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ILSR Commentary on the SMUD SolarShares Program

Additional submitted attachment is included below.

February 20, 2020

California Energy Commission
1516 9th Street
Sacramento, CA 95814

Subject: ILSR Commentary on the SMUD SolarShares Program

Dear Commissioners,

The California 2020 Home Solar Mandate is an ambitious initiative to spur the development of rooftop solar. However, community solar is an important alternative structure — where rooftop solar is not viable — that will still deliver on the vision of the solar mandate.

In recent years, community solar programs across the country have made leaps to bring solar to those traditionally excluded from renewable energy ownership for either financial or logistical reasons.

At the Institute for Local Self-Reliance, we track and evaluate state and local community solar programs on four key principles: tangible benefits for participants, a flexible ownership structure, compatibility with other renewable energy policies, and access for all. The overriding principle is that solar power is fundamentally different from the fossil fuel sources it replaces, which require large scale and concentrations of capital to deploy, and thus the ownership structure of solar energy systems should benefit everyone, not just utility companies and utility-scale developers.

Community solar is best when it can be owned and controlled by participants in the community, as seen with projects by Cooperative Energy Futures in Minnesota or Co-op Power in Massachusetts that score highly against all four criteria of good community solar programs. These projects democratize access to and generation of clean energy in the manner that the individual solar mandate intends, even as they serve climate and clean energy goals.

As currently proposed by the Sacramento Municipal Utility District, the Neighborhood SolarShares Program is an innovative approach to deploying more solar energy attributable to specific customers. If provided as an option to utility customers, no doubt many would choose it for the limited risk and guaranteed, if modest, financial benefit. As such, SMUD continues to show how municipal utilities can replace polluting energy sources in a manner that benefits all of its customers.

However, SolarShares should not be mistaken for a community solar program.

On the measure of tangible benefits, SolarShares meets the letter, but not the spirit, of the law's intent to broadly distribute the economic benefits of solar. SolarShares guarantees the subscriber a benefit of at least \$10 per kilowatt per year. Assuming a four kilowatt system size,

the subscriber would save \$40 per year. This compares to \$550 in annual bill savings from a typical 4-kilowatt on-site solar array with bill credits of \$0.10 per kilowatt-hour.¹ SolarShares offers a financial benefit, but it pales in comparison to customers owning solar generation. It's a significant shift from the utility's early leadership with its Solar Pioneers program, helping to use its buying power and relationship with city governments to drive down the cost of customer-sited solar.²

SMUD's program may meet the law's requirements to provide energy that matches a home's load profile, but it ignores the potential location benefits of on-site solar in doing so. Solar projects can provide unique benefits to the grid if they are located on the low-voltage side of the substation, able to offset energy demands before they reach the larger, bulk transmission system. Not only can it reduce energy losses, but paired with smart inverters, solar arrays can provide reactive power to support system voltage, a service remote solar arrays cannot provide.

Ultimately, a community solar program would provide financial benefits more comparable to on-site solar ownership, and take advantage of the technological benefits of distributed solar.

SolarShares also can't qualify as community solar because it doesn't have any option for ownership by the direct beneficiaries (other than the important, if diffuse, benefit of being a resident of the municipality that owns its utility company). Community solar programs should allow diverse ownership structures reflecting the competitive nature of solar electricity markets (there are plenty of firms able to finance community-scale solar) as well as the opportunity to build equity and wealth in communities that have traditionally suffered from pollution and extraction from the fossil fuel economy.

SMUD's SolarShares program also runs afoul of the spirit of the state's home solar mandate law to drive down the costs of distributed solar as it drives deployment, because it appears to focus almost entirely on utility-scale solar projects. Furthermore, in its implementation of the rooftop solar mandate, it misses an enormous opportunity to address the state's massive resiliency problem made evident by public safety power shutoffs. When communities remain reliant on transmission for their energy needs, regardless of the source, they cannot easily weather power disruptions. This becomes a more serious consideration as homes in California electrify, becoming reliant on a single fuel for all energy needs. With locations at a significant distance from customers, and requiring transmission to those customers, SolarShares projects fail to address resiliency needs made apparent by recent wildfires in a way that on-site or local generation and storage could.

Finally, SMUD's program admirably provides solar access to all, but with two major drawbacks:

¹ Default output from NREL's System Advisor Model for Sacramento, Calif.

² Farrell, John. Two Decades of Solar Pioneers in Sacramento – Episode 27 of Local Energy Rules Podcast. (Institute for Local Self-Reliance, 8/7/15). <http://bit.ly/2k38HwI>

1. As noted before, the financial benefits of participation are far less than if customers choose alternative solar access options. The lower compensation is not commensurate with the actual distribution of risks and benefits.
2. SolarShares customers will be captive participants because builders will sign the contracts on their behalf. The implementation of California's rooftop solar mandate admirably includes flexibility in implementation. That flexibility should extend to the ultimate resident, not just the utility or housing developer.

Community solar is an essential tool to bringing the benefits of solar electricity, both financial and environmental, to everyone. Community solar programs deliver comparable benefits to on-site solar ownership, allow for flexible ownership options, align with other clean energy policies, and deliver access to all. The SMUD SolarShares program does meet most of the letter of the rooftop solar mandate law, but it is not community solar.

The California Energy Commission should carefully consider how SMUD's program could be modified to align with the definition of community solar, the spirit of the state's solar rooftop mandate, and the growing need for locally resilient power systems as the state electrifies homes.

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