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No. 2011/039

October 13, 2011

TO COUNTY ASSESSORS AND INTERESTED PARTIES:

GUIDELINES FOR ACTIVE SOLAR ENERGY SYSTEMS  
NEW CONSTRUCTION EXCLUSION

Government Code section 15606(e) and Revenue and Taxation Code section 169 require that the Board issue to county assessors information to promote uniformity in appraisal practices and in assessed values throughout the state.

After receiving numerous inquiries, Board staff has initiated a project to develop guidelines to assist county assessors' staff in applying the active solar energy system new construction exclusion. Enclosed is a draft of the proposed *Guidelines for Active Solar Energy Systems New Construction Exclusion*. Interested parties are encouraged to participate in the project by providing any suggested revisions to the *Guidelines* in the form of alternate text. Suggested revisions or comments should be submitted by November 23, 2011 to Mr. Michael McDade at the above address or via email to [michael.mcdade@boe.ca.gov](mailto:michael.mcdade@boe.ca.gov).

After reviewing responses received from interested parties, it is anticipated that the project will proceed as follows:

- A matrix arraying comments received from interested parties will be posted to the Board's website by January 6, 2012.
- An interested parties meeting is scheduled on January 26, 2012 to discuss any unresolved issues resulting from suggestions received.
- The *Guidelines* will be scheduled for discussion before the Board's Property Tax Committee.

All documents regarding this project will be posted to the Board's website at [www.boe.ca.gov/proptaxes/otherprojects11.htm](http://www.boe.ca.gov/proptaxes/otherprojects11.htm). If you have questions regarding this project, you may contact Mr. McDade at 916-274-3361 or Ms. Sherrie Kinkle at 916-274-3363.

Sincerely,

/s/ David J. Gau

David J. Gau  
Deputy Director  
Property and Special Taxes Department

DJG:mm  
Enclosure

*DRAFT*

GUIDELINES FOR  
ACTIVE SOLAR ENERGY SYSTEMS  
NEW CONSTRUCTION EXCLUSION

October 2011

# TABLE OF CONTENTS

<b>GUIDELINES FOR APPLICATION OF THE NEW CONSTRUCTION EXCLUSION TO ACTIVE SOLAR ENERGY SYSTEMS .....</b>	<b>2</b>
INTRODUCTION .....	2
DEFINITIONS .....	2
<i>Active Solar Energy System</i> .....	2
<i>Fixtures</i> .....	3
<i>Electrical Corporation</i> .....	3
ASSESSMENT RESPONSIBILITY .....	5
<i>Property Tax Rule 905</i> .....	5
NEW CONSTRUCTION .....	6
<i>Exclusions</i> .....	6
<i>First Buyer Exclusion</i> .....	6
<i>Builders' Exclusion</i> .....	7
LEASES .....	8
<i>Leased Equipment</i> .....	8
<i>Leased Land or other Leased Real Property</i> .....	9
<i>Recent Legislation</i> .....	9
LEGAL ENTITIES .....	10
<i>Transfer of Real Property of a Legal Entity</i> .....	10
<i>Transfer of Interest in a Legal Entity</i> .....	11
DECLINE IN VALUE .....	11
TYPES OF USES FOR ACTIVE SOLAR ENERGY SYSTEMS .....	13
<i>Electrical Generating Systems—Residential</i> .....	13
<i>Electrical Generating Systems—Commercial or Industrial</i> .....	14
<i>Thermal Systems—Passive</i> .....	14
<i>Thermal Systems—Active</i> .....	14
<i>Solar Water Heating</i> .....	15
<i>Space Conditioning</i> .....	15
<i>Process Heating</i> .....	16
FREQUENTLY ASKED QUESTIONS AND ANSWERS .....	17

1 **GUIDELINES FOR APPLICATION OF THE NEW CONSTRUCTION**  
2 **EXCLUSION TO ACTIVE SOLAR ENERGY SYSTEMS**

3 **INTRODUCTION**

4 The objective of these guidelines is to provide county assessors' staff, assessment appeals board  
5 members, taxpayer representatives, and others interested in the administration of property taxes  
6 in California with information regarding the new construction exclusion for active solar energy  
7 systems, including:

- 8 • Definitions
- 9 • Assessment responsibility
- 10 • First buyer exclusion
- 11 • Construction completion
- 12 • Leases
- 13 • Legal entities
- 14 • Decline in value
- 15 • Types of uses for active solar energy systems

16 **DEFINITIONS**

17 **ACTIVE SOLAR ENERGY SYSTEM**

18 An *active solar energy system* is a system that uses solar devices, which are thermally isolated  
19 from living space or any other area where the energy is used, to provide for the collection,  
20 storage, or distribution of solar energy.<sup>1</sup> Such a system does not include solar swimming pool  
21 heaters, hot tub heaters, passive energy systems, or wind energy systems.

22 An active solar energy system may be used for any of the following:

- 23 • Domestic, recreational, therapeutic, or service water heating
- 24 • Space conditioning
- 25 • Production of electricity
- 26 • Process heat
- 27 • Solar mechanical energy

28 An active solar energy system includes storage devices, power conditioning equipment, transfer  
29 equipment, and parts related to the functioning of those items. Parts include spare parts that are

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<sup>1</sup> Revenue and Taxation Code section 73.

1 owned by the owner of, or maintenance contractor for, an active solar energy system for which  
2 the parts were specifically purchased, designed, or fabricated for installation in that system. Such  
3 a system includes only equipment used up to, but not including, the stage of transmission or use  
4 of the electricity.<sup>2</sup>

5 An active solar energy system does not include auxiliary equipment, such as furnaces or hot  
6 water heaters, which use a source of power other than solar energy to provide usable energy.  
7 Dual-use equipment, such as ducts and hot water tanks used by both auxiliary equipment and  
8 solar energy equipment, is considered active solar energy system property only to the extent of  
9 75 percent of its full cash value.<sup>3</sup>

10 **FIXTURES**

11 Property Tax Rule<sup>4</sup> 122.5, *Fixtures*, establishes three tests to determine whether an article is a  
12 fixture. The three tests are:

- 13 • Physical annexation
- 14 • Constructive annexation
- 15 • Intent

16 A typical active solar energy system is considered a fixture, and thus real property, if it meets the  
17 tests outlined above.<sup>5</sup> The exclusion is not applicable to portable active solar energy systems  
18 since they are items of personal property.

19 **ELECTRICAL CORPORATION**

20 Section 218 of the Public Utilities Code clarifies the definition of *electrical corporation* as:

21 (a) "Electrical corporation" includes every corporation or person owning,  
22 controlling, operating, or managing any electric plant for compensation within  
23 this state, except where electricity is generated on or distributed by the producer  
24 through private property solely for its own use or the use of its tenants and not for  
25 sale or transmission to others.

26 (b) "Electrical corporation" does not include a corporation or person employing  
27 cogeneration technology or producing power from other than a conventional  
28 power source for the generation of electricity solely for any one or more of the  
29 following purposes:

- 30 (1) Its own use or the use of its tenants.

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<sup>2</sup> Section 73. All statutory references are to the Revenue and Taxation Code unless otherwise specified.

<sup>3</sup> Section 73.

<sup>4</sup> All references to Rules are Property Tax Rules from Title 18, Public Revenues, California Code of Regulations.

<sup>5</sup> For more information, see Assessors' Handbook Section 504, *Assessment of Personal Property and Fixtures*.

1 (2) The use of or sale to not more than two other corporations or persons solely  
2 for use on the real property on which the electricity is generated or on real  
3 property immediately adjacent thereto, unless there is an intervening public street  
4 constituting the boundary between the real property on which the electricity is  
5 generated and the immediately adjacent property and one or more of the following  
6 applies:

7 (A) The real property on which the electricity is generated and the immediately  
8 adjacent real property is not under common ownership or control, or that common  
9 ownership or control was gained solely for purposes of sale of the electricity so  
10 generated and not for other business purposes.

11 (B) The useful thermal output of the facility generating the electricity is not used  
12 on the immediately adjacent property for petroleum production or refining.

13 (C) The electricity furnished to the immediately adjacent property is not utilized  
14 by a subsidiary or affiliate of the corporation or person generating the electricity.

15 (3) Sale or transmission to an electrical corporation or state or local public  
16 agency, but not for sale or transmission to others, unless the corporation or person  
17 is otherwise an electrical corporation.

18 (c) "Electrical corporation" does not include a corporation or person employing  
19 landfill gas technology for the generation of electricity for any one or more of the  
20 following purposes:

21 (1) Its own use or the use of not more than two of its tenants located on the real  
22 property on which the electricity is generated.

23 (2) The use of or sale to not more than two other corporations or persons solely  
24 for use on the real property on which the electricity is generated.

25 (3) Sale or transmission to an electrical corporation or state or local public  
26 agency.

27 (d) "Electrical corporation" does not include a corporation or person employing  
28 digester gas technology for the generation of electricity for any one or more of the  
29 following purposes:

30 (1) Its own use or the use of not more than two of its tenants located on the real  
31 property on which the electricity is generated.

32 (2) The use of or sale to not more than two other corporations or persons solely  
33 for use on the real property on which the electricity is generated.

34 (3) Sale or transmission to an electrical corporation or state or local public  
35 agency, if the sale or transmission of the electricity service to a retail customer is

1 provided through the transmission system of the existing local publicly owned  
2 electric utility or electrical corporation of that retail customer.

3 (e) "Electrical corporation" does not include an independent solar energy  
4 producer, as defined in Article 3 (commencing with Section 2868) of Chapter 9 of  
5 Part 2.

6 (f) The amendments made to this section at the 1987 portion of the 1987-88  
7 Regular Session of the Legislature do not apply to any corporation or person  
8 employing cogeneration technology or producing power from other than a  
9 conventional power source for the generation of electricity that physically  
10 produced electricity prior to January 1, 1989, and furnished that electricity to  
11 immediately adjacent real property for use thereon prior to January 1, 1989.

## 12 **ASSESSMENT RESPONSIBILITY**

13 The first determination to be made by a county assessor is whether the active solar energy system  
14 will be state or locally assessed. State-assessed property is not subject to the provisions of article  
15 XIII A (Proposition 13), and thus is assessed at fair market value annually on the lien date. Only  
16 a system subject to local assessment could be excluded by section 73. Generally, the Board  
17 assesses electric generation facilities with a generating capacity of 50 megawatts or more but  
18 excludes qualifying small power production facilities and qualifying cogeneration facilities. For  
19 further clarification, please refer to Letter To Assessors (LTA) 2003/009, "*Electric Generation*  
20 *Facilities*" - *State/Local Assessment Jurisdiction Issues*.

### 21 **PROPERTY TAX RULE 905<sup>6</sup>**

22 Rule 905, *Assessment of Electric Generation Facilities*, subsection (a), defines the assessment of  
23 electrical generation facilities, and states:

24 (a) Commencing with the assessment for the lien date for the 2003 assessment  
25 year, an electrical generation facility shall be state assessed property for purposes  
26 of article XIII, section 19 of the California Constitution if: (1) the facility has a  
27 generating capacity of 50 megawatts<sup>7</sup> or more; **and** (2) is owned or used by a  
28 company which is an *electrical corporation* as defined in subdivisions (a) and (b)  
29 of section 218 of the Public Utilities Code; or, the facility is owned or used by a  
30 company which is a state assessee for reasons other than its ownership of the  
31 electric generation facility or its ownership of pipelines, flumes, canals, ditches,  
32 or aqueducts lying within two or more counties.... [Footnote and emphasis  
33 added].

34 Systems that do not meet the definitions of Rule 905 are assessed by the assessor of the county  
35 where the facility is located.

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<sup>6</sup> See also section 721.5.

<sup>7</sup> One megawatt is enough energy to power 1,000 average homes.

1 **NEW CONSTRUCTION**

2 Generally, when something of value is physically added to real property, what is added is  
3 considered new construction and is assessed at current market value. This value is added to the  
4 existing base year value of the real property. *New construction* and *newly constructed* are defined  
5 as either (1) any addition to real property (including fixtures), or (2) any alteration of land or of  
6 an improvement (including fixtures) which constitutes a major rehabilitation thereof or converts  
7 the property to a different use.<sup>8</sup>

8 The law requires a county assessor to determine the added value for newly constructed property  
9 upon completion. The value is established as the base year value for those specific improvements  
10 qualifying as new construction and is added to the property's existing base year value(s).

11 Certain types of construction activity, however, are excluded from assessment as new  
12 construction. These exclusions are authorized by constitutional amendment. Consequently, while  
13 these types of improvements may increase the value of the property, the additional value of these  
14 improvements is not assessable because of an exclusion.

15 **EXCLUSIONS**

16 In 1980, voters approved amendment of section 2(c) of article XIII A of the California  
17 Constitution,<sup>9</sup> giving the Legislature the authority to exclude the construction of certain active  
18 solar energy systems from property tax assessment. This exclusion was incorporated in Revenue  
19 and Taxation Code section 73, which provides that the term *newly constructed* does not include  
20 the construction or addition of any active solar energy system for property tax purposes.

21 The property tax incentive for the installation of an active solar energy system is in the form of a  
22 *new construction exclusion*. It is not an exemption. Therefore, the installation of a qualifying  
23 solar energy system will not result in either an increase or a decrease in the assessment of the  
24 existing property.

25 This exclusion remains in effect until a change in ownership of the system occurs. In the event of  
26 a partial change in ownership, that portion of the system that changed ownership would be  
27 assessable.

28 **FIRST BUYER EXCLUSION**

29 Section 73 was modified<sup>10</sup> in 2008 to allow the active solar energy system new construction  
30 exclusion to be conveyed to the first buyer of a new building containing such a system, if the  
31 following conditions are met:

- 32
  - The owner-builder does not intend to occupy or use the building;

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<sup>8</sup> Section 70, subdivision (a).  
<sup>9</sup> Proposition 7, Senate Constitutional Amendment 28.  
<sup>10</sup> Stats. 2008, ch. 538 (Assembly Bill 1451).



- 1 • The owner-builder had not received the active solar energy system new construction  
2 exclusion;
- 3 • The first buyer purchases the building prior to it becoming subject to reassessment to the  
4 owner-builder, as prescribed in subdivision (d) of section 75.12 (a discussion of this  
5 section follows); and
- 6 • The first buyer files the appropriate claim form<sup>11</sup> with the county assessor.

## 7 **BUILDERS' EXCLUSION**

8 Section 75.12 implements the exclusion from supplemental assessment commonly known as the  
9 *builders' exclusion*. The exclusion allows builders to avoid reassessment of their inventories. The  
10 exclusion is accomplished by deferring the date of assessment of new construction where either:

- 11 1. A builder has notified the county assessor, prior to or within 30 days of the  
12 commencement of construction, that he or she does not intend to occupy or use the  
13 property; or
- 14 2. The property meets all of the following criteria applicable to the development of  
15 residential subdivisions:
  - 16 A. The property is subdivided into five or more parcels in accordance with the  
17 Subdivision Map Act, or any successor to that law;
  - 18 B. The map describing the parcels has been recorded; and
  - 19 C. Zoning regulations applicable to the parcels or building permits for the parcels  
20 require that, except for parcels dedicated for public use, single-family residences  
21 will be constructed on the parcels.

22 For the builders' exclusion, new construction is considered completed at the date upon which the  
23 new construction is available for use by the owner, unless the owner does not intend to occupy or  
24 use the property. *Occupy or use* means the occupancy or use by the owner, including the rental  
25 or lease of the property.<sup>12</sup> Property is not considered occupied if the occupancy or use is in  
26 conjunction with an offer for a change in ownership, such as use of the property as a model  
27 home.<sup>13</sup>

28 The builders' exclusion applies only to the initial supplemental assessment for the completion of  
29 new construction. It does not preclude the assessment of construction on the assessment roll on  
30 the lien date following the date of completion of construction or to any other supplemental  
31 assessments on the property, such as the change in ownership related to the initial acquisition of  
32 the property. In other words, on the lien date, completed new construction and incomplete

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<sup>11</sup> Form BOE-64-SES, *Initial Purchaser Claim for Solar Energy System New Construction Exclusion*.

<sup>12</sup> Section 75.12(b)(1).

<sup>13</sup> Section 75.12(b)(2).

1 construction in progress should be assessed at full value. Full value for completed new  
2 construction would be determined as of the date the construction is completed.

### 3 **Examples**

4 The following examples illustrate the application of the builders' exclusion.

#### 5 ***Example 1***

6 A builders' exclusion was in place for a home with an active solar energy system, which  
7 was started in March, 2009, and completed on August 15, 2009. No supplemental  
8 assessments would have been enrolled during construction. The home was sold on or  
9 before December 31, 2009. The initial purchaser *would* be eligible for the new construction  
10 exclusion for the solar energy system.

#### 11 ***Example 2***

12 A builders' exclusion was in place for a home with an active solar energy system, which  
13 was started in March, 2009, and completed on August 15, 2009. The home was sold on  
14 February 3, 2010. Construction was 100 percent complete on the January 1, 2010 lien  
15 date for purposes of determining the assessed value of the property for the 2010-2011  
16 regular roll. The builder would receive the active solar energy system exclusion when the  
17 lien date value is enrolled. The initial purchaser *would not* be eligible for the new  
18 construction exclusion for the solar energy system since the owner-builder received the new  
19 construction exclusion when the lien date value was established.

#### 20 ***Example 3***

21 With no builders' exclusion in place, construction of a warehouse with an active solar  
22 energy system was started by a builder in March 2010. Construction was 80 percent  
23 complete on January 1, 2011, at which time the value of the construction in progress  
24 would have been enrolled. The portion of the active solar energy system that was  
25 installed would have been excluded. Completion of construction occurred in February  
26 2011, at which time the value of the new construction would have been enrolled,  
27 resulting in a supplemental assessment. The owner-builder would receive the solar energy  
28 system exclusion. Upon subsequent sale, the initial purchaser *would not* be eligible for the  
29 new construction exclusion for the solar energy system, since the owner-builder already  
30 received the benefit of the new construction exclusion.

## 31 **LEASES**

### 32 **LEASED EQUIPMENT**

33 For active solar energy systems that are leased to the property owner for a term of less than  
34 35 years, ownership of the system remains with the leasing company for the duration of the  
35 lease. Therefore, the system is excluded from the definition of new construction at the time of  
36 installation, and continues to be excluded from assessment until a change in ownership of the  
37 system occurs.

1 At the end of the lease term, some options for the lessee, and the effect of those options on the  
2 status of the active solar energy system, include:

- 3 • Extension of the lease for an additional period, resulting in no change in the assessment  
4 status of the system.
- 5 • Purchase of the system by the lessee, which terminates the new construction exclusion  
6 and makes the system assessable.
- 7 • Removal of the system, resulting in no change to the assessed value of the "host"  
8 property.

9 In the case of a pending sale of the host property, some options for the property owner prior to  
10 sale include:

- 11 • Lease buyout, which terminates the new construction exclusion and makes the system  
12 subject to assessment.
- 13 • Transfer of the lease to the purchaser, upon approval of the leasing company, resulting in  
14 no change in the assessment status of the system.

## 15 **LEASED LAND OR OTHER LEASED REAL PROPERTY**

16 Systems that are installed on leased land or leased building rooftops are also subject to the new  
17 construction exclusion, and are not assessable until a change in ownership of the system occurs.

18 When the lease involves government-owned land or buildings, a taxable possessory interest in  
19 the real property is created. Although the active solar energy system is not assessable, the  
20 possessory interest must be valued and assessed.

## 21 **RECENT LEGISLATION**

22 The most recent amendment to section 73 was chaptered June 28, 2011.<sup>14</sup> It added legislative  
23 intent language declaring that section 73 was enacted to encourage the building of active solar  
24 energy systems. It also declared the following:

25 That newly constructed active solar energy systems are often sold or transferred in sale-  
26 leaseback arrangements, partnership flip structures, or other transactions to purchasers  
27 that may also be eligible for federal tax benefits. As long as the active solar energy  
28 system is newly constructed or added and another taxpayer has not received an exclusion  
29 for the same active solar energy system, it is the intent of the Legislature that the  
30 purchaser of the active solar energy system in a transaction such as that described above  
31 receive an exclusion.

32 Thus, this legislation ensures that newly constructed active solar energy systems transferred  
33 using sale-leaseback and similar arrangements that require the solar energy system itself, but not

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<sup>14</sup> Stats. 2011, ch 3 (Assembly Bill 1x 15), in effect June 28, 2011.

1 the real estate on which it is situated, to be sold or transferred to a third party, will continue to  
2 receive the property tax exclusion.

3 Because the active solar energy system new construction exclusion was for the purpose of  
4 encouraging the building of active solar energy systems, and states explicitly that it covers "other  
5 transactions," the new construction exclusion should also be applied to active solar energy  
6 systems that are transferred during construction. The exclusion is not lost on transfer until a  
7 taxpayer receives the exclusion on a system on which construction has been completed.  
8 Additionally, construction in progress on the lien date would also qualify for the exclusion.

9 The legislative intent also declared that:

10 Newly constructed active solar energy systems that are constructed as freestanding or  
11 parking lot canopies, or that are constructed as installations on existing buildings qualify  
12 for the exclusion from classification as newly constructed under Section 73 of the  
13 Revenue and Taxation Code, including active solar energy systems sold in sale-leaseback  
14 transactions.

15 The legislation further clarified that the new construction exclusion remains in effect only until  
16 there is a subsequent change in ownership, and that systems qualifying for an exclusion prior to  
17 January 1, 2017 will continue to be excluded on and after that date until there is a change in  
18 ownership.

## 19 **LEGAL ENTITIES**

20 Active solar energy systems owned by a legal entity, such as a corporation, limited liability  
21 company (LLC), or partnership, are also excluded from the definition of new construction, and  
22 are excluded from assessment.

23 There are two types of transfers involving legal entities that may trigger a change in ownership  
24 of real property:

- 25 • A transfer of real property between an individual and an entity or between entities; and
- 26 • A transfer of an interest in an entity.

27 A change in ownership would terminate the new construction exclusion for the active solar  
28 energy system.

## 29 **TRANSFER OF REAL PROPERTY OF A LEGAL ENTITY**

30 Generally, a transfer of any interest in real property from an individual to a legal entity, from a  
31 legal entity to an individual, or between legal entities is a change in ownership.<sup>15</sup>

32 Any transfer of real property between an individual or individuals and a legal entity, or between  
33 legal entities, that results solely in a change in the method of holding title to the real property,

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<sup>15</sup> Section 61, subdivision (j); Rule 462.180.

1 and in which the proportional ownership interests of the transferors and transferees in each and  
2 every piece of real property transferred remain the same after the transfer, is excluded from a  
3 change in ownership.<sup>16</sup> This is commonly known as the *proportional ownership interest transfer*  
4 *exclusion*. If the transaction is subject to this exclusion, the active solar energy system remains  
5 excluded from assessment.

6 If the ownership interests are not identical after the transfer, then the entire real property  
7 transferred is subject to reassessment, not only the disproportionate interest.<sup>17</sup>

## 8 **TRANSFER OF INTEREST IN A LEGAL ENTITY**

9 Generally, transfers of interests in legal entities do not constitute changes in ownership of the  
10 real property owned by those legal entities.<sup>18</sup> Thus, purchases or transfers of corporate voting  
11 stock, partnership ownership interests, LLC membership interests, or ownership interests in other  
12 legal entities are not changes in ownership of the real property owned by the legal entity.

13 However, there are two exceptions to this general rule. First, when a *change in control* of the  
14 legal entity occurs, all real property owned by the entity will be reassessed.<sup>19</sup> Second, when a  
15 legal entity's *original co-owners*<sup>20</sup> cumulatively transfer more than 50 percent of their ownership  
16 interests in that legal entity, then the real property previously excluded from change in  
17 ownership, including the active solar energy system, will be reassessed.

## 18 **DECLINE IN VALUE**

19 A county assessor must appraise new construction at its full cash value on the date the  
20 construction is completed.<sup>21</sup> *Full cash value* is defined as the amount of cash or its equivalent  
21 that property would bring *if exposed for sale* in the open market under conditions in which  
22 neither buyer nor seller could take advantage of the exigencies of the other.<sup>22</sup>

23 Section 51 requires that the county assessor annually enroll the lesser of a property's factored  
24 base year value or its full cash value (market value) as of the lien date. Since an estimate of full  
25 cash value for decline-in-value purposes is made as if the property was exposed for sale, the full  
26 cash value (for comparison purposes only) should not be reduced by the value of any excluded  
27 new construction.

### 28 ***Example 4***

29 A property owner installs a qualified active solar energy system for \$500,000, and the  
30 system is appropriately excluded from assessment as "new construction." The following

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<sup>16</sup> Section 62, subdivision (a)(2). Reorganizations of affiliated corporations are governed by section 64, subdivision (b).

<sup>17</sup> Rule 462.180, subdivision (d)(4), *Change in Ownership – Legal Entities*.

<sup>18</sup> Section 64, subdivision (a).

<sup>19</sup> Section 64, subdivision (c)(1).

<sup>20</sup> Section 64, subdivision (d).

<sup>21</sup> Section 75.10.

<sup>22</sup> Section 110.

1 January 1 lien date, the county assessor reviews the property for a possible decline in  
2 value (Proposition 8). When comparing the factored base year value with the current  
3 market value, the county assessor would include the current market value of the active  
4 solar system in the current market value for the entire property. The current market value  
5 for the entire property would be compared to the enrolled factored base year value, and  
6 the lesser of the two values enrolled.

7 This comparison is for a decline-in-value review only, and does not affect the enrolled  
8 factored base year value.

9

## TYPES OF USES FOR ACTIVE SOLAR ENERGY SYSTEMS

Active solar energy systems may be installed in several application environments, including but not limited to:

- Residential
- Commercial or industrial
- Government
- Agricultural
- Property of exempt organizations

### ELECTRICAL GENERATING SYSTEMS—RESIDENTIAL

Figure 1 depicts the components of a typical solar electrical generating system. Depending on the application, systems may or may not contain battery banks.

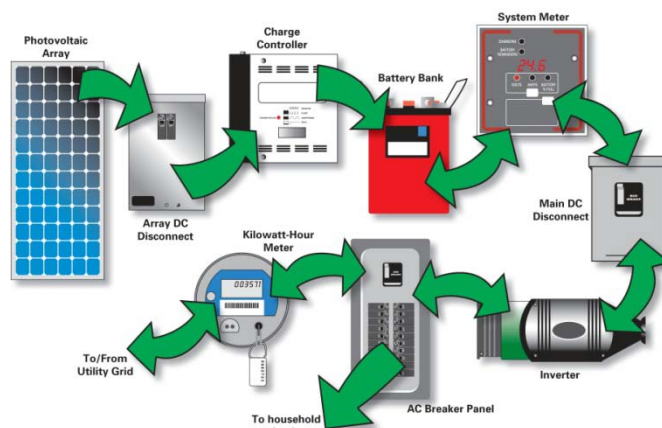


Figure 1. Typical Grid-Connected PV System<sup>23</sup>

Many newer residential developments include energy efficient building enhancements. A solar electric system is often available as either a standard or optional feature. The majority of these types of systems do not have the battery backup shown in Figure 1.

Any excess electricity generated by the system during the day is provided to the grid, effectively selling it to the utility. The power output capability of this type of system is typically in the range of 2 – 5 kW.<sup>24</sup>

<sup>23</sup> Reprinted with permission. © 2009 Home Power, Inc., [www.homepower.com](http://www.homepower.com).

<sup>24</sup> 1 kW (kilowatt) equals 1,000 watts.

1 The typical system included with residential new construction may include component parts such  
2 as solar tiles rather than panels. When added to an existing residential structure, the system  
3 typically uses solar panels.

4 **ELECTRICAL GENERATING SYSTEMS—COMMERCIAL OR INDUSTRIAL**

5 Systems designed for commercial or industrial environments are significantly larger than the  
6 residential systems. They are designed to provide a significant amount of the daily energy  
7 requirement of the building upon which they are installed. The power output of these systems  
8 range from several hundred kW to over a megawatt.<sup>25</sup>

9 **THERMAL SYSTEMS—PASSIVE**

10 Buildings may be designed to optimize the collection of solar energy for heating, ventilation, and  
11 daytime lighting. These structures are categorized as *passive solar* and are not excluded from the  
12 definition of new construction by section 73.

13 Passive systems are inherent to the structural design and site of the building and contain no  
14 active components.

15 Figure 2 provides an example of a passive solar residential structure.



21

22 Figure 2. Passive Solar Architecture<sup>26</sup>

23 **THERMAL SYSTEMS—ACTIVE**

24 Active thermal systems are found in many applications, including but not limited to:

- 25
- 26
- 27
- 28
- Water heating (domestic, commercial, and industrial)
  - Space heating and cooling and process heating
  - Electricity generating facilities
  - Pool and spa heating<sup>27</sup>

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<sup>25</sup> A megawatt is equal to one million watts.

<sup>26</sup> All photographs in this document are courtesy of DOE/NREL.

<sup>27</sup> Pool, spa, and hot tub heaters are not eligible for the new construction exclusion.



1 **SOLAR WATER HEATING**

2 Although not as widely implemented as solar electric generation systems, the installed base of  
3 solar water heating systems will likely grow in the next few years.

4 The *Solar Water Heating and Efficiency Act of 2007*<sup>28</sup> is intended to facilitate the installation of  
5 at least 200,000 solar water heating systems on homes, businesses, and government buildings  
6 throughout California by 2017. This program is to be coordinated with the Energy Commission's  
7 New Solar Homes Partnership to achieve the goal of building "zero-energy" homes.

8 The photographs in Figure 3 show typical water heating system solar collectors.



15

16 Figure 3. Medium and Small-Scale Solar Water Heating—Roof Mount

17 As previously noted, dual-use equipment, such as ducts and hot water tanks used by both  
18 auxiliary equipment and solar energy equipment, is considered active solar energy system  
19 property only to the extent of 75 percent of its full cash value.

20 **SPACE CONDITIONING**

21 Several methods of using solar energy for space and process heating are in use today. Two  
22 websites provide a good overview of the different types of systems:

- 23
- The U.S. Department of Energy's Federal Energy Management Program at  
24 <http://www1.eere.energy.gov/femp/>; and
  - The U.S. Department of Energy's National Renewable Energy Laboratory at  
25 <http://www.nrel.gov/>.
- 26

27 One example of a space heating technology is depicted in Figure 4. The *transpired solar*  
28 *collector* is an effective and simple technique for pre-warming air for an industrial building. In  
29 the example, the perforated dark-colored collector is mounted to a south-facing wall. Air is  
30 drawn through the perforations, warmed by the collector, and distributed to ductwork by the  
31 ventilation fan. The outside air temperature can be increased significantly by this type of system.

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<sup>28</sup> Public Utilities Code sections 2860 through 2867.4; Stats. 2007, ch 536 (Assembly Bill 1470)

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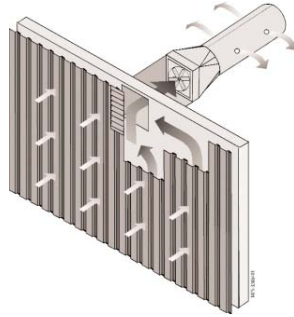


Figure 4. Transpired Solar Collector Diagram

**PROCESS HEATING**

Process heating, used in industrial environments, generally requires the development of much higher temperatures for the production of steam or high heat. Figure 5 shows a *parabolic trough* system, where a highly reflective parabolic surface concentrates sunlight upon a central liquid-carrying tube. Systems like this are capable of producing process heat and steam in the temperature range of 200° - 400°F.



Figure 5. Parabolic Trough Collector

# FREQUENTLY ASKED QUESTIONS AND ANSWERS

## *General Information*

- 1. Has the sunset date for the active solar energy system new construction exclusion been extended?**

Yes, effective September 28, 2008, the sunset date for the active solar energy system new construction exclusion was extended through the 2015-16 fiscal year. The statute is now scheduled to sunset on January 1, 2017.

- 2. How does this new construction exclusion for solar energy systems work?**

Generally, when something of value is physically added to real property, the addition is assessed at current market value and this value is added to the existing base year value of the real property. When an active solar energy system is installed, it is not assessed, meaning that the existing assessment will not increase.

## *Leases and Ownership*

- 3. A company has contracted with a local government agency to lease the roof of the agency's building, install an active solar electrical generating system, and sell the electricity to the agency. Is the solar energy system assessable?**

No. The system is excluded from the definition of new construction and is, therefore, not assessable. However, a taxable possessory interest in the roof area may have been created when the lease was executed.

- 4. A homeowner installed an active solar energy system last year and financed it with a capital lease. The leasing company was advised to report the system as machinery and equipment on their annual 571-L Business Property Statement, and the homeowner subsequently received a tax bill. Is this correct?**

No. The system is excluded whether it is leased or owned. The real property appraiser in the county assessor's office should coordinate information with the business property auditor-appraiser when a permit for construction is issued.

- 5. If an active solar energy system is installed on an existing structure (store, shopping mall, parking structure, office building, etc.) and the ownership of the active solar energy system is vested in a multi-member LLC, is the new construction exclusion still applicable for this installation, or is the active solar energy system considered to be assessable business property to the LLC? Does it matter if the active solar energy system will be powering general business occupancy requirements or specialized fixtures?**

1 The active solar energy system would be classified as a fixture (real property) if it  
2 meets the tests of Rule 122.5, and would be excluded from the definition of new  
3 construction if it meets the definitions of section 73. Therefore, it would not be  
4 considered assessable business property. Ownership of the system is not a condition of  
5 exclusion. Further, there are no specific use requirements for the energy produced by  
6 the system.

7 ***Residency Requirement***

8 **6. The corporate headquarters of a company is in New Jersey, but the corporation**  
9 **owns a building in Los Angeles upon which was installed an active solar energy**  
10 **system. Is the new construction exclusion limited to California residents or**  
11 **entities?**

12 No. There are no residency provisions for the owner of a solar energy system.

13 ***Property of Exempt Organizations***

14 **7. A religious organization has leased a portion of its property to a for-profit entity**  
15 **for the installation of an active solar energy system. What is the status of their**  
16 **property tax exemption(s)?**

17 The portion of the religious organization's property that is leased for the solar energy  
18 system would not qualify for the church, religious, or welfare exemptions. However,  
19 disqualification of the exemption for the portion of the property leased for the solar energy  
20 system does not, by itself, jeopardize the organization's qualification for exemption on the  
21 remaining portions of the property that are used exclusively for religious worship (church  
22 exemption), for religious worship and the operation of a school of less than collegiate grade  
23 (religious exemption), or for religious purposes (welfare exemption). The active solar  
24 energy exclusion would apply to the system, and it would not be assessable.

25 ***Property Type***

26 **8. Does the new construction exclusion for active solar energy systems apply only to**  
27 **residential buildings?**

28 No. The exclusion is not restricted to residential buildings.

29 ***Initial Purchaser***

30 **9. In February 2008, I purchased a recently constructed home that had an integrated**  
31 **solar energy system. The completion of construction was July 3, 2007. Can I claim**  
32 **an exclusion as the initial purchaser?**

1 No. The provisions of the new construction exclusion to the initial purchaser for a solar  
2 energy system are *prospective*, and only qualifying improvements completed on or after  
3 January 1, 2008 are eligible for the exclusion.

4 **10. If a builder is fully assessed for a newly constructed home on the lien date**  
5 **(January 1) following the date of completion of new construction and the initial**  
6 **purchaser buys the property after the lien date, is the initial purchaser eligible for**  
7 **the active solar energy new construction exclusion?**

8 No. Since the builder was assessed on the lien date following the date of completion of  
9 the new construction, the subsequent purchaser is not eligible for the solar energy  
10 system new construction exclusion.

11 Example: A home with an active solar energy system is completed on  
12 November 15, 2009, and the new construction of the home is 100 percent complete on  
13 the lien date for purposes of determining the assessed value of the property for the  
14 2010-2011 regular roll. If the home sold on or before December 31, 2009, the initial  
15 purchaser *would* be eligible for the new construction exclusion for the solar energy  
16 system. If the home did not sell until after the lien date, for example January 2, 2010,  
17 the initial purchaser *would not* be eligible for the new construction exclusion for the  
18 solar energy system because the builder would receive the exclusion as of the lien date.

19 ***Filing***

20 **11. Does a property owner have to file an application to get this exclusion?**

21 A property owner who adds an active solar energy system to an existing structure does  
22 not have to file for the exclusion. The exclusion should be automatically granted when  
23 the county assessor receives a copy of the building permit.

24 However, if a developer installs an active solar energy system while constructing a new  
25 building, the initial purchaser of that building may receive the exclusion if (1) the  
26 building was completed on or after January 1, 2008, (2) the developer/builder did not  
27 receive the exclusion, and (3) the purchaser files a form with the county assessor. The  
28 form is called the *Initial Purchaser Claim for Solar Energy System New Construction*  
29 *Exclusion* and is available from the assessor of the county where the property is located.  
30 After the county assessor receives this form, the new base year value of the building  
31 may be reduced by the value of the active solar energy system, less any rebates or tax  
32 credits received. The builder will be able to provide the value of the system and any  
33 rebates or tax credits that they received.