

M e m o r a n d u m

Date: April 3, 2007

To: The Commission
(Meeting of April 12, 2007)

From: Delaney Hunter, Director
Office of Governmental Affairs (OGA) — Sacramento

**Subject: AB 1470 (Huffman) Solar energy: Solar Hot Water and
Efficiency Act of 2007**
As Introduced: February 23, 2007

**LEGISLATIVE SUBCOMMITTEE RECOMMENDATION: SUPPORT WITH
TECHNICAL AMENDMENTS**

SUMMARY OF BILL:

This bill would establish the Solar Hot Water and Efficiency Act of 2007. Directs the Commission to establish a 10-year, statewide incentive program to encourage the installation of 500,000 solar water heating systems to offset natural gas usage for water and space heating. The incentives would be funded by establishing a surcharge on certain natural gas customers.

SUMMARY OF SUPPORTING ARGUMENTS FOR RECOMMENDATION:

The Commission has long supported incentives for solar thermal technologies. The Commission sought to offer incentives for solar thermal in the California Solar Initiative (CSI) but was preempted by SB 1 of 2006. The Commission is also co-sponsoring AB 1064 (Lieber) that would deem solar thermal technologies eligible for rebates through the Self-Generation Incentive Program.

SUMMARY OF SUGGESTED AMENDMENTS (if any):

1. Clarify the funding source and funding mechanism. Section 902 should clarify whether the proposed solar-thermal program budget is \$100 million annually, or whether the total amount collected by the surcharge for all gas programs is \$100 million.

2. Similar to the amendment described above, §2863(c) should clarify whether the \$100 million is to fund all programs established under this surcharge, or if the \$100 million is the maximum budget for the solar incentives established by AB 1470.
3. §2861(b) utilizes a definition of kWth consistent with the standard established by the International Energy Agency (IEA). The bill be amended to allow the CPUC the flexibility to set a standard similar, but not identical to, the IEA standard.
4. §2866 should be consistent with the low-income housing standards under proposed SB 324, which expands the definition of low-income residential housing for the California Solar Initiative (“CSI”) to include residential housing occupied by individuals eligible for the California Alternative Rates for Energy (“CARE”) and the Low-Income Energy Efficiency (“LIEE”) programs. As a result, LIEE and CARE participants would be eligible to receive loans and incentives to help finance solar energy installations.

DIVISION ANALYSIS (Energy Division):

- This bill adds Section 902 and Sections 2860-2867.3 to the Public Utilities Code to create the Solar Hot Water and Efficiency Act of 2007.
- This bill would require the Commission to develop and fund a new statewide program until 2018 to offer performance-based incentives for solar water heating and other natural gas displacing devices.
- The bill seeks to establish a program similar to the CSI and SB 1 for solar heating systems.
- Specifically, the bill:
 - Requires the Commission to fund the program through the use of a surcharge on natural gas customers.
 - States legislative intent regarding the ills of our natural gas dependence, global warming and the need to install more solar water heating systems.
 - States legislative intent to create a program that will install at least 500,000 solar heating systems on homes, businesses and government buildings by 2017, “thereby lowering prices and creating a self-sufficient market.”
 - Requires that the program be administered by the Commission.
 - Requires the Commission to coordinate with the Energy Commission’s New Solar Homes Partnership to achieve the goal of building zero energy homes.
 - Requires the Commission to establish the surcharge on natural gas customers by July 1, 2008.
 - Prohibits the surcharge from being imposed on CARE and FREA participants.

- Requires the Commission, in consultation with the Energy Commission to establish eligibility criteria for solar heating systems.
 - Requires the Commission to establish conditions on the incentives relative to system installation, energy efficiency improvements and rating standards for the systems.
 - Requires the Commission to provide at least 10 percent of the program's funds for the installation of solar heating systems on affordable housing projects.
 - Requires the program incentives to decline over time and be paid on the basis of actual system performance.
 - Requires the Commission to consider federal tax credits and other rebates when determining the appropriate rebate amount.
 - Directs the Energy Commission to coordinate with the Commission to consider combining solar heating system rebates with rebates for other energy efficiency technologies.
 - Requires the Commission to report on the program's effectiveness by July 1, 2010.
 - States that solar heating technologies shall not be eligible for CSI incentives unless the system also displaces electricity.
- Solar heating systems use energy from the sun to heat water, reducing the amount of energy needed for both water and space heating. Up to 90% of the solar energy that lands on a roof can be absorbed by a collector, heating liquid that is then pumped into a storage tank. This in turn reduces or eliminates the need for conventional fuel – which in California, is primarily natural gas.
 - Installing a solar heating system on an existing home costs \$5,000-\$6,000, and at current prices, is typically expected to pay for itself within 10 years. Upfront costs have prevented many consumers from installing these systems. A statewide incentive program would increase public awareness and offer economically beneficial incentives to natural gas ratepayers.
 - In addition to providing cost savings, the widespread use of these technologies decreases demand for fossil fuels, thereby helping to improve public health, mitigate climate change, and stabilize energy prices for all ratepayers.

PROGRAM BACKGROUND:

Although this bill would create a new program, the Commission sought to offer incentives for solar thermal in the California Solar Initiative (CSI) but was preempted by SB 1 of 2006.

The Commission recently approved a solar water heating incentive pilot program within the California Solar Initiative for customers in San Diego Gas and Electric's service

territory. The purpose of the program is to determine the cost-effectiveness and benefits of offering incentives for solar water heaters.

SB 1 allows the Commission to provide incentives for solar thermal devices that produce electricity, up to a total budget of \$100.8 million.

LEGISLATIVE HISTORY:

SB 1 (Murray) of 2006 precluded funding solar heating devices from the CSI.

FISCAL IMPACT:

- To complete the workload associated with this bill, the Commission would require one PURA V, one PURA III and one PURA I to:
 - Establish a program funding mechanism
 - Establish eligibility requirements for solar heating systems, such as design, installation, and energy output standards.
 - Establish metering and monitoring criteria and approve associated technologies.
 - Establish appropriate energy efficiency standards
 - Set rating standards for equipment and components.
 - Explore feasibility of a loan or loan guarantee program.
 - Establish all the above criteria for a low-income solar program.
 - Provide a report to the Legislature by July 1, 2010 regarding program cost effectiveness.

The total fiscal impact would be \$236,514 per year.

STATUS:

The bill is set for hearing in the Assembly Utilities and Commerce Committee on April 9th. The bill has also been referred to the Assembly Natural Resources Committee.

SUPPORT/OPPOSITION:

Environment California (Sponsor)

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Date: April 3, 2007

DLH:cdl

BILL LANGUAGE:

BILL NUMBER: AB 1470 INTRODUCED
BILL TEXT

INTRODUCED BY Assembly Member Huffman
(Principal coauthor: Assembly Member Smyth)

FEBRUARY 23, 2007

An act to add the heading of Article 1 (commencing with Section 2851) to, and to add and repeal Section 902 of, and Article 2 (commencing with Section 2860) of, Chapter 9 of Part 2 of Division 1 of, the Public Utilities Code, relating to solar energy, and making an appropriation therefor.

LEGISLATIVE COUNSEL'S DIGEST

AB 1470, as introduced, Huffman. Solar energy: Solar Hot Water and Efficiency Act of 2007.

(1) Under existing law, the Public Utilities Commission has regulatory authority over public utilities, including gas corporations. The commission is required to implement elements of the California Solar Initiative, which modifies the self-generation incentive program for distributed generation resources and provides incentives to customer-side photovoltaics and solar thermal electric projects under one megawatt. The commission is required to award monetary incentives for up to the first megawatt of alternating current generated by solar energy systems that meet the eligibility criteria established by the State Energy Resources Conservation and Development Commission (Energy Commission). The commission is required to adopt a performance-based incentive program for solar energy photovoltaic systems and is authorized to award monetary incentives for solar thermal and solar water heating devices in a total amount up to \$100,800,000.

This bill would establish the Solar Heating and Efficiency Act of 2007. The bill would make findings and declarations of the Legislature relating to the promotion of solar hot water systems and other technologies that reduce natural gas demand. The bill would define several terms for purposes of the act. The bill would require the commission to create and administer, not later than July 1, 2008, a program to incentivize the installation of 500,000 solar thermal systems in homes and businesses throughout the state by 2017.

The bill would require the commission, in consultation with the Energy Commission and interested members of the public, to establish eligibility criteria for the solar heating systems receiving ratepayer funded incentives not later than July 1, 2008. The commission would be required to establish conditions on those incentives. The bill would specify that only solar heating technologies that displace electricity are eligible for a portion of California Solar Initiative funds, as determined by the commission. The commission would be required to allocate not less than 10% of the

overall funds for installation of solar heating systems for specified affordable housing projects and specify that no moneys be diverted from any existing programs for low-income ratepayers. The bill would specify that the consumer rebates decline over time and be structured to reduce the cost of solar heating technologies. The Energy Commission, in coordinating efforts with the commission, would be required to consider coupling rebates for solar heating systems with complimentary energy efficient technologies. The commission would be required to report to the Legislature, not later than July 1, 2010, on the effectiveness of the program. The bill would repeal these provisions on August 1, 2018.

(2) Existing law establishes a surcharge on all natural gas consumed in the state to fund certain low-income assistance programs, cost-effective energy efficiency and conservation activities, and public interest research and development. Existing law requires a public utility gas corporation, as defined, to collect the surcharge from natural gas consumers, as specified. The money from the surcharge is deposited in the Gas Consumption Surcharge Fund and is continuously appropriated to specified entities, including to the commission, or to an entity designated by the commission, to fund low-income assistance programs, cost-effective energy efficiency and conservation activities, and public interest research and development not adequately provided by the competitive and regulated markets.

This bill would require the commission to fund the program of the Solar Hot Water and Efficiency Act of 2007 through a surcharge applied to persons consuming natural gas in the state that has been transported by an interstate pipeline, except those participating in certain existing programs for low-income ratepayers, not to exceed \$100,000,000 in its entirety. Because this bill would increase the amount of money deposited in the Gas Consumption Surcharge Fund and make the money available to the commission for the purposes of the act, it would make an appropriation. The bill would repeal these provisions on August 1, 2018.

Vote: 2/3. Appropriation: yes. Fiscal committee: yes.
State-mandated local program: no.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 902 is added to the Public Utilities Code, to read:

902. (a) The commission shall fund the program established in the Solar Hot Water and Efficiency Act of 2007, pursuant to Article 2 (commencing with Section 2860) of Chapter 9 of Part 2, through the use of a surcharge applied to persons consuming natural gas in this state that has been transported by an interstate pipeline. This fund shall not exceed one hundred million dollars (\$100,000,000).

(b) Funds shall be allocated for the benefit of persons paying the surcharge and the promotion of solar hot water systems and other technologies that reduce natural gas consumption and global warming pollution.

(c) This section shall remain in effect until August 1, 2018, and as of that date is repealed unless a later enacted statute extends or repeals that date.

SEC. 2. The heading of Article 1 (commencing with Section 2851) is added to Chapter 9 of Part 2 of Division 1 of the Public Utilities Code, to read:

Article 1. Solar Photovoltaic Systems

SEC. 3. Article 2 (commencing with Section 2860) is added to Chapter 9 of Part 2 of Division 1 of the Public Utilities Code, to read:

Article 2. Solar Thermal Systems

2860. This article shall be known, and may be cited, as the Solar Hot Water and Efficiency Act of 2007.

2861. As used in this article, the following terms have the following meanings:

(a) "Energy Commission" means the State Energy Resources Conservation and Development Commission.

(b) "kWth" means the kilowatt thermal capacity of a solar heating collector consistent with the standard established by the International Energy Agency's Solar Heating and Cooling Program.

(c) "kWhth" means kilowatthours thermal as measured by the number of kilowatts thermal generated in an hour.

(d) "New Solar Homes Partnership" means the 10-year program encouraging solar energy systems in new home construction.

(e) "Solar heating system" means a solar energy device that has the primary purpose of reducing demand for natural gas through water heating, space heating, or other methods of reducing natural gas consumption in a home, businesses, or any building receiving natural gas that is subject to the surcharge established pursuant to Section 902, or exempt from the surcharge pursuant to subdivision (c) of Section 2863, and that meets or exceeds the eligibility criteria established pursuant to Section 2864.

2862. The Legislature finds and declares all of the following:

(a) California is heavily dependent on natural gas, importing more than 80 percent of the natural gas it consumes.

(b) Rising worldwide demand for natural gas and a shrinking supply create rising and unstable prices that can harm California consumers and the economy.

(c) Natural gas is a fossil fuel and a major source of global warming pollution and the pollutants that cause air pollution, including smog.

(d) California's growing population and economy will put a strain on energy supplies and threaten the ability of the state to meet its global warming goals unless specific steps are taken to reduce demand and generate energy cleanly and efficiently.

(e) Water heating for domestic and industrial use relies almost entirely on natural gas and accounts for a significant percentage of the state's natural gas consumption.

(f) Solar water heating systems represent the largest untapped natural gas saving potential remaining in California.

(g) In addition to financial and energy savings, solar heating systems can help protect against future gas and electricity shortages and reduce our dependence on foreign sources of energy.

(h) Solar heating systems can also help preserve the environment and protect public health by reducing air pollution, including carbon dioxide, a leading global warming gas, and nitrogen oxide, a precursor to smog.

(i) Growing demand for these technologies will create jobs in California as well as promote greater energy independence, protect consumers from rising energy costs and result in cleaner air.

(j) It is in the interest of the State of California to promote solar hot water systems and other technologies that directly reduce demand for natural gas in homes and businesses.

(k) It is the intent of the Legislature to build a mainstream market for solar heating systems that directly reduces demand for natural gas in homes, businesses, and government buildings. Toward that end, it is the goal of the Solar Hot Water and Efficiency Act of 2007 to install at least 500,000 solar heating systems on homes, businesses, and government buildings throughout the state by 2017, thereby lowering prices and creating a self-sufficient market that will sustain itself beyond the life of this program.

(l) It is the intent of the Legislature that the solar heating incentives created by the act should be a cost-effective investment by consumers of natural gas. Consumers of natural gas will recoup the cost of their investment through lower prices as a result of avoiding purchases of natural gas, and benefit from additional system stability and pollution reduction benefits.

2863. (a) In order to achieve the goals of the Legislature, the commission shall, not later than July 1, 2008, create a program to promote the installation of 500,000 solar thermal systems in homes and business throughout the state by 2017.

(b) The program shall be supervised or administered by the commission. The commission shall coordinate with the Energy Commission's New Solar Homes Partnership to achieve the goal of building zero-energy homes.

(c) Not later than July 1, 2008, the commission shall establish a surcharge pursuant to Section 902, not to exceed one hundred million dollars (\$100,000,000) in its entirety. In establishing the program required by this section, no moneys shall be diverted from any existing programs for low-income ratepayers. Any surcharge imposed to fund the program adopted and implemented pursuant to this section shall be imposed upon all customers not participating in the California Alternate Rates for Energy (CARE) or family electric rate assistance (FERA) programs.

2864. (a) Not later than July 1, 2008, the commission, in consultation with the Energy Commission, and interested members of the public, shall establish eligibility criteria for solar heating systems receiving ratepayer funded incentives. The criteria should specify and include all of the following:

(1) Design, installation, and energy output or displacement standards.

(2) Require that solar heating system components are new and unused, and have not previously been placed in service in any other location or for any other application.

(3) Require that solar heating systems have a warranty of not less than 10 years to protect against defects and undue degradation.

(4) Require that solar energy systems are in buildings connected to a natural gas utility's distribution system within the state.

(5) Require that solar heating systems have meters or other kWth measuring devices in place to monitor and measure the system's performance and the quantity of energy generated or displaced by the system.

(6) Require that solar energy systems are installed in conformity with the manufacturer's specifications and all applicable codes and

standards.

(b) Upon establishment of eligibility criteria pursuant to this section, no ratepayer funded incentives shall be made for a solar energy system that does not meet the eligibility criteria.

2865. (a) The commission shall establish conditions on ratepayer funded incentives. The conditions shall require both of the following:

(1) Appropriate siting and high quality installation of the solar heating system based on installation guidelines that maximize the performance of the system and prevent qualified systems from being inefficiently or inappropriately installed. The conditions shall not impact housing designs or densities presently authorized by a city, county, or city and county. The goal of this paragraph is to achieve efficient installation of solar heating systems and promote the greatest energy production or displacement per ratepayer dollar.

(2) Appropriate energy efficiency improvements in the new or existing home or commercial structure where the solar heating system is installed.

(b) The commission shall set rating standards for equipment, components, and systems to assure reasonable performance and shall develop standards that provide for compliance with the minimum ratings.

2866. The commission shall provide not less than 10 percent of the overall funds for installation of solar heating systems on affordable housing projects undertaken pursuant to Section 50052.5, 50053, or 50199.14 of the Health and Safety Code. If deemed appropriate in consultation with the California Tax Credit Allocation Committee, the commission may establish a grant program or a revolving loan or loan guarantee program for affordable housing projects consistent with the requirements of Chapter 5.3 (commencing with Section 25425) of Division 15 of the Public Resources Code.

2867. (a) The rebates provided through this program shall decline over time. They shall be structured so as to drive down the cost of the solar heating technologies, and be paid out on a performance based incentive basis so that incentives are earned based on the actual energy savings.

(b) The commission shall consider federal tax credits and other incentives available for this technology when determining the appropriate rebate amount.

(c) In coordinating with the commission, the Energy Commission shall consider coupling rebates for solar heating systems with complimentary energy efficiency technologies, including, but not limited to, efficient hot water heating tanks and tankless or on demand hot water systems that can be installed in addition to the solar heating system.

2867.1. Not later than July 1, 2010, the commission shall report to the Legislature as to the effectiveness of the program and make recommendations as to any changes that should be made to the program. To facilitate the understanding of how solar heating devices compare with other clean energy and energy efficiency technologies, all documents related to and rebates provided by this program shall be measured in both kWhth and therms of natural gas saved.

2867.2. Solar heating technologies shall not be eligible for California Solar Initiative (CSI) funds, pursuant to Section 2851, unless they also displace electricity, in which case only the electricity displacing portion of the technology may be eligible under the CSI program, as determined by the commission.

2867.3. This part shall remain in effect only until August 1, 2018, and as of that date is repealed, unless a later enacted statute, that is enacted before August 1, 2018, deletes or extends that date.