



STATE BOARD OF EQUALIZATION

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January 19, 2007

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RAMON J. HIRSIG  
Executive Director

Dear Interested Party:

Enclosed are the Agenda, Issue Paper, and Revenue Estimate for the February 1, 2007, Business Taxes Committee (BTC) meeting. This meeting will address the proposed amendments to Regulation 1521, *Construction Contractors*, regarding the classification of solar panels as materials or fixtures. Please note that the BTC meeting date of January 31, 2007, has been changed to February 1, 2007.

If you are interested in other topics to be considered by the Business Taxes Committee, you may refer to the "Business Taxes Committee" page on the Board's Internet web site (<http://www.boe.ca.gov/meetings/btcommittee.htm>) for copies of Committee discussion or issue papers, minutes, a procedures manual, and a materials preparation and review schedule arranged according to subject matter and meeting date.

Thank you for your input on these issues and I look forward to seeing you at the Business Taxes Committee meeting at **9:30 a.m.** on **February 1, 2007**, in Room 121 at the address shown above.

Sincerely,

Randie L. Henry, Deputy Director  
Sales and Use Tax Department

RLH:llw

Enclosures

cc: (all with enclosures)

Honorable Betty T. Yee, Interim Chairwoman, First District (MIC 71)  
Honorable Bill Leonard, Interim Vice-Chair, Second District (MIC 78)  
Honorable Michelle Steel, Member, Third District  
Honorable Judy Chu, Ph.D., Member, Fourth District



Honorable John Chiang, State Controller, C/O Ms. Marcy Jo Mandel (MIC 73 and e-mail)  
Mr. Alan LoFaso, Board Member's Office, First District (via e-mail)  
Mr. Mark Ibele, Board Member's Office, First District (via e-mail)  
Ms. Mira Tonis, Board Member's Office, First District (via e-mail)  
Ms. Margaret Pennington, Board Member's Office, Second District (via e-mail)  
Mr. Lee Williams, Board Member's Office, Second District (MIC 78 and e-mail)  
Mr. Erik Caldwell, Board Member's Office, Third District (via e-mail)  
Mr. Neil Shah, Board Member's Office, Third District (via e-mail)  
Mr. Romeo Vinzon, Board Member's Office, Third District (via e-mail)  
Mr. Steve Shea, Board Member's Office, Fourth District (via e-mail)  
Mr. Chris Schutz, Board Member's Office, Fourth District (MIC 72)  
Ms. Melanie Darling, State Controller's Office (via e-mail)  
Mr. Ramon J. Hirsig (MIC 73)  
Ms. Kristine Cazadd (MIC 83)  
Mr. Robert Lambert (MIC 82)  
Mr. Randy Ferris (MIC 82)  
Mr. Robert Tucker (MIC 82)  
Ms. Sharon Jarvis (MIC 82)  
Ms. Janice Thurston (via e-mail)  
Ms. Jean Ogrod (via e-mail)  
Mr. Jeff Vest (via e-mail)  
Mr. David Levine (MIC 85)  
Mr. Steve Ryan (MIC 85)  
Mr. Rey Obligacion (via e-mail)  
Mr. Todd Gilman (MIC 70)  
Mr. Dave Hayes (MIC 67)  
Ms. Freda Orendt (via e-mail)  
Mr. Stephen Rudd (via e-mail)  
Mr. Joseph Young (via e-mail)  
Mr. Jeffrey L. McGuire (MIC 92 and via e-mail)  
Mr. Vic Anderson (MIC 44 and via e-mail)  
Mr. Geoffrey E. Lyle (MIC 50)  
Ms. Leila Khabbaz (MIC 50)  
Ms. Lynn Whitaker (MIC 50)  
Ms. Lynda Cardwell (MIC 50)



**AGENDA — February 1, 2007, Business Taxes Committee Meeting**  
**Regulation 1521, Construction Contractors**

Action Item	Regulatory Language Proposed by Staff	Regulatory Language Proposed by Industry
<b>Action 1 -</b>		
<p><b>Proposed new subdivision (c)(13)</b></p>	<p><b>(c) PARTICULAR APPLICATIONS.</b></p> <p><u>(13) SOLAR CELLS, SOLAR PANELS AND SOLAR MODULES. A contract to furnish and install a solar energy system onto a structure or realty is a construction contract which involves furnishing and installing both materials and fixtures. A solar energy system is defined as any solar collector or other solar energy device that provides for the collection and distribution of solar energy and, where applicable, the storage of solar energy.</u></p> <p><u>(A) Materials. Photovoltaic (PV) cells, solar panels and solar modules, including both solar thermal panels and solar electric PV panels, are considered materials when they function in the same manner as other materials such as roofing, windows, or walls and are incorporated into, attached to, or affixed to real property and, as such, lose their identity to become an integral and inseparable part of the real property. Examples of these types of solar panels include, but are not limited to, PV integrated skylights, PV panels used to function as a roof on a parking lot shade structure, and PV integrated roofing tiles.</u></p> <p><u>Other materials include, but are not limited to, wiring, wiring harnesses, strapping, piping, and mounting systems.</u></p> <p><u>(B) Fixtures. Photovoltaic (PV) cells, solar panels and solar modules, including both solar thermal panels and solar electric PV panels, are</u></p>	<p><b>(c) PARTICULAR APPLICATIONS.</b></p> <p><u>(13) SOLAR CELLS, SOLAR PANELS AND SOLAR MODULES. A contract to furnish and install a solar energy system onto a structure or realty is a construction contract which involves furnishing and installing both materials and fixtures. A solar energy system is defined as any solar collector or other solar energy device that provides for the collection and distribution of solar energy and, where applicable, the storage of solar energy.</u></p> <p><u>(A) Materials. Photovoltaic (PV) cells, solar panels and solar modules, including both solar thermal panels and solar electric PV panels, are considered materials when furnished and installed in the performance of a construction contract to install a solar energy system. Photovoltaic (PV) cells, solar panels and solar modules, including both solar thermal and solar electric PV panels that are held in place by their own size, weight and mass, are deemed to be constructively affixed to the realty when it is the intent of the parties that the solar panels are a permanent addition to the realty and as such are materials. Other materials include, but are not limited to, wiring, wiring harnesses, strapping, piping, and mounting systems.</u></p> <p><u>(B) Fixtures. Items included in the solar energy system which are considered fixtures include, but are not limited to, terminal boxes, DC and AC</u></p>

**AGENDA — February 1, 2007, Business Taxes Committee Meeting**  
**Regulation 1521, Construction Contractors**

Action Item	Regulatory Language Proposed by Staff	Regulatory Language Proposed by Industry
<p>Amend <i>Appendix A</i> of Regulation 1521 to add specific products to the listing of materials.</p>	<p><u>considered fixtures when they are accessory to a building or other structure and do not lose their identity as accessories when installed. Examples of these types of solar panels include, but are not limited to, rack mounted solar panels installed on roofs and solar panels used in free-standing solar arrays.</u></p> <p><u>Other items included in the solar energy system which are considered fixtures include, but are not limited to, terminal boxes, DC and AC disconnect boxes, inverters, transformers, batteries and pumps.</u></p> <p><u>Contractors furnishing and installing solar energy systems that include fixtures are required to hold seller's permits as described in subdivision (b)(4).</u></p> <p><i>Appendix A.</i> The following is a list of typical items regarded as materials:</p> <p><u>Photovoltaic (solar) integrated roofing tiles and skylights</u></p>	<p><u>Disconnect boxes, inverters, transformers, batteries and pumps.</u></p> <p><u>Contractors furnishing and installing solar energy systems that include fixtures are required to hold seller's permits as described in subdivision (b)(4).</u></p> <p><i>Appendix A.</i> The following is a list of typical items regarded as materials:</p> <p><u>Photovoltaic (PV) cells</u></p> <p><u>Solar panels (solar thermal and solar electric PV panels)</u></p>

Issue Paper Number 06-008



- Board Meeting
- Business Taxes Committee
- Customer Services and Administrative Efficiency Committee
- Legislative Committee
- Property Tax Committee
- Other

## Proposed revisions to Regulation 1521, Construction Contractors, regarding photovoltaic cells and solar panels

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### I. Issue

Should Regulation 1521, *Construction Contractors*, be amended to provide that solar panels and photovoltaic cells are “materials” when they are furnished and installed as part of a construction contract for a solar energy system?

### II. Alternative 1 - Staff Recommendation

Staff recommends adding guidance in Regulation 1521 to explain the application of tax to the sale and installation of solar panels. Staff believes that when solar panels are combined with other tangible personal property and installed as roofing shingles, skylights, wall panels, or windows, the panels lose their identity and become an integral and inseparable part of the realty. These solar panels should be considered materials. Other types of solar panels, however, are accessory to a building or structure and do not lose their identity as accessories when installed. Staff currently considers these solar panels to be fixtures, and believes they should remain classified as fixtures.

Staff’s proposed revisions to Regulation 1521, subdivision (c) and Appendix A are attached as Exhibit 2.

### III. Alternative 2 – Industry Recommendation

The California Solar Energy Industries Association (industry) recommends amending Regulation 1521 to classify all solar panels and photovoltaic (PV) cells as materials. Industry believes that considering how the panels are affixed, their utility to the structure, and the general intention that the panels will become a permanent improvement to real property, all solar panels and PV cells become integral and inseparable parts of real property and should be treated as materials.

Industry’s proposed revisions to Regulation 1521, subdivision (c) and Appendix A are attached as Exhibit 3.

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#### **IV. Background**

In March 2006, industry filed a petition with the Board of Equalization (Board) to amend Regulation 1521 to provide that solar panels and PV cells are “materials” when furnished and installed pursuant to a construction contract. The Board heard the petition at its May 17, 2006, meeting and referred the issue to the Business Taxes Committee (BTC) to work with interested parties.

Interested parties meetings were held on August 22, 2006, and October 5, 2006, to discuss the solar panel issue. Currently, Regulation 1521 does not specifically identify how tax applies to contracts to furnish and install solar energy systems. Instead, the general rules established by Regulation 1521 explain how tax applies to contracts to furnish and install solar energy systems, just as these general rules explain how tax applies to other construction contracts. Although staff agrees that Regulation 1521 should be amended to provide clarification, staff does not agree that all solar panels meet the definition of materials. Industry believes that classifying all panels as materials would provide a bright line for contractors to follow and would allow for future changes and advancements in the solar industry. The BTC is scheduled to discuss this issue at its meeting on February 1, 2007.

**Construction contracts in general.** Regulation 1521 makes a distinction between materials, fixtures, and machinery and equipment. “Materials” include construction materials and components, and other tangible personal property incorporated into, attached to, or affixed to real property by contractors in the performance of a construction contract and which, when combined with other tangible personal property, lose their identity and become an integral and inseparable part of the real property. Examples of materials include linoleum, concrete, bricks, doors, insulation, wallboard, windows, and roofing shingles. In general, construction contractors are considered consumers of materials and tax applies to the sale of materials to the contractor or to the use of the materials by the contractor.

“Fixtures” include items that are accessory to a building or other structure and do not lose their identity as accessories when installed. Examples of fixtures include air conditioning units, burglar and fire alarms, heating units, prefabricated cabinets, lighting fixtures, electric generators, and plumbing fixtures. Except for construction contracts with the United States government, construction contractors are considered retailers of fixtures and tax applies to the contractor’s separately stated selling price of the fixture. If no selling price is stated in the contract, tax is due on the “cost price” of the fixture to the contractor. For fixtures acquired in a completed condition, “cost price” is deemed the contractor’s purchase price. For contractors that self-manufacture the fixtures they install, “cost price” is defined by Regulation 1521 as:

- The price at which a similar fixture is sold by the manufacturer/contractor to other contractors ready for installation, or
- If there are no similar fixtures, “cost price” is the amount stated in the price lists, bid sheets, or other records of the manufacturer/contractor, or
- If “cost price” cannot be established from the records, “cost price” is the total of the cost of materials, direct labor, specific factory costs attributable to the fixture, any manufacturer’s excise tax, a pro-rata share of overhead attributable to the manufacture of the fixture, and a reasonable profit from manufacturing operations.

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Jobsite fabrication labor, such as the labor to assemble the fixture at the home or business prior to installation, must also be included in the “cost price” of the fixture.

Contractors are consumers of fixtures furnished and installed in the performance of a construction contract for the United States government.

“Machinery and equipment” is defined as property intended to be used in the production, manufacturing or processing of tangible personal property, or in the performance of services, or for other purposes not essential to the fixed works, building, or structure itself, but which property incidentally may, on account of its nature, be attached to the realty without losing its identity as a particular piece of machinery or equipment and, if attached, is readily removable without damage to the unit or to the realty. Construction contractors are retailers of machinery and equipment.

**Current classification of solar panels.** Solar energy systems convert energy from the sun into a usable form, either absorbing its heat to heat water or collecting light to produce electricity. Photovoltaic (PV) cells are devices that produce electricity from sunlight. In most applications, groups of PV cells are laid side-by-side and encapsulated in a protective laminate to form a PV module. Modules are combined to create PV solar panels that are installed as part of solar energy systems. Solar energy systems may also have batteries, charge controllers, and inverters which convert the direct current generated by the solar system into an alternating current, the type of electricity required to run most electric devices.

Staff has previously advised taxpayers that rack mounted solar panels and solar panels used in most free-standing solar arrays are fixtures (see exception below for panels that become carport roofs). Staff considers these solar panels to be accessory to a structure and do not lose their identity as accessories when installed. Photos of panels that are considered fixtures by staff are attached as Exhibit 4.

In contrast, when solar panels not only collect solar energy, but also function as roofing tiles or shingles, staff has advised taxpayers that the panels are considered materials. Specifically, staff has advised taxpayers that PV integrated roofing tiles that look like composition or ceramic roofing shingles are materials. Staff has also advised taxpayers that solar panels installed in free-standing parking lot shade structures are materials because the solar panels function in the same manner as the roof of a carport. Following industry’s presentation at the October 5, 2006, interested parties meeting, staff has also concluded that PV integrated interlocking roof tiles designed for flat roofs are materials. Photos of panels that are considered materials by staff are attached as Exhibit 5.

## **V. Discussion**

Staff and industry disagree about the classification of rack mounted solar panels and solar panels used in most free-standing solar arrays. Industry believes these panels meet the definition of materials provided in Regulation 1521, while staff believes these panels are more appropriately classified as fixtures.

**Classification of materials and fixtures.** The underlying issue is whether the solar panels in question become “integral and inseparable” parts of real property (i.e., materials) or are the panels “accessory” to the real property (i.e., fixtures). Industry and staff have looked to Regulation 1521 and to annotations<sup>1</sup>

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<sup>1</sup> Annotations published in the Business Taxes Law Guides are summaries of the conclusions reached in selected legal rulings of counsel. “Legal ruling of counsel” means a legal opinion written and signed by the Chief Counsel or an attorney who is the Chief

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for guidance. In their November 17, 2006, letter, (see Exhibit 7) industry noted the following Sales and Use Tax Annotations (hereafter Annotations) in support of their position that rack mounted solar panels become integral and inseparable to the realty.

**190.1860 Koolshade Screens.** Koolshade screens are of a nature that they become so architecturally and functionally integrated with the building to which they are attached that they may be considered “materials” rather than “fixtures.” The function of Koolshade screens is to minimize direct solar radiation into the interior of buildings. The screens may be set up as part of a window closure or may be offset from the building by outriggers or other means. Window screens are classified as “materials”. 5/26/64.

**190.1220 Aluminum Louver.** An aluminum louver consisting of slats which are firmly attached to a supporting framework and when installed are not adjustable, but become almost a part of the wall of the building, is not a fixture and measure of tax is cost of “materials.” 7/13/53.

Industry notes that in both of these examples the property involved consists of slats or panels attached to a framework or racking structure, which attaches to a building wall or surface. They believe that rack mounted solar panels are analogous to these items because they are attached to a framework or racking structure with no moving parts. When installed, industry maintains that the solar panels become part of the building shell, typically the roof.

Staff disagrees with industry’s analysis of these annotations. With regard to Annotation 190.1860 (5/26/64), Koolshade screens are a type of window screen and window screens are specifically listed in Appendix A of Regulation 1521 as materials. Staff does not consider the fact that Koolshade screens are mounted in a frame to be determinative of classification since standard window screens consist of screen mesh mounted in a metal frame. Rather, the critical fact is whether the property is integral and inseparable from the real property or is accessory to the building or structure. In staff’s view, the important point of the annotation is that regardless of how the Koolshades were mounted – as part of the window or by outriggers – the Koolshades still functioned as window screens. Window screens are regarded as materials pursuant to Regulation 1521, and since the Koolshade screens are integrated into the building, much like window screens, they too are regarded as materials.

With regard to Annotation 190.1220 (7/13/53), a photo of aluminum louvers that function as the wall of a building is shown in Exhibit 6. Although the aluminum slats are attached to a supporting framework, they become part of the building wall. Staff believes Annotation 190.1220 (7/13/53) supports the position that, when solar panels are used as a wall of a building, the panels qualify as materials. For example, staff would consider PV integrated glass panels that are used as glass curtain walls on office buildings to be materials. Staff does not believe, however, that the louvers are analogous to rack mounted solar panels, because the louvers are not installed on top of the wall; they are installed in place of the wall.

It is staff’s opinion that Annotations 190.1869 and 190.1220 are consistent with and support the position that when solar panels function like other property classified as materials, the panels should be considered materials. In other words, a roofing shingle which collects sunlight to heat water or generate electricity remains a roofing shingle and should be considered a material. These types of solar panels

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Counsel’s designee, addressing a specific tax application inquiry from a taxpayer or taxpayer representative, a local government, or Board of Equalization staff.

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are integrated into the roof with other shingles and become an inseparable part of the roof. However, a solar panel that is attached to a metal rack and the metal rack is mounted on top of the roof is not integrated into the roof's structure. It may be affixed to the structure, but it remains accessory to the structure. Those panels are properly classified as fixtures. (See Exhibit 4.)

With respect to free-standing solar panel arrays (except for the parking lot shade structures noted in the Background section) staff believes the application of tax to solar panels installed on these structures are analogous to windmills described in Annotation 190.1165 (7/7/81).

Annotation 190.1165 (7/7/81) provides in part, that the components used in constructing the towers on site and the power lines are materials while the windmill head consisting of rotor, axel, gearbox, microprocessor control unit and electricity generator is a fixture.

A photo of free-standing solar panel arrays is included in Exhibit 4. Staff believes these solar panels are similar to windmills in that the solar panels are affixed to poles that are imbedded in the ground. Staff believes these solar panels are properly classified as fixtures.

**Property sold as an improvement to real property.** In its submission, industry cites *San Diego Trust & Savings Bank et al. v. County of San Diego et al.* (1940) 16 Cal. 2d 142 (hereafter *San Diego Trust*) as support for its position that rack-mounted solar panels are not fixtures under California law.

Industry quotes the three-pronged test used by the court to ascertain whether property constitutes fixtures under Property Tax Law. As stated in *San Diego Trust*:

“...we must apply the three tests which have often been used by this court in determining whether or not an article is a fixture – namely: (1) the manner of its annexation; (2) its adaptability to the use and purpose for which the realty is used; and (3) the intention of the party making the annexation.”

In *San Diego Trust*, the court applied these three tests to a bank vault door and concluded that the vault door was a fixture and not personalty. Industry uses this analysis to reason that rack-mounted solar panels become integrated and inseparable from real property because the solar energy system is bolted onto roofing, serves a useful purpose related to the building, and is intended to be a permanent improvement to the building. Industry explains that rack-mounted systems are bolted to the underlying roof structure and then roofing materials cover the portions where the frame connects with the roof structure. Wiring extends from the panel and becomes part of the building's electrical system. Installing or removing the panels is significantly more complicated than that of typical fixtures in that it involves knowledge of structural construction, electrical wiring, plumbing, and roofing. Removal of the systems is costly and often damaging to the roof. Industry believes these factors are clear evidence of intent to permanently improve real property rather than intent to temporarily affix personal property. As such, industry states the rack-mounted solar panels should be treated as building materials, not fixtures.

Staff disagrees with industry's analysis, and believes industry has misunderstood the *San Diego Trust* case. The question presented in *San Diego Trust* was *not* whether the bank vault doors were fixtures or materials; it was whether the bank vault doors were real property (including improvements to real property) as opposed to personal property, under *Property Tax Law*. The court applied the three tests and determined that the bank vault doors were fixtures (i.e., improvements to real property) and not personalty (i.e., personal property). It did *not* address the question of whether the doors were fixtures or

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materials, *both* of which are considered improvements to real property under the *Sales and Use Tax Law*. The character of property may be viewed differently for purposes of sales tax and property tax. (C. R. Fedrick (1988) 204 Cal.App.3d 252, 263.) Accordingly, the test used in the *San Diego Trust* case should be applied to Sales and Use Tax Law when determining whether a contract is a construction contract to improve realty or merely a contract for the retail sale of tangible personal property; not as a test to distinguish materials from fixtures as those terms are used in Regulation 1521. Likewise, the other factors in the *San Diego Trust* analysis – the intent of permanence and the damage upon removal – are generally factors to be considered when determining if a contract is for the improvement of real property or a sale of tangible personal property. These factors were not considered in *San Diego Trust* to decide whether an item is a material or fixture, since the distinction was not an issue in that case.

Staff agrees that rack-mounted solar panels meet the requirements of the three-prong test and are intended to be improvements to real property rather than personalty. Under the Sales and Use Tax Law if the end result of the installation of property is an improvement to realty (i.e., the property becomes a part of the real property), then the property installed constitutes either materials or fixtures. However, staff believes these rack-mounted solar panels are fixtures and not materials. The definitions of materials and fixtures in Regulation 1521 provide the information necessary to determine whether the panels are materials or fixtures. If the rack-mounted panels are incorporated into, attached to or affixed to the real property so that they are combined with other tangible personal property and lose their identity to become an integral and inseparable part of the real property, the panels are materials. (Reg. 1521, subd. (a)(4).) On the other hand, if the rack-mounted panels are an accessory to the real property and do not lose their identity as an accessory once installed, they are fixtures. (Reg. 1521, subd. (a)(5).) Here, as may be seen in the photographs attached as exhibits, the rack-mounted panels retain their identity as solar panels and are an accessory to the building, whereas other items, e.g., PV integrated roofing tiles, lose their identity and combine with other property to become an integral and inseparable part of the real property, i.e., of the roof.

Industry cites Annotation 190.2334 (5/11/62; 6/27/62), as an example of classification by the Board of items as fixtures if they can be installed or removed without damage and as materials if they cannot.

190.2334 **Walk-In Cooler**. A manufacturer states that the walk-in coolers are prefabricated at its plant and assembled as a prefabricated unit at the job site. They are fastened to the floor via the use of a ram set (trade name) gun using ram set fasteners, and to the walls via lag bolts or ram set fasteners. The walk-in cooler does not lose its identity as a walk-in cooler and may be removed (with a considerable amount of time and effort) and reinstalled at other locations.

Walk-in coolers are regarded as “materials” in those instances where they are affixed to and become an integral part of the real property. If the job merely entails fastening a self-contained unit to realty which does not lose its identity and can be removed without damage to realty, the walk-in cooler in this instance would properly be classified as a fixture. In the latter instance, tax would be due on the sales price of the material plus the fabrication labor involved prior to installation. 5/11/62; 6/27/62.

However, staff believes that, as provided in the annotation above, the underlying question remains whether the property loses its identity and becomes an integral and inseparable part of the realty.

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Industry also points out an annotation on prefabricated blackboards as another example of property where the method of attachment and the risk of damage to the realty determined the classification as a material or fixture. Annotation 190.1280 (1/11/50) provides:

190.1280 **Blackboards** and bulletin boards built into and becoming an integral part of wall are “materials.” Prefabricated blackboards and bulletin boards attached to wall as unit by screws or nails are “fixtures.” 1/11/50.

Once again, staff believes this annotation illustrates staff’s position. If a PV-integrated roofing shingle is built into a roof (like the blackboard is built into the wall), the shingle is considered a material even though it is also a solar panel. On the other hand, if a solar panel is attached to a metal rack and the metal rack is bolted on top of the roof (much like a prefabricated blackboard is attached to a wall by screws) the solar panel is a fixture.

### Consequences of Classifying All Solar Panels as Materials

**Tax would be due at time of purchase.** If solar panels are classified as materials, solar energy system contractors who install those panels under lump-sum contracts would be considered the consumers of those panels and would be required to pay sales tax reimbursement or use tax measured by the cost of the panels at the time of purchase by the contractor. In the Second Discussion Paper, staff noted that when the on-premise electric sign issue was under discussion by the Business Taxes Committee in 1999, the proposal to classify the signs as materials rather than fixtures would have created an undesired cash flow concern for many contractors in the sign industry. At the second interested party meeting on solar panels, industry indicated that a new requirement to pay tax on the cost of the solar panels at the time of purchase rather than on the sale of the panels when installed would not have a significant financial impact on the industry. Industry believes that since solar energy system contractors already consider solar panels to be materials, contractors are already paying the tax or tax reimbursement at the time of purchase as most solar energy systems are installed on a lump-sum basis.

If industry’s proposed regulatory revisions are adopted to classify all solar panels as materials, solar energy system contractors that have issued resale certificates to their panel suppliers may need to rescind those certificates. In general, contractors that furnish and install materials should not issue resale certificates to their suppliers for their purchases of solar energy materials unless the contractors are also in the business of selling materials.

**Most contractors would still need seller’s permits.** In addition to solar panels, solar energy system contractors typically install charge controllers, inverters, batteries, pumps and other components that are considered fixtures. Thus, even if all solar panels were considered materials, solar energy system contractors installing these other items would still be required to hold seller’s permits. Both staff and industry’s proposed amendments to Regulation 1521 include this requirement (Exhibits 2 and 3).

**Manufacturers of solar panels would not owe tax on their fabrication labor.** Since industry has advised staff that most solar energy systems are installed pursuant to lump-sum contracts, the discussion in this section relates to panels installed on a lump-sum basis. For contractors purchasing solar panels in a completed condition, the classification of the panels as materials or fixtures does not affect the amount of tax owed by the contractor. These contractors owe tax based on the purchase price or cost of the panel to the contractor. However, if the contractor manufactures the solar panel, the classification of the panel as “material” or “fixture” is critical when determining the amount subject to sales or use tax.

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If a solar panel is considered a material, a contractor who self-manufactures and installs the panel is liable for tax only on the cost of the materials used to fabricate the panel. Any labor or overhead costs incurred by the contractor to manufacture the panel would not be subject to tax. Conversely, if the solar panel is considered a fixture, tax is due based on the “cost price” of the panel which can be calculated to include the cost of materials, direct labor, specific factory costs attributable to the fixture, a pro rata share of the overhead, manufacturer’s excise tax, and a reasonable profit. The use of “cost price” creates uniformity for all contractors when determining the sale price of fixtures furnished and installed by the manufacturing, installing contractor roughly equivalent to the price paid by the non-manufacturing, installing contractor.

If all solar panels are classified as materials, contractors that manufacture and install the panels currently classified as fixtures will have a competitive advantage over non-manufacturing, installing contractors. This is because the manufacturing, installing contractor will be liable for tax only on the cost of materials used to fabricate the solar panel, while a contractor purchasing panels in a completed condition would presumably be paying tax on the manufactured selling price of the panels. It should be noted, however, that industry has advised staff that solar panel manufacturers are unique from other manufacturers of property in that they typically purchase the components of finished solar panels in a substantially completed condition. Thus, solar panel manufacturers incur significantly less direct labor and overhead costs than most manufacturers because they are assembling completed components into a finished panel.

**Concerns regarding consistency among the construction industry.** Staff is concerned that the change proposed by industry would set a precedent with regard to treating construction contractors that furnish and install solar panels and photovoltaic cells differently than contractors that furnish and install all other types of fixtures. Many contractors manufacture and install both materials and fixtures and must determine whether their products are classified as materials or fixtures. For example, construction contractors manufacturing and installing cabinets often install cabinets that, depending upon the level of completion, may be regarded as fixtures. However, if the cabinets are not “prefabricated,” as defined by Regulation 1521, then the cabinets are regarded as materials. In some cases, the construction contractor may install cabinets that are regarded as fixtures and cabinets that are regarded as materials on the same job. Even though they may, at times, experience some complexity, these contractors are still required to classify their products and report the correct amount of tax.

## **VI. Alternative 1 - Staff Recommendation**

### **A. Description of the Staff Recommendation**

Staff recommends amending Regulation 1521 to provide that when solar panels are combined with other tangible personal property and installed as roofing shingles, skylights, wall panels, or windows, the panels should be considered materials. Staff believes that when combined with other tangible personal property these panels lose their identity and become an integral and inseparable part of the realty (see Exhibit 5). Other types of solar panels, however, are accessory to a building or structure and do not lose their identity as accessories when installed. Staff currently considers these solar panels to be fixtures, and believes they should remain classified as fixtures. These other types of panels include rack mounted solar panels and solar panels used in most free-standing solar arrays (see Exhibit 4).

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Staff believes the amendments proposed by industry primarily affect contractors that *both* manufacture and install solar panels, and that industry's proposed change would benefit only those contractors. Currently, contractors that purchase solar panels in a completed condition and install them pursuant to a lump-sum contract can meet their tax liability by paying tax on their cost, regardless of whether the panel is considered a material or fixture. The amendments proposed by industry do not change how tax applies to these contractors.

**B. Pros of the Staff Recommendation**

- Provides guidelines within Regulation 1521 to determine the classification of solar panels as materials or fixtures.
- Is consistent with staff's current classification of solar panels.
- For fixtures installed pursuant to lump-sum contracts, maintains a level playing field between non-manufacturing, installing contractors and manufacturing, installing contractors.

**C. Cons of the Staff Recommendation**

Contractors that both manufacture and install solar panels pursuant to lump-sum contracts will still have to distinguish between materials and fixtures to determine cost price.

**D. Statutory or Regulatory Change**

No statutory change is required. However, staff recommendation does require an amendment to Regulation 1521.

**E. Administrative Impact**

Staff would notify taxpayers of the amendments to Regulation 1521 through an article in the Tax Information Bulletin (TIB) and revision of Publication 9, *Tax Tips for Construction Contractors*.

**F. Fiscal Impact**

**1. Cost Impact**

The workload associated with publishing the regulation and TIB article and revising the pamphlet is considered routine. Any corresponding cost would be absorbed within the Board's existing budget.

**2. Revenue Impact**

None. See Revenue Estimate (Exhibit 1).

**G. Taxpayer/Customer Impact**

Revisions to Regulation 1521 will provide guidance to contractors furnishing and installing solar panels.

**H. Critical Time Frames**

None. The amended regulation will become effective 30 days after approval by the Office of Administrative Law.

Issue Paper Number: 06-008

## VII. Alternative 2 – Industry Recommendation

### A. Description of the Alternative

Industry recommends amending Regulation 1521 to classify all solar panels and PV cells as materials. Industry believes that based on how the panels are affixed, their utility to the structure, and the general intention that the panels will become a permanent improvement to realty, all solar panels and PV cells become integral and inseparable parts of real property and should be treated as materials. Industry believes that classifying all panels as materials would provide a bright line for contractors to follow and would allow for future changes and advancements in the solar industry.

### B. Pros of the Alternative

- Simplifies the application of tax to solar panels. Contractors will no longer need to determine whether a solar panel is a material or fixture. This simplification is particularly beneficial to contractors who manufacture and install solar panels pursuant to lump-sum contracts.
- Contractors who only install solar panels and other materials on a lump-sum basis would no longer be required to hold seller's permits. (Contractors who install fixtures such as inverters, converters, batteries, and pumps, would still need seller's permits.)

### C. Cons of the Alternative

Staff believes classifying all solar panels as materials creates a competitive advantage for manufacturing, installing contractors over non-manufacturing, installing contractors for solar panels that are currently considered fixtures. Industry believes this difference to be minimal since manufacturers of solar panels purchase the panel components in a substantially completed condition.

### D. Statutory or Regulatory Change

No statutory change is required. However, industry's recommendation does require an amendment to Regulation 1521.

### E. Administrative Impact

Staff would notify taxpayers of the amendments to Regulation 1521 through an article in the TIB and revision of Publication 9, *Tax Tips for Construction Contractors*.

### F. Fiscal Impact

#### 1. Cost Impact

The workload associated with publishing the regulation and TIB article and revising the pamphlet is considered routine. Any corresponding cost would be absorbed within the Board's existing budget.

#### 2. Revenue Impact

Revenue would be lost from the direct labor, overhead, and profit related to solar panels that are currently considered fixtures and are fabricated and installed by the same contractor. See Revenue Estimate (Exhibit 1).

Issue Paper Number: **06-008**

**G. Taxpayer/Customer Impact**

Solar energy system contractors may need to rescind any resale certificates they have issued to their suppliers of solar panels. However, industry has indicated that solar energy system contractors already consider solar panels to be materials, and are likely already paying tax or tax reimbursement due at the time of purchase.

**H. Critical Time Frames**

None. The amended regulation will become effective 30 days after approval by the Office of Administrative Law.

Prepared by: Tax Policy Division, Sales and Use Tax Department

Current as of: 01/16/07

## REVENUE ESTIMATE

STATE OF CALIFORNIA  
BOARD OF EQUALIZATION

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## **Proposed revisions to Regulation 1521, Construction Contractors, regarding photovoltaic cells and solar panels**

### **Alternative 1 – Staff Recommendation**

Staff recommends adding guidance in Regulation 1521 to explain the application of tax to the sale and installation of solar panels. Staff believes that when solar panels are combined with other tangible personal property and installed as roofing shingles, skylights, wall panels, or windows, the panels lose their identity and become an integral and inseparable part of the realty. These solar panels should be considered materials. Other types of solar panels, however, are accessory to a building or structure and do not lose their identity as accessories when installed. Staff currently considers these solar panels to be fixtures, and believes they should remain classified as fixtures.

### **Alternative 2 – Industry Recommendation**

The California Solar Energy Industries Association (industry) recommends amending Regulation 1521 to classify all solar panels and photovoltaic (PV) cells as materials. Industry believes that considering how the panels are affixed, their utility to the structure, and the general intention that the panels will become a permanent improvement to real property, all solar panels and PV cells become integral and inseparable parts of real property and should be treated as materials.

## **Background, Methodology, and Assumptions**

### **Alternative 1 – Staff Recommendation**

There is nothing in staff's proposed Regulation 1521 that would impact current revenue. Staff's proposal will provide guidance on the application of tax to the sale and installation of solar panels when combined with other tangible personal property and installed as roofing shingles, skylights, wall panels, or windows. These types of solar panels lose their identity and become an integral and inseparable part of the realty and should be deemed as materials.

## Revenue Estimate

**Alternative 2 – Industry Recommendation**

Alternative 2 will result in a revenue impact. Industry's version asserts that all solar panels and PV cells become integral and inseparable parts of real property and should be treated as materials. This assertion is supported by the belief that the way in which solar panels are affixed to real property and their utility to the structure and the general intent that the panels become a permanent improvement to real property are the determining factors to treat solar panels as materials. If the Board of Equalization (Board) were to adopt industry's recommendation the results would be an annual revenue loss of \$331,000.

Contractors are generally regarded as consumers of the materials they purchase, and their tax liability is limited to the tax on their purchase price of the materials used in the performance of the contract. A contractor engaged in the business of furnishing and installing fixtures, such as solar panel systems, is required to hold a seller's permit, file sales and use tax returns, and remit tax based on his or her selling price of the fixtures he or she installs. The Board's regulation provides that if the contract states the sale price of the fixture, such as in a *cost-plus* or *time and material contract*, tax applies to that price. However, if the contract does not state the sale price, such as in the case of a *lump sum contract*, the regulation provides that the sale price shall be deemed to be the contractor's cost price of the fixture. Alternative 2 would result in the treatment of all solar panels as materials, thus the tax would apply only to the contractor's cost, regardless of whether the contract is a *lump sum contract*, *cost-plus*, or *time and material*.

Since January 2003, the California Energy Commission's Emerging Renewables Program has provided financial incentives for over 15,200 commercial and residential photovoltaic (PV) solar energy systems at a value of \$693 million, an average of \$179 million in completed projects per year. The Emerging Renewables Program provides funding for an average of 3,931 PV systems each year in the State, at an average cost of \$45,500.

The PV system program is the largest solar energy system program in the State. To comply with the rebate program, the Energy Commission requires contractors to identify on their invoices the quantity, make, and model numbers of major equipment and the labor charge for installation. Major PV equipment makes up approximately 34% of the contract price; this includes a general mark-up of about 30%.

In April 2005, in preparation of a revenue estimate for Assembly Bill 1613, we conducted a phone survey of PV solar energy systems contractors to estimate the percentage of these contractors that utilize *lump sum contracts* as opposed to *time and material* or *cost plus contracts*. We found that 10 of the 14 (or 71%) of contractors that responded to our survey utilized lump sum contracts. Since *lump sum contracts* do not state the sales price of fixtures, Regulation 1521 provides that the sale price shall be deemed to be the contractor's cost price of the fixture. However, if the contractor is a manufacturer of the fixture, the cost price is deemed to be the price at which similar fixtures in similar quantities ready for installation are sold by him/her to other contractors. In determining the cost price of fixtures for a manufacturer/contractor, jobsite fabrication, including assembly labor performed prior to attachment of a fixture structure, and its prorated share of manufacturing overhead, must be included in the sale price of the fixture. Therefore, while this proposal may not directly affect the tax treatment for contracts utilizing lump sum type contracts, it does affect contractors that are a manufacturer of the fixtures they install. We will address the revenue impact on manufacturer/contractor *lump sum contracts* below utilizing the results of the phone survey that

## Revenue Estimate

we used to determine the impact the proposal on *cost-plus* and *time and material contracts*. Based on the result of this phone survey, we estimate that at least 1,140 (29% x 3,931) of the 3,931 PV solar energy system contracts funded by the California Energy Commission annually will be directly affected by industry's proposal.

Using the information specific to PV solar electric generation systems, we determined the revenue impact of specified contractors of solar energy systems, for cost-plus and time and material contracts, is as follows:

**Photovoltaic Solar Energy Systems**

Annual number of completed projects for <i>cost-plus</i> and <i>time and material contracts affected</i> by this proposal	1,140
Average project cost	\$ 45,500
Estimated value of PV equipment in each project (34% of project cost)	15,470
Assuming an average markup of 30%	<u>3,570</u>
Total measure affected by this proposal (1,140 x \$3,570)	<u>\$4,069,800</u>
State and Local revenue impact (7.94% x \$4,069,800)	\$ 323,142

If Alternative 2 is adopted by the Board, contractors that manufacture the PV systems they install will have a competitive advantage because all solar panels would thereby be classified as materials and that would exempt them from paying taxes on solar panels formerly considered as fixtures. We know of 30 manufacturers of PV systems that currently participate in the Energy Commission's Emerging Renewables Program. Most of these manufacturers do not install the PV systems that they manufacturer; they sell them directly to installation contractors or retail sellers. However, we found that 5 of these manufacturers have contracted to install PV systems. Some may also choose to market their solar products directly to consumers and hire agents to install them. We know of at least 128 PV system projects that have been completed through Manufacturer/Installer contracts. The value of these PV system projects that the Energy Commission has approved amounts to \$4.74 million for the two-year period ending August 29, 2005. A recent audit of a PV manufacturer indicated an average markup of 14% on PV equipment manufactured and installed by these companies. The revenue impact of this proposal for manufacturer installed PV systems is as follows:

**Manufacturer Installed Photovoltaic Solar Energy Systems**

Annual number of completed Manufacturer Installed projects affected by this proposal (128 divided by 2)	64
Average project cost (\$4.74 million divided by 128)	\$ 37,000
Estimated value of PV equipment in each project (34% of project cost)	12,580
Assuming an average markup of 14% by manufacturer/installer	<u>1,545</u>
Total measure affected my this proposal (64 x \$1,545)	<u>\$ 98,880</u>
State and Local revenue impact (7.94% x \$98,880)	<u>\$ 7,851</u>

Revenue Estimate

**Revenue Summary**

Alternative 1 – staff recommendation does not have a revenue impact.

Alternative 2 – industry proposal would have an annual revenue loss of \$331,000.

	Annual Revenue Loss
State (5.0%)	\$ 208,400
Fiscal recovery fund (0.25%)	10,400
Local (2.0%)	83,400
Special District (0.69%)	28,800
	<u>\$ 331,000</u>

**Preparation**

Mr. Bill Benson, Jr., Research and Statistics Section, Legislative and Research Division, prepared this revenue estimate. Mr. Dave Hayes, Manager, Research and Statistics Section, Legislative and Research Division, and Mr. Jeff McGuire, Tax Policy Manager, Sales and Use Tax Department, reviewed this revenue estimate. For additional information, please contact Mr. Benson at (916) 445-0840.

Current as of January 16, 2007.

*(NOTE: Only relevant subdivisions of this regulation are contained in this Exhibit. Other sections are not being amended.)*

**Regulation 1521. CONSTRUCTION CONTRACTORS.**

**(c) PARTICULAR APPLICATIONS.**

(13) SOLAR CELLS, SOLAR PANELS AND SOLAR MODULES. A contract to furnish and install a solar energy system onto a structure or realty is a construction contract which involves furnishing and installing both materials and fixtures. A solar energy system is defined as any solar collector or other solar energy device that provides for the collection and distribution of solar energy and, where applicable, the storage of solar energy.

(A) Materials. Photovoltaic (PV) cells, solar panels and solar modules, including both solar thermal panels and solar electric PV panels, are considered materials when they function in the same manner as other materials such as roofing, windows, or walls and are incorporated into, attached to, or affixed to real property and, as such, lose their identity to become an integral and inseparable part of the real property. Examples of these types of solar panels include, but are not limited to, PV integrated skylights, PV panels used to function as a roof on a parking lot shade structure, and PV integrated roofing tiles.

Other materials include, but are not limited to, wiring, wiring harnesses, strapping, piping, and mounting systems.

(B) Fixtures. Photovoltaic (PV) cells, solar panels and solar modules, including both solar thermal panels and solar electric PV panels, are considered fixtures when they are accessory to a building or other structure and do not lose their identity as accessories when installed. Examples of these types of solar panels include, but are not limited to, rack mounted solar panels installed on roofs and solar panels used in free-standing solar arrays.

Other items included in the solar energy system which are considered fixtures include, but are not limited to, terminal boxes, DC and AC disconnect boxes, inverters, transformers, batteries and pumps.

Contractors furnishing and installing solar energy systems that include fixtures are required to hold seller's permits as described in subdivision (b)(4).

Appendix A. The following is a list of typical items regarded as materials:

Asphalt	Linoleum	Sand
Bricks	Lumber	Sheetmetal
Builders' hardware	Macadam	
Caulking material	Millwork	Steel
Cement	Mortar	Stone
Conduit	Oil	Stucco
Doors	Paint	Tile
Ducts	Paper	Wall coping
Electric wiring and connections	<u>Photovoltaic (solar) integrated roofing tiles and skylights</u>	Wallboard
Piping, valves, and pipe	Wallpaper	
Flooring	fittings	Wall-to-wall carpeting (when affixed to the floor)
Glass	Plaster	Weather stripping
Gravel	Power poles, towers, and lines	Windows
Insulation	Putty	Window screens
Lath	Reinforcing mesh	Wire netting and screen
Lead	Roofing	Wood preserver
Lime		

*(NOTE: Only relevant subdivisions of this regulation are contained in this Exhibit. Other sections are not being amended.)*

**Regulation 1521. CONSTRUCTION CONTRACTORS.**

**(c) PARTICULAR APPLICATIONS.**

(13) SOLAR CELLS, SOLAR PANELS AND SOLAR MODULES. A contract to furnish and install a solar energy system onto a structure or realty is a construction contract which involves furnishing and installing both materials and fixtures. A solar energy system is defined as any solar collector or other solar energy device that provides for the collection and distribution of solar energy and, where applicable, the storage of solar energy.

(A) Materials. Photovoltaic (PV) cells, solar panels and solar modules, including both solar thermal panels and solar electric PV panels, are considered materials when furnished and installed in the performance of a construction contract to install a solar energy system. Photovoltaic (PV) cells, solar panels and solar modules, including both solar thermal and solar electric PV panels that are held in place by their own size, weight and mass, are deemed to be constructively affixed to the realty when it is the intent of the parties that the solar panels are a permanent addition to the realty and as such are materials. Other materials include, but are not limited to, wiring, wiring harnesses, strapping, piping, and mounting systems.

(B) Fixtures. Items included in the solar energy system which are considered fixtures include, but are not limited to, terminal boxes, DC and AC Disconnect boxes, inverters, transformers, batteries and pumps.

Contractors furnishing and installing solar energy systems that include fixtures are required to hold seller's permits as described in subdivision (b)(4).

*Appendix A.* The following is a list of typical items regarded as materials:

Asphalt	Linoleum	Sand
Bricks	Lumber	Sheetmetal
Builders' hardware	Macadam	<u>Solar panels (solar thermal and solar electric PV panels)</u>
Caulking material	Millwork	Steel
Cement	Mortar	Stone
Conduit	Oil	Stucco
Doors	Paint	Tile
Ducts	Paper	Wall coping
Electric wiring and connections	<u>Photovoltaic (PV) cells</u>	Wallboard
Flooring	Piping, valves, and pipe fittings	Wallpaper
Glass	Plaster	Wall-to-wall carpeting (when affixed to the floor)
Gravel	Power poles, towers, and lines	Weather stripping
Insulation	Putty	Windows
Lath	Reinforcing mesh	Window screens
Lead	Roofing	Wire netting and screen
Lime		Wood preserver



Rack mounted solar panels





Free standing solar arrays





Solar panels used as roofing on a carport.



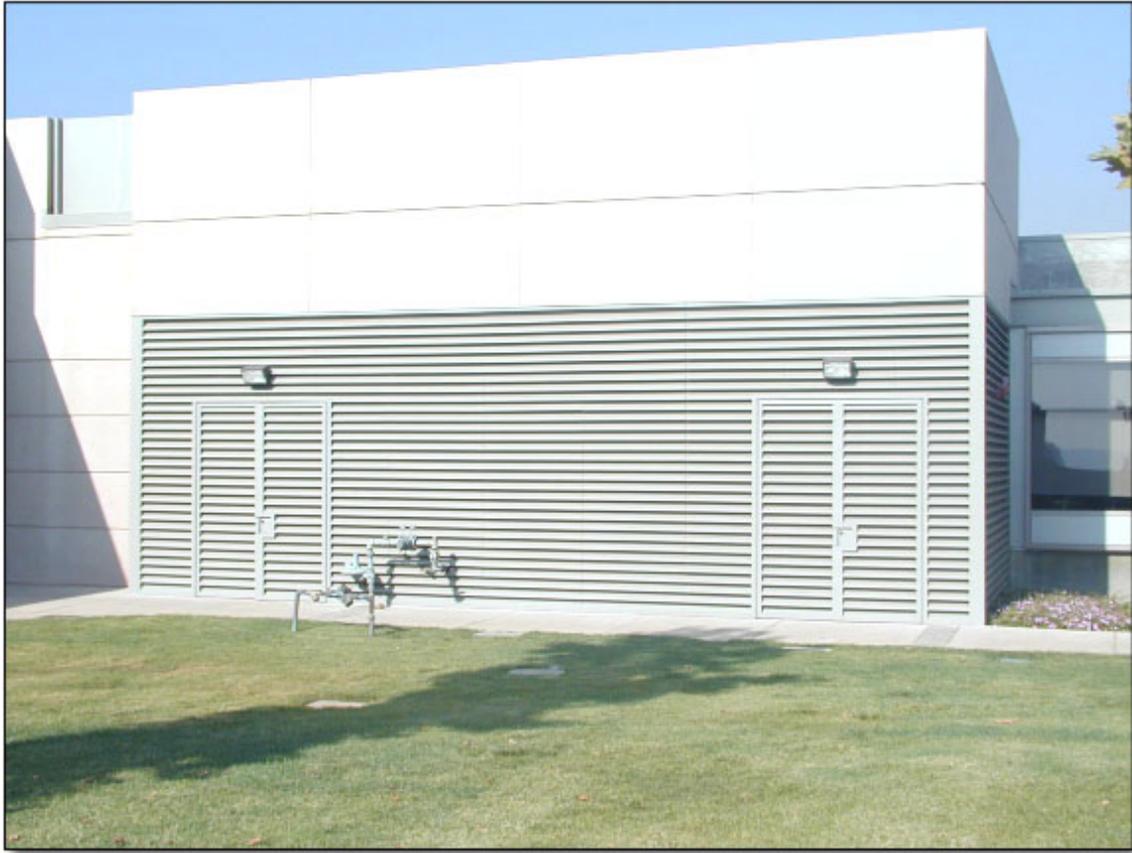
Solar panels used as skylights on an atrium cover.



PowerGuard solar panels – PV integrated, interlocking roofing tiles used on flat roofs. Solar panels are adhered to foam and concrete roofing tiles as shown in the photo below.



PV integrated roofing tiles installed alongside standard composition roofing shingles.



Aluminum louvers installed as a building wall and considered materials.



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November 17, 2006

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Ms. Lynn Whitaker  
Program Policy Specialist  
State Board of Equalization  
Business Taxes Committee Team  
450 N. Street MIC:50  
Sacramento, CA 94279-0005  
USA

Dear Ms. Whitaker:

On October 5, the State Board of Equalization (SBE) held a Second Interested Parties Meeting to discuss the California Solar Energy Industries Association's (CAL SEIA) proposed change to Cal. Code Regs. tit. 18 § 1521 (hereinafter "Regulation 1521"). CAL SEIA's proposed change to Regulation 1521 would classify all solar panels and photovoltaic cells (PV cells) as a "material" for purposes of establishing the sales and use tax treatment of solar energy collection equipment in a construction contract. On behalf of CAL SEIA, we appreciate this opportunity to provide further comment and clarification in response to this Second Interested Parties Meeting on CAL SEIA's proposed language to the SBE.

#### Background of Issue

Regulation 1521 addresses the application of sales and use tax to transactions involving tangible personal property sold to or used by persons performing construction contracts in California. Regulation 1521 defines a construction contract to include "*contracts to erect, construct, alter, or repair any building or other structure, project, development, or other improvement on or to real property.*"<sup>1</sup> The SBE last updated the construction contractor definitions contained in Regulation 1521 in the 1970's and, consequently, these definitions do not address solar panels and PV cells, which represent a relatively recent robust California industry in a time where clean, renewable energy has become of paramount importance to private citizens and the California government alike. Despite the proliferation of solar panels furnished and installed as part of a construction contract, Regulation 1521, which would govern the sales and use taxation of these items, remains silent on their exact tax treatment.

On March 13, 2006, CAL SEIA requested that the BOE enter a formal rulemaking process to review and update Regulation 1521 to set forth the specific tax treatment of solar construction materials and contracting operations. This Interested Party Filing addresses some of the salient issues involved in how Regulation 1521 should apply to solar panels and PV cells.

The type of property furnished and installed governs how the sales and use tax applies to construction contractors. Regulation 1521, sections (a)(4) and (a)(5) defines "materials" and "fixtures," respectively, in this context:

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<sup>1</sup> California Sales and Use Tax Regulation 1521 (a)(1)(A)1.

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“Materials” means and includes construction materials and components, and other tangible personal property incorporated into, attached to, or affixed to, real property by contractors in the performance of a construction contract and which, when combined with other tangible personal property, *loses its identity to become an integral and inseparable part of the real property* (emphasis added).<sup>2</sup>

“Fixtures” means and includes items *which are accessory* to a building or other structure and do not lose their identity as accessories when installed (emphasis added).<sup>3</sup>

The principal issue subject to debate at the rule making proceedings is whether solar panels and PV cells should appropriately be classified in Regulation 1521 as “materials,” as recommended by CAL SEIA, or as a “fixture” for purposes of sales and use tax payments made in the performance of a construction contract.

### Status of Rulemaking Process

To date, all parties agree that Regulation 1521 does not clearly specify how solar materials should be classified. The SBE staff and CAL SEIA also agree that the large body of SBE annotations to Regulation 1521 do not provide specific or general guidance on how solar contractors and integrators should comply with Regulation 1521.<sup>4</sup> Instead, the annotations provide examples of analogous items that the solar industry and SBE staff can rely on to establish whether solar panels and PV cells should be treated as materials or fixtures.

Following the Second Interested Parties meeting on October 5<sup>th</sup>, 2006, SBE staff and CAL SEIA agreed that Regulation 1521 should treat some types of solar applications – namely those that serve as a shade structure or roofing material, in addition to generating electricity – as a “material.” However, disagreement remains between SBE staff and CAL SEIA as to whether Regulation 1521 should treat all solar panels and PV cells as a “material” used in the performance of a construction contract or whether the SBE should classify only frame-mounted solar applications as a “fixture.” *See*, Second Discussion Paper of September 25<sup>th</sup>, 2006, Page 4.

### Proper Classification of Frame-Mounted Solar Panels

The narrow, remaining issue and the subject of the following discussion is whether frame-mounted solar panels and PV cells become “integral and inseparable” parts of real property, and therefore should properly be classified as “materials,” or do they more appropriately constitute “accessories” to the building, and therefore should be classified under Regulation 1521 as “fixtures”?

### SBE Annotations Support Classifying Frame Mounted Solar Panels as Materials

Critical to the definitions of “material” and “fixture” are the meanings of “accessory” and “integral and inseparable.” However, Regulation 1521 does not define these terms. In the absence of definitive

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<sup>2</sup> *Id.* at (a)(4).

<sup>3</sup> *Id.* at (a)(5).

<sup>4</sup> Annotations provide summaries of selected legal rulings of SBE counsel. Annotations do not have the force and effect of law, and do not embellish or interpret the legal rulings of counsel they summarize. They are published in the Business Taxes Law Guide or the Property Taxes Law Guide to provide additional assistance in understanding the application of California tax law.

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regulatory guidance, the industry and SBE must look to other authority, including SBE annotations, to find analogous items that the SBE has classified as “materials” or “fixtures.”

During the First Interested Parties meeting on August 25th, SBE Board Member Staff requested that, as part of this Second Interested Parties proceeding, CAL SEIA identify annotations to Regulation 1521 where the SBE has concluded that certain construction property analogous to solar panels should be treated as a “material.” They also requested that CAL SEIA identify why they believe these annotations should be used in support of defining solar panels as a material. CAL SEIA submitted the requested research in their September 6<sup>th</sup> Interested Party letter to the SBE. *See* attached.

CAL SEIA found annotations that support defining solar panels as both a material and as a fixture. However, annotations pertaining to items that are both physically similar and similar in method of attachment clearly support CAL SEIA’s position that all solar panels, including frame-mounted solar panels, should be properly classified as materials.

The following annotations identify types of construction property analogous to solar panels in both their physical characteristics and method of attachment that become “integral and inseparable” to the real property:

- **Annotation 190.1869 Koolshade Screens:** Koolshade Screens are metal screens that attach to the exterior of a building to deflect sunlight and solar radiation (UV Rays). They may be attached at an angle to the building, or vertically on outrigger offset away from the building. Koolshade Screens may be mounted in a frame that is attached to the building, or building façade with bolts. The SBE determined in A.190.1869 that: *“Koolshade screens are of a nature that they become so architecturally and functionally integrated with the building to which they are attached that they may be considered “materials” rather than “fixtures.”*
- **Annotation 190.1220 Aluminum Louver:** Aluminum Louvers are described in the SBE annotation as: *“Consisting of slats which are firmly attached to a supporting framework and when installed are not adjustable, but become almost a part of the wall of building.”* The SBE determined in A.190.1220 that aluminum louvers are “part of a wall” and consequently “materials”, even though the louvers do not necessarily lose their separate identity, and may be removed and replaced without damage to the underlying structure.

In both of these examples the property involved consists of slats or panels attached to a framework or racking structure, which then attaches to a building wall or surface. The SBE considers the respective property discussed in each of the above annotations to be part of the building shell when installed and, therefore “architecturally and functionally integrated” with the building such that it becomes “material.” Solar panels and PV cells are clearly analogous to these items because they are attached to a framework or racking structure with no moving parts. Moreover, when installed, these panels and PV cells becomes part of the building shell, typically the roof. CAL SEIA maintains that the architectural and physical similarities between the Koolshade Screen, the aluminum louver and a frame-mounted solar panel would lead the average person to conclude that these items are analogous insofar as they all are “architecturally and functionally integrated” with the building and therefore a “material” according to SBE annotative guidance.

SBE staff did not address CAL SEIA’s discussion on this topic as part of the October 5<sup>th</sup> meeting agenda, and thus neither supported nor rejected CAL SEIA’s analysis of the above annotations. SBE staff also did not support their position defining frame-mounted solar panels as “fixtures.” Instead, on

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Page 4 of the Second Discussion Paper, they restated (without elaboration) the SBE's previous position, which advised taxpayers that frame-mounted glass solar panels and other non-penetrating solar panels such as interlocking roof tiles or modular systems that rest in place are fixtures. SBE staff's reluctance to explain or justify their conclusions runs contrary to the purpose of this rulemaking proceeding, which is to ascertain the most logical, reasonable and fair direction for Regulation 1521.

Staff then compares solar panels to electric generators (fossil fuel), which Regulation 1521 classifies as "fixtures." Yet again Staff does not illustrate specifically how solar panels are analogous to fossil-fueled electric generators as part of a construction contract. CAL SEIA maintains that electric generators are dissimilar to solar panels because contractors do not install and attach generators *to the actual buildings* in the same manner as solar panels, which are incorporated into a structure's roof. We do note that during the October 5<sup>th</sup> meeting, extensive discussions took place regarding the installation and function of interlocking roof tiles. Upon further explanation and analysis, SBE staff conceded that these items should be classified as "materials." However, the frame-mounted solar panels and cells remain at issue.

#### Frame-Mounted Solar Panels are Not Fixtures under California Law

As additional support for its position, CAL SEIA provides further analysis of whether frame-mounted solar panels constitute "fixtures" under more general legal principles. As discussed above, the definitions of "fixture" or "material" in Regulation 1521 do not fully distinguish an "accessory" from property that becomes an "integrated and inseparable" part of the real property. In absence of clear guidance and in addition to the annotations discussed above, case law may be consulted to elaborate on the meaning of each of these definitions.

While the specific definition of "fixture" and "material" may differ by area of law, the concepts underlying these definitions are uniform: Property will be a fixture where it represents a separate and distinct piece of personal property rather than becomes a part of either real property or an improvement thereon. In *San Diego Trust & Savings Bank et al. v. County of San Diego*,<sup>5</sup> the California Supreme Court summarized the well-established legal doctrine for determining fixtures versus land improvements—a test that has been applied by California Courts to ascertain whether property constitutes "fixtures" under Regulation 1521<sup>6</sup>:

...we must apply the three tests which have often been used by this court in determining whether or not an article is a fixture – namely: (1) the manner of its annexation; (2) its adaptability to the use and purpose for which the realty is used; and (3) the intention of the party making the annexation.<sup>7</sup>

The court in this case applied each of these factors to a bank vault door, but placed particular emphasis on the third element—intent of the party with respect to the property. In analyzing the first factor, the Court applied the definition in Cal. Civ. Code 660, which defined a fixture to include items bolted, nailed or screwed onto real property or onto a building. It concluded that the bolted bank vault door's manner of affixation to the vault fit within the definition of "fixture" under the Civil Code. The Court then examined intent of the parties and concluded that the vault door served an obviously useful purpose related to the real property—a bank vault.

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<sup>5</sup> 16 Cal. 2d 142, 105 P.2d 94 (1940).

<sup>6</sup> See, e.g., *C.R. Frederick, Inc. v. State Bd. Of Equalization*, 204 Cal. App. 3d 252 (1988).

<sup>7</sup> *Id.* at 150.

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The Court most carefully examined the intent prong of the analysis, considering numerous factors in discerning whether the parties intended the door to be a permanent, integrated part of the bank vault or whether they contemplated a piece of property that could and would be removed: 1) The nature of the item of property itself—a bank vault would be useless without a vault door; 2) the difficulty, impracticability and potential damage caused by moving the property; 3) the duration that the property will remain in place; and 4) the cost of the property.<sup>8</sup> .

After considering all of the factors together, the Court concluded that the parties clearly intended that the property be a permanent improvement to the bank vault rather than a mere fixture.<sup>9</sup> The Court noted that the doors were expensive and inconvenient to move, despite the fact that little damage would be incurred to move them.<sup>10</sup> In addition, the parties need not contemplate retaining the doors in place in perpetuity.<sup>11</sup> Rather, an intent to leave them in place until critical pieces of the property had been worn down evidenced sufficient intent of permanence.<sup>12</sup> Finally, the high cost of the doors also illustrated intent to make the door a permanent addition or improvement rather than a temporary fixture.<sup>13</sup> Despite that the first two prongs of the three-part test weighed in favor of fixture, the Court found the intent of the parties dispositive of the issue, holding that the vault door constituted a part of the realty and not a fixture.<sup>14</sup>

Under the Supreme Court's three-factor test in *San Diego Trust & Savings Bank*, the frame-mounted solar panels at issue here could admittedly be classified as fixtures under the first two prongs—they are bolted onto roofing and serve a useful purpose related to the building.<sup>15</sup> However, the most important element—intent—clearly weighs in favor of permanence as a land improvement or “materials” rather than a fixture.<sup>16</sup> Indeed, just as the intent element constitutes the most important test for determining a fixture versus a property improvement for general legal purposes, it also logically serves as the definitive element in distinguishing “materials”—property that becomes integrated with and inseparable from real property—versus a “fixture”, which constitutes a mere accessory to real property.

Frame-mounted solar panels by their very nature become a part of the building to which they are affixed.<sup>17</sup> They are bolted to the underlying roof structure of the building and then roofing materials cover the portions where the frame connects with the roof structure. Wiring extends from the panel and becomes part of the building's electrical system. Removing the panels is costly, inconvenient, and often times damaging to the roof of the building.<sup>18</sup> Generally, the panels are put into place until they wear out and are not easily or commonly transferred.<sup>19</sup> Moreover, they are expensive, which clearly supports their permanence when added to a building or structure.<sup>20</sup> Thus, like the bank vault door in

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<sup>8</sup> *Id.* at 150-151.

<sup>9</sup> *Id.*

<sup>10</sup> *Id.*

<sup>11</sup> *Id.*

<sup>12</sup> *Id.*

<sup>13</sup> *Id.*

<sup>14</sup> *Id.* at 153.

<sup>15</sup> *Id.* at 149.

<sup>16</sup> *Id.* at 150-151.

<sup>17</sup> *Id.*

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

<sup>20</sup> *Id.*

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*San Diego Trust & Savings*, the typical use of frame-mounted solar panels clearly evidences intent to permanently improve real property rather than intent to temporarily affix personal property. As such, the frame-mounted solar panels should be treated as building “materials” and not as “fixtures.”

#### Frame-Mounted Solar Panels are Not Fixtures under SBE Interpretations and Common Denotations

SBE interpretations also generally support the general legal conclusion that frame-mounted solar panels are more permanently attached and integrated into a building or structure like an improvement rather than a mere fixture. When the SBE analyzes whether an item should be classified as either a material or a fixture, the SBE generally considers the manner of installation and whether the installation or removal of an item will cause damage to the structure. The SBE will classify an item that will cause damage to the underlying structure upon removal as a “material.” On the other hand, if a contractor can install or remove an item without damage it should generally be classified as a “fixture”. For example, in Annotation 190.2334, Walk-In Cooler, the SBE concluded that: “Walk-in coolers are regarded as “materials” in those instances where they are affixed to and become an integral part of the real property. If the job merely entails fastening a self-contained unit to realty which does not lose its identity *and can be removed without damage to realty*, the walk-in cooler in this instance would properly be classified as a fixture. In the latter instance, tax would be due on the sales price of the material plus the fabrication labor involved prior to installation.” 5/11/62; 6/27/62. (Emphasis added) Prefabricated blackboards are another example of property where the method of attachment and the risk of damage to the realty determined the classification as a fixture. Annotation 190.1280, Blackboards, provides that prefabricated blackboards affixed to the wall as a unit by screws or nails are fixtures.

This interpretation is entirely consistent with case law discussed above as well as common denotations of these words. The definition of a “fixture” classifies an item as an accessory but the Regulations do not state the precise meaning of “accessory.” The common English definition of accessory is “a thing which can be added to something else to make it more useful, versatile, or attractive.” (*Compact Oxford English Dictionary of Current English*) The examples of fixtures in Appendix B of Regulation 1521 and the annotations generally reference property where removal does not damage the building or structure or may cause only incidental damage. (i.e. screws used to mount a blackboard may leave small holes that can be easily patched)

Frame mounted solar panels, on the other hand, are firmly attached to the building by penetrating the waterproof membrane of the roof, attaching to the underlying roof structure (i.e. roof truss or beam system), and then integrated into the structure’s electrical system or plumbing system, in the case of solar thermal. To attach or remove frame-mounted solar panels, the property owner must remove and replace portions of the exterior roof and waterproof membrane as well as perform various electrical re-wiring and/or certain plumbing work. There is a substantial risk of property damage arising from both the direct removal from the roof and/or the underlying structure, and also potentially from water damage resulting from the penetration of the waterproof membrane. The potential damage from removing a solar panel clearly exceeds that which would be incurred to remove widely accepted examples of “fixtures” or “accessories”, such as faucets or light fixtures. Installing or removing a solar panel is also significantly more complicated than simply attaching a self-contained electric generating unit to the roof of a commercial structure, or installing a temporary mobile electric generator in a parking lot. It involves knowledge of structural construction, electrical wiring, plumbing, and roofing.

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Clearly a reasonable person could interpret all installed solar panels, including frame-mounted solar panels, as “materials”. Distinguishing between solar panels integrated into roofing materials versus frame-mounted varieties discriminates against certain solar products and also against particular installers, depending on what type of solar product they install as part of a construction contract. We argue that treating all solar panel products consistently and fairly under Regulation 1521 compliments the state of California’s well-articulated policies on promotion of use and installation of solar energy products by giving contractors clear guidance on how to treat solar panel materials purchased and installed as part of their contracts. We further assert that consistent tax treatment for all solar products simplifies tax reporting for contractors who can report all of their building materials in the same fashion, which becomes especially important for small contractors who may not have the sophistication or knowledge to report differently depending on the type of solar product they install. Finally, tax-neutral treatment among different types of solar products promotes innovation and cost reductions in the solar industry by allowing solar manufacturers to focus on efficiency and performance rather than catering to demands of contractors for particular types of solar panels due in part to the ease of tax reporting associated with such products.

#### CAL SEIA Recommendation

CAL SEIA respectfully recommends that the SBE propose a bright line test defining all solar products as “materials.” During the last Interested Parties meeting, SBE staff suggested CAL SEIA clarify certain definitions in the proposed language for Regulation 1521. CAL SEIA proposes the following revised language:

*(a) Solar cells, solar panels and solar modules. A contract to furnish and install a solar energy system onto a structure or realty is a construction contract which involves furnishing and installing both materials and fixtures. A solar energy system is defined as any solar collector or other solar energy device that provides for the collection and distribution of solar energy and, where applicable, the storage of solar energy.*

*1. Materials. Photovoltaic (PV) cells, solar panels and solar modules, including both solar thermal panels and solar electric PV panels, are considered materials when furnished and installed in the performance of a construction contract to install a solar energy system. Photovoltaic (PV) cells, solar panels and solar modules, including both solar thermal and solar electric PV panels that are held in place by their own size, weight and mass, are deemed to be constructively affixed to the realty when it is the intent of the parties that the solar panels are a permanent addition to the realty and as such are materials. Other materials include, but are not limited to, wiring, wiring harnesses, strapping, piping, and mounting systems.*

*2. Fixtures. Items included in the solar energy system which are consider fixtures include, but are not limited to, terminal boxes, combiner boxes, DC and AC Disconnect boxes, inverters, transformers, batteries and pumps.*

The existing annotations from the SBE, California Supreme Court precedent and reasonable interpretation of Regulation 1521 all support the classification of all solar panels as “materials”. It would serve the best interests of the state of California by avoiding repeated industry requests for re-interpretation, by streamlining the administrative process, and by supporting the intent of SB 1 and the California Solar Initiative, which aim to reduce the cost of solar installations and encourage their widespread adoption and utilization in California over the next decade.

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If you have any questions regarding the foregoing information or would like additional elaboration, please do not hesitate to contact me at (916) 288-3246. Thank you for your consideration of our position.

Sincerely,

A handwritten signature in black ink that reads "Karri Rozario". The signature is written in a cursive, flowing style.

Karri Rozario  
Senior Manager  
Multistate Tax Services

KR/sa

Enclosure

cc: Les Nelson, CAL SEIA - via email