

**API Comments on the
Regional Greenhouse Gas Initiative Draft Model Rule
May 22, 2006**

Summary

Under the Regional Greenhouse Gas Initiative (RGGI) draft model rule, any fossil fuel-fired stationary boiler, combustion turbine, or combined cycle system that services an electricity generator with a nameplate capacity equal to or greater than 25 MWe shall be subject to the RGGI CO₂ budget trading (“cap/trade”) program. See Sections XX-1.2(bg) and XX-1.4(a). Under certain limited conditions, units supplying less than 10% of their annual gross generation to the electric grid may optionally be exempted by individual states. See Section XX-1.4(b)(1).

While combined heat and power units (sometimes called CHP, cogeneration, or cogen units) do emit some carbon dioxide (CO₂), they do so while simultaneously producing thermal or process (steam) energy for industrial applications as well as electricity. Because the model rule does not recognize the joint nature of this production process, the model rule potentially – but perhaps unintentionally -- extends the coverage of the RGGI program beyond CO₂ emissions from electricity generation into CO₂ emissions associated with normal industrial processes. In doing so, the RGGI model rule is including CO₂ emissions associated with CHP process energy under the same program that would cap CO₂ emissions from the generation of electricity.

This creates an important disincentive to the use of combined heat and power units which can achieve 70% to 85% total efficiencies and promotes the separate generation of industrial process steam (that is not covered by the model rule) and electricity (that is covered by the model rule, but is generally only 30% to 51% efficient). Based on modeling done under the RGGI effort, cogen units account for about 2% of overall electricity generation in RGGI states, and only 4% of fossil-fuel fired generation, and that percentage is projected to decline during the simulation period.

By failing to exempt CHP units, the RGGI model rule is penalizing industrial technologies that are relatively efficient and which comprise a very small share of RGGI state electricity generation. Therefore, the model rule should contain an exemption for combined heat and power units (CHP or cogeneration units).

Background on API and the API Climate Challenge Program

API is a nationwide, not-for-profit trade association representing more than 400 member companies engaged in all aspects of the oil and gas industry, including exploration and production, transportation, refining, distribution and marketing. API represents many of the oil and gas companies that do business in Northeast states. API has played an active role in representing the oil and gas industry in state and federal regulatory, legislative and judicial actions involving potential climate change and possible responses to that issue.

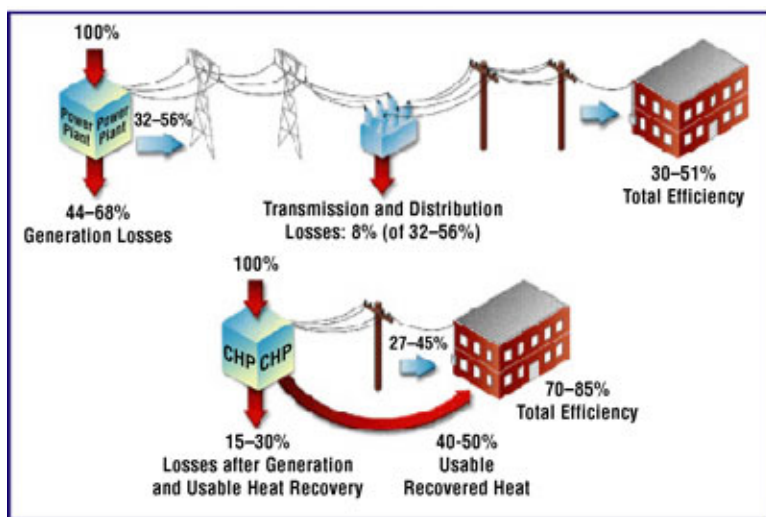
API is one of the 13 industry associations participating in the voluntary “Climate VISION” program spearheaded by the U.S. Department of Energy. API also has established its own “Climate Challenge”

program in response to the President's challenge to reduce the GHG intensity of the nation's economic activity while keeping the economy growing to meet the needs of our expanding population.¹

API's Climate Challenge Program consists of: the *Climate Action Challenge*, focusing on strategies for voluntarily reducing GHG emissions, including a commitment by API-member refining companies to improve the overall energy efficiency of their operations by 10 percent by 2012; the *Climate R&D Challenge*, involving support for enhanced research and development leading to new, improved and lower-cost technologies as part of a longer-term effort to reduce or sequester GHG emissions; and the *API Climate Greenhouse Gas Estimation & Reporting Challenge* for consistently estimating and tracking GHG emissions industry-wide.

Background on Combined Heat & Power Units

The following, from the U.S. Department of Energy – Energy Efficiency and Renewable Energy program website², illustrates CHP systems.



As described in the DOE website, “A CHP system recovers the heat from electricity generation for productive uses such as heating, cooling, dehumidification, and other processes—heat that is usually wasted at conventional power plants. And because the electricity is generated near the point of use, it is subject to fewer transmission losses than electricity supplied by distant central power plants. For these reasons,

properly designed CHP systems can be more than twice as efficient as the average U.S. fossil fuel power plant.... [Additionally] CHP systems decentralize power generation to locations near facilities having thermal requirements that can be met with waste heat. Also, CHP systems are potentially 70% - 85% efficient in utilizing fuels. And they can meet increased energy needs, reduce transmission congestion, increase power quality and reliability, and increase the energy security of a facility.”

The RGGI Model Rule CHP Problem

The RGGI model rule covers CO2 emissions from units serving electricity generators with a nameplate capacity of 25 MWe or greater, so it implicitly covers CO2 emissions from CHP units which simultaneously generate thermal or process (steam) energy as well as electricity (if the CHP's generation

¹ Information on API's Climate Challenge program and other responses to potential climate change can be found at: <http://api-ec.api.org/policy/index.cfm?bitmask=001001004002000000>. Information on DOE's Climate VISION programs is found at: <http://www.climatevision.gov/>.

² See http://www.eere.energy.gov/femp/technologies/derchp_chpbasics.cfm Emphasis added.

capacity is 25 MWe or greater). In doing so, the RGGI model rule is including CO2 emissions associated with CHP process energy under the same program that would cap CO2 emissions from the generation of electricity.

The presumably unintended consequence of this approach is to create a disincentive to the use of CHP units compared to separate and less efficient:

- generation of process energy (which is not covered by the RGGI model rule) and
- purchase of electricity needed at industrial or other facilities from other generators (the CO2 emissions of which would be the responsibility of the electricity generating entities).

One Solution to the RGGI CHP Problem

The modeling system used in the RGGI simulations (the IPM model, also used by the U.S. EPA) does not assess the potential impact of the Model Rule on a real CHP unit. The modeling system conceptually includes only the electricity generation from a CHP unit -- it does not evaluate a real CHP unit which simultaneously generates thermal energy and electricity. Therefore, the potential impact of the proposed RGGI program on actual use of CHP units is essentially unevaluated.

However, given that CHP units are only cost effective at locations that need substantial quantities of useful thermal/process energy (thermal energy cannot be shipped any significant distance), an exclusion of CHP units under the RGGI Model Rule is unlikely to lead to a significant change in the reduction of CO2 emissions from electricity generation for the following reasons.

- In the detailed modeling of the potential impacts of the RGGI program (see the “generation” page of the Excel spreadsheets for the reference case or various RGGI cap/trade cases at <http://www.rggi.org/documents.htm>), cogen or CHP units account for only about 2% of total electricity generation among RGGI states and about 4% of fossil-fuel fired generation, and therefore contribute little to RGGI state CO2 emissions.
- Additionally, the detailed modeling of the RGGI program (same source) indicates no increase in cogen/CHP electricity generation over the forecast period, indicating little or no increase in CO2 emissions from cogen/CHP units.

Therefore, it is appropriate to establish a CHP exemption in the RGGI model rule and avoid the negative consequences described. There are various ways such an exemption could be crafted. One way to exempt CHP units would be by:

- Adding a definition of “Qualified Cogeneration Unit” to Section XX-1.2 of the Model Rule as follows:
 - “*Qualified Cogeneration Unit*. A qualified cogeneration unit is a unit that meets the criteria for qualifying cogeneration facilities codified in section 292.205 of Title 18 of the Code of Federal Regulations as issued on April 1, 2002.”
- Adding the following sentence to the existing Section XX-1.4(a) of the RGGI Model Rule.
 - “A qualified cogeneration unit shall not be a CO2 budget source and shall not be subject to the requirements of this Part.”

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Attachment

**FERC “Qualified Cogeneration Unit” Definition from
Section 292.205 of Title 18 of the Code of Federal Regulations as Issued on April 1, 2002**

beginning with the date the facility first produces electric energy and any calendar year subsequent to the year in which the facility first produces electric energy.

(Energy Security Act, Pub. L. 96-294, 94 Stat. 611 (1980) Public Utility Regulatory Policies Act of 1978, 16 U.S.C. 2601, *et seq.*, Energy Supply and Environmental Coordination Act, 15, U.S.C. 791, *et seq.*, Federal Power Act, as amended, 16 U.S.C. 792 *et seq.*, Department of Energy Organization Act, 42 U.S.C. 7101, *et seq.*; E.O. 12009, 42 FR 46267)

[46 FR 17972, Mar. 20, 1980, as amended by Order 135, 46 FR 19231, Mar. 30, 1981; Order 575, 60 FR 4857, Jan. 25, 1995]

§ 292.205 Criteria for qualifying cogeneration facilities.

(a) *Operating and efficiency standards for topping-cycle facilities.*—(1) *Operating standard.* For any topping-cycle cogeneration facility, the useful thermal energy output of the facility must be no less than 5 percent of the total energy output during the 12-month period beginning with the date the facility first produces electric energy, and any calendar year subsequent to the year in which the facility first produces electric energy.

(2) *Efficiency standard.* (1) For any topping-cycle cogeneration facility for which any of the energy input is natural gas or oil, and the installation of which began on or after March 13, 1980, the useful power output of the facility plus one-half the useful thermal energy output, during the 12-month period beginning with the date the facility first produces electric energy, and any calendar year subsequent to the year in which the facility first produces electric energy, must:

(A) Subject to paragraph (a)(2)(1)(B) of this section be no less than 42.5 percent of the total energy input of natural gas and oil to the facility; or

(B) If the useful thermal energy output is less than 15 percent of the total energy output of the facility, be no less than 45 percent of the total energy input of natural gas and oil to the facility.

(ii) For any topping-cycle cogeneration facility not subject to paragraph (a)(2)(1) of this section there is no efficiency standard.

(b) *Efficiency standards for bottoming-cycle facilities.* (1) For any bottoming-cycle cogeneration facility for which any of the energy input as supplementary firing is natural gas or oil, and the installation of which began on or after March 13, 1980, the useful power output of the facility during the 12-month period beginning with the date the facility first produces electric energy, and any calendar year subsequent to the year in which the facility first produces electric energy must be no less than 45 percent of the energy input of natural gas and oil for supplementary firing.

(2) For any bottoming-cycle cogeneration facility not covered by paragraph (b)(1) of this section, there is no efficiency standard.

(c) *Waiver.* The Commission may waive any of the requirements of paragraphs (a) and (b) of this section upon a showing that the facility will produce significant energy savings.

[45 FR 17972, Mar. 20, 1980, as amended by Order 478, 52 FR 28467, July 30, 1987; Order 575, 60 FR 4857, Jan. 25, 1995]

§ 292.206 Ownership criteria.

(a) *General rule.* A cogeneration facility or small power production facility may not be owned by a person primarily engaged in the generation or sale of electric power (other than electric power solely from cogeneration facilities or small power production facilities).

(b) *Ownership test.* For purposes of this section, a cogeneration or small power production facility shall be considered to be owned by a person primarily engaged in the generation or sale of electric power, if more than 50 percent of the equity interest in the facility is held by an electric utility or utilities, or by an electric utility holding company, or companies, or any combination thereof. If a wholly or partially owned subsidiary of an electric utility or electric utility holding company has an ownership interest of a facility, the subsidiary's ownership interest shall be considered as ownership by an electric utility or electric utility holding company.