

Hello, I'm Rich Harkness, the author of that whitepaper on remote solar I hope you've had a chance to look at. I'll explain why it seems relevant and timely to Cal-ISO shortly.

By way of background, I'm retired from doing new business and strategic planning at Stanford Research Institute, IBM and Boeing. I've written a book about global warming. Last year I wrote a paper showing that utility-scale solar is about 6 times more cost-effective than rooftop solar per unit of power produced. That fact isn't in the literature and I think very few know the difference is so large.

To take advantage of it I analyzed a scenario where homeowners could purchase solar panels and battery storage in utility-scale solar farms and export that energy into the grid to offset the grid energy used at home. The homeowner would just pay for transmission and distribution.

It took about 6 months to get the data and construct a financial model but the results were dramatic. I estimated that a remote solar system capable of generating as much power as the average California home uses each year would only cost about \$4200, payback in 3.3 years and have an ROI of about 30%. About half that \$4200 is for battery.

I suspect many folks would voluntarily invest some of their savings in something that gets a 30% ROI, so remote-solar could be a way to reduce electric bills while significantly and painlessly increasing the funding for solar.

So why is this especially relevant to Cal-ISO?

You have identified the so called "duck curve problem" and my whitepaper shows how remote solar could help mitigate it. It does this because the PUC could require remote-solar to include battery storage, and at \$4200 the combined package of array+ battery would still be a very attractive investment.

In conclusion I hope Cal-ISO will do two things:

First, ask your technical folks to carefully review my whitepaper and see if they agree with my analysis.

Second, the PUC is currently making rules for community solar and remote solar may fit under that umbrella, although it's very different in how the homeowner is compensated. Remote-solar envisions the homeowner owning the power and just paying the utility to transport it, whereas community solar apparently requires the homeowner to sell his power to the utility who then credits his electric bill for it, perhaps on the basis of avoided cost. I suspect remote solar would be cheaper, gain wider acceptance, save more GHG, and better mitigate the duck curve problem. But we don't have the data.

Therefore Cal-ISO might request that the PUC determine the capital cost, and ROI for community solar so the costs can be compared. And Cal-ISO might also suggest that the PUC consider including remote-solar in their current rule-making.

Thanks very much for your consideration. I would very much appreciate your comments.

Oral comments to CAISO meeting on May 23, 2024

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