

**Department of Legislative Services**  
 Maryland General Assembly  
 2008 Session

**FISCAL AND POLICY NOTE**  
**Revised**

House Bill 377 (The Speaker, *et al.*) (By Request – Administration)  
 Economic Matters and Ways and Means Budget and Taxation and Finance

**Solar and Geothermal Tax Incentive and Grant Program**

This Administration bill increases specified grant limits under the Solar Energy and Geothermal Heat Pump grant programs, exempts the sale of specified solar energy and geothermal equipment from the State sales and use tax, and exempts specified solar energy property from State and local real property taxes. The bill also specifies that a geothermal heating and cooling system, either as a stand-alone system or as a combined geothermal and conventional system, is not to be assessed, for property tax purposes, at more than the value of a conventional system.

The bill takes effect July 1, 2008; the property tax-related provisions of the bill are applicable to taxable years beginning after June 30, 2008.

**Fiscal Summary**

**State Effect:** General fund revenues could decrease by \$148,100 in FY 2009 and Transportation Trust Fund revenues could decrease by \$10,300. Potential special fund revenue decrease, resulting from the property tax exemption, though the amount of the decrease cannot be reliably estimated. Future year revenues reflect projected growth in solar and geothermal installations due to the bill’s incentives. To the extent the bill’s provisions increase participation in the grant programs and result in higher average grant amounts, State expenditures for grants would increase.

(in dollars)	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
GF Revenue	(\$148,100)	(\$177,700)	(\$213,300)	(\$255,900)	(\$307,100)
SF Revenue	(10,300)	(12,400)	(14,800)	(17,800)	(21,400)
GF Expenditure	-	-	-	-	-
Net Effect	(\$158,400)	(\$190,100)	(\$228,100)	(\$273,700)	(\$328,500)

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

**Local Effect:** Local government revenues could decrease, resulting from the property tax exemption, though the amount of the decrease cannot be reliably estimated. Expenditures would not be affected.

**Small Business Effect:** The Administration has determined that this bill has minimal or no impact on small business (attached). Legislative Services disagrees with this assessment because small businesses in the solar and geothermal energy industries could benefit to the extent the increased grant limits and tax incentives under the bill increase demand for their services. (The attached assessment does not reflect amendments to the bill.)

### Analysis

**Bill Summary:** Solar energy and geothermal heat pump grant award limits are increased as follows:

	<u>Current Limits</u>	<u>Proposed Limits</u>
Photovoltaic property (residential)	\$3,000 or 20% of the total installed cost*	\$10,000 or \$2,500 per kW of installed electricity generation capacity*
Photovoltaic property (nonresidential)	\$5,000 or 20% of the total installed cost*	\$10,000 or \$2,500 per KW of installed electricity generation capacity*
Solar water heating property	\$2,000 or 20% of the total installed cost*	\$3,000 or 30% of the total installed cost*
Geothermal property (residential)	\$1,000	\$3,000 or \$1,000 per ton*
Geothermal property (nonresidential)	\$1,000	\$10,000 or \$1,000 per ton*

\* The lesser of.

Note: "Ton" is defined in the bill as 1 standard ton of refrigeration equal to 12,000 British thermal units of heat removal per hour.

The definition of photovoltaic property is also modified to include only solar energy property with an installed electricity generation capacity of 20 kilowatts or less.

The bill gives the Maryland Energy Administration discretion to adjust the grant amounts, within the prescribed award limits, to reflect market conditions and prevailing prices.

**Current Law:** The Solar Energy Grant Program was created by Chapter 128 of 2004 and took effect January 1, 2005. The Geothermal Heat Pump Grant Program was created by Chapter 476 of 2005 and took effect July 1, 2005. Both programs are administered by MEA. The Solar Energy Grant Program provides grants to individuals, local governments, and businesses for a portion of the costs of acquiring and installing photovoltaic property and solar water heating property. Photovoltaic property is defined as solar energy property that uses a solar photovoltaic process to generate electricity. Solar water heating property is solar energy property, in connection with a structure, that uses solar energy for the purpose of providing hot water for use within the structure. Both must meet standards and certification requirements specified by MEA. The Geothermal Heat Pump Grant Program provides grants to individuals for a portion of the cost of acquiring and installing a geothermal heat pump. A geothermal heat pump is defined as a heating and cooling device that is installed using ground loop technology.

### *Tax Incentives*

Chapter 615 of 2007 established a State property tax exemption for a solar energy device installed to heat or cool a dwelling (generally the principal residence of an individual with a legal interest in the house, condominium, etc.), generate electricity used in the dwelling, or to provide hot water used in the dwelling. Chapter 615 also ensured that money received under the Solar Energy Grant Program is not subject to State and local income tax for individuals.

Local governments are authorized to grant, by law, a tax credit against the county or municipal property tax imposed on a structure if the structure uses a solar energy device, a geothermal energy device, or a qualifying energy conservation device to heat or cool the structure, generate electricity to be used in the structure, or provide hot water for use in the structure.

Under Chapter 6 of the 2007 special session, an annual tax-free weekend prior to and including the third Monday in February was established, beginning in calendar 2011, during which the sales and use tax will not apply to the sale of any solar water heater and specified Energy Star products.

## *Property Tax Assessment*

A solar energy heating and cooling system, if no conventional heating and cooling system exists in a building, is assessed to the owner of the property at no more than the value of a conventional system. If a solar energy system is installed in a building in addition to a conventional system, the combined system is assessed to the owner of the property at no more than the value of the conventional system.

## *Tax Rates*

The State sales and use tax rate is 6%. The State real property tax rate for fiscal 2008 is \$0.112 per \$100 of assessed value. Local real property tax rates are set by each jurisdiction's governing body with the rates ranging from \$0.475 in Talbot County to \$2.268 in Baltimore City.

**Background:** This bill, with the exception of the property tax exemption and the provision relating to the assessment of geothermal heating and cooling systems, implements recommendations included in MEA's January 2008 *Maryland Strategic Electricity Plan*, that identifies various strategies to address the State's energy future.

In the plan, MEA indicates that current incentives for photovoltaic solar energy under the Solar Energy Grant Program are too low to induce significant participation. A typical residential, 2 kW system costs roughly \$20,000 installed, and with a \$3,000 State grant and a \$2,000 federal tax credit (set to expire December 31, 2008), a homeowner would pay roughly \$15,000. MEA indicates that while such a system would offset monthly electric bills and enhance reliability, under current electricity rates, the financial break-even point on the investment would be 43 years in the future. According to MEA, the incentives for nonresidential solar and geothermal projects are similarly not sufficient to stimulate significant demand.

As a result of changes made to the Maryland Renewable Portfolio Standard (RPS) under Chapters 119/120 of 2007, Solar Renewable Energy Credits (SRECs) (commodities equal to the renewable energy generation attributes of one megawatt-hour of electricity) could be bought and sold in Maryland as early as 2008, though MEA indicates it is unclear how much of an incentive the SRECs will be for smaller solar energy systems.

MEA identifies Delaware, Colorado, and New Jersey as states with effective solar energy incentives. In Delaware, rebates of up to 50% of installation costs are available, while Xcel Energy, an energy provider in Colorado, provides an incentive of up to \$4,500 per kW (consisting of a \$2.00 per watt rebate and up to \$2.50 per watt renewable energy credit payment) for smaller (0.5-10 kW) photovoltaic systems. New Jersey's program,

which, at its beginning, provided the highest incentive of any state (70% of system cost), has run out of funding due to factors including pent-up demand, increased solar industry capacity, and several large commercial scale installations. According to the New Jersey Board of Public Utilities, 40 MW of solar generating capacity was installed in the state between May 2001 and August 2007, assisted by more than \$170 million in rebates. The board decided in September 2007 to move away from state rebates and instead rely on SRECs to support the state's solar renewable energy market, though rebates for smaller systems (10 kW or less) may continue in the short term. **Appendix 1** shows some of the renewable energy incentives offered by surrounding states and the federal government.

**State Fiscal Effect:** State revenues could decrease by \$158,400 in fiscal 2009 and by \$328,500 in fiscal 2013. In addition, State property tax revenues could decrease by an indeterminate amount due to the property tax exemption for specified solar energy property.

#### *Sales Tax Exemption*

State sales tax revenues could decrease by \$158,400 in fiscal 2009 (\$148,100 in general funds and \$10,300 in TTF) and by \$328,500 in fiscal 2013 (\$307,100 in general funds and \$21,400 in TTF). The estimate is based on the following facts and assumptions:

- \$4.4 million was spent in Maryland in fiscal 2007 for the purchase and installation of solar energy and geothermal property by grant recipients under the Solar Energy and Geothermal Heat Pump grant programs.
- MEA estimates that approximately 60% of that amount represents equipment costs.
- Fiscal 2009 equipment sales would be roughly equivalent to fiscal 2007 sales.
- Purchase and installation of solar energy and geothermal property by State grant recipients would increase by 20% from fiscal 2009 forward, due to the increased grant limits and tax incentives under the bill. (This assumes adequate grant funding to meet demand.)

The above estimate is based only on systems installed in fiscal 2007 with grant assistance under the Solar Energy and Geothermal Heat Pump grant programs. To the extent additional sales of solar energy and geothermal property occur in the State, the revenue loss would be greater. MEA estimates that a significant majority of the residential and small business solar energy system installations in the State are completed with grant assistance, since installers in the State generally know about the program and promote it to their customers. MEA is less certain as to what amount of the total geothermal systems in the State are installed with grant assistance, given the relatively small grant

amount available (\$1,000) and less awareness of the program. There is also the possibility that larger, nonresidential solar energy system installations are occurring without grant assistance as the grant amount in those cases is much smaller relative to the overall costs of the systems.

### *Property Tax Exemption*

The property tax exemption proposed by the bill could decrease State property tax revenues for the Annuity Bond Fund. However, the amount of the State revenue decrease cannot be reliably estimated and depends on • the number and value of solar energy systems that exist in the State that generate electricity or provide hot water for use in a structure and are not currently exempt from State property tax under Chapter 615 of 2007; and • the extent to which the value of these systems is added to a property for assessment purposes. Solar energy heating and cooling systems would remain subject to property tax (to the extent of the value of a conventional system) as provided for under the bill.

As noted previously, Chapter 615 of 2007 established a State property tax exemption for specified solar energy devices installed in dwellings. The Fiscal and Policy Note for Chapter 615 calculated a relatively small revenue loss based on an assumed average cost of photovoltaic and solar water heating systems and MEA's estimated number of installations since 1999. The estimate assumed that the value of the systems would be added to a property for assessment purposes.

Debt service payments on the State's general obligation bonds are paid from the Annuity Bond Fund. Revenue sources for the fund include State property taxes, premium from bond sales, and repayments from certain State agencies, subdivisions, and private organizations. General funds may be appropriated directly to the Annuity Bond Fund to make up any differences between the debt service payments and funds available from property taxes and other sources. The fiscal 2009 State budget includes \$745.5 million for general obligation debt service costs supported by special funds from the Annuity Bond Fund.

To offset any potential reduction in State property tax revenues, general fund expenditures could increase in an amount equal to the decrease in the Annuity Bond Fund revenues or the State property tax rate would have to be increased in order to meet debt service payments. This assumes that the Annuity Bond Fund does not have an adequate fund balance to cover the reduction in State property tax revenues.

*Modified/Increased Grant Limits*

Increasing the current grant limits under the Solar Energy and Geothermal Heat Pump grant programs is intended to increase participation in the program; however, initially State expenditures are not expected to increase beyond current budgeted amounts.

The State budget included \$1.5 million for the Solar Energy and Geothermal Heat Pump grant programs in fiscal 2007 and \$675,000 in fiscal 2008. However, due to limited participation, MEA only awarded \$401,000 in grants in fiscal 2007 and \$298,000 has been awarded in fiscal 2008 (according to the most recent information available from MEA, originally obtained in the beginning of February 2008) as shown in **Exhibit 1**. The State budget for fiscal 2009 includes \$590,500 for the two programs.

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**Exhibit 1**  
**Solar Energy and Geothermal Heat Pump Grant Programs**  
**Fiscal 2007-2009**

	<u>State</u> <u>Appropriation</u>	<u>Grants</u> <u>Awarded</u>	<u>Grant</u> <u>Amount</u>
Fiscal 2007	\$1,500,000	239	\$400,883
Fiscal 2008	\$675,000	178	\$298,161
Fiscal 2009	\$590,519	n/a	n/a

Source: Maryland Energy Administration

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In subsequent years, however, if interest in the grant program increases due to the bill, State expenditures would be expected to increase. The amount of the increase cannot be reliably estimated and depends upon the number of additional grants awarded and the increase in the average amount of the grants.

**Local Revenues:** The property tax exemption proposed by the bill could decrease local government property tax revenues. However, similar to the impact on State revenues described above, the amount of any local government revenue decrease cannot be reliably estimated and depends on the number and value of solar energy systems that exist in the locality that generate electricity or provide hot water for use in a structure and the extent to which the value of these systems is added to a property for assessment purposes.

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## Additional Information

**Prior Introductions:** None.

**Cross File:** SB 207 (The President, *et al.*) (By Request – Administration) – Budget and Taxation and Finance.

**Information Source(s):** State Department of Assessments and Taxation; Comptroller's Office; Maryland Energy Administration; *Database of State Incentives for Renewable Energy*, Interstate Renewable Energy Council; U.S. Department of Energy; Montgomery County; Prince George's County; Kent County; Worcester County; Department of Legislative Services

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## Appendix 1

### Renewable Energy Incentives Offered by the Federal Government and Surrounding States

#### Rebates/Grants

	<u>Tax Credits/Exemptions</u>	<u>Planning/Purchase and Installation of Renewable Energy Equipment</u>	<u>Larger Scale Research and Development and Deployment Projects/ Production Incentives</u>
Federal Government	<ul style="list-style-type: none"> <li>• 30% personal tax credit up to \$2,000 for purchase and installation of residential solar electric or solar water heating property and up to \$500 per 0.5 kW for fuel cells (applies to systems installed between January 1, 2006 and December 31, 2008)</li> <li>• 30% corporate tax credit for renewable energy property including photovoltaic and solar water heating property (credits decrease January 1, 2009)</li> </ul>		<ul style="list-style-type: none"> <li>• Financial and technical assistance to Indian tribes for feasibility studies and cost sharing of implementation of renewable energy installations on tribal lands</li> <li>• Per kWh corporate tax credit for electricity generated by qualifying energy sources (2.0 cent/kWh for wind, geothermal, closed-loop biomass; 1.0 cent/kWh for others) (expiring December 31, 2008)</li> <li>• Production incentive payments for certain new renewable energy generation facilities (<i>e.g.</i>, not-for-profit electrical cooperatives, public utilities, state governments, ...) of \$.015/kWh (in 1993 dollars, indexed for inflation) for the first 10-year period of operation</li> <li>• Solar America Initiative, a U.S. Department of Energy effort to accelerate development of advanced solar energy technologies and make solar electricity cost-competitive with conventional forms of electricity by 2015, providing funding opportunities for development, improvement, and deployment of solar technologies</li> </ul>

**Rebates/Grants**

	<b><u>Tax Credits/Exemptions</u></b>	<b><u>Planning/Purchase and Installation of Renewable Energy Equipment</u></b>	<b><u>Larger Scale Research and Development and Deployment Projects/ Production Incentives</u></b>
Delaware		<ul style="list-style-type: none"> <li>Up to 50% rebate of installation costs for photovoltaic, solar water heating, fuel cell, geothermal heat pump, and wind turbine systems with varying dollar amount caps by utility and by technology</li> </ul>	<ul style="list-style-type: none"> <li>35% of cost of qualifying projects up to \$250,000 to develop or improve renewable energy technology</li> <li>25% of eligible equipment costs up to \$200,000 for projects that demonstrate market potential and accelerate commercialization of renewable technologies</li> </ul>
New Jersey	<ul style="list-style-type: none"> <li>Exemption from sales tax for all purchases of solar or wind energy equipment</li> </ul>	<ul style="list-style-type: none"> <li>Rebate based on dollar amount per watt of capacity (or annual KWh of expected performance in the case of wind energy systems) for solar-electric (acceptance of private-sector applications suspended December 20, 2007), wind, and sustainable biomass systems</li> <li>Financial incentives (nonresidential) for energy efficiency equipment including geothermal heat pumps</li> </ul>	<ul style="list-style-type: none"> <li>State renewable energy portfolio standard requires use of solar renewable energy certificates (SRECs) resulting in a production incentive</li> </ul>
Pennsylvania*	<ul style="list-style-type: none"> <li>Exclusion of wind turbines and related equipment from property tax assessment</li> </ul>	<ul style="list-style-type: none"> <li>Grant program for planning costs of including renewable energy and energy efficient technology in school construction</li> </ul>	<ul style="list-style-type: none"> <li>Up to \$1 million per grant or loan (in 2007) for advanced energy research and deployment projects and to assist businesses interested in locating or expanding advanced energy operations</li> <li>Grants for implementation of clean and renewable energy technologies (no maximum per grant; \$5.4 million for 28 projects awarded in 2007)</li> </ul>

**Rebates/Grants**

	<b><u>Tax Credits/Exemptions</u></b>	<b><u>Planning/Purchase and Installation of Renewable Energy Equipment</u></b>	<b><u>Larger Scale Research and Development and Deployment Projects/ Production Incentives</u></b>
Virginia	<ul style="list-style-type: none"><li>• Local option total or partial exemption from property taxes for solar energy or recycling equipment</li></ul>		
District of Columbia			<ul style="list-style-type: none"><li>• Grants of up to 50% of project costs for renewable energy projects involving photovoltaic, wind, biomass, fuel cell, hydropower, geothermal-electric, and other renewable technologies (\$450,000 of total funding available for 2007 solicitation)</li></ul>

\*Various other local government and utility-sponsored incentives (not shown) are available in Pennsylvania.

Source: *Database of State Incentives for Renewable Energy*, Interstate Renewable Energy Council; U.S. Department of Energy

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