

**Department of Legislative Services**  
Maryland General Assembly  
2009 Session

**FISCAL AND POLICY NOTE**

Senate Bill 199 (Senator Garagiola, *et al.*)  
Education, Health, and Environmental Affairs

**Biodiesel Requirements for the State Vehicle Fleet**

This bill phases in new fuel requirements for diesel-powered State vehicles. In fiscal 2011 and 2012, at least 50% of State-owned diesel vehicles must use a blend of diesel fuel that is at least 10% biodiesel (B10) instead of 5% biodiesel (B5). In fiscal 2013 and 2014, the blend must be at least 15% biodiesel (B15). Beginning in fiscal 2015, at least half of State-owned diesel vehicles must use a fuel blend that is at least 20% biodiesel (B20).

**Fiscal Summary**

**State Effect:** Total State expenditures increase by \$745,200 in FY 2011 to purchase almost 7.0 million gallons of B10 diesel fuel instead of B5. Of that, special fund expenditures by the Maryland Department of Transportation (MDOT) increase by almost \$505,900 and general fund expenditures by the Department of General Services (DGS) increase by \$239,300. Higher education fund expenditure increases by the University System of Maryland (USM) cannot be reliably estimated. Out-year costs reflect the bill's phase in of higher biodiesel blends, which cost more. No effect on revenues.

(in dollars)	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Revenues	\$0	\$0	\$0	\$0	\$0
GF Expenditure	0	239,300	239,300	478,700	478,700
SF Expenditure	0	505,900	505,900	1,011,800	1,011,800
Higher Ed Exp.	-	-	-	-	-
Net Effect	\$0	(\$745,200)	(\$745,200)	(\$1,490,400)	(\$1,490,400)

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

**Local Effect:** None.

**Small Business Effect:** None.

## Analysis

**Current Law:** At least 50% of diesel-fueled vehicles in the State vehicle fleet must use a blend of fuel that is at least 5% biodiesel fuel. At least 50% of heavy equipment owned by the State and 50% of heating equipment in State buildings must use a blend of fuel that is at least 5% biodiesel fuel, subject to availability. These mandates do not apply to any vehicle or piece of equipment whose manufacturer's warranty would be voided if the use of biodiesel fuel caused mechanical failure.

**Background:** Biodiesel fuel offers some advantages over regular petroleum-based diesel fuel (RDF). According to the U.S. Environmental Protection Agency, biodiesel fuel reduces carbon monoxide, sulfur dioxide, and other harmful emissions from diesel-powered engines, although it slightly increases nitrous oxide emissions. Because it is produced from renewable sources such as vegetable oils and animal fat, it is also biodegradable, nontoxic, and less flammable than RDF. Diesel fuel blends consisting of up to 20% biodiesel fuel can be stored in existing diesel fuel storage tanks and used in existing diesel engines without modifications. Increased use of domestically produced renewable fuel can help reduce the nation's dependence on imported oil.

However, biodiesel fuel does have certain performance disadvantages. It burns slightly less efficiently than RDF, and it requires a special additive to keep it from congealing during the winter. Biodiesel blends above B5 have been found to clog fuel filters and fuel tanks in some older vehicles, requiring more frequent servicing and maintenance. The Maryland Transit Administration reports that on one occasion it mistakenly received a shipment of B10 fuel that resulted in clogged fuel lines on some of its buses. Many engine manufacturers warranty their engines for the use of blends up to and including B20, but some notable manufacturers do not. For instance, Ford and Mack warranties extend only to B5, and General Motors and Chrysler only warranty certain vehicles for B20.

**State Fiscal Effect:** Exhibit 1 shows the average cost per gallon of biodiesel blends in Baltimore as of February 5, 2009. Although the prices of petroleum-based diesel fuel and biodiesel fuel have both fluctuated in recent years, price spreads of about 10 cents among the different blends have remained fairly consistent over the past three years. Legislative Services therefore assumes that the price spreads among the different blends will persist even if the underlying prices change.

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**Exhibit 1**  
**Average Prices of Biodiesel Fuel Blends**

<u>Fuel Blend</u>	<u>Price Per Gallon</u>
B5	\$1.53
B10	\$1.63
B15	\$1.74
B20	\$1.85

Source: Energy Management Institute, Alternative Fuels Index

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DGS purchases fuel on behalf of most State agencies, with the notable exception of MDOT and USM. DGS reports that it purchases approximately 4.5 million gallons of diesel fuel annually. For MDOT, the State Highway Administration purchases approximately 1.5 million gallons of diesel fuel, and the Maryland Transit Administration purchases about 8.0 million gallons to run its bus fleet. USM cannot provide an estimate of annual fuel purchases because each campus purchases its own fuel, so the fiscal effect does not reflect additional costs to USM.

Legislative Services assumes that agencies satisfy the bill's requirements by purchasing higher biofuel blends instead of the B5 that is currently required for half of the State's vehicles. This enables them to continue to use RDF for vehicles that may experience problems with higher biofuel blends, especially older vehicles. Therefore, the fiscal effect is calculated as the difference between the higher blends required by the bill and B5 fuel.

Based on that assumption, general fund expenditures by DGS increase by approximately \$239,000 in fiscal 2011 to purchase 2.25 million gallons of B10 fuel instead of B5. Special fund expenditures for MDOT increase by nearly \$505,900 in fiscal 2011 to purchase 4.75 million gallons of B10 instead of B5. Out-year costs reflect the bill's phase in of higher biodiesel blends. By fiscal 2015, total fuel costs for both agencies increase by \$2.2 million when B20 is required.

The bill's fiscal effect may increase or decrease based on State vehicles' tolerance for higher biodiesel blends. To the extent that some State vehicles may be exempt from the fuel requirement because their warranties do not allow blends higher than B5, the cost increases may be smaller. However, if the higher biodiesel blends lead to more frequent vehicle maintenance and repairs due to clogged fuel lines, the costs may increase.

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## **Additional Information**

**Prior Introductions:** None.

**Cross File:** None.

**Information Source(s):** Board of Public Works, Department of Budget and Management, Department of General Services, Maryland Department of Transportation, University System of Maryland, Energy Management Institute, National Biodiesel Board, U.S. Environmental Protection Agency, Department of Legislative Services

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