

TECHNICAL SUPPORT DOCUMENT

FOR

AMENDMENTS TO COMAR 26.09

CO₂ Budget Trading Program

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PREPARED BY:

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I. INTRODUCTION

Primary Purpose of the Amendments

The purpose of this action is to amend regulations under COMAR 26.09, the Maryland Carbon Dioxide (CO₂) Budget Trading Program, with regard to the following:

1. Clean Generation Set-aside Account,
2. Voluntary Renewable Set-aside Account,
3. Limited Industrial Exemption Set-aside Account,
4. Definitions,
5. RGGI Model Rule language,
6. Maryland \$7 trigger,
7. Minor language changes,
8. Incorporation by Reference (IBR) documents,
9. "Alternate CO₂ authorized account representative," "CO₂ budget unit," and "CO₂ budget source" language,
10. Annual allocation of CO₂ allowances,
11. Demonstrating compliance, and
12. The Fund.

Background

The Healthy Air Act (Ch. 23, Acts of 2006) was signed into law on April 6, 2006 and required Maryland to join the Regional Greenhouse Gas Initiative (RGGI) by July 2007. Maryland joined RGGI by signing RGGI's multi-state Memorandum of Understanding (MOU) on April 20, 2007. The MOU required Maryland to adopt regulations implementing the RGGI program by December 31, 2008. The Maryland CO₂ Budget Trading Program, Code of Maryland Regulations (COMAR) 26.09.01 to .03, became effective on July 17, 2008. COMAR 26.09.04 became effective as an emergency action on April 4, 2008 and as a permanent action on August 25, 2008.

The Regional Greenhouse Gas Initiative is a market-based carbon dioxide (CO₂) cap and trade program designed to reduce CO₂, a greenhouse gas, emissions from fossil fuel-fired electricity generators with a nameplate capacity of 25 megawatts or greater. RGGI was formed by states in the Northeast and Mid-Atlantic regions; currently Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Maryland comprise the RGGI region. Since there are no current technological controls available to reduce CO₂ emissions generated during the combustion of fossil fuels, the program requires electricity generators to have acquired, through regional auction or secondary market transactions, one CO₂ allowance for every ton of CO₂ emitted. Auction proceeds will fund state-driven energy efficiency programs that will result in lower CO₂ emissions through reduced electricity demand. The RGGI program will be implemented in January 2009.

The electricity generation sector is a major contributor to climate change since large amounts of CO₂ is released during the combustion of fossil fuels. The RGGI program has set a cap of

188,076,976 tons on CO₂ emissions for the region, based on averaged emissions from eligible electricity generators over 2000 to 2002. Each RGGI state will receive an annual allocation of CO₂ allowances from the regional cap equivalent to tons of CO₂ emissions from eligible sources in that state. Maryland will receive 37,503,983 CO₂ allowances for each year from 2009 through 2014. Between 2015 and 2018, Maryland will annually receive 2 ½ percent fewer CO₂ allowances as the RGGI cap reduces by 10% during that time.

Clean Generation Set-Aside Account

Maryland currently imports 30% of the electricity it consumes from states whose electricity generators are not subject to the cap and trade requirements of the RGGI program. Competition to develop additional electricity generation capacity could favor projects located in non-RGGI states, such as Pennsylvania and Virginia, which do not have the additional financial cost of buying RGGI CO₂ allowances. Out-of-state electricity distribution into Maryland by new and existing “coal by transmission wires” projects originating in Ohio, West Virginia, and Indiana places Maryland’s environment at risk since increased air emissions from non-RGGI states will also affect Maryland.

During the 2008 Legislative Session, the Maryland Public Service Commission (PSC) identified a critical need for a set-aside account in the Maryland CO₂ Budget Trading Program regulations to provide incentives for the development of new in-state electricity generation capacity. The PSC's concern is that Maryland will experience electricity shortages as demand grows and already congested transmission lines restrict additional imports of electricity. The PSC indicated that new in-state capacity is preferable to meet Maryland's critical electricity needs. In response to electricity reliability concerns raised by PSC and others, MDE committed to include a set-aside account for new generation.

Voluntary Renewable Set-Aside Account

The Maryland CO₂ Budget Trading Program regulations establish general provisions for a Voluntary Renewable Set-aside Account as a placeholder for future detailed provisions outlining the administration of the account. Detailed provisions, developed through the Maryland stakeholder process, are included in these amendments.

Maryland will retire CO₂ allowances equivalent to a proportion of voluntary purchases of electricity generated from renewable energy as represented by renewable energy credits (RECs) surrendered to the Department. Maryland determined that award of CO₂ allowances under the Voluntary Renewable Set-aside Account would mean that the CO₂ allowances could be traded on the open market and eventually used in a CO₂ budget source's compliance demonstration to cover the emission of CO₂. Retiring CO₂ allowances, on the other hand, prevents the CO₂ allowances from being available on the market and therefore cannot be used in a compliance demonstration to cover the emission of CO₂. Reduction of CO₂ emissions through energy efficiency and renewable energy programs is a primary goal of the RGGI program, and retirement of CO₂ allowances representing voluntary purchases of electricity generated from renewable energy purchases is consistent with that goal.

Limited Industrial Exemption Set-Aside Account

The Maryland CO₂ Budget Trading Program regulations establish provisions for a Limited Industrial Exemption Set-aside Account. Amendments to the regulations include clarifications to the climate action plan and other provisions of the Account, modified for legal sufficiency, to conform with other MDE programs.

II. OVERVIEW OF THE AMENDMENTS

Amendment Requirements

The regional CO₂ allowance cap for RGGI and Maryland's annual allocations are detailed below. The amendments include changes to Maryland's annual CO₂ allowances to reflect the allocation amount stated in the RGGI Memorandum of Understanding.

<u>Year</u>	<u>Regional Annual CO₂ Cap</u>	<u>Maryland's Annual CO₂ Allowances</u>
2009-2014	188,076,976	37,503,983
2015	183,375,052	36,566,383
2016	178,673,127	35,628,783
2017	173,971,203	34,691,183
2018 and beyond	169,269,278	33,753,583

The amendments also include the following provisions agreed to by the RGGI member states: new and revised auction definitions, RGGI model rule language changes, additional "alternative authorized account representative" language, and updates to incorporation by reference documents.

This proposed action includes the following requirements:

1. The Clean Generation Set-Aside Account provisions:

A definition of "Clean Generation Set-Aside Account" was added to the definitions in COMAR 26.09.01.02B. COMAR 26.09.02.03 was amended to include provisions for the Department to: (1) open and manage the Clean Generation Set-Aside Account, (2) allocate CO₂ allowances to the Clean Generation Set-Aside Account, and (3) deduct for compliance CO₂ allowances allocated from the Clean Generation Set-Aside Account to sources. COMAR 26.09.02.09 establishes the requirements for the administration of the Clean Generation Set-Aside Account.

Overview of the Clean Generation Set-aside Account:

The Clean Generation Set-Aside Account in the Maryland CO₂ Budget Trading Program will allocate up to 5% of Maryland's annual CO₂ allowances, or approximately 1,875,199 CO₂ allowances annually, to eligible CO₂ budget units as an incentive for development of clean, new electricity generation in Maryland. Eligible CO₂ budget units are units that

commence operation after January 1, 2009, use a gaseous fuel as the primary fuel, and have applied best available control technology (BACT) or lowest achievable emission rates (LAER) criteria.

The Clean Generation Set-Aside Account will award CO₂ allowances to eligible CO₂ budget units to cover all or a majority of needed CO₂ allowances for up to the first six years of operation. Awards of CO₂ allowances will be based on actual CO₂ emissions. If the total number of CO₂ allowances requested for a specific year exceeds the number of CO₂ allowances in the Clean Generation Set-Aside Account, the number of CO₂ allowances awarded will be in proportion to each eligible CO₂ budget unit's average heat input.

Since the length of time needed to plan and permit a new electricity generation facility is approximately 5 years, the demand for CO₂ allowances by eligible CO₂ budget units should not exceed the number of CO₂ allowances in the Clean Generation Set-aside Account in the early years of the program. Currently, the earliest that an award of CO₂ allowances from the Clean Generation Set-aside Account might be made would be for a tentative 2012 commencement of operation.

CO₂ allowances awarded from the Clean Generation Set-aside Account may not be resold and must remain in the CO₂ budget source's compliance account to be used for demonstrating compliance. CO₂ allowances from the Clean Generation Set-aside Account not awarded to eligible CO₂ budget units by December 31 of each year will be auctioned during the next calendar year.

2. The Voluntary Renewable Set-aside Account provisions:

A definition for renewable energy credit (REC) and a clarification to the definition for renewable energy were added to definitions in COMAR 26.09.01.02. Provisions for administration of the Voluntary Renewable Set-aside Account and the process for retiring CO₂ allowances from the Voluntary Renewable Set-aside Account have been included in COMAR 26.09.02.08. The regulation originally contained a brief paragraph that stated the annual allocation of CO₂ allowances to the Voluntary Renewable Set-aside Account.

Overview of the Voluntary Renewable Set-aside Account:

Persons in Maryland may elect to voluntarily purchase electricity generated from renewable energy to cover all or a proportion of their electricity needs. They would purchase electricity through an electricity supplier, who, upon request, provides a renewable energy credit (REC) for the electricity generated from renewable energy to the person or their authorized representative. In turn, the person or their authorized representative accumulates or coordinates with an aggregator to gather RECs to equal at least 1 ton of CO₂ emissions. The person or their authorized representative submits RECs that equal at least 1 ton of CO₂ emissions to the Department, which will then retire one CO₂ allowance from the number of CO₂ allowances in the Voluntary Renewable Set-aside Account for every ton of CO₂ emissions avoided through the voluntary purchase of electricity generated from renewable energy. Note that the Department may not accept

RECs that equal less than one ton of CO₂. CO₂ allowances from the Voluntary Renewable Set-aside Account not retired on behalf of surrendered RECs by December 31 of each year will be auctioned during the next calendar year.

In order to determine how many RECs equal one ton of CO₂ emissions, the number of RECs, in megawatt-hours (MWh), must be converted to tons of CO₂ emissions. The conversion is carried out using the CO₂ output emission rate generated by the North American Electric Reliability Corporation (NERC). This rate is described in pounds per MWh and is available from the United States Environmental Protection Agency's Emissions and Generation Resource Integrated Database (eGRID), in the section entitled, "NERC Region Emissions Rate" for the Reliability First Corporation (RFC) region.

To perform the conversion, the number of RECs must be multiplied by the CO₂ output emission rate from the eGRID database to determine the pounds of CO₂. To convert pounds of CO₂ to tons of CO₂, the resulting pounds of CO₂ is divided by 2,000 (2,000 lbs = 1 ton).

$$\text{Tons of CO}_2 = \frac{[\text{CO}_2 \text{ Output Emission Rate (lbs / MWh)}] \times [\text{Number of RECs (MWh)}]}{2,000 \text{ lbs / ton}}$$

3. Limited Industrial Exemption Set-aside Account

Provisions describing the administration of the Limited Industrial Exemption Set-aside Account have been clarified in COMAR 26.09.02.06. An amendment was made to clarify that the Limited Industrial Exemption Set-aside Account provides an exemption from demonstrating compliance, which includes the purchase of CO₂ allowances; the exemption was not intended to include the entire subtitle. In order for a CO₂ budget source to qualify for the exemption, it must obtain from the Department and comply with a permit condition that limits its electrical output to the PJM region electricity grid; submit, receive the Department's approval of, and comply with a climate action plan that requires CO₂ emissions reductions through reasonably available reduction practices, such as energy efficiency; and receive written notice of the Department's approval of the exemption. The Department also clarified language regarding the effective date of the exemption.

Other amendments include additional language that the number of CO₂ allowances to be retired annually from the Limited Industrial Exemption Set-aside Account would equal the average number of CO₂ tons emitted by exempt CO₂ budget sources and that CO₂ allowances in the Limited Industrial Exemption Set-aside Account will be retired to the CO₂ Allowance Retirement Account. CO₂ allowances from the Limited Industrial Set-aside Account not retired by December 31 of each year will be auctioned during the next calendar year.

4. Definitions:

The Department added, modified, and deleted the definitions below in COMAR 26.09.01.02B. The sources of these changes were the RGGI Auctions Subcommittee, RGGI Model Rule Subcommittee, legal clarifications, and terms related to the Clean Generation, Voluntary Renewable, and Limited Industrial Set-aside Accounts amendments.

- Applicant (added)
- Auction clearing price (added)
- Award (modified)
- Bidder (added)
- Clean generation (added)
- Clean generation set-aside account (added)
- Climate action plan (added)
- CO₂ allowance retirement account (modified)
- Commercial building (modified)
- Consumer price index (modified)
- Electronic submission agent (added)
- Fund (modified)
- Person (added)
- Renewable energy (modified)
- Renewable energy credit (added)
- Renewable energy portfolio standard (modified from “renewable portfolio standard”)
- Renewable portfolio standard (added)
- Reserve price (modified)
- Residential building (modified)
- Unsold allowance (added)

5. RGGI Model Rule language:

The RGGI Model Rule Subcommittee maintains a consensus-based list of language changes to the Model Rule (January 5, 2007 version). As appropriate, the Maryland regulations have been modified in COMAR 26.09.01 to .03 to incorporate changes in the RGGI Model Rule that consist of the following:

- In COMAR 26.09.01 for updating CO₂ budget unit account information and recording the transfer of CO₂ allowances;
- In COMAR 26.09.02 for corrections to references to EPA regulations; amending calculations for use of gaseous and solid eligible biomass; and the priority for retiring CO₂ allowances for compliance;
- In COMAR 26.09.03 for modifying the offsets project consistency application filing date used to determine the SF₆ emissions baseline; clarification of language regarding renewable energy; and correction of typographical errors.

See the following regulations:

COMAR 26.09.01.04I(2)
COMAR 26.09.01.05J(2)

COMAR 26.09.01.06B
COMAR 26.09.02.03E

COMAR 26.09.02.10A
COMAR 26.09.02.10B
COMAR 26.09.02.10G
COMAR 26.09.02.11B
COMAR 26.09.02.11D
COMAR 26.09.03.02F(1)
COMAR 26.09.03.02I(2)

COMAR 26.09.03.04D(1)
COMAR 26.09.03.04D(2)
COMAR 26.09.03.06B(1)
COMAR 26.09.03.06B(7)
COMAR 26.09.07.07G(3)(c)
COMAR 26.09.03.09E

6. Maryland \$7 trigger:

The Department incorporated changes to COMAR 26.09.02.03 for the purposes of clarifying the Maryland \$7 trigger.

7. Minor language changes

The Department made minor modifications to language in COMAR 26.09.01 to .02 to improve clarity.

8. Incorporation By Reference (IBR) documents:

The Department updated the IBR regulation under COMAR 26.09.01.03B, references to IBR documents within the definitions for “commercial building” and “residential building” in COMAR 26.09.01.02 and references to IBR documents in COMAR 26.09.03.06C and .06H. The changes include updates to three standards for energy efficiency in residential and commercial buildings and additions to and revisions of definitions within the Code of Federal Regulations (CFR).

9. “Alternate CO₂ authorized account representative,” “CO₂ budget unit,” and “CO₂ budget source,” language:

The Department added the phrase, "or alternate CO₂ authorized account representative," to sections of the regulations under COMAR 26.09.01.04 -06 that discussed establishing compliance and general accounts to be consistent with other RGGI states. The Department also added “CO₂ budget” for clarification of the terms “unit” and “source” in regulations, for example COMAR 26.09.01.04H and I.

10. Annual allocation of CO₂ allowances:

Maryland's allocation was amended in COMAR 26.09.02.03 from 37,504,000 to 37,503,983 CO₂ allowances, reflecting the allocation amount stated in the RGGI Memorandum of Understanding.

11. Demonstrating compliance:

The Department added language to COMAR 26.09.02.03E regarding demonstrating compliance. It clarified that a CO₂ budget source must have one CO₂ allowance in its compliance account for every ton of CO₂ emitted in a control period. The Department

also clarified language regarding CO₂ allowance deductions from compliance accounts of CO₂ budget sources with excess emissions.

12. The Fund:

The Department modified language in COMAR 26.09.03.02D to reflect the Fund instead of the Consumer Energy Efficiency Account.

III. COMPARISON OF THE REGULATIONS TO FEDERAL STANDARDS

No federal regulation currently exists for the control of CO₂ emissions from the burning of fossil fuels for electricity generation. The Maryland regulations, as a part of the larger RGGI regional process, are among the first regulations of its kind in the country.

IV. AFFECTED SOURCES¹

These regulations affect fossil fuel-fired generating units at the following plants:

Owner	Plant	Location	Fuel
AES Enterprise	Warrior Run	Allegany County	Coal
Allegheny Energy	R P Smith	Washington County	Coal
Con Edison Development & Old Dominion Electric Cooperative	Rock Springs	Cecil County	Natural Gas
Constellation Power	Brandon Shores	Anne Arundel County	Coal
	C P Crane	Baltimore County	Coal
	Gould Street	Baltimore City	Natural Gas
	Perryman	Harford County	Oil/Natural Gas
	Riverside	Baltimore County	Oil/Natural Gas
	Herbert A Wagner	Anne Arundel County	Coal/Oil/Natural Gas
	Westport	Baltimore City	Natural Gas
Dominion Gas Transmission	Cove Point	Calvert County	Natural Gas
Mirant	Chalk Point	Prince George's County	Coal/Natural Gas
	Dickerson	Montgomery County	Coal/ Natural Gas
	Morgantown	Charles County	Coal
Severstal Steel	Sparrows Point	Baltimore County	Natural Gas/Blast Furnace Gas
New Page	Luke Mill	Allegany County	Coal
NRG Energy	Vienna	Dorchester County	Oil
Panda Energy	Brandywine	Prince George's County	Natural Gas

V. ENVIRONMENTAL & HEALTH IMPACTS OF AMENDMENTS

These amendments will have a positive impact on children, individuals with disabilities, the elderly, and the general public by reducing CO₂ pollution over the long term. Carbon dioxide pollution will be decreased through reductions of in-state combustion of fossil fuels for

¹ Maryland Department of Natural Resources, Power Plant Research Program (PPRP), *Electricity in Maryland Fact Book*, August 2006, <http://esm.versar.com/pprp/factbook/Fact%20bk%2006%20std.pdf>, accessed, 12/10/07.

electricity generation and from imports of coal-based electricity from non-RGGI states into Maryland. Reductions in CO₂ from the electricity generation sector should result in mitigating temperature rise and other climate changes that exacerbate numerous respiratory and cardiovascular diseases, lead to increases in insect-borne diseases, and affect water quality and availability.

VI. ECONOMIC ANALYSIS

Expected Costs to the Regulated Entity & the General Public from the Regulations

The economic impact of these amendments is related to the Clean Generation Set-aside Account. Award of CO₂ allowances from the Clean Generation Set-aside Account to eligible CO₂ budget units provides a monetary benefit to the sources because they avoid the cost of purchasing CO₂ allowances to cover their CO₂ emissions. This incentive is available for up to the first six years upon commencing operation. The net benefit to eligible CO₂ budget units will be equal to the clearing price of CO₂ allowances at auction or price on the secondary market multiplied by the number of CO₂ allowances awarded to the eligible CO₂ budget units. The number of CO₂ allowances for this incentive is capped at 1,875,199 annually. The CO₂ allowance clearing price was \$3.07 for the RGGI auction held September 25, 2008 and is anticipated to remain around \$3 per CO₂ allowance in future auctions.

The estimated monetary benefit over 6 years to eligible CO₂ budget units under the Clean Generation Set-aside Account is calculated as follows:

$$(1,875,199 \text{ CO}_2 \text{ allowances/year}) \times (\$3/\text{CO}_2 \text{ allowance}) \times (6 \text{ years}) = \$33,753,582$$

This calculation assumes that all CO₂ allowances in the Clean Generation Set-aside Account are awarded each year for six years.

The Clean Generation Set-aside Account may result in a change in commercial or residential electricity rates; however, the magnitude of any change is indeterminate. The Clean Generation Set-aside Account may reduce electricity rates by providing incentives for construction of additional in-state electricity generation which would have lower transmission costs than electricity imported from out-of-state. At the same time, CO₂ allowances awarded to eligible CO₂ budget sources' compliance accounts from the Clean Generation Set-aside Account will be unavailable for auction, reducing auction revenues deposited into the Strategic Energy Investment Fund (SEIF). The SEIF funds the Maryland Energy Administration's energy efficiency programs which will reduce commercial and residential electricity demand. Regardless, electricity rates are the prerogative of the retail electricity supplier and are influenced by the assessment of which costs to pass on to the consumer and which costs to absorb. An electricity supplier, whether awarded CO₂ allowances from the Clean Generation Set-aside Account or not, would make that final determination.

Construction contractors and other industries involved with building new electricity generation units in Maryland are expected to benefit from the creation of the Clean Generation Set-aside Account, if successful in incentivizing additional in-state generation. While these may not be

local companies due to the specialized nature of power plant construction, projects of this type are long term and could benefit local economies.

The Clean Generation Set-aside Account will have a positive impact on costs associated with environmental hazards and health effects to the public. The Clean Generation Set-aside Account could assist in reducing CO₂ and other air pollution by decreasing imports of electricity from states that are not subject RGGI and that have less stringent controls than Maryland on air emissions from electricity generation. Reductions in air pollution could result in mitigating respiratory, cardiovascular, insect-borne, and other diseases and environmental impacts. Prevention of negative environment and health impacts will result in cost savings to the public.

Expected Costs to the State

The Maryland Energy Administration (MEA) may see a decrease in projected auction revenue into the Strategic Energy Investment Fund (SEIF) tentatively beginning in 2013 due to the implementation of the Clean Generation Set-aside Account; the first potentially eligible CO₂ budget unit is anticipated to commence operation in 2012. The revenue loss to MEA, which would be the same as the economic benefit to eligible new clean generation units, would total as follows, over six years:

$$(1,875,199 \text{ CO}_2 \text{ allowances/year}) \times (\$3/\text{CO}_2 \text{ allowance}) \times (6 \text{ years}) = \$33,753,582$$