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Maryland General Assembly
2021 Session

FISCAL AND POLICY NOTE
First Reader

Senate Bill 835 (Senator Rosapepe)
Education, Health, and Environmental Affairs

**Facilitating University Transformations by Unifying Reductions in Emissions
(FUTURE) Act**

This bill requires each public four-year institution to be carbon neutral for “Scope 1 direct emissions” and “Scope 2 indirect emissions” by January 1, 2025, and for “Scope 3 induced emissions” by January 1, 2035. Carbon neutrality can be met through reduced carbon emissions or carbon offsets. Except under specified conditions, an institution that uses carbon offsets must meet specified requirements related to the percentage of projects that are achieved in Maryland, the Chesapeake Bay watershed, or through an environmental justice offset project. Each carbon offset must be verified, as specified. Each institution must have specified staff to implement the bill and dedicated to sustainability by specified dates. By December 1 annually, each public four-year institution must report on the progress the institution has made toward meeting the requirements of the bill, as specified. **The bill takes effect July 1, 2021.**

Fiscal Summary

State Effect: As early as FY 2022, public four-year higher education expenditures increase to begin projects to reduce carbon emissions. Beginning in FY 2025, public four-year higher education expenditures increase, likely by hundreds of thousands of dollars annually, to purchase carbon offsets that meet the bill’s requirements. Expenditures likely increase as the percentage of projects that are required to meet specified requirements increase, with requirements fully phased in by FY 2055. Other costs are possible. As explained below, overall costs cannot be reliably estimated. Revenues are not directly affected, although institutions may increase or establish student sustainability fees to cover a portion of the cost.

Local Effect: None.

Small Business Effect: Minimal, as explained below.

Analysis

Bill Summary: The bill applies to public senior (four-year) institutions *i.e.*, constituent institutions of the University System of Maryland (USM) and the University of Maryland Center for Environmental Science (UMCES), Morgan State University (MSU), and St. Mary’s College of Maryland (SMCM).

“Scope 1 direct emissions” means emissions physically produced at a public four-year institution campus, including specified emissions. “Scope 2 indirect emissions” means indirect emissions resulting from activities affiliated with the institution that take place at a site that is not owned or controlled by the institution, including specified emissions. “Scope 3 induced emissions” means emissions produced by sources that are central to an institution’s operations and activities and are not owned or controlled by the institution, including those specified.

Methods for achieving carbon neutrality include increasing an institution’s energy efficiency, transitioning the institution’s vehicles to electric vehicles, a commitment to net-zero building emissions from the institution, transitioning the institution to renewable energy, and carbon offsets.

As shown in **Exhibit 1**, for an institution that uses carbon offsets for achieving carbon neutrality under the bill, a specified percentage of offsets must be achieved in Maryland, in the Chesapeake Bay watershed, or through an environmental justice offset project. In addition, by 2035, 10% of each carbon offset project must be designed to benefit a community that scores a 0.51 or higher on the [Maryland Environmental Justice Screen Tool](#).

Exhibit 1

Percentage of Offset Projects That Must Be Achieved in Maryland, the Chesapeake Bay Watershed, or through an Environmental Justice Offset Project by Years

<u>Years</u>	<u>Percentage</u>
2025 through 2034	5%
2035 through 2044	25%
2045 through 2054	50%
2055 and thereafter	75%

Source: Department of Legislative Services

An environmental justice offset project must be located within the United States. For in-State projects, it must directly benefit a community that scores a 0.51 or higher on the Maryland Environmental Justice Screen Tool. For out-of-state projects, it must directly benefit a community that scores in the 50th percentile or higher on the [U.S. Environmental Justice Screening and Mapping Tool](#). Further, an environmental justice project must also (1) be developed in partnership with local organization located or primarily working in the community in which the project will occur; (2) follow best practices; and (3) meet the requirement of the bill.

An institution may use offsets that do not meet the specified requirements if (1) the public institution, in consultation with the Department of General Services (DGS), determines that the institution cannot reasonably meet the requirements of the bill and (2) the public institution's student government association appoints students who will work with the individual responsible for making energy and offset purchase decisions for the institution to review and approve the carbon offsets the institution will use in lieu of carbon offsets that meet the specified requirements.

Each carbon offset use to meet the requirements of the bill must be verified by one of several specified methods.

By August 1, 2021, each institution must designate an existing faculty or staff member to implement and monitor the institution's implementation of the bill. The individual must report directly to the institution's president or equivalent.

By January 1, 2023, each institution must have at least one position dedicated to sustainability. Each dedicated sustainability staff member and, if applicable, sustainability office, must report directly to the institution's president or equivalent.

Institutions must share relevant resources, best practices, and methodologies with one another. Each sustainability office or sustainability staff members must meet quarterly to share best practices and report on the progress made toward meeting the bill's requirements.

Current Law: Public four-year institutions are not required to be carbon neutral. For those institutions who choose to be carbon neutral, there are no requirements to meet that status.

Greenhouse Gas Emissions Reduction Act

The Greenhouse Gas Emissions Reduction Act, originally enacted in 2009 and made permanent and expanded in 2016, was enacted in light of Maryland's particular vulnerability to the impacts of climate change. Under the Act, the State was required to develop plans, adopt regulations, and implement programs to reduce greenhouse gas

(GHG) emissions by 25% from 2006 levels by 2020 and must further reduce GHG emissions by 40% from 2006 levels by 2030; the 2030 reduction requirement terminates December 31, 2023. In October 2019, the Maryland Department of the Environment released a [draft plan](#) to reach the 2030 reduction requirement.

The Maryland Green Building Council

The Maryland Green Building Council (MGBC), which is staffed by DGS, is charged with:

- evaluating current high-performance building technologies;
- recommending the most cost-effective green building technologies that the State might consider requiring in the construction of State facilities;
- providing recommendations concerning how to expand green building in the State; developing a list of building types for which green building technologies should not be applied; and
- establishing a process for receiving public input.

Energy Efficiency and Conservation – High-performance Buildings

Chapter 124 of 2008 requires most new or renovated State buildings to be constructed as high-performance buildings, subject to waiver processes established by the Department of Budget and Management (DBM) and DGS. Chapter 124 defines a “high-performance building” as one that (1) meets or exceeds the Leadership in Energy and Environmental Design criteria for a silver rating or (2) achieves a comparable numeric rating according to a nationally recognized, accepted, and appropriate standard approved by DBM and DGS. Based on action approved by MGBC, DGS, and DBM, a “high performance building” also includes one that (1) earns a two Green Globes rating or better under the Green Building Initiative’s Green Globes rating system or (2) complies with MGBC’s supplement to the International Green Construction Code enacted in November 2014.

Only new or renovated State buildings that are at least 7,500 square feet and are built or renovated entirely with State funds are subject to the high-performance requirement. Additionally, building renovations must include the replacement of heating, ventilation, air conditioning, electrical, and plumbing systems and must retain the building shell. Unoccupied buildings are exempt from the high-performance mandate, including warehouses, garages, maintenance facilities, transmitter buildings, and pumping stations.

Maryland Building Performance Standards

The Maryland Department of Labor (MDL) is required to adopt, as Maryland Building Performance Standards, the most recent version of the International Building Code (IBC),

including the 2018 International Energy Conservation Code (IECC), along with applicable modifications authorized in Title 12 of the Public Safety Article. Within 18 months of the release of each new version of IBC, MDL is required to review the new version, consider modifications, and adopt specified modifications related to energy conservation and efficiency. MDL is prohibited from adopting any modification that is more stringent than IBC, except that an energy conservation requirement may be more stringent than IECC. MDL and local governments may also adopt by regulation the International Green Construction Code.

Energy Efficiency and Conservation – State Building Energy Efficiency Executive Order

In June 2019, Governor Lawrence J. Hogan, Jr., issued an executive order establishing a new energy savings goal for State government. Specifically, DGS, in cooperation with the Maryland Energy Administration (MEA), must manage a “Maryland Leads by Example” energy savings initiative that will oversee reducing, by 2029, the energy use of State-owned buildings by 10% compared to a 2018 baseline. Chapter 289 of 2020 codified the Governor’s executive order, including the goal for reducing energy use in State-owned buildings by 10%.

EmPOWER Maryland

In 2008, the General Assembly passed the EmPOWER Maryland Energy Efficiency Act, which set target reductions of 15% in per capita electricity consumption and peak demand, respectively, by 2015 from a 2007 baseline. Legislation in 2017 extended the program through its 2018 to 2020 and 2021 to 2023 program cycles and established a new annual energy savings goal of 2% per year, based on each electric company’s 2016 sales. Approved program costs are recovered by electric companies on customer bills.

Zero-emission Vehicles

Several State programs aim to encourage the purchase of electric vehicles in the State. For example, subject to available funding, a person who purchased a qualified plug-in electric vehicle or a qualified fuel cell electric vehicle prior to July 1, 2020, may claim a credit against the vehicle excise tax. In addition, MEA administers the Electric Vehicle Recharging Equipment Rebate Program, which provides rebates to individuals, businesses, and to State and local governments. The rebate is equal to 40% of the cost of property that is located in the State and used for recharging vehicles propelled by electricity, subject to specified maximum values. MEA may also reimburse a person for the reasonable costs of installing the qualifying equipment.

State Vehicle Fleet

DGS purchases vehicles for the State based on standards developed by DBM and approved by the Board of Public Works. DBM administers the State vehicle fleet. The standards developed by DBM must, as far as practicable and feasible, be based on the lowest possible life-cycle cost of the vehicle.

Regional Greenhouse Gas Initiative and the Strategic Energy Investment Fund

Maryland participates in the multistate Regional Greenhouse Gas Initiative (RGGI) in order to reduce carbon dioxide (CO₂) emissions from the power sector. Each participating state limits CO₂ emissions from electric power plants, issues CO₂ allowances, and establishes participation in CO₂ allowance auctions. A single CO₂ allowance represents a limited authorization to emit one ton of CO₂.

Chapters 127 and 128 of 2008 established the Strategic Energy Investment Fund primarily to contain revenue generated from the sale of CO₂ emission allowances under RGGI. The allocation of revenue has been altered several times in budget reconciliation legislation. The current allocation requires (1) at least 50% for energy assistance; (2) at least 20% for energy efficiency and conservation (at least one-half for low- and moderate-income programs); (3) at least 20% for renewable and clean energy, energy-related education and outreach, resiliency, and climate change programs; and (4) up to 10%, but no more than \$5.0 million for administrative expenses.

State Expenditures: The bill requires USM institutions, MSU, and SMCM to achieve carbon neutrality for Scope 1 and 2 emissions by January 1, 2025 (fiscal 2025) and for Scope 3 emissions by January 1, 2035 (fiscal 2035). As discussed below, it is assumed that institutions use a combination of carbon emissions reduction activities and the purchasing of carbon offsets that meet the bill's requirements. Costs largely depend on the costs of carbon offsets, including those that meet the specified requirements. The overall costs cannot be reliably estimated; however, many institutions have estimated significant costs, with costs definitely increasing by fiscal 2025, likely by hundreds of thousands of dollars annually. As discussed below, other costs, including for personnel, are also possible. Costs may begin as early as fiscal 2022.

Carbon Emissions Reduction Activities

As early as fiscal 2022, public four-year expenditures increase to begin projects to reduce carbon emissions. Any such projects will reduce the amount of carbon offsets that will need to be purchased beginning in fiscal 2025. According to the bill, methods for achieving carbon neutrality include increasing an institution's energy efficiency, transitioning the institution's vehicles to electric vehicles, a commitment to net-zero building emissions

from the institution, transitioning the institution to renewable energy, and carbon offsets. Some of these costs will be one-time expenditures, while others will be ongoing costs. Some of the projects undertaken to reduce carbon emissions may result in future year and long-term savings, such as the purchase of electric vehicles. The projects chosen will depend on the institution, and costs cannot be reliably estimated.

Carbon Offsets

Beginning in fiscal 2025 (January 1, 2025) public four-year expenditures increase to purchase carbon offsets that meet the requirements of the bill to achieve carbon neutrality for Scope 1 and 2 emissions. Beginning in fiscal 2035 (January 1, 2035), public four-year expenditures increase further to achieve carbon neutrality for Scope 3 emissions. In addition, the percentage of carbon offsets that must be achieved in Maryland, in the Chesapeake Bay watershed, or through an environmental justice offset project increases from 2025 through 2055. Further, by 2035, 10% of each carbon offset project must be designed to benefit a community that scores a 0.51 or higher on the Maryland Environmental Justice Screen Tool.

According to Second Nature, a nonprofit organization focused on campus carbon neutrality, the price of carbon offsets can vary widely, from less than \$1 to greater than \$50 per ton. The price depends on the type of carbon offset project, the carbon standard under which it was developed, the location of the offset, the co-benefits associated with the project, and the vintage year. Salisbury University advises that the costs for carbon offsets range from \$7 to \$25. Gold Standard for the Global Goals, one of the verification methods listed in the bill, lists global offsets at \$10 to \$47 per ton. The cost of carbon offsets that meet the requirements of the bill are unknown. It is also unknown if the cost of carbon offsets will increase or decrease in future years.

Costs are also dependent on the carbon emissions of each institution. According to [Second Nature](#), carbon emissions by public four-year institutions in Maryland ranged from zero (UMCES), with the next lowest of approximately 8,600 to a high of 240,000 tons; however, the source of this information is unclear, the most recent year of data varies by institution, and information is not available for all institutions (only for those that participate in one of Second Nature's commitments or programs).

Under one set of assumptions, prior to any emission reduction activities or projects, the Department of Legislative Services (DLS) estimates annual costs to be from \$129,000 to \$3.6 million *per institution*, with annual costs in the hundreds of thousands of dollars per institution likely. This estimate is based on the Second Nature information on carbon emissions by institution and an estimated carbon offset cost of \$15, the cost for the majority of Gold Standard for the Global Goals offsets as of February 2021.

University of Maryland, Baltimore Campus estimates an annualized incremental cost increase of \$3.3 million to achieve Scope 1 and 2 carbon neutrality and an additional \$394,300 annually to achieve Scope 3 carbon neutrality. University of Maryland Baltimore County advises that costs to achieve carbon neutrality within the bill's timeline of 2035 total \$15.2 million, with annual costs thereafter of \$950,000. University of Maryland Global Campus (UMGC) estimates costs of about \$1.0 million over three years to replace boilers and vehicles. DLS notes that at \$15 per carbon offset credit, assuming 8,600 tons of carbon emissions at UMGC in 2019, as reported by Second Nature, purchasing carbon offsets has an estimated annual cost of \$129,000.

Overall carbon offset costs cannot be reliably estimated but are likely significant.

Personnel Costs

By August 1, 2021 (fiscal 2022), each public four-year institution must designate an existing faculty or staff member to implement and monitor the institution's implementation of the bill. Since this must be an existing faculty or staff member, costs for this position are not affected; however, to the extent that the existing staff or faculty member's existing duties and responsibilities cannot be absorbed, higher education expenditures for other staff may increase.

By January 1, 2023 (fiscal 2023), each institution must have at least one position dedicated to sustainability. Thus, all institutions that do not have at least one position dedicated to sustainability must dedicate a position to sustainability. To the extent that an institution cannot fill this role with existing staff, additional staff must be hired, and costs increase.

Other Potential Costs

Beyond the required staffing discussed above, there may be other implementation costs such as monitoring and tracking carbon emissions. Any such costs cannot be reliably estimated but may be significant.

Small Business Effect: Any carbon offset small business based in Maryland may receive more business from public four-year institutions due to the bill. Any such increase cannot be reliably estimated.

Additional Information

Prior Introductions: None.

Designated Cross File: HB 803 (Delegate Solomon) - Appropriations.

Information Source(s): University System of Maryland; Morgan State University; Maryland Department of the Environment; Department of General Services; Second Nature; Ecosystem Marketplace; U.S. Environmental Protection Agency; Department of Legislative Services

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