

STATE OF CALIFORNIA

Public Utilities Commission
San Francisco

M e m o r a n d u m

Date: May 16, 2007

To: The Commission
(Meeting of May 24, 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 amended: May 2, 2007

LEGISLATIVE SUBCOMMITTEE RECOMMENDATION: SUPPORT WITH 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 200,000 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 up to \$250 million over ten years.

The most substantive amendments include:

- Delaying the implementation of the program until the data from the SDREO pilot project is evaluated.
- Limits the program cost to whatever level is necessary to meet the goal of installing 200,000 solar hot water systems. This is to hedge against the Commission establishing a \$250 million fund if, for example, only \$150 million is needed to meet the bill's goals.
- Prohibits the Commission from assessing a surcharge on ratepayers whose household income is below 300 percent of the federal poverty level.
- Requires locally-owned municipal utilities to adopt, implement and finance a similar solar hot water incentive program.

Please note that our suggested amendments relative to clarifying the funding source and definitions were accepted by the author.

SUMMARY OF SUPPORTING ARGUMENTS FOR RECOMMENDATION:

After the bill's first policy committee, AB 1470 was significantly amended as outlined above. The Commission has long supported incentives for solar thermal technologies.

SUMMARY OF SUGGESTED AMENDMENTS (if any):

Clarify the provision exempting households earning less than 300 percent of the federal poverty level from paying the solar thermal surcharge. The Commission does not collect nor possess the income levels of each ratepayer or household. The bill should be amended and the language restored to exempt CARE/FERA/LIEE ratepayers from paying the surcharge. These ratepayers are known, identifiable and low-income.

DIVISION ANALYSIS (Energy Division):

- This bill adds Sections 2860-2867.4 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 after the data from the SDREO pilot project is analyzed.
 - Prohibits the surcharge from being imposed on households earning less than 300% of the federal poverty level.

- 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.
 - Requires the locally-owned municipal utilities to adopt, implement and finance a similar program.
- 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 pending hearing in the Assembly Appropriations Committee.

SUPPORT/OPPOSITION:

Support:

- Environment California (Sponsor)
- AFSCME
- Association of California Community and Energy Services (ACCES)
- American Institute of Architects
- Americans for Solar Power (ASPV)

- Arise Solar
- California Solar Energy Industries Association (CALSEIA)
- Central Coast Energy Services, Inc.
- Clean Power Campaign
- Coalition for Clean Air
- Environment California
- LIHEAP Service Providers Committee
- Natural Resources Defense Council (NRDC)
- Northern California Solar Energy Association (NorCal Solar)
- Planning and Conservation League
- Sierra Club California
- Sierra Pacific Home & Comfort Inc.
- Southern California Forum
- SPG Solar, Inc.
- Working Assets

Oppose:

- Sempra Energy

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Date: May 16, 2007

BILL LANGUAGE:

BILL NUMBER: AB 1470 AMENDED
BILL TEXT

AMENDED IN ASSEMBLY MAY 2, 2007
AMENDED IN ASSEMBLY APRIL 12, 2007

INTRODUCED BY Assembly Member Huffman

~~(- Principal coauthor:
Assembly Member Smyth
)~~

(Coauthors: Assembly Members Carter, Laird, Maze, ~~and
Wolk~~ Wolk, and Saldana)

(Coauthors: Senators Kuehl and Romero)

FEBRUARY 23, 2007

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

LEGISLATIVE COUNSEL'S DIGEST

AB 1470, as amended, 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~~ , *after the receipt and evaluation of data on the appropriate level and type of incentives needed to promote installation of solar hot water systems from a specified pilot program, to design and implement* a program to incentivize the installation of 200,000 solar hot water 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 hot water systems receiving ~~ratepayer~~ *gas customer* funded incentives ~~not later than July 1, 2008~~. The commission would be required to establish conditions on those incentives. The bill would specify that, except for the Solar Hot Water Pilot Program in San Diego, 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 hot water 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 hot water technologies. The Energy Commission, in coordinating efforts with the commission, would be required to consider , when appropriate , coupling rebates for solar hot water systems with complementary 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 moneys from the surcharge are deposited in the Gas Consumption Surcharge Fund and are 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 , *for the service territories of the gas corporations*, through a surcharge ~~based upon the amount of natural gas consumed applied to ratepayers of a gas corporation~~ *gas customers in those service territories* based on the amount of natural gas consumed, ~~except those participating in certain existing programs for low income ratepayers~~, not to exceed \$250,000,000 over the course of the 10-year program. The bill would require the commission to annually establish a surcharge rate for each class of ~~customer for each gas corporation~~ *gas customers*, and would ~~except from the surcharge those gas customers whose household income is below 300 % of the federal poverty level~~. The bill would require that the program be administered by the gas corporations or 3rd party administrators, as determined by the commission, and subject to the supervision of the commission.

(3) *The bill would require the governing body of each publicly owned utility providing gas service to retail end-use gas customers, to adopt, implement, and finance a solar hot water system incentive program meeting certain requirements.*

Vote: majority. Appropriation: no. Fiscal committee: yes.
State-mandated local program: no.

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

SECTION 1. 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. 2. 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 Hot Water Systems

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

~~(b) The commission shall fund the program established by this article through the use of a surcharge applied to ratepayers of a gas corporation based upon the amount of natural gas consumed. The commission shall annually establish a surcharge rate for each class of customer for each gas corporation. The surcharge shall be in addition to any other charges for natural gas sold or transported for consumption in this state.~~

~~(c) Funding for the program established by this article shall not exceed two hundred and fifty million dollars (\$250,000,000). Funds shall be allocated for the benefit of ratepayers to promote utilization of solar hot water systems.~~

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) "Gas customer" includes both "core" and "noncore" customers, as those terms are used in Chapter 2.2 (commencing with Section 328) of Part 1, that receive retail end-use gas service within the service territory of a gas corporation.

~~(b)~~

(c) "kWth" means the kilowatt thermal capacity of a solar hot water system, measured consistent with the standard established by the SRCC.

~~(e)~~

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

~~(d)~~

(e) "New Solar Homes Partnership" means the 10-year program, administered by the Energy Commission, encouraging solar energy systems in new home construction.

~~(e)~~

(f) "Solar heating collector" means the device that is used to collect or capture heat from the sun and that is generally, but need not be, located on a roof.

~~—(f)—~~

(g) "Solar hot water 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 capturing energy from the sun to reduce natural gas consumption in a home, businesses, or any building receiving natural gas that is subject to the surcharge established pursuant to Section 2860, 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. "Solar hot water systems" do not include solar pool heating systems.

~~—(g)—~~

(h) "SRCC" means the Solar Rate and Certification Corporation.

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 hot water systems represent the largest untapped natural gas saving potential remaining in California.

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

(h) Solar hot water 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 hot water 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 200,000 solar hot water 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 hot water system incentives created by the act should be a cost-effective investment by ~~natural gas ratepayers. Natural gas ratepayers~~ *gas customers. Gas customers* 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 200,000 solar hot water systems in homes and businesses throughout the state by 2017.~~

~~(b) The program shall be administered by the gas corporations or third party administrators, as determined by the commission, and subject to the supervision of 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 2860, not to exceed two hundred fifty million dollars (\$250,000,000) over the course of the 10 year program. In establishing the program required by this section, no moneys shall be diverted from any existing programs for low income ratepayers or cost effective energy efficiency programs. 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.~~

2863. (a) After meaningful data is available and evaluated by the commission from the Solar Hot Water Heater Pilot Project conducted by the San Diego Regional Energy Organization on the appropriate level and type of incentives needed to promote installation of solar hot water systems, the commission shall do all of the following:

(1) Design and implement a program applicable to the service territories of a gas corporation, to achieve the goal of the Legislature to promote the installation of 200,000 solar hot water systems in homes and businesses throughout the state by 2017.

(2) The program shall be administered by gas corporations or third-party administrators, as determined by the commission, and subject to the supervision of the commission.

(3) The commission shall coordinate the program with the Energy Commission's New Solar Homes Partnership to achieve the goal of building zero-energy homes.

(b) (1) The commission shall fund the program through the use of a surcharge applied to gas customers based upon the amount of natural gas consumed. The surcharge shall be in addition to any other charges for natural gas sold or transported for consumption in this state.

(2) The commission shall impose the surcharge at a level that is necessary to meet the goal of installing 200,000 solar hot water systems on homes and businesses in California by 2017. Funding for the program established by this article shall not, for the collective service territories of all gas corporations, exceed two hundred fifty million dollars (\$250,000,000) over the course of the 10-year program.

(3) The commission shall annually establish a surcharge rate for each class of gas customers. Any surcharge imposed to fund the program designed and implemented pursuant to this article shall not be imposed upon a gas customer whose household income is below 300 percent of the federal poverty level.

(4) The gas corporation or other person or entity providing revenue cycle services, as defined in Section 328.1, shall be responsible for collecting the surcharge.

(c) Funds shall be allocated for the benefit of gas customers to

promote utilization of solar hot water systems.

(d) In designing and implementing the program required by this article, no moneys shall be diverted from any existing programs for low-income ratepayers or cost-effective energy efficiency programs.

2864. (a) ~~Not later than July 1, 2008, the~~
The commission, in consultation with the Energy Commission
~~—~~ and interested members of the public, shall
establish eligibility criteria for solar hot water systems receiving
~~ratepayer funded incentives~~ *gas customer*
funded incentives pursuant to this article . The criteria
should specify and include all of the following:

(1) Design, installation, and energy output or displacement standards. To be eligible for rebate funding, a solar hot water system shall, at a minimum, have a SRCC OG-300 Solar Water Heating System Certification.

(2) Require that solar hot water 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 hot water collectors have a warranty of not less than 10 years to protect against defects and undue degradation.

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

(5) Require that solar hot water systems have meters or other kWhth 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 hot water systems are installed in conformity with the manufacturer's specifications and all applicable codes and standards.

(b) ~~No ratepayer~~ *No gas customer*
funded incentives shall be made for a solar hot water system that does not meet the eligibility criteria.

~~(c) In establishing the incentive structure and criteria, the commission shall draw upon the experience in San Diego with the Solar Hot Water Pilot Program as well as other well established solar hot water incentive programs.~~

2865. (a) ~~No later than July 1, 2008, the~~
The commission shall establish conditions on ~~ratepayer~~
~~funded incentives~~ *gas customer funded incentives*
pursuant to this article . The conditions shall
require both of the following:

(1) Appropriate siting and high-quality installation of the solar hot water 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 hot water systems and promote the greatest energy production or displacement per ~~ratepayer~~
gas customer dollar.

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

(b) The commission shall set rating standards for equipment,

components, and systems to ensure 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 hot water systems on low-income and 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 hot water 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 when appropriate, consider coupling rebates for solar hot water systems with complementary 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 hot water 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. This report shall include justification for the size of the rebate program in terms of total available incentive moneys as well as the anticipated benefits of the program in its entirety. To facilitate the understanding of how solar hot water systems 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. Except for the Solar Hot Water Pilot Program in San Diego, solar hot water 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. *In order to further the state goal of encouraging the installation of 200,000 solar hot water heaters by 2017, the governing body of each publicly owned utility providing gas service to retail end-use gas customers shall adopt, implement, and finance a solar hot water system incentive program that does all the following:*

(a) *Relies upon meaningful data from the Solar Hot Water Heater Pilot Project conducted by the San Diego Regional Energy Organization on the appropriate level and type of incentives needed to promote installation of solar hot water systems.*

(b) *Ensures that any solar hot water system receiving monetary incentives complies with the eligibility criteria equivalent to those established by the commission, in consultation with the Energy Commission and interested members of the public, pursuant to Section 2864.*

(c) Includes conditions for the receipt of monetary incentives for solar hot water systems consistent with those adopted by the commission pursuant to subdivision (a) of Section 2865.

(d) Includes minimum ratings for equipment, components, and systems consistent with those adopted by the commission pursuant to subdivision (b) of Section 2865.

(e) Provides that not less than 10 percent of the overall funds be used for installation of solar hot water systems on low-income and 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 governing board 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.

~~2867.3.~~ 2867.4. This article 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.