October 9, 2019

California Energy Commission
1516 9th Street
Sacramento, CA 95814

Docket number: 19-BSTD-08

Subject: SACRAMENTO MUNICIPAL UTILITY DISTRICT (SMUD) APPLICATION TO ADMINISTER A COMMUNITY SHARED SOLAR SYSTEM

Dear Commissioners:

The California Solar & Storage Association (CALSSA) and the Solar Energy Industries Association (SEIA) submit these comments on Sacramento Municipal Utility District's (SMUD) proposal for their SolarShares program to meet the requirements of the new home solar mandate. We request the Commission disapprove the application. SMUD's proposal jeopardizes the integrity of California's new home solar mandate and negates many of the benefits of distributed generation for customers, the grid, and the environment. Additionally, the proposal fails to meet the criteria a community solar program must meet to be approved by the Commission.

Accepting SMUD's proposal will set a dangerous precedent for California. Under the proposal, builders will be able to use SMUD's generation capacity on existing and future solar farms tens and hundreds of miles away to forgo installing solar on-site. The material result of this – the buildout of utility-scale solar in rural areas – would be indistinguishable from increasing California's Renewable Portfolio Standard mandate. It brings into sharp focus the question of what California is accomplishing with the new home solar mandate, should SMUD's proposal be approved. Furthermore, SMUD's SolarShares program would prevent the benefits of distributed generation to the environment, the grid, consumers, and the broader community – from materializing. If the Commission accepts SMUD's proposal, we could expect other utilities to submit similar proposals, undermining the vision of building smart clean energy homes.

The Energy Commission included community solar as a compliance option to meet the solar mandate in the 2019 Building Energy Efficiency Standards for multiple reasons. One was to encourage community solar programs and prevent roadblocks that would inhibit their development. One could argue over whether developing a community solar market in California is the role of the Energy Commission, or the appropriate side benefit of building energy

efficiency standards. However regardless, SMUD's proposal raises serious questions about whether the vision of developing true community solar markets in California is being achieved.

While the community solar compliance language was broadly framed, it was the understanding of multiple stakeholders who took part in the code development process that the Commission would later refine how the code would be implemented to preserve the original intent of the solar mandate – namely, that the majority of new homes would be built with on-site solar – while also enabling a limited compliance alternative off-site. However, it was never the intent of the Commission to enable the alternative community solar option to become the primary method of compliance by regulated entities. If this were the case, there would be no need for a solar mandate in the building standards as regulated entities could merely point to the renewable portfolio standard (RPS) resources to satisfy their compliance obligations.

SMUD's SolarShares proposal marks the first application the Commission has received for a community solar program. The decision of whether to approve, deny, or request changes to SMUD's proposal will set the precedent for the types of programs that are acceptable to the Commission and be a signal to other utilities considering submitting similar proposals. For these reasons, we request the Commission use SMUD's proposal as an opportunity to review the Commission's vision of community solar and the standards community solar must meet to satisfy the requirements of the solar mandate and achieve the vision.

It must also be pointed out that SMUD's SolarShares proposal does not exist in a vacuum. Six months prior to their submittal of this proposal, SMUD staff proposed a net energy metering (NEM) successor tariff that would have severely reduced, if not eliminated, the financial benefits of behind-the-meter solar and energy storage in SMUD territory for new construction and retrofit projects alike. The staff proposal was so extreme that the SMUD board ordered it be removed from consideration and that staff create a community stakeholder group, go back to the drawing board, and present a revised NEM successor tariff in 2020 or 2021. It is troubling that SMUD staff are now proposing an alternative compliance plan for meeting the new home solar mandate that would further undermine the development of distributed generation. As the Energy Commission leads the way on implementing SB 100 and California's 100% clean energy goals, it is of great importance that the agency take a hard look at how the SolarShares proposal before you today fits into the state's larger clean energy goals, how distributed generation fits into the viability of the state's deep decarbonization efforts, and the role of building smart energy homes.

We have laid out our concerns with SMUD's proposal below.

Issue #1: The SolarShares proposal does not qualify as a community solar program.

According to the Energy Commission's *Frequently Asked Questions* on the 2019 Building Energy Efficiency Standards, "community-scale PV systems can range from a few kW to a few MW."[1] These limits match the industry's classification of community-scale solar.

SMUD's solar farms in their SolarShares program exceed these limits. Out of the resources listed in SMUD's SolarShares application, the majority of the existing and future capacity comes from systems larger than a few megawatts (MW), including Rancho Seco II (160MW), Great Valley Solar 2 (SMUD's portion is 60MW), and Wildflower (13MW).[2]

Additionally, while the Energy Commission has not established a ceiling on the distance between a home and a solar project for the project to be considered "community solar," the Great Valley Solar 2 project, which is 135 miles outside SMUD's service area, clearly sits outside the community, and should not be considered "community solar."[3]

While the Energy Commission has not clearly defined "community solar," other government bodies that have defined "community solar" would not classify SMUD's SolarShares program as such. In Colorado, for example, community solar projects must be no larger than 2MW.[4]

SMUD's large solar farms, some of which are far from the communities they serve, that the utility is considering as community solar, are in line with the Commission's classification of utility-scale solar, not community-scale solar. According to the Commission:

> *Utility-scale PV systems may be up to 500 megawatts (MW) or larger. The benefits include installed equipment costs that are less expensive per watt ($1.05 to $1.20 per watt) than an onsite rooftop system, and reduced system-wide CO2 emissions. The challenges include acquiring large plots of land, long transmission, distribution, and transformer infrastructure; and time consuming, and expensive environmental impact reports. The systems can also negatively impact sensitive wildlife habitats.*[5]

Issue #2: The SolarShares proposal fails the "additionality" criterion for a community solar program to be approved by the Commissioners.

The intent of the "additionality" criterion (see section 10-115 of the *2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*) is to ensure that a builder choosing the community solar program for a new home will result in the generation of new solar energy equivalent to the building's loads (assuming a mixed-fuel house). The pertinent language from the criterion is, "a community shared solar electric generation system… shall be designed and installed."[6] SMUD's SolarShares proposal fails this criterion because some of the generation systems have already been installed. The pertinent language from SMUD's proposal is, "SMUD will supply the SolarShares generation from a portfolio of existing solar resources and resources under development."[7] SMUD's existing solar capacity that is available to be reallocated to the SolarShares program totals 160MW, which can power approximately 57,500 2,000-square foot single-family homes.[8] As a point of comparison, Sacramento County, the area of which closely aligns with SMUD's service territory, added 4,200 homes (single-family and multi-family units) in 2018.[9]

SMUD's statement that its SolarShares generation allocation for participating homes will not be allocated for other purposes, such as renewable portfolio standard (RPS) compliance or resale of renewable energy certificates (RECs), does not affirm that the program will result in the creation of additional solar capacity.[10] For example, according to SMUD's application, "Output from the [feed in tariff] projects is currently allocated to SMUD's RPS and existing SolarShares programs, but will be reallocated to the *Neighborhood SolarShares Program* as needed as participating homes are built and become occupied."[11]

The "additionality" criterion's language that reflects that homes in the community solar program cannot use existing systems to meet the mandate matches the language in the *Residential Compliance Manual* that reflects that homes cannot use existing systems to meet the mandate. The pertinent language is, "all low-rise single family and multifamily buildings are required to have a PV system installed."[12] Without this language, a new detached in-law unit would be able to use existing solar on the main house to meet the solar requirements.

Issue #3: The SolarShares proposal fails the "equivalent benefits" criterion for the program to be approved by the Commissioners.

Section 7.4.1 of the *2019 Residential Compliance Manual* states, "entities who wish to serve as administrators of a proposed Community Shared Solar Electric Generation System must… ensure that the Community Shared Solar Generation System provides equivalent benefits to the residential building expected to occur if photovoltaics or batteries had been installed on the building site."[13]

SMUD's application does not meet this criterion for the following reasons:

- The SolarShares program offers homes poor financial benefits compared to the benefits they would receive with on-site solar. SolarShares offers $5/kilowatt/year in net financial benefit assuming the builder does not pay an upfront buydown.[14] The average net financial benefit for onsite solar built to meet the new home solar mandate is $420/year.[15]
- Whereas on-site solar protects homes from rate increases, the SolarShares program does not protect homes. Because of the nature of net energy metering for on-site solar, if the retail rate increases, so too will the export rate, and the bill will remain relatively unchanged.[16] Homes enrolled in the SolarShares program are not insulated from rate increases because the SolarShares program does not offset electricity usage and costs on bills.[17] For homes enrolled in SolarShares, if rates increase, bills will increase accordingly.
- One benefit of on-site solar is that, when paired with storage, it provides residents with power when the grid goes down. As utilities continue planned power shutoffs, wildfires continue to cause blackouts, and the price of energy storage systems declines, more customers will seek batteries for their back-up power. If the property does not have on-site solar as of a result of the SolarShares program, the customers will receive far less benefit from their energy storage systems.

Issue #4: The SolarShares proposal does not provide sufficient information for the Commissioners to ensure that the program will meet the "energy performance" criterion.

The intent of the "energy performance" criterion (see section 10-115 of the *2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*) is to ensure that for homes enrolled in the community solar program, and thereby have forgone on-site solar, that the community solar program generates energy for those homes that would have been generated by on-site solar. The pertinent language from the criterion is, "the community shared solar electric generation system… shall be demonstrated to provide the same or better energy performance equal to… the compliance with the energy performance of the onsite solar electric generation."[18] Since the solar mandate requires builders to size on-site systems so that the total electricity generated equals the total electricity consumed (assuming a mixed-fuel home and certain energy consumption behaviors), this criterion ensures that the loads for a home in the community solar program are met by community solar, and the utility will not need to rely on additional generation.

SMUD's SolarShares proposal does not provide sufficient information for the Commissioners to ensure that the program will meet the energy performance criterion because the application does not discuss if or how SMUD will account for line loss during transmission and distribution. While we do not have a figure for line loss in SMUD, the estimated statewide line loss is 5.72 percent.[19]

Issue #5: The SolarShares proposal will negate many of the benefits of distributed generation, undermining the state's ability to meet its 100% clean energy goals.

According to the Commission:

> *The benefits of [onsite or rooftop PV] systems are that they do contribute to CO2 reduction from building loads, they do not require land acquisition (the roof is existing and available for PV deployment at no additional cost) or additional transmission and distribution infrastructure because the system is close to the load it serves. As part of a local distributed energy resource (DER) system and because of the proximity to the loads it serves, an onsite PV system, once coupled with smart inverters, demand response, and a battery storage system, can enhance grid reliability and resilience. The benefits of a DER system include providing ancillary services (frequency and voltage regulation) and improved reliability during grid failures, natural disasters, and wildfires. Further, the distributed nature of small generation systems reduces the grid's overall vulnerability to cyberattacks. Onsite efficiency and PV systems allow building occupants to save each month on their utility bills, making home ownership more affordable.*[20]

As the solar subscriptions for a new home customer in SMUD's SolarShares program will come from large utility-scale solar farms, some of which will be far from their home (see Issue #1 section above) the SolarShares program will not lead to most all of the benefits listed above.

As we add new loads to the grid through building and the transportation electrification and new construction, placing clean energy generation close to consumption – via distributed generation solar – will help California achieve its renewable energy goals without overbuilding transmission and distribution infrastructure. Each home that forgoes on-site solar and enrolls in the SolarShares program will not play the role it potentially could in supporting the grid's transition to clean energy.

Issue #6: The SolarShares proposal will undermine the Commission's efforts to promote energy storage as a critical component to the state's 100% clean energy goals.

To reduce peak demand and the need for peaker plants, in the 2019 Building Energy Efficiency Standards the Commission made energy storage systems eligible for building envelope compliance credit. As a result, we should see the increased adoption of energy storage systems in new homes. However, if a new home meets the solar mandate through a community solar option, the home will be ineligible to receive compliance credit for including storage on-site.[21] Consequently, it is unlikely that new homes enrolled in SolarShares will be built with energy storage systems.

Issue #7: The SolarShares proposal will harm the distributed generation solar market.

Since SMUD's basic option under SolarShares has no upfront cost and SMUD provides a $5/kilowatt/year benefit to enrolled customers, SMUD will be collecting less revenue from these customers compared to typical customers.[22] The lost revenue will be compounded by the additional expenditures of administering the program. This attempt to gain market share despite the poor financial upsides for SMUD is anti-competitive and monopolistic and will hurt local solar business. The many builders that have submitted public comments to the Energy Commission in support of the SolarShares proposal is evidence that business likely will be diverted away from the distributed generation solar market. This is especially egregious in light of SMUD's recent staff proposal to charge existing and future customers with on-site solar and storage a flat monthly fee based on the capacity of the solar panels on the roof.

Adding insult to injury, the SolarShares builder agreement will inhibit many customers from installing on-site solar in the future. The agreement technically allows the customer to install on-site solar, but the SolarShares generation must be credited to the bills before the rooftop solar is credited.[23] Additionally, a building's SolarShares subscription is sized to generate energy equal to the building's consumption (assuming a mixed-fuel home), and a home enrolled in the SolarShares program will be prohibited from withdrawing from the program for 20 years.[24] Current and future homeowners will therefore not be allowed to install on-site solar given net

metering rules dictating that customers cannot size systems that exceed the energy needs of the home. The SolarShares program also will harm the energy storage segment of the market, because as previously stated, the SolarShares program discourages energy storage.

As detailed previously, on-site solar and storage can help California achieve its renewable energy goals. To that end, a strong distributed generation solar industry is important, but SMUD's proposal will hurt the market in the Sacramento region.

The SolarShares program will have an outsized impact on the solar industry that works in multifamily housing because SMUD has stopped offering a virtual net energy metering (VNEM) tariff necessary to the deployment of on-site renewable energy on multi-family housing projects. VNEM allows the energy generated by a single solar system on a multifamily home to be virtually credited to residents' bills. Without VNEM, a 100-unit apartment would need 100 individual solar systems with 100 conduit runs, meters, and other hardware, increasing installation costs by approximately 40 percent. Under these circumstances, we believe most builders of large multifamily homes would enroll their projects in the SolarShares program.

Issue #8: The SolarShares proposal does not provide sufficient information for the Commissioners to ensure that the program will meet the "dedicated building energy savings benefits" criterion.

The SolarShares program guarantees a $5/kilowatt/year net benefit, which is calculated by subtracting the SolarShares charges from the SolarShares credits.[25] SMUD's proposal states that "a participating builder may agree to an up-front payment to SMUD in order to provide higher net benefits in each year."[26] If the up-front payments exceed the total value of the net benefits, the SolarShares program would not meet this criterion, which states "that building's energy bill [savings]… shall be greater than the added cost to the building resulting from the building's share in the community shared solar."[27] Since SMUD does not provide information on the size of the up-front payments that correspond to higher net benefits, the Commissioners do not have the information needed to ensure the program meets the criterion.

Conclusion: The Commission should disapprove SMUD's SolarShares program and review its vision for community solar.

As previously stated, the Commissioners should disapprove SMUD's SolarShares application. The SolarShares proposal fails to meet the criteria a community solar program must meet to be approved by the Commission. Also, the proposal jeopardizes the new home solar mandate and negates many of mandate's benefits to customers, the grid, and the environment. Instead, the Commission should use SMUD's proposal as an opportunity to review its vision of community solar and the standards community solar must meet to satisfy the requirements of the solar mandate and achieve this vision.

In reviewing the Commission's vision of community solar, we will be able to answer key questions to chart a path forward for community programs in the Building Energy Efficiency Standards. These questions include how close should the array be to the home, what should the benefits be to homeowners, what should the benefits be to the grid, who owns and controls the array, and more. We look forward to working with the Energy Commission on these important policy initiatives.

Thank you for your consideration of our comments.

Sincerely,

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About the California Solar & Storage Association (CALSSA): Since 1977, the California Solar and Storage Association has advanced the common interests of the solar industry, helping make California's solar market the most robust in the United States. Comprised of 500 contractors, manufacturers, distributors, developers, engineers, consultants and educational organizations, CALSSA represents a diverse membership committed to growing the California solar industry, including storage and solar thermal technologies. CALSSA engages with local and state decision makers to ensure California remains a solar energy leader through good public policy and regulations that provide clarity, transparency, and certainty.

About the Solar Energy Industries Association (SEIA): SEIA is the national driving force behind solar energy. We are building a strong solar industry to power America through advocacy and education. As the national trade association in the U.S., we represent all organizations that promote, manufacture, install and support the development of solar energy. SEIA works with its 1000-member companies to champion the use of clean, affordable solar in America by expanding markets, removing market barriers, strengthening the industry and educating the public on the benefits of solar energy.

Endnotes

[1] California Energy Commission, *Frequently Asked Questions: 2019 Building Energy Efficiency Standards*, page 4, accessible at https://ww2.energy.ca.gov/title24/2019standards/documents/Title24_2019_Standards_detailed_faq.pdf.
[2] SMUD's Community Shared System Application, pages 18-22.
[3] SMUD's Community Shared System Application, page 21.
[4] Colorado House Bill 10-1342, section (2)(b)(I)(A), accessible at https://leg.colorado.gov/sites/default/files/images/olls/2010a_sl_344.pdf. Note: this is not an endorsement of Colorado's definition of community solar.
[5] California Energy Commission, *Frequently Asked Questions: 2019 Building Energy Efficiency Standards*, page 4, accessible at https://ww2.energy.ca.gov/title24/2019standards/documents/Title24_2019_Standards_detailed_faq.pdf.
[6] California Energy Commission, *2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings,* section 10-115(a)(4).
[7] SMUD's Community Shared System Application, page 3.
[8] "The SolarShares program totals 160MW": SMUD's Community Shared System Application, page 18. "Can power 57,000 2,000-square foot single-family homes" uses the prescriptive formula (KW = CFA x A)/1000 + (NDwell x B)), which sets the system size in climate zone 12 (which includes Sacramento County) at 2.6kW. We also assumed a 6 percent line loss. The prescriptive formula is available, California Energy Commission, *2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings,* page 284.
[9] Tony Bizjak and Michael Finch II, "Sacramento builds more homes than any California city north of LA. See where other cities rank," *The Sacramento Bee,* 14 May 2019.
[10] SMUD's Community Shared System Application, page 8.
[11] SMUD's Community Shared System Application, page 18.
[12] California Energy Commission, *2019 Residential Compliance Manual for the 2019 Building Energy Efficiency Standards*, section 7.2.1.
[13] California Energy Commission, *2019 Residential Compliance Manual for the 2019 Building Energy Efficiency Standards*, section 7.4.1.
[14] SMUD's Community Shard System Application, page 14.
[15] $420 in annual net benefits derived from multiplying the monthly net benefit ($35) by 12. California Energy Commission, *Frequently Asked Questions: 2019 Building Energy Efficiency Standards*, page 2, accessible at https://ww2.energy.ca.gov/title24/2019standards/documents/Title24_2019_Standards_detailed_faq.pdf.
[16] "The bill will remain relatively unchanged" because if the retail rate increases more than the export rate, customers' bills will increase, though significantly less than if they did not have solar.
[17] SMUD's Community Shard System Application, pages 12 and 13.
[18] California Energy Commission, *2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*, section 10-115(a)(2).
[19] Information on how to calculate line loss in California are available at U.S. Energy Information Administration, *Frequently Asked Questions: How much electricity is lost in electricity transmission and distribution in the United States,* available at https://www.eia.gov/tools/faqs/faq.php?id=105&t=3
[20] California Energy Commission, *Frequently Asked Questions: 2019 Building Energy Efficiency Standards*, page 4, accessible at https://ww2.energy.ca.gov/title24/2019standards/documents/Title24_2019_Standards_detailed_faq.pdf.
[21] Personal communication with Mazi Shirakh, August 22, 2019.
[22] Note: Builders can opt to pay a "buydown" at the beginning of the program, which would increase the monthly benefits for customers. We use the phrase "basic option under SolarShares" to refer to instances in which the builder has not paid a buydown.
[23] SMUD's Community Shared System Application, page 34.
[24] SMUD's Community Shared System Application, page 8.
[25] SMUD's Community Shared System Application, page 14.
[26] SMUD's Community Shared System Application, page 15.

[27] California Energy Commission, *2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*, section 10-115(a)(3).