



CLEAN POWER PLAN PROPOSAL

Reducing Carbon Pollution From Existing Power Plants

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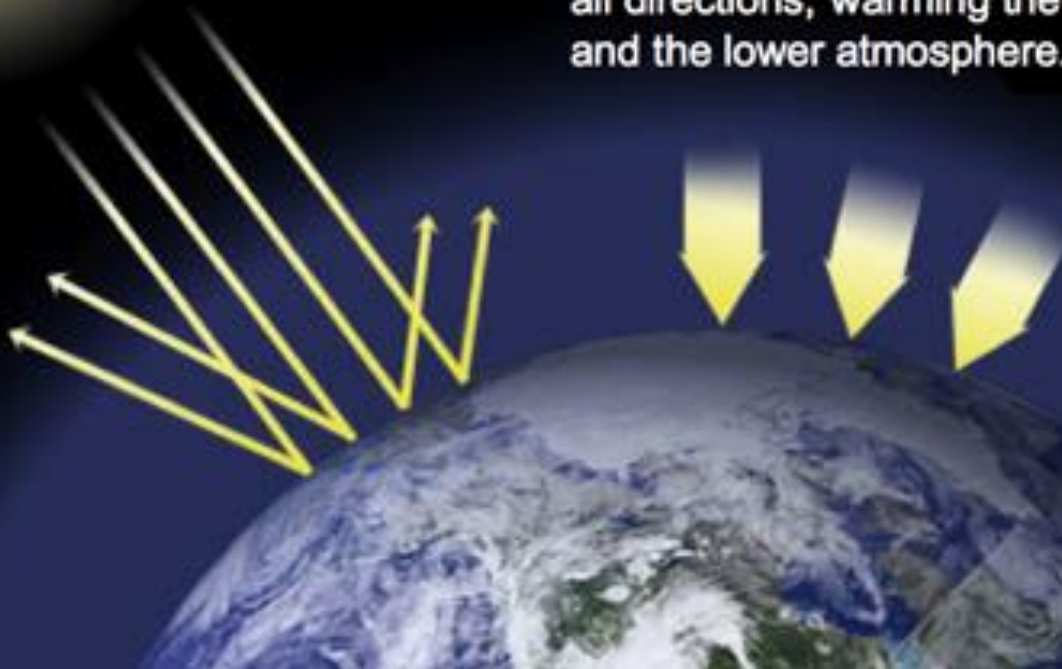
Regional Tribal Operations Committee

July 31, 2014

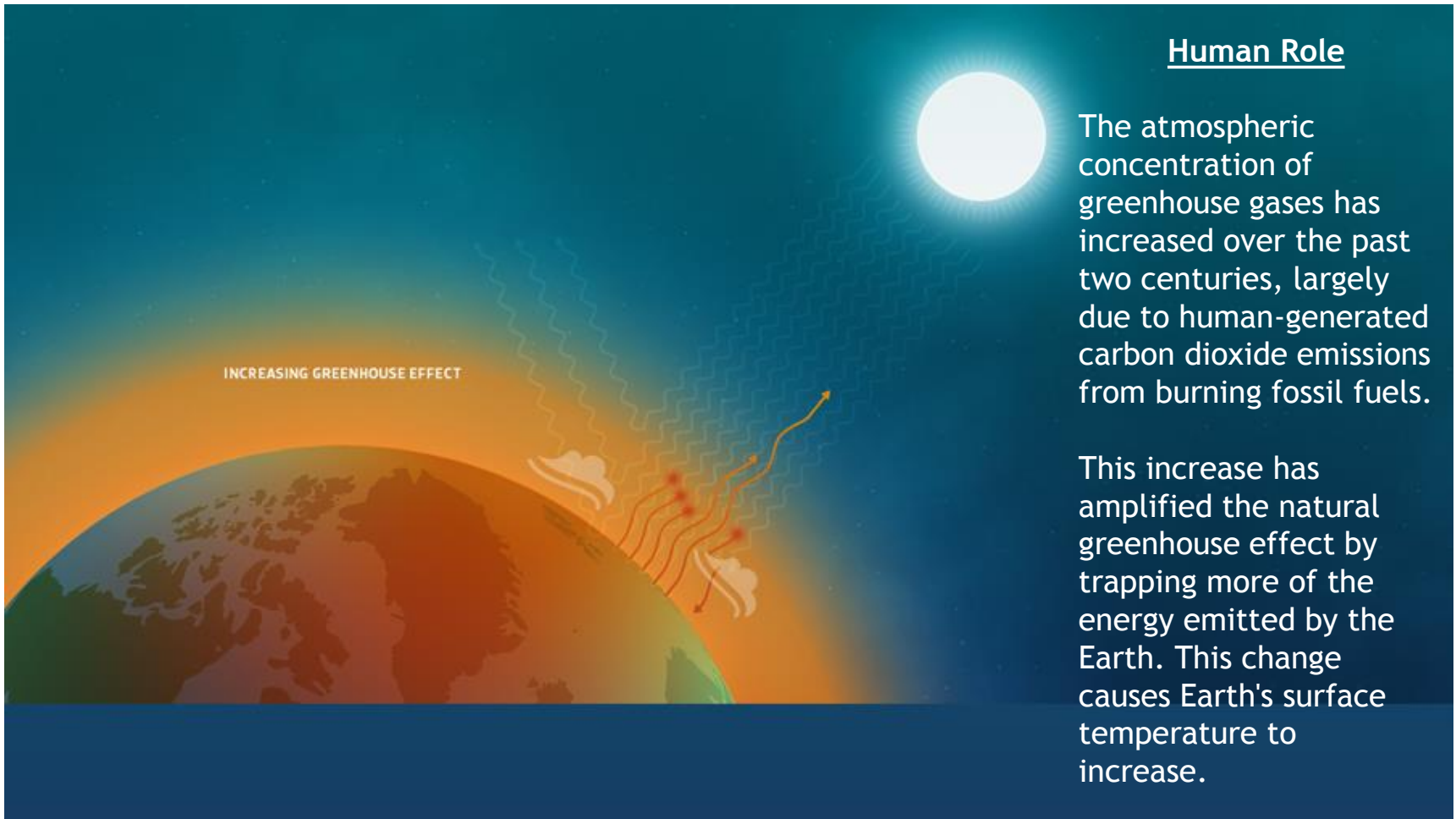
What is the Greenhouse Effect?

Sunlight passes through the atmosphere and warms the Earth's surface. This heat is radiated back toward space.

Most of the outgoing heat is absorbed by greenhouse gas molecules and re-emitted in all directions, warming the surface of the Earth and the lower atmosphere.



Causes of Climate Change



Human Role

The atmospheric concentration of greenhouse gases has increased over the past two centuries, largely due to human-generated carbon dioxide emissions from burning fossil fuels.

This increase has amplified the natural greenhouse effect by trapping more of the energy emitted by the Earth. This change causes Earth's surface temperature to increase.

Carbon Pollution and Health

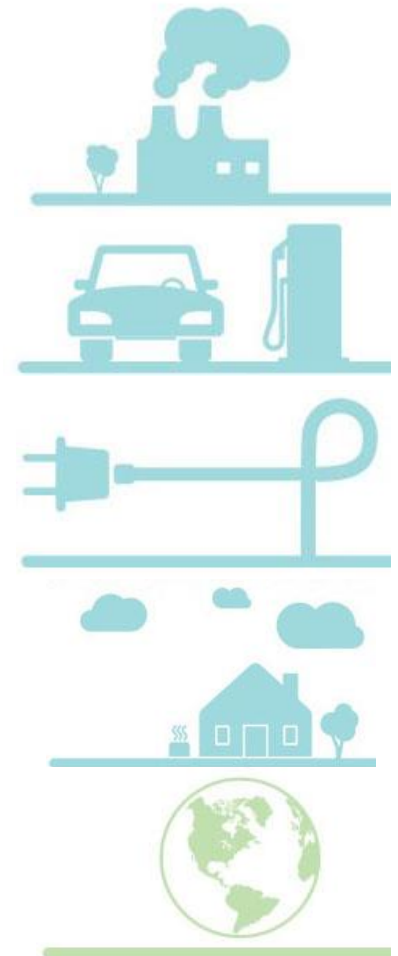
- **Public health risks include:**
 - **Increase in heat stroke and heat-related deaths**
 - **Extreme heat events are the leading weather-related cause of death in the U.S.**
 - **Worsening smog and in some cases particle pollution**
 - **Increasing intensity of extreme events, like hurricanes, extreme precipitation and flooding**
 - **Increasing the range of insects that spread diseases such as Lyme disease and West Nile virus.**





President Obama's Climate Action Plan: EPA's Role

- Reducing carbon emissions from power plants
- Building a 21st century transportation sector
- Cutting energy waste in homes, businesses, and factories
- Reducing methane and HFCs
- Leading international efforts to address global climate change





Reducing Carbon Pollution from Power Plants

President's Directive to EPA:

Develop carbon pollution standards, regulations or guidelines, as appropriate, for:

1. New power plants
 - Proposed: January 8, 2014
2. Modified and reconstructed power plants
 - Proposal: June 2014
 - Final: June 2015
3. Existing power plants
 - Proposed Guidelines: June 2014
 - Final Guidelines: June 2015
 - State Plans due: June 2016



Why is EPA Proposing to Address CO₂?

U.S. GREENHOUSE GAS POLLUTION INCLUDES:



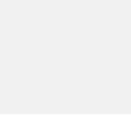
CARBON DIOXIDE (CO₂) 82%

Enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and wood products, and also as a result of certain chemical reactions (e.g., manufacture of cement).



FLUORINATED GASES 3%

Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes.



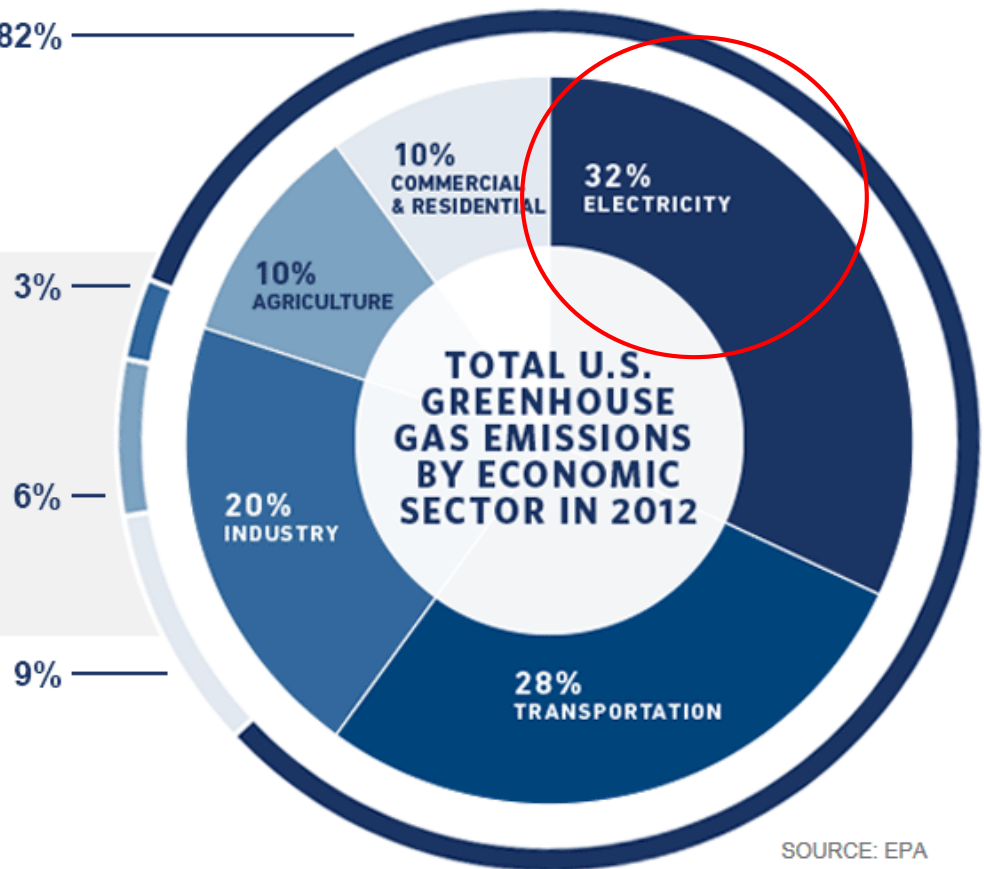
NITROUS OXIDE (N₂O) 6%

Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.



METHANE (CH₄) 9%

Emitted during the production and transport of coal, natural gas, and oil as well as from landfills.



SOURCE: EPA



Proposed Clean Power Plan

- On June 2, EPA proposed guidelines to cut carbon pollution from existing power plants
- The proposal published in the Federal Register on June 18
- Common sense approach that will cut carbon pollution
- By 2030, carbon emissions will be reduced by 30% from 2005 levels
- Spur investment in cleaner and more efficient technologies, creating jobs and driving innovation
- Lead to health and climate benefits worth an estimated \$55 billion to \$93 billion in 2030



Proposed Clean Power Plan

- EPA proposed emission guidelines for states to follow in developing plans to reduce CO₂ emissions
 - State-specific, rate-based goals (pounds per MWh) for the power sector
 - Goals were based on the “Best System of Emission Reduction” or BSER
- Includes 2020-2029 Interim Goal Period and Final Goal to be achieved in 2030 and thereafter
- EPA intends to issue a supplemental proposal addressing affected power plants on tribal lands and territories in Fall 2014



EPA Establishes a Goal for Every State

- EPA analyzed the practical and affordable strategies that states and utilities are already using to lower carbon pollution from the power sector
- Proposed goals are based on a consistent national formula, calculated with state and regional specific information
- The result of the equation is the state goal
- Each state goal is a rate – a statewide number for the future carbon intensity of covered existing fossil-fuel-fired power plants in a state
 - Encompasses the dynamic variables that ultimately determine how much carbon pollution is emitted by fossil fuel power plants
 - Accommodates the fact that CO₂ emissions from fossil fuel-fired power plants are influenced by how efficiently they operate and by how much they operate
- The state goal rate is calculated to account for the mix of power sources in each state and the application of the “building blocks” that make up the best system of emission reduction



The Building Blocks

- Applied Four Building Blocks to 2012 emission data
- Building Block 1: Make fossil fuel-fired power plants more efficient
- Building Block 2: Increased use of lower-emitting power sources
- Building Block 3: Increased use of zero or low-emitting energy sources
- Building Block 4: Use electricity more efficiently

Building Block for BSER	Strategy EPA Used to Calculate the State Goal	Examples of State Compliance Measures
1. Make fossil fuel-fired power plants more efficient	Efficiency Improvements	<ul style="list-style-type: none"> • Efficiency improvements • Co-firing or switching to natural gas • Coal retirements • Retrofit CCS (e.g., WA Parish in Texas)
2. Use lower-emitting power sources more	Dispatch changes to existing natural gas combined cycle (CC)	<ul style="list-style-type: none"> • Dispatch changes to existing natural gas CC
3. Build more zero or low-emitting energy sources	Renewable Energy Certain Nuclear	<ul style="list-style-type: none"> • New Natural gas-fired Combined Cycle Units • Renewables • Nuclear (new and up-rates) • New coal with CCS
4. Use electricity more efficiently	Demand-side energy efficiency programs	<ul style="list-style-type: none"> • Demand-side energy efficiency programs • Transmission efficiency improvements • Energy storage

*** States are not limited to the Building Blocks and have flexibility to determine how to meet their goal**



Flexibilities Available To States

Measures to meet Goal

- States may implement any collection of measures that reflect its particular circumstances and policy objectives as long the collection achieves the goal
- States can use a rate-based or a mass-based goal
- States have the option to collaborate with other states to develop multi-state plans

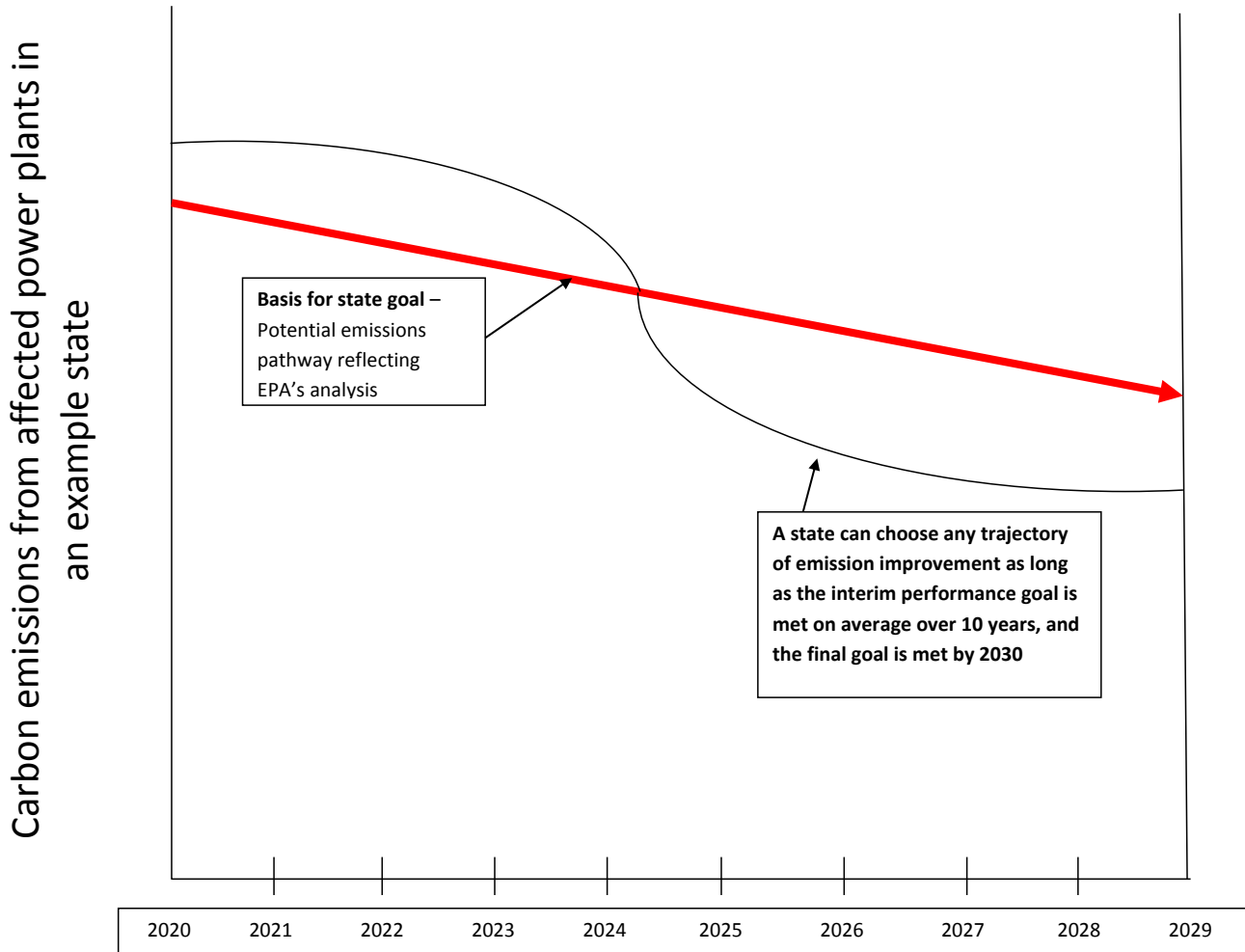
Timing to Submit Plan and to Achieve Goal

- States have up to two to three years to submit plans for EPA approval
- States have up to a 15-year window in which to plan for and achieve goals



States Have Flexibility

As an example, states could do less in the early years, and more in the later years, as long as on average it meets the goal



Timing of Power Plant Emission Reductions



Benefits and Costs

- Nationwide, by 2030, this rule would help reduce CO₂ emissions from the power sector by approximately 30% from 2005 levels
 - Also by 2030, reduce by over 25% pollutants that contribute to the soot and smog that make people sick
- These reductions will lead to public health and climate benefits worth an estimated \$55 billion to \$93 billion in 2030
- Proposal will avoid an estimated 2,700 to 6,600 premature deaths and 140,000 to 150,000 asthma attacks in 2030
- Health and climate benefits far outweigh the estimated annual costs of meeting the standards
 - Estimated at \$7.3 billion to \$8.8 billion in 2030
- Proposal protects children and other vulnerable Americans from the health threats posed by a range of pollutants
- Move us toward a cleaner environment for future generations
- Ensures an ongoing supply of the reliable, affordable power needed for economic growth



Affected Power Plants in Indian Country

- EPA did not propose goals for areas of Indian country with affected power plants in the June 18 proposal
- EPA is aware of four potentially affected power plants in Indian country
 - Four Corners Power Plant and Navajo Generating Station on Navajo tribal lands within New Mexico and Arizona
 - South Point Energy Center on Fort Mojave tribal lands within Arizona
 - Bonanza Power Plant on Ute tribal lands within Utah



Upcoming Supplemental Proposal

- In the fall, EPA intends to publish a Supplemental Proposal to establish CO₂ emission performance goals covering affected power plants located in Indian country and territories
- EPA intends to take final action by June 2015
- EPA will appropriately engage in government-to-government consultation with Tribes



Questions for Consideration

- Which Building Blocks should apply to goal-setting for areas of Indian country?
- How can tribes without affected power plants also participate in the program (e.g., through renewable energy or energy efficiency programs) to help meet goals?
- What other issues we should be aware of?
- Input can be provided to Pat Childers (childers.pat@epa.gov) or Laura McKelvey (Mckelvey.laura@epa.gov) of the EPA Office of Air Quality Planning and Standards



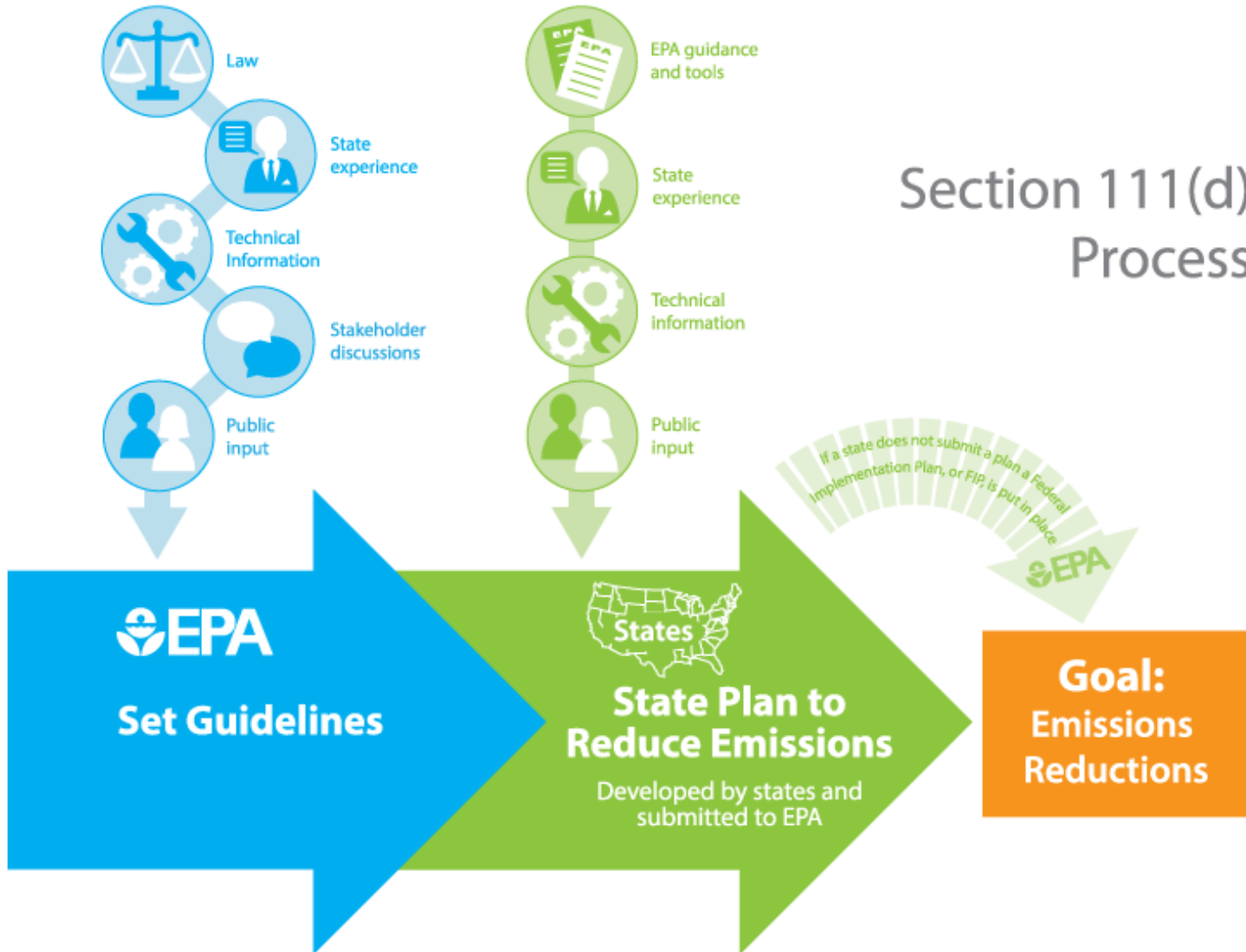
Next Steps

- The proposed rule, as well as information about how to comment and supporting technical information, are available online at:
<http://www.epa.gov/cleanpowerplan>
- EPA will hold 4 public hearings the week of July 28th in Denver, Atlanta, Pittsburgh and Washington, D.C.
- The 120-day public comment period on the proposal closes **October 16, 2014**
- Comments on the proposal should be identified by **Docket ID No. EPA-HQ-OAR-2013-0602** and may be submitted through www.regulations.gov
- Supplemental Proposal for tribal land and territories with affected power plants in Fall 2014

Optional Slides



Clean Power Plan: Process





Proposed Implementation Timeline

