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Benefits of Distributed Solar

Additional submitted attachment is included below.

Docket No. 22–IEPR–02 —Comments on Draft Staff Report on Land Use Screens for Electric System Planning and Mapping

Dear Energy Commission Members, These comments are being submitted late by Basin and Range Watch because one of the members of the organization had long covid and was not able to meet the deadline.

Land-Use Screens for Electric System Planning Draft Staff Report and the Process, Methods & Recommendations presented at the workshop on October 10, 2022.

The report and process could avoid impacts to important cultural and biological resources, public land values and access and personal safety by including distributed energy, rooftop and parking lot solar, brownfields, old agricultural and mine sites in the planning and mapping.

Benefits of Distributed Solar

There are numerous benefits that distributed solar systems on rooftops can provide to everyone on the grid.

For example, rooftop/parking lot/distributed solar can reduce grid congestion and increase reliability. Aggregated **Distributed Energy Resources (DER)** can provide grid services such as dynamic capacity and peak shaving, flexible ramping, frequency regulation, voltage and reactive power support, and more. DER can offer increased reliability and resiliency by deploying energy storage to provide backup power during routine outages.

In late June 2016, power outages were planned by SCE in southern California during a heat wave and 16,000 customers had their electricity shut off after work and all night until 6 am. In 2022, solar projects are curtailed every day to keep the California grid stable. But having a large distributed network of solar arrays on rooftops, parking lot shade canopies, and commercial buildings could

potentially offer a reduction in peak use, especially if combined with distributed energy storage batteries. Peak use of electricity has shifted into the late afternoon hours and early evening time, and a PV-battery combination could help to shave off this peak extreme usage that tests the usual central-station power plant portfolio of the utilities in large population urban areas. NEM is the type of policy that should encourage increased DER build out to benefit grid peak usage. Hindering rooftop solar incentives is going backwards to modernize the grid.

Distributed solar also reduces the need for costly new transmission projects (which are paid for by utility rate increases to all customers), with associated loss of electricity on the lines. Large-scale solar PV projects are often hundreds of miles distant from load centers, and even though prices of electricity sold to the utility may be slightly less because of economies of scale of the projects, the inefficient loss of electricity on the lines across the state, and capital needed to construct these large transmission lines should all be factored into any comparison of cost shift. The cost of new and upgraded large 500 kV transmission lines stretching across deserts to the urban coastal cities in California from remote utility-scale solar and wind projects should be considered as a burden ratepayers would not have to pay if more homeowners subscribed to NEM programs. Are NEM solar rooftop generators receiving a double grid interconnection and maintenance fee unfairly, since they already pay for transmission upgrades? Utilities can defer some distribution upgrades as more local residences switch to rooftop solar.

Distributed solar and DER reduce the need for construction of more natural gas power plants, especially peaker plants (which can cost $900 million) and likely only needed for a few months of year. Under NEM, homeowners buy the solar systems themselves or through leasing companies, saving the general ratepayers money through reduced utility need for new power plants and capital campaigns.

Distributed solar helps move utilities toward their Renewable Portfolio Standard goals without upfront cost to.

Distributed solar values low volume users and energy efficiency. With climate change a pressing global problem, anything we can do to lower CO2 emissions should be encouraged.

There is also a value to the net excess energy generated by NEM grid-connected solar systems which needs to be discussed much more. This excess electricity the home does not use is fed back to the grid and resold by the utility to all customers,

including those without rooftop solar. What is the value of this excess energy? Should it be valued higher since it often coincides with peak usage?

Avoided land use is a very important benefit of placing photovoltaic panels on rooftops in the built environment. Currently there are several utility-scale PV projects that have been built or are under construction on desert ecosystems that have had to be cleared of native plant communities and wildlife, and graded, with accompanying stormwater berm and channel earthworks, new or upgraded transmission lines and substations that fragment habitat for wildlife further. A large percentage of these solar projects are on public lands, which removes these lands from other public uses and significantly impacts resources. Many of these PV projects are 2,000 to 4,000 acres in extent. These same PV panels could be distributed on rooftops. These public lands have immense biological and cultural value and should be conserved.

Submitted by Kevin Emmerich, Co-Founder

Basin and Range Watch

P.O. Box 70

Beatty, NV 89003