

DOCKETED

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SolarCity comment Lead Commissioner Workshops RE: IRP Renewable Energy

Additional submitted attachment is included below.



December 30, 2016

Commissioner David Hochschild
California Energy Commission
Dockets Office, MS-4
Re: Docket No. 16-OIR-04
1516 Ninth Street MS-33
Sacramento, CA 95814 - 5512

Re: IRP Renewable Energy

Dear Commissioner Hochschild,

Thank you for your leadership in hosting the Commission's December 13 Workshop on Publicly Owned Utility (POU) Integrated Resource Plans (IRP), and for encouraging public comment on this important process. The IRP is a key tool to meeting our statewide Senate Bill (SB) 350 goals, and we appreciate the CEC's guidance on this issue. SolarCity respectfully submits the below comments.

Background

SolarCity is California's leading full service solar power provider for homeowners and businesses – a single source for engineering, design, installation, monitoring, and support. At present, the company has more than 4,000 California employees based at more than 40 facilities around the state and had installed solar energy systems for over 300,000 customers nationwide as of September 30, 2016.

Overall Comments

Over the past two decades, California's progressive energy policies have achieved remarkable success at promoting technologies that can reduce energy consumption and generate energy where it is consumed without the use of fossil fuels. Thanks to the state's forward-looking programs, next-generation technologies that can modernize the grid and help us address the climate crisis – such as rooftop solar panels, smart thermostats, electric vehicles and batteries – have either achieved or are on their way to achieving commercial scale and widespread availability to customers.

Now more than ever, we must double down on our commitment to be a leader on clean, renewable energy. SB 350 is the most recent example of California's progressive vision by extending the State's renewable portfolio standard (RPS) to 50% by 2030. Through the IRP process, utilities have the opportunity to formalize their plans for meeting these goals. This discussion has the potential to move the state towards a cleaner, less expensive and more resilient electric grid that achieves California's ambitious climate goals in a cost-effective manner.

Recommendations

Solar power presents the biggest opportunity to meet our renewable energy goals, and should be fully utilized. Rooftop solar plays an especially important role.

Analysis from Energy + Environment Economics (E3) presented during the workshop found that California needs an additional 15,000 MW of clean energy to meet a 50% RPS goal. Despite the many

renewable energy options, such as geothermal and wind, only solar is “boundless in potential,” with over 100,000 megawatts of untapped potential. In addition, the cost of solar continues to decline, and fell below the cost of new gas-combined cycle plants in 2016¹.

While utilities have started to embrace large-scale solar as a pathway to meet their goals, distributed generation (DG) provides its own unique set of benefits and should also be incorporated in long-term planning. These benefits include distribution system capacity benefits, generation capacity value, power quality and ancillary services².

In addition, DG solar can help save ratepayers money by avoiding the need for expensive transmission investments. A recent report by Energy Commission staff found that in the San Joaquin Valley alone, the value to ratepayers of avoided transmission investment from distributed energy resources (DERs) could be as much as \$300 million.³ Some of this value was realized recently when the California Independent System Operator (CAISO) cited DG solar as the reason for deferring a planned high voltage transmission line the region, with a ratepayer savings of between \$115 million and \$145 million.⁴

In addition to the benefit of avoided transmission infrastructure, DG solar may also meet statewide siting recommendations more easily than large-scale solar. As a presenter from Southern California Public Power Authority (SCPPA) noted during the workshop, utilities may run into problems when siting large-scale solar due to recent requirements from the California Air Resources Board (CARB) that set strict guidelines for building on open space. DG most often utilizes existing roof space rather than open space, and therefore does not risk violating CARB’s requirements.

Recommendation: The CEC should produce analysis and/or recommendations for how utilities can incorporate the full stack of benefits offered by distributed generation into planning processes to ensure optimal integration of renewable energy in a cost effective manner.

The penetration of distributed generation may stagnate or decrease as municipal utilities meet the minimum requirements for net energy metering (NEM) and replace NEM with successor programs that undervalue solar. The CEC should provide guidance for utilities once they hit their NEM caps.

Net energy metering or NEM is a policy that allows owners of solar energy systems to receive retail credit for electricity they export to the grid. Under net metering, solar customers reduce the amount of electricity needed from their utility by generating their own power, and utilities provide credit against future consumption for excess electricity not consumed on site.

For two decades, the NEM program has been used to encourage considerable private investment in renewable energy sources, particularly solar. A recent report by the non-partisan Brookings Institute

¹ Schlag, Nick (2016, December). *Resource Planning Under High Renewable Penetrations*. PowerPoint presentation at the California Energy Commission IRP Workshop, Sacramento.

² *Comments of California Solar Energy Industries Association, Solar Energy Industries Association and SolarCity Corporation on Preliminary Scope and Schedule*, Rulemaking 16-02-007. (Mar. 21, 2016)

³ Coldwell, Matt (2016, July). *Customer Power Decentralized Energy Planning and Decision-Making in the San Joaquin Valley*, California Energy Commission Staff paper. <http://www.energy.ca.gov/2016publications/CEC-200-2016-005/CEC-200-2016-005.pdf>

⁴ Sheehan, Tim. “Solar growth puts Fresno high-voltage transmission line on hold,” Fresno Bee. December 20, 2016.

analyzing all of the major cost-effectiveness studies to date found that in most cases net metering provides a net benefit to all ratepayers. The paper finds that: “In short, while the conclusions vary, a significant body of cost-benefit research conducted by PUCs, consultants, and research organizations provides substantial evidence that net metering is more often than not a net benefit to the grid and all ratepayers.”⁵

Current state law requires electric utilities offer NEM programs on a first-come first-serve basis until the generating capacity used by customers exceeds 5% of the utility’s aggregate customer peak demand. After that point, the law requires the CPUC to come up with a NEM successor tariff (or “NEM 2.0”) that balances the costs and benefits of NEM and allows for continued growth of the solar market. The California Public Utilities Commission (CPUC) recently opened a two year proceeding to analyze the costs and benefits of NEM and devise a successor program. . The resulting NEM 2.0 program has allowed for a smooth transition in the IOU territories to a new tariff that allows continued growth of PV with little disruption to the solar market. However, this program does not apply to the POU’s, which have been dealing with their NEM caps on an ad hoc basis.

In some cases, the POU’s have analyzed the economics of NEM and found that continuation of NEM is justified. For example, the Los Angeles Department of Water and Power recently released its 2016 Draft IRP, and recommended significantly increasing the amount of net energy metered solar because “additional cost to customers appears to be reasonable in light of the benefits of job growth and support of the local economy from adopting the higher levels of local solar.”⁶

In other cases, however, municipal utilities are proposing programs that severely harm the economics of rooftop solar without ever conducting a comprehensive cost and benefit analysis. In municipal utility territories such as Turlock Irrigation District and Imperial Irrigation District that have already replaced NEM with new programs, the majority of solar companies are no longer able to offer rooftop solar to ratepayers. This is especially worrisome when municipal utilities are already far behind the goals of the California Solar Initiative (CSI), outlined in SB 1, which require 700 MW of net-metered solar energy systems in POU territories by the end of 2017. As of the end of 2015, POU’s were a little over halfway towards their 700 MW goal⁷. As a growing number of POU’s replace NEM with less attractive programs, it will become increasingly unlikely for POU’s to meet the SB 1 goals. Municipal utilities and their ratepayers would benefit from the CEC providing oversight and direction as to next steps once the NEM minimum is reached.

Recommendation: The CEC should undertake a comprehensive analysis of the costs and benefits of rooftop solar, as municipal utilities often don’t have the staff or capacity to do so. The CEC should provide guidelines for the types of internal analysis that municipal utilities should conduct before considering changes to their NEM programs. The CEC should create recommendations and/or a model program for municipal utilities to use if they choose to modify NEM with a successor program.

Energy storage options are changing rapidly and can help utilities meet their 50% RPS goal.

⁵ “Rooftop Solar: Net Metering is a Net Benefit,” by Mark Muro and Devashree Saha. The Brookings Institution, December 28, 2016. <https://www.brookings.edu/research/rooftop-solar-net-metering-is-a-net-benefit/>

⁶ LADWP *Draft 2016 Power Integrated Resource Plan*, pg. 182

⁷ California Energy Commission. December 2016. *Tracking Progress- Renewable Energy*. http://www.energy.ca.gov/renewables/tracking_progress/documents/renewable.pdf



Municipal utilities should explore the use of battery storage in meeting their RPS goals; this includes both large-scale, utility owned storage and smaller residential storage paired with solar. As the cost of storage continues to rapidly decline, it can provide distribution system benefits, integrate renewable energy and provide other benefits to the grid.

With proper program and market design, customer-owned and sited storage could directly provide wholesale grid services and participate in programs that dynamically dispatch the battery based on current grid needs (i.e. demand response). Residential storage can enable integration of power from PV generation onto the grid when it's needed most, enabling higher levels of PV penetration, meeting peak load needs and improving the efficiency of grid operations.

The state Legislature and the CPUC have provided battery storage incentives for customers of the IOUs through the Self Generation Incentive Program (SGIP). This program allows residents and businesses to invest in storage, usually in conjunction with a rooftop solar system. Municipal utilities should adopt similar programs to encourage their customers to invest in storage to both better manage these customer's own loads, and support optimal grid operations.

Recommendation: The CEC should create recommendations and/or a model program that municipal utilities can use in designing their own version of an SGIP program to increase customer sited storage.

Conclusion

SolarCity thanks the Commission for the opportunity to submit comments in relation to the 2016 SB 350 POU IRP Renewable Energy Workshop. We look forward to continuing to engage with the CEC as the recommendations further evolve over time.

Respectfully submitted,

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SolarCity