Kenneth M. Rubin
Senior Counsel
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408-0420
(561) 691-2512
(561) 691-7135 (Facsimile)
ken.rubin@fpl.com

June 23, 2015

Via electronic mail

Lee Eng Tan, Esq.
Office of General Counsel
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Florida Power & Light Company's Response to Request for Comments on Solar Energy in Florida

Dear Ms. Tan,

Attached please find Florida Power & Light Company's response to the Florida Public Service Commission Staff's April 23, 2015, request for comments regarding demand-side and supply-side policies and programs related to enhancing development of solar technologies in Florida.

If you have any questions or comments, please contact me at 561-691-2512.

Sincerely,

Kenneth M. Rubin
Senior Counsel
Jessica Cano
Senior Attorney

cc: Kenneth Hoffman, VP Regulatory Affairs

Florida Power & Light Company's Response to Requested Solar Comments

On April 23, 2015, the Florida Public Service Commission ("FPSC" or "Commission") Staff issued a letter encouraging individuals, businesses, and utilities to provide input on demand-side and supply-side policies and programs, and any other information that would be useful to the FPSC regarding enhancing development of solar technologies in Florida. Staff specifically requested that respondents answer the following questions:

1. What policies or programs would be most effective at promoting demand-side solar energy systems (i.e., programs effective on the customer side of the meter)?

2. What policies or programs would be most effective at promoting supply-side solar energy systems (i.e., utility or third-party owned)?

In providing comments on the above items, Staff requested that we address each of the following factors, as appropriate:

a) Can the policies or programs be implemented under current Florida statutes?

b) Can the policies or programs be implemented under current FPSC rules? If not, what changes or additions to the rules would be needed?

c) What are the impacts of the policies or programs on system reliability?

d) What are the impacts of the policies or programs on system fuel diversity?

e) Identify the cost-effectiveness of the policies or programs compared to traditional forms of generation.

f) Identify specific costs associated with the policies or programs and who will bear these costs.

g) Identify how the policies or programs will be fair, just, and reasonable across the general body of ratepayers.

Staff also asked the following:

3. Are there any other policies or programs that could promote the development and deployment of solar energy systems in Florida?

Florida Power & Light Company ("FPL" or "the Company") is hereby submitting its comments in response to the questions posed by Staff and additional information that it believes would be useful to the FPSC in considering the development of solar energy in Florida.

EXECUTIVE SUMMARY

Florida's policies and programs to promote both demand-side and supply-side solar development should focus on cost-effective projects and initiatives that are fair to all customers. Because the cost of solar photovoltaic ("solar PV" or "PV") technology has been declining, Florida is on the verge of significant solar expansion within the existing regulatory framework. For example, FPL recently announced the addition of three large-scale, cost-effective solar PV projects that will be built and placed in service in 2016, effectively tripling the Company's current solar capacity. Florida electric utilities are well-positioned to take advantage of the benefits of national market trends and deploy cost-effective solar for the benefit of all customers. Large-scale solar PV projects produce more solar generation for every dollar invested and provide the greatest and most efficient means for increasing fuel diversity, avoiding fossil fuel costs, and lowering emissions. Smaller rooftop installations, on the other hand, simply are not as cost-effective as larger scale applications even as the cost-effectiveness of all solar resources is improving.

Despite the gap in the relative cost-effectiveness of large-scale versus small customer-owned solar, FPL fully supports the choice of an individual customer to install demand-side solar at his or her home or business for use by that customer, so long as other customers who cannot or choose not to install their own systems are not adversely impacted. Unfortunately, without changes to the way in which solar-installing customers are charged for access to the grid and with their continued reliance upon backup power, solar-installing customers will continue to be subsidized by other customers. The fact that customers with demand-side solar currently are compensated for their excess generation (a wholesale product) at a full retail rate exacerbates the problem and increases the subsidy paid by all other customers. With large-scale solar becoming

cost-effective in Florida, subsidized rooftop solar can no longer be justified simply because it delivers solar energy. The subsidies required to support rooftop solar place the burden on non-participants to financially support an individual who simply prefers solar energy from his or her own rooftop. FPL respectfully submits, therefore, that further deployment of demand-side solar in Florida should be accompanied by measures to address the cost burden currently borne by customers without their own systems. In the meantime, utility Research & Development ("R&D") programs should continue to evaluate and understand potential impacts to the grid of increasing demand-side penetration levels and the costs arising from these impacts. In addition, consumer protection measures should be enhanced. With respect to supply-side initiatives, cost-recovery support for large-scale solar projects, voluntary supply-side solar programs, and supply-side R&D are all programs that could promote additional supply-side solar in Florida.

INTRODUCTION

FPL has identified eight key principles for enhancing solar energy in Florida:

1. Focus on solar initiatives that provide the greatest system benefits, enhance fuel diversity and reduce carbon emissions, regardless of whether demand-side or supply-side;

2. Minimize cross-subsidization among customers in order to preserve affordability of electric rates for all customers;

3. Maintain the safety and reliability of utility distribution, transmission, and generating systems;

4. Identify and account for integration costs and benefits to the utility system of both demand-side and supply-side solar;

5. Ensure customers are charged fairly for services provided by, or costs imposed upon, the utility system;

6. Ensure customers are compensated fairly for any generation provided by customer-owned and interconnected facilities;

7. Preserve a customer's option to choose demand-side solar while continuing to provide efficient and transparent processes for the installation and interconnection of demand-side solar when requested; and

8. Enhance consumer protection.

FPL believes that energy can and should be both clean and affordable. Fortunately, the cost of solar PV technology is dropping and the use of solar technology is increasing. Costs for PV systems are declining due to a combination of improved panel efficiency, improved manufacturing processes, and increased competition among suppliers. In turn, this decline is contributing to rapid growth in U.S. PV deployment. In 2008, the average price for a PV module was about $4.00 per peak watt ("Wp"). By the end of the second quarter of 2014, the average price had fallen more than 80%, to about $0.65/Wp[1]. This is a tremendous boon for the solar industry. Similar cost reductions and technological improvements have also occurred for inverters. This benefits all PV applications, both demand-side solar generation and supply-side large-scale solar generation.

The declining costs and improving efficiencies of solar PV technology, however, have not changed the fundamental economics of various applications. Currently, a large-scale PV system can generate 1.5 to 2.5 times the amount of electricity for the same amount of investment, when compared with Commercial & Industrial ("C&I")-sized PV systems and residential-sized PV systems, respectively. This is shown on Attachment 1.

Further, while declining costs and increasing adoption can be seen nationwide, it is important to recognize that when it comes to advancing solar energy, what is right for one state is not necessarily right for another. Solutions to each state's – and each utility's – energy challenges are unique. Regulators, utilities, and other interested parties should consider the

[1] *The Future of Solar Energy*, The MIT Energy Initiative, Massachusetts Institute of Technology (May 2015). http://mitei.mit.edu/futureofsolar

specific state's and utility's needs, attributes and geography, as well as the impact on electric rates and customer bills. Specific Florida attributes and their impacts on the cost-effectiveness of demand-side and supply-side solar are discussed further below in these comments.

It also is worth noting that there can be a difference between the "most effective" policies and programs, as framed by Staff's questions, and the "most *cost*-effective" policies or programs in the traditional regulatory sense. Currently, Florida law and policy emphasize the importance of cost-effectiveness. For example, the Florida Energy Efficiency and Conservation Act ("FEECA") emphasizes the use of "the most efficient and cost-effective demand-side renewable energy systems" (§366.81, Fla. Stat.). Applying this principle, the Commission recently determined that the previously ordered demand-side solar rebate pilot programs for both solar PV and solar water heating systems are not cost-effective and should not be continued after 2015. Similarly, when analyzing certain base-load supply-side additions, a separate section of FEECA directs the FPSC to consider, among other factors such as fuel diversity and supply reliability, whether a proposed power plant is "the most cost-effective alternative available" (§403.519(3), Fla. Stat. (2014)).

Policies and programs to promote demand-side and supply-side solar in Florida should continue to rely upon cost-effectiveness as the standard, and Florida should maintain its existing integrated resource planning process and cost-effectiveness approaches, for at least three reasons. First and most importantly, Florida's focus on cost-effectiveness has served and continues to serve customers well. Florida electric rates are below the national average. Also FPL has identified three new cost-effective, 74 MW large-scale solar power plants. This represents a significant step forward in the development of solar energy in the Sunshine State. Moreover, as federal law and policy continue to develop, the cost of greenhouse gas emission compliance

likely will play a growing role in these cost-effectiveness analyses, further supporting the economics of large-scale solar. Second, the solar energy market is no longer in its infancy; therefore the need for and purpose of subsidies have to be seen and discussed in very different terms, particularly in a low electric rate environment such as Florida. Third, renewable portfolio standards and similar programs in other states, along with national and international market forces, are the primary drivers behind declining solar PV prices. A policy shift in Florida away from its focus on cost-effectiveness is not likely to have any real impact on these national and international market forces. Accordingly, there is no need for the FPSC to promote non-cost-effective approaches – customers in Florida can take advantage of declining solar PV costs while continuing to benefit from a cost-effective portfolio of resources.

Of course, it is a policy question for the Legislature whether to change current Florida law to promote demand-side and/or supply-side solar by instituting policies or programs regardless of cost-effectiveness. But as noted above, traditional policies focused on cost-effectiveness have produced good results for customers. In FPL's case, its residential customers enjoy electric rates of about 10 cents per kilowatt hour ("kWh") – for typical bills that are almost 30% below the national average[2] – thanks in part to Florida's constructive regulatory environment and adherence to cost-effectiveness considerations. Given the current legal framework in Florida and FPL's commitment to reliably deliver affordable, clean energy to *all* its customers, FPL's comments in response to Staff's questions focus on the solar energy policies and programs that are: (i) cost-effective; and (ii) fair to all customers.

[2] As of May 2015, FPL's 1,000-kWh monthly residential bill totaled $97.11. This is approximately 29% lower than the U.S. average 1,000-kWh monthly residential bill of $137.06, based on Edison Electric Institute's semi-annual Typical Bills and Average Rates Reports for Summer 2014 and Winter 2015.

DEMAND-SIDE SOLAR ENERGY SYSTEMS

1. What policies or programs would be most effective at promoting demand-side solar energy systems (i.e., programs effective on the customer side of the meter)?

a. Addressing Cross-Subsidies

FPL supports a customer's choice to install demand-side solar energy systems such as rooftop solar PV systems. However, demand-side solar implemented at the expense of non-participating customers is inequitable and is not a sustainable model in the long term. Additionally, longstanding Commission precedent supports the principle that the cost causer of any elective or optional service, rather than the general body of customers, should bear the costs required to provide that service. Recognition of these fundamentals indicates that the net metering framework in Florida is in need of improvement. Neither the price paid to customers with their own PV systems ("PV customers") for excess generation nor the price paid by PV customers for their use of and reliance on the electric grid is fair to utility customers who either cannot, or choose not, to install their own PV systems.

Florida's net metering policy is among the more generous in the nation, allowing individual residential, commercial, and industrial customers to install up to 2,000 kilowatts ("kW") of solar at their premises, with no state-wide limit on total installed capacity. These customers receive payment for their excess power generation in the form of a credit at the full retail electric rate for up to 12 months.[3] In essence, these customers receive a retail price for a wholesale product.

[3] The Rule provides that "excess customer-owned renewable generation delivered to the investor-owned utility's electric grid shall be credited to the customer's energy consumption for the next month's billing cycle." Rule 25-6.065(8)(e), Fla. Admin. Code. At the end of each calendar year, the investor-owned utility pays the customer for any unused energy credits at an average annual rate based on the investor-owned utility's COG-1, as-available energy tariff. Rule 25-6.065 (8)(f), Fla. Admin. Code.

Solar PV customers' reliance on the grid, and payment therefor, is slightly more complex. Unlike an energy efficiency measure, customer-owned solar is also a form of electric generation that relies on the utility's grid both to provide power to the customer and to transmit any unused energy to the grid. Today, apart from a modest level of direct fixed-charge cost recovery, rate structures in Florida for residential and non-demand commercial and industrial customers typically rely on the collection of revenues to cover fixed utility system costs on a kWh consumption basis (i.e., on a variable basis). For FPL, these fixed utility system costs comprise more than 90% of total base rate costs. Customers who choose to install their own PV systems reduce their kWh consumption but still rely on the grid at least as much as customers without their own PV systems. As a result, demand-side PV customers do not pay their fair share of the fixed cost to operate and maintain the grid. It is left to the general body of customers who cannot or choose not to install their own PV systems to pay more of the fixed system costs than they should pay. Therefore, demand-side PV results in cross-subsidization among customers.

Asking demand-side PV customers to pay their proportionate share of the electric grid is consistent with the basic principles of cost-based rate design that have been used in Florida for decades. The actual share of grid costs that should be borne by such customers is a remarkable bargain when considered relative to the cost of a simple proxy for the "value" of the grid in the form of a fully capable battery storage system. Putting aside the very practical question of physical size or storage volume required to provide power through the night or through a

sustained period of stormy weather, the cost alone of such a battery backup system was recently estimated to be approximately nine times as expensive as relying upon the existing grid.[4]

Further deployment of demand-side solar energy systems in Florida should be accompanied by measures to address the cost burden currently borne by customers without their own demand-side solar energy systems. Indeed, the current mechanisms for the recovery of the electric system's fixed costs would need to be modified and transparency of the pricing and cost recovery components improved. Fixed-cost recovery could be addressed through generally-applicable rate restructuring across all rate classes in a generic rate structure proceeding; over time through individual utility base rate case proceedings; or by undertaking rate restructuring for a specific rate class, for example, by revising the FPSC's Interconnection and Net Metering of Customer-Owned Renewable Generation Rule (a possibility that the Commission alluded to even in establishing the rule). Improved transparency and elimination of cost shifting would clear the path for other policies or programs that support demand-side solar.

b. Florida-Specific Considerations

Public debate often focuses on the technical potential and speculative societal benefits of demand-side solar generation. But as an electric utility, FPL must remain focused on the electric rate and bill impacts for customers given a Florida-specific application of demand-side solar energy systems, including solar PV systems. The following is a list of specific Florida attributes that should be considered in any examination of demand-side solar programs and policies:

- A significant portion of Florida's residents and businesses enjoy electric bills well below the national average. This makes cost-effectiveness for distributed solar more challenging than in states where customers experience higher electric bills. In other

[4] A Bernstein analysis of the newest, lowest cost storage alternative, the Tesla Powerwall lithium-ion battery for residential and commercial applications, determined that solar plus storage (i.e., what's necessary to enable a customer to go completely "off-grid") would be approximately nine times as expensive as a customer relying upon the grid, based on an average U.S. residential electric rate for service. Sanford C. Bernstein & Co., LLC, "Tesla Builds a Battery, Utilities Yawn," May 6, 2015, p. 1, available from bernsteinresearch.com.

words, because rates in Florida are relatively low, a homeowner or business does not see the types of returns from the installation of solar PV that are seen in states with higher rates, such as California. Of course, the true benefits and costs of PV can only be determined within each specific utility system where it is interconnected.

- "Technical potential" statistics can be misleading. A commonly misrepresented statistic is Florida's ranking as "third in the nation in solar potential," sometimes clarified as "rooftop solar potential." This is derived from a 2012 NREL report[5], however, it is important to recognize that the report focuses exclusively on "technical potential" of renewable energy technologies by state. "Technical potential" is a theoretical way to capture all the land or roofs available without considering limiting factors. The first paragraph of the report's executive summary clearly explains that its estimates of technical potential "do not consider (in most cases) economic or market constraints, and therefore do not represent a level of renewable generation that might actually be deployed."

- Also, as the 2012 NREL report notes, rooftop solar is just one part of a state's solar potential. The report also considers technical potential for large-scale solar. For Florida, the report estimates that rooftop solar accounts for less than 2% of Florida's total solar PV potential while large-scale solar accounts for more than 98%.

- The impact of tropical storms, hurricanes, and severe weather events on buildings, and on maintaining and insuring rooftop solar systems, should be recognized. These weather events impact system economics, the expected reliability of systems, and the need for continued reliance on the grid.

- Prior regulatory decisions have stated that solar PV rebates are not cost-effective in Florida and that so-called "Value of Solar" analyses are not appropriate cost-effectiveness tests. "Value of Solar" studies typically include consideration of benefits not relevant to utility ratemaking, such as claimed health improvements. Even if such a "Value of Solar" approach were to be used, many, if not all, of the attributes captured under such studies are equally applicable to large-scale solar PV projects. Therefore, to the extent they are relevant policy variables, these studies reinforce the advantages of large-scale projects, as discussed below in response to Question 2.

c. Policies or Programs to Support Demand-Side Solar

In light of the above Florida-specific considerations, FPL has identified two programs or policies for the promotion of demand-side solar energy systems. First, R&D should continue to be performed for the development and integration of demand-side solar technologies. Second,

[5] Lopez, A., Roberts, B., Heimiller, D., Blair, N., Poroo, G., 2012. U.S. Renewable Energy Technical Potentials: A GIS-Based Analysis. *NREL Technical Report Series*. NREL/TP-6A20-51946.

consumer protections should be enhanced to ensure that those customers who choose to install their own PV have the best possible protection against consumer fraud and abuse.

It is important for electric utilities to understand impacts to the grid from increasing demand-side PV penetration due to the net-export capability of demand-side PV and this technology's inherent supply variability. In its simplest terms, the electric grid was designed for one-way power flow, not two-way power flow.[6] As the penetration of demand-side PV increases, there will be more challenges in the areas of power quality and a utility's ability to operate the grid. Maintaining reliability, restoration, auto restoration (smart-grid), and other functions will become much more complex. The solution to these issues will impose additional costs and require increased monitoring, manpower and equipment not currently required by the existing grid. R&D activities can help utilities monitor and prepare for the integration of increased demand-side PV, reducing potential obstacles to such integration in the future. R&D activities can examine both residential and commercial/industrial applications. So long as the intent of the R&D program is to examine and explore options and opportunities that will benefit the general body of customers, such a program is fair, just and reasonable for all customers. Additionally, the performance and cost recovery of R&D is currently allowed under Florida statutes and regulations.

One particular R&D activity that FPL has identified as worthy of further consideration is the use of utility interactive inverters or "smart inverters" on customer-owned, demand-side PV systems. Current standards require that inverters disconnect the customer-owned PV system when grid frequency or voltage falls outside a specified range to protect the grid and ensure the safety of life, equipment, and property. With the advent of utility interactive inverters, utilities can monitor the device like any other utility system device and leverage inverter capabilities to

[6] The introduction of energy exporting technologies necessarily adds costs.

improve (or at least not degrade) power quality. Examples of these capabilities are (a) under/over frequency and/or voltage ride-through, where the inverter directs the distributed solar PV system to stay online and respond accordingly to relatively short-term, minor events;[7] (b) curtailment and ramp-rate control where inverters can change the level of real power output (to zero if need be) from the system by controlling the rate at which real power is fed onto the grid either up or down; and (c) reactive power control where the inverter would inject or absorb reactive power into or from the grid.

In addition to such R&D efforts, strong consumer protection measures should be put in place by the state of Florida as interest in demand-side solar, especially solar PV, continues to grow. Positive customer experiences could have the effect of promoting demand-side solar, while lack of such measures and negative experiences could have the opposite effect.

Experience across the country, including Florida (for example, the BlueChip Energy solar panel fraud issue and the company's subsequent bankruptcy in 2013[8]), has highlighted the need for such protections, as consumers face issues of fraud, sales of oversized systems (i.e., systems far larger than is needed to offset a customer's use), inflated and inaccurate utility bill savings claims, and homeowner's insurance issues. Certain states are exploring opportunities to provide additional customer protections in this area; one state (Louisiana) has adopted a law defining solar installation fraud and classifying it as a criminal act.

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[7] In some cases, this function can actually help the grid to "self-heal" from a disturbance. Even when the ride-through functions are activated, the inverter disconnects the solar system when more severe grid disturbances warrant doing so.

[8] Lelis, L. "BlueChip Energy failure leaves solar-power customers up in air," Orlando Sentinel. (July 28, 2013). http://articles.orlandosentinel.com/2013-07-28/business/os-blue-chip-solar-customers-20130728_1_solar-panels-solar-power-customers-bluechip-energy

SUPPLY-SIDE SOLAR ENERGY SYSTEMS

2. What policies or programs would be most effective at promoting supply-side solar energy systems (i.e., utility or third-party owned)?

a. Relative Economics and "Potential"

Currently in Florida, an investment in large-scale supply-side PV systems can generate 1.5 to 2.5 times the electricity as the same investment in smaller, distributed C&I-size or residential-size PV systems, respectively. This is shown on Attachment 1. This is primarily due to large-scale PV enjoying significant economies of scale, and the ability to strategically locate facilities to minimize costs and maximize annual production (i.e., exposure to the sun). Additionally, certain engineering, permitting, and planning costs are relatively fixed, regardless of the size of the project. Therefore, large-scale PV facilities provide the greatest and most efficient means for increasing fuel diversity and lowering system emissions, including CO_2 emissions. As the size of the PV installation decreases, so does its cost-effectiveness.

In contrast to other jurisdictions, Florida is uniquely situated to take advantage of large-scale PV projects. Florida has large amounts of flat land located near a generally robust transmission system. Not surprisingly, large-scale solar PV is by far Florida's leading opportunity to achieve renewable generation, representing more than 98% of the state's overall solar PV technical potential.

In addition to its cost-effectiveness and technical potential, large-scale PV facilities that are owned by electric utilities, or that produce power purchased by electric utilities, are deployed for the benefit of *all* customers – eliminating any concerns of cross-subsidies between or discriminatory treatment of customer classes. For the same amount of investment, large-scale PV has a substantially greater impact than demand-side PV on reducing system fuel costs and emission compliance costs for all customers. Such projects also could provide measurable

improvements in fuel diversity and improve system reliability through fuel and technology diversification. In sum, the relative economics and inherent fairness for *all* customers strongly indicate that policies or programs to encourage large-scale, supply-side PV systems would be the appropriate and most cost effective course of action.

A recently published MIT Study on the Future of Solar Energy focused on the objective "to assess solar energy's current and potential competitive position and to identify changes in U.S. government policies that could more efficiently and effectively support the industry's robust, long-term growth." Below are key findings from the study:

- Large-scale solar is cheaper in terms of energy produced for the investment; enjoys huge economies of scale; and the projects are typically built in areas with much better solar resources or insolation.

- "PV generation by residential systems is, on average, about 70% more costly than from utility-scale PV plants. Even in California, and even including 100% effective federal subsidies, residential PV is not competitive with [combined cycle natural gas] generation on [a levelized cost of electricity] basis."[9]

- Existing rooftop PV gets a greater subsidy than large-scale solar under the Federal investment tax credit. This is because it is a capacity based incentive, so every kWh produced by a behind-the-meter-solar installation versus large-scale gets a higher dollar per kWh subsidy.

- Primary policy focus should be on preparing for long-term sustainable solar deployment. Second priority should be on most effective use of public budgets and private resources.

b. Policies or Programs to Support Supply-Side Solar

To support large-scale, supply-side solar, fuel and capacity clause recovery of the costs of such investments could be an important step in encouraging broader and earlier deployment. Clause recovery makes sense for solar PV projects because, unlike fossil-fueled generating units, large-scale PV projects enjoy a shorter construction schedule and can be deployed in

[9] *The Future of Solar Energy*, The MIT Energy Initiative, Massachusetts Institute of Technology (May 2015). http://mitei.mit.edu/futureofsolar

comparatively smaller increments (e.g., 100 MW versus 1,000 MW) at a lower cost. To this end, FPL would support a review of Commission authority to approve recovery through the fuel and capacity clause of the prudently incurred costs for large-scale PV facilities.

In addition, FPL has identified two other types of policies or programs that would promote supply-side solar energy deployment. The first is voluntary PV programs. Voluntary PV programs such as FPL's SolarNow™ pilot is an example of a program that can be offered at low cost to participants, is available to all customers, avoids cross-subsidization, and deploys PV in larger "chunks" than could be accommodated on most customers' roofs. The second is supply-side R&D programs as rate base or Energy Conservation Cost Recovery ("ECCR") recoverable activities. "Distributed" supply-side solar can be deployed and analyzed to better understand system operational impacts of solar integration and required system controls. Such distributed supply side R&D can be used to prepare the grid for greater PV adoption levels on the demand-side, and to develop improved standards and processes for integrating solar. This R&D can help the utility prepare for issues such as "clustering," the enhanced understanding of which would be good for all customers – particularly those who may otherwise face the situation (as seen in other jurisdictions) where they are not able to interconnect PV to the grid. Approval and cost-recovery for such voluntary solar programs and R&D programs are currently within the FPSC's jurisdiction.[10] Additionally, such programs are fair, just, and reasonable for all customers.

[10] Costs for such programs, assuming prudent implementation, are recoverable through base rates. Costs for supply-side R&D programs are also recoverable through the ECCR clause. *See* §366.82(2) stating the FPSC "may allow efficiency investments across generation, transmission, and distribution as well as efficiencies within the user base."

OTHER POLICIES OR PROGRAMS

3. Are there any other policies or programs that could promote the development and deployment of solar energy systems in Florida?

Florida's existing policies regarding the analyses of resource options, and the methodologies utilized to perform those analyses, are well-designed and have served Florida's electric customers well. These policies and methodologies contain significant flexibility to address both system and customer impacts that will result from the deployment of resource options including solar technologies. Therefore, in regard to both demand-side and supply-side solar, Florida should continue to utilize these policies and methodologies while encouraging analyses of these solar resource options to account for all costs and benefits identified in on-going PV integration studies. In this way, a more complete picture of the economic and non-economic impacts of PV will emerge.

Also impacting the future picture of solar is the U.S. Environmental Protection Agency's ("EPA") proposed Clean Power Plan ("CPP"). It is anticipated that the CPP will be a major driver for supply-side solar and, to a much lesser degree, demand-side solar. Under the proposed CPP, EPA has defined the Best System of Emission Reduction for reducing CO_2 emissions from existing fossil fuel-fired electric generating units as consisting of four "building blocks," one of which is the addition of new renewable energy resources. While scale and economics dictate that the vast majority of new solar development in Florida will be on the supply-side, states will have the flexibility to include some amount of demand-side solar in their compliance plans if protocols can be developed to track and quantify emission reductions from these installations in a manner acceptable to EPA. As proposed, states will have to comply with an interim emission target comprised of the average of the annual targets from 2020 to 2029 and a final emission target in 2030.

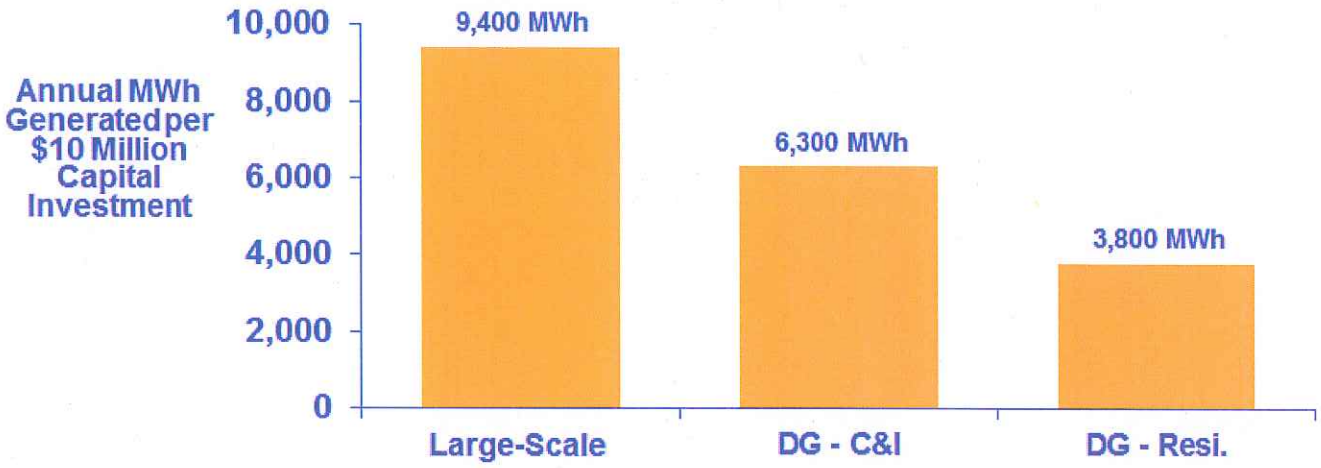
CONCLUSION

The adoption of demand-side solar and the deployment of large-scale supply-side solar are increasing in Florida – without any major policy shift or deviation from traditional cost-effectiveness considerations. Nonetheless, there are some opportunities to improve the current framework. Elimination of cross-subsidies between customers without demand-side PV and customers with demand-side PV will provide more transparent pricing and appropriate price signals for all customers. In addition, improved certainty of cost-recovery for cost-effective, large-scale PV projects, for example by allowing clause recovery, could also be considered. For both demand-side and supply-side solar, R&D programs are of growing importance and should continue so that electric utility system impacts may be fully understood. What is known now, however, is that current economics strongly favor large-scale PV systems. FPL intends to pursue such cost-effective projects for the benefit of all its customers. FPL thanks Staff for the opportunity to provide comments on this important topic and looks forward to continuing to participate in this dialogue.

ATTACHMENT 1

Large-Scale vs. DG Solar Annual Generation(1)

Large-scale solar provides 1.5 to 2.5 times the amount of renewable generation for the same investment



1) Solar project costs based on Bloomberg New Energy Finance (BNEF) in-house forecast Jan 2015 and SEIA/GTM Solar Market Insights 1Q2015.

FPL.