SB 711

Department of Legislative Services

Maryland General Assembly
2000 Session

FISCAL NOTE
Revised

Senate Bill 711 (Senator Pinsky, *et al.*)
Budget and Taxation

Public School Construction - Use of Solar Energy - Pilot Program

This bill establishes a Solar Energy Pilot Program to promote the use of solar energy systems in public school buildings. The Interagency Committee on School Construction must encourage all local boards of education to study, design, and construct or renovate school buildings that are energy efficient and use solar energy systems to generate electricity to meet a certain percentage of the school building's energy needs. The Interagency Committee must provide grants to local boards to assist in implementing the use of solar energy systems in newly constructed or renovated school buildings. The grants would cover 90% of the total additional cost of implementing a solar energy system. Local boards that receive a grant must pay 10% of the additional costs of implementing a solar energy system and 100% of the architectural or engineering fees for installing the solar energy system. The Interagency Committee cannot award a grant for a public school construction project that has not been approved by the Board of Public Works.

The bill takes effect July 1, 2000.

Fiscal Summary

State Effect: The FY 2001 State budget includes $250,000 for solar energy pilot projects in public schools, contingent upon the enactment of this bill.

Local Effect: Local boards would receive State grants to cover 90% of the cost to implement solar energy for public school construction projects. Local school systems are not required to implement a solar energy system. Potential decrease in school operation

expenses resulting from using solar energy. Currently, local school systems spend between 1.5% to 3% of total school expenditures on gas and electricity.

Small Business Effect: Minimal.

Analysis

Current Law: Solar energy is not required for public school construction projects.

Background: The Interagency Committee on School Construction (IAC) administers Maryland's public school construction program. Local school systems submit their capital funding request to the Interagency Committee. After reviewing the submissions, the Interagency Committee makes recommendations to the Board of Public Works.

The State provides between 50% and 90% of eligible costs for approved school construction projects, depending upon the wealth of the local school systems whereby less affluent school systems receive a higher State share. The remaining eligible costs and 100% of noneligible costs are paid by the local school system. Noneligible costs include such things as architectural and engineering fees, land acquisition, certain off-site development work, and square footage above the State formula. It is estimated that noneligible costs may account for between 25% and 30% of the total cost for a school construction project.

State and Local Fiscal Effect: The annual energy usage for a public school averages from 160 kilowatts at a small elementary school to 700 kilowatts at a large secondary school. The infrastructure cost to implement a solar energy system totals approximately $8,000 per kilowatt. To be eligible for a State grant, local boards must use solar energy for at least 20% of the energy demand for an elementary school; at least 15% of the energy demand for a middle school; and at least 10% of the energy demand for a high school. The cost of a solar energy system would total approximately $256,000 (32-kilowatt system) at an elementary school and $560,000 (70-kilowatt system) at a secondary school. For local boards receiving a grant, the State would pay 90% of the costs and the local school system would pay 10% of the cost. **Exhibit 1** shows the potential State and local costs to implement a solar energy system.

Exhibit 1
State and Local Costs to Implement a Solar Energy System Per School

	Elementary School	Secondary School	Average School
Total Energy Demand	160 kilowatts	700 kilowatts	430 kilowatts
Solar Energy System	32 kilowatts/ 20% of energy demand	70 kilowatts/ 10% of energy demand	65 kilowatts/ 15% of energy demand
Implementation Cost ($8,000/kilowatt)	$256,000	$560,000	$520,000
State Share (90%)	$230,400	$504,000	$468,000
Local Share (10%)	$25,600	$56,000	$52,000

The fiscal 2001 State budget includes $250,000 for solar energy pilot projects in public schools. Based on projected cost estimates in Exhibit 1, this amount will cover the State share of one solar energy pilot project in the State.

Based on current technology, solar energy is more expensive than traditional energy sources. It is estimated that local school systems would only recover about 40% of the total cost to implement a solar energy system through lower utility expenses over the life of the system.

Exhibit 2
Increased Cost of Implementing a Solar Energy System

	Elementary School	Secondary School	Average School
Implementation Cost ($8,000/kilowatt)	$256,000	$560,000	$520,000
Reductions in Utility Expenses*	$102,400	$224,000	$208,000
Increased Cost Over Traditional Energy Sources	$153,600	$336,000	$312,000

*Over the life of the solar energy system.

Solar Energy Cost in Relation to School Construction Costs

Based on a review of 30 school construction projects in eight local school systems, the total cost for a public school building ranges from $4.5 million for an elementary school to $38.7 million for a high school. As stated earlier, a solar energy system designed to meet 20% of a

school's energy demand would cost $256,000 (32-kilowatt system) for a small elementary school and a solar energy designed to meet 10% of a school's energy demand would cost $560,000 (70-kilowatt system) for a large secondary school. This represents a 5.7% increase in the total cost of an elementary school and a 1.4% increase in the total cost of a secondary school.

Additional Comments: Local school systems could realize a decrease in school operation expenses resulting from the use of solar energy. Based on a review of seven counties, local school systems spend between 1.5% to 3% of total school expenditures on gas and electric utilities. For example, the Baltimore County Public School System spent approximately $11.4 million on gas and electric utilities in fiscal 1999, representing 1.7% of total school expenditures. Assuming the costs are equally distributed throughout the system's 168 public schools, the average cost per school is $67,800. **Exhibit 3** shows the gas and electricity expenses for seven local school systems.

Exhibit 3
Gas and Electricity Expenses for Selected Local School Systems
Fiscal 1999

Local School System	Gas and Electricity Expenses	Percentage of Total School Expenditures
Anne Arundel	$10.2 million	2.2%
Baltimore County	$11.4 million	1.7%
Caroline	$0.5 million	1.7%
Frederick	$5.0 million	2.3%
Howard	$7.2 million	2.6%
Prince George's	$13.9 million	1.6%
Worcester	$1.1 million	2.7%

Source: Local school budgets

Additional Information

Prior Introductions: None.

Cross File: None.

Information Source(s): Maryland State Department of Education, Department of Legislative Services

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