INITIAL STATEMENT OF REASONS
(Revised, November 19, 2010)

PROPOSED REGULATIONS FOR THE HOMEBUYER SOLAR OPTION AND SOLAR OFFSET PROGRAM

California Code of Regulations, Title 20, Division 2, Chapter 9
Adopt Article 1 and Sections 2700-2704

California Energy Commission
Docket Number 09-SOPR-1
November 19, 2010

INTRODUCTION

In 2006, the Governor signed into law Senate Bill 1 (SB 1, Murray, Chapter 132, Statutes of 2006) a bill that expanded Governor Schwarzennegger's "Million Solar Roofs Initiative" and builds on the California Public Utilities Commission's (CPUC) California Solar Initiative Program, the California Energy Commission's New Solar Homes Partnership and existing publicly owned utility solar energy system incentive programs. SB 1 directs total expenditures of up to $3.3 billion by 2017 with goals to install solar energy systems with generation capacity equivalent of 3,000 megawatts, to establish a self-sufficient solar industry so that in 10 years solar energy systems are a viable mainstream option for homes and commercial buildings, and to put solar energy systems on 50 percent of new homes by the end of the program. The overall goal is to help build a self-sustaining solar electricity market combined with improved energy efficiency in the state's residential and non-residential buildings.

Public Resources Code Section 25405.5, enacted by SB 1, directs the California Energy Commission to develop regulations that require a seller of production homes, beginning January 1, 2011, to offer the option of a solar energy system to all customers negotiating to purchase a new production home constructed on land meeting certain criteria and disclose certain information. Section 25405.5 also requires the Energy Commission to develop an offset program that allows a developer or seller of production homes to forgo the solar as an option offer requirement on a project by installing solar energy system generating specified amounts of electricity on other projects.

These regulations are required to establish:

- Procedures that the developer/seller will use when disclosing the home buyer solar as an option to a prospective home buyer.

- Reporting and verification of compliance requirements with which the developer/seller must comply with.

- Requirements for the solar offset program, which includes a description of the offset solar energy system, reference solar energy system, banking system, and withdrawals from the bank-owned offset system.

- Annual reporting requirements for both programs.

SPECIFIC PURPOSE AND RATIONALE OF EACH SECTION – GOVERNMENT CODE SECTION 11346.2(b)(1)

This section explains how each provision of the proposed regulations relates to the development of the Homebuyer Solar Option and/or Solar Offset Programs.

Proposed Article 1. Solar Offset Program.

Article 1 needs to be established in order to incorporate these regulations.

Article 1 will be titled Solar Offset Program, and will consist of sections 2700 through 2704, and will be added to Chapter 9 of Division 2 of Title 20.

Proposed Section 2700. Scope.

This section summarizes the scope and intent of the regulations.

The specific purpose and rationale for the adoption of this section is to establish the Homebuyer Solar Option and the Solar Offset Program to comply with Public Resources Code Section 25405.5.

Proposed Section 2701. Definitions.

This section is necessary in order to define specific terms as used in Sections 2700-2704 of these proposed regulations.

For the purpose of the proposed regulations, the following definitions shall apply:

<u>Subsection 2701(a)</u> - *AC* means alternating current.

<u>Subsection 2701(b)</u> - *Banking* means the accumulation of expected annual time dependent valuation (TDV) energy from offset solar energy system(s) for future use in the solar offset program.

Subsection 2701(c) - *Building Energy Efficiency Standards for Residential and Nonresidential Buildings* means the California Building Energy Efficiency Standards as set forth in the California Code of Regulations, Title 24, Part 6.

Subsection 2701(d) - *Climate Zone* means the 16 geographic areas of California for which the Energy Commission has established typical weather data, prescriptive packages and energy budgets. The Energy Commission climate zone map is located at: www.energy.ca.gov/maps/building_climate_zones.html

Subsection 2701(e) - *Development* – the proposed regulations uses the definition of "Development" provided in California Government Code Section 66418.1.

Subsection 2701(f) - *Energy Commission* means the State of California Energy Resources Conservation and Development Commission, commonly known as the California Energy Commission.

Subsection 2701(g) - *IOU* means investor-owned utility.

Subsection 2701(h) - *kW* means kilowatt or 1,000 watts, as measured from the alternating current side of the solar energy system inverter consistent with Section 223 of Title 15 of the United States Code.

Subsection 2701(i) - *MW* means megawatt or 1,000,000 watts.

Subsection 2701(j) - *Minimal Shading* means that no existing shading obstructions or planned or potential shading obstructions (i.e. such items that are shown on builder's building or landscaping plans but not yet installed or planted) are closer than a distance of twice the height that the obstruction extends above the nearest point on the PV array. Any obstruction that projects above the point on the PV array that is closest to the obstruction shall meet this criterion for the PV array to be considered minimally shaded.

When developing these regulations, staff referred to the established New Solar Homes Partnership (NSHP) program guidelines when determining the installation characteristics of the solar energy system for the offset program. The definition of minimal shading was used as it is part of the installation characteristics included in the NSHP California Flexible Installation criteria. The criteria were developed as a simplified approach to estimating the incentives (for the NSHP Program) for those solar energy systems in a development that are designed and installed to meet the criteria. Stakeholders agreed that the use of existing NSHP installation criteria would be acceptable since builders/developers are familiar with the NSHP program guidelines.

The minimal shading criterion is outlined in the *Guidelines for California's Solar Electric Incentive Programs (Senate Bill1) Third Edition*, June 2010, Appendix 2: Field Verification and Diagnostic Testing of Photovoltaic Systems.

Subsection 2701(k) - *New Solar Homes Partnership (NSHP)* means the part of the comprehensive statewide solar program, known as the California Solar Initiative, that is applicable to new residential construction in the utility territories of Pacific Gas and Electric (PG&E), Southern California Edison (SCE), San Diego Gas & Electric (SDG&E), and Golden State Water Company (doing business as Bear Valley Electric Service). The NSHP provides financial incentives and other support to home builders to encourage the construction of new, energy-efficient solar homes.

Subsection 2701(l) - *Offset Solar Energy System* means a solar energy system that is used to meet the requirements of the Solar Offset Program.

Subsection 2701(m) - *Phased Final Map* means a Final Map that was filed pursuant to California Government Code Section 66456.1 that covers only a portion or phase of the total area encompassed by a Tentative Subdivision Map for which an application has been deemed complete on or after January 1, 2011.

Subsection 2701(n) - *POU* means publicly-owned utility.

Subsection 2701(o) - *Production Home* means a single-family residence constructed as part of a development of at least 50 homes per project that is intended or offered for sale. This definition of Production Home was included in the regulations because it appears in Public Resources Code Section 25405.5(a)(2).

Staff further defined what constitutes a "development of at least 50 homes per project" in order to clarify that the number of planned homes will be aggregated, as provided below, for purposes of determining the applicability of the regulations. This further clarification is necessary to address the following scenario: a developer/seller files a tentative subdivision map and multiple final maps, and each map identifies less than 50 homes, yet, when considered in the aggregate, there are 50 or more homes identified on all of the maps that cover the total area encompassed by the tentative subdivision map. The further clarification of what constitutes a "development of at least 50 homes per project" is necessary to ensure that Public Resources Code Section 25405.5 applies in this scenario.

To determine whether there is a "development of at least 50 homes per project":

(1) The number of planned homes identified on a Tentative Subdivision Map for which an application has been deemed complete on or after January 1, 2011, will be aggregated with the number of additional homes identified on any Phased Final Maps that are subsequently filed which cover only a portion or phase of the total area encompassed by the Tentative Subdivision Map.

(2) Under no circumstances will Tentative Subdivision Maps deemed complete prior to January 1, 2011, or Phased Final Maps that were filed prior to January 1, 2011, be considered in this determination.

Subsection 2701(p) - *PV* means flat-plate non-concentrating photovoltaic modules.

Subsection 2701(q) - *Reference Solar Energy System* means a fictitious solar energy system that is used for calculating expected annual TDV energy equivalency for the Solar Offset Program.

Subsection 2701 (r) – *Single-Family Residence* means "Detached Single-Family Dwelling," as defined in the California Building Code, Title 24, Part 2, Section 202. Section 202 defines a "Detached Single Family Dwelling" as "Any single-family dwelling which is separated from adjacent property lines by 3 feet (914 mm) or more or is separated from adjacent buildings by 6 feet (1829 mm) or more." This definition was selected because it effectuates the intent of California Public Resources Code Section 25405.5, and is consistent with definitions previously established by the Energy Commission.

Subsection 2701(s) – *Solar Energy System* means a solar energy device that has the primary purpose of providing for the collection and distribution of solar energy for the generation of electricity that produces at least 1 kW, and not more than 5 MW, alternating current rated peak electricity, and that meets or exceeds the following:

(1) All components in the solar energy system are new and unused, and have not previously been placed in service in any other location or for any other application;

(2) The solar energy system is connected to the electrical corporation's electrical distribution system within the state;

(3) The solar energy system has meters or other devices in place to monitor and measure the system's performance and the quantity of electricity generated by the system; and

(4) The solar energy system is installed in conformance with the manufacturer's specifications and in compliance with all applicable electrical and building code standards.

Subsection 2701(t) - *Solar Offset Program Calculator* means a calculator based on the California Energy Commission Photovoltaic (CECPV) model. This calculator incorporates detailed inverter performance modeling and uses weather data from the 16 climate zones in California. The calculator allows a user to select photovoltaic modules and inverters from a library of eligible equipment and generate the estimated monthly kWh production and annual TDV (kWh) production for a specified solar energy system. The calculator is located at: www.energy.ca.gov/2010-SOPR-1/documents/index.html

In order to avoid confusion with the CECPV calculator, staff developed a separate calculator for the Solar Offset Program. Stakeholders agreed that using existing estimation tools would be acceptable for the Solar Offset Program since

the developer/builder are familiar with its use and to be consistent with the NSHP program.

Subsection 2701(u) - *Subdivision* – this article uses the definition of "Subdivision" provided in California Government Code Section 66424.

Subsection 2701(v) - *Tentative Subdivision Map* means a Tentative Subdivision Map for which an application has been deemed complete on or after January 1, 2011.

Subsection 2701(w) - *Time-Dependent Valuation (TDV) Energy* means the time varying energy caused to be used by the building to provide space conditioning and water heating and for specified buildings lighting. TDV energy accounts for the energy used at the building site and consumed in producing and delivering energy to a site, including, but not limited to, power generation, transmission and distribution losses.

Proposed Section 2702. Homebuyer Solar Option.

This section sets forth the requirements that the seller of production homes shall adhere to if they elect to offer solar as an option to prospective home buyers. These sections are necessary to establish and clarify the Homebuyer Solar Option program and reporting requirements, and to comply with Public Resources Code Section 25405.5(b).

Subdivision (a) – Disclosure to Prospective Home Buyer – this section sets forth the information a seller of production homes shall disclose to prospective home buyers when offering solar as an option.

This provision will ensure that the seller of production homes is providing sufficient information regarding the Homebuyer Solar Option to prospective home buyers in order for the home buyer to make an informed decision.

Subdivision (a)(1) – this section sets forth that the seller of production homes shall disclose the total installed cost of the solar energy system option to a prospective home buyer.

This section will ensure that the seller of production homes will disclose the total installed cost of the solar energy system option to a prospective home buyer. This language is required pursuant to Public Resources Code Section 25405.5(b)(1).

Subdivision (a)(2) – this section sets forth that the seller of production homes shall disclose the estimated cost savings associated with the solar energy system option, as determined by the Energy Commission.

This section will ensure that the seller of production homes will disclose the estimated cost savings associated with the solar energy system to a prospective home buyer. This estimated cost savings was determined by the California Energy Commission,

pursuant to Chapter 8.8, (commencing with Public Resources Code Section 25780) of Division 15. This language is required pursuant to Public Resources Code Section 25405.5(b)(2). Staff referred to the reference solar energy system outlined in Subdivision 10, when determining the estimated cost savings.

Table 1, Estimated Annual kWh Generation and Dollar Savings of a 1 kW Solar Energy System, was developed to reflect the estimated cost savings.

Subdivision (a)(3) - this section sets forth that the seller of production homes shall inform the prospective home buyer of California solar energy system incentives.

Subdivision (a)(4) – this section sets forth that the seller of production homes shall provide the prospective home buyer with information about the Go Solar California website.

Subdivision (b) – Reporting Requirements – this section sets forth the annual reporting requirements that a seller of production homes shall adhere to if they elect to offer solar as an option to prospective home buyers. The information requested in this section allows the Energy Commission to verify that a seller of production homes is fulfilling their requirement to offer solar. The information is also for statistical and informational purposes to allow the Energy Commission to gauge the status of the program.

Subdivision (b)(1) – the seller of production homes shall report, on an annual basis, identifying information for the subdivision as noted on the tentative subdivision map, and where applicable, the legal description of the portion or phase of the total area encompassed by the tentative subdivision map that is covered by any phased final map(s). This information could include, but is not limited to, street address, lot or parcel number.

Subdivision (b)(2) – the seller of production homes shall report, on an annual basis, the total number of planned homes as identified on the tentative subdivision map and where applicable, the legal description of the portion or phase of the total area encompassed by the tentative subdivision map that is covered by any Phased Final Map(s).

Subdivision (b)(3) – the seller of production homes shall report the utility territory of the development on an annual basis.

Subdivision (b)(4) – the seller of production homes shall report the number of homes sold in the development in the reported year on an annual basis.

Subdivision (b)(5) – the seller of production homes shall report the number of homes where the solar option was installed in the reported year on an annual basis.

Subdivision (b)(6) – the seller of production homes shall report the average capacity (in AC kW) and average total cost of solar energy system option installed in the reported year on an annual basis.

Subdivision (b)(7) – the seller of production homes shall report incentives received, information about the incentive program(s), number of solar energy systems that received an incentive and the average dollar amount of the incentive on an annual basis.

Subdivision (c) – Verification of Compliance – this section sets forth the verification of compliance requirements that shall be submitted by the seller of production homes to the Energy Commission each calendar year, if the seller of production homes elects to offer solar as an option to prospective home buyers.
This provision will ensure that the seller of production homes is providing Homebuyer Solar Option materials to the prospective home buyer.

Subdivision (c)(1) – the seller of production homes shall submit a verification of compliance endorsed by a principal or corporate officer of the seller's company, signed under penalty of perjury. This information shall be submitted to the Energy Commission by May 1 of each year for the previous calendar year.

Subdivision (c)(2) – the seller of production homes shall make available the solar as an option disclosure to prospective home buyers at the sales office and on the seller's website. The Energy Commission reserves the right to review the solar as an option materials.

Proposed Section 2703. Requirements for Solar Offset Program.

These sections establish the eligibility and reporting requirements of the Solar Offset Program established pursuant to Public Resources Code Section 25405.5(c).

Subdivision (a) – this section describes the requirements that the seller of production homes shall adhere to if they elect to not participate in the Homebuyer Solar Option.

Subdivision (a)(1) – this section sets forth that the seller shall assume that "20 percent of prospective homebuyers" of planned homes identified on the Tentative Subdivision Map "would have installed solar energy systems".

Subdivision (a)(2) - this section sets forth that if the Tentative Subdivision Map identifies less than 50 planned homes and the seller intends to file multiple Phased Final Maps, the number of homes identified on the Tentative Subdivision Map will be aggregated with the number of additional homes identified on any Phased Final Map(s).

Subdivision (a)(3) – this section sets forth that If the aggregate number of planned homes identified in the Tentative Subdivision Map and Phased Final Map(s) exceeds 50, then the number of additional homes identified on any subsequently filed Phased

Final Map(s) will not be aggregated with the number of homes identified in the Tentative Subdivision Map or any previously filed Phased Final Map(s).

Subdivision (b) – Required TDV Energy Equivalency – this section sets forth the requirement that the electricity equivalency shall be calculated using TDV energy. The required TDV energy equivalency for the proposed subdivision being offset shall be based on the assumption that a reference solar energy system would have been installed by prospective home buyers, had the proposed subdivision participated in the homebuyer solar option program.

Subdivision (c) – Offset Solar Energy System – this section defines the requirements of the offset solar energy system that the seller of production homes shall adhere to if they participate in the Solar Offset Program.

Subdivision (c)(1) – Solar Energy System – this section defines that an offset solar energy system shall be comprised of photovoltaic modules in order to be eligible for the Solar Offset Program.

Subdivision (c)(2) – Interconnection Date – this section sets forth the eligibility date of July 1, 2010 as the date the offset solar energy system is interconnected to the utility grid and is qualified to participate in the Solar Offset Program.
The interconnection date was chosen as the qualification date because it serves as evidence of the systems installation and operation.

Subdivision (c)(3) – Location – this section specifies that the offset solar energy system must be located within the same utility territory as the proposed subdivision which is being offset.

The location of the offset system will affect how a calculation is made to determine the specifications of the offset system. Problems could arise with this calculation if the offset system is located in a different utility territory than the homes the system is intending to offset. Limiting the location of the offset system within the same utility territory as the proposed subdivision will allow flexibility to participants of the solar offset program while providing necessary parameters.

Subdivision (c)(4) – Maximum Capacity – this section specifies that the maximum capacity of an offset solar energy system shall not exceed 5 MW.

This is consistent with the definition of “solar energy system” provided in this article.

Subdivision (c)(5) – Expected TDV Energy Calculation – this section specifies that the expected annual TDV energy of an offset solar energy system shall be calculated by the Solar Offset Program Calculator, version 1.0. This calculation shall be equal to or greater than the required TDV energy equivalency of the proposed subdivision being offset.

Subdivision (c)(6) – Major Solar Energy System Components – this section specifies that all major components of the offset solar energy system, PV modules, inverters and meters, shall be included on the Energy Commission's Eligible Equipment List. The Energy Commission currently manages lists of eligible solar energy system components including PV modules, inverters and meters. Only products on the eligible lists are qualified to receive solar energy system incentives. Manufacturers must show that their product has met certain safety and performance criteria before being placed on the list. Requiring the offset system to be composed of products on the eligible lists gives the Energy Commission a level of assurance that the products have met appropriate performance and safety tests.

Subdivision (c)(7) - Field Verification – this section specifies that a participant in the Solar Offset Program shall have the offset solar energy system verified by a third-party to ensure that the components of the PV system, and its installation, are consistent with the characteristics used to determine the estimated performance.

Subdivision (c)(8) – Initial Reporting – this section sets forth the initial reporting requirements that a participant in the Solar Offset Program shall adhere to within 60 days of adoption of these regulations, or interconnection of the offset solar energy system to the utility grid, whichever is later.
This provision will establish the date the offset solar energy system was interconnected to the utility grid, eligibility information that the Energy Commission will rely upon for identifying the offset solar energy system, and for banking purposes.

Subdivision (c)(8)(A) – this provision is required by the Energy Commission to determine the date the offset solar energy system was interconnected to the utility grid and became eligible to participate in the solar offset program. Only systems interconnected after July 1, 2010 are eligible as offset solar energy systems.

Subdivision (c)(8)(B) – this provision is required by the Energy Commission to determine the date the offset solar energy system was interconnected to the utility grid.

Subdivision (c)(8)(C) – the requirement to report expected TDV energy calculations will allow the Energy Commission to verify that the offset solar energy system will produce enough energy to properly offset the systems' corresponding development.

Subdivision (c)(8)(D) – Executed Written Agreement – this section specifies that a developer/seller must submit an executed written agreement with the system owner.

Public Resources Code Section 25405.5(c) states that a developer/seller of production homes is allowed to forgo the requirement to offer solar energy systems by, "installing solar energy systems generating specified amounts of electricity…"

The Energy Commission has interpreted this section to mean that a developer/seller of production homes is responsible for the existence of the offset solar energy system, and that the offset solar energy system is a system that has been installed solely for the purposes of the Solar Offset Program.

This requirement for an executed written agreement between the developer/seller and the system owner allows the Energy Commission to verify that the developer/seller was responsible for the installation of the offset solar energy system.

Subdivision (c)(8)(D)(1) – this provision will provide the Energy Commission with the address of the offset solar energy system. This information will be used for verification and banking purposes.

Subdivision (c)(8)(D)(2) – this provision provides the Energy Commission with verification that the seller/developer contributed materially to the installation of the offset solar energy system.

Subdivision (c)(8)(D)(3) – this provision provides the Energy Commission with information on the total installed cost of the offset solar energy system. When combined with the information from Subdivision (c)(8)(D)(2), the Energy Commission will know what proportion of the total installed cost was contributed by the developer/seller.

Subdivision (c)(8)(E) – this requirement notifies the developer/seller that information they provide to the Energy Commission may be available to the public.

<u>Subdivision (c)(9)</u> – Partial Funding of Offset Solar Energy System – this section specifies that when the developer/seller pays for less than the total cost of the PV system to be used as an offset solar energy system, the developer/seller shall only be eligible to claim a fraction of the total capacity of the PV system as an offset credit. The fraction of the capacity eligible to be claimed as an offset solar energy system shall be equal to the fraction of the total cost of the PV system paid by the developer/seller.

<u>Subdivision (c)(10)</u> – Use of Offset Solar Energy System to Offset a Future Subdivision(s) – this section specifies that an offset solar energy system may be used to offset multiple subdivisions, including but not limited to, subdivisions at different locations, in accordance with Section 2703(e).

This provision will ensure that participants in the Solar Offset Program will be able to have their solar offset system be used to offset future subdivisions.

<u>Subdivision (d)</u> – Reference Solar Energy System – this section specifies the capacity, installation characteristics, modules, inverters, expected annual time-dependent valuation energy calculation and per-home energy equivalency of a reference solar energy system that a participant in the Solar Offset Program shall utilize when designing their offset solar energy system.

The reference solar energy system serves as a baseline for calculating how much energy a solar offset system will be required to generate. Public Resources Code Section 25405.5(c) states that

> *The amount of electricity required to be generated from solar energy systems used as an offset pursuant to this subdivision shall be equal to the amount of electricity generated by solar energy systems installed on a similarly sized project within that climate zone, assuming 20 percent of the prospective buyers would have installed solar energy systems.*

The Energy Commission has interpreted this section to mean that an offset solar energy system is required to generate an amount of energy equal to what would have been generated had 20 percent of the development installed solar energy systems. In order to calculate how much energy an offset solar energy system must generate, certain assumptions must be made about the system that "prospective buyers would have installed." This subdivision details those assumptions.

This provision will ensure that the participants in the Solar Offset Program will be using consistent methodologies when developing their offset solar energy system.

<u>Subdivision (d)(1)</u> – Capacity – this section specifies that the reference solar energy system will have a capacity of 2 kW alternating current.

This capacity was chosen because it is the average capacity of installed solar energy systems in the New Solar Homes Partnership (NSHP) program.

<u>Subdivision (d)(2)</u> – Installation Characteristics – this section describes the specific installation characteristics the reference solar energy system is assumed to have. The characteristics include azimuth, tilt, mounting height, system type, and shading.

These characteristics were chosen because they are the same as those of the NSHP California Flexible Installation default system. In order to determine the required equivalency calculation, assumptions were made about the solar energy that would have been installed on 20 percent of the homes in the subdivision that is being offset. These assumptions will mirror the NSHP California Flexible Installation criteria and use the PV modules and inverters that have been most commonly used in NSHP.

<u>Subdivision (d)(3)</u> – PV Modules – this section identifies that the reference solar energy system shall utilize the most commonly used PV modules in NHSP as of June 28, 2010 which is the SunPower PL-PLT-63L-BLK-U. In order to simulate the energy production of a reference solar energy system, specific equipment must be identified. This PV Module was chosen because it was the most commonly installed module in NSHP as of June 28, 2010.

Subdivision (d)(4) – Inverter – this section identifies that the reference solar energy system shall utilize the most commonly used inverter in NSHP as of June 28, 2010 which is the Xantrex Technology GT2.8-NA-240/208 (240V). In order to simulate the energy production of a reference solar energy system, specific equipment must be identified. This inverter was chosen because it was the most commonly installed inverter in NSHP as of June 28, 2010.

Subdivision (d)(5) – Expected Annual TDV Energy Calculation – this section identifies, for each climate zone, the expected TDV energy equivalency of the reference solar energy system, as calculated by the Solar Offset System Program Calculator, version 1.0. This information is noted in Table 2.

Subdivision (d)(5)(A) – Per-home TDV Energy Equivalency - this provision will ensure that the participants in the Solar Offset Program will be using consistent methodologies when calculating the expected annual TDV energy calculation for each climate zone as outlined in Table 2, Expected Annual TDV Energy Calculation per Climate Zone.

Public Resources Code Section 25405.5(c) states that the offset solar energy system is required to generate an equal amount of electricity as would have been generated by the installation of solar energy systems on 20 percent of homes in the proposed subdivision that is being offset. Capacity of a solar energy system cannot be used for the offset system requirement due to the phrasing “amount of electricity”. To be consistent with the valuation of energy in the NSHP program and the Building Energy Efficiency Standards, the offset system requirement will be based on expected TDV energy equivalency. The use of TDV energy equivalency was discussed at the workshop that staff at the Energy Commission held with stakeholders in May 2010 and was addressed in a staff paper *Solar Offset Program Pre-Rulemaking* that was posted on the Energy Commission’s website in May 2010.

Subdivision (d)(5)(B) – this section instructs the developers/builders to multiply the number of homes they are intending to offset by the appropriate TDV energy value, depending on the climate zone in which the proposed subdivision is located. The resulting value is the required TDV energy equivalency for the proposed subdivision being offset as specified in Section 2703 (b).

Subdivision (e) – Solar Offset Bank – this section establishes a banking system which allows participants in the Solar Offset Program to aggregate their offset solar energy systems and apply those systems to multiple subdivisions including, but not limited to, subdivisions at different locations.

The banking program was developed to give participants in the Solar Offset Program more flexibility in achieving compliance.

Subdivision (e)(1) – Eligibility – this section sets forth that any qualifying offset solar energy system shall be eligible to be used in the Solar Offset Bank.

Subdivision (e)(2) – Deposits into Solar Offset Bank – this section sets forth the required reporting information that a developer/seller shall disclose to the Energy Commission if they wish to enter an offset solar energy system into the Solar Offset Bank.

This provision ensures that deposits into the Solar Offset Bank are captured and documented accurately.

Subdivision (e)(2)(A) – Name of Developer/Seller – this requirement determines the name of the developer/seller.

Subdivision (e)(2)(B) – Capacity of Offset Solar Energy System (in kW AC) – this information is requested by the Energy Commission for statistical and informational purposes. Knowing the capacity of installed offset solar energy systems allow the Energy Commission to keep track of how much solar generation is being added.

Subdivision (e)(2)(C) – Expected Annual TDV Energy form Offset Solar Energy System – as mentioned in Section 2703(b), the offset solar energy system must be expected to generate specified amounts of energy. This provision will ensure that the developer/seller properly followed instructions on calculating the energy required to properly offset their development, and that the offset solar energy system is expected to generate enough energy to properly offset the associated development. This provision ensures that deposits into the Solar Offset Bank are captured and documented accurately.

Subdivision (e)(2)(D) – City Location of Offset Solar Energy System – this information is necessary for the Energy Commission to verify that developer/seller properly calculated their required TDV Energy Equivalency. The calculations are based on climate zones, so the city location of the offset solar energy system is necessary to determine the climate zone. This provision ensures that deposits into the Solar Offset Bank are captured and documented accurately.

Subdivision (e)(2)(E) – Utility Territory of Offset Solar Energy System – as mentioned in Section 2703(c)(3), the offset solar energy system must be located in the same utility territory as the proposed development being offset. This provision ensures that deposits into the Solar Offset Bank are captured and documented accurately.

Subdivision (e)(2)(F) – Interconnection Date of Offset Solar Energy System – as mentioned in Section 2703(c)(2), only solar energy systems interconnected to the utility grid on or after July 1, 2010 are eligible for the Solar Offset Program. This provision ensures that deposits into the Solar Offset Bank are captured and documented accurately.

Subdivision (e)(3) – Withdrawals from the Solar Offset Bank – this section sets forth the required reporting information that a developer/seller shall disclose to the Energy Commission if they wish to apply an offset to a proposed subdivision and make a withdrawal from the Solar Offset Bank.

This provision ensures that withdrawals from the Solar Offset Bank are captured and documented accurately.

Subdivision (e)(3)(A) – this provision sets forth the legal description of the proposed subdivision(s) being offset. This information is required for identifying withdrawals from the solar offset bank.

Subdivision (e)(3)(B) – this provision sets forth the date the offset system was applied to the proposed subdivision(s). This information is required for identifying withdrawals from the solar offset bank.

Subdivision (e)(3)(C) – this provision sets forth the number of homes in the proposed subdivision(s) that are being offset and, where applicable, the total number of planned homes identified. This information is required for identifying withdrawals from the solar offset bank.

Subdivision (e)(3)(D) – this provision sets forth the number of homes being offset. This number equals 20 percent of homes in the proposed subdivision. This information is required for identifying withdrawals from the solar offset bank.

Subdivision (e)(3)(E) – this provision sets forth the requirement of the climate zone location of the subdivision being offset. This information is required for identifying withdrawals from the solar offset bank.

Subdivision (e)(4) – Calculating Balance – this section sets forth the required Solar Offset Bank balance reporting information that the Energy Commission shall disclose to the developer/seller. This section combines information from the previous sections regarding deposits and withdrawals from the Solar Offset Bank. The units or “currency” of the bank will be TDV energy.

The Energy Commission will disclose the information in this section to the developer/seller each time a withdrawal is made. This information will also be available online.

This provision ensures that the balance of the Solar Offset Bank is captured and documented accurately.

Subsection (e)(4)(A) – this provision sets forth the required TDV energy per home for the proposed subdivision being offset. This information is outlined in Subdivision 2703 (d)(5(A) and is required for calculating the balance of the solar offset bank.

Subsection (e)(4)(B) – this provision sets forth the required TDV energy equivalency for the entire proposed development being offset. This information is outlined in Subdivision 2703 (d)(5(A) and is required for calculating the balance of the solar offset bank.

Subsection (e)(4)(C) – this provision reports the running balance of TDV energy that a developer/seller has at any given time. Developer/sellers can install additional offset solar energy systems to add to this balance. Withdrawals from this balance are made when developments are applied to be offset.

Subdivision (f) – Annual Reporting – this section sets forth the annual reporting requirements that a Solar Offset Program participant shall adhere to when there is a positive expected annual TDV energy balance for an offset solar energy system.

This provision will ensure that the offset solar energy system is still operational and ensures that the Energy Commission will be provided sufficient verification that the offset system is still qualified to participate in the Solar Offset Program.

2704. Future Ordinances Requiring Solar.

Subdivision (a) – this section specifies that if a California city, county, or other governing political subdivision requires solar energy systems on new homes at a future date, that such a requirement shall supersede the provisions of these regulations.
This provision ensures that if a California city, county of other governing political subdivision initiates an ordinance or requirement mandating the installation of solar energy systems, that ordinance or requirement will supersede the provisions of these regulations.

STUDIES, REPORTS, AND DOCUMENTS RELIED UPON

- *"Guidelines for California's Solar Electric Incentive Program (Senate Bill 1) Third Edition",* Energy Commission Publication No. CEC-300-2010-004-CMF, June 2010. This document is located on the Energy Commissions website at: www.energy.ca.gov//2010publications/CEC-300-2010-004/CEC-300-2010-004-CMF.PDF

- *"New Solar Homes Partnership Guidebook – Third Edition",* Energy Commission Publication No. CEC-300-2010-CMF-REV1, April 2010. This document is located on the Energy Commissions website at: www.energy.ca.gov/2010publications/CEC-300-2010-001/CEC-300-2010-001-CMF-REV1.PDF

- *"2008 Building Energy Efficiency Standards for Residential and Nonresidential Building, Regulations/Standards"* Effective January 1, 2010, Energy Commission

Publication No. CEC-400-2008-001-CMF, December 2008. This document is located on the Energy Commissions website at: www.energy.ca.gov/2008publications/CEC-400-2008-001/CEC-400-2008-001-CMF.PDF

- The Commission conducted informal meetings with affected stakeholders in February 2010. After those meetings were conducted the *Solar Offset Program Pre-Rulemaking* staff paper was developed outlining issues and concerns raised regarding the development of comprehensive regulations for the Solar Offset Program

- *"Solar Offset Program Pre-Rulemaking"* staff paper, Energy Commission Publication No. CEC-300-2010-005, May 2010. This document is located on the Energy Commissions website at: www.energy.ca.gov/2010publications/CEC-300-2010-005/CEC-300-2010-005.PDF

- Staff conducted a workshop on May 20, 2010 to discuss the *Solar Offset Program Pre-Rulemaking* staff paper and to receive comments from interested stakeholders. After this workshop, staff developed draft regulations. Draft regulations were made available for public comment on September 20, 2010.

- *"Solar Offset Program Pre-Rulemaking Draft Regulations"*, staff report, Energy Commission Publication No. CEC-300-2010-009-SF, September 2010. This document is located on the Energy Commissions website at: www.energy.ca.gov/2010publications/CEC-300-2010-009/CEC-300-2010-009-SF.PDF

OTHER STATUTORY REQUIREMENTS

Public Resources Code Sections 25213 and 25218(e) provide the Commission with the authority to adopt rules and regulations necessary to carry out its assigned duties and responsibilities. Further, Public Resources Code Section 25218.5 provides that provisions specifying any power of the Commission, such as the Commission's rulemaking authority, shall be liberally construed.

LOCAL MANDATE

The proposed regulations will not impose a mandate on state or local agencies or districts.

ECONOMIC AND FISCAL IMPACTS

The Energy Commission has made the following initial determinations:

(1) The proposed regulations will not impose a mandate on state or local agencies or districts.

(2) The proposed regulations will not impose any costs on local agencies or school districts for which Government Code sections 17500 to 17630 require reimbursement.

(3) The proposed regulations will not result in other non-discretionary costs or savings imposed upon local agencies.

(4) The proposed regulations will not result in any costs or savings for state agencies.

(5) The proposed regulations will not result in any costs or savings in federal funding to the state.

EFFECT ON HOUSING COSTS

The proposed regulations will have no direct impact on housing costs because prospective home buyers are not required to install a solar energy system; this is an option during the home purchase negotiations. If a prospective home buyer chooses to install a solar energy system, the cost of this system could be added to the purchase price of the home. It is estimated that the average cost of a residential solar installation, less than 10 kW, is $8.49 per watt (CPUC California Solar Initiative, 2009 Impact Evaluation). The Energy Commission determined that a median sized new construction, residential solar energy system is 2 kW or 2,000 watts. The cost of installation for this solar energy system, before state rebates and a federal tax incentive, would be approximately $16,980. Incorporating the cost of the solar energy system into the home loan will increase the monthly mortgage payment, however, the home buyers' investment may be offset through reduced energy costs and increased value of the home.

If the home buyer does not elect to install a solar energy system then there would be no increase in the purchase price of the home, and therefore, no effect on housing costs.

SIGNIFICANT STATEWIDE ADVERSE ECONOMIC IMPACT DIRECTLY AFFECTING BUSINESS, INCLUDING THE ABILITY OF CALIFORNIA BUSINESSES TO COMPETE WITH BUSINESSES IN OTHER STATES

The Energy Commission has made an initial determination that there will be no significant (or insignificant) statewide adverse economic, fiscal, or environmental impact directly affecting businesses, including small businesses, as a result of the proposed regulations, including the ability of California businesses to compete with businesses in other states.

If the developer selects the option to install an offset solar energy system, there would be a cost to the developer. It is unknown at this time how big this offset solar energy system would be or the cost to install it. It is estimated that the average cost of a large commercial solar installation, over 10 kW, is $7.09 per watt (CPUC California Solar Initiative, 2009 Impact Evaluation). Since it is unknown how large an offset system will be installed we can only provide an estimate.

If a developer built a subdivision that consisted of 100 homes, and our regulations assume that 20 percent of prospective home buyers will install a solar energy system, then 20 homes would be the number that would be offset. The Energy Commission has already determined that a 2 kW solar energy system will be used as the baseline for determining expected time-dependent valuation weighted equivalent energy of the solar energy system for the offset location. The developer will need to determine the required capacity (in kW AC) of the offset solar energy system as calculated by the Solar Offset Program Calculator, Version 1. The developer will divide the homes that are being offset by the required capacity. For this example, the developer would need to build an offset solar energy system that is at least 40 kW or 40,000 watts. The cost to build this offset solar energy system would be approximately $283,600. This is an approximate number, since it is unclear what the developer will actually pay for the offset solar energy system and the required capacity that was calculated.

The developer could pass the cost of the offset system onto the purchase price of the homes in the subdivision that is using the offset. This is also an unknown.
There could be a positive impact to the solar industry and new subdivisions. With the implementation of the Homebuyer Solar Option, homebuyers will now have an option to install solar on their new home and incorporate the cost of this option into their monthly mortgage payment. This might steer prospective homebuyers to new construction homes, therefore, increasing the construction of these homes. This increase could impact businesses in a positive way by increasing the manufacture of solar modules and inverters (could decrease the cost of these products and create new jobs), boost sales by retailers (could add new businesses and create new jobs), improve the workload of installers (could reduce the cost of installations and add to the workforce) and possibly increase sales of new construction homes (possible job creation).

IMPACTS ON THE CREATION OR ELIMINATION OF JOBS WITHIN THE STATE, THE CREATION OF NEW BUSINESSES OR THE ELIMINATON OF EXISTING BUSINESSES, OR THE EXPANSION OF BUSINESSES IN CALIFORNIA

The proposed regulations will have no impact on the creation or elimination of jobs with the state, the creation of new businesses or the elimination of existing businesses, or the expansion of businesses in California.

COST IMPACTS ON REPRESENTATIVE PERSON OR BUSINESS

The Energy Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

BUSINESS REPORTS

The proposed regulations would require mandatory data submittal for the purpose of identifying subdivisions that will be offering the Homebuyer Solar Option to prospective home buyers, ensuring that the seller of production homes is providing solar as an option materials to the home buyer, verifying an offset solar energy system interconnection date, and managing a banking system and withdrawals from this banking system. The Energy Commission estimates that the annual reporting cost would be $400 per developer/seller.

It is necessary for the health, safety or welfare of the people of the state that the proposed regulations apply to business. The Legislature has required the Energy Commission to develop these regulations, and the submittal of data is necessary to verify compliance.

DUPLICATION OR CONFLICT WITH FEDERAL REGULATIONS

The proposed regulations do not duplicate or conflict with any federal regulations contained in the Code of Federal Regulations. Furthermore, the proposed regulations are not mandated by federal law or regulation.

ALTERNATIVES

Before it adopts the proposed regulations, the Energy Commission must determine that no reasonable alternative it considered, or that has otherwise been identified and brought to its attention, would be more effective in carrying out the purpose for which the amendments are proposed or would be as effective as and less burdensome to affected private persons than the proposed regulations. To date, the Energy Commission has found no alternatives to the proposed action that would be more effective, or as effective and less burdensome.