June 23, 2015

Florida Public Service Commission
Capital Circle Office Center
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Dear Ms. Lee Eng Tan,

We are pleased to submit this letter on behalf of the Interstate Renewable Energy Council, Inc. (IREC), in response to the Request for Comments issued on April 23, 2015. IREC appreciates the interest of the Florida Public Service Commission (Commission) to gather information regarding enhancing development and promoting deployment of solar technologies in Florida, and we welcome the opportunity to address some of the Commission's questions in our comments.

IREC is a national 501(c)(3) non-profit organization that has been active in regulatory matters related to renewable energy for more than thirty years. In that time, IREC has participated in workshops, proceedings and rulemakings in over forty states addressing topics that directly impact the deployment of renewable energy resources. IREC works to expand and simplify consumer access to reliable and affordable distributed clean energy by: (1) developing and advancing regulatory policy innovations; (2) generating and promoting national model rules, standards, and best practices; and (3) providing workforce training, education, and credentialing. IREC works independently from renewable energy industries, trade associations, technologies, and advocacy organizations; and, though we promote the creation of robust,

competitive clean energy markets, IREC does not have a financial stake in those markets. Grounded in the latest research and objective analysis, IREC's work helps to inform and guide clean energy regulatory and workforce development efforts. Through collaborative partnerships with diverse stakeholders, IREC seeks to build consensus and achieve workable solutions to create a sustainable and economically strong clean energy future. The scope of IREC's work includes implementing shared renewable energy programs to expand options for consumers that cannot host a renewable energy system, guiding adoption of best practices for net metering and interconnection, engagement in distributed energy storage and grid modernization proceedings, and other related efforts aimed at removing barriers to the adoption of renewable energy.

The Commission's Request for Comments addresses both demand- and supply-side solar policies. While IREC encourages all forms of renewable energy, our organization has traditionally focused on expanding consumer access to demand-side renewable energy resources. The recommendations we provide in these comments include both demand- and supply-side resources though we expect other parties to weigh in more heavily on supply-side issues. Where possible, we have attempted to respond to the subset of questions; however, we note that some of the questions require additional study and analysis, and thus are more difficult to address in this set of comments. As applicable, we have provided suggestions on possible next steps for the Commission to consider as they conduct this comprehensive investigation on programs and policies.

Specifically, IREC recommends initiating interconnection reform, continuing and expanding support for distributed solar thermal resources, implementing shared renewable energy programs, removing restrictions on meter aggregation and upholding the current net metering rules. IREC further recommends that the Commission host a workshop or series of workshops to allow stakeholders to discuss these additional options in more detail. We provide additional rationale and information for each

recommendation below.

Interconnection

Interconnection is a foundational renewable energy policy that can broadly support a range of both supply-side and demand-side solar options in the state of Florida.[1] In IREC's estimation, updated interconnection procedures would greatly improve the efficiency and cost of interconnection in Florida. Currently, Florida's interconnection procedures have earned a "D" in the 2014 *Freeing the Grid* Report, which grades states based on the effectiveness of their NEM and interconnection policies, scoring higher than only five other states in the country.[2] Inefficient interconnection procedures can add unnecessary time and significant expense onto solar projects and undermine the economics of an otherwise cost-effective project. To this end, IREC recommends that the Commission update its procedures to accommodate solar growth well into the future.

While interconnection is a highly technical topic, the reform process does not have to be onerous. Indeed, the number of states that have earned either "A" or "B" grades for interconnection has grown from just two in 2007 to now nearly 30 as of 2014. What's more, recent best practice measures adopted by California, Massachusetts, Ohio and the Federal Energy Regulatory Commission (FERC), (and now under active consideration in Illinois and Iowa), which are reflected in IREC's *Model Interconnection Procedures,* provide a thoroughly vetted and proven path for Florida to follow.

FERC's recently updated Small Generator Interconnection Procedures (SGIP) are based on practical input from experienced utility engineers who work in high-penetration solar states such as New Jersey.[3] These procedures are founded on years of research into grid operations and solar penetrations that

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1 *See* D. Steward and E. Doris, *The Effect of State Policy Suites on the Development of Solar Markets, NREL*
2 2014 *Freeing the Grid* report, page 105.
3 FERC, Small Generator Interconnection Agreements & Procedures, 78 Fed. Reg. 73,240 (Dec. 5, 2013),

allow applications to be efficiently processed while controlling costs and ensuring the safety, power quality and reliability of the distribution system. Adopting a best-practice model such as the FERC SGIP could avert interconnection challenges now and further down the road, as applications for renewable energy continue to increase. Some improvements in the new FERC SGIP include:

- A pre-application report process that enables generators, in exchange for a reasonable fee, to obtain available system information about a particular point of interconnection. This information can assist them in evaluating the potential costs and timeframe associated with interconnecting at that point.
- Increased eligibility for projects that can proceed through the SGIP's expedited or "Fast Track" review process. The new, more technically based limit evaluates the system type and location in addition to the size to determine which projects are eligible for Fast Track. This should allow a greater number of systems with capacities of up to 5 megawatts (MW) to avail themselves of the more efficient process while still protecting the safety and reliability of the grid.
- Improving the supplemental review process to allow more projects to avoid a full study. The new process also provides utilities with additional time to verify that eligible generators will not create safety, reliability or power quality impacts to the grid. As higher penetrations of distributed generation are reached, these new procedures create a pathway for efficient interconnection up to 100 percent of a circuit's minimum load.

Florida utilities should expect to see continued solar growth for the foreseeable future, a trend that will likely place an increasing burden on utilities' ability to process interconnection applications at low cost to the ratepayers and at scale if interconnection procedures are not updated. Furthermore, while still cost-prohibitive for most customers, costs for onsite battery storage systems are falling rapidly as the market for electric vehicles expands. Considering the potential near-term growth of the energy storage market, it would be helpful if Florida's interconnection procedures included an energy storage component.

Updated interconnection procedures improve a utility's ability to safely accommodate greater penetrations of solar. Hawaiian utilities have recently experienced some challenges incorporating these

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available at http://www.gpo.gov/fdsys/pkg/FR-2013-12-05/pdf/2013-28515.pdf; *IREC Model Interconnection Procedures,* 2013, available at www.irecusa.org/wp-content/uploads/2013-IRECInterconnection-Model-Procedures.pdf.

higher penetrations of solar onto the grid, which led to a significant slowdown in the Hawaiian market.[4] However, after a detailed study of inverter performance, Hawaiian Electric proposed doubling the solar threshold for neighborhood circuits from 120% to 250% of daytime minimum load.[5] While this shows that high-penetration issues can be overcome, at Florida's current rate of growth, utilities will not have to consider these issues for the foreseeable future. Florida still has relatively very low distributed solar penetrations, around .046%, compared to Hawaii's nearly 15% penetration.[6]

Interconnection reform is particularly important as the Commission seeks to pursue policies and programs that expand the State's suite of solar options, which will likely increase the solar market growth rate. Based on experiences in other states, interconnection reform is an imperative first step that can address increasing penetrations of both demand-side and supply-side solar resources, while still maintaining the safety, power quality and reliability of the grid. A formal stakeholder process to review and address the limitations of the current interconnection procedures has shown to be an effective way of identifying and implementing win-win solutions for ratepayers, renewable customers, developers, and utilities. As such, we strongly encourage the Commission to consider opening an interconnection docket in the near future, and IREC looks forward to the opportunity to engage in any forthcoming discussions on this important topic.

Solar Thermal

Solar thermal facilities have long been identified as a cost-effective way to reduce customer

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4 *See*, e.g. http://www.utilitydive.com/news/solar-installers-flee-hawaii-as-interconnection-queue-backs-up/314160/.

5 See Hawaiian Electric Company Press Release from January 20, 2015, available at http://www.hawaiianelectric.com/vcmcontent/StaticFiles/pdf/20150120b_Hawaiian_Electric_Companies_Plan_for_Sustainable_Solar_Growth.pdf.

6 These calculations are derived from 27.6 MW of non-utility scale solar data in Florida and 399 MW in Hawaii, reported by the Solar Energy Industries Association's *U.S. Solar Market Insight Report*: *2014 Year in Review* and 59,944 MW Net Summer Generation Capacity for Florida and 2,763 MW for Hawaii, from the Energy Information Administration's State Energy Profiles for FL and HI, available at http://www.eia.gov/state/.

demand, both for residential and non-residential utility customers. Solar thermal applications are well-suited for Florida because of the State's abundant solar resource, relatively low electricity rates and relatively limited availability of natural gas for residential water heating. This technology has a wide range of applications, including solar water heating (SWH), space heating and cooling and pool heating. Solar water heating, for example, can be particularly effective in reducing demand for college campuses, hotels, laundries and other facilities that use large quantities of hot water. In residential applications the use of SWH can be effective at serving a variety of occupancy situations and providing a benefit to low-to-moderate-income customers while also reducing coincident demand.

Research has illustrated that SWH can result in many utility, customer and ratepayer benefits. Of particular interest, residential SWH has been shown to be strongly coincident with winter peaks in southwestern markets,[7] which is also the case in Florida. A Florida Solar Energy Center (FSEC) study has shown that, while typical residential electric resistance water heaters contribute roughly 1.1 kilowatt-hour (kWh) to the winter peak demand in Florida, customers with residential SWH systems reduce coincident winter peak demand by 0.7 kW per system.[8] This can have a significant impact when multiplied by many systems across a utility's service territory. A 2010 FSEC study further found that SWH would reduce a typical family's water heating needs by over 60%.[9] This amounts to an electricity savings of around 3.5 – 5.5 kWh per day.[10] Given the built-in storage capability, SWH behaves similarly to energy efficiency and can help reduce demand on the grid, while also providing a notable bill savings benefit to customers.

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[7] Bourg, Joe, et al., *A Critical Look at the Utility Benefits of Solar Water Heating in an Age of Booming PV*, 2014, published by the American Solar Energy Society, p. 4, available at http://proceedings.ases.org/wp-content/uploads/2014/02/SOLAR2013_0141_final-paper_small.pdf. (reviewing utility SWH programs in Nevada, Arizona and Colorado).

[8] Merrigan, Tim and Parker, Danny, *Electrical Use, Efficiency, and Peak Demand of Electric Resistance, Heat Pump, Desuperheater, and Solar Hot Water Systems*, available at http://www.fsec.ucf.edu/en/Publications/html/FSEC-PF-215-90/.

[9] Colon, Carlos and Parker, Danny, *Side-by-Side Testing of Water Heating Systems: Results from the 2009-2010 Evaluation.* Florida Solar Energy Center, 2010, p. 6.

[10] *Id*, p. 5.

SWH also obviates the need for typical grid interconnection processes and studies and/or additional grid management services, which can provide a cost savings to utilities, SWH customers, and other ratepayers.

Many areas in Florida have a history of winter utility peaks, driven by electric water heating and electric heat strips. If the capacity benefits of SWH programs are properly quantified, Florida's SWH programs will likely appear to be a very cost-effective proposition. Many of Florida's utilities offer incentives in the form of rebates and loans,[11] and Lakeland Electric has a unique program to install third-party-owned SWH systems on customer's roofs, enabling them to lock-in long-term hot water heating rates.[12] IREC commends the existing support for solar thermal technologies in Florida and encourages the Commission and utilities to continue existing programs and expand support for customer adoption of solar thermal technologies. The Commission and utilities should also consider incorporating solar thermal into utility planning processes and energy efficiency plans.

Shared and Community Renewable Energy

Shared renewable energy programs (also known as "community solar") enable multiple customers to share the economic benefits from one renewable energy system via their individual utility bills.[13] Unlike most rooftop solar systems, shared renewable energy projects are typically not physically located on a customer's property, though the energy generated by these systems is ultimately offsetting customer load. That is, a utility is not purchasing the energy for general consumption; rather individual customers are purchasing the power, for example by buying a capacity share in a project or a monthly kWh block of energy, and getting credited for the associated energy on their utility bills. Customers' participation in

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11 Most Florida utility incentives can be found on the Database of State Incentives for Renewables and Efficiency at http://programs.dsireusa.org/system/program?state=FL.

12 *See* http://www.solarlakeland.com/.

13 While IREC uses the term "shared renewable energy" or "shared renewables" to include all generation types, the majority of these programs and projects in the U.S. are based on solar generation.

shared renewables programs also generally offsets a utility's need to procure supply-side resources for its ratepayers since participating customers are offsetting their demand, similar to customers involved in on-site solar or energy efficiency. Many utilities around the country, including two in Florida, have voluntarily offered a means of participating in shared solar facilities to their customers.[14]

The Commission has found that "community solar does not promote the development of demand-side renewables," citing its authority to promote demand-side renewables and the definition of demand-side renewables in Florida law as being sited on customers' premises.[15] IREC assumes that this finding was based on an assumption that community solar projects would be located off-site, but in practice, community solar can be sited on or adjacent to the participants' premises. A shared renewable energy system can, for example, be sited on the roof of a multi-tenant building or shopping mall, or in a common area of a mobile home park in order to offset the electricity needs of onsite tenants. In other words, a shared renewable energy system could behave like a demand-side resource, given its ability to reduce demand on a circuit where participants are located. However, as we understand Florida statutes, nothing is precluding the Commission from exploring ways to promote typical supply-side shared renewables, such as through a broad pilot program. As such, IREC recommends the Commission allow shared renewables to be eligible for onsite use and consider implementing a pilot program for an off-site shared renewables program. Regardless of where the facility is located in relation to participants, IREC recommends the Commission consider the following guidelines from IREC, which have been developed over the past several years of working with utilities, utility commissions and program developers across the country.

Within the past few years, IREC has provided expert guidance on the implementation of several

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[14] Florida Keys Electric Cooperative (FKEC) and Orlando Utilities Commission (OUC) have voluntarily created community solar programs in response to customer demand. Read more about FKEC's Simple Solar Program at http://www.fkec.com/Green/simplesolar.cfm and OUC's Community Solar Program at http://www.ouc.com/environment-community/solar/community-solar.

[15] Order No. PSC-14-0696-FOF-EU, page 47, citing Florida Statutes 366.82 for the definition of "demand-side renewable energy" to require siting on customer premises.

shared renewable energy programs, developed *Model Rules for Shared Renewable Energy Programs* (Model Program Rules),[16] and assisted the National Renewable Energy Laboratory (NREL) in developing a guidebook on shared solar.[17] Additionally, we often collaborate with utilities, industry organizations such as the Solar Energy Industries Association (SEIA) and the Solar Electric Power Association (SEPA), nonprofit advocates such as The Vote Solar Initiative (Vote Solar), and other stakeholders to identify and refine the best practices for shared renewables programs. IREC also tracks the development of programs across the country.[18] Finally, IREC has directly engaged in several state-level dockets implementing shared renewable energy programs, including efforts in California, Colorado, Minnesota, New York and Washington, D.C.

To frame IREC's perspective on the issue of shared renewables program development, the following four key principles guide our approach:

1. Shared renewable energy programs should expand renewable energy access to a broader group of energy consumers, including those who cannot install renewable energy on their own properties.
2. Participants in a shared renewable energy program should receive tangible economic benefits on their utility bills.
3. Shared renewable energy programs should be flexible enough to account for energy consumers' preferences.
4. And finally, shared renewable energy programs should be additive to and supportive of existing renewable energy programs.

This approach is based on our experience in helping to develop programs at the utility and state levels across the country and our monitoring of policy and market evolution over the past several years. Moreover, these serve as guiding principles for IREC and Vote Solar's Model Program Rules, which have

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16 *Model Rules for Shared Renewable Energy Programs*, 2013, available at www.irecusa.org, "publications."

17 *A Guide to Community Solar: Utility, Private and Non-Profit Project Development*, 2010, available at www.nrel.gov/docs/fy11osti/49930.pdf.

18 Available at http://www.irecusa.org/2014/09/shared-solar-program-catalog-3.

been vetted with a wide range of stakeholders and widely referenced in shared solar proceedings and discussions across the country. These guiding principles also correlate with our understanding of customer preferences and their motivation for subscribing to shared renewables facilities. From discussions with utilities and program managers across the country, we have found that consumers are most keenly interested in greening their energy supply through programs that result in new generation, provide them with tangible economic benefits and allow them to receive generation from specific facilities located in or near their communities.[19] Given the Commission's broad authority to promote demand-side renewables,, we recommend the Commission allow shared renewables projects at multi-tenant locations. We expect customers at such locations would be especially interested because their projects would be located on-site, and not just nearby.

Determining the appropriate monetary value to assign to shared renewables bill credits can be a complex process. While establishing the value of the generation alone may be relatively easy, understanding the wider costs and benefits of a shared renewable energy system is more difficult. By carefully designing a fair bill credit that appropriately compensates a distributed solar facility's contribution to the grid and encourages customer participation, the Commission can also ensure that non-participating ratepayers are not negatively impacted by the addition of shared renewable energy programs. Approaches to bill credit valuation are detailed further in IREC's Model Program Rules. As a wide variety of programs have struggled with this valuation process, the following two distinct categories of approaches have emerged.

Embedded cost-based approach. This approach is based on the structure of a utility's electric rate design, including the generation, transmission and distribution cost components of retail rates, similar to a

[19] See Passera, Laurel, *Location, Location, Location: How much does it matter for shared solar participants?*, published by IREC, Jan. 2014, available at http://www.irecusa.org/2014/01/location-location-location-how-much-does-it-matter-for-shared-solar-participants/.

traditional NEM bill credit. We refer to it as "embedded cost" because it is based on the cost structure embedded in energy consumers' current rates. Programs have typically valued the credit based on the retail rate in effect for each participant versus at the facility location. This approach ties a credit rate directly to a utility's ratesetting structure, which maintains the ability of renewable energy to act as a price hedge against future utility rate increases for a particular participant.

Value-based approach. The value-based approach to bill credits is based on the value of shared renewable energy generation, usually to the participants' utility and its ratepayers. This approach includes the value of the new generation source to the utility, and also the value of avoided transmission and distribution costs, such as system infrastructure costs and avoided line losses. Although sometimes more difficult to calculate, some programs include other components in renewable energy valuation, such as avoided emissions and associated costs, and improved security and resiliency in the face of natural disasters or acts of terrorism. The utility may also provide credit for any other benefits it finds relevant, for example by exempting the participant from a renewable energy standard compliance charge or a credit reflecting a particular facility's locational benefits. IREC's *A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation*, provides a careful consideration of the benefits and costs that should be considered in a value-of-solar approach.[20]

Shared renewables remove many of the traditional barriers associated with typical onsite generation and allow a much broader range of utility customers to participate in solar, including low-to-moderate income customers. While there are a number of challenges to facilitating low-income participation, it is imperative to design a program that is an accessible and realistic option for low-income customers. Many renewable energy opportunities present poor front-end economics that make them

[20] *A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation*, Jason Keyes and Karl Rabago, 2013, available at www.irecusa.org, "publications."

unappealing to low-income energy consumers, who often need a positive cash flow from the start. Encouraging participation of low-income energy consumers requires creative thinking about program design but should be made a priority for shared and community programs, as they represent one of the main vehicles through which low-income customers can feasibly access and benefit from renewable energy.

IREC would lastly like to reiterate the importance of IREC's four guiding principles, as noted above. It is relatively easy to set up a program that may, on the surface, sound like a shared solar program, but is in practice simply a green tariff program whereby customers pay more to "green" their energy supply. A shared renewable energy program must carry a tangible economic benefit for customers, particularly if the program is to garner broad customer interest. Also importantly, shared renewables program design must also incorporate flexibility, to allow developers and utilities to offer a range of options that suit customers' individual preferences. And finally, central to all of the recommendations above, shared renewables program design must be transparent and incorporate consumer protections to ensure the integrity of the market.

Meter Aggregation

Based on our experiences and observations in other states, IREC believes that aggregated net metering (ANM) would be a useful extension to Florida's NEM policy. Meter aggregation permits a single NEM participant to offset their load from multiple meters through NEM credits generated from a single renewable energy system connected to one of the participant's meters. Across the U.S. 18 states have adopted ANM in some form.[21] This type of arrangement is particularly useful for Florida's sizeable agricultural sector, which often has smaller, individually metered loads spread across a property. And

[21] These states include CO, DE, PA, CA, MD, VT, AZ, CT, OR, WV, MA, NY, UT, AR, MN, RI, WA, and ME. See the Freeing the Grid Report, 2014 edition, available at http://freeingthegrid.org/#download-ftg/.

there is clearly interest in meter aggregation in Florida. There have been several newspaper articles, for example, documenting the challenges of one Sarasota farmer who attempted to offset a number of meters on her property with solar generation but was denied by Florida Power and Light.[22]

Florida law does permit customer-generators with anaerobic digesters to engage in NEM, though it requires the Commission to provide approval for ANM arrangements. Section 366.91(7) of the Florida Statutes reads:

> "…when a utility purchases power generated from biogas produced by the anaerobic digestion of agricultural waste, including food waste or other agricultural byproducts, net metering shall be available at a single metering point or as a part of conjunctive billing of multiple points for a customer at a single location, so long as the provision of such service and its associated charges, terms, and other conditions are not reasonably projected to result in higher cost electric service to the utility's general body of ratepayers or adversely affect the adequacy or reliability of electric service to all customers, as determined by the commission for public utilities, or as determined by the governing authority of the municipal electric utility or rural electric cooperative that serves at retail."

By enacting this law, the Florida legislature is clearly supportive of ANM for the agricultural sector. The Commission, however, has not promulgated rules that provide the necessary considerations for these customers. By essentially requiring utilities to prove, on a case-by-case basis, that ANM arrangements are not "reasonably projected to result in higher cost electric service to the utility's general body of ratepayers or adversely affect the adequacy or reliability of electric service to all customers," it places an undue burden on utilities and customers that effectively prohibits the operation of these systems.

IREC recommends the Commission eliminate this hurdle by determining the general conditions by which these arrangements will not impact cost or service to other ratepayers. For example, by confining the aggregated meters to a customer's property or contiguous properties, the customer would not be engaging in "power wheeling" at the expense of other ratepayers. Additionally, requiring the customer to

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[22] See Anderson, Zac, *A big solar array but little savings*, Herald Tribune, June 7, 2009, available at http://www.heraldtribune.com/article/20090607/ARTICLE/906071047.

pay for any meter upgrades necessary would shield ratepayers from those costs. Regarding any adverse effects to the "adequacy or reliability of electric service to all customers," these issues are adequately accounted for in the interconnection process, such that a customer-generator facility should not be allowed to connect if it were likely to cause any adequacy or reliability problems.

This policy provision can also be useful to other types of non-residential facilities, such as educational campuses and government facilities. To make net metering more accessible to a variety of customers, IREC recommends removing the regulatory restriction on ANM. Rule 25-6.102 of the Florida Administrative Code precludes ANM and other "conjunctive" billing arrangements for customers of investor-owned electric utilities.[23] While there are several aspects of ANM regulation that could quickly become overly complex, IREC urges the Commission to adopt simple and clear rules for ANM arrangements. For example, IREC provides the following model language for meter aggregation within its Model Net Metering Rules:[24]

(d) Meter aggregation

(1) For Customer-generators participating in meter aggregation, the following provisions apply:

i. For the purpose of measuring electricity usage under these Net Metering rules, an Electricity Provider must, upon request from a Customer-generator, aggregate for billing purposes a meter to which the Net Metering facility is physically attached ("designated meter") with one or more meters ("additional meter") set out in this subsection. This rule is mandatory upon the Electricity Provider only when:

a. The additional meter is located on the Customer-generator's contiguous property;

b. The additional meter is used to measure only electricity used for the Customer-generator's requirements;

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[23] Rule 25-6.102 states, "Conjunctive billing means totalizing metering, additive billing, plural meter billing, conjunctional metering, and all like or similar billing practices which seek to combine, for billing purposes, the separate consumptions and registered demands of two or more points of delivery serving a single customer…Conjunctive billing shall not be permitted."

[24] *IREC Model Net Metering Rules*, 2009, p. 6, available at: http://www.irecusa.org/publications/.

ii. A Customer-generator must give at least 30 days notice to the Electricity Provider to request that additional meters be included in meter aggregation. The specific meters must be identified at the time of such request. In the event that more than one additional meter is identified, the Customer-generator must designate the rank order for the additional meters to which Net Metering credits are to be applied.

iii. The Net Metering credits will apply only to charges that use kWh as the billing determinant. All other charges applicable to each meter account will be billed to the Customer-generator.

iv. If in a monthly billing period, the Net Metering facility supplies more electricity to the Electricity Provider than the energy usage recorded by the Customer-generator's designated meter, the Electricity Provider will apply credits to additional meters in the rank order provided by the Customer-generator, and any remaining credits after doing so will be rolled over to the designated meter for use during the subsequent billing period.

v. Customer-generators participating in meter aggregation do not have to have all meters on the same rate schedule.

IREC would be happy to provide more information about our net metering model rules or the structure of ANM in other states if the Commission is interested.

Net Energy Metering

As the Commission has noted on several occasions, net energy metering (NEM) is an important policy that has driven the growth of Florida's renewable energy market to date.[25] Notably, Florida's NEM policy and rules have earned a "B" grade on the national scorecard, *Freeing the Grid*.[26] As another foundational renewable energy policy, NEM has been proven to be a highly effective and straightforward tool for advancing solar deployment in states across the country. A recent analysis conducted by NREL confirms the importance of this policy as a solar market driver.[27]

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[25] *See*, e.g. *Customer-Owned Renewable Energy Continues to Grow in Florida*, Commission press release, available at http://www.psc.state.fl.us/home/news/index.aspx?id=1051.

[26] *Freeing the Grid* is available at www.freeingthegrid.org.

[27] *See* D. Steward and E. Doris, *The Effect of State Policy Suites on the Development of Solar Markets, NREL* (Nov. 2014), available at http://www.nrel.gov/docs/fy15osti/62506.pdf at *v* ("States in all contexts experienced more robust markets with the implementation of interconnection and net metering. Although these policies

It is helpful to keep in mind that rate structures can and do have a considerable impact on the overall effectiveness of any NEM policy; and to that end, it is important that NEM customers are allowed access to non-discriminatory rates that do not penalize their decision to install on-site distributed energy. In late 2014 the Commission voted to continue NEM as an appropriate means to encourage the development of demand-side renewable energy.[28] Absent a comprehensive framework and study to determine the exact benefits and costs of NEM systems, and given the very recent 2014 Commission vote to continue NEM, reevaluation of the State's NEM rules at this juncture seems unnecessary.

Overwhelmingly states that have embarked on a comprehensive cost-benefit analysis have determined that net metering systems provide a benefit to non-participating ratepayers. A recent NEM study in Mississippi, for example, showed that NEM has the potential to provide net benefits to the state in nearly every scenario and sensitivity analyzed.[29] A value of solar study conducted in Maine,[30] found that the value of solar power produced in Maine is $0.33/kWh, which is approximately $0.20 more than the average NEM credit on solar customers' bills.[31] And, a study in Nevada concluded that grid benefits of rooftop-distributed energy installed through 2016 exceed costs by approximately $36 million.[32] On the

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alone are not usually sufficient to spur solar markets, they are foundational for distributed generation market growth. Most states that implement set-asides or [third-party ownership] policy after having best practice net metering and an interconnection policy in place for a few years, see rapid increases in solar markets. States that did not implement best practice net metering and interconnection policies initially have not seen as rapid growth in solar markets.")

28 See November 25, 2014 Commission Conference Agenda No. 18, Balbis motion, pp. 75-76, available at http://www.psc.state.fl.us/library/FILINGS/14/06614-14/06614-14.pdf

29 *Net Metering in Mississippi*: Costs, Benefits and Policy Considerations, Synapse Energy Economics, Inc., September 2014, p. 49, available at http://www.psc.state.ms.us/InsiteConnect/InSiteView.aspx?model=INSITE_CONNECT&queue=CTS_ARCHIVEQ&docid=337867.

30 *Maine Distributed Solar Valuation Study*, Clean Power Research, March 1, 2015, available at https://mpuc-cms.maine.gov/CQM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2014-00171.

31 Per Natural Resources Council of Maine, March 3, 2015, available at http://www.nrcm.org/news/nrcm-news-releases/maine-puc-solar-power-study/.

32 *Net Energy Metering Impacts Evaluation*, E3, prepared for the Public Utility Commission of Nevada, July 2014, pp 7-8, available at http://puc.nv.gov/About/Media_Outreach/Announcements/Announcements/7/2014_-_Net_Metering_Study/.

other hand, a small handful of states, including Virginia, Arizona and Wisconsin have authorized seemingly arbitrary additional fees for NEM customers without relying on a comprehensive study to guide the decision-making process.[33] As the Commission explores programs and policies aimed at enhancing development of solar technologies, IREC urges the Commission to uphold Florida's existing NEM rules and continue to provide access to this mechanism in a non-discriminatory manner.[34]

Conclusion

Florida has one of the best solar resources in the country, yet ranks 15th among states for cumulative installed capacity, behind states such as Maryland, Massachusetts and Pennsylvania.[35] By maintaining the existing net metering program, updating interconnection procedures, and adding shared renewable energy and meter aggregation policies, Florida could greatly improve access to solar for its residents, bolster the local economy and protect the State's air quality and natural resources. We hope that the Commission will continue this important discussion by holding transparent stakeholder workshops that effectively and inclusively address program design and rule changes that can be implemented before the end of 2015. IREC would appreciate the opportunity to further participate in an open dialogue with the Commission and other stakeholders.

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[33] See, Arizona Corporation Commission Decision 74202 in Docket E-01345A-33-0248; Virginia State Corporation Commission Final Order, November 23, 2011 in Case PUE-2011-00088; and Wisconsin Public Service Commission Final Order adopting Madison Gas & Electric utility proposal, December 23, 2014, Case 327-UR-120.

[34] Fla. Stat. 366.81 states, "…the commission shall not approve any rate or rate structure which discriminates against any class of customers on account of the use of such [solar energy, renewable energy sources, highly efficient systems, cogeneration, and load-control] facilities, systems, or devices."

[35] *U.S. Solar Market Insight Report: 2014 Year in Review*, Solar Energy Industries Association.

Sincerely,

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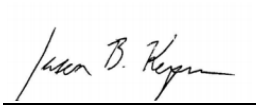

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