


# Update on U.S. Air Quality Management Policies

A large, faint watermark of the United States Environmental Protection Agency (EPA) logo is centered in the background. The logo features a stylized flower with a sun-like center and three leaves, surrounded by the text "UNITED STATES ENVIRONMENTAL PROTECTION AGENCY".

**Fifty-second Session of the  
Working Group on Strategies and Review  
Geneva, Switzerland  
June 30 - July 3, 2014**



# Overview

- Ozone National Ambient Air Quality Standard (NAAQS) Review
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  - Non-attainment areas
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- Clean Power Plan – Reducing carbon pollution from existing power plants
  - Clean Power Plan
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# National Ambient Air Quality Standards (NAAQS)

The **Clean Air Act** requires EPA to set National Ambient Air Quality Standards (NAAQS) for wide-spread pollutants from numerous and diverse sources considered harmful to public health and the environment



# Primary vs. Secondary Standards

- The **Clean Air Act** established two types of NAAQS
  - **Primary standards** set limits to protect **public health**, including the health of "sensitive" populations such as asthmatics, children, and the elderly
  - **Secondary standards** set limits to protect **public welfare**, including protection against visibility impairment and damage to animals, crops, vegetation, and buildings

# Current National Ambient Air Quality Standards (NAAQS) as of April 2014

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
CO	primary	8-hour	9 ppm	Not to be exceeded more than once per year
		1-hour	35 ppm	
Lead	primary and secondary	Rolling 3 month average	0.15 µg/m <sup>3</sup>	Not to be exceeded
NO <sub>2</sub>	primary and secondary	Annual	53 ppb	Annual mean
	primary	1-hour	100 ppb	98 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over 3 years
O <sub>3</sub>	primary and secondary	8-hour	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
PM <sub>2.5</sub>	primary	Annual	12.0 µg/m <sup>3</sup>	annual mean, averaged over 3 years
	secondary		15.0 µg/m <sup>3</sup>	
	primary and secondary	24-hour	35 µg/m <sup>3</sup>	98 <sup>th</sup> percentile, averaged over 3 years
PM <sub>10</sub>	primary and secondary	24-hour	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
SO <sub>2</sub>	primary	1-hour	75 ppb	99 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over 3 years
	secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Primary (health-based) and secondary (welfare-based) standards. Units of measure are parts per million (ppm), parts per billion (ppb) or micrograms per cubic meter of air (µg/m<sup>3</sup>). For more information about the standards, visit <http://www.epa.gov/ttn/naaqs/>.

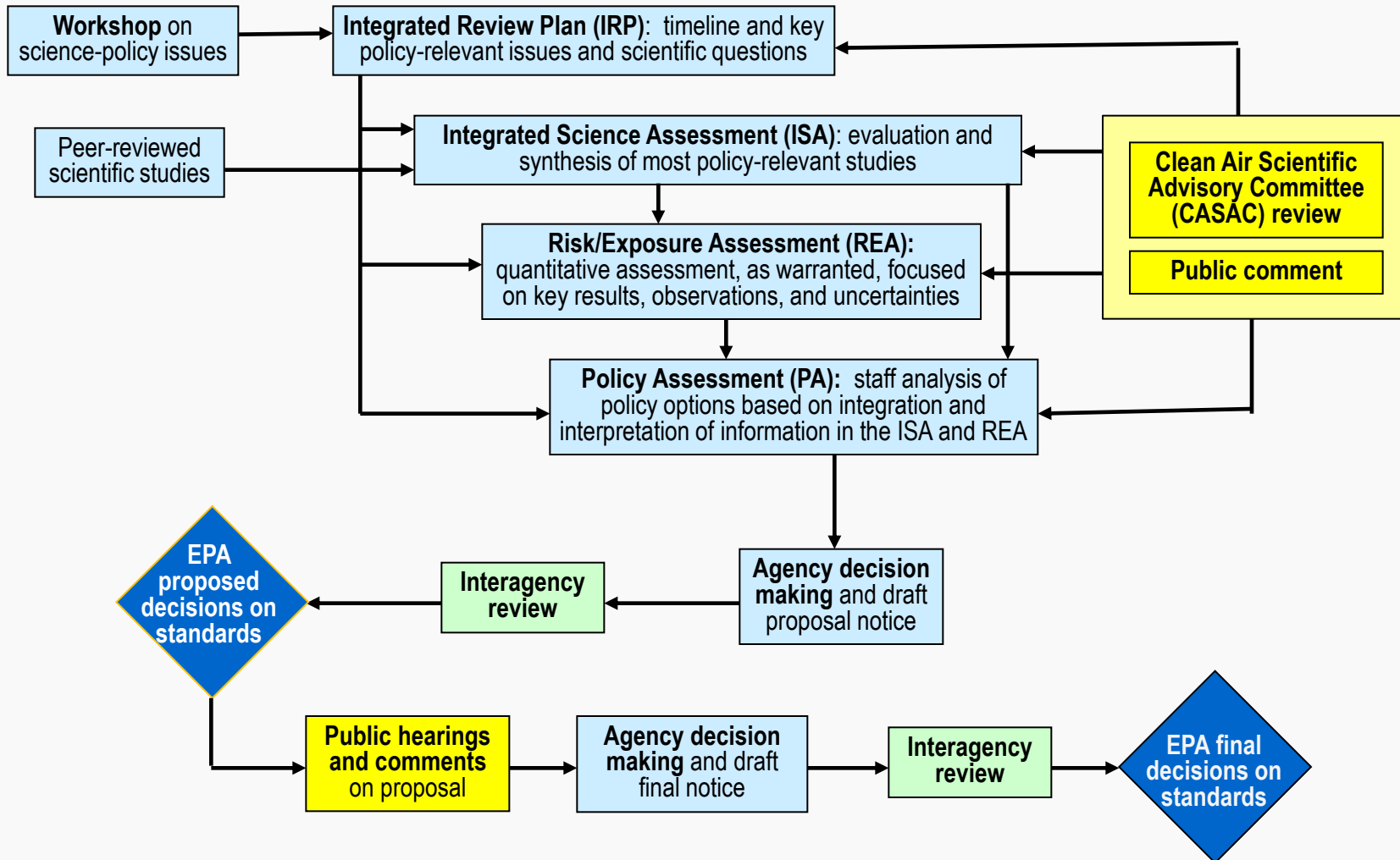
## 8-Hour Ozone Nonattainment Areas (2008 Standard)



Nonattainment areas are indicated by color. When only a portion of a county is shown in color, it indicates that only that part of the county is within a nonattainment area boundary.



# NAAQS Review Process





# Status of Ozone NAAQS Review

- In February 2013, EPA completed the Integrated Science Assessment for Ozone (ISA)
- In January 2014, EPA completed the second drafts of the health and welfare Risk and Exposure Assessments (REA) and Policy Assessment (PA)
- The Clean Air Scientific Advisory Committee (CASAC) has met to review the health and welfare REA and PA documents.
- EPA anticipates a final letter from CASAC with their advice on the documents shortly.
- EPA will then update and finalize the REA and the PA in July based on the feedback received from CASAC.
- After considering the final ISA, the REAs, the PA, and CASAC advice, the Administrator will propose a rule for public comment
  - Pursuant to a court order, the EPA intends to issue a proposal by December 1, 2014 and a final rulemaking by October 1, 2015.





# Clean Power Plan - - Reducing Carbon Pollution from Existing Power Plants



## Clean Power Plan

- On June 2, 2014, the U.S. EPA, proposed emission guidelines to address greenhouse gas emissions from existing fossil fuel-fired power plants.
  - *State-specific rate-based goals for carbon dioxide emissions from the power sector.*
  - *Guidelines for states to follow in developing plans to achieve the state-specific goals.*
- This proposal follows carbon pollution standards for new power plants proposed in September 20, 2013.



# Summary

## The proposal will:

- Reduce carbon pollution from existing power plants, for which there are currently no national limits.
- Maintain an affordable, reliable energy system.
- By 2030, reduce nationwide carbon dioxide (CO<sub>2</sub>) emissions, from the power sector by approximately 30% from 2005 levels.
  - Significant reductions begin by 2020.
- Cut hundreds of thousands of tons of harmful particle pollution, sulfur dioxide and nitrogen oxides as a co-benefit.
- Provide important health protections to the most vulnerable, such as children and older Americans.
- Lead to health and climate benefits worth an estimated \$55 billion to \$93 billion in 2030.



## Summary (Cont'd)

- Build on actions states, cities and businesses across the country are already taking to address the risks of climate change.
- Spur investment in cleaner and more efficient technologies, creating jobs and driving innovation.
- Require a reasonable emission reduction glidepath starting in 2020.
- Provide a flexible timeline—up to 15 years from guideline issuance—for all emission reduction measures to be fully implemented in 2030.
  - Recognizing that investments in infrastructure can take time to put in place.
- Provide an array of tools states can use to formulate approvable plans.



# 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.
- Each state goal is a rate – a statewide number for the future carbon intensity of covered existing fossil-fuel-fired power plants.
  - *Encompasses the dynamic variables that ultimately determine how much carbon pollution is emitted by fossil fuel power plants.*
  - *Accommodates the fact that CO<sub>2</sub> emissions from fossil fuel-fired power plants are influenced by how efficiently they are operated 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.
  - States will need to meet an interim goal and a final goal.



# States Choose How to Meet the Goals

- Demand-side energy efficiency programs.\*
- Generating electricity from low/zero-emitting facilities.\*
- Expanding use of existing NGCC units.\*
- Transmission efficiency improvements.
- Energy storage technology.
- Working with utilities to consider retiring units that are high emitting.
- Energy conservation programs.
- Retrofitting units with partial CCS.
- Use of certain biomass.
- Efficiency improvements at higher-emitting plants.\*
- Market-based trading programs.
- Building new renewables.
- Dispatch changes.
- Co-firing or switching to natural gas.
- Building new natural gas combined cycle units.

\* Measures EPA used in calculating the state goals



## Benefits and Costs

- Nationwide, by 2030, this proposed rule would help reduce CO<sub>2</sub> emissions from the power sector by approximately 30% from 2005 levels (~ 730 million tonnes)
- It will also by 2030, reduce by over 25% pollutants that contribute to the soot and smog
  - 48,988 to 50,802 tonnes\* of PM<sub>2.5</sub>
  - 384,646 to 427,284 tonnes\* of SO<sub>2</sub>
  - 369,224 to 388,275 tonnes\* of NO<sub>2</sub>



## Benefits and Costs (Cont'd)

- 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.





## 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 28<sup>th</sup> in Denver, Atlanta, Pittsburgh and Washington, D.C.
- There will be a 120-day public comment period on the proposal.



# Proposed Implementation Timeline

