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Shared Solar: Current Landscape, Market Potential, and the Impact of Federal Securities Regulation

David Feldman,[1] Anna M. Brockway,[2] Elaine Ulrich,[2] and Robert Margolis[1]

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Technical Report
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April 2015

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List of Acronyms

CBECS	Commercial Building Energy Consumption Survey
CSI	California Solar Initiative
DG	Distributed generation
DOE	U.S. Department of Energy
IREC	Interstate Renewable Energy Council
IRS	Internal Revenue Service
ITC	Investment Tax Credit
JOBS Act	Jumpstart Our Business Startups Act
NREL	National Renewable Energy Laboratory
PV	Photovoltaic(s)
REC	Renewable energy certificate
RPS	Renewable portfolio standard
SEC	U.S. Securities and Exchange Commission
SEPA	Solar Electric Power Association
TPO	Third-party-owned
VNM	Virtual net metering

Executive Summary

This report provides a high-level overview of the current U.S. shared solar landscape and the impact that a given shared solar program's structure has on requiring federal securities oversight, as well as an estimate of market potential for U.S. shared solar deployment. Shared solar models allocate the electricity of a jointly owned or leased system to offset individual consumers' electricity bills, allowing multiple energy consumers to share the benefits of a single solar array.[1] Despite tremendous growth in the U.S. solar market over the last decade, existing business models and regulatory environments have not been designed to provide access to a significant portion of potential PV system customers. As a result, the economic, environmental, and social benefits of distributed PV are not available to all consumers. Emerging business models for solar deployment have the potential to expand the solar market customer-base dramatically. Options such as offsite shared solar and arrays on multi-unit buildings can enable rapid, widespread market growth by increasing access to renewables on readily available sites, potentially lowering costs via economies of scale, pooling customer demand, and fostering business model and technical innovations. Fundamentally, these models remove the need for a spatial one-to-one mapping between distributed solar arrays and the energy consumers who receive their electricity or monetary benefits. The output of shared solar arrays can be divided among residential and commercial energy consumers lacking the necessary unshaded roof space to host a PV system of sufficient size, or divided among customers seeking more freedom, flexibility, and a potentially lower price.

If federal, state, and local policies can institute a supportive regulatory environment, shared solar presents an area of tremendous potential growth for solar photovoltaics (PV), expanding the potential customer base to 100% of homes and businesses. We estimate that 49% of households are currently unable to host a PV system when excluding households that 1) do not own their building (i.e., renters), 2) do not have access to sufficient roof space (e.g., high-rise buildings, multi-unit housing), and/or 3) live in buildings with insufficient roof space to host a PV system. We also estimate that 48% of businesses are unable to host a PV system when excluding businesses that 1) operate in buildings with too many establishments to have access to sufficient roof space (e.g., malls), and/or 2) have insufficient roof space to host a PV system capable of supplying a sufficient amount of their energy demand. By opening the market to these customers, shared solar could represent 32%–49% of the distributed PV market in 2020, thereby leading to growing cumulative PV deployment growth in 2015–2020 of 5.5–11.0 GW, and representing $8.2–$16.3 billion of cumulative investment (Figure ES-1).

[1] For this report, we define "shared solar" PV systems to include only those that allocate the electricity of a jointly owned or third-party-owned (TPO) system to offset multiple individual businesses' or households' consumption. Therefore, a PV system used to offset electricity from common areas or shared space in an apartment complex, for example, is not included. PV systems financed through "crowd-funded" financing mechanisms in which security holders only have an economic interest, and do not use the energy, are also not included. So-called "community solar" collective-purchasing programs (e.g., "solarize" campaigns) in which community members band together to buy separate PV systems collectively are also not included. Finally, "green power" purchasing plans for consumers to opt into rate plans wherein the electricity is bundled with renewable energy certificates, or "green attributes," are also not considered shared solar.

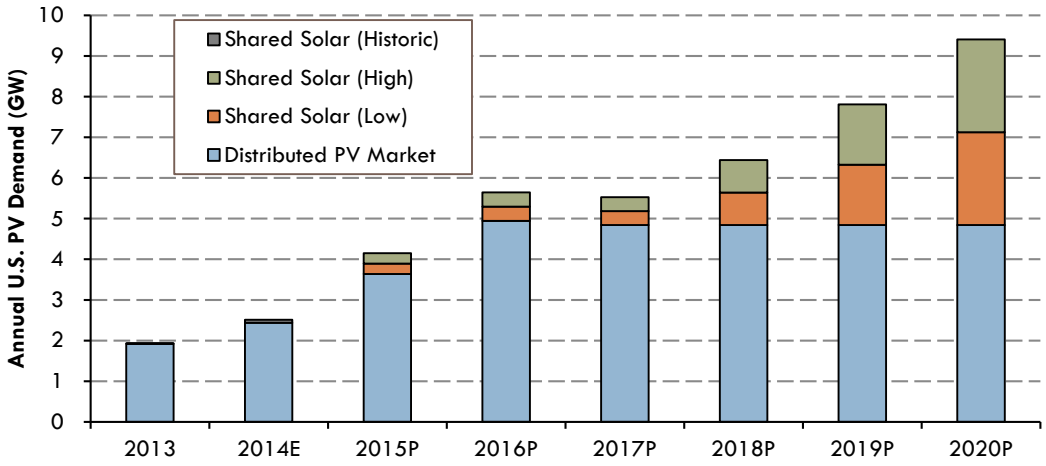

Figure ES-1. Estimated PV market potential of onsite and shared solar distributed PV capacity

There are several factors that may cause shared solar deployment to be significantly higher than these estimates, including easier and less restrictive participation, a better value proposition through economies of scale, and the ability to service a much higher share of customer load. That said, without proper legislative support from federal, state, and local authorities as well as further business innovation and expansion, shared solar may have difficulty reaching these deployment levels.

Shared solar arrays can be hosted and administered by a variety of entities, including utilities, solar developers, residential or commercial landlords, community and nonprofit organizations, or a combination thereof. Electricity benefits are typically allocated on a capacity or energy-production basis. Participants in capacity-based programs own, lease, or subscribe to a specified number of panels or a portion of the system and typically receive electricity or monetary credits in proportion to their share of the project.

Shared solar enabling state legislation commonly takes the form of virtual net metering (VNM), specific tariffs, or holistic statewide shared clean energy programs that incorporate VNM or a set tariff. VNM and on-bill credits enable the allocation of benefits from an electricity-generating source that is not directly interconnected to the energy consumer's electricity meter. Federal tax credits that support PV deployment historically have been designed for use by a single entity; shared solar projects that involve multiple entities can pose challenges to allocating tax-credit benefits. However, in some instances, shared solar programs can function similarly to single-entity solar projects for tax-credit purposes.

Despite regulatory frameworks that make shared solar available in many states and jurisdictions, the shared solar business model still faces barriers to greater adoption. Owing to the infancy of the market, there is a lack of legal precedent, market research, and data on project successes. One of the top concerns raised by shared solar stakeholders is uncertainty about the applicability of Securities and Exchange Commission (SEC) requirements for registration and disclosure of shared solar projects. Central to this issue is whether an interest in a shared solar project is a "security." If it is, then it is regulated by the SEC (although its offer may qualify for an exemption) and has the potential to significantly impact the way a shared solar program operates.

Therefore, stakeholders should consider securities regulations carefully when structuring a shared solar program.

One central question in determining whether participation in a shared solar project is considered a security appears to be the motivation of the participant and the perception of the participation. SEC Staff have provided some guidance on this issue through a no-action letter issued to the solar developer CommunitySun, LLC and through individual discussions with the authors of this paper. Based on this information, participation in a shared solar project likely will not be considered an investment contract and may not otherwise be a security when participants' primary motivation for participating in the shared solar project is personal consumption (i.e., reducing a customer's retail electricity bills)—not the expectation of profit—and the terms of participation include certain provisions to prevent the use of the agreement as a financial play.

Shared solar offerings that are classified as securities can still be bought and sold if they are registered with the SEC and follow more stringent procedures or if they qualify for an exemption. The most relevant exemptions for shared solar programs are Regulation D, including Rule 506 (CFR, §230.506) (more specifically, 506(b) and 506(c)) and Rule 504 (CFR, §230.504), the intrastate exemption, and exemptions related to nonprofits. Shared solar projects that avoid SEC regulation by not being considered a security or by qualifying for an exemption may be subject to regulation by other federal, state, and local laws. For example, every state has its own set of securities statutes, which may treat securities differently from federal law. Also, while the SEC has provided some guidance on this issue, judicial authority supersedes administrative guidance.

As these new business models and legal frameworks are established, working within the guidance of SEC interpretation of securities law will create more confidence in the shared solar market, and ideally, it will reduce restrictions, delays, and costs.

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1 Introduction

Despite tremendous growth in the U.S. solar market over the last decade,[2] PV business models and regulatory environments historically have not been designed to provide access to a significant portion of potential photovoltaic (PV) system customers. As a result, the economic, environmental, and social benefits of distributed PV are limited to a select number of customers. Traditional distributed solar models typically rely on the decision by individual home or building owners to adopt PV systems. Optimal customers for hosting rooftop-mounted systems have ample unshaded roof space relative to their energy consumption, unilateral decision making authority regarding that roof space, and high credit scores to enable low-cost financing. Functionally, these restrictions limit solar market participation to a minority of residential and commercial energy consumers. While the technical potential of on-site, single-customer PV is significantly larger than its current installed capacity, distributed deployment strategies only directed at on-site, single-customer systems limit the speed and flexibility at which PV can be deployed in the United States, and potentially increase the cost. As customer demand for solar increases, so does the impetus to develop innovative business models and utility programs that can enable and retain direct participation from all types of energy consumers.

Community solar is an innovative solar energy deployment model that is gaining popularity across the United States. Community solar models encompass approaches to solar deployment that connect community stakeholders to increase the penetration of renewable energy. Such models include group purchasing, crowd financing and community investment, and donation-based models. As demonstrated in Figure 1, community solar programs can site, fund, and sell electricity from PV systems in several different ways.

[2] Annual PV installations grew from 79 MW in 2005 to 6.2 GW in 2014, an increase of 7,800% (SEIA/GTM 2015).

Figure 1. Four different community solar business models

Among the broad array of community solar models, one approach gaining traction in some jurisdictions is called shared solar.[3] For the purposes of this report, we define "shared solar" PV to include only those systems that allocate the electricity of a jointly owned system, or a third-party-owned (TPO) system, to offset multiple individual businesses' or households' consumption participating in the program. Table 1 briefly summarizes the difference between shared solar programs and other methods for purchasing or financing a distributed PV system. Such shared solar models allow multiple energy consumers to share the electricity and other benefits of one solar array.

[3] "Shared solar" projects are sometimes referred to as "community shared solar" and "solar gardens."

Table 1. Different Financing and Purchasing Methods for Distributed PV Systems

Arrangement	Location	Ownership	Number of Consumers per System	Group Purchasing	Covered in this analysis
Onsite individual net metering	Onsite	Solely owned; TPO	Single	Not necessarily (community group purchasing, e.g., "solarize")	No
Offsite virtual net metering (VNM)	Offsite	Solely owned; TPO	Single	Not necessarily	No
Onsite shared solar (multi-unit buildings)	**Onsite**	**Jointly owned; TPO**	**Multiple**	**Yes**	**Yes**
Offsite shared solar (solar gardens)	**Offsite**	**Jointly owned; TPO**	**Multiple**	**Yes**	**Yes**
Community driven financial models (crowd-funding)	Offsite	Jointly owned; TPO	Energy not consumed by crowd-funding participants	Yes	No
"Green power" purchasing plans	Offsite	Utility; TPO	Consumption from no distinct system	Yes	No

Emerging business models for solar deployment have the potential to dramatically develop the solar market, expanding the potential customer base to 100% of homes and businesses. Options such as shared solar can enable rapid, widespread deployment by increasing access to renewables on readily available land and rooftop sites, lowering costs via economies of scale, and fostering innovation. Fundamentally, these models remove the need for spatial one-to-one mapping between distributed solar arrays and the energy consumers who receive their electricity benefits. The output of offsite solar arrays can be shared among residential and commercial energy consumers lacking sufficient unshaded roof space to site an array. Solar developers can construct arrays in optimal locations on marginal lands or unused rooftops and offer community members the opportunity to participate directly and benefit. Shared solar arrays sited on apartment buildings and shopping malls can provide stable electricity bills to landlords and tenants. Retailers and municipal buildings that host shared solar systems can provide electricity and other benefits to the community and generate goodwill. Utility-sponsored shared solar programs can reach large numbers of energy consumers. Table 2 summarizes some potential benefits of shared solar deployment.

Table 2. Potential Benefits of Shared Solar

Market Expansion	Economies of Scale	Opportunities for Innovation
• **Access to solar for individuals and businesses without good roofs or land for solar** · A significant amount of land and roof space is currently available without onsite energy demand. • **Lower financial and technical barriers to entry** · Aggregating customer demand means minimum buy-ins can be smaller than those for onsite systems. · Customers may find joining a group effort easier and more engaging than choosing solar individually. · Lower barriers to entry can enable participation by new market segments, including lower-income customers and energy consumers who want to try before they buy and may not fit "early adopter" demographics. • **Potentially transferable** · Those who move have an option to sell.	• **Lower soft costs** · Soft costs—such as permitting, interconnection, and customer acquisition—are spread over larger project sizes. • **Supporting optimal grid integration and local economic development via siting flexibility** · With utility input, project sites can be selected for low-cost grid integration. · Community-scale projects can use space close to load centers that is unsuitable for small- or utility-scale solar, such as municipal rooftops, schools, brownfields, and highway medians. · Larger systems are easier to maintain than several dispersed small-scale systems and thus have the potential to produce more energy at a lower cost. • **Increased grid visibility and focused interconnection efforts** · Utilities can monitor the operation of several larger arrays instead of many small systems.	• **Entrepreneurship opportunities** · There is a wide range of possible business models. • **Sector interfaces** · There are opportunities for residential, commercial, and municipal collaboration. • **Community support** · Engaging a variety of stakeholders can help program administrators and hosts give back to their community.

By aggregating customer demand, shared solar programs can reduce financial and technical barriers to entry and lower costs via economies of scale. For example, shared solar projects reduce customer acquisition costs by removing the need for individual site assessments for each participant. Separating energy assets from customers' residences or businesses also leads to a number of benefits. In the event a customer moves, his or her solar share can be transferred separately from his or her residence to a new home within the same utility service territory or sold to another entity. Since an offsite shared solar array is not physically located behind an individual shared solar customer's meter, there are benefits from increased siting flexibility. Strategic placement on sites such as commercial rooftops, brownfields, and municipal land can optimize grid operations and aid local economic development.

With utility input, strategic shared solar deployment can also support low-cost grid integration and provide grid benefits. For utilities, shared solar arrays can function in a more streamlined manner than smaller, diffuse electricity-generating sources; in addition, because they are more visible within the community, they exhibit a utility's commitment to renewable energy.

Shared solar programs can also engage local partnerships and help build community assets. For example, community-based shared solar market participants can work together to lower financing costs through spreading fixed costs over a larger pool of capital. Partnerships between the commercial, municipal, and residential sectors can lead to more creative deployment opportunities and solar business models.

Despite the many potential benefits of shared solar programs, there are challenges to successful implementation of these programs. As described in Table 3, customer adoption practices, additional rate design implementation, and further clarity and uniformity on how to structure a shared solar program must all be addressed if shared solar is to achieve its full potential.

Table 3. Current Challenges to Shared Solar Programs

Customer Adoption	Rate Design	Program Structure	Added Challenges
• **Lack of uniformity and standardization of customer contracts** · There are costs to businesses of developing contracts. · A significant amount of time is often spent educating customers on opportunity and arrangement. • **Marketing costs** · The newness of the shared solar market means more education and customer-acquisition costs.	• **Billing credit mechanisms not available in every jurisdiction** · The benefits of shared solar depend on customers receiving credit for energy generated by PV facilities. • **Unquantified benefits** · Clarity on the distribution and transmission benefits and costs of shared solar will give more certainty to shared solar energy credits.	• **Uncertainty for shared solar market participants about the applicability of federal SEC requirements for registration and disclosure for shared solar projects** · If a shared solar offering is structured as a security, then it is regulated by the SEC, which may be complicated and costly (although it may qualify for an exemption). • **Uncertain tax credit applicability** · There is some uncertainty to the applicability of the 25D residential tax credit to offsite shared solar models.	• **More infrastructure may be necessary for off-site systems** · E.g., the use of transmission and distribution lines. • **Managing supply and demand, if necessary, may be more difficult to implement** · However, customers' combined load may create a more balanced load to offset. • **Additional complexities in structuring group program and managing group project** · O&M. · Legal and regulatory filings. • **Additional laws and regulations may need to be implemented.** • **Site costs may be higher for off-site systems** · Might need to lease or purchase land or roof space.

Many U.S. companies and jurisdictions have already addressed some of these issues, which has helped expand the shared solar market. As shown in Figure 2, the number of shared solar programs has grown from one in 2006 to 41 as of August 2014.[4] These programs span 19 states and collectively have a maximum program size of at least 172 MW. The Solar Electric Power Association (SEPA) and the Interstate Renewable Energy Council (IREC) are also tracking another 16 programs in the planning or proposal stages, which could increase the market

[4] SEPA and IREC may use a different classification method for defining community or shared solar programs than the definition in this report.

presence of shared solar to 22 states and a maximum program size of at least 1.3 GW (Campbell et al. 2014; Campbell and Passera 2014).

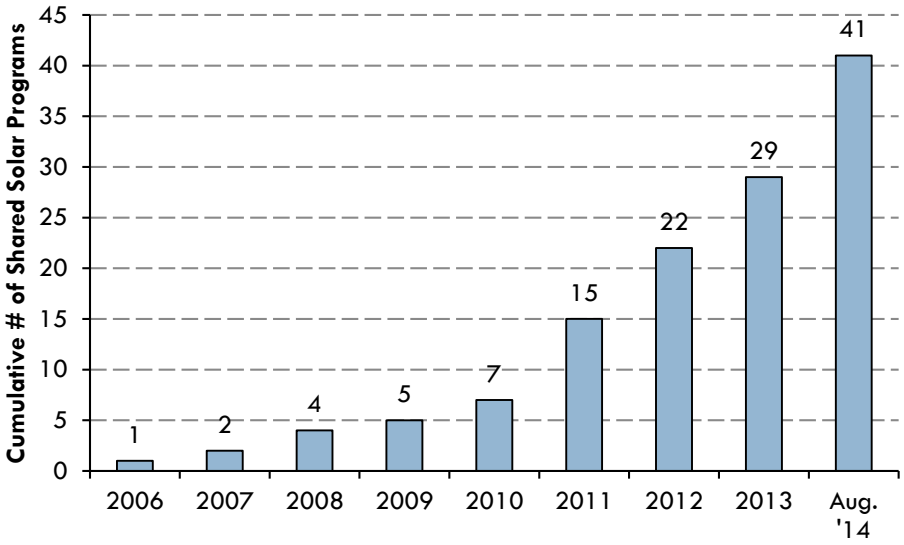

Figure 2. Cumulative number of U.S. shared solar programs, 2006–2014

Source: Campbell and Passera 2014

The potential benefits of shared solar suggest it could play an even larger role in the U.S. PV market. This report provides a high-level overview of the current U.S. shared solar landscape as well as an estimate of its market potential. Section 2 discusses the legal and business frameworks in which shared solar projects currently operate. Section 3 addresses issues currently inhibiting greater shared solar market expansion, with a particular focus on the issues pertaining to guidance from the SEC on whether a shared solar project constitutes a security. Section 4 provides an analysis of the market potential of shared solar if the issues limiting greater market expansion are addressed, followed by conclusions in Section 5.

2 Current Business and Legal Environment for Shared Solar

This section discusses variations in shared solar business models as well as federal-, state-, and jurisdictional-level considerations for shared solar.

2.1 Variations in Shared Solar Business Models

Shared solar arrays can be hosted and administered by a variety of entities, including utilities, solar developers, residential or commercial landlords, municipalities, community and nonprofit organizations, or a combination thereof. Electricity benefits are typically allocated on a capacity or energy-production basis. Participants in capacity-based programs own, lease, or subscribe to a specified number of panels or a portion of the system and typically receive electricity or monetary credits in proportion to their interest in or share of the project. Energy-based programs offer participants the opportunity to purchase the output of an array via kilowatt-hour blocks of generation. More generally, participation can also take the form of owning or leasing an interest in a shared solar array. Because of the potential for multiple, offsite electricity offtakers, shared solar programs have the potential to be more flexible than onsite single-user PV business models. Depending on the regulatory framework, residential, commercial, nonprofit, and municipal entities may be able to participate. Existing programs have, in some cases, stipulated that a percentage of the project be allocated specifically for residential or commercial entities, or for low-income participants.[5]

For further detail on the various approaches for shared solar development, see IREC and Vote Solar (2013). These different business models all aim to enable shared solar participants to receive a properly allocated share of the benefits of a PV installation. Utilities, developers, and investors may also find these business models more cost effective. Several federal, state, and jurisdictional rules have been enacted to facilitate shared solar deployment.

2.2 Federal-level Considerations

The U.S. tax code currently provides for national PV deployment incentives in the form of a 30% Investment Tax Credit (ITC), eligible in the first year of operation either under Section 25D or Section 48 of the tax code. The Section 25D credit is for persons using the solar property for residential purposes and, as currently written, will expire at the end of 2016. The Section 48 ITC can be used by businesses to offset income from a trade or business (e.g., all commercial and utility-scale installations and TPO residential, government, or non-profit installations) and, as currently enacted, will revert to 10% in 2017. Businesses that claim the Section 48 ITC have the

[5] Providing low-income individuals more access to the benefits of PV is a continuing effort throughout the industry (Mueller and Ronen 2015) and specifically within the shared solar space (Passera 2015). The Colorado Community Solar Gardens Act requires that retail utilities set forth compliance plan proposals for including low-income customers as subscribers to solar community gardens. Additionally, "the utility may give preference to community solar gardens that have low-income subscribers" (CO H.B. 10-1342). The standard was later revised to require at least 5% of an investor-owned utility's purchases that come from a shared solar facility to be reserved for low-income subscribers (4 CCR 723-3, Rule 3665, effective June 14, 2014). California's shared solar legislation also includes provisions for low-income individuals in its Green Tariff Shared Renewables legislation (SB 43), "which requires 100 out of 600 megawatts of the program's capacity to be located in 'disadvantaged communities' including those with socioeconomic vulnerability" (Passera 2015, ¶ 14).

additional benefit of using an accelerated 5-year tax depreciation schedule for the solar asset; together, the tax credit and depreciation schedule are commonly referred to as "tax benefits."

The Section 48 commercial tax credit is designed for use by for-profit entities with significant tax appetite,[6] such as investors, large developers, and investor-owned utilities. The economics of utility ownership are challenged by a regulatory measure that limits utilities' ability to pass on the full advantage of a solar project's tax benefits to their rate bases. In particular, the Internal Revenue Service (IRS) currently requires that the benefit of the ITC to utility ratepayers be amortized over the life of the facility—a process called "normalization"—thereby deferring the upfront tax benefit and diluting the incentive intended under the federal tax code. Utilities cannot take the ITC without normalizing the tax benefit. Owing to this normalization issue, many utilities have not purchased solar assets.

Partnerships and sole proprietorships seeking to use the credit must have a significant source of passive income. In practice, these limitations may exclude individuals, small developers, cooperative utilities, municipalities, and nonprofit entities from enjoying the tax benefits.

Qualifying single entities can take advantage of either the Section 25D residential ITC or the Section 48 commercial ITC. However, shared solar projects that involve multiple entities can pose challenges to allocating tax credit benefits. In some instances, shared solar projects can be structured such that a single entity can take advantage of the Section 48 tax credit. For example, a third-party commercial entity can set up a shared solar business model in which individuals or businesses lease a portion of a PV system. In this case, the third-party commercial owner uses the Section 48 ITC as well as the associated project depreciation expense. Individuals cannot use the Section 48 ITC unless the PV system is being used for a trade or business. Therefore, if a household uses the energy generated from the PV system they own for personal consumption,[7] they must use the Section 25D tax credit.[8]

There are remaining questions about the applicability of the 25D residential credit to shared solar models. The statutory language of the tax code states that only property that "generate[s] electricity for use in a dwelling … used as a residence by the taxpayer" may receive a credit (Section 25D (d)(2)). Based on this language, some shared solar developers had concerns that individual owners of an offsite shared solar project might be precluded from receiving the 25D credit because an offsite array *ipso facto* is not sited on the residence of the participating taxpayer. The IRS shed some light on this issue when it issued Notice 2013-70 in November 2013 (IRS 2013). Notice 2013-70 provided narrow guidance for a scenario involving offsite solar

[6] "Tax appetite" refers to the tax liability or expense a company owes to a state or the federal government which can be avoided either through a tax credit (i.e., the opposite of a tax expense) or through lowering a company's income through depreciation expense deductions. The tax benefits of a typical solar system are relatively sizable compared with its revenues and initial investment; additionally, owing to economies of scale, it is often necessary to deploy a significant amount of capital to justify the costs of structuring a solar investment. Therefore, typical solar project investors are large companies with a big tax appetite.

[7] If less than 80% of the use of the PV system is for nonbusiness purposes, only that portion of the expenditures for such item which is properly allocable to use for nonbusiness purposes can receive the Section 25D tax credit. However, a PV system used to produce energy for a home office, for example, may use the Section 48 tax credit.

[8] Section 48(a)(3)(C) states that eligible property can only include property "with respect to which depreciation (or amortization in lieu of depreciation) is allowable."

panels owned by a *single* taxpayer who also "owns the electricity transmitted by the solar panels to the utility grid until drawn from the grid at his residence" and who does not generate significantly more electricity than is consumed by the taxpayer at her or his residence (IRS 2013, page 10). While Notice 2013-70 signaled that Section 25D eligibility may extend to a single taxpayer in such a scenario, it is not clear whether the Section 25D ITC can be more widely applied to a situation involving multiple taxpayers entering into an offsite shared solar arrangement with different utility agreement terms. Currently, some groups are working to get more clarity on this issue.

Finally, there is uncertainty for shared solar market participants about the applicability of federal SEC requirements for registration and disclosure of shared solar projects. Central to this issue is whether an interest in a shared solar project is a "security;" if it is, then it is regulated by the SEC (although its offer may qualify for an exemption). Therefore, structuring a shared solar program should be carefully considered. This issue is discussed in more detail in Section 3.

2.3 State- and Jurisdictional-level Considerations

Owing to their inherent flexibility, shared solar programs can be structured to work in a variety of market and regulatory environments. Existing programs differ in their ownership and management structures, extent of utility participation, size and proximity to participants, target customer demographics, and mechanisms of participation. State and local market environments and policy and regulatory considerations often influence the optimal shared solar program structure for a particular jurisdiction. For example, state securities laws can build on federal securities laws to impact business model decisions for shared solar projects; interconnection policies can influence sizing, equipment, and siting decisions for solar arrays; and local permitting rules can ease or complicate soft costs for shared solar projects. A key question pertains to the allocation of benefits for program participants. Shared solar programs rely on the virtual distribution of benefits from the electricity-generating facility to customers. Benefit allocation can be legislatively enabled through state policy, utility enabled through billing mechanisms, or distributed locally by proxy.

Enabling legislation commonly takes the form of defined bill credit mechanisms such as VNM, specific solar tariffs, or holistic statewide shared energy programs that incorporate bill credit mechanisms or a set tariff. In some cases, such credit mechanisms have become synonymous with shared solar, and the terms are used interchangeably. However, shared solar programs can rely on a variety of benefit-allocation methods. VNM and other on-bill credit mechanisms enable the allocation of benefits from an electricity-generating source that is not directly interconnected to the electricity meter of the energy consumer. The customer's meter does not physically roll backwards when electricity is generated; rather, an agreed-upon credit from a designated facility appears on the electricity bill to offset electricity production or reduce the total bill. Such credits take various forms in different jurisdictions, and they can offset electricity bills on the basis of kilowatt-hour consumption and generation, electricity rate classes, or defined value-of-solar rates. Well-defined credit mechanisms can be useful for offsite solar arrays benefiting one or more customers or onsite solar arrays benefiting multiple customers, such as arrays located on

multi-tenant buildings.[9] Figure 3 provides a summary of enacted, proposed, and expected shared solar state legislation in February 2015.

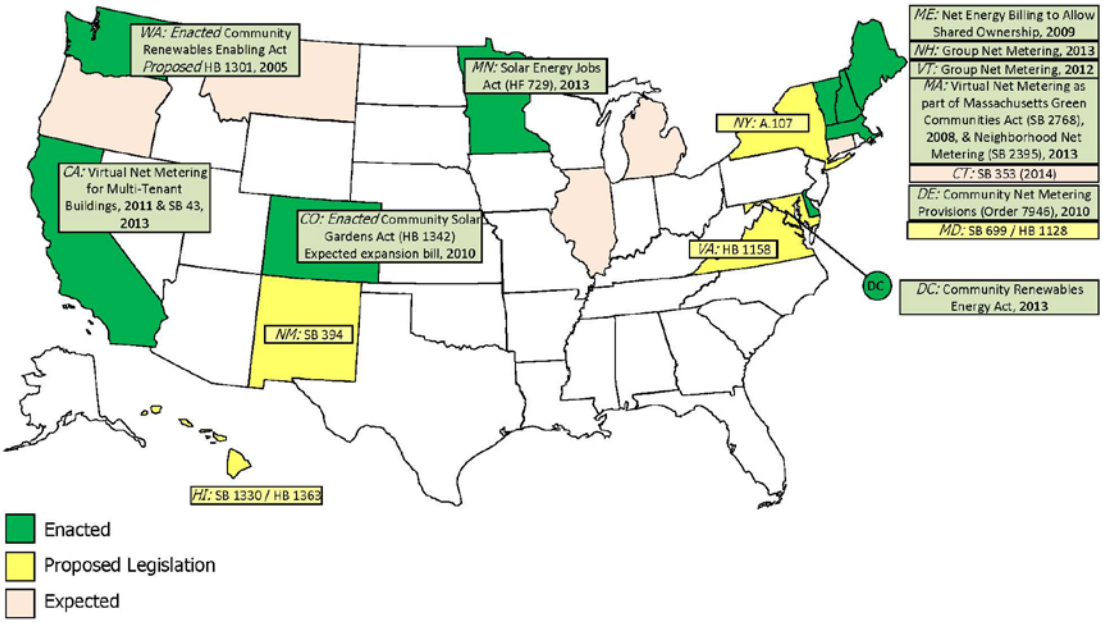

Figure 3. Enacted, proposed, and expected shared solar legislation, February 2015

Source: Vote Solar 2015

An overview of common state policies impacting shared solar programs can be found in Table 4. While all program types described below allow for shared solar implementation, states have taken a variety of approaches to enabling shared solar programs. For example, basic VNM legislation enables multiple customers to link their electricity meters to the electricity production of one shared solar array. More comprehensive statewide shared energy policies may establish business model frameworks that all shared solar programs in the state must follow, and tackle additional considerations, such as ownership, solar deployment goals, and reporting requirements. This table is not meant to be comprehensive or account for all nuances of every program. A more comprehensive discussion of state-level policies can be found in Appendix A.

[9] Other types of meter-aggregation policies (e.g., which allow individual customers to aggregate meters across multiple buildings or sites) are beyond the scope of this document. More information on other types of net metering options can be found in a 2013 report issued by the North Carolina Solar Center (Barnes 2013).

Table 4. Examples of State Policies Related to Shared Solar Programs

Program Type	Description	States
Group net metering or VNM	Enables the allocation of benefits from an electricity-generating source that is not directly connected to a customer's meter	California,[a] Connecticut,[b] Massachusetts, Maine, New Hampshire, Vermont
Statewide shared energy program	Establishes a comprehensive shared renewable energy program in the state (including VNM or value-of-solar provisions)	California,[c] Colorado, Delaware, District of Columbia,[c] Massachusetts, Minnesota
Incentives	Provides additional financial incentives for shared renewable energy programs	Washington

[a] Restricted to residential and commercial multi-tenant properties.
[b] Restricted to state, municipal, and agricultural customers as well as critical facilities.
[c] Specific rules are still being considered by the state regulatory commissions.

According to a set of reports produced by SEPA and IREC (Campbell and Passera 2014; Campbell et al. 2014), 31 of the 57 utility-offered shared solar programs (and 92% of the capacity allocated for utility-offered shared solar programs) are located in states that have community solar legislation. Although legislation that sets statewide VNM rules is helpful, it is not always necessary. In states without explicit VNM legislation or defined shared energy programs, utilities can still administer shared solar programs through their billing mechanisms. Benefits from shared solar programs can also be allocated by proxy in the case of joint ownership; for example, a cooperative apartment complex (co-op) which does not sub-meter electricity can reduce co-op fees proportionally to offset electricity credits from a shared solar system.

3 Addressable Regulatory and Market Issues for Shared Solar Beyond Legislation

This section discusses regulatory and market issues affecting shared solar, with an emphasis on SEC classification of shared solar projects as securities.

3.1 Shared Solar Market Maturity and Heterogeneity

Despite the regulatory frameworks that make shared solar available in some states and jurisdictions, the shared solar business model still faces barriers to greater adoption. Some states limit the class of customers who can participate in a bill credit mechanism program (e.g., Connecticut restricts VNM to municipal, state, or agricultural customers). Other states currently do not have regulatory frameworks in place that explicitly allow alternative bill credit mechanisms, such as VNM.

Additionally, there are regional legal and regulatory variations that make it difficult, or costly, to scale up the shared solar model in an efficient manner. New business models can be challenging to scale with different market conditions and without homogeneous regulatory frameworks in place. Standardizing shared solar regulatory frameworks and contracts could create more transparency and consistency for investors and consumers and lower overall project development costs. Public awareness also presents an obstacle owing to the cost and time associated with business marketing and customer acquisition for a business model that may be unfamiliar to many. Additionally, for shared solar projects that involve multiple owners, different procedures must be instituted. For example, a co-op structure must determine how operations and maintenance will be performed on the system.[10]

Owing to the infancy of the market, there is also a lack of legal precedent, market research, and data on project successes. More than half of the shared solar programs currently tracked by SEPA have been implemented in the past two years or are still in the planning or proposal stages (Campbell et al. 2014). Operating without legal precedent and market data makes it more difficult to assess the risks of a project, and this uncertainty can make it more difficult to convince potential customers or investors to participate. Under these circumstances, investors may charge a higher rate of return, making project financing more challenging.

3.2 DOE Shared Solar Workshop, October 2013

To evaluate these challenges and identify paths forward, the U.S. Department of Energy's (DOE's) SunShot Initiative hosted a full-day stakeholder workshop entitled *Shared and Community Solar: Getting to Scale* in October 2013. The workshop consisted of approximately 80 representatives from the solar industry, utilities, nonprofit and community organizations, and representatives from the legal and finance fields. Attendees discussed shared solar in the context of structural, regulatory, financial, and educational hurdles. The focus of the workshop was on how to seize opportunities to scale up the shared solar market to enable 5 GW of U.S. shared solar deployment by 2020 (up from approximately 50 MW deployed by 2013). Workshop

[10] One solution to this challenge is the establishment of an operations and maintenance trust, an entity established with a pool of money set aside for the sole purpose of operating and maintaining the PV system.

attendees identified many of the issues raised previously in this report and emphasized the importance of utility participation in the design and implementation of shared solar programs. In general, attendees felt that local stakeholder input is crucial for optimal design of local programs and that additional education and outreach are needed to convey the potential of shared solar.

However, the top concern raised among stakeholders at the workshop was the uncertainty about the applicability of SEC requirements for registration and disclosure of shared solar projects. Community and shared solar models lack a long history of case law upon which to rely for determining applicable state and federal regulations. Participants felt that increased clarity on regulations regarding current operating practices can aid the development of replicable business models and help inform stakeholders, including state policymakers and regulators, in drafting legislation and rules to support shared solar models.

Central to this issue is whether an interest in a shared solar project is considered a "security" under the federal securities laws. If it is considered a security and the project fails to qualify for an exemption, the project is subject to compliance with federal securities laws, as administered by the SEC, making it more complicated and expensive to structure and develop.

3.3 DOE-facilitated Engagement with the SEC about Shared Solar

Stemming from the shared solar stakeholder workshop held in October 2013, DOE pursued conversations with SEC staff to help the industry better assess whether various shared solar financial instruments are considered securities. A stakeholder meeting was held at DOE headquarters in Washington, DC, on June 27, 2014, in which SEC staff summarized key clarifications and answered stakeholder questions.[11]

The June 27 meeting was primarily focused on discussion of a single no-action letter request made to the SEC by CommunitySun, LLC (CommunitySun 2011). The CommunitySun letter can be found in Appendix C, and the SEC no-action response can be found in Appendix D.

[11] A list of attendees can be found in Appendix B. The SEC staff members spoke only in their respective individual capacities about the CommunitySun no-action letter and the general framework of the federal securities laws. Their views do not necessarily reflect the views of the staff of the Division of Corporation Finance or the Commission generally or specifically with respect to shared solar projects and the application of the federal securities laws to these projects. Information contained in this document does not constitute legal advice or an official position by either the SEC or DOE; this document is for informational purposes only.

Role and Authority of the SEC

The SEC was established through the Securities Act of 1933 and the Securities Exchange Act of 1934. These laws were passed in order to "increase information disclosure surrounding the issuance and trading of securities" following the failure of so-called state-level "blue sky" laws, which were being circumvented via interstate issuance and trading (Bailey 2012). The Securities Act of 1933 regulates the offer and sale of securities, including the initial offering of securities by an issuer to the public. The act requires all initial offerings to have a registration statement on file with the SEC that discloses important information to investors. The act also prohibits the sales of and offers to buy any security for which no registration statement has been filed. The Securities Exchange Act of 1934 regulates, among other things, the ongoing disclosures provided by companies that sell securities through registered offerings (Bailey 2012).

Registration and ongoing reports filed with the SEC are designed to protect investors from fraudulent investment schemes, and registration and compliance can require significant time and financial investment with administrative and legal cost ranging from tens of thousands to millions of dollars.

As a result, determining whether a particular offering constitutes a security has significant securities-laws consequences. The legal determination itself may consume significant resources. In order to increase certainty regarding the status of an offering, the public may seek clarity directly from the SEC. The Office of Chief Counsel in the SEC's Division of Corporation Finance is available to discuss whether a business model constitutes a security, and the Office of Small Business Policy, also in the SEC's Division of Corporation Finance, can provide guidance on exemptions from registration available under the federal securities laws. However, businesses may seek more formal assurance about the status of new proposed financial instruments used in a specific offering. One method for more formally establishing the SEC staff's view as to whether an instrument used for an offering is a security is to seek a "no-action letter" from the SEC's Division of Corporation Finance. To do this, individuals or entities provide information regarding a particular product, service, or action to the SEC staff to determine whether not registering the offering as a security would constitute a violation of federal securities law. If SEC staff recommends that the Commission not take enforcement action against the requester on the facts and representations described in the individual's or entity's request, then the SEC staff may issue a no-action letter (SEC n.d.).

If numerous requests pertain to a single or related set of topics, the SEC may decide to issue a staff legal bulletin, which applies to a topic more broadly than a letter to one particular individual or entity. However, the SEC and its staff are not the final arbiters—as is the case with any law, the courts ultimately decide what is and is not a violation of federal securities laws.

3.4 CommunitySun No-action Letter

CommunitySun is a renewable energy developer that sells interests in shared solar installations via a "SolarCondo[12]" framework. Under CommunitySun's arrangement, a group of customers collectively owns a PV installation and receives VNM credits on its individual electric-utility bills. In seeking clarification from the SEC, CommunitySun wanted to make sure that the SEC staff would not construe an interest in a SolarCondo as a security. In its request for a no-action letter, CommunitySun argued, among other things, that the purchasers of their SolarCondos had no expectation of profit, but rather were purchasing a system for generating electrical energy for their own personal use. This distinction was deemed by SEC to be operative, and it allowed the SEC to issue the no-action letter.

The Securities Act of 1933 lists different types of securities, including stocks, notes, and "investment contracts." If an instrument is determined to fit into one of these categories, it is a security. To assess CommunitySun's request for a no-action letter, the SEC focused its inquiry on whether an interest in a CommunitySun PV project had the properties of an investment contract, thus qualifying the interests in a SolarCondo as a security. The U.S. Supreme Court identified four criteria for investment contracts in the case, *Securities and Exchange Commission v. W.J. Howey Co.* (1946).

In *Howey,* the Supreme Court established a test to determine whether an instrument qualifies as an "investment contract" for the purposes of the Securities Act of 1933. This test, often referred to as the Howey Test, states that an investment contract has the following criteria:

- An investment of money
- In a common enterprise
- Based solely on the efforts of a promoter or a third party
- For which there is an expectation of profits.

SEC staff stated that the purchase of a SolarCondo in the CommunitySun shared solar project meets three of the Howey Test investment contract criteria, but not necessarily the fourth criterion, as demonstrated in Table 5.

Table 5. Howey Test Application for CommunitySun

Criteria	CommunitySun Program
An investment of money	Yes. Customers purchase condominium interests.
In a common enterprise	Yes. Multiple customers are expected to purchase an interest in a single PV asset.
Based solely on the efforts of a promoter or a third party	Yes. The program is to be developed, and the project is to be built and operated, by CommunitySun or other businesses they hire.
For which there is an expectation of profits	***Not necessarily***. SolarCondo owners may have many motivations for purchasing a condominium interest.

[12] "SolarCondo" is a registered trademark of CommunitySun, LLC.

Because it is not readily apparent whether SolarCondo owners seek profits, as SEC staff explained, the expectations of the owners and sellers must be determined.[13]

In its letter urging an SEC no-action response, CommunitySun pointed to the holding in *United Housing Foundation, Inc. v. Forman*, 421 U.S. 837, 847 (1975), which involved investors buying an apartment in a housing cooperative (condo). In this case the court determined that there was not an expectation of profit—investors were living in the units, and their purchase was motivated instead by personal consumption and use.

CommunitySun's letter also emphasized that its SolarCondos are similar to the Forman apartments in that they provide a good or service—in this case, electricity—for personal use. Consequently, CommunitySun contended that their SolarCondo owners did not expect profit out of the arrangement. This argument appears to have been effective in part because the SolarCondos bore some resemblance to traditional condominium arrangements that have clearer and longstanding terms of use related to securities with clearer precedent.[14]

In CommunitySun's case, the company argued that SolarCondo owners participate in the program for personal consumption; while they may receive credit from the electric utility, the primary purpose of the arrangement is to provide energy (use) or to benefit the environment (enjoyment). Because energy is fungible (electrons are indistinguishable whether generated on- or offsite), the panels of a SolarCondo owner effectively generate electricity for the owner's consumption even if the exact same electrons they generate are not the same as those consumed. Thus, CommunitySun reasoned, because the primary motivation for participating in the SolarCondos is personal consumption and not the expectation of profit, CommunitySun's shared solar project did not present an investment contract, and therefore interests in the project did not amount to securities.

Based on the CommunitySun no-action letter, the central questions in determining whether an interest in a shared solar project is considered an investment contract and therefore a security appear to be the motivation of the participant and the perception of the financial instrument. How a customer is compensated for a share of electricity, the documentation of the agreement, and the marketing of the product may all influence the customer's motivation and perception. Therefore, states, jurisdictions, and developers should keep in mind that the way a shared solar compensation framework is structured and marketed—that is, whether it could be seen or used as a financial play as opposed to simply providing a mechanism for the use of renewable energy or credits for that energy at an individual's meter—can have an impact on whether an interest is viewed as a security under federal law.

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[13] Some shared solar developers have approached the Howey Test differently than CommunitySun to argue that interests in a shared solar project do not constitute a security. For example, rather than focusing on the expectation of profit, some shared solar programs have been structured to avoid classification as a "common enterprise" (e.g., individual panels are sold to participants rather than "a share" of the project). Some developers have also claimed that their enterprise is not based solely on the efforts of a promoter or a third party because their project is administered by a democratic association of project participants.

[14] SEC staff members noted that the condo or real estate business structure is not necessary in order to successfully avoid being classified as a security. Note that there are some condo arrangements that are defined as securities; these include rental schemes and hotel-condo arrangements.

3.5 Structuring Billing Mechanisms to Avoid Interest in a Shared Solar Program Being Classified as a Security

A number of state or locally regulated legal structures could be used to create a shared solar program. In order to avoid SEC oversight, the primary goal and function of a program should be to provide electricity for personal consumption, not for profit. However, some specific PV market factors can make this challenging. PV system production and customer consumption both vary, owing to weather and consumption habits. For example, under a net metering arrangement, if a PV system produces more than a customer consumes, the energy is metered back to the grid. Almost all net metering arrangements, including VNM, credit excess electricity that goes back into the grid against the energy a consumer draws from the grid, in some manner, as long as a customer's PV system produces less than they consume over a predetermined period (typically a year). These arrangements are normally structured on the premise that a PV system that produces energy equal to or less than the consumption of a customer functions to provide energy for that customer. While the same electrons generated by a customer's PV array might not be used by a particular customer, the intent is still the same. That said, the further a net metered arrangement departs from the PV asset primarily being used to offset the customer's consumption, the harder it becomes to argue that the energy is solely designed for personal use and not profit.[15]

In some cases, a small amount of excess generation is produced by the PV system relative to consumption over a given period owing to variability in weather and consumption habits. Many net metering programs allow PV systems to be sized slightly larger than a customer's average or historic consumption to account for changing weather and consumption habits while still allowing customers the opportunity to offset as much of their electricity consumption as possible. In these instances, the utility may or may not provide payment to the consumer for the value of the excess electricity generated. In such cases, a small payment to a shared solar program participant for excess generation flowing back to the grid may not necessarily lead to classification as a security as long as electricity consumption remains the primary goal of the program. Similarly, reducing system cost through the use of federal or state tax credits, local rebates, or the value of solar renewable energy credits (SRECs) does not necessarily evince a shared solar participant's motivation to seek profit, only to minimize costs. However, high overproduction and compensation allowances can undercut the argument that a system's electricity generation is designated for personal consumption.

Program participants can receive credit for electricity generated from a shared solar project in various ways. In states with bill-credit-mechanism legislation, customers typically, though not always, receive a one-to-one credit for each kilowatt-hour the system generates. In programs in other states, credits may be allocated based on a predetermined value-of-solar rate or tariff.[16] In either case, participant motivation—consumption versus profit—remains the dominant factor for

[15] Relatedly, the distance between the customer and the PV system may matter, especially if the energy transaction is particularly complex. Most shared solar arrangements currently use utility programs that require a PV system to be within the same service territory and/or state as the participants. In such cases, the geographic distance between a customer and a shared solar array is usually relatively proximate. However, the farther a shared solar PV system is located away from the participants in a shared solar program, the more difficult it may be to argue that the electricity produced is for personal consumption.

[16] A third category of utility programs uses billing mechanisms based on retail rates, or some portion thereof, minus any service or transmission charges.

determining whether an interest in a shared solar arrangement will be construed as a security under federal law.

3.6 Structuring Shared Solar Programs to Avoid Federal Regulatory Oversight

Developers often provide information to potential consumers on the projected cost savings of a shared solar project relative to retail electricity prices, the effective rate of return on the cost of the system, or the system's payback period. How a program is marketed can make a difference in the determination of whether the product is a security. If a shared solar product is marketed primarily as a profit-generating program, it is more likely to come under SEC scrutiny. If a developer does not want its product classified as a security, the primary benefit of program participation should be marketed for reducing a customer's retail electricity bill.

Shared solar offerings that are classified as securities can still be offered and sold, so long as they are either registered with the SEC under the Securities Act of 1933 or they qualify for an exemption from registration. There are several available exemptions from registration under the Securities Act of 1933. The most relevant exemptions for shared solar programs include Rule 506 of Regulation D (CFR, §230.506) (more specifically Rules 506(b) and (c)), Rule 504 of Regulation D (CFR, §230.504), the intrastate offering exemption, and exemptions related to nonprofits.

By far, the most widely used exemption from registration is Rule 506(b) of Regulation D. Rule 506(b) allows an entity to raise an unlimited amount of capital from an unlimited number of "accredited investors."[17] Up to 35 non-accredited individuals may also participate in a Rule 506(b) offering, so long as they have a certain amount of financial sophistication and are provided a certain disclosure document. No advertising is allowed, which may make finding interested investors problematic. The Rule 506(c) exemption is similar to Rule 506(b), but it allows an issuer to engage in general solicitation and general advertising to offer and sell their securities, so long as sales are made only to accredited investors and the issuer takes reasonable steps to verify that the investors are accredited investors.

Another potential exemption from registration for shared solar projects is Rule 504, which allows an issuer to raise up to $1 million per year. Unlike the Rule 506(b) and (c) exemptions, issuers relying upon Rule 504 must comply with the state registration requirements for each state in which they offer or sell their securities. General solicitation and general advertising to find investors are usually not permitted under Rule 504.

Most current shared and community solar programs may qualify for the intrastate offering exemption under Section 3(a)(11) of the Securities Act of 1933. To qualify for the intrastate

[17] Accredited investors are wealthy individuals who fall into the following categories: 1) generate individual income in excess of $200,000 per year (or joint income with their spouse in excess of $300,000 per year) in each of the two most recent years and have a reasonable expectation of reaching the same income level in the current year; 2) have a net worth exceeding $1 million (excluding the value of their home equity in their primary residence); and 3) any director, executive officer, or general partner of the issuer of the securities being offered or sold, or any director, executive officer, or general partner of a general partner of that issuer (SEC 2013).

offering exemption, an issuer must be organized in the state where it is offering its securities, carry out a significant amount of business in that state, and make offers and sales only to residents of that state. Rule 147 provides issuers with a safe harbor and clear guidelines on how to conduct a valid intrastate offering. Specifically, 80% of the proceeds of the offering, gross revenues, and assets must come from in-state activity. Additionally, the issuer can only advertise in that state,[18] shares cannot be sold outside the state within 9 months from the original date of purchase, and all state registration requirements and securities regulations apply. While many of these requirements do not pose a problem for individual shared solar projects, they may make it difficult to scale a shared solar business and may limit a business's operational effectiveness.

Nonprofit solar developers that qualify under Section 501(c)3 of the tax code may also be exempt from SEC registration under Section 3(a)(4) of the Securities Act of 1933 because, by definition, these organizations do not have any profits. However, there are currently few nonprofit developers operating in the United States. Additionally, relying on a nonprofit developer may also create challenges if the shared solar project uses a TPO model, in which the customers lease or contract for electricity rather than owning the underlying assets.[19]

Applicable federal securities regulations will vary depending on a shared solar program's design. A variety of current shared solar developers are approaching the Howey Test differently to argue that an interest in their program does not constitute a security.[20] However, even if an interest in certain shared solar programs is a security, for federal purposes, the program can still operate if it complies with federal securities laws. As shared solar business models become more prominent, precedents are likely to form and guidance will become clearer.

In 2012, the federal government passed the Jumpstart Our Business Startups (JOBS) Act, attempting to "cut the red tape" and make it easier for small investments to comply with federal securities regulations. Title II of the JOBS Act modifies Rule 506 of Regulation D to allow issuers to engage in "general solicitation and advertising" to find accredited investors. Title III of the JOBS Act, concerning "crowdfunding," allows companies to raise up to $1 million per year from individual investors with fewer regulatory requirements.

3.7 Regulations Beyond Federal Securities Laws

In addition to complying with federal securities laws administered by the SEC, shared solar projects, to the extent they involve the offer or sale of securities, will also be subject to state securities laws in every state where an offering or sale is made. While a majority of states also follow the Howey Test in their definition of a security, approximately 17 jurisdictions apply a broader test called the "risk capital test" (Kassan 2015; Blomberg and Forcier 2005).[21]

[18] Internet advertisement must have clear statements saying that the instrument is only available in the selected state.
[19] In a TPO model, a nonprofit's participation in certain financial transactions may preclude investors from receiving a federal tax credit.
[20] See footnote 13.
[21] The risk capital test has been adopted in some form by the following 17 jurisdictions: Alaska, Arkansas, California, Georgia, Guam, Hawaii, Illinois, Michigan, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Washington, Wisconsin, and Wyoming (Cutting Edge Capital 2015).

In 1959, to pay for a portion of building a country club in Marin County, California, developers sold charter memberships in the club. Charter membership gave individuals the right to use the club's facilities but did not entitle the individuals to any profit or ownership in the club. These memberships were not considered securities under the Howey Test because members did not receive a financial return--only the benefit of club access. However, the California Supreme Court ruled that these memberships were securities in the case *Silver Hills Country Club v. Sobieski* because the issuance fell under the purview of the regulatory intent of the California Corporate Securities Act (Silver Hills Country Club v. Sobieski 1961). "The court found that the investors were risking their capital in expectation of receiving the benefits of club membership, which was in the control of the issuers of the membership. Notably, the court stated the 'act extends even to transactions where capital is placed without expectation of any material benefits'" (Cutting Edge Capital 2015, ¶ 31). The court felt that the judicial system must look through "form to substance" in order to protect the public from schemes to attract "risk capital." In *Silver Hills Country Club v. Sobieski* the California Supreme Court established the following criteria, often referred to as the "risk capital test," to determine whether an instrument qualifies as a security (Cutting Edge Capital 2015):

- Funds are being raised for a business venture or enterprise
- The transaction is offered indiscriminately to the public at large
- The investors are substantially powerless to affect the success of the enterprise
- The investors' money is substantially at risk because it is inadequately secured.

There still exists some uncertainty regarding how the risk capital test should be applied. In the 1986 California Supreme Court case *People v. Figueroa*, the court noted, "the corporate securities laws do not contain an 'all-inclusive formula' by which to test the facts in every case. And the courts have refrained from attempting to formulate such a test. …In arriving at a determination, the courts have been mindful that the general purpose of the law is to protect the public against the imposition of unsubstantial, unlawful and fraudulent stock and investment schemes and the securities based thereon" (Section 736). In most jurisdictions, the risk capital test is used in conjunction with the Howey Test: if an instrument meets the definition under either test, it is generally deemed to be a security.

Regardless of whether they involve the issuance of a security, shared solar projects are also covered by many other federal, state, and local laws. For example, state laws governing real estate and fraud may apply to all types of shared solar projects. Shared solar programs may also fall within the jurisdiction of the regulations administered by a public utility commission (e.g., rate structures, program-specific tariffs and/or fees, and power purchase agreement usage).

4 Shared Solar Market Deployment Potential

This section provides an estimate of the customer market expansion potential that shared solar could provide to the distributed PV market from 2015–2020. The analysis relies upon existing analyst projections of distributed PV installations and infers the additional deployment levels that can be achieved through expanding the available PV system customer base.[22] This section also discusses factors not included in the analysis that could cause the shared solar market to be greater than these estimates.

This analysis does not attempt to calculate the potential rooftop and land area available for shared solar. Several analyses have been conducted previously (Denholm and Margolis 2008; Macknick et al. 2013) showing that the available U.S. rooftop and land area could host hundreds of gigawatts of distributed PV installations; shared solar is merely an ownership structure that can be used to build nearly all of these installations. This analysis assumes that rules and regulations are implemented to allow enough shared solar to be deployed in all states rather than limiting the market potential to states that currently allow VNM or other energy crediting mechanisms. Finally, this analysis relies on market projections of PV system potential across the United States from a variety of sources. We did not perform our own independent market projection through detailed market modeling of factors such as renewable portfolio standard (RPS) requirements, future competitiveness of PV system electricity cost to retail rates, or local supply chains.

Market potential for shared solar was calculated separately for the residential and non-residential PV markets. For each market segment, customers were identified that currently cannot practically host an onsite PV system (either as a PV system owner or through a TPO model).

4.1 Residential Market

Residential customers not able to host a PV system are assumed to meet one of the following criteria: 1) households that do not own their building (i.e., renters), 2) customers in buildings with more than three stories, or 3) those living in a building with insufficient roof space to host a PV system. As shown in Figure 4, the percentage of renters in the U.S. housing market was roughly 50% between 1920–1940 and has been around 35% since the 1970s. Here we assume the percentage of renters remains at 35% over the next decade.

[22] Any cannibalistic shared solar deployment (i.e., deployment that would have occurred otherwise through traditional onsite PV generation) is not calculated. In other words, this analysis does not estimate whether customers who have the ability to host an onsite PV installation will instead opt for a shared solar program.

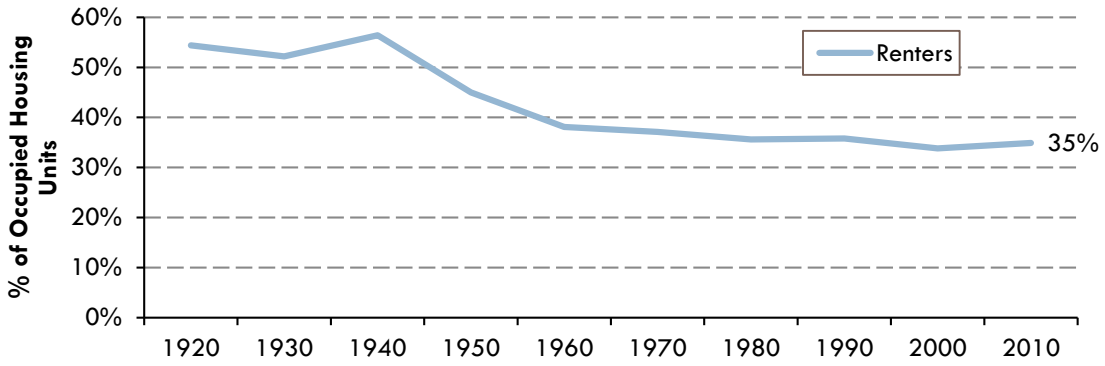

Figure 4. Historic percentage of U.S. housing units occupied by renters

Source: Mazur and Wilson 2011

Landlords do not typically purchase the electricity for residential units and may not directly benefit from lower electricity payments. Tenants do not own the properties they inhabit and may not have the ability to authorize an onsite PV array, or, because they are only temporary occupants of the property, long-term investments may not make financial sense. This "split incentive" makes it difficult for either party to be motivated to purchase a PV system for rental property. Shared solar offers a way for renters to harness the benefits of solar deployment.

Shared solar also may be a suitable option for property owners living in buildings without sufficient access to roof space for PV. High-rise buildings and/or multi-unit housing can present barriers to customers hosting a PV system because individual owners typically do not own a specified portion of the roof space. Additionally, the roof space per household is frequently very small, particularly for high-rise buildings, meaning that the proportional electricity production credit allocation per unit owner will likewise be small. It is also very difficult to install PV systems on buildings with four or more stories because typically the material either has to be brought onto the roof through the interior of the building or outside by special, expensive equipment (such as a crane). As shown in Figure 5, approximately 37% of households are occupied by renters or by owners who live in buildings with four or more stories.[23]

[23] In addition to buildings with four or more stories, shared solar is ideal for residential households in multi-unit buildings. The underlying data in Figure 5 also include information segmenting buildings by "# of units in structure." Based on these data, approximately 36% of U.S. households are in buildings with five or more units. Unfortunately the data either separate buildings by "# of stories" or "# of units." Therefore, the structures cannot be segmented using both screens at once. That said, there is likely a large overlap between buildings with more than four stories and buildings with more than five units.

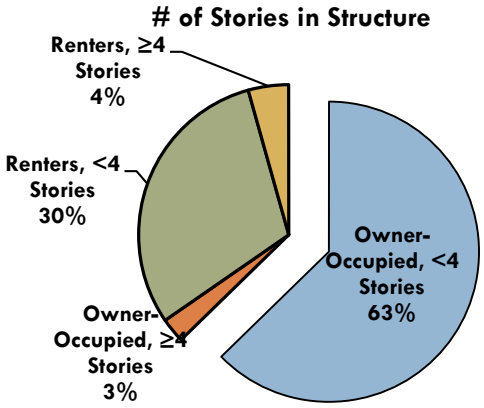

Figure 5. U.S. households by units in structure, stories in structure, and renter/owner occupation

Source: HUD and DOC 2013

Of the 63% of households that are owner occupied and in a building of less than four stories, we estimated how many of them had sufficient roof space to site a PV system. LiDAR rooftop data from the U.S. Department of Homeland Security were analyzed in 167 U.S. regions (see map in Appendix E). The data processed cover an area with a population of 100.1 million (33% of the population of the lower 48 states) and roof area of 7.7 billion square meters, including 13.1 million city buildings and 13.8 million rural and suburban buildings.[24] Data were unavailable to determine which buildings within the data set were "residential." Therefore, those with a footprint less than 5,000 square feet were assumed to be "residential" based on previous analysis from Ong et al. (2012).

As an initial step, the data were analyzed to determine how many buildings meet the following requirements to host a PV system:

- Shade and slope thresholds enabling PV modules to receive sunlight for an acceptable period[25]
- A roof facing flat, south, east, southeast, west, or southwest--also to ensure that PV modules receive sunlight for an acceptable period[26]
- A minimum of 10 square meters of contiguous area meeting the above requirements.

It is estimated that 10 square meters of contiguous roof space are sufficient to install a 1.5-kW PV system, assuming an average module efficiency of 15%, which is in line with 2014 average multicrystalline module efficiencies of 15%–16% (Munsell 2014). The 1.5-kW system threshold

[24] We do not have a statistical breakdown for the entire United States of building stock separated into city, rural, and suburban areas. However, as of 2010, approximately 31% of the population was located in cities, and 69% of the population was located in rural or suburban areas (National Center for Education Statistics 2006; U.S. Census Bureau 2010).
[25] The acceptable period represents the minimum amount of time required for the roof to produce 80% of potential generation. The number of hours differs by location. For more detail, see Melius et al. (2013).
[26] In the northern hemisphere, the sun's path goes from southeast to southwest.

was chosen because a significant portion of U.S. residential systems are installed at or below this capacity. Although residential systems can range significantly in size, they are typically assumed to be less than or equal to 10 kW in capacity (Sherwood 2014). While the average size of systems less than or equal to 10 kW is 4.9 kW, 19% of the systems have capacities between 1.5 kW and 3 kW, as shown in Figure 6.

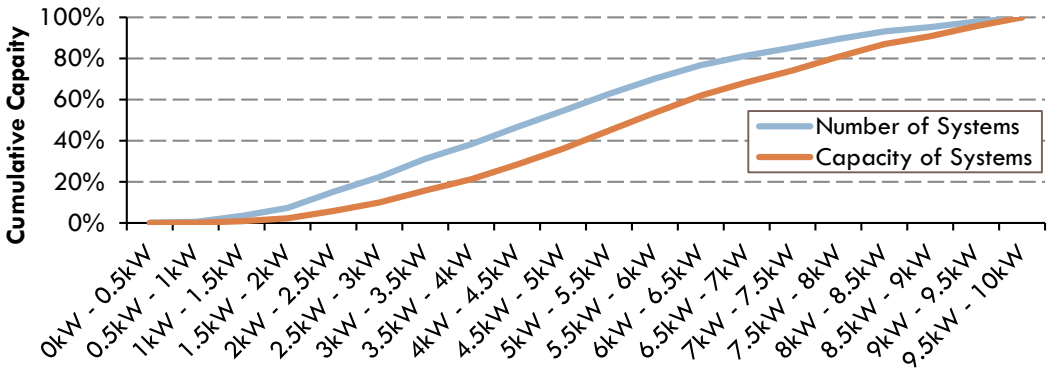

Figure 6. Cumulative percentage of U.S. PV systems less than or equal to 10 kW, by number of systems and capacity

Source: OpenPV Database 2014

This indicates that setting the threshold at 3 kW versus 1.5 kW would exclude 19% of currently installed U.S. systems sized at 10 kW or less. Further, DOE's *A Guide to Community Solar* estimates the average size of a customer's portion of a shared solar installation is between 0.5 kW and 4 kW (Coughlin et al. 2010), and SEPA's recent survey of community solar programs found that the average residential participant purchased 1.7 kW of capacity (Campbell et al. 2014).

Based on the thresholds outlined above, the analysis indicates that 81% of residential buildings have enough suitable roof space to host a 1.5-kW PV system.[27] Some variability exists within the data depending on the region of the country. For example, given a minimum threshold of 10 square meters, only 73% of residential buildings in the Northwest satisfy the minimum threshold requirements outlined above compared to 86% of residential buildings in the Southwest.

When accounting for a residential building's ownership, number of stories, and availability and suitability of roof space, we estimate that only 51% of households can install a 1.5-kW PV system.[28] In other words, shared solar has the potential to double the residential market by

[27] The larger the system desired, the fewer buildings that meet the minimum contiguous area requirement. In a preliminary analysis, using a smaller sample of LiDAR data, we set three different thresholds for minimum contiguous areas of roof space: 10 square meters, 20 square meters, and 30 square meters. Based on these thresholds the analysis indicated that 79%, 58%, and 39% of buildings 5,000 square feet or less can host a PV system on 10 square meters, 20 square meters, and 30 square meters of contiguous roof space respectively. That said, the larger a system the less likely it would need to be contiguous. Additionally, as PV manufacturers increase average panel efficiency over time the necessary roof space required to host a PV system decreases.

[28] The 49% value is derived by multiplying the 63% of households comprising non-renters living in buildings of less than four stories by the 81% of residential buildings that can host a 1.5-kW PV system.

offering PV to the 49% of households that—owing to shading, roof suitability and size, or ownership—cannot host a PV system.

To assess the near-term market potential of onsite residential PV, we collected analyst projections of the U.S. residential market. These estimates project until the year 2017, after which we kept demand constant, as shown in Figure 7.

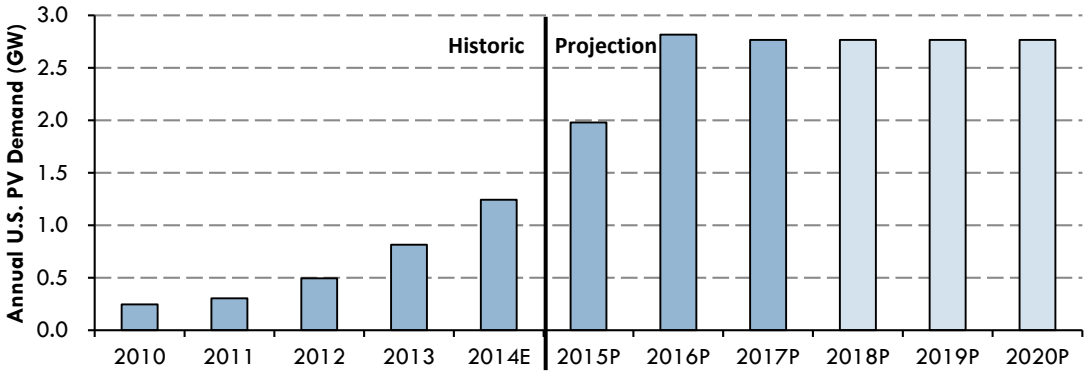

Figure 7. Historic and projected U.S. residential PV deployment

Note: 2010–2017 data represent the median historic and projected deployment numbers from collected analyst projections. It is assumed that deployment levels remain flat from 2018–2020.

Sources: Lee et al. 2015; BNEF 2015; SEIA and GTM 2014

While shared solar has the potential to double the residential PV market (as outlined above), net metering caps, limited state PV incentives, and the growth rate of this new financial business model are likely to bound deployment in the next five years.

Net metering, as discussed in Section 3, is a billing mechanism that allows customers to receive credit on their utility bills for energy generated from a PV system. Net metering caps limit the total amount of net metered generating capacity that can be installed in a state or utility service territory. A recent National Renewable Energy Laboratory (NREL) report found that a little over half of states with net metering policies have caps on their net metered capacity; several more states without caps have triggers that enable net metering to be reviewed. The report also found that "a handful of states could reach current cap levels by 2018" (Heeter et al. 2014, page 33).

At the state level, the RPS has proven to be one of the most significant drivers of renewable energy deployment in the United States. An RPS, also called a renewable electricity standard (RES), requires electricity suppliers to purchase or generate a targeted amount of renewable energy by a certain date. Although design details can vary considerably, RPS policies typically enforce compliance through penalties, and many include the trading of renewable energy certificates (RECs). As shown in Figure 8, 23 states and Washington, DC, had RPS policies with specific solar or distributed-generation provisions as of September 2014 (DSIRE 2014).

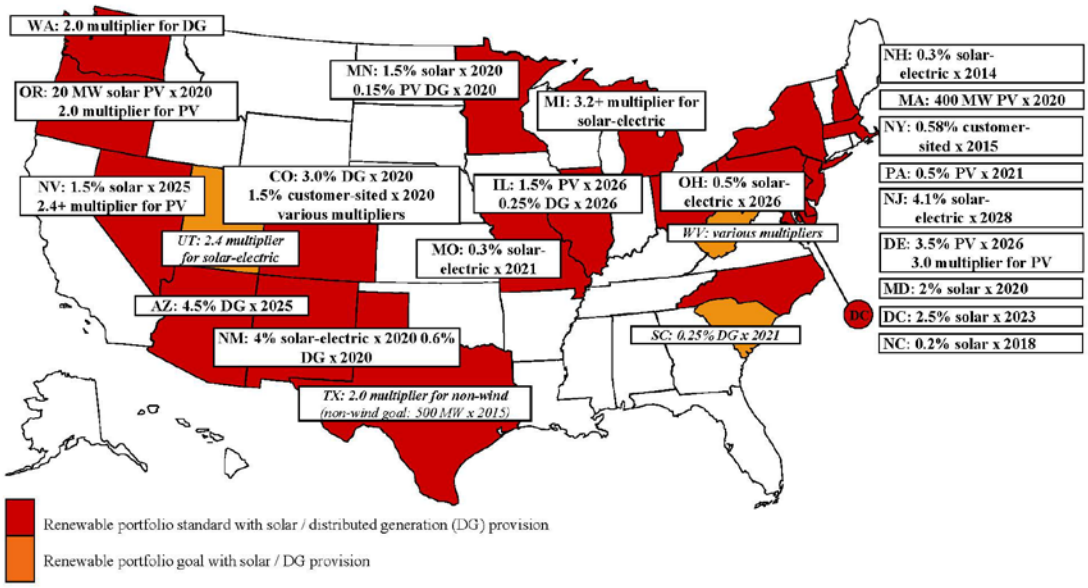

Figure 8. State RPS regulations with solar and distributed-generation (DG) set-asides

Source: DSIRE 2014

As an alternative to RECs, states have incentivized PV deployment through upfront cash grants, performance-based cash grants, state and local tax credits, and feed-in tariffs. Local jurisdictions without strong state solar mandates (e.g., Austin, TX) have developed solar initiatives as well. These programs either have limited funding or respond to market oversupply relative to RPS requirements; therefore, a portion of future PV demand is limited by incentives and RPS mandates. This may be particularly relevant post-2016, when the 30% federal residential ITC expires, the federal commercial ITC is reduced to 10%, and projects must rely more heavily on state funding or revenue through the trading of RECs.

Recently, PV systems have been installed in certain U.S. markets (e.g., Hawaii, California) without the need for state or local incentives, either because of relatively high retail electricity rates in those markets, relatively low system costs, or a combination of both factors. As shown in Figure 9, in the fourth quarter of 2013, only 37% of distributed PV systems installed in California received assistance from the California Solar Initiative (CSI), the state's largest incentive program. This was down from 89% just 2 years earlier, while the overall capacity of distributed PV systems installed in California has grown substantially over the same period.

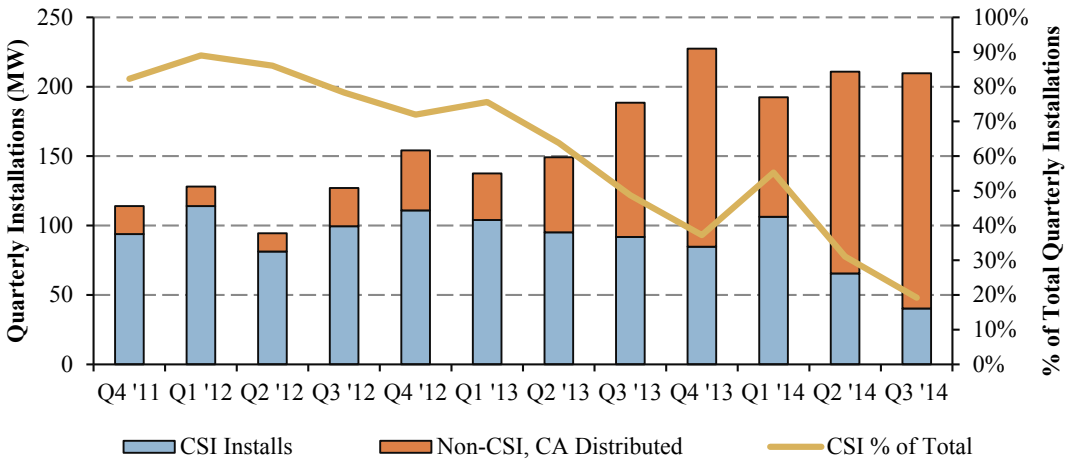

Figure 9. Distributed PV systems installed in California, with and without incentives, by quarter

Sources: CSI 2015; SEIA and GTM 2014

As state and local incentive programs wind down or exhaust their budgets, many analysts expect a larger share of systems to be installed with only the federal incentives. However, given that many systems are still expected to require state incentives (with limited budgets) to be financially viable, and that net metering caps may also constrain distributed PV in certain areas, we model two scenarios: one in which 50% of U.S. distributed PV demand is capped by these factors (i.e., 50% of the market will not grow despite the potential for new customers provided by shared solar programs), and one in which future demand is not capped by these potential limitations.[29]

To estimate the rate at which it takes a new financial business model to develop fully within the residential PV market, we examined the time it took the TPO business model to reach its peak percentage of the market.[30] Residential TPO, which in large part started in 2006 with the founding of SolarCity, solved many of the barriers to PV adoption for homeowners. However, it took 6 years for TPO's market share to reach a relatively steady state (Figure 10).

[29] Some of that limited demand could be satisfied by shared solar, but it would not be additive growth. We do not consider the 50% limitation to be an exact amount; rather it is an estimate for the order-of-magnitude impact on these limitations. Given the many uncertainties to future market demand—including uncertainty in analyst projections, changing funding levels for state incentive programs, future revisions to net metering caps, and potential RPS changes—a more accurate number would be difficult to calculate.

[30] Under the TPO arrangement, a third-party entity purchases, owns, and operates the PV system on the roof or property of a home or business. In exchange, the homeowner or business signs a long-term contract (15–25 years) to lease the system or purchase the electricity generated by the system (under a power purchase agreement), typically at a rate less than the price of retail electricity rates. The homeowner or business benefits from onsite PV generation at or below electric utility costs, but without the upfront outlay of capital or any complications associated with operating a system.

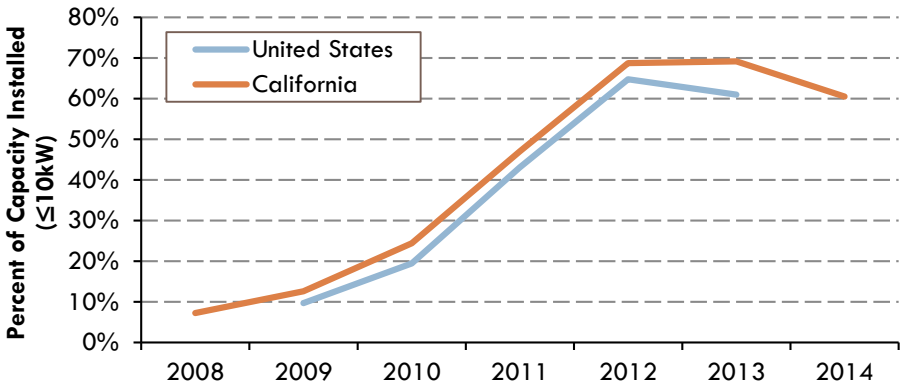

Figure 10. TPO percent of total residential PV market (systems less than or equal to 10 kW), United States and California

Sources: CSI 2015; Barbose et al. 2014

The shared solar marketplace will need to develop in many of the same ways that the TPO market developed, such as expanding shared solar businesses nationwide, promoting customer awareness of a new financial product, and changing some state and local laws to accommodate the new business models. We assume shared solar will go through this growth process over a similar period, estimating that the residential shared solar market will require 6 years (from 2015–2020) to reach full maturity, growing from 15% of its potential in years 1–3 to 35% in year 4, 65% in year 5, and 100% in year 6.

We calculated the market potential of shared solar for 2015–2020 with the data sets described above using the following equation:

Equation 1. Shared solar deployment

$$= \text{Onsite Deployment}_{year} \times \frac{\%\ \text{Unable to Deploy}}{\%\ \text{Able to Deploy}} \times \%\ \text{Market Maturity}_{year} \times \text{State Level Constraints}$$

Where:

- Onsite Deployment$_{year}$ = the projected onsite deployment level in a given year (see Figure 7)
- % Unable to Deploy = the percentage of customers unable to deploy onsite PV
- % Able to Deploy = the percentage of customers able to deploy onsite PV
- % Market Maturity$_{year}$ = the percentage of full potential the market has reached in a given year (see Figure 10)
- State Level Constraints = state-level factors constraining the market, such as net metering caps or limited state incentives (either 50% or no limit)

Based on these assumptions, we estimate that, from 2015–2020, cumulative shared solar installations could constitute 3.1–6.3 GW of PV for residential customers, including 1.3–2.6 GW in 2020 alone (Figure 11). This could represent an additional $4.7–$9.3 billion of cumulative investment.[31]

[31] This amount is quoted in 2010 dollars. The investment figure assumes that shared solar installations have prices similar to onsite commercial systems. The analysis also assumes that system prices decrease on a straight line

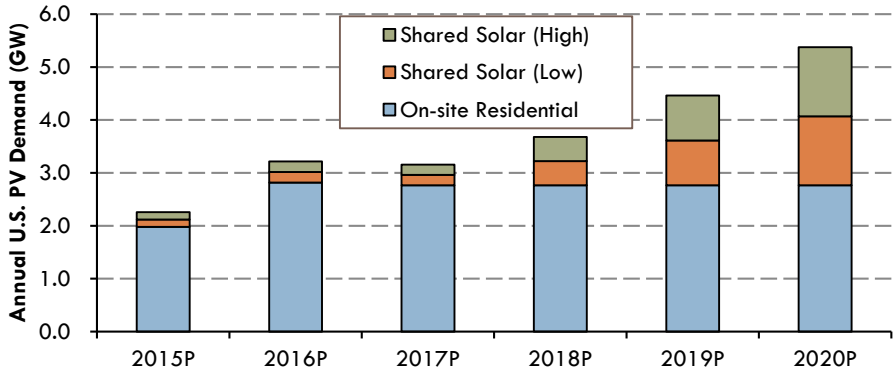

Figure 11. Estimated PV market potential of onsite and shared solar PV for residential customers

4.2 Non-residential Market

The calculation of shared solar market potential for non-residential customers is similar to the residential calculation. First we identified customers unable to host a PV system, and then we used non-residential PV market projections from a range of analysts, limited the growth trajectory of the shared solar market, and calculated the results. Non-residential customers unable to host a PV system were assumed to meet one of the following criteria: 1) businesses in buildings with more than five establishments (e.g., malls); 2) businesses in buildings of less than 10,000 square feet with two to five establishments; and 3) businesses in single-establishment buildings under 10,000 square feet with insufficient roof space to host a PV system of adequate size.

Unlike the residential analysis, the non-residential shared solar market analysis does not assume that ownership in the non-residential space is a requirement for hosting an onsite PV system. Not owning a building or property can be an impediment to hosting a PV system for many businesses, particularly for businesses uncertain as to how long they will remain at that location. Shared solar can play a role in resolving some of these issues. However, many businesses have successfully solved these issues and worked with their landlords to install PV.[32] Therefore, we did not assume that ownership is a limiting factor to hosting a PV system.

Instead, the analysis focuses on non-residential customers with insufficient access to roof space for PV. High-rise buildings and/or multi-unit properties are also problematic for individual self-generation because individual business owners typically do not own a specified portion of the roof space. Additionally, the roof space per individual business owner is likely very small, particularly for high-rise buildings.

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between the 2014 NREL commercial system benchmarked price of $2.38/W (Feldman et al. 2014) and the SunShot target of $1.25/W (DOE 2012).

[32] For example, Staples has added standard language to all the new leases it signs with property owners since 2007 to facilitate installing PV on its stores; additionally, they have contracted directly with one of their building owners, Hartz Mountain, to purchase electricity generated from an onsite PV system also owned by Hartz Mountain (Feldman and Margolis 2014).

For this analysis, we assume that a business will not install a system on its roof unless that system can generate at least 20% of its energy demand. Based on data from the U.S. Energy Information Administration's Commercial Building Energy Consumption Survey (CBECS), on average, a PV system serving 20% of the energy demand for a building will use approximately 15% of a building's square footage.[33] While non-residential buildings could also install a 1.5-kW system, which is the minimum threshold set in the residential analysis, businesses will most likely not go through the hassle of installing an onsite PV system unless it is of sufficient value to them. Even if they did install such a small system, a shared solar program would offer them the additive ability to offset a reasonable portion of their electricity demand. The 20% minimum threshold also conforms well to the minimum threshold set in the residential market in terms of the amount of energy it can offset.[34]

Businesses with sufficient energy consumption could feasibly virtual net meter an entire system on a different property, without the use of a shared solar structure.[35] A SEPA survey (Campbell et al. 2014) found that the average shared solar system size was approximately 250 kW (1.7 kW per customer, 147 participants). CBECS data indicate that, on average, a PV system larger than 250 kW would be needed to generate at least 20% of the energy consumption for buildings of more than 100,000 square feet (EIA 2006). Therefore, we also assume that buildings greater than 100,000 square feet in size, with fewer than five establishments, will not use a shared solar program (that is, either they will host a system themselves or virtual net meter an entire system).

Based on these assumptions, we divided buildings into categories by size and number of establishments and then used LiDAR data to determine what percentage of non-residential customers could host a PV system that would support at least 20% of their demand. This information is summarized in Figure 12.

When accounting for the number of units in a commercial building, its square footage, and the availability and suitability of roof space, we estimate that only 52% of businesses can install a PV system that will support at least 20% of their demand. In other words, shared solar has the potential to double the commercial market by offering PV to the 48% of businesses that cannot host a PV system.

[33] There is a difference between a building's square footage and the square footage of its roof, most notably for multi-story buildings. However, CBECS data segment buildings either by "# of stories" or by "building floor space." Therefore, the structures cannot be segmented using both screens at once. That said, according to CBECS 1995 survey data (EIA 1995), 66% of commercial buildings are one floor.

[34] A 1.5-kW rooftop PV system in Kansas City, Missouri, will generate approximately 19% of the average U.S. household electricity consumption (EIA 2015), assuming a panel tilt of 25 degrees and a derate of 0.81, as calculated by PVWatts (version 1).

[35] Virtual net metered projects do not necessarily fall into the category of shared solar. Shared solar programs have multiple participants, each with an interest or share in a PV system, while not all uses of VNM benefit multiple customers.

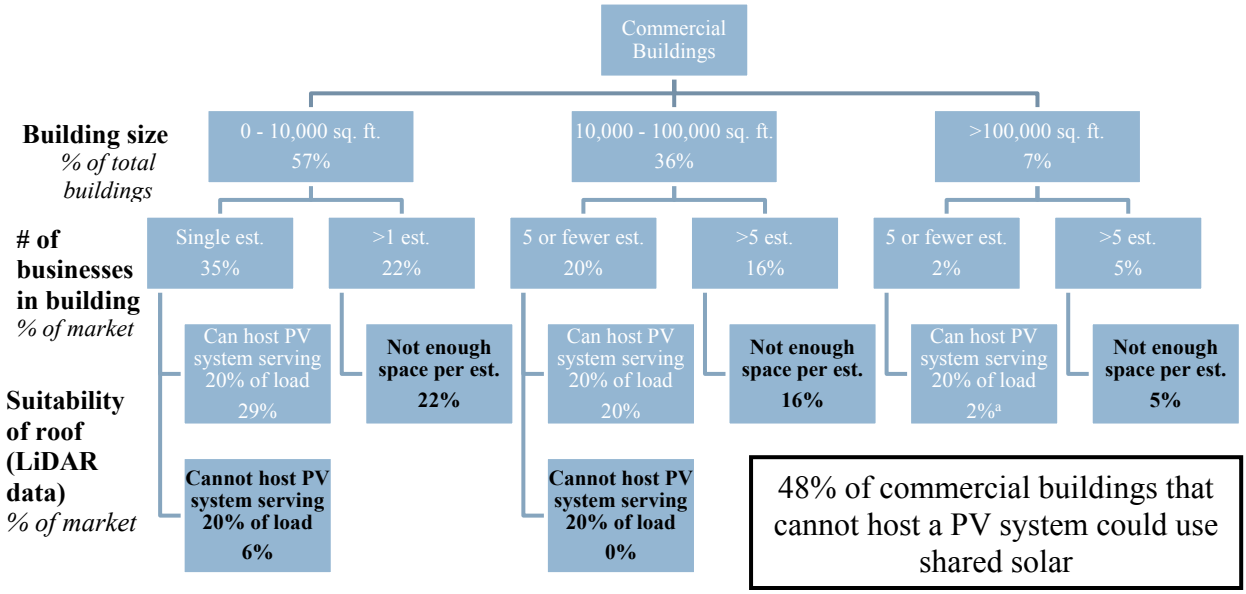

Figure 12. Percentage of non-residential customers that cannot host a PV system owing to minimum square footage (sq. ft.) thresholds, or too many establishments (est.) in building

Note: percentages do not necessarily add to 100% due to rounding.

[a] Based on average energy consumption, buildings larger than 100,000 square feet that cannot host a PV system have the ability to virtual net meter an entire system and thus do not need a shared solar program.

Source: EIA 2006

To assess the near-term market potential of onsite non-residential PV, analyst projections of the U.S. non-residential market were collected. These estimates project until the year 2017 after which we kept demand constant, as shown in Figure 13.

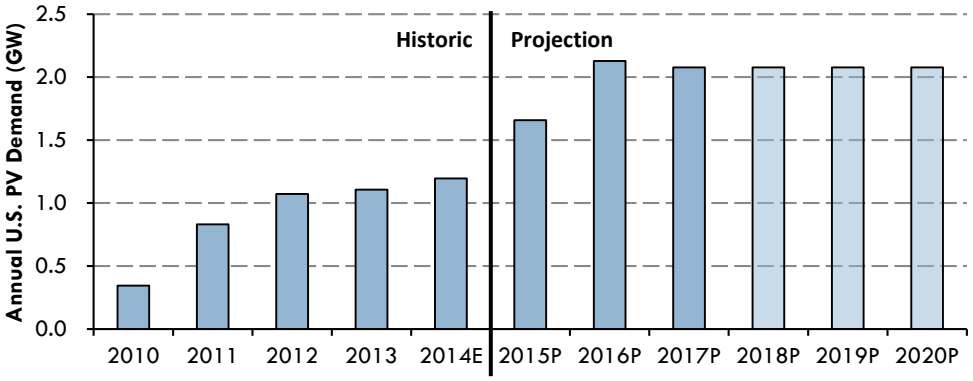

Figure 13. Historic and projected U.S. non-residential PV deployment

Note: 2010–2017 data represent the median historic and projected deployment numbers from collected analyst projections. It is assumed that deployment levels remain flat from 2018–2020.

Sources: Lee et al. 2015; BNEF 2015; SEIA and GTM 2014

While shared solar has the potential to double the non-residential PV market (as outlined above), limited state PV incentives and the growth rate of this new business model are likely to bound

deployment in the next 5 years in the same manner assumed in the residential sector. Therefore, we also model two non-residential scenarios: one in which 50% of U.S. distributed PV demand is capped by these factors, and one in which future demand is not capped by these potential limitations. Additionally, we estimate that the shared solar market for non-residential customers also will require 6 years (from 2015–2020) to reach full maturity--growing from 15% of its potential in years 1–3, to 35% in year 4, 65% in year 5, and 100% in year 6.

Based on these assumptions, as outlined in Equation 1, we estimate that from 2015–2020 shared solar could cumulatively install 2.4–4.7 GW of PV for non-residential customers, including 1.0–2.0 GW in 2020 alone (Figure 14). This could represent an additional $3.5–$7.0 billion of cumulative investment.[36]

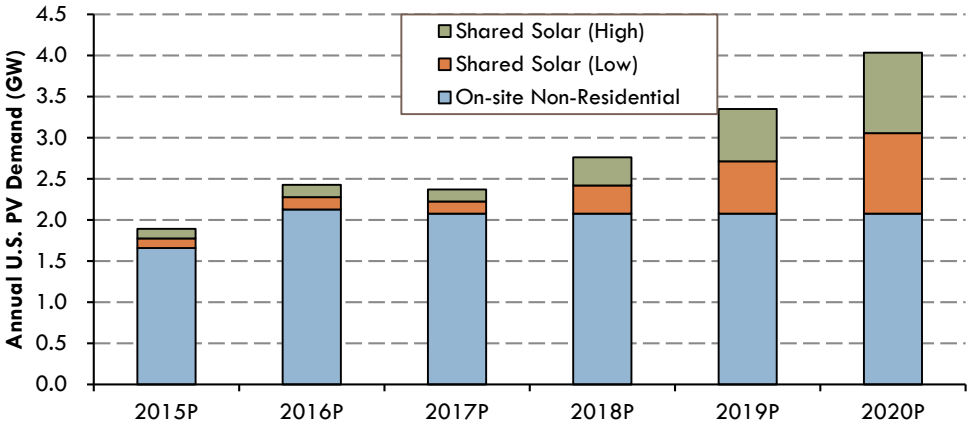

Figure 14. Estimated PV market potential of onsite and shared solar for non-residential customers

Combining the potential market penetration of the shared solar business model in the residential and non-residential sectors, as shown in Figure 15, we estimate that shared solar could represent 32%–49% of the distributed PV market in 2020, growing cumulative PV deployment by 5.5–11.0 GW and representing $8.2–$16.3 billion of cumulative investment. This is slightly higher, but in line with, the New York State Energy Research and Development Authority estimate that shared solar may contribute 20% of total PV capacity in New York (NYSERDA 2014). The 5.5–11.0 GW estimate is also significantly higher than the combined current state mandates in California (600 MW), Colorado (6 MW per year, or 36 MW from 2015–2020), and Minnesota (all public utilities must set up a program, but no minimum capacity is set).

[36] This amount is quoted in 2010 dollars. The investment figure assumes that shared solar installations have prices similar to onsite commercial systems. The analysis also assumes that system prices decrease on a straight line between the 2014 NREL commercial system benchmarked price of $2.38/W (Feldman et al. 2014) and the SunShot target of $1.25/W (DOE 2012).

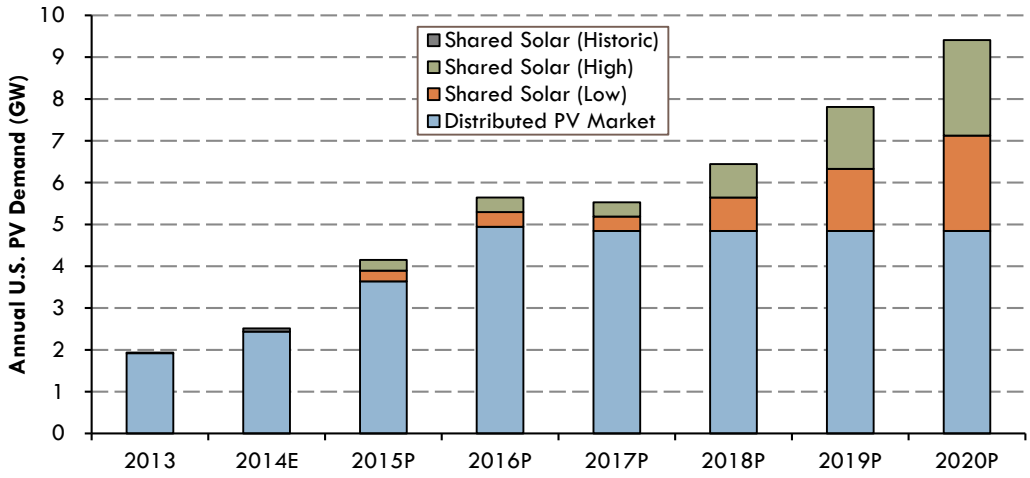

Figure 15. Estimated PV market potential of onsite and shared solar distributed PV capacity

4.3 Upside Potential of Shared Solar

There are several reasons why the market for shared solar could be larger than estimated in Figure 15. Shared solar systems are typically larger than onsite residential PV, bringing economies of scale and likely lowering system prices. Thus, customers may choose shared solar over onsite generation, owing to a better economic value proposition.

Additionally, the LiDAR data may overestimate the number of buildings that can host a PV system because these data do not take into account roof age, condition, and building material, which may prevent some buildings from installing PV, at least in the short term. In the long term, building owners may choose to install PV when their roofs are replaced, but some customers may not want to wait.

As mentioned previously, many businesses lease rather than own their property; while some businesses have worked successfully with their landlords to install PV, many businesses have been unable, owing to lack of consent or a tenant company's fear that it will not remain in that space for the economic life of the PV asset. Shared solar solves this problem because the business can transfer the virtually net metered energy to its new location.

Shared solar is also potentially more attractive because it is more fungible than ownership of an onsite PV facility. Having an easier exit option over the lifetime of the solar investment may make it more attractive to potential customers. Finally, installation of onsite generation may be a barrier to some potential customers with suitable roof space who prefer not to host a PV system; customers may not want construction, operations, and maintenance related to a PV system on their property or may have concerns about the effect a PV system has on the aesthetics of their property. Because shared solar overcomes many obstacles that have prevented many customers from adopting onsite PV, the market impact of shared solar may be greater than is estimated in this analysis.

With that said, the shared solar market may not achieve the deployment estimates in Figure 15. This analysis depends on states and utilities adopting enabling legislation and practices that

support shared solar programs. Businesses must also be formed--or grow--to develop a shared solar marketplace, creating programs that work within existing securities regulations to raise funds in an efficient manner. Additionally, more transparency and standardization within the industry must occur to attract enough customers and investors. Finally, U.S. customers must be convinced that shared solar programs are viable alternatives to receiving energy from other sources, such as standard utility service.

5 Conclusion

Shared solar business models allow multiple energy consumers to share the electricity benefits of one PV array. Fundamentally, these models remove the need for a spatial one-to-one mapping between distributed PV arrays and the energy consumers who receive their electricity benefits, thus expanding the potential customer base for PV to 100% of homes and businesses. As is the case with virtually all scenarios of PV deployment, technical barriers must be overcome in order to meet a significant portion of electric demand using solar. However, shared solar business models come with a number of potential benefits, some of which may overcome a portion of these technical issues. By aggregating customer demand, shared solar programs can reduce financial and technical barriers to entry and reduce costs via economies of scale. Separating energy assets from customers' residences or businesses also leads to a number of benefits. In the event a shared solar customer moves, his or her solar share can be transferred separately from his or her residence to a new home within the same utility service territory or sold to another entity. Shared solar arrays allow for increased siting flexibility: strategic placement on sites such as commercial rooftops, brownfields, and municipal land can aid local economic development. With utility input, strategic deployment can also aid grid integration. For utilities, shared solar arrays can function as a more streamlined and visible electricity-generating source than many smaller systems. By engaging community stakeholders, shared solar can help build community assets.

Shared solar remains a small—but growing—model for deploying PV systems. Currently, there are several issues that governments, utilities, and the solar industry can address to accelerate the shared solar market. Enacting enabling legislation in more jurisdictions and creating greater standardization and transparency will attract more investors and customers, expedite the development process, and allow businesses to expand more easily into new regions. As these new business models and legal frameworks are established, continued attention to compliance with the federal securities laws and consultation with the SEC where necessary will create more confidence within the market, and it will reduce restrictions, delays, and costs.

Shared solar is not the only manner in which the PV market can grow. The technical, economic and market potential of traditional on-site PV are significantly larger than its current installed capacity. However, distributed deployment strategies only directed towards on-site, single-customer systems limit the speed and flexibility at which PV can be deployed in the United States, and potentially increases the cost. If measures are properly instituted to allow for and encourage shared solar business models, the potential growth for PV is tremendous. We estimate that 49% of households and 48% of businesses cannot host a PV system of adequate size on their property or virtually net meter an entire system themselves. By opening the market to these customers, shared solar could represent 32%–49% of the distributed PV market in 2020, growing cumulative PV deployment in 2015–2020 by 5.5–11.0 GW and representing $8.2–$16.3 billion of cumulative investment. Although this estimate represents a very large increase in PV deployment, several factors not quantified in this analysis suggest the actual potential of shared solar in the United States could be even larger.

This analysis also points to several directions for future research. While this paper sheds light on some of the ways that shared solar programs can be implemented, a deeper analysis of different business models may provide further guidance. In particular, the majority of the discussion of

federal securities regulations in this report was centered on the facts surrounding the no-action letter for CommunitySun; however other shared solar programs are using different structures and strategies to avoid regulation by the SEC. Additionally, there are added complexities to state securities laws which may vary widely depending on the jurisdiction. A more comprehensive study of federal and state securities regulations, as it pertains to shared solar, has the potential to further help shared solar programs throughout the U.S. Additionally, this report uses several datasets to estimate the percentage of U.S. businesses and households which cannot host a PV system; it also highlights several factors not incorporated in the analysis which may affect a customer's ability to host an on-site PV system. Additional work attempting to quantify the impact of some of these additional factors may provide a more accurate picture of the potential market size for shared solar.

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Appendix A. State Policies and Incentives for Shared Solar

Table A-1. State Policies and Incentives for Shared Solar[37]

State	Legislation or Incentive	Description	Geographic Limitations	Capacity Limit
California	Virtual Net Energy Metering at Multitenant Buildings[38]	In 2009, California enabled virtual net metering in investor-owned utility territories for onsite renewable energy systems benefiting multiple tenants in affordable housing developments. This legislation was utilized by the Multifamily Affordable Solar Housing (MASH) program and the New Solar Homes Partnership (NSHP), which provided incentives for solar on existing and new properties, respectively. In 2011, the legislation was broadened to all multitenant properties (including commercial tenants) in the state with customer accounts served by the same Service Delivery Point (SDP) as the generation source. The single SDP requirement was removed for affordable housing developments. Renewable energy customers are credited at the retail rate. A minimum of two participants is required per facility.	• Applies within the SDG&E, PG&E, and SCE utility territories. • Affordable housing customers must be located within the same property development. • All others must be on the same Service Delivery Point (SDP).	• Subject to state net metering cap of 1 MW and 5% of aggregate customer peak demand.
	Green Tariff Shared Renewables Program (SB 43)[39]	Mandates the installation of 600 MW of new renewable energy that will be available to ratepayers who are unable to access the benefits of onsite generation, including renters, businesses, and institutional customers such as universities, local governments, and the military. A minimum of 100 MW is reserved for residential customers, 100 MW for economically disadvantaged communities, and 20 MW for the City of Davis. Subscriptions are limited to 100% of a customer's electricity demand. Customers will be compensated at the retail rate plus a time-of-delivery adjustment, but will have to pay a renewable generation rate to cover administrative and other program costs.	• Applies within the SDG&E, PG&E, and SCE utility territories. • Customers must be located within the same utility territory as the renewable facility.	• Statewide limit: 600 MW. • Individual projects cannot exceed 20 MW or 1 MW if located in disadvantaged communities.

[37] "Home: Shared Renewables HQ." (2013). Shared Renewables HQ. Accessed December 2014: http://www.sharedrenewables.org/.
[38] "Virtual Net Energy Metering at Multitenant Buildings." (n.d.). San Francisco Department of the Environment. Accessed November 2014: http://www.sfenvironment.org/download/virtual-net-energy-metering-at-multitenant-buildings.
[39] *An act to add and repeal Chapter 7.6 (commencing with Section 2831) of Part 2 of Division 1 of the Public Utilities Code, relating to energy.* Senate Bill No. 43, Chapter 413 (September 28, 2013). Accessed December 2014: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB43.

Colorado	Community Solar Gardens Act (HB 1342)[40] Enacted: 2010	Enables the development of Community Solar Gardens, shared solar facilities with a minimum of 10 participants. Subscriptions are limited to 120% of a customer's average annual electricity demand. Subscribers will be compensated at the retail rate minus a reasonable fee for electricity delivery, integration, and program administration. Community Solar Gardens must be operated by a for- or nonprofit Subscriber Organization whose sole purpose is to beneficially own and operate the facility.	• Applies to investor-owned utilities. • Customers must be located within the same municipality or county as the solar garden with some exceptions.	• Investor-owned utility purchase requirement: 6 MW/year from 2011-2013. • Projects are limited to 2 MW each.
Connecticut	Virtual Net Metering[41]	Enables virtual net metering for state, municipal, and agricultural customers. Renewable energy systems may serve the electricity needs of the host customer and additional state, municipal, and agricultural facilities. Critical facilities connected to microgrids may also participate in some circumstances.	• Applies to investor-owned utilities. • All facilities must be in the same electric distribution company's service territory.	• Projects are limited to 3 MW each.
District of Columbia	Community Renewable Energy Act[42] Enacted: 2013	Enables the deployment of Community Energy Generating Facilities, shared solar facilities with a minimum of two subscribers. Subscriptions are limited to 120% of a customer's energy consumption over the previous 12 months. Participants will be compensated via net metering at a standard offer service rate. Facilities must be owned or operated by a for- or non-profit Subscriber Organization. New subscribers may be added monthly.	• Customers must be located within the same utility service territory as the shared renewable energy facility.	• Projects are limited to 5 MW each.
Delaware	Community Net Metering Provisions (Order 7946)[43] Enacted: 2010	Modified the existing net metering law to allow virtual net metering. Renewable energy generating facilities may be located as standalone or behind the meter of a subscriber. Customers on the same distribution feeder as the facility are compensated at the full retail rate. Customers not on the same distribution feeder are compensated at a lower rate.	• Customers must be located within the same utility service territory as the shared renewable energy facility.	Subject to state net metering caps: • 2 MW for Delaware Power and Light • 500 kW for municipal utilities • 5% of electric supplier's aggregated customer monthly peak demand.

[40] *House Bill 10-1342*. (2010). Accessed January 2015: http://www.leg.state.co.us/CLICS/CLICS2010A/csl.nsf/fsbillcont3/490C49EE6BEA3295872576A80026BC4B?Open&file=1342_enr.pdf. *Food Security Act of 1985*. H.R. 2100. 99th Congress, first session, Congressional Record 131 (Oct. 8, 1985): H 8353-8426.

[41] "Net Metering." (2013). Database of State Incentives for Renewables & Efficiency. Accessed December 2014: http://programs.dsireusa.org/system/program/detail/277.

[42] *Community Renewable Energy Act of 2013*. (2013). B20-0057. Council of the District of Columbia. Accessed January 2015: http://dcclims1.dccouncil.us/lims/legislation.aspx?LegNo=B20-0057.

[43] *3001 Rules for Certification and Regulation of Electric Suppliers*. (2011). Title 26. State of Delaware. Accessed November 2014: http://regulations.delaware.gov/AdminCode/title26/3000/3001.shtml#TopOfPage.

Massachusetts	Massachusetts Green Communities Act (SB 2768)[44]	Enacted virtual net metering, enabling customers to transfer generation credits to other customers. Participants are compensated at the full retail rate. All customer classes are eligible.	• Applies to investor-owned utilities. • Municipal utilities may choose to offer net metering. • Customers must be located within the same utility service territory and ISO load zone as the facility.	• Projects are limited to 2 MW each, 10 MW for government-owned systems. • All net metering is capped at 6% of the utility's peak load (3% for government-owned systems, 3% for non-government-owned).
	Neighborhood Net Metering (SB 2395)[45]	Enables the deployment of neighborhood net metering facilities with a minimum of 10 residential customers. Other customer classes are also permitted to participate. Participants are compensated at the retail rate minus default service, transmission, and transmission service charges.	• Customers must be located within the same municipality and service territory.	• Subject to state net metering cap of 2 MW. • All net metering is capped at 6% of the utility's peak load (3% for government-owned systems, 3% for non-government-owned).
Maine	Net Energy Billing to Allow Shared Ownership[46]	Enables shared ownership of renewable energy facilities through virtual net metering for a maximum of 10 participants. Participants are required to have an ownership stake in the facility and are compensated at the retail rate. An eligible facility must be used primarily to offset all or part of the customers' electricity requirements.	• Applies to investor-owned utilities. • Municipal and cooperative utilities may choose to participate.	Projects are limited to: • 660 kW in investor-owned utility territories. • 100 kW in municipal and cooperative utility territories, up to 660 kW at the utility's discretion.
Minnesota	Solar Energy Jobs Act (HF 729)[47]	Required Xcel Energy to submit a plan for a community solar gardens program to the state public utility commission. Participants will be credited at a retail rate, with option for a future value-of-solar rate. Each facility must have at least 5 participants, each of whom subscribes to at least 200 W of the system's generating capacity.	• Applies to investor-owned utilities. • All customers must be located in the same utility service territory.	• Projects are limited to 1 MW.

[44] *Chapter 169: An Act Relative to Green Communities.* (2008). The 189th General Court of the Commonwealth of Massachusetts. Accessed December 2014: www.malegislature.gov/Laws/SessionLaws/Acts/2008/Chapter169.

[45] *Section 140: Neighborhood net metering facility; election of net metering; rules and regulations*. (n.d.). The 189th General Court of the Commonwealth of Massachusetts. Accessed December 2014: https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXXII/Chapter164/Section140.

[46] "Net Energy Billing." (2014). Database of State Incentives for Renewables & Efficiency. Accessed January 2015: http://programs.dsireusa.org/system/program/detail/280.

[47] *Session Law Chapter 85--H.F.No. 729*. (2013). 88th Minnesota Legislature. Accessed December 2014: https://www.revisor.mn.gov/laws/?id=85&year=2013&type=0.

New Hampshire	Group Net Metering (SB 98)[48] Enacted: 2013	Enables a customer with behind-the-meter renewable generation to become a group host for a group of other customers who wish to offset their electricity demand. The group host is responsible for any costs incurred by a utility to accommodate the required billing arrangements.	• All customers must be located in the service territory of the same electric distribution utility as the host.	• Projects are limited to 1 MW each.
Vermont	Group Net Metering[49]	Enables energy consumers to link their electricity usage accounts to one renewable facility. Vermont does not require programs to be administered by a utility or a third-party administrator. Participants receive credits at the retail rate.	• All participants must be located in the same utility service territory.	• Projects are limited to 500 kW each (2.2 MW on military property) • Subject to state net metering cap of 4% of utility's 1996 peak demand or the previous year's peak demand, whichever is greater.
Washington	Community Renewables Enabling Act[50]	Shared renewables projects must be located on community-owned property, such as schools, parks, or government buildings. All participants are credited $0.30/kWh for their participation.	• All participants must be located in the same utility service territory as the renewable facility.	• Projects are limited to 75 kW each. • Subject to state net metering cap of 0.5% of a utility's peak demand in 1996. (Limit was 0.25% prior to 2014.)

[48] "Net Metering." (2014a). Database of State Incentives for Renewables & Efficiency. Accessed January 2015: http://programs.dsireusa.org/system/program/detail/283.
[49] "Net Metering." (2014b). Database of State Incentives for Renewables & Efficiency. Accessed February 2015: http://programs.dsireusa.org/system/program/detail/41.
[50] Konkle, D. (2013). "Community Renewable Energy Program for Michigan." Great Lakes Renewable Energy Association (GLREA). Accessed January 2015: http://cleanenergywebs.com/myjoomla/jupgrade/images/Community_Solar_for_Michigan_-_white_paper.pdf.

Appendix B. List of Attendees of June 27, 2014 Stakeholder Meeting

Allan Abravanel	Clean Energy Collective
Kenneth Alston	U.S. Dept. of Energy
Crystal Bergmann	U.S. Dept. of Housing and Urban Development
Steve Blumenfeld	Opower
Daniel Boff	SunShot Initiative, U.S. Dept. of Energy
Anna Brockway	SunShot Initiative, U.S. Dept. of Energy
Becky Campbell	Solar Electric Power Association
Katie Cullen	SC Partners, LLC
David Feldman	National Renewable Energy Laboratory
David Fredrickson	U.S. Securities and Exchange Commission
Paige Gentry	Nixon Peabody
Emily Greenlee	Village Power Finance
David Hill	Vermont Energy Investment Corporation
Max Joel	NYSERDA
DeWitt Jones	Boston Community Capital
Jenny Kassan	Cutting Edge Capital
Bill Kelly	Stewards of Affordable Housing for the Future
Tom Kimbis	Solar Energy Industries Association
Kelly Knutsen	Office of Senator Mark Udall
Minh Le	SunShot Initiative, U.S. Dept. of Energy
Alexandra Lieberman	CT Clean Energy Finance and Investment Authority
James Mueller	George Washington University Solar Institute
Shehzad Niazi	U.S. Securities and Exchange Commission
Daniel Phelan	National Regulatory Research Institute
Doug Rand	White House Office of Science and Technology Policy
Michael Reedich	U.S. Securities and Exchange Commission
Anya Schoolman	Community Power Network
Noah Shaw	U.S. Dept. of Energy
David Simpson	Village Power Finance
Elaine Ulrich	SunShot Initiative, U.S. Dept. of Energy
Ellen Vancko	Maryland Public Service Commission
Joseph Wiedman	Interstate Renewable Energy Council
Jason Wiener	Jason Wiener | p.c.

Appendix C. CommunitySun No-action Letter Request

Vinson&Elkins

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Tel 202.639.6705 Fax 202.879.8905

Securities Act of 1933 Sections 2(a)(1) and 5

Securities Exchange Act of 1934 Section 3(a)(10) and 12(g)

August 29, 2011

Office of the Chief Counsel
Division of Corporation Finance
Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Re: CommunitySun, LLC™

Utilities allow residential and business customers to offset self-generated electricity against electricity consumed by such customers in their service areas, which is called "net metering" or self-generation/consumption. Such self-generated electricity is most often produced on the property where the customer consumes electricity, typically by installing roof-top solar panels. However, many consumers cannot install solar panels because of site restrictions or site unsuitability, such as multi-family or commercial properties with limited access to sunlight or incorrect roof position.

Our client CommunitySun, LLC (the "Company") is a solar integrator and developer, which desires to offer and sell real estate interests in a solar facility (each interest a "SolarCondo"™). Ownership of a SolarCondo will allow production of self-generated, individually owned solar electricity without installing solar panels at the property where the owner consumes electricity. The purpose is to provide the benefits of rooftop solar energy to people who are unable to install rooftop solar on their property. An additional public benefit is to correct the inequity to such persons, who pay for solar rebates in the overall electricity rate base, but who do not have access to solar as a power alternative.

On behalf of the Company, we respectfully request that the staff of the Division of Corporation Finance (the "Staff") confirm that it will not recommend that the Securities and Exchange Commission take any enforcement action if the Company, under the facts and circumstances described below, offers and sells SolarCondos without being registered with the Securities and Exchange Commission under Section 5 of the Securities Act of 1933, as amended (the "Securities Act") and Section 12(g) of the Securities Exchange Act of 1934, as amended (the "Exchange Act," and together with the Securities Act, the "Securities Acts").

I. Facts

A. CommunitySun, LLC

The Company is a Texas limited liability company based in Austin, Texas. The Company has developed and licensed intellectual property that is subject to a current U.S. Patent Application. The Company will plan, develop and build SolarCondos. The Company will then offer and sell SolarCondos to residential and small business electric consumers who are located within the related distribution service area.

The Company is pursuing one or more pilot projects ranging from two to ten-megawatt solar facilities serving between 400 and 2,000 customers in Texas and other states. The Company has not determined which utility service area will be served by its initial pilot project but it is considering different utilities, including Georgetown Utility Systems, Pedernales Electric Cooperative, the Sacramento Municipal Utility District, CPS Energy, Reliant Energy, Austin Energy, and Green Mountain Energy. The pilot project will be built in as small as 125-kilowatt modular phases by pre-selling up to twenty-five 5 kilowatt units and commencing the succeeding phases when sufficient pre-sales of the prior phases are achieved. Once the pilot project has been completed successfully, the Company intends to expand the pilot project, as well as develop multiple projects in other markets across the U.S.

B. The SolarCondos

Location; Condominium Interest

Each solar facility will transmit electric energy to a host utility service area/grid, and will be located either within the host utility service area or sufficiently close to allow for efficient transmission. For the initial facility, photovoltaic solar panels will be installed at ground level over a large land area. The real property may be owned in fee or pursuant to a long term lease, similar to a residential condominium regime. The real property will be burdened with a condominium regime, which will create individual condominium units of varying size, each containing a set number of solar panels with a set capacity.

The SolarCondos will be real estate condominium interests under applicable state law. As such, the offer and sale of the SolarCondos will be subject to protections provided by the condominium and real estate laws of the state in which the condo is located. For example, any project in Texas will be governed by the Texas Condominium Act and the Texas Deceptive Trade Practices Consumer Protection Act. In addition, since this will be a real property interest, brokers and salespersons participating in the transaction must be licensed as

real estate brokers or salespersons under the Texas Real Estate Licensing Act. The Company has become licensed as a real estate broker under the Texas Real Estate Licensing Act.

In order to gauge initial interest in the pilot project(s), each potential SolarCondo owner will be asked to execute a SolarCondo Letter of Interest prior to purchasing a SolarCondo. A copy of the form SolarCondo Letter of Interest, along with the accompanying marketing brochure, has been provided with this letter. The SolarCondo Letter of Interest describes the agreements that each SolarCondo owner will enter into to purchase a SolarCondo.

Net Metering Agreement

Upon the purchase of a SolarCondo, the utility will offer the owner a net metering arrangement, whereby the owner's portion of the electric energy generated at the solar facility will be transmitted to the utility's grid, through a single connection point, and that energy will be offset by the utility against the energy consumed by such SolarCondo owner at its residence or business, the same as if it were produced on-site (such as by rooftop solar).[1] The self-generated electricity will reduce (be "netted" against) the consumer's aggregate usage from the grid for purposes of calculating the "net" amount of electricity purchased from the utility.[2] Each such net metering agreement will be prepared by the applicable utility, but should be substantially similar to the utility's existing forms for on-site net metering.

Only a person who consumes electricity at a property within the host utility service area and enters into such an arrangement with the utility can derive any benefit from the electricity produced by their SolarCondo. In addition, the benefit to an owner will be limited

[1] Even for rooftop solar owners, the energy produced by the solar panels is not all directly consumed by the owner, but rather portions of the production are transmitted to the electric grid and offset by the utility against the total energy consumed at the property. This treatment is implemented by a net metering system used by utilities to bill their customers. Net metering is a nationally adopted mechanism for the integration of privately owned renewable energy systems with a host electrical grid. During certain daytime periods, a rooftop solar-PV system may produce more electricity than the property consumes. In that case, the on-site system pushes electricity from the rooftop solar panels to the grid, causing the customer's meter to spin backward. During peak demand periods and at night, the customer draws electricity from the grid. Although electricity sent to the grid is immediately consumed (because the grid must be balanced at all times), net metering treats the excess electricity produced by the solar-PV system during off-peak periods as if it were "stored" on the grid for use at the residence at a later time. The customer will be billed based on the meter, which records the overall net flow of electricity between the customer's residence and the grid.

[2] The SolarCondo will have title and ownership of the electricity in the same manner that other stand alone generators are deemed to maintain title and ownership of energy transmitted across a utility grid.

to a reduction of the owner's total electricity consumption for purposes of calculating the net amount of electricity purchased from the utility. The owner will not receive any other benefit from the electricity generated at the solar facility.[3] If the owner does not consume any electricity on property within the applicable utility district, he or she will not receive any benefit.[4] Further, if the utility rescinds or modifies the net metering arrangement prior to the end of the economic life of the solar facility, the SolarCondos may lose most or all of their value.

The Company anticipates that the applicable state or local municipal regulatory authority will determine that the energy offset from the SolarCondo is self-generation/consumption for state and local electric regulatory purposes.[5] In Texas, for example, there are existing statutory provisions that provide guidelines of what constitutes self-generation/consumption and facilities such as the SolarCondos are addressed under those guidelines.[6]

Metering

Each utility will only provide a limited number of interconnection points to its grid from the solar facility. The Company will establish a separate condominium association for each allowed interconnection point. Each interconnection point will also be required to have one revenue-grade production meter. There will typically be only one meter per

[3] Because the relationship between the owner and utility is contractual, it is theoretically possible that the utility and owner could modify the arrangement after the sale of the SolarCondo so that the utility provides cash to the SolarCondo owners in exchange for the energy generated at the solar facility. However, this scenario is highly unlikely, the SolarCondos will not be marketed in this manner, and any such future arrangement would be outside the scope of this letter.

[4] In certain circumstances, such as when a residential customer goes on vacation, the energy produced by the SolarCondo may exceed that consumed at the associated property. In such circumstances, most utilities roll a credit forward to the next billing cycle. In rare circumstances, for administrative convenience, a utility may settle any excess production in cash, but this is typically only after an annual or longer period. Size restrictions on the SolarCondos will ensure that the amount of any such cash settlement will be de minimis.

[5] For example, in Texas, while the Public Utility Commission of Texas ("PUCT") has general regulatory authority over the rates, operations and services of electric utilities in Texas, under Section 33.001(a) of the Texas Utilities Code, "the governing body of a municipality has exclusive original jurisdiction over the rates, operations, and services of an electric utility in areas in the municipality."

[6] *See* Section 31.002(6) of the Texas Utilities, which provides that the term "electric utility" does not include either a person who "furnishes an electric service or commodity only to itself" or a person who "owns or operates in this state equipment or facilities to produce, generate, transmit, distribute, sell or furnish electric energy to an electric utility, if the equipment or facilities are used primarily to produce and generate electric energy for consumption by that person;" *see also* P.U.C. Substantive R. 25.109(a)(2), which requires self-generators with facilities rated at one megawatt or greater to register with the PUCT.

interconnection point. Although it is possible to provide a separate sub-meter for each individual SolarCondo, it is not cost effective to individually meter each SolarCondo because of the additional meters, inverters, wiring and construction costs that would be necessary. For example, according to eMeter, a smart meter integration company, the average price of an individual smart meter is $221.25. Since each two-megawatt solar facility will serve an estimated 400 customers, if each SolarCondo is individually metered this would require 400 individual meters totaling $88,500 plus the additional cost of installation or wiring. In addition, if each SolarCondo were individually metered each SolarCondo would also require a separate inverter. A five kilo-watt inverter used for individual metering typically costs $1.00/watt, whereas a large scale inverter as part of the shared solar facility typically costs about $0.45/watt. For a two mega-watt solar facility, inverter costs for individually metered SolarCondos would be approximately $2,000,000, whereas the cost for shared inverters would be approximately $900,000.

Because the facilities will not have a separate sub-meter for each SolarCondo, the output from a SolarCondo will be calculated as a proportionate amount of the metered production of the facility based primarily on the number of panels in the SolarCondo. The Company and the condominium association will take reasonable steps to ensure that the amount of generation allocated to each SolarCondo will match the output of that SolarCondo as closely as reasonably practicable. For instance, where practicable, allocations will be adjusted to reflect any days in which a particular panel or string of panels is not producing. This may be due to panel, string, or inverter failure caused by lightning strikes or equipment problems. In this event, the SolarCondos served by the failed inverter, string or panels may not contribute to the aggregate metered production of the facility for a period of time until the failure is corrected. Where material, adjusting entries to the allocations will be made to account for the estimated loss of energy.

Purchase and Sale of SolarCondos

Each SolarCondo will be offered and sold as a deeded condominium unit that is mortgagable and transferable. Owners may fund a substantial portion of the purchase price through a bank loan secured by a mortgage on the SolarCondo, similar to the financing of the purchase of residential or commercial condominium real estate. The SolarCondos will have restrictions on size and transferability. The condominium association governing documents will limit the size of the SolarCondos that may be owned by an individual to a system that will generate no more than 125% of such individual's average electricity usage (in kilo-watt-hours) in the host utility and each potential SolarCondo owner will be required to provide its average electricity usage to determine the maximum size unit. A SolarCondo owner's average electricity usage in the host utility must be at least 80% of the electricity generated by the smallest kilowatt unit in the solar facility. For example, if the smallest unit in a solar facility is five kilowatts the SolarCondo owner's average electricity usage must be greater than or equal to the amount potentially generated by a four kilowatt unit. These average electricity usage restrictions will also apply in a resale of a SolarCondo. When a SolarCondo owner transfers its SolarCondo, the new owner must provide its average electricity usage to the condominium association as a condition to the transfer. In addition, the new owner of a transferred SolarCondo must enter into a net metering agreement with the applicable utility, which will either not allow for net excess generation of energy or pay the owner for any net excess generation of energy.

Also, each SolarCondo owner, whether an initial purchaser or transferee, must be a consumer within the service area, and a SolarCondo owner will not be allowed to rent, lease or transfer the energy credits it receives from its SolarCondo to another consumer. The ownership and transfer restrictions that apply in connection with initial purchases will also apply when a SolarCondo owner sells its SolarCondo as a result of restrictions contained in the condominium association's governing documents.

The Company anticipates that the initial sales of the SolarCondos will be handled by a licensed real estate broker, either as part of the sale of the related residence or business, or on its own. If the SolarCondo is subject to a mortgage, any transfer will require payoff of the mortgage loan to obtain a release or assumption of the mortgage by the purchaser. The Company does not anticipate that it will sell a large number or block of SolarCondos to a reseller. Although it is not part of the Company's primary marketing plan, the Company may sell bundles of SolarCondos for specific marketing purposes, such as a group of SolarCondos to builders of new subdivisions who will then attach an individual SolarCondo to the sale of each lot in the subdivision. The Company will contractually require any such reseller to comply with the Company's marketing and sales restrictions so that the ownership and

transfer restrictions that apply in connection with initial purchases will also apply where a reseller offers a SolarCondo for resale.

The ownership of a SolarCondo is separate and distinct from the SolarCondo owner's ownership of its residence or business. A SolarCondo may be transferred separate from the owner's residence or business to another consumer in the utility district. Similarly, a SolarCondo owner retains ownership and title of its SolarCondo and the energy produced by the SolarCondo if it sells its residence or business. If the SolarCondo owner moves within the utility service area, the energy produced by the SolarCondo may be transported and delivered to the owner's new residence or business. If the SolarCondo owner moves outside of the utility service area, the SolarCondo owner will be unable to use the energy produced and will receive no benefit from it.

Marketing

The SolarCondos will be marketed with a primary emphasis on the ability to net meter self-generated electricity. A copy of the SolarCondo marketing brochure and a Residential Solar PV Advisor Model have been provided with this letter. The marketing materials highlight that the initial cost to buy a SolarCondo is less than the cost of installing rooftop solar due to economies of scale derived from engineering, locating and building a utility-scale solar facility as compared to the cost of engineering, locating and building a series of custom designed, custom installed rooftop solar systems. The marketing materials will include a Residential Solar PV Advisor Model, which is a solar calculator to help residential customers decide if a SolarCondo is right for them.[7]

The SolarCondos will not be marketed as an investment opportunity and the marketing materials will point out that the anticipated lifespan of the solar panels is anticipated to be 20 to 25 years. In marketing the SolarCondos, no representations will be made regarding the economic benefits of the SolarCondos. Moreover, no income projections concerning the SolarCondos will be provided to prospective purchasers. Licensed real estate brokers will be advised that, under no circumstances, are they allowed to make statements concerning any rates of return relating to the SolarCondos, and emphasis must be placed only on the value of the SolarCondos for producing a commodity for consumption.

[7] The methodology and calculations are modeled as closely as possible to the "Solar Advisor Model (SAM)" produced by the National Renewable Energy Laboratory (https://www.nrel.gov/analysis/sam/). The calculator for commercial customers will differ based on tax treatment, but will also be based on the NREL Solar Advisor Model.

The Condominium Association

Prior to the sale of the initial SolarCondos, the Company will establish a self-governing condominium association in accordance with the state and local laws applicable to residential or commercial condominiums. The owner's rights relative to the type, style and nature of the solar panels and facilities constituting its SolarCondo will be subject to the rules created by the condo regime and as adopted by the condo association to ensure that the entire project is operating consistent with engineering performance criteria and utility requirements. The condo association (i) will be a non-profit entity controlled by the owners, (ii) will be governed by a board or other managing body elected by the owners, (iii) will have the authority to assess owners for maintenance costs and other costs incurred in maintaining the common elements, (iv) will have the authority to enter into contracts relating to the operation of the condominium, including, without limitation, contracts for the management and operation of the condominium, and (v) will have the right and obligation to enforce the rules adopted by the condo association. The Company may be an initial owner until it is able to sell the SolarCondos, and therefore may initially control the condo association.

Each SolarCondo owner will individually own 100% of the owner's condominium "Unit," the physical portion of the condominium designated for separate ownership in the condominium declaration, which will constitute a real property interest under state condominium law. In addition to the Unit, it is anticipated that each owner will own 100% of their respective solar panels and certain appurtenant equipment. Each owner will own an undivided interest, in common with all other owners, in the "common elements" of the solar facility, including any land subject to the condominium project that is not part of an individual owner's unit and the internal distribution lines, transformers, converters, switch gears and other improvements and fixtures within the solar facility that are not part of an individual owner's unit.

In addition to the ownership rights described above, each owner will have the following rights and privileges with respect to their SolarCondo. Each owner will have all of the rights of a real property owner under the condominium laws of the jurisdiction in which the solar facility is located with respect to such owner's Unit, subject to the limitations imposed by the condominium declaration. Each owner will also be a member of, and a have a vote in, the condo association and each owner will have the right to offset such owner's share of electricity generated at the solar facility against its energy consumption pursuant to the net metering arrangement. The owners will also have the following obligations and liabilities: (i) each owner will be subject to regular and special assessments from the condo association for the operation of the association, property insurance, maintenance and applicable ad valorem taxes of the project and (ii) each owner will be a party to the License

and Services Agreement (discussed below) and will be responsible for paying its share of the fees under this agreement, either directly under such agreement or indirectly through the assessments it pays to the condo association.

The condo association will maintain the common areas and facilities, including the solar panels and associated hardware. It is likely that the condo association will contract with outside parties to provide maintenance for the physical upkeep of the solar facility and its common components and database and administrative services to maintain the condo association, interface with the host utility and account for any changes in ownership. The physical services that will be contracted will include regular physical inspections and cleaning of the arrays and power handling equipment and repairs to data acquisition systems, inverters, junction boxes, arrays, systems, meters and AC disconnects. It is anticipated that the condominium association will initially contract with the Company for the database and administrative services due to the unique nature and role the Company will play in the formation of the condominium association.

The anticipated economic lifespan of the solar panels is currently 20 to 25 years. At the end of such period, each SolarCondo owner will have to work within the condominium association to determine what to do with the real estate and fixtures. Possibilities include (i) continuing to operate the facility without change, as the solar panels may be able to continue to operate past this period, albeit with reduced efficiency; or (ii) invest in new fixtures and solar panels; or (iii) make other changes that the group deems appropriate.

There will be a License and Services Agreement among the utility, the owners and an affiliate of the Company. Under such agreement, the Company or its affiliate will provide software and services to support the calculation and billing of the net metering arrangement between the owner and the utility. There is currently no draft of this agreement.

II. Legal Analysis

Section 2(a)(1) of the Securities Act defines the term "security" to mean one of various types of instruments, including any "stock…, investment contract…, or, in general, any interest commonly known as a 'security'…" 15 U.S.C. §77b(a)(1). Section 3(a)(10) of the Exchange Act defines a security as, among other types of instruments, any "stock…, investment contract…, or, in general, any interest commonly known as a 'security'…" 15 U.S.C. §78c(a)(10). The Supreme Court has repeatedly ruled that the definitions of "security" in the Securities Act and the Exchange Act are virtually identical and will be treated as such in discussions regarding the scope of the term. *Landreth Timber Co. v.*

Landreth, 471 U.S. 681, 697 (U.S. 1985); *United Hous. Found., Inc. v. Forman*, 421 U.S. 837, 847 (U.S. 1975).

In determining whether a particular instrument is a "security" under the Securities Act and the Exchange Act, the Supreme Court has stressed the importance of looking at the specific characteristics and underlying economic substance of the particular instrument. This approach was reaffirmed in *Forman* when the Supreme Court stated "we again must examine the substance – the economic realities of the transaction – rather than the names that may have been employed by the parties." *Forman*, 421 U.S. at 851-52. As discussed below, the economic realities of a SolarCondo should not deem it to be a "security" under the Securities Act and the Exchange Act.

A. The offering and sale of the SolarCondos does not constitute an investment contract under the "Howey Test" for the purposes of the Securities Acts.

The Supreme Court has held that an investment contract exists when there is "an investment in a common enterprise premised on a reasonable expectation of profits to be derived from the entrepreneurial or managerial efforts of others" (the "Howey Test"). *Forman*, 421 U.S. at 852; *see also S.E.C. v. Howey Co.*, 328 U.S. 293, 301 (U.S. 1946).

In *Forman*, the Supreme Court examined whether the purchase of shares to acquire an apartment in a housing cooperative should be considered a securities transaction. The Court focused on whether this offering would be an investment contract and held that the investment did not constitute a security. *Forman*, 421 U.S. at 847.

1. The SolarCondos do not provide "a reasonable expectation of profits."

In its analysis in *Forman*, the Court closely examined the term "profits" in the definition of an investment contract. The Court stated that the term "profits" includes both capital appreciation from the development of the initial investment and a participation in earnings resulting from the use of the investors' funds. *Id.* at 852.

The Court considered the motivation of the investor in making the investment and stated that "*what distinguishes a securities transaction* – and what is absent here – is an investment where one parts from his money in the hope of receiving profits from the effort of others, and *not where he purchases a commodity for personal consumption*." *Id.* at 858 (emphasis added). Since the primary purpose of the purchasers acquiring the shares in *Forman* was to enable the purchasers to occupy an apartment in the housing cooperative, the Court found that the shares were not an investment contract and therefore not securities. *Id.*

The Court also found that the Court of Appeals incorrectly held that profit existed based on the fact that the living space in the cooperative was offered at a cost that was substantially below the market price. *Id.* at 855.

Under *Forman*, viewed in terms of substance rather than form, the sale of a SolarCondo should not be considered to be "premised on a reasonable expectation of profits" but, rather, should be considered the sale of a commodity for personal consumption (self-generation/consumption of electricity).

An owner's motivations are likely to be personal consumption of energy generated by its own property and the reduction of its carbon footprint. In the same manner as rooftop solar, the energy produced by a SolarCondo is transmitted to the electric grid and consumed at the owner's residence or business. In both cases (rooftop solar and SolarCondos), the owner does not actually consume the exact same energy produced by the solar-PV panels, but that is because energy is indistinguishable and, once placed on the grid, cannot be traced from the place of production to the place of consumption. Instead, the utility "nets" the production against the consumption such that the energy produced is treated as if it were directly consumed by the same owner. The net metering arrangement is simply a convention to provide for the personal consumption of self-produced energy, and SolarCondos will be marketed as such.

Even if the owner's primary motivation is a reduction in his or her electric bill, under *Forman* such a reduction should not be considered "profits." Under *Forman*, "low rent attributable to state financial subsidies no more embodies income or profit attributes than other types of government subsidies." *Id.* Net metering of utility bills is analogous to the low rent from state financial subsidies. Because "net metering" reduces a consumer's bill at the retail electric rate, which is higher than the rate paid by the utility to other producers of electricity, it is effectively a subsidy to encourage self-generation/consumption of clean, renewable energy.

The combined metering of the solar facility should not be considered a participation in "profits" of the solar facility. The necessity of this arrangement is only a factual circumstance and is not a basis upon which relief should be granted or denied. Rather, combined metering is distinguishable from residential condo rental pools because the benefit that will be derived from the combined metering is personal consumption of energy and not profit. Condo pooling is done so that the condo owner can participate in the revenue generated by other condos, even when the owner's condo is not being rented (and vice versa). Combined metering is a necessary expedient to correctly allocate the production of an indistinguishable commodity. Because the energy produced by a SolarCondo is

indistinguishable and must flow through a common connection point with all other SolarCondos in the condominium, metering (whether combined or individual) is necessary to correctly allocate the total energy to the individual SolarCondo owner. In a residential condo rental pool the purpose is the exact opposite – to spread each owner's rental profits across all owners.

The value of a SolarCondo may increase under certain economic conditions, such as if the cost of energy increases, which has the potential to be characterized as capital appreciation. However, the solar panels have a limited economic lifespan, and any temporary increase in value would be offset over time by the overall depreciation of the SolarCondo resulting from the reduction in the remaining useful life attributable to the passage of time. Therefore, the primary motivation of a rationale owner would not be to seek profits from capital appreciation.

Further, if the resale value of a SolarCondo were to increase due to higher energy costs, the potential gain from a resale would also not constitute a "profit." The Howey Test states that the expectation of profits is to be "derived from the entrepreneurial or managerial efforts of others." The Ninth Circuit considered whether the resale of silver bars by the original purchasers constituted a "profit" under the Howey Test. *Noa v. Key Futures, Inc.*, 368 F.2d 77, 79 (9th Cir. 1980). The court held that it did not because any profits the purchaser may make depended on the fluctuations of the silver market and not the managerial efforts of the defendant. *Id.* As in *Key Futures*, if a SolarCondo owner were to profit from an increased resale value such profit would not be derived from the entrepreneurial or managerial efforts of others, it would be based upon fluctuations in the independent energy market. It was also discussed in a no-action request letter that the resale of charter or club seat licenses to purchase season tickets at SBC Park ("CSL") failed the profit aspect of the Howey Test even though there was a chance the CSL holders may be able to resell their CSLs for a gain. NO-ACT, WSB File No. 0227200624, San Francisco Baseball Assocs, L.P. (Feb. 24, 2006). The no-action letter stated that it may be difficult for a CSL holder to resell a CSL because they would be relying on the desire of a third-party to "consume" a portion of the value represented by the CSL and that even if a resale were to occur there is only a speculative chance that the CSL holder would profit from such resale. *Id.* The Staff's reply letter stated that it would not recommend enforcement action to the Securities and Exchange Commission. This is similar to the SolarCondos since it is highly speculative that a SolarCondo may be resold for a profit given the limited lifespan of a SolarCondo and a SolarCondo owner will only be able to resell the SolarCondo to a third-party who consumes energy within the utility district and has the desire to "consume" the value represented by the SolarCondo.

2. The benefit of the SolarCondos should not be considered to be "derived from the entrepreneurial or managerial efforts of others."

Both the Fifth and Ninth Circuit Courts of Appeals have held that reliance on the efforts of others should be examined by an investor's practical ability to control his investment, whether the investor has "an inability to exercise meaningful powers of control or to find others to manage his investment." *Hocking v. Dubois*, 885 F.2d 1449, 1460 (9th Cir. 1989); *Williamson v. Tucker*, 645 F.2d 404, 424-25 (5th Cir. 1981). The court in *Dubois* expanded the control standard set forth in *Tucker* stating that actual control exercised by the purchaser is irrelevant as long as the purchaser has the right to exercise control. *Dubois*, 885 F.2d at 1461.

With the SolarCondos, each owner will have an individual net metering agreement with the local utility. The SolarCondo owners will govern the condo association and the condo association will be free to hire or terminate employees or service providers for the maintenance of the solar condos. The owners will enter into a License and Services Agreement with the Company or an affiliate of the Company to provide the software and services that support the net metering arrangement between the owner and the local utility.

Like *Tucker*, each owner will control the most significant parts of the SolarCondo – the mortgage on the SolarCondo, the use of the energy produced and the net metering arrangement with the local utility. With respect to the more administrative aspects, like *Schultz* and *Fargo Partners*, the condo association will retain control since it will have the ability to change the party who will maintain the SolarCondos. Therefore, the SolarCondo owners are not relying on the entrepreneurial and managerial efforts of others.

The entrepreneurial and managerial efforts provided by the Company or an affiliate of the Company will include finding land for the solar facilities, arranging financing and hiring a contractor for the construction of the facility, organizing and initially controlling the condominium association, managing the initial sales of the SolarCondos, negotiating the initial contractual arrangement between the condominium association and the related utility and assisting the utility with billing. However, the benefit of self-generation/consumption of clean, renewable energy produced from the solar facility is not derived from such efforts, and the only party that can benefit from such production is the owner due to the strict limitations of the utility (i.e. the utility prohibits any sale of the electricity; it can only be offset against consumption as reflected on the owner's utility bill). The utility that provides the energy to the owner merely acts as the transfer agent moving the electricity from one place to the other to effectively match the generation of the energy with its consumption.

The offering and sale of SolarCondos should not be considered an investment contract under the "Howey Test" because, analogous to *Forman*, the owners will be acquiring a commodity for self-consumption. No reasonable expectation of profits exists and no entrepreneurial efforts of others is present in this case, since the owners are motivated by the ability to self-generate and self-consume a commodity and by the corresponding reduction in the overall cost of energy that they are consuming. The owner of a SolarCondo will not be paid by the utility for the electricity generated by a SolarCondo, other than by an offset against the bill for electricity consumed by the owner on property within the applicable utility district. The owner of a SolarCondo cannot even carry over his energy credits for other than a limited time, and can never sell or trade his energy credits, again confirming no reasonable expectation of profit.

B. The offering and sale of the SolarCondos does not constitute an investment contract under S.E.C. Release No. 33-5347 dated January 4, 1973 (the "Condominium Release") for the purposes of the Securities Acts.

The Condominium Release states that a condominium sale that is offered in conjunction with any of the following arrangements will be considered an investment contract:

1. The condominiums, with any rental arrangement or other similar service, are offered and sold with emphasis on the economic benefits to the purchaser to be derived from the managerial efforts of the developer, or third party designated or arranged for by the developer, from rental of the units;

2. The offering of participation in a rental pool arrangement; and

3. The offering of a rental or similar arrangement whereby the purchaser must hold his unit available for rental for any part of the year, must use an exclusive agent or is otherwise materially restricted in his occupancy or rental of his unit.

Outside of these 3 circumstances, the Condominium Release focuses on the manner of the offer and the economic inducements held out to the prospective purchaser in determining whether an offering involves securities. A sale of condominium units will not be considered a security if the condos are not offered and sold with emphasis on the economic benefits to the owner to be derived from the managerial efforts of others. Even if an owner of the condominium unit, after purchasing his unit, enters into a non-pooled rental arrangement with an agent not designated or required to be used as a condition to the purchase, the sale will not be deemed to involve securities. Also, a continuing affiliation

between the developers or solar integrators of a project by reason of maintenance arrangements does not make the condominium unit a security.

The SolarCondos will not be marketed with emphasis on the economic benefits to the owner to be derived from the managerial efforts of others. They will be marketed with a primary emphasis on the ability to net meter self-generated electricity. The marketing materials also highlight that the initial cost to buy a solar parcel is less than the cost of installing rooftop panels. However, a lower initial purchase price should not be considered an economic benefit to the owners that is derived from the managerial efforts of others.

The marketing materials also point out that the value of the solar panels will decline over the 20 to 25 year anticipated lifespan of the facility. Any periodic increase in value is solely based on market energy costs or other external market forces and is not an economic benefit derived from the managerial efforts of others. Also, since the solar panels have a limited economic lifespan of 20 to 25 years, there is a limit to any increase in value that the owner might receive from increasing energy costs.

In some respects the combined metering of SolarCondos may look analogous to a participation in a rental pool arrangement, since the total output of the entire facility will be metered, and each SolarCondo owner will be allocated a proportionate amount of the total production. However, unlike residential condominiums where a rental pool is used for economic reasons, combined metering at a solar facility is a necessary expedient to measure the amount of energy produced by each unit due to the utility service area providing only one connection point to its grid, the indistinguishable nature of energy and the impracticality and inefficiency of metering each SolarCondo separately.

The combined metering of the solar facility should not be considered a rental pool arrangement since the benefit that will be derived from the combined metering is personal consumption of energy and not profit.[8] In point of fact, there are no ongoing or periodic monetary proceeds or revenue that will be derived by any owner in the operation of the solar facility because no monetary proceeds or revenues are likely to be produced. It is not contemplated that a SolarCondo owner will be able to "save" or "bank" credits for future effort, since the utility will require that the credits be offset (sometimes called a "true-up") against consumption over the one to twelve month period following the generation of the electricity. Each utility sets its own true-up period and different regions of the United States have different standard true-up periods. Although some utilities may at times and for

[8] The economic and functional necessity of combined metering is only described to provide a better understanding of the facilities and not as a reason that relief should be granted or denied.

convenience of accounting elect to settle any excess after a true-up period in cash, the amount paid is generally nominal and cannot be relied upon by the owner. The only use that the owner of a SolarCondo can realistically anticipate is consumption of electric energy created, in an amount that is equal in amount to the amount of electric energy produced.

SolarCondos differ from residential condominiums that fall under the Condominium Release in many ways. As stated above, the main difference is that the purpose of a residential condominium is shelter and occupation where the purpose of a SolarCondo is to generate clean energy for personal consumption. The rental pooling arrangement used by residential condominiums is an efficient mechanism to participate in proceeds from the ownership of a residential condo. Unlike each distinctive residential condo that participates in a rental pooling arrangement, the energy produced by each SolarCondo is indistinguishable from the energy produced by the other SolarCondos in the same solar facility and combined metering does not generate revenue or profits. Further, there is a public market for residential condominiums and it is not expected that a public market will be created for SolarCondos.

The offering and sale of the SolarCondos should not be considered an investment contract under the Condominium Release for a number of reasons, including the following. The offering will not be marketed with an emphasis on the economic benefits to the owners and will instead focus primarily on the ability to net meter self-generated electricity. The SolarCondos are being offered in conjunction with net metering of energy. While practical considerations require that the metering be combined at the connection to the utility's lines, the combined metering should not be considered a rental pool arrangement since it is not a means by which any person is deriving revenue or profit from the venture. Finally, although the owners will be restricted in their occupancy of the condo, this restriction is necessary for the main purpose of the SolarCondo, namely the generation of clean electricity for self-consumption.

III. Conclusion.

Based upon the foregoing, it is our opinion that the SolarCondos will not constitute securities under Section 2(a)(1) of the Securities Act or Section 3(a)(10) of the Exchange Act, and we request that the Division of Corporation Finance advise us that it will not recommend to the Commission that it take any enforcement action against the Company if, in the circumstances described herein, any offers and sales of the SolarCondos are made without being registered with the Commission under Section 5 of the Securities Act or Section 12(g) of the Exchange Act.

Should you desire any further information regarding this request, please do not hesitate to contact the undersigned at (202) 639-6705.

Very truly yours,

/s/ Paul S. Maco
Paul S. Maco

US 470426v.17

NON-BINDING SOLARCONDO™ LETTER OF INTEREST

Dear Prospective Buyer:

CommunitySun, LLC ("***cSun***") intends to develop a utility-scale solar energy facility (the "***Facility***") in _____, Texas, and to sell SolarCondo units in the Facility to certain residential or business customers located in the electrical utility service area of _____. You are executing this Letter of Interest and delivering to cSun a fully-refundable deposit of $_____ (the "***Good Faith Deposit***") to show your interest in purchasing a SolarCondo in the Facility. EXCEPT FOR THE FULL REFUNDABILITY OF THE GOOD FAITH DEPOSIT AND EXCEPT FOR SECTION III BELOW, THIS LETTER OF INTEREST IS NON-BINDING, AND YOU OR CSUN MAY TERMINATE THIS LETTER OF INTEREST AT ANY TIME BY WRITTEN NOTICE TO THE OTHER. Upon any termination of this Letter of Interest, cSun shall promptly return to you the Good Faith Deposit. The purpose of this Letter of Interest is to assist cSun in gauging community interest in the Facility and in forecasting potential sales of SolarCondos at the Facility.

I. BACKGROUND AND NATURE OF INTEREST

A. SolarCondo Brochure. Please read the SolarCondo Brochure that has been provided to you for additional details concerning the SolarCondo.

B. Real Estate Interest. Each SolarCondo will be a nonresidential real estate condominium interest. A SolarCondo will be mortgageable and transferable under local law, subject to certain transfer restrictions generally described in Section I(G) below. You will own the assets comprising your SolarCondo (real estate condominium interest, solar panels and appurtenant equipment) and an undivided interest in the common elements of the Facility (the "***Common Elements***"), which Common Elements will include, but are not limited to, (i) the land or leasehold interest underlying the Facility, and (ii) internal distribution lines, transformers, converters, trackers and switch gear at the Facility. Record title to your SolarCondo must be held in the same name(s) that are on your utility account in the local host utility.

C. Owners' Association. You and other SolarCondo owners will be members of the SolarOwnersAssociation™, the property owners' association that governs the Facility.

D. Creation of Condominium. To create the condominium regime for the Facility, cSun will prepare a Condominium Declaration, Condominium Plat, organizational documents for the SolarOwnersAssociation, and other documents relating to the SolarCondos and the Facility (referred to herein together as the "***Condominium Documents***"). Advanced drafts of the Condominium Documents will be provided to you prior to your execution of a binding contract to purchase a SolarCondo.

E. Transportation of Electricity. Electricity produced by each SolarCondo will be transported by the local utility's grid, through a single connection point, to the residence or business of each SolarCondo owner. SolarCondo owners will be customers of the utility, and will have ownership of the electricity that flows into the grid. The utility will simply transport the power produced by the customer's SolarCondo to the customer's residence or business. Each SolarCondo owner is responsible for paying any delivery or similar charges assessed by the

utility to the SolarCondo owner for the transportation and delivery of power produced by the owner's SolarCondo.

F. Net Metering. Under a net metering arrangement with the host utility, the output from your SolarCondo will be transmitted along with the output from all other SolarCondos within the Facility through a single connection point, and your SolarCondo will be allocated a proportionate amount of the aggregate metered production of the Facility primarily based on the output capacity of your SolarCondo divided by the aggregate output capacity of panels in the entire Facility. The SolarOwnersAssociation will take reasonable steps to ensure that the amount of generation allocated to each SolarCondo will match the output of that SolarCondo as closely as reasonably practicable. For instance, where practicable, allocations will be adjusted to reflect any days in which a particular panel or string of panels is not producing. The utility will credit or offset your own electrical energy production from your SolarCondo against the consumption recorded by your residence or business meter for purposes of calculating your utility bill. The energy offset is expected to be treated as self-generation and consumption for state and local electric regulatory purposes.

G. Transfer Restrictions. The Condominium Documents will impose certain restrictions on the transfer of SolarCondos and energy credits derived from SolarCondos, including, but not limited to, (i) restricting transfers of SolarCondos to transferees that are consumers within the service area of the local host utility, and (ii) prohibiting transfers of a SolarCondo where the output capacity of such SolarCondo exceeds 125% of the historical or anticipated usage in the service area of the transferee, and (iii) prohibiting the rent, lease or transfer by a SolarCondo owner of energy credits derived from a SolarCondo to any other consumer.

II. TERMS OF EARNEST MONEY CONTRACT

If you desire to proceed with the purchase of a SolarCondo interest, you and cSun will enter into a commercial condominium sales contract (the "***Earnest Money Contract***"). The Earnest Money Contract will include the terms set forth below and such other terms that are mutually agreed upon by you and cSun.

A. Property. A _____ kilowatts SolarCondo in Pecan Street I, a SolarCondominium facility, located at _____ Street, _____, _____ County, Texas in the electrical utility service area of _____, to be described in the Condominium Documents, and any amendments thereto to be recorded in _____ County, Texas as of closing; together with the solar arrays associated therewith and such SolarCondo's undivided interest in the Common Elements designated by the Condominium Documents. In no event may the output capacity of your SolarCondo exceed 125% of your historical or anticipated electrical usage in the service area.

B. Seller. cSun or its affiliates.

C. Purchase Price. The purchase price for the SolarCondo will be determined by cSun on a kilowatt-installed basis. Currently, cSun estimates that the price per kilowatt installed in a SolarCondo will be $_____.

D. Earnest Money Deposit. $_____, to be delivered by you at your execution of the Earnest Money Contract to Fidelity National Title Insurance Company (the "***Title Company***"), or to such other title company designated by cSun. The Earnest Money Deposit shall be applied at closing as a credit against the purchase price.

E. Diligence Period. You will have a Diligence Period commencing on the effective date of the Earnest Money Contract and ending ___ days thereafter, during which you may conduct such diligence concerning the SolarCondo and the Facility as you deem appropriate and arrange financing for your acquisition of the SolarCondo. Prior to the expiration of the Diligence Period, you may terminate the Earnest Money Contract for any reason and be refunded the Earnest Money Deposit.

F. Financing Terms. Financing is available through cSun's approved lenders, offering mortgage financing for the purchase of SolarCondos through their SolarMortgage™ loan products. You currently *(check one)* (_) are (_) are not interested in financing the purchase of your SolarCondo.

G. Title Policy. At closing, the Title Company will provide, at cSun's expense, an owner's title policy of insurance insuring your real estate title in and to your SolarCondo. You will bear the expense of any mortgagee's title policy of insurance.

H. Closing. cSun projects that closing will occur on or about _____, but in any event, no later that two (2) years after the execution of the Earnest Money Contract. At closing, title to the SolarCondo will be conveyed by a SolarDeed™, a real estate warranty deed conveying to you fee simple title to your SolarCondo.

III. ADDITIONAL CONSIDERATIONS, DISCLAIMERS AND WAIVER

A. Cost of Utilities. cSun does not control the rates and fees that the utility may charge customers for power. Accordingly, like other customers of the utility, owners of a SolarCondo may be subject to changes (which may occur frequently) in the utility's rate structure, fees and tariffs for power, including, without limitation, changes in rates, fees and tariffs with respect to energy consumption that is not offset by the net metering described above, and with respect to utility service in general.

B. Taxes and Incentives. The SolorCondo may potentially qualify for certain federal tax incentives and local incentives. You are encouraged to consult with your tax, legal and other advisors regarding the availability of any tax rebates, credits and incentives relating to the SolarCondo. cSun does not make and expressly disclaims any representations or warranties concerning the availability of any tax and other incentives, credits and rebates relating to the SolarCondo. **Circular 230 notice: each recipient of the SolarCondo Brochure and this Letter of Interest is hereby notified that: (a) any discussion of U.S. federal tax issues contained or referred to therein or herein (including eligibility for tax credits) is not intended or written to be relied upon, and cannot be used by any prospective purchaser for the purpose of avoiding penalties that may be imposed on it under the Internal Revenue Code; (b) any such discussion is included therein and herein in connection with the promotion or marketing of the matters addressed therein and/or herein; and (c) the**

recipient should seek advice based on the recipient's particular circumstances from an independent tax advisor.

C. Waiver. This Letter of Interest, the SolarCondo Brochure, and other documents and information provided to you with this Letter of Interest concerning the SolarCondo and the Facility are not in the form of the Condominium Information Statement described in Section 82.153 of the Texas Property Code. Further, cSun does not intend to deposit your Good Faith Deposit in escrow with a third party as described in § 82.158 of the Texas Property Code. As permitted by § 82.151 of the Texas Property Code for non-residential condominium projects, you hereby waive any requirements in § 82.152(a) and § 82.152(c) of the Texas Property Code that cSun prepare and/or deliver to you the Condominium Information Statement described in § 82.153 of the Texas Property Code and any requirement that your Good Faith Deposit be held in escrow by a third party.

D. Effective and Binding. Notwithstanding the nonbinding provisions of this Letter of Intent, the disclaimers and waivers in this Section III are effective and binding in accordance with their terms, and this Section III shall survive the termination of this Letter of Interest.

cSun appreciates your interest in the purchase of a SolarCondo at the Facility. We will keep you informed of the status of the Facility, and we welcome any questions that you may have concerning the SolarCondos and the Facility. If the development of the Facility proceeds in accordance with our current plans, we hope to be able to provide to you advanced drafts of the Condominium Documents and a draft Sales Contract on or before _____.

If you are interested in purchasing a SolarCondo at the Facility in accordance with this Letter of Interest, please so indicate by acknowledging in the space provided below and delivering to cSun your Good Faith Deposit.

Sincerely,

CommunitySun, LLC

By:_____
Name:_____
Title_____

Agreed to and accepted this the _____ day of _____, 2011

Prospective Buyer:

Signature:_____
Printed Name:_____

Address: _____

_____

_____

Telephone number:_____

Email address:_____

SolarCondo™
Renewable Energy System

Solar powered by
CommunitySun™
Renewable Energy Developer

Finally, no more obstacles to solar ownership

With a CommunitySun™ SolarCondo™ Renewable Energy System, you can generate your own solar energy. Many utility customers have been excluded from owning their own solar power system due to cost, or they can't install solar panels on their homes or places of business because their rooftops are unsuitable due to shade trees or poor orientation to the sun. Until now.

No rooftop needed

A SolarCondo makes solar ownership more affordable, and you don't have to worry about location suitability. With a SolarCondo, there's no rooftop installation of any kind.

Renters and tenants eligible

This also makes a SolarCondo the practical option for anyone who pays a utility bill but has no legal access to a rooftop – people like apartment dwellers, residential condominium owners and commercial business tenants.

Goes with you when you move

What's more, the electricity generated by your SolarCondo goes with you when you move. As long as you move within the service area of your electric utility, the power from your SolarCondo follows you where you go. Unlike rooftop installations, you will not leave your solar panels behind on the roof of your former residence or business.

This can be especially important to renters. For instance, if a retail business tenant moves to a new shopping center, it can bring its SolarCondo rights along to its new location. If an apartment or home renter moves, the SolarCondo energy is delivered to the next apartment or home.

Available and affordable

With a SolarCondo the electricity produced is more affordable than traditional rooftop solar power. The SolarCondo not only makes clean solar power affordable, it makes it available to more individuals. With a SolarCondo, CommunitySun is bringing solar power to one and all.

Your SolarCondo adds up to affordable solar power	Solar Condo	Rooftop Panels
You own the solar panels – and the energy they produce	•	•
Energy generated by your solar system is subtracted from your utility bill	•	•
Eligible for potential Federal tax credits*	•	•
Eligible for utility rebates	•	•
More efficient and lower cost	•	
Available to all renters	•	
Available to apartment, condo, and other multi-family dwellings with no roof rights	•	
Available to business tenants leasing property	•	
Not an issue with homeowner associations	•	
Fully effective regardless of roof design or shade trees	•	
When you move, the savings continue	•	
Leverages efficient technology to reduce costs	•	
Lower maintenance costs, and hassle free	•	

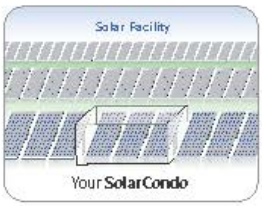
* CommunitySun is not a tax or legal advisor. Please consult your personal tax and legal advisor before making tax or legal-related purchase decisions.

To learn more about the SolarCondo solution and affordable solar ownership, visit www.CommunitySun.com.

What is a SolarCondo?

Just like in a residential condo, a community of people each buy an individual SolarCondo within a solar facility with shared interests in the land and common elements. The owners belong to the SolarOwnersAssociation™ governance group that provides property management and maintenance.

With a SolarCondo, each person individually owns specific solar panels. Each SolarCondo has a SolarDeed™ title. Yes, it is real property that has a title and can be bought and resold.



Savings for 20-25 years

The estimated lifespan of your solar panels is 20-25 years. This is the minimum economic life of the clean energy produced by your SolarCondo.

How does it work?

The power from the entire solar facility enters the power grid, and through digital processes, the power generated by your SolarCondo is allocated to your residence and is credited on your utility bill. This is what utility companies refer to as "net metering," because your utility bill is calculated based on your total electric usage less the amount of electricity produced by your SolarCondo.

Efficient technology

Next, we use high-efficiency solar tracking mechanisms that produce an average of 25 percent more energy than fixed rooftop installations and decrease the cost of each kilo-watt hour (kWh) produced. So, when viewed in terms of energy delivered, a CommunitySun SolarCondo costs less than rooftop solar.

Tax credits and incentives

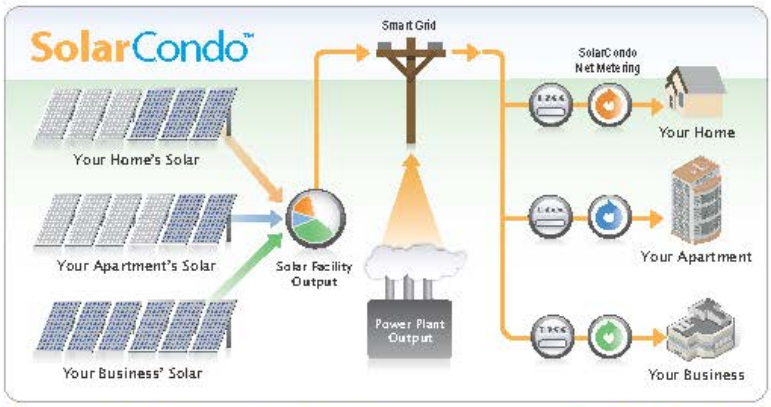
When you factor in available local incentives – such as solar rebates, and potential Federal tax credits* – the SolarCondo is even *more* affordable than rooftop installations.

Loans at mortgage rates

What's more, since the SolarCondo is just that – a condo – you can finance a substantial portion of the purchase price through a SolarMortgage™ bank loan just as you would finance the purchase of a residential or commercial condominium.

With a SolarMortgage you can take advantage of competitive mortgage options and forego the typical financing choices for conventional solar systems. Namely, you can avoid the high cost, unsecured signature loans offered at credit card interest rates or mortgaging your home with a costly home improvement or home equity loan.

All of this adds up to the first, truly affordable option for individually owned solar power – the SolarCondo Renewable Energy System.



Net Metering	
Your total usage:	2,250 kW hrs.
Less	
Your total SolarCondo production:	1,000 kW hrs.
Net billable hours:	1,250 kW hrs.

Total bill = 1,250 kW hours x electric rate per kW hour

Energy generated from your SolarCondo flows into the power grid, and to your home, reducing your monthly bill.

It's green, but it doesn't cost a lot of green

A CommunitySun SolarCondo gives you the power to reduce your carbon footprint and dependence on imported fuels and domestic coal – affordably. This is a first in the green energy industry. Plus, you can buy just what you need, no more and no less, to live comfortably in the green.

Economies of scale

SolarCondo affordability starts with the economies of scale that come from building a large-scale solar facility. It simply costs less to build many SolarCondo systems, each containing a number of solar panels, than it does to build a series of custom-designed, custom-built rooftop systems.

The SolarCondo Solution delivers more for your money

- **Compared with rooftop installations** – costs less and produces more energy than similar sized rooftop systems
- **Low up-front costs** – with mortgage-rate financing available
- **30% potential tax credit*** – from Uncle Sam
- **Significant rebates from local utility** – are often available
- **Long-term solar savings** – for 25 years or more

* CommunitySun is not a tax or legal advisor. Please consult your personal tax and legal advisor before making tax or legal-related purchase decisions.

CommunitySun
3435 Greystone Drive
Austin, Texas 78731
info@CommunitySun.com

To learn more about the SolarCondo solution and affordable solar ownership, visit www.CommunitySun.com.

Appendix D. SEC No-action Letter for CommunitySun

Response of the Office of Chief Counsel **August 29, 2011**
Division of Corporation Finance

Re: CommunitySun, LLC
Incoming letter dated August 29, 2011

Based on the facts presented, the Division will not recommend enforcement action to the Commission if, in reliance upon your opinion of counsel that SolarCondos are not securities, CommunitySun offers and sells the SolarCondos without registration under the Securities Act of 1933 and the Securities Exchange Act of 1934.

This position is based on the representations made to the Division in your letter. Any different facts or conditions might require the Division to reach a different conclusion. Further, this response expresses the Division's position on enforcement action only and does not express any legal conclusion on the question presented.

Sincerely,

/s/ Michael J. Reedich
Special Counsel[51]

[51] SEC: http://www.sec.gov/divisions/corpfin/cf-noaction/2011/communitysun082911-2a1.htm#.

Appendix E. LiDAR PV Rooftop Data Coverage