

LEGISLATIVE BRIEFING ON PROPOSED GHG REGULATIONS FOR ELECTRIC GENERATING UNITS



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GHG Regulation Timeline

- **May 2007:** Supreme Court ruled that GHGs are air pollutants covered by the Clean Air Act.
- **December 2009:** EPA issued its "Endangerment Finding".
- **May 2010:** EPA issued its "Tailoring Rule," which required air permitting for the largest stationary sources of GHGs.
- **January 2011:** GHG air permitting began for facilities that would have to go through air permitting for non-GHG pollutants anyway.
- **July 2011:** GHG permitting began for new facilities that would emit more than 100,000 tons of CO₂e per year and for facilities that undergo major modifications that would increase emissions by 75,000 tons of CO₂e per year.
- **July 2011:** EPA finalized a three-year deferral of GHG permitting for facilities that use biomass.
- **April 2012:** EPA proposed GHG guidelines under the "New Source Performance Standards" establishing emission levels for new power plants.
- **2015:** EPA will complete study to examine GHG permitting for smaller sources of emissions.

GHG NSPS for New EGU's

- March 27, 2012 - EPA proposed CO₂ standard for new fossil-fuel fired power plants.
- No current national limits on the amount of carbon emissions from new power plants.
- Section 111(b) – Federal Program for New Sources
 - The Administrator shall “establish Federal standards of performance” for “new sources within [the] source category.”
- “Standard of Performance”
 - “A standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction, which the Administrator determines has been adequately demonstrated.”
- Comment period open for 60 days.

Proposed NSPS Provisions

- A technology based standard (best demonstrated technology)
- BDT takes costs and other impacts into consideration
- Applies to **new** units larger than 25 megawatts
 - Fossil fuel-fired boilers,
 - Integrated Gasification Combined Cycle (IGCC) units, and
 - Natural Gas Combined Cycle (NGCC) units
- Proposed rule sets output-based emission standard of 1,000 pounds of CO₂ per megawatt-hour (lb CO₂ /MWh gross)
- New combined cycle natural gas plants could meet the standard
- New coal or pet-coke power plants would need to incorporate carbon capture and storage technology (CCS).
- Includes an alternative 30-year compliance plan for CCS.

The proposal would not apply to:

- Existing units, including modifications such as changes needed to meet other air pollution standards
- New simple cycle turbines
- "Transitional" units
 - Sources with construction permits if they begin construction within 1 year of proposal publication.
 - Sources part of a DOE demonstration project looking to renew permits if they begin construction within 1 year of proposal publication.
- New units located in non-continental areas, which include Hawaii and the territories
- New units that burn biomass only

Kansas 2011 Coal-fired EGU Boiler CO2 intensity

Kansas Acid Rain Program EGU / coal (natural gas)-fired boilers	Unit fuel(s)	Capacity (MW)	2011 lb CO2/MWh
Empire - Riverton Unit 7/39	Coal/NG	38	2,833
Empire - Riverton Unit 8/40	Coal/NG	54	2,509
Kansas City BPU - Nearman Unit 1	Coal	256	2,533
Kansas City BPU - Quindaro Unit 1	Coal/NG	82	2,184
Kansas City BPU - Quindaro Unit 2	Coal/NG	158	2,367
KCP&L - La Cygne Unit 1	Coal	736	2,030
KCP&L - La Cygne Unit 2	Coal	682	2,139
Sunflower - Holcomb Unit 1	Coal	349	2,024
Westar Energy - Jeffrey Unit 1	Coal	720	2,157
Westar Energy - Jeffrey Unit 2	Coal	720	2,175
Westar Energy - Jeffrey Unit 3	Coal	720	2,103
Westar Energy - Lawrence Unit 3	Coal/NG	61	2,265
Westar Energy - Lawrence Unit 4	Coal/NG	135	2,199
Westar Energy - Lawrence Unit 5	Coal/NG	448	2,104
Westar Energy - Tecumseh Unit 7/9	Coal/NG	96	2,248
Westar Energy - Tecumseh Unit 8/10	Coal/NG	176	2,101

Source: U.S. EPA Clean Air Markets

Kansas 2011 Gas-fired EGU Boiler CO2 intensity

Kansas Acid Rain Program EGU/natural gas (fuel/oil) fired boilers	Unit fuel(s)	Capacity (MW)	2011 lb CO ₂ /MWh
Coffeyville Unit 4	NG	38	1,382
Mid-Kansas Elec. - Cimarron River Unit 1	NG	44	1,522
Mid-Kansas Elec. - Fort Dodge Unit 4	NG	150	1,298
Mid-Kansas Elec. - Great Bend Unit 3	NG	75	1,270
Sunflower Elec. - Garden City Unit S2	NG/fuel oil	100	1,255
Westar Energy - Gordon Evans Unit 1	NG	149	1,207
Westar Energy - Gordon Evans Unit 2	NG	383	1,324
Westar Energy - Hutchinson Unit 4	NG	175	1,341
Westar Energy - Murray Gill Unit 1	NG	43	1,505
Westar Energy - Murray Gill Unit 2	NG	74	1,417
Westar Energy - Murray Gill Unit 3	NG	112	1,391
Westar Energy - Murray Gill Unit 4	NG	107	1,390
Westar Energy - Neosho Unit 7	NG	74	1,560
Winfield #2 Unit 4	NG	27	705

Source: U.S. EPA Clean Air Markets

Kansas 2011 Gas Turbine EGU CO2 intensity

...from US EPA Clean Air Markets Division

Kansas Acid Rain Program EGU/natural gas (fuel/oil) fired combustion turbines	Unit fuel(s)	Capacity (MW)	2011 lb CO ₂ /MWh
Chanute #2 Unit 14	NG	47	1,700
Empire - Riverton Unit 12	NG	150	1,416
Kansas City BPU - Nearman Unit CT4	NG/fuel oil	86	1,621
KCP&L - Osawatomie Unit 1	NG	80	1,534
KCP&L - West Gardner Unit 1	NG	80	1,462
KCP&L - West Gardner Unit 2	NG	80	1,460
KCP&L - West Gardner Unit 3	NG	80	1,568
KCP&L - West Gardner Unit 4	NG	80	1,359
McPherson #3 Unit 1	NG/fuel oil	80	1,637
Westar Energy - Emporia Unit EEC1	NG	48	1,204
Westar Energy - Emporia Unit EEC2	NG	48	1,229
Westar Energy - Emporia Unit EEC3	NG	48	1,243
Westar Energy - Emporia Unit EEC4	NG	48	1,224
Westar Energy - Emporia Unit EEC5	NG	195	1,276
Westar Energy - Emporia Unit EEC6	NG	195	1,272
Westar Energy - Emporia Unit EEC7	NG	195	1,246
Westar Energy - Gordon Evans Unit E1CT	NG/fuel oil	80	1,510
Westar Energy - Gordon Evans Unit E2CT	NG/fuel oil	80	1,548
Westar Energy - Gordon Evans Unit E3CT	NG/fuel oil	154	1,259

EPA Comment Process

- The EPA will accept comment on this proposed rule for 60 days following publication in the Federal Register. Comments on the proposed standard should be identified by Docket ID No. EPA-HQ-OAR-2011-0660.

- EPA also plans to hold public hearings on this proposal. The dates, times, and locations of the public hearings will be available soon.
 - They will be published in the Federal Register and also listed on <http://www.epa.gov/carbonpollutionstandard>

Electrical Generating Units and MACTS

- **40 CFR Part 63, Subpart YYYY**
 - Simple and combined cycle turbines at major HAP source
- **40 CFR Part 63, Subpart ZZZZ**
 - Stationary RICE engines at major or area HAP sources
- **40 CFR Part 63, Subpart UUUUU**
 - Coal and oil fired electric utility steam generating units (EGUs) at major and area HAP sources

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