for the planning and investment needed to maintain system reliability.
- A basic design that allows states and affected EGUs flexibility to include a large variety of approaches and measures to achieve the environmental goals in a way that is tailored to each state's and utility's energy resources and policies, including trading within and between states, and other multi-state approaches that support electric system reliability.
- A requirement that each state demonstrate in its final plan that it has considered reliability issues in developing its plan.
- A mechanism for a state to seek a revision to its plan in case unanticipated or significant reliability challenges arise.
- A reliability safety valve to address situations where, in the wake of an unanticipated event or other extraordinary circumstances, an affected power plant must provide reliability-critical generation notwithstanding CO<sub>2</sub> emissions constraints that would otherwise apply.
- In addition to the measures outlined in the rule EPA, the Department of Energy (DOE) and the Federal Energy Regulatory Commission (FERC) are coordinating efforts to monitor the implementation of the final rule to help preserve continued reliable electricity generation and transmission.

## STATE PLAN TIMING

- States will be required to submit a final plan, or an initial state plan with an extension request, 13 months after the final rule, or September 6, 2016.
- Final complete state plans must be submitted no later than September 6, 2018.
- The final rule provides 15 years for full implementation of all emission reduction measures, with incremental steps for planning and demonstration that will ensure progress is being made in achieving CO<sub>2</sub> emission reductions.
- Each state plan must include provisions that will allow the state to demonstrate that the plan is making progress toward meeting the 2030 goal. The Clean Power Plan offers several options for states to show their progress for meeting interim CO<sub>2</sub> emission performance rates or state CO<sub>2</sub> emission interim step goals.
- In addition to offering three multi-year “step down” goals within the interim period, the final rule also allows states to apply measures in a gradual way that they determine is the most cost-effective and feasible.

- During the interim period states are required periodically to compare emission levels achieved by their affected power plants with emission levels projected in the state plan and report results to EPA.

## HELPING COMMUNITIES BENEFIT FROM CLEAN ENERGY

- The Clean Power Plan gives states the opportunity to ensure that communities share in the benefits of a clean energy economy, including energy efficiency and renewable energy.
- EPA is creating a Clean Energy Incentive Program (CEIP) to reward early investments in wind and solar generation, as well as demand-side energy efficiency programs implemented in low-income communities, that deliver results during 2020 and/or 2021. Through this program, EPA intends to make allowances or emission rate credits (ERCs) available to states that incentivize these investments. EPA is providing additional incentives to encourage energy efficiency investments in low-income communities.

## COMMUNITY INVOLVEMENT AND ENVIRONMENTAL JUSTICE

- The final rule reflects two years of unprecedented outreach and engagement with stakeholders and the public, and incorporates changes directly responsive to stakeholders' critical concerns and priorities.
- Public engagement was essential throughout the development of the Clean Power Plan, and EPA will continue to engage with communities and the public now that the rule is final.
- To ensure opportunities for communities – particularly low-income communities, minority communities and tribal communities – to continue to participate in decision making, EPA is requiring that states demonstrate how they are actively engaging with communities as part of their public participation process in the formulation of state plans.
- The requirement for meaningful engagement within state plans will provide an avenue for all communities to both hear from the state about strategies that might work best to tackle climate pollution, and to provide input on where possible impacts to low-income communities, minority communities, and tribal communities could occur along with strategies to mitigate those impacts.
- The final rule includes information on communities living near power plants, and EPA will provide additional information to facilitate engagement between communities and states as implementation of the Clean Power Plan moves forward. For example, the agency will provide guidance on strategies states can use to meaningfully engage with communities, along with other resources and information, on a portal web page the agency will develop for communities' use.
- As implementation of the Clean Power Plan goes forward, the agency will conduct air quality evaluations to determine impacts that state plans may have on vulnerable

communities. EPA encourages states to conduct analyses to help states, communities and utilities understand the potential localized and community impacts of state plans.

- To help with these analyses, EPA will ensure emissions data is available and easily accessed through the Clean Power Plan Communities web page. The agency also will provide demographic information and other data, along with examples analyses that states have conducted to assess the impact of other rules.





## BY THE NUMBERS

### *CUTTING CARBON POLLUTION FROM POWER PLANTS*

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On August 3, President Obama and EPA announced the Clean Power Plan – a historic and important step in reducing carbon pollution from power plants that takes real action on climate change. Shaped by years of unprecedented outreach and public engagement, the final Clean Power Plan is fair, flexible and designed to strengthen the fast-growing trend toward cleaner and lower-polluting American energy. With strong but achievable standards for power plants, and customized goals for states to cut the carbon pollution that is driving climate change, the Clean Power Plan provides national consistency, accountability and a level playing field while reflecting each state’s energy mix. It also shows the world that the United States is committed to leading global efforts to address climate change.

#### ENSURING AND BUILDING ON CLEAN ENERGY MOMENTUM

- Power plants are the **largest source** of carbon dioxide emissions in the United States, making up roughly **one-third** of all domestic greenhouse gas emissions.
- The transition to clean energy is happening faster than anticipated. This means carbon and air pollution is already decreasing, improving public health **each and every year**.
- The Clean Power Plan accelerates this momentum, putting us on pace to cut this dangerous pollution to **historically low levels** in the future.
- When the Clean Power Plan is fully in place in 2030, carbon pollution from the power sector will be **32 percent below** 2005 levels – or **870 million tons less** carbon pollution – securing progress and making sure it continues.
- That’s equal to the annual emissions from more than **166 million cars**, or **70% of the nation’s passenger vehicles**.
- The transition to cleaner sources of energy will better protect Americans from other harmful air pollution, too. By 2030, emissions of SO<sub>2</sub> from power plants will be **90 percent lower** compared to 2005 levels, and emissions of NO<sub>x</sub> will be **72 percent** lower.

- Because these pollutants can create dangerous soot and smog, the historically low levels mean we will **avoid thousands of premature deaths** and mean thousands fewer asthma attacks and hospitalizations **in 2030 and every year beyond.**
- Within this larger context, the CPP itself is projected to contribute significant pollution reductions, resulting in important benefits.

## THE CLEAN POWER PLAN HAS BIG PUBLIC HEALTH AND CLIMATE BENEFITS

- The Clean Power Plan has public health and climate benefits worth an estimated **\$34 billion to \$54 billion** per year in 2030, far outweighing the costs of **\$8.4 billion.**
- Reducing exposure to particle pollution and ozone in 2030 will avoid a projected
  - **1,500 to 3,600** premature deaths
  - **90,000** asthma attacks in children
  - **Up to 1,700** heart attacks
  - **1,700** hospital admissions
  - **300,000** missed school and work days
- From the soot and smog reductions alone, for every dollar invested through the Clean Power Plan – American families will see **up to \$4** in health benefits.
- The Clean Power Plan will reduce pollutants that contribute to the soot and smog that make people sick by **over 20 percent** in 2030.
  - **318,000 tons** of sulfur dioxide
  - **282,000 tons** of nitrogen dioxide
- In EPA’s nearly **45-year history**, air pollution has decreased dramatically across the county, improving public health protection for all Americans while the economy has grown.

## EPA LISTENED TO THE PUBLIC

- The plan takes into account the unprecedented input we received through numerous outreach efforts, including the **4.3 million comments** that were submitted to the agency during the **6-month public comment period.**

## LOWER ELECTRICITY BILLS

Due to increased energy efficiency, the Clean Power Plan is projected to reduce electric bills by about **\$7 per month** by 2030.

## NUMBER OF POWER PLANTS COVERED BY THE CLEAN POWER PLAN

- In the U.S., there are **1,000 fossil fuel fired power plants** with about **3,100 units** covered by this rule.
- Utility planners are already making plans to address an aging fleet. The average age of coal units is **43 years**. The average age of oil units is **46 years**. The average age of natural gas combined cycle units is **15 years**.

## STATE CLIMATE, ENERGY EFFICIENCY AND RENEWABLE ENERGY POLICY STATISTICS

- States, cities and businesses are already leading the way with proven, widely adopted renewable energy and energy efficiency strategies that are substantially and cost-effectively lowering CO<sub>2</sub> emissions from the power sector. States will be able to use these types of programs in their plans to cut carbon pollution under the Clean Power Plan.
  - **50** states with demand-side energy efficiency programs
  - **37** states with renewable portfolio standards or goals
  - **10** states with market-based greenhouse gas emission programs
  - **25** states with energy efficiency standards or goals

## STATE PLANS

- **September 6, 2016** – Initial submittal with request for extension or complete plan due.
- **September 6, 2017** – If state got an extension, submit a progress update.
- **September 6, 2018** – If state got an extension, submit final plan.

## COMPLIANCE TIMEFRAME

- States and utilities will have **15 years** to meet the final goals by **2030**. Investment can begin **now**, with the period for mandatory reductions beginning in **2022**.



# CLEAN ENERGY INCENTIVE PROGRAM

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The EPA is providing a Clean Energy Incentive Program (CEIP) to reward early investments in renewable energy (RE) generation and demand-side energy efficiency (EE) measures that generate carbon-free MWh or reduce end-use energy demand during 2020 and/or 2021. State participation in the program is optional.

Through this program, the EPA will make additional allowances or Emission Rate Credits (ERCs) available to states to encourage early reductions from zero-emitting wind or solar power projects and EE projects. The EPA intends for the CEIP to have a reserve for wind and solar projects and a reserve for EE projects in low income communities and is taking comment in the federal plan on several aspects of the CEIP, including the size of these reserves. The EPA is providing additional incentives to encourage EE investments that are implemented in low-income communities.

The CEIP specifically incentivizes wind and solar RE projects because these technologies can be implemented relatively quickly and because stakeholders were concerned that the Clean Power Plan could potentially shift investment away from these zero-emitting technologies.

The CEIP will help ensure that momentum to no-carbon energy continues and give states a jumpstart on their compliance programs.

## **WHAT IS THE CLEAN ENERGY INCENTIVE PROGRAM?**

The Clean Energy Incentive Program is a voluntary “matching fund” program that states can use to incentivize early investment in eligible RE, as well as demand-side energy efficiency projects that are implemented in low-income communities.

### The Clean Energy Incentive Program will:

- Encourage the widespread development and deployment of wind and solar, which is essential to longer term clean energy and climate strategies and consistent with the Clean Air Act’s directive to advance newer technologies.
- Jumpstart job gains that are anticipated from construction and installation of RE and EE projects under the CPP.
- Provide incentives to follow through on planned investments in zero-emitting wind and solar power in advance of the Clean Power Plan’s first performance period.
- Provide near term health benefits from reductions in sulfur dioxide, particulates, and nitrogen oxides.

- Level the playing field for implementing energy efficiency in low-income communities, which has been historically limited by economic barriers, bringing jobs and lower energy costs to consumers in those areas.

#### Requirements for Eligible Projects:

- Located in or benefitting a state that has submitted a final state plan that includes requirements establishing its participation in the CEIP.
- Commence construction (in the case of RE) or commence operations (in the case of EE) following the date on which the state submits its final state plan to the EPA.
- For RE: Generate metered MWh from wind or solar resources.
- For EE: Result in quantified and verified electricity savings (MWh) through demand-side EE measures implemented in a low-income community.
- Generate or save MWh in 2020 and/or 2021.

#### Incentives for Project Providers

- EPA will provide matching allowances or Emission Rate Credits (ERCs) to states that participate in the CEIP, up to an amount equal to the equivalent of 300 million short tons of CO<sub>2</sub> emissions.
- Wind or solar projects will receive 1 credit for 1 MWh of generation (i.e., half early action credit from the state and half matching credit from the EPA)
- Demand-side EE projects implemented in low-income communities will receive 2 credits for 1 MWh of avoided generation (i.e., a full early action credit from the state and a full matching credit from the EPA)

#### Aligns with the Flexible Compliance Pathways that States can Choose Under the CPP:

- States that choose mass-based compliance may draw CO<sub>2</sub> emission allowances from their 2022-2029 mass-based goal and award them to eligible projects that achieve reductions in 2020 and/or 2021.
- States that choose rate-based compliance may “borrow” from the pool of ERCs they will issue during the 2022-2029 performance period and award them to eligible projects that achieve reductions in 2020 and/or 2021.
- Allowances and ERCs issued under the CEIP may be used for compliance by affected EGUs with their emission standards during the interim and final performance periods, and may be banked within and between periods.
- The CEIP will be available to projects in states where EPA implements a Federal Plan. Eligibility would be limited to projects that commence construction (RE) or commence operations (EE) after September 6, 2018.

#### Future Engagement:

- EPA will engage with stakeholders in the coming months to discuss the CEIP and gather feedback on specific elements of the program.