

PHOTOVOLTAIC SYSTEM FOR DEPARTMENT OF ENERGY
HEADQUARTERS BUILDING

FEBRUARY 12, 2007.—Committed to the Committee of the Whole House on the State
of the Union and ordered to be printed

Mr. OBERSTAR, from the Committee on Transportation and
Infrastructure, submitted the following

R E P O R T

[To accompany H.R. 798]

[Including cost estimate of the Congressional Budget Office]

The Committee on Transportation and Infrastructure, to whom
was referred the bill (H.R. 798) to direct the Administrator of Gen-
eral Services to install a photovoltaic system for the headquarters
building of the Department of Energy, having considered the same,
report favorably thereon without amendment and recommend that
the bill do pass.

PURPOSE OF THE LEGISLATION

H.R. 798 authorizes the Administrator of General Services to in-
stall a photovoltaic system for the headquarters building of the De-
partment of Energy and directs the General Services Administra-
tion to use \$30 million of unobligated balances from the Federal
Buildings Fund to carry out the project.

BACKGROUND AND NEED FOR LEGISLATION

H.R. 798 is a bill to authorize the Administrator of General Ser-
vices to install a photovoltaic system for the Department of Energy
headquarters building.

Photovoltaic systems convert light energy into electricity. The
term “photo” is derived from the Greek “phos” which means light
and “volt” is named for Alessandro Volta, a pioneer in the study
of electricity. Most commonly known as simply “solar cells” photo-
voltaic power can be found in such common items as small calcula-
tors and wrist watches.

The photovoltaic system to be installed is called the Solar Net, which was the winning design produced by a competition sponsored in 1999 by the U.S. Department of Energy (DOE), National Renewable Energy Laboratory, in cooperation with The American Institute of Architects, and the Architectural Engineering Institute. Solar energy systems integrated into or onto buildings is the fastest-growing segment of the solar energy market. The DOE competition included submissions from 151 teams.

The goal of the competition was to select a winning sun wall design that would transform the south wall of the DOE headquarters building in Washington, D.C., from an unappealing concrete mass with little value into an elegant architectural façade that would harness the sun's vast energy and provide a source of clean energy for the building. Aesthetics was one of the most important features of the competition. The design had to be pleasing to the eye and in harmony with the architecture of the Forrestal Building and the surrounding area. The competition required that a minimum of 100 kilowatts be generated by the design. The winning design will produce 460,000 kWh, which is the equivalent of 1,684 hair dryers operating for 30 minutes every day for a year, or 6,850 compact fluorescent light bulbs operating eight hours every night for a year.

The winning design is rich in detail, using not only solar electric and photovoltaic cells but also solar thermal technology where water is heated in a solar thermal array, which is very efficient. The sun wall is 300 feet long and 130 feet high. It incorporates 24,750 square feet of power generating panels. This innovative design uses solar skin to create both sweeping exterior planes and soaring interior spaces which will energize the south façade of the DOE building. The clean energy produced by the wall is seamlessly channeled back into the building in the form of electricity, hot water, and convected heat.

The Solar Net is a clean technology with its skin created by an array of modular solar thermal and photovoltaic collector panels. The collector surfaces are organized in a pattern of solids and voids which allows light to transmit through to the interior. From mid fall to early spring, when the sun is low in the sky, thermal collectors in the upper part of the wall use incident solar radiation to generate hot water for use in the building heating systems. This solar water heating system is arranged to optimize the opportunity to provide the highest energy gains during the fall and spring. The overall efficiency of the solar collection array is improved by making use of convected heat from the back of the collector surface. The photovoltaic electricity panels occupy the middle portion of the sun wall and are positioned to optimize annual solar production.

The steel structure itself is a series of curved primary cable trusses spanning between the vertical concrete wall and the reconfigured ground plane. Steel brackets will serve as mastheads for the trusses.

H.R. 798 will enable the Department of Energy to lead the way by example. The sun wall will be the largest solar installation in a federal building, and will be an international landmark for the city of Washington. It will demonstrate the Nation's commitment to clean energy technologies while at the same time being environmentally sensitive.

SUMMARY OF THE LEGISLATION

Section 1. Installation of photovoltaic system at Department of Energy Headquarters Building

Section 1(a) directs the Administrator of General Services to install a photovoltaic system, set forth in the sun wall design project, for the headquarters of the Department of Energy.

Section 1(b) requires the General Services Administration to make available \$30 million from the Federal Building Fund to complete the project. The funds may be derived from unobligated balances from prior years and may not come from funds made available for the agency's energy program.

LEGISLATIVE HISTORY AND COMMITTEE CONSIDERATION

In the 107th Congress, then Ranking Member Oberstar introduced H.R. 2407, the Federal Photovoltaic Utilization Act. On August 1, 2001, the Subcommittee held a legislative hearing on H.R. 2407. No further action was taken on the bill.

In the 108th Congress, then Ranking Member Oberstar and then Ranking Subcommittee Member Norton introduced an amendment to H.R. 6, the Energy Policy Act of 2003, which authorized the General Services Administration to establish a program for the procurement and installation of photovoltaic solar energy systems for electricity production in new and existing public buildings and authorized \$263 million for each fiscal year from 2004 to 2008. The amendment was incorporated into the final Conference Report, which became P.L. 108-375.

In the 109th Congress, then Ranking Member Oberstar included a provision in the Energy Policy Act of 2005 (P.L. 109-58) which authorized the Administrator of General Services to install a photovoltaic system for the headquarters building of the Department of Energy. While the Act authorized funding for FY 2006, no funds were appropriated for the project. On May 25, 2006, then Ranking Member Oberstar introduced H.R. 5510, which authorized funding for the project in FY 2007. No further action was taken on the bill.

On February 6, 2007 the Subcommittee on Economic Development, Public Buildings, and Emergency Management met in open session and considered H.R. 798. The Subcommittee recommended the bill favorably to the Committee on Transportation and Infrastructure by voice vote.

On February 7, 2007 the Transportation and Infrastructure Committee met in open session and ordered the bill H.R. 798 reported to the House by voice vote.

RECORD VOTES

Clause 3(b) of rule XIII of the House of Representatives requires each committee report to include the total number of votes cast for and against on each record vote on a motion to report and on any amendment offered to the measure or matter, and the names of those members voting for and against. There were no recorded votes taken in connection with ordering H.R. 798 reported. A motion to order H.R. 798 reported favorably to the House was agreed to by voice vote.

COMMITTEE OVERSIGHT FINDINGS

With respect to the requirements of clause 3(c)(I) of rule XIII of the Rules of the House of Representatives, the Committee's oversight findings and recommendations are reflected in this report.

COST OF LEGISLATION

Clause 3(c)(2) of rule XIII of the Rules of the House of Representatives does not apply where a cost estimate and comparison prepared by the Director of the Congressional Budget Office under section 402 of the Congressional Budget Act of 1974 has been timely submitted prior to the filing of the report and is included in the report. Such a cost estimate is included in this report.

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, February 12, 2007.

Hon. JAMES. L. OBERSTAR,
Chairman, Committee on Transportation and Infrastructure,
House of Representatives, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 798, a bill to direct the Administrator of the General Services to install a photovoltaic system for the headquarters building of the Department of Energy.

If you wish further details on these estimates, we will be pleased to provide them. The CBO staff contact is Matthew Pickford.

Sincerely,

PETER R. ORZSAG,
Director.

Enclosure.

H.R. 798—A bill to direct the Administrator of General Services to install a photovoltaic system for the headquarters building of the Department of Energy

H.R. 798 would require the General Services Administration to install a solar energy (photovoltaic) system on the side of the headquarters building of the Department of Energy (DOE) located in Washington, DC. Photovoltaic systems use solar power technology to convert energy from the sun into electricity. The project would consist of a "sun wall" of almost 25,000 solar panels that would provide some electricity and hot water to the building. The legislation would direct the use of \$30 million in unobligated balances in the Federal Buildings Fund beginning in fiscal year 2008 to install the system.

Currently, the Federal Buildings Fund has unobligated balances of over \$2 billion available for construction and repair and alteration of federal buildings. Legislation that modifies the expected spending pattern of those balances would be considered a change in direct spending but would not increase budget authority. Based on information from DOE, CBO estimates that spending for this project would cost \$6 million in 2008 and \$30 million over the 2008–2012 period. However, we also estimate that this project would not affect net federal outlays over the 2008–2012 period because spending on this project would be offset by decreased spending later in that period.

H.R. 798 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act and would not affect the budgets of state, local, or tribal governments.

The CBO staff contact for this estimate is Matthew Pickford. The estimate was approved by Peter H. Fontaine, Deputy Assistant Director for Budget Analysis.

COMPLIANCE WITH HOUSE RULE XIII

1. With respect to the requirement of clause 3(c)(2) of rule XIII of the Rules of the House of Representatives, and 308(a) of the Congressional Budget Act of 1974, the Committee references the report of the Congressional Budget Office included in the report.

2. With respect to the requirement of clause 3(c)(4) of rule XIII of the Rules of the House of Representatives, the performance goals and objective of this legislation are to install a photovoltaic system at the headquarters of the Department of Energy.

3. With respect to the requirement of clause 3(c)(3) of rule XIII of the Rules of the House of Representatives and section 402 of the Congressional Budget Act of 1974, the Committee has received the enclosed cost estimate for H.R. 798 from the Director of the Congressional Budget Office.

COMPLIANCE WITH HOUSE RULE XXI

Pursuant to clause 9 of rule XXI of the Rules of the House of Representatives, H.R. 798 contains the following congressional earmarks, limited tax benefits, or limited tariff benefits as defined in clause 9(d), 9(e), or 9(f) of rule XXI of the Rules of the House of Representatives:

1. \$30 million to install a photovoltaic system for the headquarters building of the Department of Energy, at 1000 Independence Avenue, Southwest, Washington, DC, requested by Chairman James L. Oberstar (MN-08) and Chairwoman Eleanor Holmes Norton (DC) and co-sponsored by Ranking Member John L. Mica (FL-07).

CONSTITUTIONAL AUTHORITY STATEMENT

Pursuant to clause (3)(d)(1) of rule XIII of the Rules of the House of Representatives, committee reports on a bill or joint resolution of a public character shall include a statement citing the specific powers granted to the Congress in the Constitution to enact the measure. The Committee on Transportation and Infrastructure finds that Congress has the authority to enact this measure pursuant to its powers granted under article I, section 8 of the Constitution.

FEDERAL MANDATES STATEMENT

The Committee adopts as its own the estimate of Federal mandates prepared by the Director of the Congressional Budget Office pursuant to section 423 of the Unfunded Mandates Reform Act (Public Law 104-4).

PREEMPTION CLARIFICATION

Section 423 of the Congressional Budget Act of 1974 requires the report of any Committee on a bill or joint resolution to include a

statement on the extent to which the bill or joint resolution is intended to preempt state, local, or tribal law. The Committee states that H.R. 798 does not preempt any state, local, or tribal law.

ADVISORY COMMITTEE STATEMENT

No advisory committees within the meaning of section 5(b) of the Federal Advisory Committee Act are created by this legislation.

APPLICABILITY TO THE LEGISLATIVE BRANCH

The Committee finds that the legislation does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act (Public Law 104–1).

CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

H.R. 798 makes no changes in existing law.

