Appendix: Major or Controversial Clean Air Act Rules Affecting Stationary Sources Promulgated by EPA since January 2009

Rule	Status and Court or Legislative Requirement	Affected Entities and Requirements	Benefits
Greenhouse Gas (GHG) Reporting Rule[1]	**Finalized October 30, 2009**. Legislative Requirement: FY2008 Consolidated Appropriations P.L. 110-161.	Requires facilities in 31 source categories to report their annual emissions of GHGs. Eleven categories have subsequently been added.	
GHG Endangerment Finding[2]	**Finalized December 15, 2009.** Court Requirement: In *Massachusetts v. EPA*[3] the Supreme Court held that greenhouse gases, including carbon dioxide, are "air pollutants" under the Clean Air Act. As a result, EPA was legally obligated to determine whether greenhouse gas emissions from motor vehicles could be reasonably anticipated to endanger public health or welfare.	None, however it triggered the promulgation of GHG emission standards for vehicles; which, in turn, prompted GHG permit requirements for stationary sources.	
National Ambient Air Quality Standard for Sulfur Dioxide (SO_2) [4]	**Finalized June 22, 2010**. D.C. Circuit remanded the SO_2 standard to EPA in 1998; EPA acted under a consent decree.	The 2010 rule strengthens the primary SO_2 NAAQS to a level of 75 parts per billion (ppb). Principal effects would be to require additional controls on fossil fuel-fired power plants.	The revised primary SO_2 NAAQS is expected to yield net benefits of up to $31.5 billion in 2020.
Portland Cement Manufacturing	**Finalized September 9, 2010.**	The rule significantly reduces emissions of	When fully implemented, the Cement MACT cuts

[1] www.gpo.gov/fdsys/pkg/FR-2009-10-30/pdf/E9-23315.pdf; www.epa.gov/ghgreporting
[2] www3.epa.gov/climatechange/Downloads/endangerment/Federal_Register-EPA-HQ-OAR-2009-0171-Dec.15-09.pdf; www3.epa.gov/climatechange/endangerment/
[3] *Commonwealth of Massachusetts, et al. v. Environmental Protection Agency*, 415 F.3d 50 (S. Ct. 2007).
[4] www3.epa.gov/ttn/naaqs/standards/so2/fr/20100622.pdf; www3.epa.gov/airquality/sulfurdioxide/pdfs/20100602fs.pdf

MACT and NSPS (Cement MACT) [5]	Portions of the rule were remanded to the agency, and EPA finalized changes to the standard on **February 12, 2013**.[6]	mercury and other air toxics and particle-forming pollutants from new and existing Portland cement kilns. Existing facilities had until September 2015 to comply.	93 percent of mercury pollution from cement kilns, compared to 2010 levels. The final rule is expected to yield net benefits of up to $17.7 billion annually
MACT to Control Air Toxics from Boilers (Boiler MACT) [7]	**Finalized February 21, 2011**, and updated **January 31, 2013**.[8] Court Requirement: D.C. Circuit vacated the rule in 2007. D.C. District Court set deadline of February 21, 2011 for promulgation.	The boiler MACT rule would affect boilers and process heaters at a broad array of industrial, commercial, and institutional facilities. New and existing boilers and process heaters located at major source facilities are required to meet emissions limits for certain pollutants, and less-polluting sources, such as natural gas-fired boilers and small coal-fired boilers only need to comply with work practice standards, which require tune-ups every year or every other year.	The final rule is expected to yield net benefits of up to $65 billion annually.
Cross-State Air Pollution Rule (CSAPR) [9]	**Finalized August 8, 2011**. The D.C. Circuit stayed implementation of the rule, and subsequently vacated the standards in August 2012. On **April 29, 2014**, the U.S. Supreme Court overturned the D.C. Circuit ruling, and stay was lifted. EPA expects to finalize	CSAPR requires states in the eastern, central, and southern United States to reduce power plant emissions that cause air quality problems in other states. The rule establishes state emissions budgets and sets up SO_2 and NOx trading programs for covered power plants. Phase 1 implementation	The CSAPR rule is expected to yield net benefits of up to approximately $277 billion annually.

[5] www.gpo.gov/fdsys/pkg/FR-2010-09-09/pdf/2010-21102.pdf; www3.epa.gov/airquality/cement/pdfs/20121220_port_cement_fin_fs.pdf
[6] www.gpo.gov/fdsys/pkg/FR-2013-02-12/pdf/2012-31633.pdf
[7] www.gpo.gov/fdsys/pkg/FR-2011-03-21/pdf/2011-4494.pdf; www3.epa.gov/airquality/combustion/docs/20121221_boiler_major_recon_fs.pdf
[8] www.gpo.gov/fdsys/pkg/FR-2013-01-31/pdf/2012-31646.pdf
[9] www.gpo.gov/fdsys/pkg/FR-2011-08-08/pdf/2011-17600.pdf; www3.epa.gov/crossstaterule/pdfs/CSAPRFactsheet.pdf

	and update in **August 2016.**[10]	began in 2015, and Phase 2 (CSAPR update) will begin in 2017.	
Mercury and Air Toxics Standards (MATS) [11]	**Finalized February 16, 2012**. The MATS rule remains in effect, despite subsequent court challenges that required EPA to revise their appropriate and necessary finding, to include a consideration of costs.[12] Legislative Requirement: Clean Air Act section 112 requires EPA to promulgate regulations to control toxic air emissions from power plants, due to a finding made in 1998.	MATS set Maximum Achievable Control Technology standards for power plant emissions of mercury and other toxic air pollution. Existing coal- and oil-fired electric generating units had until April 2015 to comply, with an optional extension until April 2016.	MATS will prevent 90 percent of the mercury in coal burned at power plants from being released. The final rule is expected to yield net benefits of up to $80 billion annually.
Oil and Natural Gas Air Pollution Standards[13]	**Finalized April 17, 2012**, as required by a consent agreement to revise existing NSPS and hazardous pollutant rules.	The standards are the first national air emission standards for hydraulically fractured wells. By 2015 companies are required to capture natural gas and volatile organic compounds (VOCs) that escape from gas wells.	The rule is expected to reduce VOC emissions from hydraulically fractured natural gas wells by 95 percent annually. The rules will also yield up to $19 million in cost savings for the industry.
Flares and Process Heaters[14]	**Finalized September 12, 2012**.	The rule set NO_x emissions limits for process heaters, and set work practice standards for flares at petroleum refineries.	The rule is expected to yield net benefits from SO_2 and NO_x reduction of up to $610 million annually.
National Ambient Air Quality Standard for	**Finalized January 15, 2013**.	The rule strengthened the annual NAAQS for fine particles ($PM_{2.5}$) to 12	The revised $PM_{2.5}$ NAAQS is expected to yield net benefits of up to

[10] www.gpo.gov/fdsys/pkg/FR-2015-12-03/pdf/2015-29796.pdf
[11] www.gpo.gov/fdsys/pkg/FR-2012-02-16/pdf/2012-806.pdf; www.epa.gov/airquality/powerplanttoxics/pdfs/20111221MATSsummary fs.pdf
[12] www.epa.gov/sites/production/files/2016-05/documents/20160414_mats_ff_fr_fs.pdf
[13] www.gpo.gov/fdsys/pkg/FR-2012-08-16/pdf/2012-16806.pdf; www3.epa.gov/airquality/oilandgas/pdfs/20120417fs.pdf
[14] www.gpo.gov/fdsys/pkg/FR-2012-09-12/pdf/2012-20866.pdf; www3.epa.gov/ttn/caaa/t1/fact_sheets/refineryfs.pdf

Particulate Matter (PM) [15]		micrograms per cubic meter. PM standards affect a wide range of mobile and stationary sources because they address all kinds of particles and aerosols in the atmosphere.	$8.75 billion in 2020.
Brick and Clay Product MACT[16]	**Finalized September 25, 2015**, in response to a consent decree. EPA has agreed to reconsider the Clay Ceramics portion of the rule.[17]	The rule requires brick and clay product manufacturers to control emissions of hazardous air pollutants. The rule sets health based standards for controlling acid gases, and technology based standards for mercury that is emitted during the brick manufacturing process.	The rule is expected to yield net benefits of up to $150 million annually.
National Ambient Air Quality Standard for Ozone[18]	**Finalized October 1, 2015**. Court and Legislative Requirement: EPA missed its March 2013 statutory deadline for reviewing the 2008 ozone NAAQS, and was required to sign a final rule by October 1, 2015.	The 2015 rule strengthens the ozone NAAQS to a level of 70 parts per billion (ppb). The 2015 ozone NAAQS does not directly limit ozone emissions from sources, but setting a new standard requires the designation of nonattainment areas. Large emitters located in these nonattainment areas are subject to various pollution reduction requirements.	A NAAQS is set at a level adequate to protect public health, including the health of sensitive groups. The more protective standard of 70 ppb is expected to yield net benefits of up to $4.5 billion in 2025 alone.
Carbon Pollution Standards for New, Modified and	**Finalized October 23, 2015.** Legislative Requirement:	Coal-fired electric generating units, and natural gas-fired	Even in the absence of the final rule, few, if any, fossil fuel-fired steam-

[15] www.gpo.gov/fdsys/pkg/FR-2013-01-15/pdf/2012-30946.pdf; www3.epa.gov/pm/2012/decfsoverview.pdf
[16] www.gpo.gov/fdsys/pkg/FR-2015-10-26/pdf/2015-25724.pdf
[17] www3.epa.gov/ttn/atw/brick/Brick%20and%20CLay%20Reconsideration%20Notice%20May%202%202016.pdf
[18] www.gpo.gov/fdsys/pkg/FR-2015-10-26/pdf/2015-26594.pdf; www.epa.gov/sites/production/files/2015-10/documents/20151001_bynumbers.pdf

Reconstructed Power Plants[19]	Clean Air Act section 111(b).	stationary combustion turbines. For natural gas units, the final standard is an emissions limit of 1,000 pounds of CO_2 per megawatt-hour on a gross-output basis (lbs CO_2/MWh-gross). For coal units, the final standard is an emissions limit of 1,400 lbs CO_2/MWh-gross, or capturing roughly 20 percent of its CO_2 emissions.	generating units will be built in the foreseeable future. Therefore, the final rule will result in negligible CO_2 emission changes, quantified benefits, and costs by 2022.
Clean Power Plan (Carbon Pollution Standards for Existing Power Plants) [20]	**Finalized October 23, 2015.** The U.S. Supreme Court issued a stay on February 9, 2016. Legislative Requirement: Clean Air Act section 111(d).	Starting in 2022, states have to meet specific pollution reduction goals to control CO_2 emissions from existing fossil-fuel fired electric generating units. However, states have considerable flexibility in deciding how to best achieve their overall pollution reduction goals.	Carbon pollution from the power sector will be reduced by 32 percent compared to 2005 levels. The rule is expected to result in up to $54 billion in climate and public health benefits in 2023.
Methane Emission Standards for New and Modified Sources in the Oil and Gas Industry[21]	**Finalized June 3, 2016.**	The rule will curb emissions of methane, VOCs and toxic air pollutants from new, reconstructed, and modified oil and gas sources.	The rule is expected to yield net climate benefits of $170 million in 2015.
Federal Implementation Plan (FIP) for Clean Power Plan[22]	**Proposed October 23, 2015**. EPA expects to finalize Summer 2016.	The FIP would be implemented only in the states that do not submit their approvable plan for	

[19] www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22837.pdf; www.epa.gov/sites/production/files/2015-11/documents/fs-cps-overview.pdf

[20] www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf; www.epa.gov/cleanpowerplan/fact-sheet-clean-power-plan-numbers; www.epa.gov/cleanpowerplan/fact-sheet-clean-power-plan-benefits-cleaner-more-efficient-power-sector

[21] www.gpo.gov/fdsys/pkg/FR-2016-06-03/pdf/2016-11971.pdf; www3.epa.gov/airquality/oilandgas/may2016/nsps-overview-fs.pdf

[22] www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22848.pdf; www.epa.gov/sites/production/files/2015-10/documents/fs-cpp-proposed-federal-plan.pdf

	Legislative Requirement: Clean Air Act section 11(d)(2) requires EPA to impose FIPs in states that fail to submit a satisfactory plan.	compliance. EPA proposed both a rate-based trading plan and a mass-based trading plan, and power plants would still need to meet the CO2 emissions targets set in the Clean Power Plan.	