U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEE ON ENVIRONMENT

HEARING CHARTER

EPA's 2015 Ozone Standard: Concerns Over Science and Implementation

Thursday, October 22, 2015
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building

PURPOSE

The House Science, Space and Technology Committee will hold a hearing entitled *EPA's 2015 Ozone Standard: Concerns Over Science and Implementation* on Thursday, October 22, 2015, at 10:00 a.m. in Room 2318 of the Rayburn House Office Building. The purpose of the hearing is to examine the scientific basis of the Environmental Protection Agency's (EPA) final National Ambient Air Quality Standards (NAAQS) for ozone. In addition, witnesses will discuss impacts of these proposed national standards to local communities and address concerns over implementation issues in order to meet these standards.

WITNESSES

- **The Honorable Jeffrey Holmstead**, Partner, Bracewell & Giuliani LLP
- **Mr. Seyed Sadredin**, Executive Director and Air Pollution Control Officer, San Joaquin Valley Air Pollution Control District
- **Dr. Elena Craft,** Senior Health Scientist, Environmental Defense Fund
- **Dr. Michael Honeycutt,** Director, Texas Commission on Environmental Quality, Toxicology Division

BACKGROUND

Ozone **(**O_3**)** is a gas that occurs both in the Earth's upper atmosphere as well as at ground level (troposphere). Ozone in the upper atmosphere helps protect the Earth from the sun's harmful rays such as ultraviolet radiation. Ozone at ground level is not directly emitted into the air, but instead is created by chemical reactions between precursor emissions, specifically nitrogen oxide (NOx) and volatile organic compounds (VOC**).**[1] Ground level ozone is commonly referred to as smog.

[1] http://www.epa.gov/air/ozonepollution/basic.html

The Clean Air Act of 1970 (P.L. 91-604, with major legislative updates in 1977 and 1990) directed EPA to set NAAQS for pollutants considered harmful to public health and the environment.[2] EPA has set standards for six criteria pollutants, including carbon monoxide, lead, nitrogen dioxide, ozone, particle pollution (particulate matter), and sulfur dioxide. The Clean Air Act specifies two categories of standards: primary standards for public health protection and secondary standards for public welfare protection.

The Clean Air Act requires EPA to review the NAAQS every five years to ensure adequate health and environmental protection is being provided. In 1997, EPA replaced the existing ozone NAAQS with an 8-hour standard of 84 parts per billion (using standard rounding conventions). In 2008, EPA issued a final rule revising the ozone standard to a level of 75 parts per billion.[3] Last February, EPA finalized[4] a new set of requirements that state, tribal, and local air quality management agencies must meet for areas where air quality exceeds the 2008 NAAQS.[5] In July 2011, outside of the normal five year review process, EPA submitted a rule for reconsideration of the 2008 ozone NAAQS that President Obama then subsequently withdrew in September 2011.[6]

Based on the advice of the Clean Air Scientific Advisory Committee (CASAC), the EPA proposed an updated ozone NAAQS which appeared in the Federal Register on December 17, 2014.[7] The proposal would set more stringent standards, by lowering the primary standard from the current 75 parts per billion (ppb) to a range of 65 to 70 ppb. Publication in the Federal Register begins the public comment period that ended on March 17, 2015. The agency must address significant public comments when it publishes the final standard. On October 1, 2015 the EPA finalized the primary standard for ozone to 70 ppb.

COMPLIANCE WITH THE NAAQS

When the EPA revises the NAAQS for ozone, it must designate areas in the US which meet *attainment* or *nonattainment* of the standard. Attainment refers to a state or region complying with federal regulations, while nonattainment is an area that exceeds the regulated limit. States must individually develop a plan to comply with the NAAQS, including proposals for bringing nonattainment areas into attainment. Reductions in ozone levels can be achieved by a variety of methods including pollution control technologies. Ozone control technologies generally target nitrogen oxides (NOx) and volatile organic compounds (VOCs). Control strategies focus on mission limits along with control equipment that may address specific industrial processes. State environmental agencies must then develop State Implementation Plans (SIPs).[8] Specifically, after each revised NAAQS is promulgated, both the EPA and states must undertake the following actions:

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[2] http://www.epa.gov/air/criteria.html
[3] http://www.gpo.gov/fdsys/pkg/FR-2008-03-27/html/E8-5645.htm
[4] http://www.epa.gov/groundlevelozone/actions.html#feb2015i
[5] http://www.epa.gov/groundlevelozone/pdfs/20150213fr.pdf
[6] http://www.whitehouse.gov/the-press-office/2011/09/02/statement-president-ozone-national-ambient-air-quality-standards
[7] http://www.gpo.gov/fdsys/pkg/FR-2014-12-17/pdf/2014-28674.pdf
[8] http://www.epa.gov/airquality/urbanair/sipstatus/overview.html

- **"Within two years after NAAQS promulgation:** With input from the states and tribes, EPA must identify or 'designate' areas as meeting (attainment areas) or not meeting (nonattainment areas) the standards. Designations are based on the most recent set of air monitoring data.
- **Within three years after NAAQS promulgation:** All states must submit plans, known as state implementation plans (SIPs), to show they have the basic air quality management program components in place to implement a new or revised NAAQS, as specified in Clean Air Act section 110.
- **Within 18-36 months after designations:** Due dates for nonattainment area SIPs are based on the area designation date and vary by pollutant and area classification. SIPs for Ozone, $PM_{2.5}$, and CO nonattainment areas are generally due within 36 months from the date of designation. Each nonattainment area SIP must outline the strategies and emissions control measures that show how the area will improve air quality and meet the NAAQS. In addition, the CAA mandates that areas adopt certain specified control requirements."[9]

After a state submits its implementation plan, EPA then reviews and either approves it in full, in part, or disapproves. The public has an opportunity to submit comments on EPA's proposed actions. If a state fails to submit a plan or if EPA disapproves of the plan, EPA is required to develop a federal implementation plan.[10]

SECONDARY STANDARD

In addition to issuing the primary standard, the EPA is required to issue secondary standards that protect the public welfare under Section 109 of the Clean Air Act. The secondary standard is intended to protect ecosystems and sensitive plants. Currently, the secondary ozone standard is equal to the primary ozone standard, based on short-term (8 hour) average concentration measurements. However, plants and foliage are more sensitive to long-term cumulative ozone exposure, causing stunted growth or injury. A cumulative index of exposure is better correlated with plant growth effects than the 8-hour average concentration used to measure human health effects. An appropriate cumulative index must consider not only ambient concentrations of ozone but also other relevant physiological processes.[11]

ADDITIONAL READING

- U.S. Environmental Protection Agency, National Ambient Air Quality Standards for Ozone, Proposed Rule. Available at: https://www.federalregister.gov/articles/2014/12/17/2014-28674/national-ambient-air-quality-standards-for-ozone
- U.S. Environmental Protection Agency, Regulatory Impact Analysis of the Proposed Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone. Available at: http://www.epa.gov/ttn/ecas/regdata/RIAs/20141125ria.pdf

[9] http://www.epa.gov/airquality/urbanair/sipstatus/process.html
[10] Ibid
[11] pp 75316 of the Federal Register, Proposed Rule, National Ambient Air Quality Standards for Ozone

Appendix A:

Table of Historical Ozone NAAQS[12]

Final Rule/Decision	Primary/ Secondary	Indicator	Averaging Time	Level	Form
1971 36 FR 8186 Apr 30, 1971	Primary and Secondary	Total photochemical oxidants	1-hour	0.08 ppm	Not to be exceeded more than one hour per year
1979 44 FR 8202 Feb 8, 1979	Primary and Secondary	O_3	1-hour	0.12 ppm	Attainment is defined when the expected number of days per calendar year, with maximum hourly average concentration greater than 0.12 ppm, is equal to or less than 1
1993 58 FR 13008 Mar 9, 1993	EPA decided that revisions to the standards were not warranted at the time				
1997 62 FR 38856 Jul 18, 1997	Primary and Secondary	O_3	8-hour	0.08 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
2008 73 FR 16483 Mar 27, 2008	Primary and Secondary	O_3	8-hour	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years

[12] http://www.epa.gov/ttn/naaqs/standards/ozone/s_o3_history.html

Appendix B:

Percent Change in Air Quality[13]

	1980 vs. 2013	1990 vs. 2013	2000 vs. 2013
Carbon Monoxide (CO)	-84	-76	-59
Ozone (O_3) (8-hr)	-33	-23	-18
Lead (Pb)	-92	-87	-60
Nitrogen Dioxide (NO_2) (annual)	-58	-50	-40
Nitrogen Dioxide (NO_2) (1-hour)	-60	-46	-29
PM_{10} (24-hr)	---	-34	-30
$PM_{2.5}$ (annual)	---	---	-34
$PM_{2.5}$ (24-hr)	---	---	-34
Sulfur Dioxide (SO_2) (1-hour)	-81	-76	-62

Notes:

1. --- Trend data not available
2. Negative numbers indicate improvements in air quality
3. In 2010, EPA established new 1-hour average National Ambient Air Quality Standards for NO2 and SO2

[13] http://www.epa.gov/airtrends/aqtrends.html

Appendix C:

Percent Change in Emissions:[14]

	1980 vs. 2013	1990 vs. 2013	2000 vs. 2013
Carbon Monoxide (CO)	-67	-59	-42
Lead (Pb)	-99	-80	-50
Nitrogen Oxides (NO_x)	-52	-48	-41
Volatile Organic Compounds (VOC)	-53	-39	-18
Direct PM_{10}	-50	-20	-17
Direct $PM_{2.5}$	---	-24	-32
Sulfur Dioxide (SO_2)	-81	-78	-69

Notes:
1. --- Trend data not available
2. Direct PM10 emissions for 1980 are based on data since 1985
3. Negative numbers indicate reductions in emissions
4. Percent change in emissions based on thousand tons units

National and local air quality trends graphs showing the nation's progress towards clean air are available for: carbon monoxide (CO), ozone (O_3), lead (Pb), nitrogen dioxide (NO_2), particulate matter (PM), and sulfur dioxide (SO_2).

[14] http://www.epa.gov/airtrends/aqtrends.html