



**CONGRESSIONAL BUDGET OFFICE  
COST ESTIMATE**

July 6, 2007

**H.R. 2774  
Solar Energy Research and Advancement Act of 2007**

*As ordered reported by House Committee on Science and Technology  
on June 27, 2007*

**SUMMARY**

H.R. 2774 would authorize the appropriation of \$347 million over the 2008-2012 period for the Department of Energy (DOE) to support the research, development, and utilization of solar energy technology. Of that amount, the majority of funds would be awarded to states to distribute grants for the purchase of photovoltaic technologies (solar cells that convert light energy into electricity).

Assuming appropriation of the authorized amounts, CBO estimates that implementing H.R. 2774 would cost \$17 million in 2008 and \$276 million over the 2008-2012 period. Enacting H.R. 2774 would not affect direct spending or revenues.

H.R. 2774 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would benefit state and local governments.

**ESTIMATED COST TO THE FEDERAL GOVERNMENT**

The estimated budgetary impact of H.R. 2774 is shown in the following table. The costs of this legislation fall within budget function 270 (energy).

	By Fiscal Year, in Millions of Dollars				
	2008	2009	2010	2011	2012
<b>CHANGES IN SPENDING SUBJECT TO APPROPRIATION</b>					
Grant and Demonstration Programs					
Authorization Level	28	43	58	73	83
Estimated Outlays	12	30	46	61	74
Thermal Energy Storage and Solar Energy					
Research and Development					
Authorization Level	9	11	13	14	16
Estimated Outlays	4	9	11	13	15
Reporting Requirements					
Estimated Authorization Level	1	0	0	0	0
Estimated Outlays	1	0	0	0	0
Total Changes					
Estimated Authorization Level	38	54	71	86	99
Estimated Outlays	17	39	57	74	89

## BASIS OF ESTIMATE

For this estimate, CBO assumes that H.R. 2774 will be enacted near the end of fiscal year 2007 and that the entire amounts authorized and estimated to be necessary will be appropriated for each fiscal year. Estimated outlays are based on historical spending patterns for DOE energy supply and conservation programs.

H.R. 2774 would authorize the appropriation of \$37 million in 2008 and \$347 million over the 2008-2012 period for DOE solar energy programs. CBO estimates that appropriation of those amounts, plus an additional \$1 million for new reporting requirements, would result in discretionary outlays of \$17 million in fiscal year 2008 and \$276 million over the 2008-2012 period.

## **Grant and Demonstration Programs**

H.R. 2774 would create three DOE grant and demonstration programs. The bill would specifically authorize the following appropriations:

- Between \$17 million and \$70 million a year to states to distribute grants to commercial, governmental, and residential users of electricity to purchase photovoltaic technology;
- \$10 million annually for grants to develop and strengthen a school curriculum and workforce training programs concerning the use of solar energy products; and
- \$3 million annually for a demonstration program of solar-powered air-conditioning technology.

CBO estimates that appropriation of the authorized amounts would cost \$12 million in 2008 and \$223 million over the 2008-2012 period.

## **Thermal Energy Storage and Solar Energy Research and Development**

H.R. 2774 would authorize the appropriation of \$63 million over the 2008-2012 period for research grants to study thermal energy and solar power. Specifically, the bill would authorize the appropriation of between \$5 million and \$12 million annually for the development of lower-cost thermal energy storage technologies. Under the bill, another \$4 million a year would be authorized to be appropriated to promote the commercial application of solar energy, with a portion of those funds allocated for an annual report assessing the energy savings resulting from solar energy use. Assuming appropriation of the authorized amounts, CBO estimates that implementing those provisions would cost \$4 million in 2008 and \$52 million over the 2008-2012 period.

## **Reporting Requirements**

CBO estimates that about \$1 million would be necessary in 2008 to prepare two studies required by the bill. The first study would analyze methods to transmit concentrated solar power to regional electricity transmission systems. The second study would address how to reduce the amount of water consumed by solar power systems.

## **INTERGOVERNMENTAL AND PRIVATE-SECTOR IMPACT**

H.R. 2774 contains no intergovernmental or private-sector mandates as defined in UMRA and would create several research and grant programs benefitting state and local governments. Any costs those governments might incur, including matching funds, would be incurred voluntarily.

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