



June 23, 2015

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

Ms. Tan:

In response to the Florida Public Service Commission’s request dated April 23, 2016 for comments regarding solar energy in Florida, please see OUC’s responses below. OUC is providing input to questions 1 and 2 based on actual experience with current policies and programs. OUC’s thoughts on new policies and programs are provided in its response to question 3.

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)?

OUC’s Response:

Over the last 8 years, OUC has implemented several demand side programs to encourage adoption of demand side solar energy systems. The programs accomplish this by incentivizing customers to install photovoltaic (PV) or solar thermal systems and by simplifying access to solar for those who are not able to install their own systems. Even though uptake in the programs has tapered off over the last few years, OUC continues to look for new ways to assist customers in achieving their solar goals by implementing new and innovative programs.

When OUC first implemented these programs in 2008, there was a substantial uptake in customer participation. Since 2011, however, the rate of adoption has slowed down and the percentage change in number of participating customers continues to be smaller year-over-year.

Fiscal Year	Customers Participating		Capacity Installed	
	Number	Percent Change	KW	Percent Change
2008	41		152.4	
2009	155	278%	1,580.2	937%
2010	321	107%	2,149.2	36%
2011	398	24%	2,511.4	17%
2012	483	21%	4,029.9	60%

2013	568	18%	4,198.7	4%
2014	650	14%	4,332.1	3%
2015 (October through April)	688	6%	4,827.8	11%

The following is a brief description of each of OUC’s demand side solar programs that generated participation in the table above.

Net Metering

Customers that add a photovoltaic (PV) system to their property receive a traditional net metering benefit paid per kWh at the full retail rate.

PV REC Payment

To the full net metering amount, OUC pays an additional \$0.05 per kWh for energy produced through the PV system. OUC receives the environmental attributes (renewable energy credits or RECs) generated by the customer PV system in exchange for the REC payment.

Solar Thermal Rebate and REC Payment

OUC recognizes that solar thermal systems (hot water heaters) provide an environmentally friendly way to heat water. For this reason, OUC also incents customers to install solar thermal systems. Residential customers receive a one-time \$1,000 rebate and commercial customers receive \$0.03 per kWh equivalent for energy produced. Solar thermal is the most cost effective solar program for customers and they make up approximately 73% of customers currently participating as shown in the table above.

Interest Rate Buy Down

For customers that obtain a loan from the Orlando Federal Credit Union for a solar PV or thermal system, OUC offers to buy down the interest. The terms of the loan are between the customer and the credit union. OUC pays the buy down amount directly to the credit union that in turn passes the savings on to the customer.

Community Solar Farm

Community solar farms provide the benefits of rooftop solar, without the investment and responsibility required of a traditional system. In 2013, OUC commissioned its first community solar farm. The farm is a 400 KW system and 39 customers were able to subscribe to it. OUC bills the customers a fixed rate for a 25-year term and the customer receives a virtual net metering benefit on their bill. This program benefits those who are renters, or homeowners with shaded roofs, that want to participate in the solar generation.

Solar Aggregation

A new opportunity coming soon for OUC customers is the solar aggregation program. While OUC currently has one commercial customer on the program, the program is being expanding to include residential customers. The solar aggregation model allows residential and commercial customers to combine their solar PV needs with others and have OUC bid in aggregate for a developer to do the installations. By doing this, customers benefit from economies of scale and should receive a lower price point for their PV system. OUC further simplifies the process by recovering the customer’s payment for the service through a billable rate. OUC pays the developer through a Purchase Power Agreement (PPA).

In providing comments on the above items, please address each of the following factors, as appropriate:

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

OUC Response:

Yes

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

OUC Response:

Yes

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

OUC Response:

From the perspective of meeting peak generation demand reliability, solar is not a dispatchable resource so traditional generation assets are still required. At the current level of demand side solar penetration, there have not been any distribution system reliability issues. As penetration levels increase over time, OUC would expect to incur additional costs to install equipment for voltage regulation on its distribution system.

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

OUC Response:

Due to the limited participation in demand side programs compared to OUC's total system load requirements, the impact to fuel diversity is negligible.

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

OUC Response:

Solar is currently not a cost-effective component for meeting customer load requirements. When considering the cost of programs to incent customers to participate in solar, OUC spends approximately \$0.15/kWh from net metering and REC payments for solar PV generation. Compare these costs to the average dispatch price of an existing combined cycle of around \$0.028/kWh or the all in cost of building and operating a new combined cycle in the \$0.06 to \$0.07/kWh range, it is clearly a more expensive option of producing energy. It is also important to remember that traditional generation assets must still be maintained to meet our customer's peak and some off-peak energy needs regardless of the amount of solar installed.

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

OUC Response:

The costs described in the above solar rebates and programs as well as lost revenues from net metering are incurred by all rate payers.

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

OUC Response:

The policies or programs are not fair, just, and reasonable across the general body of ratepayers. This is because under the current design all customers share in the cost of the programs although the benefits of solar are only received by those subscribing to the programs.

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

OUC Response:

The most efficient and least cost way to support solar is for a utility company to invest in supply-side programs at the utility-scale level. By implementing supply-side projects, subsidies are eliminated and the costs and benefits of solar are distributed among all ratepayers. The following is a brief description of OUC's supply side solar projects.

Stanton Solar Farm – Phase 1

In 2011, OUC commissioned a 5.1 mW utility scale solar farm at its Stanton Energy Center site. This farm was the first of its kind in Orange County and it further diversified OUC's generation portfolio. With over 25,000 PV modules, this system produces over 9,500 mWh annually. OUC contracted with an outside vendor to construct and maintain the facility for a cost of \$0.21/kWh under a 20 year PPA arrangement.

Stanton Solar Farm – Phase 2

To further increase the amount of solar in our portfolio, OUC is in the process of selecting a developer to build a second solar farm with an estimated system capacity of 12 mW. The farm will be split over two sites located at the Stanton Energy Center. This farm should be on-line and operational by January of 2016. This facility will also be owned and maintained by a third party through a PPA. OUC is currently in negotiations with a vendor and anticipates a cost of approximately \$0.09/kWh.

Distribution Level Demonstration Project

OUC has been able to put systems in place in order to learn more about solar technology, its benefits, and how it interacts with our system. As a demonstration project with PetraSolar, OUC installed 10, 300W PV modules on utility poles. In 2014, the units were upgraded to include wirelessly controlled lighting systems as well as IP addressed solar modules with a cellular communication dashboard.

Solar Electric Vehicle Charging Station

OUC also installed a 2.8 kW PV system supplying energy to an OUC electric vehicle charging station. This system provides 80% of the energy needed for EV charging.

In providing comments on the above items, please address each of the following factors, as appropriate:

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

OUC Response:

Yes

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

OUC Response:

Yes

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

OUC Response:

From the perspective of meeting peak generation demand and voltage/var support, solar is a variable and non-dispatchable resource so traditional base load generation assets are still required.

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

OUC Response:

Due to the limited amount of solar compared to OUC's total system load requirements, the impact to fuel diversity is negligible.

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

OUC Response:

Solar is currently not a cost-effective component for meeting customer load requirements. When considering the cost of OUC's two utility scale solar projects at \$0.21 and \$0.09/kWh, it is still more expensive than traditional generation. Compare these costs to the average dispatch price of an existing combined cycle of around \$0.028/kWh or the all in cost of building and operating a new combined cycle in the \$0.06 to \$0.07/kWh range, it is clearly a more expensive option of producing energy. It is also important to remember that traditional generation assets must still be maintained to meet our customer's peak and some off-peak energy needs regardless of the amount of solar installed.

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

OUC Response:

Since supply side solar initiatives are implemented as part of a utility generation portfolio, the specific costs associated with the projects are passed on to all rate payers in an equitable manner.

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

OUC Response:

Supply side solar projects are the most equitable way to implement solar into a utility's rate structure because all customers pay a proportionate share of the cost and receive a proportional share of the benefit. Issues with customer safety and system reliability are also minimized.

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

OUC Response:

Possibilities for policies and programs to promote the development and deployment of solar in Florida could include:

Tax Incentives

One program to consider for the future is tax breaks for solar facilities. If developers were able to locate on a host site and enjoy an ad valorem tax exemption for the cost of the installed equipment, it would drive the pricing of such electricity down. This would encourage private investment in solar and make the purchase of such energy by incumbent utilities much more competitive.

Economic Development

Another effort to consider would be providing some type of economic incentive for a solar manufacturer to build a facility in Florida. This could be tax incentives on the property or tax incentives for sales within the state of Florida. This would not only help reduce the cost of manufacturing the equipment, but also reduce the cost of transportation of material to job sites within Florida.

Respectfully submitted,



W. CHRISTOPHER BROWDER, ESQUIRE
Vice President and General Counsel
Orlando Utilities Commission