

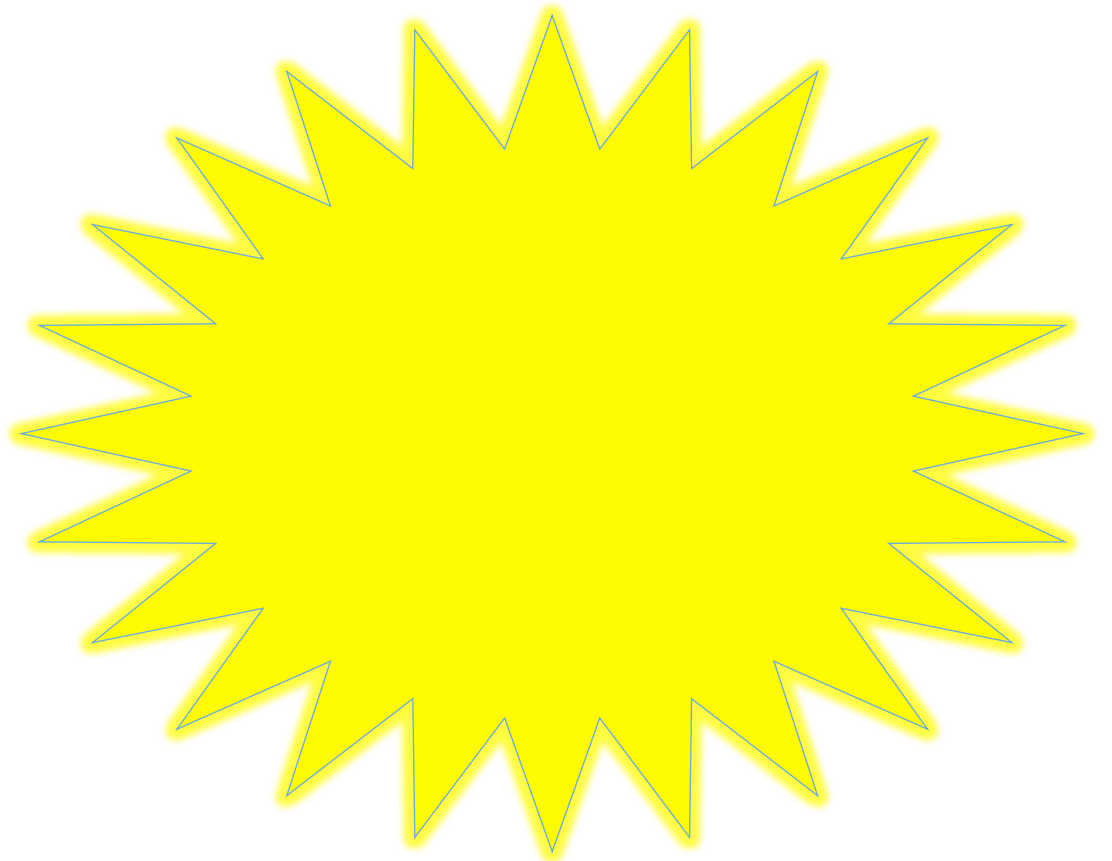
**SOLAR POWER ON THE ROOF AND IN THE
NEIGHBORHOOD:
RECOMMENDATIONS FOR CONSUMER PROTECTION
POLICIES**

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INTRODUCTION AND EXECUTIVE SUMMARY

The purpose of this Report is to address the need for essential consumer protection policies to govern the burgeoning markets for residential rooftop solar systems and community solar projects.

The U.S. residential solar market has experienced explosive growth in the last five years, fueled by lower costs, state and federal incentives, and new financing options, including leases and purchased power agreements, also known as third-party ownership. Community solar, where a consumer subscribes to shares in a solar system that is located in a neighborhood or community, is a relatively new and growing option.

Consumers may be interested in solar power to help the environment, or simply to save money on their electric bills. Whatever the motivation, it is not easy to comparison shop for solar power. Consumers will be faced with comparing the costs of outright purchase, a purchase power agreement, a lease, or a loan. Whether purchased or leased, the consumer is making a long-term financial commitment with the expectation that savings on utility bills will offset the monthly cost of the system. Achieving these savings in reality is dependent on a variety of factors—including contract terms, federal, state, and local subsidies, the estimated increase in the customer’s cost of electricity, and the performance of the solar panels themselves. It would be easy for a consumer to be misled into a purchase based on exaggerated assumptions about future savings. Indeed, consumer complaints have prompted states to take action in the courts, and propose consumer protections to address actual and potential abuses and misconceptions.

This Report describes the marketing, sales practices, disclosures, and contractual terms concerning the costs and benefits of installing rooftop solar systems or participating in community solar systems. While several existing laws and regulations may be applicable to residential rooftop solar installations, those policies are not specifically targeted to solar installations and the associated financial transactions. This Report recommends that solar energy providers that engage in sales, leases and purchase power agreements, as well as those offering community solar projects, should be subject to oversight by a state agency and be required to provide consumers key disclosures, fair contract terms, and be subject to penalties for violating state laws and regulations.

This Report will not address issues governed by home construction codes and oversight, nor the disclosures and oversight associated with loans directly provided by financial institutions. This Report should be viewed as complementary to the oversight by state Attorneys General under a state’s Unfair Trade Practice laws, the Federal Trade Commission under the comparable Federal Unfair Trade Practice law, and any state and federal regulations that specifically address Door to Door Sales and Telemarketing Sales activities. These existing consumer protection policies, while valuable, are not comprehensive and do not address the specific types of transactions and associated unique features for rooftop solar systems or community solar systems.

The preferred approach for oversight of solar energy providers offering residential rooftop or community solar projects should be uniform and comprehensive jurisdiction by the state utility commission, or other equivalent state agency. Solar energy businesses are marketing to residential electric utility customers for a product that is inexorably linked not only to the

customer's monthly electric bill (and the purchase of which might even appear on the utility's electric bill under some proposals), but is also located in the utility's distribution grid. To some extent, utility commissions already regulate solar power with their detailed pricing decisions on net metering and value of solar tariffs that are crucial to the marketing claims related to lowering a household electric bill. Often state policy requires the state public utility commission to promote solar power specifically as part of the effort to achieve renewable energy and carbon emission reduction goals. Commissions then typically require utilities to make investments to accommodate the integration of distributed generation and solar energy facilities, whether through individual customer rooftop installation or local community solar programs. Thus, it follows that state utility commissions are the most logical focus to oversee retail solar sales, and suggestions to limit the jurisdiction of utility regulators to only a few types of solar transactions would result in likely confusion by consumers as to their rights and remedies when shopping for solar systems. However, states may decide that a different state agency should exercise this oversight and jurisdiction and our recommendations would accommodate an alternative approach.

This Report proposes consumer protections specific to solar lease and sale transactions, with disclosures and contractual provisions that flow from the long standing consumer protection policies that have governed retail sales of products and services to residential customers.

The key recommendations set forth in Chapter IV include the following policies:

Registration or Licensing; State Agency Authority: Consumers protections are not effective unless a governmental agency has the authority to investigate complaints and take action against bad actors, and such enforcement cannot occur without registration or licensing. Regulators should know how to contact authorized representatives, investigate the background of a business, and take action against a provider for violations of state laws and regulations.

Disclosures: A Customer Template: This Model would not regulate the financial contents of the solar provider's offer, but would require all solar providers marketing to residential customers to use the same terms and definitions and make their offers in a manner that allows a comparison of impacts on the customer's electricity bills and obligations under the applicable financial arrangement.

Contract Provisions: Standardizing contract terms and disclosures does not in any way regulate or limit the price charged for a solar lease, purchase power agreement or sale. However, certain contract terms should be specifically addressed and, in some cases, mandated or prohibited to prevent unfair dealing and one-sided bargains about fine print terms and conditions.

Sales and Marketing Conduct: Consumer protection regulation applicable to retail solar providers should explicitly prohibit misleading and deceptive sales and marketing

statements and reference the state's specific unfair trade practice or general consumer protection law. A seller cannot misrepresent the nature of the formal agreement or use statements that are directly contradicted by the formal agreement or contract.

Terms at the Sale of a property: There have been complaints about third party financing arrangements including a provision giving the solar provider (the owner of the solar panels in several types of financial arrangements) the right to approve a new home owner before the lease could be transferred to the new owner. Several states have addressed this situation in their proposed legislation, and the rights and obligations at the time of the sale of property are a key disclosure in the recently enacted Arizona law.

Enforcement and Penalties; Customer Complaints: The proposed consumer protections cannot be effective unless those regulations can be enforced and violators penalized. Enforcement requires that an agency have the authority and necessary resources to investigate complaints, access the solar provider's records demonstrating compliance with the underlying consumer protection and contract requirements, take actions to revoke licenses or registration, and assess fines or penalties to ensure customers are protected.

CHAPTER I: THE MARKET FOR RESIDENTIAL SOLAR IS GROWING, FUELED BY NEW FINANCING OPTIONS

The U.S. residential solar market has experienced explosive growth in the last five years. This growth has benefited from several factors. First, the cost of solar power panels has dropped significantly in recent years.¹ Second, federal and state subsidies and incentives have further lowered the net cost to consumers. Finally, the solar industry has developed new financing methods, including loans, leases and purchased power agreements, that lower the initial cost to residential customers. The result is that financial investors have supported the development of solar power companies, their marketing and sales activities have expanded to many states, and new industry entrants have proliferated.

When a customer installs solar panels on their roof, they have installed a tiny generating plant for electricity. The allure of solar to many customers is not its initial cost, which is significant, but the potential for the customer to generate electricity and reduce the amount of electricity purchased from the local utility and contribute to the “greener” generation of electricity. But, that is only part of the customer benefits. The customer may generate more electricity under certain times of the day or under certain weather conditions than the customer needs and so this “excess” electricity is flowed back into the utility’s distribution system and the customer is paid for generating this excess electricity. From the solar customer’s perspective, the issue is whether the reduced usage and the payments for excess generation (the resulting monthly electric bill) offset the upfront and monthly costs of the solar installation, whether purchased outright, through a loan, or leased from the solar company.

The method or manner in which the customer is paid for generating excess electricity by the utility is referred to as “net metering” or the “value of solar.” The methodology for calculating the value and the payments to the customer for this excess electricity is highly controversial mainly because the utility is allowed to recover the costs of the bill impacts associated with solar (i.e., reduced usage and payments for excess generation) from other customers. Utility rates are regulated by the state public utility commission and a utility is allowed to set rates that recover its approved revenue requirement. As a result, there is a growing concern about the shift in costs to support the electricity system from solar customers to non-solar customers.² This Report does not address this issue, but rather focuses on the need for consumer protection policies and programs that address the marketing, sales, and contract terms associated with residential solar projects—whether installed on the customer’s roof or as part of a community solar project financed by a group of customers. Indeed, several states are reconsidering their net metering policies, and significant changes have recently been adopted by Nevada and Hawaii. Appropriate disclosures and accurate savings calculations are all the more important for consumers in this changing marketplace.

The solar industry consists of three distinct markets: individual customer rooftop solar; utility-owned solar power generating facilities; and community solar. Rooftop solar is, as the name implies, typically installed on an individual customer’s roof. Utility-owned

solar power facilities are larger arrays of solar panels that are installed on the ground and form part of the utility's generation mix for all its customers and the prudent costs for these facilities are included in rates paid by all customers. Community solar is usually installed on the ground and financed by a private or publicly owned organization to serve a group of customers in a neighborhood or defined geographic area. Solar power is a form of "distributed generation" because it is a form of generation of electricity that can be located throughout the distribution system of an electric utility, very different from the more traditional large power plants that have historically been used to produce electricity. This Report does not use the term "distributed generation" because that is a generic term that can include generation resources other than solar. For ease of reference this Report uses the term "solar power" or "solar energy facilities or systems."

Through the end of 2014, more than 600,000 homes and businesses had installed on-site solar, typically on the roof. The residential market grew by more than 50% annually in 2012, 2013, and 2014—a trend that some experts predict will continue for 2015 and 2016. These systems generate approximately one-third of the total U.S. solar electricity production. The market for residential solar is expanding rapidly across the country. Twenty-one states have now added more than 100 MW of solar PV. Yet the top five states still account for nearly three-fourths of cumulative U.S. PV installations, with approximately half of all residential solar installations in California.³ Preliminary 2015 data confirms the significant growth in residential solar installations by 66% compared to 2014 and constitutes 29% of the entire U.S. solar market. Actual activity remains concentrated in ten states.⁴

Homeowners can contract with a solar energy company to have a solar system installed on their rooftop (or elsewhere on their property). The homeowner may be offered a loan or third party ownership arrangement to lower the initial investment costs of the system. Although rare just a few years ago, 72 percent of residential solar systems installed in 2014 were financed through a third-party ownership model (i.e., solar leasing or a third-party power purchase agreement (PPA))⁵. While third-party ownership has been on the rise in the residential market, some analysts predict its growth will slow down and that financing trends may shift back to loan products.⁶

Depending on the third party ownership agreement, the solar company will often be responsible for financing, permitting, designing, installing, and maintaining the solar system. Under the typical third party ownership agreement, the homeowner also assigns any tax incentives, rebates or other incentives to the solar provider (the third-party owner). The assumption is that these benefits have been factored into the contract terms.

The following financial arrangements can be offered to a customer interested in rooftop solar,⁷ but not all solar companies offer all these options and several of these options are not available in all States due to state laws that may impact the ability of solar providers to offer some of these financial options, particular leases and PPAs.

Customer Ownership of the Rooftop Solar System:

Customer Purchase: The homeowner obtains their own financing (often in the form of a home equity loan) to purchase the system and there is no ongoing relationship between the homeowner and the solar company after the installation of the system other than potential repair and maintenance or warranty issues.

Loan Agreement: The homeowner enters into a loan agreement with the solar company to finance the purchase price of the system, thus eliminating the homeowner's obligation to obtain their own loan. Solar companies that offer this model have entered into agreements with financial institutions to support their loan offers and these terms may differ from what the homeowner might be able to obtain individually.

Third-Party Ownership of the Rooftop Solar System:

Purchase Power Agreement (PPA): The solar company retains ownership of the solar system and the homeowner buys all of the electricity produced by the solar system at an agreed-upon price per kWh. This price typically rises over the term of the contract. The homeowner typically is not required to invest any significant capital costs. PPAs are usually longer-term contracts with terms of up to 20 years.

Lease: The homeowner enters into a lease agreement and makes pre-established monthly payments to the solar company, who retains ownership of the system for the contract term. In effect, the homeowner is renting the solar system and has the right to use all the power produced by it. The lease payments typically rise yearly over the contract term and are not tied to the output of the system. Unless the contract includes a performance guarantee, the homeowner could experience higher or lower electric bills depending on the electrical output assumed at the time of the transaction.

The following chart summarizes the different attributes associated with a loan, a lease, and a PPA:

Purchase with Loan	Lease	PPA
Types of Loans include secured and unsecured solar loans, home equity loans, home equity line of credit and PACE loans	Types of leases include \$0 down or a custom down payment, with monthly payments that typically escalate each year. Option to pre-pay (functions like a cash purchase, with the leasing company retaining all tax credits and rebates).	Same as lease
Meet qualifications, such as minimum credit score.	Typically a minimum credit score is required, but not always	Same as lease
Terms of 5-20 years; 3.5-7.5% interest rates. Some states offer subsidized loans. Interest on a loan may be tax deductible.	Contract for 20-25 year period	Same as lease
Purchaser retains any incentives and tax credit.	Leasing company retains any incentives and tax credits.	Same as lease
Homeowner owns the system and is responsible for maintenance.	Leasing company owns and maintains system. However, consumer may have some maintenance responsibilities, such as tree trimming.	Same as lease.
Consumer makes loan payments. Has the right to use all of the power produced by the system.	Consumer pays a monthly lease payment in exchange for the right to use all of the power produced by the system. If the system produces less power than predicted, the cost will be higher.	Consumer agrees to buy the power generated by the system at a set price per kWh.
At the end of the loan period the consumer owns the system.	At the end of the lease the consumer can buy the system at the fair market value or price specified in the lease; have the company remove the system or renew the lease. How is fair market value determined?	Same as lease
System transfers at sale of home.	Buyer may have to qualify to take over lease payments or seller may be required to purchase system before sale.	Same as lease.

Whether loan, lease or PPA, these are significant financial outlays for a consumer, potentially with terms that may not be fully understood by, or necessarily favorable to, the purchaser. While certain policies relating to residential solar, such as net metering, remain controversial, there is a growing awareness of the need for developing and implementing basic consumer protection polices relating to the sale and leasing of solar systems.

CHAPTER II: IT IS DIFFICULT TO SHOP AND COMPARE COSTS FOR ROOFTOP SOLAR AND THE PROJECTED IMPACTS ON A RESIDENTIAL CUSTOMER ELECTRIC BILL

When shopping for a rooftop solar system, customers are presented with a wide variety of options that include outright purchase, a purchase power agreement, a lease, or a loan. Customers may hear about solar power options directly from marketers in the form of telemarketing sales calls, door-to-door marketing, web-based advertisements, and recommendations from neighbors and friends. While the idea of solar power is fairly simple to explain—install solar panels on the homeowner’s roof--it is not easy to comparison shop for a residential roof top solar system. Whether purchased or leased, the consumer is making a long-term financial commitment with the expectation that savings on utility bills will offset the monthly cost of the system. Achieving these savings in reality is dependent on a variety of factors—including contract terms, federal, state, and local subsidies, the estimated increase in the customer’s cost of electricity, and the performance of the solar panels themselves. While some or even all prospective customers may also be motivated by the environmental attributes of solar systems and their potential to displace the greenhouse gas or carbon emissions associated with more traditional power plants, most consumers also expect benefits in the form of a reduced monthly electric bill. The savings potential for rooftop solar systems is particularly important to customers who cannot afford to finance the purchase of the solar system themselves.

A. SOLAR COMPANY WEBSITES OFTEN MAKE GENERIC STATEMENTS AND DO NOT EXPLAIN MANY DETAILS OF THE PROPOSED TRANSACTION

A review of some of the top solar company websites⁸ reveals the potential for confusion and confirms the difficulty of shopping and comparing the various options or determining the projected savings in the customer’s monthly electric bill. In almost every case, the solar company’s website makes generic statements about electric bill savings, but asks the customer to call or email (and then receive a sales call) for a price quote.

- The solar company Brite’s website promotes a residential customer lease (<http://www.britelease.com/>). While there are no sample lease documents available on this website, the Company offers a no down payment 15-year lease with a performance guarantee and claim that consumers “start saving immediately.” The site states that electricity rates rise an average of 5 to 6 % annually. In fine print, the customer is informed that there is a 2.5% annual escalation in lease payments. The website does not include any links to brochures, references, or educational materials.
- Sun Edison (www.sunedison.com) only offers purchase power agreements for residential solar in six states. While the website promotes “potential savings,” there are no explicit promises or estimates of savings and the “frequently asked questions” portion of the website generally identifies the customer specific information needed to calculate benefits and costs. The company’s solar system is promoted as a long term investment to reduce the electric bill, add value to the sale of the home, and as an action to reduce carbon emissions:

I don't plan on being in my home for 20 years, why would I add solar?

Regardless of how long you'll be in your home it always makes sense to go solar for many reasons. Financially, you will be saving money the first month you go solar and every month you are in the home. You'll also be able to sell your home for more as a result because it is a more energy efficient home. Lastly you'll be reducing your carbon footprint by not using the dirty energy that the utility companies currently provide. An effect that will not only be felt by you but by your children and grandchildren.

Will my system increase the value of my home?

Yes! The amount depends on the market conditions at the time you sell your home, the area of the country you live in and the amount of money you are saving. However, most homes will appraise anywhere from \$5,000-\$15,000 more.

SunEdison's website explains that the Company will not charge the customer any upfront costs for the installation of the new solar system and the customer will pay for the energy that the solar system generates, "at a rate typically that is lower than you are currently providing" (sic). Specifically, "After all of the free equipment, maintenance, and monitoring, the only thing you have to pay for with our PPA is the power your solar panels produce. We lock in a rate that is usually less than your local utility company's market rate—which means you're free from the volatility of future rate increases. Plus, if you produce more power than you use, we put it back on the grid and you get a credit from your utility company. If you produce less power than you need you can still use energy from your energy provider at your agreed upon price."

- Sungevity (www.sungevity.com) promotes a "savings graph," that relies on a projected electricity rate increase derived from national average electricity rate increase data from 1993-2013: "The sooner you go solar, the sooner you can save." This company offers loans, leases, and a PPA, but does not include any of the sample documents on its website. While there is a fine print disclaimer about the "estimates" for electricity prices and savings, the promotional material presents a savings graph with a straight line that implies the price for solar will remain constant for 20 years. Yet there is a fine print disclaimer that includes a wide range of customer lease payments and the fact that there is an escalation clause for the "fixed" lease payments:

System size, cost, and availability vary according to location, electricity usage, and utility company. A 5 kilowatt system lease starts at \$40-\$140 per month for 20 years on approved credit. Payment terms vary and may include fixed payments or escalating payments at a rate of 1.5-2.9% annually for 20 years. Zero due at lease signing. No security deposit required. Contact Sungevity Sales for a free copy of our written performance guarantee.

- Sunrun's website (www.sunrun.com) prominently states that its customers are "typically saving 20%" and that "electricity rates are skyrocketing" as well as the following statements: "No need to buy. A solar lease or PPA can be as little as \$0 down." "As a Sunrun customer you'll save 20% or more depending on how high your electric rates are, how much sunshine you get, and financial incentives." "The average U.S. homeowner could save \$84 a month by going solar."

In some states, it's more like \$150 a month." "Over 20 years, savings can reach \$20,000 or more." The web page with the large print reference to 20% savings, includes an asterisk to the following statement:

*Savings claim based on average Sunrun contract signed before September 15, 2014, payment by automatic debit, and an assumed annual utility rate increase of 3.5%. Actual savings will vary. Savings depends on several factors, including product type, system production, geography, weather, shade, electricity usage, and utility structures and rate increases. See sunrun.com/save20 for details.

Sunrun offers loans, outright purchase, leases, PPAs, and a prepaid option. There is no presentation of the contract documents on the website. With regard to choosing among the various options, Sunrun presents a series of questions that promote the "pay as you go" and "no recurring bill" options. With respect to the choice between a lease or PPA, there is a disclosure that this option is dependent on the state law at the customer's residence. While several statements are made with regard to "flat monthly payments," there is no mention of any price escalation in contract.

- Solar City is the largest residential solar company. On its website (www.solarcity.com) the Company identifies the States in which it operates and offers purchase, loans, lease and PPAs with explanations of each. Unlike other solar company websites, Solar City includes actual PPA and lease documents available for review by customers. SolarCity promotes solar primarily as a means of reducing carbon emissions. While "savings" are generally promoted to prospective customers, the only specific example is a mention of a savings of up to 40% on the entire home energy bill with a solar loan, but in general the website options state that payments will be less than the monthly electricity bill. While the actual lease or contract documents reference a payment escalation rate, there is no reference to this feature on the website or in promotional statements
- Vivint (www.vivintsolar.com) emphasizes paying less for electricity and includes a bar graph comparing monthly electric bills versus solar powered electric bills in Hawaii, a state with high electricity rates that is not typical of other jurisdictions. The Company emphasizes a contract with a zero down payment, with a fine print reference to "for qualified customers." While the chart presents a purported 20 year savings estimate, the fine print says the chart is not based on actual savings. The website does not include sample contracts or any explanation of how customer payments escalate over time. The only purchase option explained on the website is a PPA ("Our Power Purchase Agreement (PPA) is the reason we can offer you an affordable solar solution. You agree to pay for the power our array produces, and we agree to design, install, finance, and service a solar energy system for your home."). The Company also promotes customer quotations and savings experiences on its website.

Even a casual review of these websites confirms that there are a myriad of factors to consider and weigh in a customer's choice to install solar power. There is the potential for consumers to be convinced to buy or lease systems under unfavorable loan or lease terms that do not actually produce savings at the level promoted in sales and marketing materials. As described in one consumer education piece: "[W]ith so many solar financing options now available, the marketplace for these products has become increasingly complex. It can be hard to choose among the different packages and vendors. The difference between them may not be readily apparent. Some contracts are filled with

confusing technical jargon, and key terms can be buried in the fine print of a customer contact.”⁹

B. IT IS DIFFICULT FOR CUSTOMERS TO DETERMINE THEIR OVERALL SAVINGS FROM INVESTING IN SOLAR PRIOR TO ENTERING INTO A PURCHASE, LOAN, LEASE OR PPA

The sales pitch is simple enough—the cost of investing in solar will result in savings on the monthly electric bill that offset, or more than offset, the monthly payment for the solar system. Solar power systems are also marketed to residential customers as a means of lowering pollution from traditional power plants and contributing to the call for reducing carbon emissions and help avoid global warming.

The impact of a rooftop solar system on a customer’s future electric bill is not simple. Estimating future energy prices and the output of a solar PV system is necessarily dependent on assumptions and predictions, as well as the veracity and qualifications of the solar marketers and installers. In addition to the actual lease, PPA or loan terms, a consumer’s actual monthly savings in energy bills will depend significantly on the increase in electricity rates over the contract term, any net metering or value of solar tariff programs, as well as new or increased fixed charges or other nonbypassable fees and surcharges. Any available tax credits, rebates or other incentives applicable to the customer’s installation will lower the overall cost of the system. Proper siting, sizing, installation, and performance of the system is also essential for the consumer to achieve the maximum savings at the least cost.

To illustrate the point of how projected savings vary given assumptions about future utility rates, consider the findings in an article on the Motley Fool website. In April of 2014 the Motley Fool obtained quotes on solar leases from SolarCity for homes in Connecticut and California.¹⁰ The SolarCity quotes assumed electricity rates in both jurisdictions would rise at a rate of 4.8% each year. The Motley Fool found: “If we use the historical compound 20-year growth rate of electricity, the Connecticut quote still results in significant savings over two decades, but far less than the \$23,942 quoted by SolarCity. The California quote would actually result in a higher cost of electricity from solar using the historical average growth rate.”

An example from consumer educational materials developed by the AgCenter at Louisiana State University gives a hypothetical example of two different financing options. Comparing the two options, the example shows one scenario where monthly payments for solar would be \$16 higher than the initial monthly electric bill, and another netting savings of \$30 per month. Again, the savings to consumers are highly dependent on the rise in the price of electricity: “Maintenance expenses may be incurred, and production varies with weather and shade changes. Electricity rates could rise more than expected, which would increase the annual savings from the solar power produced and shorten the payback period. Conversely, if utility electric rates fall or expenses rise, the reverse happens (savings would be less and the payback period lengthened).”¹¹

Getting an estimate is crucial, but comparison shopping among the various purchase and loan options is difficult. It is understandably difficult to give consumers quotes over the internet, given all the factors that must be considered in sizing and pricing a solar system. Many solar installers are eager to give consumers quotes based on an actual evaluation of the customer's property, but a customer would have to obtain such information from several solar companies and a variety of solar purchase, loan, or lease options to compare the impact on their monthly electric bill. As the examples above show, solar providers use differing estimates of the future price increases for electricity—the higher the estimated price increases, the more cost effective solar becomes. Consumers may not understand that even after getting a variety of cost estimates they may not be able to compare them on an “apples to apples” basis, given the varying assumptions made by each provider.

There are a few “savings calculators” available to consumers that are not directly associated with any solar company. The California Energy Commission has launched the Solar Advantage Value Estimator, or SAVE. The tool “estimates the present value of a solar photovoltaic (PV) system; providing a method to calculate the energy savings value of a solar system including the estimated value in annual energy savings. The California Energy Commission developed SAVE in response to expressed interest from real estate professionals, and other stakeholders.”¹² The calculator works for California addresses only. It uses a 2% annual escalation in energy prices. The National Renewable Energy Labs NREL PV watts calculator¹³ offers default settings (unlike CA SAVE) and also includes information on all available federal and state incentives.

A more customer- friendly option that allows consumers to compare quotes on an “apples to apples” basis is EnergySage.¹⁴ This website has the support and backing of the U.S. Department of Energy, New York State Energy Research & Development Authority, Connecticut Green Bank, and Massachusetts Clean Energy Center. According to the website, “EnergySage gets you quotes from multiple qualified installers, calculates the important financial metrics and makes it easy to compare your quotes so you get a great deal! All at no cost!” EnergySage states that it prescreens installers based on “reputation, experience and quality of services.” The web site says its staff will answer questions and “help guide your decision.”

Yet, even the best savings calculator cannot provide an accurate estimate of savings, because there are simply too many variables. These include the location and condition of the home, shade, condition of the roof, local restrictions, size of the system, escalation of payments, insurance, taxes, repairs, maintenance, and more. Additional considerations include the certification and reputation of the installer, responsibility for making repairs, homeowner association restrictions, and responsibility for roof damage, to name a few.

C. FEDERAL AND STATE INCENTIVES IMPACT CUSTOMER PAYMENTS AND SAVINGS FOR SOLAR

This transaction is made even more complicated by the existence of federal, state, and local subsidies associated with the installation of rooftop solar systems, some of which are temporary in nature and can expire or be changed.

Federal subsidies: Certain residential distributed generation investments¹⁵ receive an investment tax credit (ITC) of 30% of eligible costs, with no upper limit (except for fuel cells). Rental property does not qualify for the tax credit. A tax credit reduces the amount of taxes owed by a taxpayer on a one-time basis. For example, if the value of the ITC were \$6,500 and the federal tax owed were \$6,500, the taxpayer would pay no tax for the year. Since it was first enacted in the Energy Policy Act of 2005 the ITC has been extended and expanded. The Congressional Research Service estimates that the revenue cost to the federal government of the ITC was \$500 million in FY 2013 and \$600 million in FY 2014.

The market value of solar companies is heavily dependent on the federal ITC benefit. As reported by SEIA, Bloomberg New Energy Finance estimated that if the ITC expired installed solar capacity would decrease by nearly 8 gigawatts in 2017, compared to 2016 levels.¹⁶ Therefore, the Congressional action that adopted a five-year extension of the ITC in late 2015 omnibus budget legislation was a significant factor in the claims of solar lobby representatives that it would allow for a \$133 billion in new, private sector investments in the U.S. economy by 2020.¹⁷ It is typical under lease and PPA agreements for the third-party owner to claim the value of this tax credit. Thus, the residential customer does not directly claim the tax credit, but must rely on the solar provider to realize the value of the tax credit in the terms of the transaction.^{18 19 20}

State and local subsidies and incentives: State and local governments provide a variety of financial and policy incentives to both residential and commercial customers for solar installations. Financial incentives are typically defined as direct payments (such as rebates), tax credits, and subsidized loans. Policy or regulatory incentives include the approved net metering policy or value of solar tariff. Solar installations may also be subject to local licensing and permitting standards and fees that could impact the cost of the system.

State and local financial incentives can significantly reduce costs to consumers installing solar systems or other distributed generation. A search of a national database of renewable energy and solar energy incentives and state regulatory policies for residential incentives related to solar identified 612 state and local programs across the country.²¹

According to the 50 States of Solar report:

“At the state level, the general trends are that solar rebate incentives are decreasing, solar tax incentives are expiring, renewable portfolio standards are nearing their

targets, net metering caps are being reached, and net metering and rate design are undergoing regulatory and legislative review.”²²

Changes in state and local subsidies and incentives for solar installations will alter the financial terms of the solar provider’s contract and lease options, including in some instances for existing contracts. Since the value of solar to the customer is primarily linked to savings in energy expenditures, the interactions among the applicable subsidies and incentive payments is not known to most customers and generally not transparent in the payment terms of the solar provider’s contract documents.

CHAPTER III: THE CASE FOR ADOPTING CONSUMER PROTECTIONS FOR SOLAR POWER TRANSACTIONS

Recent State Attorney General enforcement activities, State legislative reforms, and national publicity have heightened an interest in understanding and confronting the need for specific consumer protection policies for residential solar transactions.²³

There are several state and federally sponsored publications and web-based resources that attempt to provide unbiased consumer educational materials aimed at helping residential customers understand the various solar system transactions and compare the various financial models.²⁴ While valuable, consumer education cannot substitute for state oversight including specific disclosure and contract term regulations governing these complex documents. A recent article by a national media website devoted to renewable and solar energy developments summarizes these concerns and initiatives and highlighted recent legislation adopted in Arizona and the calls from some U.S. Congressmen to seek greater oversight.²⁵

This Chapter documents the nature of the customer concerns, State Attorney General enforcement activities, and a summary of the California and Arizona statutory policies to govern certain aspects of residential solar transactions. Appendix A provides a summary of other proposed state legislation to adopt consumer protections for certain solar transactions considered in 2015, but that were not adopted.

A. CUSTOMER COMPLAINTS AND REVIEWS

In light of the complexity of solar energy contract terms, the significant costs to consumers, and the site-specific nature of any analysis of costs and benefits or impacts on a customer's electric bill, it would not be surprising for some customers to file complaints, but they may not know where to turn. Customers might find their way to the State Attorney General's consumer office, typically the section of the Attorney General's office that deals with unfair trade practice issues. Other customers might file a complaint with the local Better Business Bureau. Several web-based complaint or customer satisfaction-rating services report on customer complaints about solar installation and contract terms.

In December 2013, GreenTech Media published a review of the top five solar installers based on customer comments and reviews maintained by YELP, a popular customer review website.²⁶ The review focused on customer ratings of SolarCity, Verengo Solar, Vivint Solar, REC Solar and Sungevity in California. As a result of the review of negative comments about any of these solar companies, the author concluded, "Clearly, upset customers were most annoyed with pushy sales tactics and hidden fees in contracts. The most positive reviews came from people who felt like the entire process was transparent."

Noting that up to 10% of the total cost of the solar system is estimated to be customer acquisition costs, the author noted, "Reducing those costs means crafting

better management software and more attractive financing options, as well as finding new retail outlets via which to reach consumers. But getting customers to actually sign a contract requires traditional sales tactics like door-to-door visits, phone calls and advertising.” Also, the author, relying on his anecdotal experience, stated that he had heard far more positive reviews about the installation process than negative, but that “hard sales tactics are the uncomfortable reality of customer acquisition.”

Another website that publishes customer reviews and experiences with solar installers and solar companies is Consumer Affairs.²⁷ This website informs viewers that it accepts commercial advertisements for its website, but states that it does not reflect their reviews or customer comments. While there is no intent to suggest that the negative comments or complaints reflected on this or any other website represents a statistically valid indicator or that there are widespread negative experiences, the fact that negative comments and complaints exist can provide a red flag to suggest the need for reforms. The negative comments about solar installers reflect a wider range of issues compared to those noted above in the review of YELP data from 2013 due in part to its inclusion of more recent solar marketing activities in multiple states. In addition to comments about pushy sales tactics and lack of clear explanation of contract terms and fees, these reviewers described claims of savings on the electric bill that did not occur (“I was told I would be off the grid.”); disputes about damages to the roof or inoperable systems that were not repaired in a timely manner; delays in installation; and misrepresentation of the transaction. From a Massachusetts customer:

“Back in 2013 [] notified me and told me I qualify for solar panels because I was a low income family. They put the solar panels on. I received a bill for quite a lot. I called them. They told me I am in a 20 year contract on lease. Nobody never mentioned any of this to me. They told me I signed the paper. It was fine print. I feel that I was tricked and coerced into doing this. I want everyone out there to be aware of these people. They are nothing but a rip off. So now I sit here stuck with a 20 year contract with an extra bill each month. If I knew any of this up front of course I wouldn't have done any of this. They are nothing but a ripoff. If you see them coming run the other way.”

B. STATE ATTORNEY GENERAL ENFORCEMENT ACTIONS AND CIVIL SUITS

The Attorneys General in several states have taken action against solar companies and solar installers using their authority under existing state laws on fraud and deceptive trade practices:

- The Attorney General of Arizona has settled a criminal complaint against a solar retailer that marketed solar panel installations promising rebates from the local utility that were not delivered even though the utility paid the retailer the required rebate. Over \$1 million in restitution was made available to customers, but the local utility’s solar rebate program is now defunct.²⁸
- The Attorney General of Arizona has also settled a consumer fraud case filed against a solar energy installer that made thousands of telemarketing calls, conducted high pressure sales presentations, and sold products that did not result in the promised reduction in energy

bills. Many of the customers who called the Attorney General to complain about this solar provider had actually experience increased electric bills after the installation of solar panels due to equipment costs.²⁹

- The Attorney General of Massachusetts announced a [settlement](#) with Soltas Energy Corporation over allegations that it violated the state’s Consumer Protection and False Claims acts by failing to honor agreements to sell net metering credits.
- In 2014 the Louisiana Attorney General [investigated](#) Sader Power Enterprises for alleged violations of the Louisiana Unfair Trade Practices Act relating to allegations that Sader misled consumers about the amount of cost savings from the use of solar equipment and the costs of leasing the equipment.
- A 2013 class action lawsuit is pending against Sunrun in a Los Angeles, CA Superior Court that alleges that this solar provider, one of the leading providers of solar leases and power purchase agreements, is making false claims about the projected rise in electricity prices.³⁰

Some disgruntled customers have filed their own civil actions against solar companies. In Louisiana a class action was filed against Sader Power, alleging unfair trade practices by promising claims of substantial savings on customer electric bills, but some customers ended up paying more for their monthly electric bill after getting solar panels. This lawsuit is still pending in U.S. District Court for Eastern District of Louisiana.³¹

C. LEGISLATIVE INITIATIVES

In most states, the Attorney General has authority over solar marketing and sales activities by commercial entities, including solar providers, as part of their Unfair Trade Practice statutes. These statutes typically apply to consumer transactions generally and prohibit unfair and deceptive trade practices. As indicated above, several Attorneys General have made use of this authority to initiate investigations and bring formal enforcement actions against several solar providers. However, these generic consumer protection statutes do not typically reflect specific disclosure and contract terms that are specific to solar system marketing and sales activities. As a result, several states have considered, but few have adopted, more comprehensive regulatory programs that link the traditional unfair trade practice policies with specific energy and/or regulated utility oversight.

California adopted specific disclosure obligations for solar providers in 2008. These disclosures, while minimal, provide some key protections for consumers:

An independent solar energy producer contracting for the use or sale of electricity or the lease of a solar energy system, to an entity or person, for use in a residence shall include a disclosure to the buyer or lessee that, at a minimum, includes all of the following:

- A good faith estimate of the kilowatthours to be delivered by the solar energy system.
- A plain language explanation of the terms under which the pricing will be calculated over the life of the contract and a good faith estimate of the price per kilowatthour.

- A plain language explanation of operation and maintenance responsibilities of the contract parties.
- A plain language explanation of the contract provisions regulating the disposition or transfer of the contract in the event of a transfer of ownership of the residence, as well as the costs or potential costs associated with the disposition or transfer of the contract.
- A plain language explanation of the disposition of the solar energy system at the end of the term of the contract.

Further, this statute authorizes the Public Utility Commission to require solar energy providers to provide additional disclosures to a buyer or lessee as a condition of receiving ratepayer-funded incentives.

The law also requires solar energy companies to record a notice when solar electricity producing equipment is installed on residential property. The code is quite specific that such notice shall be recorded “against the title” to the real property. The code also says that this notice “does not constitute a title defect, lien, or encumbrance against the real property”.

Arizona most recently adopted legislation in 2015, with the statute to take effect on January 1, 2016.³² While there are no specific provisions regarding complaints and enforcement, the new requirements amend Title 44 (Chapter 11, Regulation of Particular Businesses), a section of Arizona’s law that is under the enforcement powers of the Attorney General.

The new statutory requirements include specific disclosures and certain contract terms for the sale, lease, or financing of a solar energy device that is intended to be used primarily for on-site consumption. Any such agreement must:

- a. Be signed and dated by the person buying, financing or leasing the system;
- b. Be in at least 10-point type;
- c. Include a provision granting the buyer or lessee the right to rescind the agreement within three business days after the agreement is signed and before the system is installed;
- d. Provide a description, including the make and model or a guarantee concerning energy production output that the system would provide;
- e. Separately set forth the total purchase price or cost for the life of the agreement, any interest or fees to be paid, and the total number of payments, payment frequency, the amount of payment and the payment due date, if the system is financed;
- f. Identify potential tax obligations;
- g. Disclose and separately identify tax incentives and rebates the buyer may be eligible for and any conditions or requirements to obtain these tax incentives, rebates or other incentives;
- h. Disclose whether the warranty or maintenance obligations may be sold or transferred to a third party;
- i. Disclose and separately acknowledge the ability to modify or transfer ownership of a system or the real property to which the system is affixed, including whether any modification or transfer is subject to review or approval by a third party and include the contact information of the entity responsible for approving or modifying the transfer;

- j. Provide a summary of the total costs of operating, maintaining, financing and constructing the system;
- k. Provide an estimate of the utility charges impacted by potential utility rate changes from within plus or minus 5% range of an annual increase or decrease from current utility costs if the agreement contains an estimate of utility charges with the installation of a system; and
- l. Include a disclosure stating utility rates, structures and projected savings are subject to change and tax incentives may change or be terminated by executive, legislative or regulatory action.

The new law exempts an individual or company, acting through its officers, employees or agents, that markets, sells, solicits, negotiates or enters into an agreement for the sale, financing or lease of a system as part of a transaction involving the sale or transfer of real property to which the system is or will be affixed. Finally, the statute specifies that any agreement containing blank spaces when signed by the buyer or lessee is voidable until the system is installed.

In addition to the legislation adopted in Arizona and California, consumer protection legislation relating to residential solar systems was introduced, but not adopted, in several states during legislative sessions ending in 2015 including Indiana³³, Washington³⁴, Louisiana³⁵, and Nevada.³⁶ These legislative proposals varied in detail and specific provisions, but all included disclosures, authority for a license, or registration with agency oversight and enforcement. A summary of these legislative proposals is included in Appendix A to this Report.

D. STATE AND FEDERAL GUIDANCE ON ENVIRONMENTAL CLAIMS

Most solar providers market their products as “green” or “renewable” and most consumers believe solar is environmentally friendly, yet in actuality, these claims may not be completely accurate. Questions relating to how solar providers market their solar systems by claiming renewable or “green” energy attributes has been addressed by the Federal Trade Commission and in a bulletin recently issued by the Vermont Attorney General entitled “Guidance for Third-Party Solar Projects.”³⁷ Solar providers should not claim that their product will give the customer “renewable” or “green” electricity simply because the solar power generated by the system has value as a Renewable Energy Certificate (REC). A REC is a certificate that proves that the holder has generated or has purchased electricity with certain renewable attributes. RECs can be bought and sold in private and public markets and RECs are important attributes to ensure compliance with state renewable energy mandates and requirements. However, unless the REC is specifically associated with solar energy (which, in some states is registered as a “Solar REC”), the use of a REC that may have attributes for renewable energy other than solar energy should be carefully described.

The Vermont guidance clearly states that solar providers, including community solar providers, cannot promote projects as clean, renewable energy if the solar providers

retain and then sell the renewable energy credits. That practice is known as “double counting” the RECs, and it is deceptive, according to this Guidance.

E. PROPOSALS FOR INDUSTRY SELF-REGULATION ARE INSUFFICIENT FOR CONSUMER PROTECTION

Trade associations for companies in the residential solar electric industry typically oppose the adoption of legislation or regulations that would impose specific consumer protection requirements. Rather than submit to government regulation, trade associations often promote industry self-regulation as a substitute.

For example, in a pending proceeding before the New York Public Service Commission to adopt certain registration and consumer protection requirements on some Distributed Energy Resource (DER) providers, the Solar Energy Industries Association (SEIA) submitted comments in opposition:

As the national trade association for solar energy that has been working across the leadership of the industry to build a self-regulatory framework, the Solar Energy Industries Association (SEIA) strongly encourages that New York allow SEIA and the solar industry to self-regulate, rather than subject the New York solar industry to well-intentioned but potentially costly regulations. As a whole, the *SEIA Solar Business Code* (Code) adopted by SEIA’s Board of Directors and published September 14, 2015, provides a higher level of consumer protection than the rules proposed by PSC Staff (Staff) in this Matter.³⁸

SEIA has adopted a Code of Ethics, as well as Model Lease and Purchase Agreements developed by the National Renewable Energy Laboratory. Most recently, SEIA has published a SEIA Solar Business Code that consists of The Code consists of five sections: Guiding Principles; Unfair, Deceptive, or Abusive Acts or Practices (UDAAP); Advertising; Sales and Marketing Interactions; and Contracts.³⁹

SEIA and its members adopted the Code without public input or participation and, as a private organization, could not possibly do so in any case. These facts support the proposition that any “regulations” or “code of conduct” applicable to retail solar providers should be undertaken by a governmental agency with notice and opportunity for all parties and interested persons to participate and have input. SEIA’s Code does not reflect the input for consumer representatives and governmental agencies with the necessary expertise.

The self-regulation of this emerging consumer market is not an adequate substitute for meaningful and enforceable laws and regulations. The attempt at self-regulation by SEIA is a testament that there is a need for oversight of standards and enforcement. The SEIA code, while recognizing the need for some uniformity in standards and disclosures, is neither sufficient nor comprehensive. While many of the provisions of the Code would be beneficial to consumers, the Code is not a sufficient substitute because it is voluntary and unenforceable in any public process that would include fines or orders for restitution. Finally, a private membership organization is unable to require non-members to comply with its proposed

policies and any member that objected to any provision of the Code or any attempt to “enforce” the Code could and likely would sever its ties to the organization.

Appendix B is a more detailed critique of the SEIA Code.

CHAPTER IV: RECOMMENDATIONS FOR CONSUMER PROTECTION POLICIES AND MANDATES FOR RESIDENTIAL SOLAR TRANSACTIONS

This Chapter recommends state law and/or regulations to govern the retail sales of solar power to residential customers for installation on a customer's residence, typically on the customer's roof. Chapter V addresses certain unique features associated with community solar programs, but it is intended that the disclosure and oversight policies recommended in this Chapter should also be considered for community solar programs. No seller of goods and services should commit unfair trade practices, make deceptive disclosures, or misrepresent the product or service in marketing and sales activities. These proposals are specific to solar lease and sale transactions, with specific disclosures and contractual provisions that flow from the long standing consumer protection policies that have governed retail sales of products and services to residential customers. In addition, these recommendations are intended to complement existing state and federal consumer protection laws and regulations that apply to telemarketing sales calls and door-to-door marketing to residential customers, as well as federal financial transaction laws and disclosures that apply to loans issued by regulated financial institutions. These recommendations also do not take precedence over existing state or local home construction and repair regulations that may be applicable to the installation for solar on a customer's home.

The proposed policies in this Report are organized in the following topics:

- A. Registration or Licensing; State Agency Authority
- B. Disclosures: A Customer Template
- C. Contract Provisions
- E. Sales and Marketing Conduct
- E. Enforcement and Penalties; Customer Complaints

A. REGISTRATION AND LICENSING

A person shall not sell, lease or install a rooftop solar system or a community solar system or sell electricity generated by such systems unless the person has registered with the Commission by submitting a form as prescribed by the Commission.

1. The Commission shall adopt regulations:

(a) Requiring a registration form submitted to the Commission to include:

- (1) the name, street address, mailing address, electronic mail address and telephone number of the registrant;

(2) the name and contact information of any registered agent or any person designated by the registrant to receive notices and other communications from the Commission;

(3) the name, address, and title of each officer or director;

(4) if the company is publicly traded, the company's most recent annual report filed with the United States securities and exchange commission;

(5) if the company is not publicly traded, the company's current balance sheet;

(6) the company's latest annual report, if any;

(7) a statement describing each activity described in this chapter/section in which the registrant intends to engage;

(8) a statement describing each jurisdiction where the registrant or its affiliate operates;

(9) a statement describing the managerial and technical qualifications of the registrant; and

(10) any other information required by the Commission;

(b) Requiring a registrant to submit to the Commission:

(1) An example of each consumer contract and agreement for the sale, loan, lease, or purchase agreement in which the registrant has indicated he or she intends to engage; and

(2) An updated example of the agreement if a previously submitted example is no longer reasonably accurate or if the registrant intends to engage in an activity described in this chapter/section for which the registrant has not yet submitted an example of an agreement;

(c) Requiring a registrant to submit to the Commission an amended registration form if any information provided to the Commission on a registration form or a previously submitted amended registration form is no longer correct; and

(d) Providing the time period within which an updated example described above or an amended registration form must be submitted.

2. The commission may reject an application that does not contain all information required by this section or by commission rule.

3. The commission must take action to approve or deny any application for registration within ____ days after receiving the application. The commission may approve such application with or without a hearing. The commission may deny such application after a

hearing when it finds that the company or its registered agent has violated this chapter or the rules of the commission, or the company or its registered agent has been found by a court or governmental agency to have violated the laws of a state or the United States.

4. The commission may charge a one-time application fee to recover the cost of processing applications for registration under this section.

5. The commission shall adopt rules to establish the companies' responsibilities for responding to customer complaints and disputes.

6. The commission shall adopt annual reporting requirements.

7. The solar power company must keep its customer records, including customer contracts and agreements, available for inspection by the commission for five years;

8. The solar power company must cooperate with commission investigations of customer complaints;

7. The commission may conduct investigations and may suspend or revoke a registration, and/or impose fee or penalties upon complaint by any interested party, including the state utility consumer advocate, or upon the commission's own motion after notice and opportunity for hearing, when it finds that the registered company or its agent has violated this chapter, the rules of the commission, or the company or its registered agent has been found by a court or governmental agency to have violated the laws of a state or the United States.

DISCUSSION: Consumer protections are not effective unless a governmental agency has the authority to investigate complaints and take action against bad actors, and such enforcement cannot occur without registration or licensing. Regulators should know how to contact authorized representatives, investigate the background of a business, and take action against a provider for violations of state laws and regulations. This Report recommends the public utility commission as the most likely focus for oversight and enforcement, but recognizes that an alternative agency or arrangement could be appropriately identified.

B. DISCLOSURES

A solar provider shall accurately and completely describe the proposed transaction in its marketing materials and terms of service and shall not include any promises or suggestions of benefits that are not otherwise included in the contractual terms and conditions. A solar provider shall be held to comply with its disclosures if there is any conflict with the underlying contractual terms and conditions.

The commission shall develop a model Consumer Disclosure Template that is provided in a separate document of at least 12 point type and that must be used by licensed (or

registered, where applicable) solar providers that will include, at a minimum, the following information, and separately signed and dated by the person buying, financing, or leasing the solar energy system:

1. The expected amount of electricity that will be produced by the solar energy system. The buyer or lessee shall be provided with a good faith estimate of the number of kilowatt hours that will be delivered by the solar electric system on a monthly and annual basis, together with a description of the warranties and limitations, if any, affecting the estimate.
2. To the extent that the solar provider has promoted the sale, lease, or financing for a customer's solar system as a means to save or lower the customer's electricity bill, the provider shall include the methodology and estimated result of the proposed transaction on the customer's electricity bill, using a methodology for estimating the future price of electricity that is approved by the commission. Such an estimate shall be provided for the length of the financial transaction.
3. All of the costs associated with installing the solar energy system including but not limited to any taxes the buyer or lessee will be required to pay as part of any purchase or lease agreement.
4. A good faith estimate of the impact of the installation of the solar energy system on the value of the home as well as a good faith estimate of any applicable property taxes, such estimates to be based on a disclosed methodology or data.
5. The value of all federal, state, and local tax credits, electric utility rate credits, Renewable Energy Credits, incentives, or rebates that the buyer or lessee may receive or sign over, if applicable.
6. A good faith estimate of each financial benefit the buyer or lessee will receive or waive upon signing an agreement, including tax credits, electric utility rate credits, incentives, subsidies, or rebates and information regarding the allocation of responsibility for payments if and when each of these financial benefits expires or is modified.
7. The expected rate of compensation for any electricity produced by the solar power system and sold to the customer's electric utility, including the current reimbursement rate of the electric utility at the time of signing a contract, with a disclaimer that the current reimbursement rate is subject to change.
8. If retail net metering or a similar tariff is in place at the time of the sale or lease, a notice informing the buyer or lessee that additional charges for distribution, transmission, or stand-by generation may be imposed in the future if approved by the commission, or by changes to state law.
9. The full extent of payments and interest rates or the escalation of payments over the life of the sale or lease agreement.
10. A good faith estimate of the anticipated value of any assets that remain with a lessee at the end of the lease agreement if applicable.
11. Information on the potential fire and other home safety risks of a solar electric system, and an explanation of how operations of the solar electric system could

affect home appliances and equipment in the event that the system is operating without backup or support from the utility grid.

12. Information on whether the sale or lease agreement insures the solar power system against damage or loss and under what circumstances the company does not insure or cover damages or loss of the system.
13. A statement that the buyer or lessee should determine whether homeowner insurance rates will be affected by the installation of the solar power system.
14. A statement that the buyer or lessee should determine whether a homeowner's association has any restrictions on the installation of a solar power system.
15. A disclosure on whether the lease agreement protects against any damage or loss to the lessee's real and personal property and how the installation of the solar power system may impact home insurance agreements and rates and other warranties.
16. A statement that there are costs for the removal or temporary removal of a solar electric system in case of roof repair or replacement due to weather, wear and tear, or other events. The buyer or lessee shall be given information on the costs the company will cover and will not cover in the event the roof needs maintenance and, in the case of a lease agreement, whether the lessee is required to make any lease agreement payments during the time the solar electric system is inoperable due to roof maintenance.
17. Information explaining the terms of the lease agreement in cases of inoperability due to product malfunctions or defects.
18. The costs to the buyer or lessee of any additional metering equipment or equipment used to connect the solar power system to the home or grid, including installation, removal, or maintenance and cleaning area after construction, installation, and removal.
19. A statement of the company's policy on the use of customer data as it relates to electricity usage, production, and personal information and whether such information is or could be shared with any additional parties, with the conditions and methods of such sharing identified.
20. Information regarding the change in terms of lease agreement in the event of the sale of the home or in the event of the death of the lessee, and whether and under

DISCUSSION: The legislation (or regulation) should not merely list the items that must be disclosed to the customer because such a directive may result in including the disclosure requirements in a multi-page contract, typically written in fine print and with technical terms and jargon. Similar to the proposal for a Consumer Template in one legislative proposal, the regulatory commission should develop a model Customer Disclosure Template and require solar energy providers to use the model that is provided to all prospective customers and would be available for each financial model or product offered by the solar energy provider as advertised on the provider's website. This Model would not regulate the financial contents of the solar provider's offer, but would require all solar providers marketing to residential customers to use the same terms and definitions and make their offers in a manner that allows a comparison of impacts on the customer's electricity bills and obligations under the applicable financial arrangement. Where actual customer specific information is required to complete the Template, the customer should receive a document that reflects their specific analysis and information. Where this information is not available, the provider should be required to use actual average customer usage and installation specifications from the utility's service territory for public dissemination with the

what circumstances the lease is transferable.

C. CONTRACT TERMS

An agreement governing the financing, sale or lease of a solar energy system to any person of this state must:

1. Be signed by the person buying, financing or leasing the solar energy system and must be dated. Any Disclosure Statement or contractual agreement that contains blank spaces affecting the timing, value or obligations of the agreement in a material manner when signed by the buyer or lessee is voidable at the option of the buyer or lessee until the solar energy system is installed.
2. Be in at least 12 point type.
3. Include a provision granting the buyer or lessee the right to rescind the financing, sale or lease agreement for a period of not less than three business days after the buyer or lessee signs the agreement and before the solar energy system is installed.
4. Provide a description, including the make and model of the solar energy system's major components or a guarantee concerning energy production output that the solar energy system being sold or leased will provide over the life of the agreement.
5. Separately set forth the following terms, if applicable:
 - a. The total purchase price or total cost to the buyer or lessee under the agreement for the solar energy system over the life of the agreement;
 - b. Any interest, installation fee, document preparation fees, service fee or other costs to be paid by the buyer or lessee of the solar power system;
 - c. If the solar power system is being financed or leased, the total number of payments, the payment frequency, the amount of the payment expressed in dollars, and the payment due date.
6. Provide a disclosure in the sale and financing agreements, to the extent they are used by the seller or marketer in determining the purchase price of the agreement, identifying all current tax incentives and rebates or other state or federal incentives for which the buyer may be eligible and any conditions or requirements pursuant to the agreement to obtain these tax incentives, rebates or other incentives.
7. Identify the tax obligations that the buyer or lessee may be required to pay as a result of buying, financing, or leasing the solar power system, including:
 - a. The assessed value and property tax assessments associated with the solar power system calculated in the year the agreement is signed;
 - b. Any obligation of the buyer or lessee to transfer tax credits or tax incentives of the solar power system to any other person.
8. Disclose the terms of any warranty and whether the warranty of maintenance obligations related to the solar power system may be sold or transferred to a third party.
9. Include a disclosure, the receipt of which shall be separately acknowledged by the buyer or lessee, if a transfer of the sale, lease or financing agreement contains any restrictions pursuant to the agreement on the lessee's or buyer's ability to modify or

transfer ownership of a solar power system, including whether any modification or transfer is subject to review or approval by a third party. If the modification or transfer of the solar power system is subject to review or approval by a third party, the agreement must identify the name, address and telephone number of, and provide for updating any change in, the entity responsible for approving the modification or transfer.

10. Include a disclosure, the receipt of which shall be separately acknowledged by the buyer or lessee, if a modification or transfer of ownership of the real property to which the solar power system is or will be affixed contains any restrictions pursuant to the agreement on the lessee's or buyer's ability to modify or transfer ownership of the real property to which the solar power system is installed or affixed, including whether any modification or transfer is subject to review or approval by a third party. If the modification or transfer of the real property to which the solar power system is affixed or installed is subject to review or approval by a third party, the agreement must identify the name, address and telephone number, and provide for updating any change in, the entity responsible for approve the modification or transfer.
11. Provide a full and accurate summary of the total costs under the agreement for maintaining and operating the solar power system over the life of the solar power system, including financing, maintenance and construction costs related to the solar power system.
12. If the agreement contains an estimate of the buyer's or lessee's future utility charges based on projected utility rates after the installation of a solar generation system, provide an estimate of the buyer's or lessee's estimated utility charges during the same period as impacted by potential utility rate changes ranging from at least a five percent annual decreases to at least a five percent annual increase from current utility costs. The comparative estimates must be calculated based on the same utility rates.
13. Include a disclosure, in at least 12 point type, the receipt of which shall be separately acknowledged by the buyer or lessee, that states: **Utility rates and other federal, state, or local tax subsidies are subject to change. These changes cannot be accurately predicted. Projected savings from your solar power system are therefore subject to change. Tax incentives are subject to change or termination by executive, legislative or regulatory action.**
14. If applicable, include a disclosure regarding the rate the buyer or lessee can expect to be compensated for any electricity produced by their solar power system and sold to the electric utility. The disclosure, in at least 12 point type, the receipt of which shall be separately acknowledged by the buyer or lessee, shall provide information to the buyer or lessee about the current reimbursement rate of the buyer or lessee's electric utility at the time of signing the agreement. **The disclosure shall also contain a disclaimer that the current reimbursement rate is subject to change. If retail net metering is in place at the time of the**

purchase, the solar company shall inform the solar user that additional charges for distribution, transmission, or stand-by generation may be imposed at the request of the utility, by rule of the commission, or by changes to state law.

15. An agreement for the financing, sale or lease of a solar power system that does not comply with the requirements of subsection 1 or that is not accompanied by the statement required by subsection 2 is voidable at the option of the person buying or leasing the system until the installation of the system begins.
16. If applicable, a disclosure similar to the following: **This agreement limits your right to bring a court case or file a class action to enforce this agreement or seek damages. Instead, you agree to submit any claims to an arbitrator who will have the authority to interpret this agreement and decide any claims you may have.**⁴⁰

DISCUSSION: Standardizing contract terms and disclosures do not in any way regulate or limit the price charged for a solar lease, PPA or sale. As shown by the Attorney General enforcement actions, and state legislation, there is a recognized need to provide consumers with clear, understandable disclosures that allow them to make meaningful comparisons among offers and to fully understand the terms of the financial transaction. Solar providers should not make claims of savings on websites or any such claims of “average” savings should be conspicuously identified with the basis for the claim and allow customers to access or review the data that supports such claims. Claims of customer savings on the electric bill should reflect a utility specific profile because savings are so closely related to a specific utility’s rates and applicable net metering or solar tariff policy. Consumers should be able to access this information by inputting their zip code on the provider’s website.

In addition, consumers should be informed in a conspicuous manner that their future and predicted savings or cost for electricity is subject to change by the utility commission or state legislature.

With regard to the disclosure concerning the obligation to submit claims to an arbitration process, a line of U.S. court cases have held that the 1926 Federal Arbitration Act preempts state legislation that may attempt to prohibit such contractual provisions.

Terms of Solar Contract Related to Sale of a Home

1. In the event that real property subject to a solar power system consumer contract is sold, the remainder of the consumer contract must be assumed by the buyer if a memorandum has been recorded reflecting the essential terms of the consumer contract, unless the seller and

buyer agree otherwise. If the buyer of such property assumes a consumer contract the buyer continues to qualify for all applicable incentives.

2. Thirty days prior to closing, the seller of the property shall notify any utility and solar power company affected by the consumer contract that the buyer is assuming the contract, or that the buyer and seller have agreed otherwise.

3. Within seven days of the seller's notice, the utility and solar power company shall provide the documentation of the procedures necessary for assumption of the consumer

contract by the buyer, or, in the event that the buyer is not assuming the contract, for termination of the consumer contract and removal of the renewable energy system.

4. At the end of the consumer contract term or in the event of any earlier termination of the consumer contract, the owner of the solar power system, whether it is a utility or a solar power company, is responsible for the removal of the solar power system from the property and may recover the cost thereof only as specified in the consumer contract and noted in the recorded memorandum. The owner of the renewable energy system may only obtain damages for the premature termination of a consumer contract to the extent that the amount of the damages is specified as liquidated damages in the consumer contract.

5. Renewable energy system consumer contracts may not grant utilities or solar power companies any authority to approve or disapprove of the transfer of real property associated with such a consumer contract.

6. The owner of a solar power system shall guarantee sufficient funds to properly dispose of the system at the end of the consumer contract.

7. The owner of a solar power system must remove the renewable energy system from the property within twenty-one days of a written request of the property owner. The owner of a solar power system is responsible for identifying hazardous and commercially valuable materials contained in the solar power system and how those materials will be properly disposed of or reclaimed. The owner must provide this information to the commission upon request.

DISCUSSION: There have been complaints about lease and PPA contracts including a provision giving the solar provider (the owner of the solar panels) the right to approve a new home owner before the lease could be transferred to the new owner. Several states have addressed this situation in their proposed legislation, and the rights and obligations at the time of the sale of property are a key

Privacy of Customer Information

1. Solar providers shall keep confidential customer specific or private information relating to the customer's electricity usage, financial situation, credit history, and other residence-specific information obtained to implement the proposed transaction. Such customer specific information obtained from the customer or the customer's electric utility shall not be used or transmitted to any entity, including affiliates, for any purpose other than to implement the customer's transaction without the customer's affirmative consent.

D. SALES AND MARKETING CONDUCT

1. Solar power companies shall ensure that all sales, marketing and advertising, whether oral, written or electronic, are accurate, easily understandable and based on facts and in compliance with state and federal laws and regulations. Solar power companies shall (1) accurately describe the customer's financial obligations under the proposed transaction in its sales presentations and marketing materials based on its underlying formal contract or leasing documents; and (2) ensure that its marketing and sales statements and promises conform to the formal and written terms and conditions.
2. Solar power companies are responsible for the actions of their employees, agents and any other third party representatives and shall ensure they comply with the requirements of this section. Solar power companies shall document their internal training and monitoring programs applicable to their sales agents, whether employees or third party agents, and make such records available to the licensing or regulatory authority upon request.
3. Solar power companies should not refer to solar power as "free" in oral or written marketing or sales discussions unless the Consumer will not pay anything for the solar system or the energy it generates.
4. If advertised prices include initial pricing reductions or future increases, all material terms of such initial reductions or future increases shall be disclosed when such prices are marketed or otherwise communicated to Consumers.
5. Public statements, including those on websites or in print material, that describe solar energy as "clean" or "renewable" are deceptive if the Renewable Energy Credits are sold and there is no adequate disclosure about it. Disclosures must be proximate to the promotion of solar energy.
6. Where applicable, solar providers shall be subject to the registration and applicable

DISCUSSION: Similar to regulations on the retail sale of electricity, consumer protection regulation applicable to retail solar providers should explicitly prohibit misleading and deceptive sales and marketing statements and reference the state's specific unfair trade practice or general consumer protection law. A seller cannot misrepresent the nature of the formal agreement or use statements that are directly contradicted by the formal agreement or contract. For example, retail sellers of electric generation supply cannot advertise that their generation supply will save customers on the electricity bill and then bill the customer based on a variable or month to month price that might comply with the fine print terms of the contract, but that results in significant increases in the customer's monthly electric bill. A similar example exists with promoting solar energy transactions. Solar providers should not offer "free" electricity or even "free sun power" because that is not what is reflected in the transaction.

requirements of the [State Door to Door and/or Telemarketing Sales Acts].

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E. ENFORCEMENT AND PENALTIES; CUSTOMER COMPLAINTS

1. The commission shall investigate any complaint received against a solar power company related to a violation of this Chapter. If, after investigating such complaint, the commission finds there has been a violation of this Chapter, the commission, after notice and hearing, may impose an administrative penalty against the solar company. The commission shall promulgate rules and regulations to determine the appropriate penalties for violations of the provisions of this Chapter.
2. Nothing in the Chapter is intended to preclude the authority of the Attorney General to investigate and enforce state consumer protection laws pursuant to that office's jurisdiction.
3. A solar provider shall maintain records of compliance with the requirements of this Act, including disclosure statements, contract terms, training and oversight of its agents, customer complaints, and customer notices and contract communications for a period of three years or the length of the contract term, where applicable.
4. In order to properly allow customers to communicate questions and complaints, the solar provider shall maintain reasonable and adequate customer service facilities, a toll free telephone number, and sufficient staffing to handle incoming customer communications, a means to obtain additional staffing in the event of an emergency, and sufficiently trained personnel to ensure that the service representative can provide information about the customer's specific transaction and associated issues relating to the implementation of that transaction, with access to managerial or supervisory assistance as needed.

DISCUSSION: The proposed consumer protections cannot be effective unless the regulations can be enforced and violators penalized. Enforcement requires that an agency can investigate complaints, the solar provider should be required to maintain records demonstrating compliance with the underlying consumer protection and contract requirements, including evidence of affirmative customer consent and enrollment, receipt of disclosures by the customer, customer complaints, complaints not resolved, and business records associated with these activities for a minimum time period, typically three years from the date of the transaction for enrollments and disclosures and a rolling three year period for customer complaints.

CHAPTER V: COMMUNITY SOLAR PROJECTS: ADDITIONAL CONSUMER PROTECTIONS

Community solar projects⁴² are typically less expensive per output of energy than individual solar installations, due in part to their installation on the ground, and the associated economies of scale in creating a larger solar array. A community solar project also enables the option of making solar power available to a broader group of residential customers, including lower income households, renters and those with homes that are inappropriate for a solar installation (due to location, type of roof, shade, etc.). A community solar project is a larger version of the individual rooftop solar in that it is essentially a small electric generating plant located in the distribution system.

Community solar systems can be owned directly and entirely by the utility, owned by the utility in partnership with a third party serving a specific role (e.g., project developer, customer interface), or owned by a third party. The third party could be a profit-making solar provider or a non-profit local community agency or organization. A community solar system could be promoted by the local utility pursuant to tariffs or other directives of the state public utility commission or promoted by a solar provider who may seek the necessary land under a leasing arrangement and then solicit individual customers to participate in the project.

A community solar project is composed of three distinct activities: First, a group of participants voluntarily pay for a subscription (or direct ownership) of a portion of a community solar system that is located off-site. Second, the electricity produced by the system flows directly into the electric grid. Third, in exchange for their subscription, the participants receive an agreed upon compensation (e.g., a credit on the electric bill) for the electric production of their portion of the community solar system.

According to the Solar Electric Power Association (SEPA), 13 states plus the District of Columbia have enacted community solar legislation. Each state policy varies, particularly in scale and reimbursement rate, but the foundation for each is the enablement of bill credits for customers participating in community solar programs.⁴³ The SEPA report analyzed 68 community solar projects in operation across the country. About 80 percent of these projects are under 1 megawatt (MW). About 73 percent of the organizations responding to SEPA's community solar survey charge subscribers an upfront fee to buy into a project; but as solar costs have dropped, so have upfront fees, from \$5 per Watt in 2011 to \$3 per watt in 2015. According to SEPA's Report, "Initial market research shows that consumers are interested in community solar, but are looking for programs with flexible commitments -- such as short-term contracts and transferability. Some would also prefer the projects be located at remote locations where they don't have to see them."

Among the case studies evaluated in the SEPA report are the following:

Xcel Energy has community solar projects totaling almost 20 MW in its Colorado service territory. Xcel's Solar*Rewards Community projects are constructed and owned entirely by private solar companies. These projects have enjoyed rapid growth and are usually fully subscribed within 6 months of coming online. Xcel selects its for-profit partners through a competitive bidding process and pays them subsidies tied to the amount of electricity generated. Early in the program, participants paid an upfront fee based on their subscription size, however financing is now available to most subscribers.

In 2015, Grand Valley Power (GVP) partnered with GRID Alternatives (GRID) to build a 24 kW CSG. The system was dedicated specifically to low-income customers in GVP's service territory and is operated and managed by GRID. GRID, a nonprofit, promotes a CS model that involves combining equipment donations from solar manufacturers, financial contributions from various sources, and labor from job training programs and volunteers. Subscribers to the program pay no up-front fee and receive an ongoing credit for the production of their share of the CSG, though there is a 2 cent per kWh fee to help defray management costs. Subscribers participate in four-year cycles. After each cycle, they can re-qualify for the program, or if they no longer qualify — for example, if their income has risen above program limits — their share can be assigned to another low-income participant.

The marketing, sales, contract, and disclosure requirements recommended in Chapter IV should also be adopted for community solar projects. There are several aspects to community solar programs that raise consumer protection issues and concerns, some of which are unique to community solar and others of which are similar

to the offers for rooftop solar systems. This Chapter describes the unique features for community solar and recommends additional consumer protection policies that should be adopted for these programs.

Utility and Commission Oversight. Several state community solar programs thrust the local utility and the public utility commission directly into the oversight and approval of these programs. In some cases, the size and scope of the programs (in terms of the size of the utility array and number of participants or subscribers) are restricted or limited to pilot programs. In most cases, these programs come with a statutory mandate to develop specific consumer protection or regulatory oversight regulations. In either case, there are grounds for direct oversight and regulation by the regulatory commission.

Community Solar Marketing Activities. Whether or not the commission has been required to conduct community solar pilots, the potential for marketing abuse and the need for oversight of private marketers is particularly important. When a solar provider is marketing to obtain subscribers, it may seek to market its project via telemarketing or door-to-door sales activities, promoting a solar option at a lower cost than for individual rooftop solar systems. It will be very important to ensure that marketing claims and legal agreements are properly and accurately disclosed and that consumers are protected against misleading and deceptive claims about the impact of subscribership on their monthly electric bill. This concern is particularly important for projects that are designed to solicit lower income and disadvantaged customers to enroll in a community solar program, thus intending to make such an option more affordable compared to rooftop solar systems, many of which are not available to customers without a

specific credit score or credit history. In addition, community solar systems are often touted as a potential means to enroll customers who do not own their homes in solar power systems.

The SEPA Report identified several key issues for both regulators and consumers to understand and consider with regard to community solar projects:

Customer Offer. This refers to the payment for participation--typically either an upfront payment of all costs or an ongoing premium payment applied to the electricity produced by the customer's share of the system. Financing may be offered for upfront payments. Of the active community solar programs studied by SEPA, 73% have an upfront payment customer offer, 17% have an ongoing payment, and 10% allow customer choice among the two options.

Value Proposition to Subscribers. This refers to the financial value the subscriber receives in return for participating in the community solar project, either a bill credit (71% of those reviewed in the SEPA Report), or a separate line item payment on the electric bill(29%). The bill credit reduces the subscribers' kWh consumption by the kWh produced by their share of the project. A separate line item payment is a rate unique to the community solar project that is based on avoided costs in a value of solar tariff, net metering, or another accounting method, and would be applied to all kWh produced by the subscriber's share of the output. The utility's administrative costs, particularly billing system costs, are a factor in designing both of these rates.

Sign-up Fee: The project may choose to charge a sign-up fee that can be used to guarantee a subscriber's share before the project is actually generating electricity. Of the projects studied by SEPA that currently have fees, the fees range from \$50 to several hundred dollars. When upfront payment is requested, a higher sign up fee may be charged to reserve a share, and then credited toward the upfront payment. For projects with ongoing payments, sign-up fees may protect against the risk of a subscriber leaving before the minimum term.

Renewable Energy Credit Treatment: Renewable energy credits (RECs) may be available for the community solar project. RECs have value, therefore, a decision must be made as to who will own the credits and what will be done with them. SEPA describes two options: In the first option, the owner of the energy can maintain ownership of the REC. In this case, it is then up to the owner whether they retire the REC to meet a compliance requirement or if they sell it on the market. The second option is that the REC can be tied to the energy production and transferred to the customer.⁴⁴

Proposed Consumer Protection Policies for Community Solar Projects. Several states have adopted, or are considering, consumer protections that are directly applicable to community solar projects. This Report recommends that the proposed consumer protection policies reflected in the Maryland and Minnesota public advocate proposals be adopted:

Maryland adopted a law in 2015 creating a pilot program for community solar projects. The Maryland law requires the community solar to be in the same electric service territory as its subscribers, but a third party may finance, build, own, or operate a community solar project. Electric utilities must buy the virtual net excess generation, up to specified limits. The Maryland law creates a three-year pilot program that allows for the construction of community

solar projects under the authority of the Maryland Public Service Commission. The Commission must adopt regulations implementing the pilot program no later than May 15, 2016, and the three-year program will start following rule adoption. Key issues to resolve in the PSC rulemaking are consumer protection measures—a tariff structure under which an electric company provides kilowatt-hour or value credits to the community solar subscriber; virtual net metering calculation; protocols for communication among the pertinent parties; and interconnection protocols. Under the pilot program, individual system sizes are capped at 2 megawatts and 200 kilowatt subscriptions cannot constitute more than 60 percent of its subscriptions. The cumulative nameplate capacity under the pilot program counts toward the existing statutory limitation of 1,500 megawatts for all net metering projects in the state. The Commission is required to limit the pilot program within certain parameters so that it can conduct a “meaningful” (as required) analysis of the program and its results. The law requires the Commission to initiate a stakeholder workgroup that examines and identifies the costs and benefits of the program and recommends whether to establish a permanent community solar program. The Commission will then report its findings and recommendations to the Maryland legislature by July 1, 2019.⁴⁵

The Maryland Office of People’s Counsel has proposed specific issues that should be reflected in the forthcoming consumer protection and design regulations for these pilot programs.⁴⁶ Specifically, this Office has recommended:

Sign Up and Deposit Limits: The sign-up costs and deposit requirement that developers impose on subscribers interested in participating and reserving a portion of CSEGS must be limited to a reasonable amount. Some protection must exist to prevent developers from collecting deposits from interested customers and never building the CSEGS. One potential solution to this would be requiring subscriber deposits to enter a type of “escrow” account which would transfer a percentage of the funds to the developer only after the CSEGS becomes operational. This approach could; however, limit developers’ ability to effectively finance systems, so some balance would have to be struck.

The Need for Contract Regulation: For some extremely important consumer protection issues, simply requiring disclosure to the subscribers is insufficient. If the issue has been identified as a key protection clause, it should be mandated by the Commission as part of the program, rather than just being a required disclosure. This will prevent unscrupulous developers from taking advantage of under-educated subscribers, poisoning the community solar program, and potentially dampening the entire solar industry and market.

List of suggested programmatic rules:

- No yearly price escalation past 2% embedded into contract.
- No transfer fees if customer moves within service territory.
- Projections of cost savings must include a scenario of 0% increase in electric rates.
- No fee for a downsizing allocation within first six months up to 20% of subscribed blocks.
- No fee to downsize by at most 5% each year thereafter.

Subscription Transferability: Subscribers should be able to transfer their subscription back to the subscriber organizations on a monthly basis, but may incur a penalty to do so. Should a CSEGS be undersubscribed, the portion of the capacity that is not subscribed should be credited at the commodity rate until new subscribers can be found.

Downsizing: There should be provisions allowing subscribers to downsize their subscription size. For example, regulations could provide subscribers with a right to downsize their subscription size by at most 20% without penalty within the first six months of signing up, 5% thereafter, in accordance with the minimum ownership percentages, shares, or capacity established by the subscriber organization. This prevents a potential disincentive for subscribers to conserve energy after joining the program, while incentivizing subscriber organizations to provide excellent customer service and maintain competitive costs as more community solar options become available to consumers.

Minnesota has implemented a community solar program called “*solar gardens*” in which certain consumer protection issues have been specifically considered. In this proceeding, Xcel Energy submitted a proposed tariff to implement community solar projects. The Office of Attorney General—Antitrust and Utilities Division raised significant issues with regard to the lack of specific information on the utility’s proposed tariff and made recommendations to reform the proposal prior to any Commission approval.⁴⁷ The comments submitted by the Minnesota Attorney General proposed that the Commission adopt consumer protections for solar garden subscribers, relying on the Commission’s obligation that the solar garden program is in the public interest and to ensure that consumers are provided with full and fair disclosures of future costs and benefits.

As described by the Attorney General’s Comments, Xcel’s proposed tariff was lacking in key information, including what customers might be required to pay for solar garden subscriptions, whether customers would pay any fee in a lump sum or in subscriptions, the duration of customer subscriptions, the transferability of any customer subscriptions, or the methods that solar garden developers would be required to use to estimate the output of the system. Referring to information from Xcel’s community solar developers in Colorado, “Solar garden developers in Xcel’s Colorado service territory estimate that, in exchange for the \$3,700 up-front cost, subscribers will receive bill credits of approximately \$270 per year per kilowatt, concluding that customers would not recover their initial investment for more than 13 years after the project becomes operational.⁴⁸ Among the recommendations by the Attorney General are the following consumer protection policies:

- Require registration or certification before the Community Solar Project qualifies for incentives. This should include basic information about the ownership, site, and the financial and technical ability to manage a project.
- Contracts between the utility and the project developer must be approved by the commission;
- Consumer should receive complete, credible and accurate disclosures, including information on the costs (including financing costs) and benefits of a particular project prior to signing a contract;
- Consumers should be able to recover any payments made for subscriptions in the event that their life circumstances change;

- The Commission should review materials used by community solar marketers to promote their project to customers;
- Consumers must be informed of the time period it will take to recover any initial payments prior to obtaining any customer signature;
- A standard contract or disclosure form should be required for all community solar projects;
- The Commission should establish a standardized method used to determine how the project will estimate project output;
- The Commission should establish a standardized method to project future electricity prices or impacts on customer bills during the lifetime of the project and/or the customer's subscription obligation.

In the Order approving the Solar Garden tariff,⁴⁹ the Commission rejected the Attorney General's warranty or performance recommendation on the grounds that it might impede the creation and financing of solar gardens at the early stage of their development. The Commission rejected the Attorney General's recommendations on reviewing solar garden contracts and marketing materials, and developing uniform standards for solar garden production estimates, again concluding that such requirements would burden solar garden operators at the start of the program. With regard to disclosures, the Commission required Xcel's contract with the solar garden operator to provide subscriber-specific disclosures on future costs and benefits, proof of insurance, and proof of a long-term maintenance plan. The Commission did require solar garden operators to obtain opinion letters on the legal and tax benefits of participation in the program. The Commission agreed that customer subscriptions should be transferable back to the solar garden operator. Finally, the Commission adopted the Attorney General's suggestions about data privacy and strengthened subscriber privacy protections.

APPENDIX A: SUMMARY OF STATE PROPOSED LEGISLATION (2014-2015)

The legislative proposals summarized here were not adopted.

Indiana: HB 1320 would have allowed third party ownership and included requirements regarding safety and interconnection and amended the state's deceptive trade practices act to require consumer disclosures related to distributed generation or solar power systems. The State Attorney General would have had authority to receive complaints and enforce the new law. Required disclosures included estimates of the energy output of the system, all financial terms including price escalations, disclosure of all state and federal subsidies and incentives, and clear delineation of responsibility for the equipment at the time a home is sold.

Washington: HB 1912 covered various aspects of distributed generation including state tax credits, incentives, solar module recycling, and requiring an independent consultant to prepare a two-phase "Smart Plan for a Smart Grid" study. With regard to consumer protection provisions, the bill would have permitted third party ownership and provided a regulatory framework for third party owners of distributed generation. The legislation proposed to empower the Washington Utilities and Transportation Commission with jurisdiction over non-rate related consumer protections, while retaining the current jurisdiction pursuant to the state's unfair trade practice statute implemented by the Attorney General. Third-party vendors and affiliates of an electric utility must register with the commission, disclose terms of service, and cooperate with commission investigations of consumer complaints. This includes requirements to provide, on a separate page in conspicuous print, certain terms addressing arbitration or waiving the right to join a class action, and to file with the commission or the Attorney General copies of judgments or arbitration decisions in actions alleging violation of consumer protections. The commission is granted regulatory authority over consumer protections.⁵⁰ Certain minimum disclosures are enumerated in the legislation.

One of the more innovative provisions of the bill was a requirement for the development of a Consumer Template that would then be required to be used by third party solar companies. The template must include terms deemed necessary for a consumer to understand the business deal, such as performance guarantees, respective rights of the parties, and the financial payback of the system.

(1) Any installation company, competitive electric service provider, or electric utility providing a renewable energy system eligible for an incentive payment under section 5 of this act must provide the entity applying under section 5(1) of this act a uniform statement of essential terms. The uniform statement must be in a format established by the Washington State University extension energy program, which must consult with the attorney general, the utilities and transportation commission, and representatives of utilities in establishing the uniform statement.

(2) The uniform statement must be provided prior to execution of the consumer contract and must be signed by the customer.

(3) The uniform statement must include information regarding the respective rights and responsibilities of all parties involved, and include such terms as reasonably necessary for the customer to understand and make an informed decision to enter the consumer contract. Such information must include the following:

(a) Information about the system's performance, such as a monthly or annual production performance guarantee or range of performance and system size and capacity;

(b) Customer costs, including the amount of any down payment required, periodic payments, or cost per kilowatt-hour of electricity produced, and any built-in escalation rates or schedule of payment amounts;

(c) Length of contract term and total expenditure or range of expenditures, or the effective annual interest rate over the term of the agreement; and

(d) The customer's rights and responsibilities when selling a renewable energy system as part of a sale of real property, including responsibility for system removal costs, disposal of the system, and any remaining periodic payments.

Most importantly, the proposed bill included specific language with regard to the oversight and enforcement powers of the commission, including its ability to resolve customer complaints and conduct enforcement actions and assess penalties. The third party entities subject to this jurisdiction were also required to cooperate in investigations, handling of customer complaints, and maintain records of their sales and financial activities for five years. These entities were also required to ensure that its customer contracts meet the disclosure requirements of the commission's rules.

With regard to contract terms that may limit the customer's right to obtain a remedy by court or class action, the entity "must provide these terms on a separate contract page in bold and conspicuous print and require the customer to separately sign acknowledgment of the terms." And, these entities "may not include in a consumer contract a provision that limits a consumer's ability to seek damages. A provision limiting damages is void as against public policy."

Louisiana also considered specific legislation governing solar power transactions, but did not enact any final language. This bill authorized the Public Service Commission to promulgate rules and regulations to govern the registration of solar companies with the commission, to conduct investigations, impose fees and penalties, and take actions necessary to assure proper implementation of the consumer protection provisions of proposed law. The proposal provides for certain disclosures to be made by a solar company to a solar user. These disclosures include regulatory, financial, safety and information regarding use of customer information and insurance coverage. The bill required the Commission to investigate any complaint received against a solar company related to a

violation of proposed law, and if, after investigating such complaint, the Commission finds there has been a violation, the commission, after notice and hearing, may impose an administrative penalty against the solar company. The Commission was authorized to promulgate rules and regulations to determine the appropriate penalties for violations of proposed law, but such regulations would not preclude the consumer's right to file a civil suit for damages or criminal charges in the appropriate state or federal court. The bill explicitly outlawed the typical mandatory arbitration clause for solar purchase or lease agreements and stated that the invocation of arbitration shall be voluntary at the discretion of the solar user.

The legislation proposed disclosures consistent with those proposed in other states, including financial terms and any available state or federal incentives. The Louisiana proposal also required safety and maintenance disclosures, such as responsibility for damage to the equipment or the roof; insurance; and a statement that rooftop solar panels could limit access by a fire department.

Nevada: A.B. 330 proposed to require solar providers to provide with the sale or installation an express, written warranty for the system which must provide coverage for both parts and labor. The seller or installer also must provide with the sale or installation a description of the warranty, a description of any responsibility assumed or disclaimed by the seller or installer, and performance data for the system. The bill proposed the requirements for any agreement for the financing, sale or lease of a distributed generation system or for the purchase of electricity generated by a distributed generation system. The agreement, which must be in writing, would have to make disclosures regarding: the manufacturer, seller and installer of the system; the cost and financial details of the purchase or lease and the cost of operating and maintaining the system; any tax incentives relating to the purchase or lease of the system or the purchase of electricity; and any restrictions or obligations imposed by the agreement. The seller or lessor of a system or the seller of electricity also must provide written statements regarding utility rates and attesting to the truthfulness and completeness of the agreement. Any such agreement is voidable at the option of the person purchasing or leasing the system, or purchasing electricity generated by the system, until the installation of the system. With regard to the contents of the agreement, the bill required that it include an estimate of the cost of electricity for the purchaser or lessee after the system is installed. The bill also included a registration requirement through the Nevada Office of Energy. Violations of the provisions of this bill would constitute deceptive trade practices.

Of note, if a contract referenced the price of electricity provided by a public utility, the legislation required a separate, written statement in at least 12-point font, stating:

Utility rates and utility rate structures are subject to change. For additional information regarding utility rates and utility rate structures, you may contact your local public utility or the Public Utilities Commission of Nevada.

APPENDIX B: CRITIQUE OF THE SEIA BUSINESS CODE FOR SOLAR TRANSACTIONS AS A SUBSTITUTE FOR STATE REGULATORY OVERSIGHT AND STANDARDS

The following summarizes the key provisions of the SEIA Code and provides Comments that identify potential shortcomings particularly as compared to the proposed consumer protection standards recommended in Chapters IV and V of this Report:

Unfair, Deceptive, or Abusive Acts or Practices (UDAAP). The Code requires members to “regularly examine and consider the possibility of UDAAP violations in all aspects of its business that touch on Consumers or their interests, including but not limited to marketing, sales, origination, contract terms, contract options, installation, servicing, and loss mitigation.” Members are required to “regularly remind and train “each employee” to avoid UDAAP violations.

RESPONSE: While this section of the Code appears to attempt to respond to existing state and federal Unfair Trade Practices laws, there is no identification of what constitutes UDAAP or any reference to such descriptions or examples of what would constitute UDAAP, although a number of the subsequent sections of the Code clearly build on traditional UDAAP criteria. Nor is there any requirement that members develop and provide evidence of training materials and actual documentation of training activities for either employees or the member’s third party agents.

Advertising. The proposed Code includes high level standards governing advertising, including:

“Claims should be accurate, easily understandable and based on facts.”

“System production calculations must take into account material factors.”

“Projections of future utility price must be based on accepted sources and methods.”

“Endorsements must be genuine and authorized by the endorser.”

RESPONSE: There are a number of valuable and important specifics included in this Section of the Code, including a prohibition on references to solar systems as “free”, an obligation to specifically identify any incentives and associated eligibility requirements, and obligations for disclosures of accurate prices, all pricing details, and requiring fact-based estimates that include all “material factors.”

Calculation of Estimated Future Electricity Rates. One of the key disclosures associated with any consumer’s decision to invest in or agree to a solar installation contract is the relationship between the cost of the solar system and the monthly leasing or purchasing costs compared to the customer’s current electric bill and estimates of future rate increases. With regard to projections of future utility prices, the Code requires its members to rely on at least one of a variety of sources, including the U.S. Energy Information Agency applicable to the state where the system will be located, state utility commission or energy office publications, utility rate case filings, “historical utility price data for the system location” (the source for which is not identified), “industry experts or other qualified consultant,” the “retail source or electricity

generation source servicing the system location,” and “other similar reliable sources qualified by SEIA.” Further, the Code allows the member to use a method for future utility price projections relying on an “average growth rate using no less than five years of data ending with the most recent year for which data is publicly available,” and data that is based on “third party sources” with some limitations.

RESPONSE: These requirements are not reasonable because they would allow for a wide range of potential sources and data to be used that carry a high degree of potential inaccurate or misleading projected utility prices. Consumers would not have the necessary information to compare offers across providers because each provider could use a different data set to estimate future electricity rates. This provision of the code does not serve to prevent unfair and deceptive projections of savings. As discussed further in actual recommendations in Section IV, any calculations of the impact of a solar system on a residential customer’s electric bill should rely on the current electric prices charged by the individual consumer and a state-specific and utility-specific approved methodology to provide a range of potential future utility bill impacts. Of most importance, the solar marketer or provider should be required to affirmatively disclose the risk that any such projections will be incorrect and are not subject to the control of the solar provider.

Sales and Marketing Interactions. The Code includes requirements on respecting consumer privacy, treating customers fairly and compliance with Do Not Call lists and Telemarketing Sales Rules, the FTC’s CAN-SPAM Act, and related statutes, referencing state or local analogous laws. Members are required to maintain a “do not contact” list and ensure that their agents comply with such information. Members and their agents must accurately identify the Company they represent and avoid standard deceptive statements and misrepresentations that would be applicable to any retail sales and marketing activity pursuant to most State Unfair Trade Practice Acts.

RESPONSE: The obligations and prohibitions included in this Section of the Code repeat the current applicable federal and state law and regulations, almost none of which are specific to the marketing of solar sales and leasing.

Contracts. The Code includes requirements for contracts, such as that contract terms should reflect verbal representations; contracts should be clear and understandable to Consumers and contain all contract terms; and that companies should allow Consumers the ability to rescind contracts. Standard requirements that the contract be “written in legible font,” and written to be “easy to understand” are included. The specific “material terms” that must be included in contracts (and are “recommended” be placed above the Customer’s signature) are identified as:

- Costs,
- Ownership terms,
- Financing terms,
- Warranties,
- Consumer options in the event of a home sale,
- Termination and system removal options and costs, and
- Consumer rights regarding damage to property from installation.

The Code requires that the provider must provide a three-day right of rescission (except for solar systems installed on new home sale transactions) with a reasonable means of exercising that right.

With regard to Renewable Energy Certificates (RECs), the member is prohibited from double counting the REC---by relying on its value after the sale of it in the transaction for any other purpose. Further, the company is required to educate customers about RECs and refer them to a specific publication, “Guidelines for Renewable Energy Claims: Guidance for Consumers and Electricity Providers, Center for Resource Solutions (Feb. 26, 2015). If the agreement assigns the REC to the Company and not the Consumer, the provider should “explain” to the Consumer that the Consumer has no rights to the REC, but “may state to the Consumer that sells its RECs that, by purchasing, leasing or hosting a solar system, the Consumer is helping advance solar energy in the U.S., or similar broad policy or market statements.”

RESPONSE: These provisions are appropriate in most cases, but they fail to adopt the level of specificity that should be included and as identified in Chapter IV of this Report. Furthermore, some of the obligations to “explain” certain obligations or issues to affected customers is not sufficient in that there is no required method of explanation or record of how or when this explanation is given. With regard to the recommended statements about RECs, the specific advice of the Vermont Attorney General as reflected in Chapter IV of this Report is more explicit and accurate.

The code is voluntary and thus does not provide consumer protection across the industry.

The SEIA Business Code includes Guiding Principles that require members of the SEIA to “expressly agree to following the Code, cooperate with SEIA and any designated third party during any investigations into alleged violations of the Code, and comply with any authorized actions by SEIA or third parties to enforce findings made with due process.” In addition, the Code requires members to “take commercially reasonable measures” to require the member’s “contractors, service providers or agents to abide by the Code.

RESPONSE: These objectives are welcome, but the applicability of these policies only to “members” and the lack of any means to conduct public proceedings to determine violations and assess appropriate penalties are significant shortcomings. While “members” are required to comply with the Code, not all retail promoters or sellers of solar installations are members of SEIA since SEIA is a voluntary organization and members can come and go as they please. SEIA identifies its membership on its website, claiming that this list includes over 1,000 entities, many of whom are not retail solar providers, but those who contract with solar providers, lobby on their behalf, or provide legal and technical advice.⁵¹ SEIA also identifies the number of members by State and by type of entity involved in the solar industry. As expected, some of the States with the highest number of members are those with significant solar sales and leasing activity, such as California, Florida, New Jersey, and New York. But, strangely, several states with very high solar marketing activities, such as Arizona and Nevada, have very few members, less than 10 according to this information, and many of those listed for these states are not actual retail providers, but financial or other entities that would provide services to solar marketers and their agents. Finally, most of SEIA’s members do not actually conduct retail

sales and leasing to residential customers, but are associated with the manufacturing, legal and financial consulting, and advocates for solar power businesses.

Membership in SEIA is voluntary, thus adherence to the code is as well. Further, it is not clear whether SEIA actually represents a majority or even a large number of solar contractors, installers, or other retail marketing entities offering sales or leasing of solar systems to residential customers.

With regard to SEIA's attempt to apply its Code to the agents of its members, i.e., those third party vendors or agents that may actually solicit sales and leases from residential customers on behalf of a SEIA member, the Code's obligation to use "commercially reasonable measures" is a weak substitute for a clear obligation that SEIA members are responsible for the actions and representatives of their agents and will be held accountable for the actions of their agents. There is no requirement in the Code that SEIA members provide evidence of how their contractors and agents are trained or how the members are required to document their oversight and supervision of their agents to assure compliance with the Code.

The Code is not enforceable in any manner that would serve as a deterrent to bad actors or that would compensate aggrieved consumers.

According to SEIA, it will adopt meaningful enforcement tools to ensure the Code "has teeth." In SEIA's view internal review and tools such as letters to members regarding violations, and suspension of membership are appropriate and sufficient enforcement activities.

RESPONSE: SEIA is a private non-profit organization whose members pay a fee to support the SEIA staff and the SEIA mission. This organization has no governmental or formal enforcement authority. SEIA cannot prohibit a non-member from violating its Code and cannot require non-members to recognize or comply with the Code. With regard to its members, SEIA cannot impose any penalties on its members for violating the Code. The suggestion by SEIA that it can issue "letters" or suspend "member benefits" to those found not in compliance with the Code is an insufficient enforcement mechanism and without any preventive value or recompense to consumers.

SEIA does not state how it will conduct decisions about compliance or non-compliance with the Code. Customers are not legally informed of their right to complain to the SEIA and doing so would chill the customer's legal right to file complaints with other governmental authorities, including the state Attorney General or the Federal Trade Commission. All of its handling of customer complaints and allegations of violation of the Code can and likely will be held in confidential forums without any procedural due process rights and remedies that are afforded consumers before state and federal regulatory agencies and courts.

Furthermore, the federal and state Anti-Trust Acts prohibit SEIA and similar organizations to undertake any policies or action as a group that might be alleged or found to be anti-competitive, that is, having the impact of thwarting the ability of non-SEIA members from conducting business and obtaining consumers whether or not they comply with the Code. Any move to create a "shield" to those providers who agree to become an SEIA member and abide by the Code or a "sword" to label competitors who are not members of the SEIA and have

not agreed to comply with the Code will likely raise serious Anti-Trust claims. Furthermore, the existence of the Anti-Trust obligations prevents SEIA and similar trade organizations from imposing certain required disclosure terms, using certain plain language terms, creating barriers to entry with regard to financial and technical qualifications, or imposing customer service performance criteria.

SEIA's Solar Business Code, while containing some useful recommendations and provisions, is not a substitute for more formal legislation and/or regulations governing the solar industry in its dealing with residential customers.

There is some precedent for these conclusions. The retail energy market has been the subject of detailed licensing and consumer protection regulations and policies since the onset of retail competition. No State has relied on "self-enforcement" or industry codes of conduct to regulate retail energy providers. Both the National Energy Marketers Association and the Retail Energy Suppliers Association (RESA) recognize this reality and have argued that such private regulation should not be substituted for governmental standards and regulations, particularly when there is the potential for disparate treatment among some companies offering solar power services and other entities, who may wish to combine such services with other competitive products that are subject to government regulation. RESA's recent comments to the New York Public Service Commission on its suggestion that distributed energy resource (DER) providers might be able to rely on a self-enforcement mechanism with a code of conduct stated, "Staff should however be mindful that no organization has the authority or resources to monitor and enforce any standards that are adopted. For the foreseeable future that will remain the province of the Commission." Even more importantly, as RESA described, retail energy suppliers who are required to be licensed and regulated in terms of disclosure and consumer protection and service quality attributes by state utility commissions will be offering DER products and services to residential customers that may bundle energy commodity and distributed generation products and services. As a result, there is the potential for unfair discrimination in terms of regulatory oversight and consumer protection enforcement that is likely to have anti-competitive impacts if solar providers are able to avoid any direct or detailed regulation by states through a privately operated self-enforcement mechanism.⁵²

APPENDIX C: CONSUMER EDUCATIONAL MATERIALS

- Solar Power For Your Home A Consumers Guide, LSU Ag Center Communication, 2015 (partially funded by EEI)
<http://www.lsuagcenter.com/en/communications/publications/Publications+Catalog/Home+Improvement/Energy/Solar-Power-for-Your-Home--A-Consumers-Guide.htm>
- Energy.gov solar resource and education materials:
http://energy.gov/eere/sunshot/solar-energy-resource-center-0?Topic=Solar%20Basics_and_Educating%20Consumers
- U.S. Department of Energy, A Consumers Guide: Get Your Power From the Sun.
<http://www.nrel.gov/docs/fy04osti/35297.pdf>
- A Homeowner's Guide to Solar Financing, Leases, Loans, and PPAs. By Nate Hausman, Project Manager, Clean Energy States Alliance. February 2015.
<http://www.cesa.org/assets/2015-Files/Homeowners-Guide-to-Solar-Financing.pdf>
- A Connecticut Consumer's Guide to Buying a Solar Electric System by the Connecticut Clean Energy Fund
http://uhaweb.hartford.edu/solarinfo/WebPictures/Consumer_Solar_Guide.pdf
- Energy Sage website: <https://www.energysage.com/solar>
- Better Business Bureau, Don't Fall for a Solar Energy Scam This Summer
<http://www.bbb.org/blog/2012/06/dont-fall-for-a-solar-paneling-scam-this-summer/>
- SEIA, Residential Consumer Guide to Solar
<http://www.seia.org/sites/default/files/resources/SEIA%20Residential%20Consumer%20Guide%20to%20Solar%20Power%20-%20June%202015.pdf>

ENDNOTES

¹ In part this is due to the lower production costs associated with solar panels generally and the impact of competition from manufacturers in China. According to EnergySage, 44% of the solar panels in use in the U.S. were manufactured in China and U.S. solar panels cost on average 10-30 cents more per watt than imported panels. <http://blog.energysage.com/where-solar-panels-are-manufactured/>

² Many states initially adopted generous payments under their net metering policies to stimulate a nascent industry and established ceilings associated with net metering costs. As those ceilings are reached and the costs associated with net metering are growing, many states are reviewing and reconsidering this payment and cost allocation system.

³ SEIA Solar Market research Report. <http://www.seia.org/research-resources/us-solar-market-insight/about>

⁴ SEIA, U.S. Solar Market Sets New Record, installing 7.3 GW of Solar PV in 2015, Press Release (February 22, 2016), available at: <http://www.seia.org/news/us-solar-market-sets-new-record-installing-73-gw-solar-pv-2015> It should be noted that utility scale solar still represents the bulk of solar power, representing half of all solar installed in 2015.

⁵ The market reached 72% third party ownership in 2014. SolarCity, one of the largest rooftop solar marketers, sells one-third of the U.S. residential solar.

<https://www.greentechmedia.com/research/report/us-residential-solar-financing-2015-2020>

⁶ However, Solar City announced in early 2016 that it was terminating its MyPower leasing product. Like a solar lease, it tied the customer's payment to a solar system's energy production, but unlike a lease, the homeowner owned the system once the loan was paid off. See,

<http://www.foxbusiness.com/markets/2016/02/27/solarcity-corp-backed-itself-into-corner-with-mypower-loan.html>

⁷ The community solar transaction is addressed specifically in Chapter V of this Report.

⁸ These websites were visited in December 2015-January 2016.

⁹ A Homeowner's Guide to Solar Financing, Clean Energy States Alliance and U. S. Department of Energy, p 2

¹⁰ Will the Solar Lease Live Forever or Flame Out?

<http://www.fool.com/investing/general/2014/04/30/will-the-solar-lease-live-forever-or-flameout.aspx>

¹¹ Solar Power for Your Home: A Consumers Guide, Louisiana State University AgCenter, 2015,

http://www.lsuagcenter.com/portals/communications/publications/publications_catalog/home%20improvement/energy/solar-power-for-your-home--a-consumers-guide

¹² <http://www.gosolarcalifornia.ca.gov/tools/calculators.php>

¹³ <http://pvwatts.nrel.gov>

¹⁴ www.energysage.com

¹⁵ Solar Water Heat, Solar Photovoltaics, Wind (All)Geothermal Heat Pumps, Fuel Cells using Non-Renewable Fuels, Wind (Small)Fuel Cells using Renewable Fuels on existing homes and new construction.

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- ¹⁶ <http://www.seia.org/research-resources/solar-itc-impact-analysis> (Accessed 11/7/2015)
- ¹⁷ "SEIA Celebrates the Extension of the ITC," <http://www.seia.org/news/seia-celebrates-extension-itc> (Accessed 12/24/2015)
- ¹⁸ DISCUSSION PAPERS IN ECONOMICS Working Paper No. 13-05 Tax Evasion and Subsidy Pass-Through under the Solar Investment Tax Credit, Molly Podolefsky, University of Colorado at Boulder, November 2013 < <http://www.colorado.edu/econ/papers/Wps-13/wp13-05/wp13-05.pdf>> (Accessed 11/7/2015)
- ¹⁹ See SolarCity Form 10-Q for the period ending September 30, 2015, filed on October 30, 2015, pp 54-55. < http://investors.solarcity.com/secfiling.cfm?filingID=1564590-15-8928#SCTY-10Q_20150930_HTM_ITEM_1_A_RISK_FACTORS> (Accessed 11/7/2015)
- ²⁰ <http://www.reuters.com/article/2012/10/09/us-usa-solar-investigation-idUSBRE8980YL20121009#8LSvOOsldo35JdC.97> (Accessed 11/7/15)
- ²¹ <http://www.dsireusa.org/> DSIRE, the Database of Incentives for Renewables and Energy Efficiency, is a "comprehensive source of information on incentives and policies that support renewable energy and energy efficiency in the United States." The database is operated by the N.C. Clean Energy Technology Center at N.C. State University and is funded by the U.S. Department of Energy. Consumers can search by state or zip code to find current incentives and policies, with options to filter by technology and/or program. The U.S. Department of Energy maintains a similar database: <http://energy.gov/savings/search>
- ²² https://nccleantech.ncsu.edu/wp-content/uploads/50-States-of-Solar-Q3-FINAL_25.pdf
- ²³ <http://www.wsj.com/articles/solar-power-fight-hits-home-in-arizona-1438335000>
- ²⁴ Appendix C lists the most prominent consumer education materials.
- ²⁵ "Are Rooftop Solar Companies Doing Enough to Protect Consumers?" GreentechMedia.com September 24, 2015 [visited 10/28/2015]
- ²⁶ <https://www.greentechmedia.com/articles/read/yelp-reviews-of-the-top-us-solar-installers>
- ²⁷ www.consumeraffairs.com/solar-energy/ This website will allow the consumer to search by specific solar companies.
- ²⁸ [Attorney General Brnovich Settles Lawsuit Against Solar Company | Arizona Attorney General](#)
- ²⁹ [Arizona Consumers Eligible for Criminal Restitution in Solar Rebate Scam | Arizona Attorney General](#)
- ³⁰ <http://www.greentechmedia.com/articles/read/sunrun-class-action-complaint>. This complaint is Case No. BC498001.
- ³¹ [New Orleans Advocate](http://www.theneworleansadvocate.com/news/11222295-171/nearly-2m-lawsuit-accuses-sader) on 1/1/2015 (<http://www.theneworleansadvocate.com/news/11222295-171/nearly-2m-lawsuit-accuses-sader>) (Accessed on 11/24/2015):
- ³² http://www.azleg.gov/DocumentsForBill.asp?Bill_Number=SB1465&Session_ID=114
- ³³ HOUSE BILL No. 1320 was introduced January 13, 2015. An amended bill passed the relevant committee in a 9-4 vote, but the bill did not reach the floor for any final vote. <https://iga.in.gov/legislative/2015/bills/house/1320#>

³⁴ HB 1912 was introduced February 2, 2015 and reintroduced in three subsequent special sessions. While a proposal passed committee on a vote of 8-3, the bill did not reach the floor for a vote.

<http://app.leg.wa.gov/billinfo/summary.aspx?bill=1912&year=2015>

³⁵ SB 214 was filed April 3, 2015 and it was considered in committee on April 29, 2015, but left pending at the end of the session.

<https://legis.la.gov/legis/BillInfo.aspx?s=15RS&b=SB214&sbi=y>

³⁶ A. B. 330 was introduced March 16, 2015 and was voted out of Committee with amendments, but no further action occurred.

<https://www.leg.state.nv.us/Session/78th2015/Reports/history.cfm?DocumentType=1&BillNo=330>

³⁷ Office of Attorney General, State of Vermont, "Guidance for Third Party Solar Projects." [Undated]

³⁸ SEIA Comments, New York Public Service Commission, RE: Case 15-M-0180 – In the Matter of Regulation and Oversight of Distributed Energy Resource Providers and Products (September 24, 2015).

³⁹ www.seia.org (September 2015) [© Solar Energy Industries Association]

⁴⁰ See, Horton, David, "Federal Arbitration Act Preemption: Purposivism and State Public Policy," *Georgetown Law Journal*, Vol. 7, 2013. <http://georgetownlawjournal.org/files/2013/07/Horton.pdf>

⁴¹ See, e.g., Commonwealth of Pennsylvania, by Attorney General Kathleen G. Kane, Bureau of Consumer Protection and Tanya J. McCloskey, Acting Consumer Advocate v. Energy Services Providers, Inc. d/b/a Pennsylvania Gas & Electric, Docket No. C-2014-2427656, Order Denying Motion In Limine (December 1, 2014); Pennsylvania PUC, Kiback v. IDT Energy, Inc., Docket No. C-2014-2409676, Opinion and Order (Aug. 20, 2015); Maryland PSC, In the Matter of the Investigation into the Marketing, Advertising, and Trade Practices of American Power Partners, LLC; Blue Pilot Energy, LLC; Major Energy Electric Services, LLC and Major Energy Services, LLC; and Xoom Energy Maryland, LLC, Case Nos. 9346 and 9346(b), Proposed Order (Oct. 23, 2015).

⁴² Community solar projects are sometimes referred to as "solar farms" or "solar gardens."

⁴³ Solar Electric Power Association, "Community Solar: Program Design Models," (December 2015). This Report is available at <http://www.solarelectricpower.org/about-sepa/sepa-news/press-releases/sepa-report-provides-models-for-community-solar-success.aspx> (Accessed December 27, 2015).

⁴⁴ The former option is pursued in a majority of CSPs. Some of the main reasons for this are that few community solar project subscribers have sufficient understanding of RECs to monetize them and the value of a single individual's RECS are often outweighed by transactional costs. The project owner can better draw value from the RECs, and in many cases they are able to pass this value on to their subscribers. It should be noted that many working group members pointed out that when a REC is not transferred to the customer or retired on behalf of the customer, then the customer is not actually buying solar power. In these cases, community solar project owners should be aware of the Federal Trade Commission's guidance that "marketers should not make broad, unqualified renewable energy claims, directly or by implication." See SEPA Community Solar Report at 11-12.

⁴⁵ Maryland House Bill 1087, available at: <http://mgaleg.maryland.gov/2015RS/bills/hb/hb1087F.pdf> (signed by Governor May 12, 2015).

⁴⁶ The Maryland Public Service Commission voted to issue proposed rules to implement the community solar program and adopted many, but not all, of the recommendations of the OPC. See, RM 56, Revisions to COMAR 20.62 - Community Solar Energy Generation Systems, available at the Commission's website at: <http://www.psc.state.md.us/search-results/?keyword=RM56&x.x=20&x.y=10&search=all&search=rulemaking>

⁴⁷ Office of the Attorney General—Antitrust and Utilities Divisions' Supplemental Response to Excel Energy's Petition to Approve Solar Garden Tariff, Public Utilities Commission of Minnesota, In the Matter of the Petition of Northern States Power Co. for Approval of its Proposed Community Solar Gardens Program, Docket No. E002/M-13-867 (December 3, 2013).

⁴⁸ Attorney General Comments at 4, citing to a [Denver Post](#) article, fn. 16.

⁴⁹ Minnesota Public Utilities Commission, In the Matter of the Petition of Northern States Power Co., d/b/a Xcel Energy, for Approval of its Proposed Community Solar Garden Program, Docket No. E-002/M-13-867 (April 7, 2014). This proceeding subsequently resulted in numerous filings and orders from the Commission due to the large volume of solar garden interconnection proposals made to Xcel Energy, many of whom were proposals for the co-location of several 1 MW garden projects at one location by operators that proposed to serve larger commercial customers, giving rise to concerns about the increased cost to ratepayers for the subsidy payments ordered by the Commission to stimulate solar garden development.

⁵⁰ As included in the bill, "The legislature recognizes the importance of ensuring public safety and consumer protection with an appropriate level of regulation that still allows a competitive marketplace to develop, and for this reason the legislature confers authority to the Washington Utilities and Transportation Commission to regulate as "competitive electrical companies" private third-party vendors who provide renewable energy systems directly to consumers through a consumer contract and affiliates of investor-owned utilities who invest company dollars to make these systems more widely accessible."

⁵¹ <https://www.seia.org/directory> [Visited 11/16/2015]

⁵² Retail Energy Supply Association (RESA) Comments, New York Public Service Commission, RE: Case 15-M-0180 – In the Matter of Regulation and Oversight of Distributed Energy Resource Providers and Products (September 24, 2015).