

Department of Legislative Services
 Maryland General Assembly
 2006 Session

FISCAL AND POLICY NOTE
Revised

House Bill 189
 Economic Matters

(Delegate Hubbard, *et al.*)

Education, Health, and Environmental Affairs

Healthy Air Act

This bill establishes specified limits on the emissions of nitrogen oxides (NO_x), sulfur dioxide (SO₂), and mercury from specified electric generating facilities in the State. The bill also addresses carbon dioxide (CO₂) emissions by requiring the Governor to include the State in the Regional Greenhouse Gas Initiative (RGGI). Affected facilities must submit annual reports to the Maryland Department of the Environment (MDE), the Department of Natural Resources (DNR), and the Public Service Commission (PSC). MDE must adopt regulations to implement the bill by June 30, 2007. Finally, the bill establishes penalty provisions.

The bill takes effect July 1, 2006.

Fiscal Summary

State Effect: General fund expenditure increase of at least \$284,900 in FY 2007 for MDE to begin implementing RGGI and to contract out for the required study; future year general fund expenditures are annualized and reflect ongoing costs, but not auction or computer costs. DNR special fund expenditures could increase by \$25,000 annually beginning in FY 2008 to provide technical assistance to MDE. Special fund revenues could increase significantly under RGGI (beginning in FY 2009, revenues could range from \$4 million to \$20 million annually); special fund expenditures would increase correspondingly.

| (in dollars) | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
|----------------|-------------|-------------|-------------|-------------|-------------|
| SF Revenue | \$0 | \$0 | - | - | - |
| GF Expenditure | 284,900 | 225,700 | 80,800 | 85,200 | 89,900 |
| SF Expenditure | 0 | 25,000 | 25,000 | 25,000 | 25,000 |
| Net Effect | (\$284,900) | (\$250,700) | (\$105,800) | (\$110,200) | (\$114,900) |

Note: () = decrease; GF = general funds; FF = federal funds; SF = special funds; - = indeterminate effect

Local Effect: Local governments could benefit from any consumer benefit or strategic energy programs established under RGGI.

Small Business Effect: Potential meaningful.

Analysis

Bill Summary:

Emissions Limits

Beginning January 1, 2009, the bill establishes an annual limit on the collective emissions of NO_x from affected facilities; beginning January 1, 2012, the limit would be reduced.

Beginning January 1, 2010, the bill establishes an annual limit on the collective emissions of SO₂ from affected facilities. The bill authorizes MDE to set an interim stage reduction for SO₂. Beginning January 1, 2013, the limit for SO₂ would be reduced.

The bill requires MDE to set emissions budgets for each affected facility to implement those emissions limitations. A person that owns, leases, operates, or controls more than one affected facility may exceed its emissions budget so long as the person does not exceed the cumulative emissions budget for all that person's affected facilities. The bill establishes provisions regarding how MDE must handle the emissions budgets if an affected facility ceases operation.

Beginning January 1, 2010, the bill also requires that owners or operators of affected facilities achieve a minimum 80% capture of mercury for each affected facility; beginning January 1, 2013, the required mercury reduction would be 90%. Compliance with the mercury provisions must be demonstrated through the direct monitoring of mercury emissions. MDE must adopt regulations that establish a procedure to be used to determine a baseline amount of mercury at each affected facility for purposes of calculating the required capture rate.

No later than June 30, 2007, the Governor must include the State as a full participant in RGGI. The State may withdraw from the initiative at any time after January 1, 2009. The bill also establishes provisions regarding successor organizations to RGGI. If the State's participation in RGGI ceases for any reason, the Governor must report to the General Assembly regarding why participation ceased and a plan to reduce CO₂ emissions from power plants in the State.

Owners and operators of affected facilities are authorized to determine how best to achieve the collective emissions requirements for NO_x and SO₂. If the U.S.

Environmental Protection Agency (EPA) allocates emission allowances for mercury, SO₂, or NO_x to the State, the bill prohibits their application to in-State reductions, but allows them to be sold and transferred out of State.

The bill establishes provisions specific to one of the seven “affected facilities”. Specifically, MDE would be required to allow the R.P. Smith facility in Western Maryland to operate without complying with the bill’s emissions requirements if the PJM Interconnection, Inc. determines that the termination of operation of the facility will adversely affect grid reliability. The facility would be prohibited from operating at emissions levels greater than its 2000-2004 levels, and MDE would be required to review the operations of the facility and establish an alternative emissions requirement.

Study and Reporting Requirements

The bill establishes an annual reporting requirement for affected facilities beginning December 1, 2007; reports must be submitted to MDE, DNR, and PSC. MDE must review the information submitted by facilities and make that information available to the public.

MDE must contract with an academic institution in the State for a study of whether there will be an adverse impact on the State economy, the reliability of the State’s energy supply, and the cost of energy for consumers as a result of the State’s entry into and continued participation in RGGI. The bill establishes requirements for the study and directs MDE to report findings to the Governor and the General Assembly by January 1, 2008.

Penalties

The bill establishes provisions regarding allowance penalties and the surrender of allowances for violations of the NO_x and SO₂ limits; these penalties would be in addition to specified existing administrative and civil penalties. The bill also authorizes MDE to reduce or waive penalties under specified conditions. A decision by MDE to reduce or waive any penalty is subject to judicial review by any person who meets the threshold standing requirements under federal constitutional law.

Expedited Review by PSC

In order to meet the compliance dates established by the bill, the bill establishes provisions requiring PSC to expedite review, approval, and processing of certain applications under specified conditions.

Current Law/Background: MDE’s Air and Radiation Management Administration operates the State’s air pollution control programs under the framework established by

the federal Clean Air Act (CAA). CAA requires all areas of the country to achieve specific air quality standards. Under CAA, new major stationary sources and existing major sources undergoing major modifications must install additional pollution control technologies. However, many older power plants have been able to avoid upgrading their pollution control technology by claiming that their modifications are “routine maintenance.” In addition, several plants are not subject to certain federal requirements due to their age. As a result, the majority of older power plants have only limited pollution control technology in place.

Approximately two-thirds of the electricity generated in Maryland comes from the burning of fossil fuels (coal, oil, and natural gas). The process of burning fossil fuels produces many different air pollutants including SO₂, NO_x, CO₂, mercury, volatile organic compounds, and particulate matter. These pollutants are implicated in a whole host of environmental problems including smog, acid rain, global warming, and water pollution. In addition, as shown in **Exhibit 1**, EPA has identified numerous human health impacts associated with several of these pollutants.

Exhibit 1
Health Risks Associated with SO₂, NO_x, CO₂, and Mercury

| <u>Pollutant</u> | <u>Related Health Risks</u> |
|-------------------------|---|
| SO₂ | Can cause respiratory illness, cause temporary breathing difficulty for people with asthma, and aggravate existing heart disease. When mixed with other chemicals in the air, it can cause increased respiratory disease, difficulty breathing, and premature death. |
| NO_x | Leads to smog, which damages lung tissue and reduces lung function. It mixes with other chemicals to form tiny particles that damage lung tissue, can cause or worsen respiratory diseases like emphysema and bronchitis, aggravate existing heart disease, and lead to premature death. |
| CO₂ | Can accelerate the spread of infectious disease. |
| Mercury | Accumulates in the tissues of aquatic life; when ingested, it can cause increased risk of cancer, damage to the developing nervous system of fetuses causing disabilities in children, gastrointestinal illness, and even death in individuals with compromised immune systems. Mercury does not break down in the environment. |

Source: U.S. Environmental Protection Agency

Appendix 1 illustrates the SO₂, NO_x, and CO₂ emissions from specified fossil fuel-fired power plants in Maryland in 2003. In addition, according to 2003 data from MDE, electric generating units emit over 2,250 pounds of mercury per year – approximately 70% of total point source mercury emissions in the State.

Recently, there has been considerable activity regarding multi-pollutant proposals to limit power plant emissions. Several federal rules have been promulgated and proposed in the past year, such as the Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR); federal legislation (the Clear Skies Act) has also been introduced. The Ozone Transport Commission, a group of northeastern and mid-Atlantic states, is currently in the process of developing its own multi-pollutant model rule. In addition, three states (Massachusetts, New Hampshire, and North Carolina) have adopted multi-pollutant strategies of their own, and several other states have considered multi-pollutant legislation in recent years.

RGGI is a seven-state coalition (Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York, and Vermont) created to discuss the design of a regional cap-and-trade program to reduce emissions of greenhouse gases, such as CO₂, from power plants in the region. RGGI has established internal procedures to determine if and how observer states, such as Maryland, may become member states. RGGI has established goals to cap CO₂ pollution from power plants between 2009 and 2015, with further reductions between 2015 and 2018. In general, RGGI will cover electric generating units that have a nameplate capacity equal to or greater than 25 megawatts and burn more than 50% fossil fuel. Some exemptions may apply.

In November 2005, Governor Ehrlich announced that MDE would be proposing regulations addressing emissions of NO_x, SO₂, and mercury from specified coal-fired power plants in the State. The proposed regulations were submitted to the Administrative, Executive, and Legislative Review Committee on March 24, 2006. A comparison of the limits under the proposed regulations and the bill is provided in **Appendix 2**.

State Revenues: Special fund revenues could increase significantly beginning in fiscal 2009 due to the State's participation in RGGI. Under RGGI, facilities must hold allowances for 100% of their CO₂ emissions beginning in 2009. Proceeds from the sale of at least 25% of the allowances would be allocated to a "consumer benefit or strategic energy purpose;" the remainder of the allowances would be distributed by states at their discretion. According to RGGI, consumer benefit or strategic energy purposes include the promotion of energy efficiency, the mitigation of electricity ratepayer impacts, the promotion of renewable or non-carbon-emitting energy technologies, the stimulation or rewarding of investment in the development of innovative carbon emissions abatement technologies, and/or administration.

At this point, it is unclear where any proceeds would be deposited; presumably, they could be deposited within MDE, PSC, or the Maryland Energy Administration (MEA) or some combination thereof. Although the bill does not direct revenues to any specific fund, because the revenues would have a dedicated use under RGGI, it is assumed that they would be treated as special fund revenues. In any event, any increase in revenues from the sale of allowances would depend largely on the price of CO₂ allowances at that time, which cannot be predicted with certainty; however, most estimate the cost between \$1 and \$2 per ton.

Although an exact estimate cannot be made at this time, based on information provided by MEA, revenues from the sale of allowances could range from \$4 million to \$20 million annually at the start of the trading program. This estimate, which is based on data from the U.S. Energy Information Administration, assumes that the baseline CO₂ emissions for the affected units of the affected facilities total approximately 22.9 million tons. It also assumes that the State would issue 75% of the allowances and sell 25% of the allowances. The estimated range reflects two different prices for allowances (\$0.75 per ton and \$3.50 per ton), based on modeling work conducted for RGGI. Over time, the number of allowances auctioned off could decrease, but the price per allowance would likely increase.

Legislative Services notes that the universe of affected facilities under RGGI is different than the affected facilities specified in the bill. In addition, RGGI has mechanisms to mitigate compliance costs based on the market price of allowances. Accordingly, revenues could vary somewhat.

In addition, because the bill allows for the State to withdraw from RGGI at any time after January 1, 2009, it is possible that revenues from the proceeds from the sale of allowances may not materialize.

The application of specified existing penalty provisions to violations of the bill is not anticipated to significantly affect State finances.

State Expenditures:

Maryland Department of the Environment

MDE advises that its administrative costs would increase by over \$250,000 in fiscal 2007, primarily to implement RGGI in Maryland. MDE's estimate reflects the cost of hiring three public health engineers. It includes salaries, fringe benefits, one-time start-up costs (including approximately \$100,000 in new computer hardware and software costs), and ongoing operating expenses. MDE's estimate does not include any costs relating to holding an emissions auction; MDE advises that it would have to hire a

contractor to do so, but that such costs cannot be estimated at this time. Legislative Services notes that, under RGGI, states will have discretion in the specific method used, but the sale of allowances may be achieved through an auction. In addition to the above costs, MDE estimates that the cost to contract out for the required RGGI study would total an estimated \$372,675.

Legislative Services disagrees with portions of MDE's estimates. Based on information provided by several states that are RGGI participants, MDE would probably be able to implement RGGI with one additional public health engineer. Accordingly, general fund expenditures could increase by at least \$284,924 in fiscal 2007, which accounts for a 90-day start-up delay. This estimate reflects the cost of hiring one public health engineer to administer RGGI within Maryland. It includes a salary, fringe benefits, one-time start-up costs, and ongoing operating expenses, including travel. It also includes contractual services to begin conducting the RGGI study.

| | |
|---|------------------|
| Contractual Services – RGGI Study | \$223,605 |
| Salary and Fringe Benefits | 53,604 |
| Equipment/Operating Expenses | <u>7,715</u> |
| Total FY 2007 State Expenditures | \$284,924 |

The estimate does not include any contractual costs related to holding auctions, nor does it include any costs for additional hardware and software; MDE did not provide detailed information justifying those projected costs. Accordingly, costs could be higher. The estimate also assumes that MDE would take advantage of the regional organization for additional support when feasible. To the extent one additional employee is insufficient, MDE may request additional positions through the annual budget process.

Future year expenditures assume continued participation in RGGI and reflect: (1) a full salary with 4.6% annual increases and 3% employee turnover; and (2) 1% annual increases in ongoing operating expenses. The fiscal 2008 estimate includes contractual costs to complete the required RGGI study.

Legislative Services notes that, to the extent that MDE is the agency that is tasked with designing and implementing the consumer benefit and strategic energy programs anticipated under RGGI, administrative costs could increase further in the out-years. However, because RGGI advises that the revenue from the sale of proceeds may be used for administration, it is not unreasonable to assume that any additional administrative costs would likely be covered by those special funds. It is unclear at this time if such proceeds could also cover MDE's other administrative costs relating to RGGI; if so, the bill may require less general fund support in the out-years.

Department of Natural Resources

Special fund expenditures could increase by \$25,000 annually beginning in fiscal 2008 for contractual services for DNR's Power Plant Research Program to provide technical assistance to MDE in its review of information submitted by affected facilities. This estimate assumes that MDE would request DNR's assistance in that review, and that MDE would not request similar technical assistance in the absence of the bill.

Other

Although PSC could handle the bill's requirements with existing resources, Legislative Services notes that administrative costs for PSC and MEA could increase to the extent that either of those agencies is charged with designing and implementing the consumer benefit or strategic energy programs envisioned under RGGI, as discussed above.

If the State withdraws from RGGI in the future, any costs associated with implementing RGGI would no longer be incurred.

The penalty and judicial review provisions of this bill are not expected to significantly affect State expenditures.

Local Fiscal Effect: The penalty and judicial review provisions of this bill are not expected to significantly affect local expenditures. Local governments could benefit from any consumer benefit or strategic energy programs established under RGGI.

Small Business Effect: Affected facilities are not considered small businesses. To the extent the bill results in an increase in the demand for small businesses involved with the installation of any additional pollution control technology on affected facilities, the bill would have a positive impact on them. Legislative Services notes, however, that in general, such technology would likely be implemented under MDE's proposed regulations, even in the absence of this bill. Small businesses could also benefit from the implementation of any consumer benefit or strategic energy programs established under RGGI.

Additional Comments: As noted earlier, RGGI applies to more facilities than those that would fall under the bill's definition of "affected facilities". Because the RGGI model rule is not yet finalized, and because the State regulations that would be adopted to implement RGGI in Maryland do not yet exist, a list of the specific facilities that would be covered under RGGI is not available. Based on information provided by MDE, DNR, and Easton Utilities, however, it appears that any electric generating units owned by the State or local governments would likely not be covered under RGGI. For example, although the University of Maryland-College Park has two electric generating units that use natural gas, those units are too small to fall under RGGI.

The Department of Legislative Services prepared a report during the 2005 interim relating to power plant emissions in Maryland. The report provides more detailed information on power plant emissions in Maryland and efforts to implement a multi-pollutant approach to reduce emissions. For a copy of the report, please contact Library and Information Services.

Additional Information

Prior Introductions: Similar legislation was introduced as SB 744 and HB 1169 of 2005, HB 1172 of 2004, and HB 380 of 2003. SB 744 of 2005 was recommitted to the Senate Education, Health, and Environmental Affairs Committee. HB 1169 of 2005 and HB 1172 of 2004 both received unfavorable reports from the Economic Matters Committee. HB 380 of 2003 was referred to the Environmental Matters Committee and the Economic Matters Committee but was subsequently withdrawn.

Cross File: SB 154 (Senator Pinsky, *et al.*) – Education, Health, and Environmental Affairs.

Information Source(s): Maryland Department of the Environment, Maryland Energy Administration, Department of Natural Resources, Public Service Commission, Department of Public Safety and Correctional Services, U.S. Environmental Protection Agency, MaryPIRG, State of Delaware, State of New Jersey, State of New Hampshire, State of Maine, State of New York, State of Vermont, Department of Legislative Services

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Appendix 1
Maryland Power Plant Facility Generating Capacity,
Fuel Type, and 2003 Emissions

| <u>Facility Name</u> | <u>Total Nameplate Capacity (Megawatts)</u> | <u>Primary Fuel</u> | <u>SO₂ Tons</u> | <u>NO_x Tons</u> | <u>CO₂ Tons</u> |
|--|---|---|----------------------------|----------------------------|----------------------------|
| AES Warrior Run | 229 | Steam (Coal) | n/a | 482.6 | n/a |
| Brandon Shores* | 1370 | Steam (Coal) | 40,766.7 | 13,042.9 | 8,148,886.8 |
| CP Crane* | 416 | Steam (Coal) | 32,260.8 | 10,849.4 | 2,601,391.3 |
| Chalk Point* | 2647 | Steam (Coal and Residual Fuel Oil) | 52,278.8 | 13,448.5 | 6,249,666.9 |
| Dickerson* | 930 | Steam (Coal) and Combustion Turbine (Distillate Fuel Oil) | 30,174.7 | 5,181.9 | 2,761,808.9 |
| Easton | 61 | Internal Combustion (Distillate Fuel Oil) | n/a | n/a | n/a |
| Herbert A. Wagner* | 1059 | Steam (Coal and Residual Fuel Oil) | 23,153.9 | 6,297.0 | 3,612,517.4 |
| Morgantown* | 1548 | Steam (Coal) and Combustion Turbine (Distillate Fuel Oil) | 85,340.6 | 17,792.8 | 7,759,622.1 |
| North Cliff | 144 | Combustion Turbine (Natural Gas) | n/a | n/a | n/a |
| Panda Brandywine | 288 | Combined Cycle Combustion Turbine and Combined Cycle Steam (Natural Gas) | 7.0 | 82.5 | 106,497.1 |
| Perryman | 404 | Combustion Turbine (Distillate Fuel Oil) | 14.5 | 41.5 | 33,013.6 |
| Philadelphia Road | 83 | Combustion Turbine (Distillate Fuel Oil) | n/a | n/a | n/a |
| R. Paul Smith Power Station* | 110 | Steam (Coal) | 3,749.3 | 988.8 | 544,712.8 |
| Riverside | 244 | Steam (Natural Gas) and Combustion Turbine (Distillate Fuel and Kerosene) | 0.0 | 20.1 | 8,304.8 |
| Rock Springs Generating Facility | 680 | Combustion Turbine (Natural Gas) | 0.8 | 40.8 | 165,707.5 |
| Southern Maryland Electric Cooperative (SMECO) | 84 | Combustion Turbine (Natural Gas) | n/a | n/a | n/a |
| Vienna | 183 | Steam (Residual Fuel Oil) | 1,022.4 | 198.5 | 103,157.7 |
| Total | 10,480 | | 268,769.5 | 68,467.3 | 32,095,286.9 |

Sources: U.S. Environmental Protection Agency Quick Reports
<http://cfpub.epa.gov/gdm/index.cfm?fuseaction=emissions.quickreports>.
 Power Plant Research Program, Maryland Department of Natural Resources

Note: n/a = Not Available

Note: These facilities include those power plants that have at least one fossil fuel-fired unit and that have a total nameplate capacity of at least 25 MW. Self-generators are not included.

* Reflects those facilities considered "affected facilities" under the bill. Other facilities could be affected by RGGI.

Appendix 2
Comparison of Annual Pollutant Limits Under MDE's Proposed Regulations and HB 189

| | <u>Number of Affected Facilities</u> | <u>NO_x (in tons)</u> | <u>SO₂ (in tons)</u> | <u>Mercury</u> | <u>CO₂</u> |
|----------------------------------|---|--|--|-----------------------|---|
| MDE's Proposed Clean Power Rule* | Six | 20,216 (2009) | 49,620 (2010) | 75% removal (2010) | Not covered |
| | | 16,667 (2012) | 37,235 (2014) | 90% removal (2013) | |
| SB 154 | Seven** | 20,216 (2009) | 48,618 (2010) | 80% removal (2010) | Participation in RGGI (10% reduction by 2018) |
| | | 16,667 (2012) | 37,235 (2013) | 90% removal (2013) | |

*Based on proposed regulations submitted to the AELR Committee on March 24, 2006.

**The seventh facility that is not included in MDE's proposed regulations is the R. Paul Smith Power Station. HB 189 includes provisions specific to this facility that would allow the facility to be exempt from the bill's emissions requirements under specified conditions.
