Comments following 2/8/24 workshop on R.21-06-017 Track 2

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February 22, 2024

Dear GridWorks team,

When I made my presentation at the February 8 workshop, I became concerned about the time and so ended my verbal discussion before going through the last few slides of my deck. These last few slides contain important points, however, so I am providing some comments here that I would have made during the workshop had I not felt time-constrained, so that these points can be reflected in your forthcoming workshop report.

My slides 7-13 address the seven goals listed in the central question posed for the workshop. During my workshop presentation I stopped speaking after slide 9 because I was concerned about the time. Here are my comments on slides 10-13, describing the ways the "open-access transactive distribution network" I'm proposing will advance the Commission's goals. The common theme to all seven goals (slides 7-13) is that the transactive network enables DER owners to earn the financial benefits of utilizing the full performance capabilities of their DERs to advance these goals.

Slide 10, Support Grid Resiliency. Resiliency is generally framed in terms of strengthening the grid to reduce the probability of outage under extreme climate events. The often overlooked aspect is to recognize that grid outages are inevitable as climate disruption events get more severe and less predictable. Most people in the industry are aware of the resilience benefits for customers served by a microgrid. But microgrid development has been very limited to date due to the lack of commercial opportunities for developers of the grid-forming resources that could power a microgrid during islanded operation.

A lesser-known resiliency benefit of DERs is to enable layering of the operational architecture at different levels of the distribution network, so that circuits and sections of circuits can be islanded to prevent local failures of network assets from propagating into large-area power outages.

Slide 11, Limit Market Power. To realize the benefits of DERs we must be concerned about market power on the part of the distribution utilities or DSOs as well as that of individual DERs. The potential for DSO market power arises from two main sources.

(1) The DSO's control of essential or "bottleneck" assets to which DER owners, developers and aggregators must have non-discriminatory access at reasonable transaction costs in order to have an efficient transactive market. The distribution network itself is one essential asset, and access involves both the interconnection process, where procedural timelines and costs can be a barrier, and real-time operation, where DSO curtailment of DER activity for reliability needs must be transparent and non-discriminatory (as required by FERC Order 2222 for DERs participating in the CAISO market). Network and customer data comprise another essential asset, which the utilities control by virtue of their roles as network operator and metering and billing agent.

This work was composed on the ancestral land of the Patwin people. Today there are three federally recognized Patwin tribes: Cachil DeHe Band of Wintun Indians of the Colusa Indian Community, Kletsel Dehe Wintun Nation, and Yocha Dehe Wintun Nation.

(2) The ability of the incumbent utility to leverage its monopoly position as network operator to have an anti-competitive advantage in competitive services. A current example of this is utility ownership and operation of EV charging facilities as rate-based assets. EVs and their charging technologies are a rapidly-evolving competitive arena, in which ratepayers will be better off if private companies take on the technology and commercial risks. Ratebasing charging facilities reduces a utility's costs of providing EV charging services to the detriment of the competitive market and imposes risks such as performance and obsolescence on ratepayers.

As the Commission proceeds to develop the design of the open-access transactive network it will need to address these DSO market power concerns in its DSO regulatory framework.

The potential locational market power of individual DERs seems analogous to the well-known issue in the CAISO wholesale markets, where a unique generator located in a constrained load pocket of the grid could inflate its price when the local demand exceeds the capacity to import energy from the rest of the grid. A key factor in this situation has been the lack of competition for the strategically-located generator. The difference for DERs, in the context of the open-access transactive network, is the easy entry of competitive alternatives in the form of aggregations of customer DERs. A core function of the DSO would be to conduct competitive procedures or tariffs to procure grid services to meet operational needs at a locationally granular level.

Slide 12, Meet State Policy Objectives. This slide lists four salient state policy objectives whose achievement will be accelerated by enabling commercial viability of local supply and storage resources: electrification (to decarbonize energy services that currently rely on fossil fuels); reduced use and retirement of fossil peakers; community energy resilience; and energy equity through the economic benefits of democratized ownership of local resources.

Slide 13, Efficiently Operate a High-DER Grid. I placed this one last in the deck, even though it was listed first in the question posed for this workshop, because the prior six goals all support this one. Efficient grid operation is enhanced by the open-access transactive network because DER owners will have transparent, predictable opportunities to provide and be compensated for grid services, which will incentivize them to offer the full performance capabilities of their DERs to support grid operation. In particular, DER aggregators can be rewarded for the avoided grid infrastructure costs of flattening peak loads and peak solar production profiles (the "ducklings") at various levels of the system, from an individual circuit segment up to the T-D interface with the CAISO system. Such services can increase circuit hosting capacities without having to upgrade the grid infrastructure.

Ultimately the greatest value of DERs for the electricity system as a whole, to be unleashed by an open-access transactive network, will be to substitute DER deployment for costly grid infrastructure investment at both distribution and transmission levels, and to do this with private capital investment and risk-taking rather than escalating utility rates.