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BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resources Future .	Rulemaking 21-06-017 (Filed June 24, 2021)

COMMENTS OF MICROGRID RESOURCES COALITION ON THE ORDER INSTITUTING RULEMAKING TO MODERNIZE THE ELECTRIC GRID FOR A HIGH DISTRIBUTED ENERGY RESOURCES FUTURE

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I. Introduction

The Microgrid Resources Coalition ("MRC") respectfully files its comments in response to the Commission's invitation in its R. 21-06-017 Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resources Future issued on June 24, 2021 (the "High DER OIR"). The MRC appreciates this opportunity to assist in formulating the issues for this important and timely proceeding.

The MRC is a consortium of leading microgrid owners, operators, developers, suppliers, and investors formed to advance microgrids through advocacy for laws, regulations and tariffs that support their access to markets, compensate them for their services, and provide a level playing field for their deployment and operations. In pursuing this objective, the MRC intends to remain neutral as to the technology deployed in microgrids and the ownership of the assets

that form a microgrid. The MRC's members are actively engaged in developing microgrids in many regions of the United States including many who are actively engaged in microgrid development in California.[1] MRC members have also been operating sophisticated microgrids over an extended period of time (some for over 30 years). They are at the cutting edge of microgrid technology.

The mission of the MRC is to promote microgrids as energy resources by advocating for policy and regulatory reforms that recognize and appropriately value the services that microgrids offer, while assuring non-discriminatory access to the grid for various microgrid configurations and business models. We generally support disaggregated, fair pricing for well-defined services both from the grid to microgrids as well as from microgrids to the grid. We promote community-based resilience standards and support utilities that are working toward new business models that value resilient distributed resources. We work for the empowerment of energy customers and communities.

II. Background

The MRC appreciates the work that has gone into the Distribution Resources Planning (DRP) and Integrated Distributed Energy Resources (IDER) proceedings at the Commission to-date and the MRC is supportive of consolidating issues related to distributed energy resources (DERs) and advanced distribution system planning to this new High DER Future rulemaking.[2] The predecessor rulemakings have helped to understand the changes to the utilities' distribution grids required to better manage a high volume of DERs on the grid and explore new sourcing mechanisms for DERs that can provide value to the distribution grid. As examples, the Integrated Capacity Analysis (ICA) and PV Renewable Auction Mechanism (PV RAM) maps, the Locational Net Benefits Analysis (LNBA) and Grid Needs Assessment (GNA) reports[3] have provided greater visibility into the utilities' distribution planning processes, identified available

[1] Members of the MRC include Bloom Energy, eco(n)law, Emory University, Engie, Icetec, Mainspring Energy, Princeton University, Reimagine Power, Resilience Plus, Scale Microgrid Solutions, Schneider Electric, University of Missouri and the University of Texas at Austin. The MRC's comments represent the perspective of the coalition and should not be construed as speaking for individual members.

[2] R.14-10-003 Integrated Distributed Energy Resources and R.14-08-013 Distribution System Planning

[3] https://www.pge.com/en_US/for-our-business-partners/distribution-resource-planning/distribution-resource-planning-data-portal.page

hosting capacity of the distribution grid at various locations, and enabled DER developers and customers to better plan for interconnection costs and timelines. These tools help in assigning locational value to DERs sited at beneficial points along the distribution system to reduce stress on the bulk system and the need for costly infrastructure upgrades.

Concurrently, the MRC has been an active participant in R. 19-09-009 relating to microgrids and resilience (M&R). In that proceeding we have sought to raise many of the issues, including DER access to the grid, fair pricing for services to and from DER, empowering customers and communities, including customers in disadvantaged communities, to plan for and invest in DER, and reimagining grid architecture, that are raised by the proposed questions in the High DER OIR.

The Commission outlined aspirational goals for this proceeding in its Proposed Decision closing the DRP rulemaking:[4]

> *Through the adoption of these various decisions, the Commission has established four key working principles for the DRP proceeding: (1) start with a comprehensive, scenario-driven, multi-stakeholder planning process that standardizes methodologies and data requirements to identify locational benefits and costs; (2) move the distribution system towards an open, flexible, and node-friendly network (rather than centralized and linear) that enables seamless DER integration; (3) California's electric distribution system operators (DSOs) should act as a technology-neutral marketplace to coordinate situational awareness and facilitate information exchange while avoiding conflicts of interest; (4) expedite DER participation in wholesale markets and resource adequacy (RA), unbundle distribution grid operations, create a transparent process to monetize DER services, and reduce unnecessary barriers for DER integration.*

Respectfully, if these four key principles and the statement above truly represent the goals and vision of this Commission for California's energy system, its aspirations are far bolder than its actions thus far. It is the MRC's view that the Commission has been focused too heavily on planning around the 20th century incumbent monopoly utility model of energy management and has not focused enough on *empowering customers and communities* to take control of their clean energy and resilience needs. Those communities and customers are eager to see the vision implemented, and the DER industry is ready and willing to serve Californians and the

[4] R.14-08-013 Proposed Decision issued August 6, 2021, to close Distribution Resources Planning, pg. 14-15

Commission in realizing this vision. The MRC encourages the Commission to keep these four guiding principles front and center of all decision-making in this proceeding and others.

The Commission needs to break the stranglehold of last century's premises that customers are passive consumers of one-way power flow, and that the incumbents are the only entities capable of providing safe, reliable, affordable electric service. The Commission should be promoting and encouraging a transactive clean energy future where all customers and communities have a role and choice in how they participate in our energy system. So far, the DRP, IDER and M&R proceedings have produced cautious reforms and limited pilot programs. The hard work to develop *robust, fair value* price signals and markets for grid services from DERs, including customer microgrids, by the Commission and stakeholders is still in its infancy. California needs to move towards full scale commercialization and valuation of DERs, which requires standardized tariffs and rates for grid services that are readily available to all customers. Given the current crises affecting both resource adequacy and resilience[5] and the climate crisis that was clearly spelled out in the recent IPCC report,[6] baby steps forward on are simply no longer enough.

III. Summary of Comments

In this proceeding, the Commission should strive to lay the foundation for California's grid of the future, which will require laying out the policy goals and objectives the state is trying to achieve in the next 20 years. We recommend that the following areas be addressed.

Grid Architecture, Integrated Planning. We believe that ratepayers in California will be best served by a grid that takes full advantage of third-party investment in DERs coupled with utility investment in the distribution system that allows effective contributions from DERs. Planning for multilevel optimization of grid investment will permit grid operation that makes optimal use of resources at all levels to reduce costs for all ratepayers. Grid architecture is critical because function will be constrained by form. Not only the regulatory path but also the physical infrastructure for customers and communities to invest in and operate DERs to meet their own

[5] Governor Newsom Emergency Proclamation on Energy Capacity and Wildfires; July 9, 2021 https://www.gov.ca.gov/2021/07/09/governor-newsom-takes-action-to-increase-energy-capacity-amid-heat-wave-and-disruption-to-regional-transmission-system-due-to-oregon-wildfire/

[6] Intergovernmental Panel on Climate Change, Sixth Assessment Report, August 9, 2021; https://www.ipcc.ch/report/ar6/wg1/

goals must be established. The planning process should integrate state goals for resilience and decarbonization along with operational efficiency. Planning for resilience and safety includes reducing reliance on long-distance transmission to the extent practicable. Planning for decarbonization requires adopting consistent grid-wide standards for DER operation that complement California's cap and trade system and CARB guidelines to give customers and communities clear guardrails for DER investment.

Obligation to Serve. The traditional utility obligation to serve was conceived as an egalitarian principle that the utility would take on all customers including those of limited means. It has slowly metamorphosed into an obligation to serve all the needs of all the customers all of the time, no matter how extravagant. The utilities plan for peak load as if electricity is an unlimited right. While this effort is predictably and visibly failing, it means that low-income customers are paying for a grid built to accommodate the lifestyles of the wealthy.[7] While the utilities should plan for load growth to accommodate decarbonization through TE and building electrification, they should plan the peak rather than plan for the peak. Load shaping should take place on a distributed basis and is as important a product as energy itself. We suggest a requirement that high users have the capability to shed load.

DSO Implementation. The MRC strongly supports the evolution of utilities into DSOs. This will require adoption of appropriate performance incentive mechanisms to encourage the transition to a new business model that focuses more on facilitating transactions as a platform network service provider than being compensated for new infrastructure investments.[8] To do this the DSOs must price the use of the distribution system in a manner similar to CAISO pricing of the transmission system. These and other developments will break down monopoly pricing on power, and the utility business model should not depend on marking up energy costs. The Commission, in turn, cannot rely on utilities to single-handedly manage resource adequacy or generation decarbonization.

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[7] Utility Costs En Banc analysis uses high-use customer as the model.

California Public Utilities Commission Report: *Utility Costs and Affordability of the Grid of the Future* February 2021; https://www.voiceofsandiego.org/wp-content/uploads/2021/02/Feb-2021-Utility-Costs-and-Affordability-of-the-Grid-of-the-Future.pdf

[8] Hawaii's Performance Based Regulation (PBR) docket 2018-0088 was cited in the scoping memo and can serve as a roadmap for transitioning California utilities to a new model without reinventing the wheel

Transparent Pricing. A multilevel planning and investment regime will only operate effectively with transparent, consistent pricing at all levels. Clear long-term price policies allow customers and communities to invest in DERs with confidence. Both customers and utilities should pay market or fair value for identified and quantifiable services provided by the other. In particular, a customer's contribution to grid load shape should be charged or rewarded at market prices whether delivered in the form of exported energy or demand response. All distribution flows, positive or negative should be charged distribution costs, and solar without storage or other buffers should pay for ramping costs imposed on the grid. This pricing model is consistent with the evolution of the utilities into DSOs.

Elimination of Barriers. A DSO model will only work well if non-transactional barriers to market participation are reduced or eliminated. These include not only barriers to investment such as departing load charges, excessive standby charges, and excessive delays and costs for interconnection, but also barriers to efficient operation such as restrictions on battery operation adopted to accomplish goals that could be achieved by metering and accounting. Departing load pricing is based on a false assumption of cost shifting in a static system. The grid, however, is not static, and static assumptions hobble planning for the future. More DER, effectively deployed, will reduce costs. Achieving decarbonization by imposing rigid technology and operational choices is also antithetical to efficient outcomes. To the extent not constrained by legislation, the Commission should set standards for outcomes, and let customers and communities seek creative solutions.

Safety and Technology. In the M&R proceeding, grid safety has repeatedly been raised as an objection to the proliferation of microgrids, without any basis in the record. The MRC believes that the microgrid industry, for one, has a better safety record than the utilities, and that DER safety should be addressed in this proceeding by building whatever record the Commission believes is necessary to accomplish that task. In this connection, microgrid controllers, home energy management devices, and third-party DER aggregation software and communication capability, will be as important as smart inverters in the decentralized grid of the future.

Equity. The MRC believes that disadvantaged communities (DACs) should be enabled to leverage their energy purchasing power to invest in DERs to serve their needs. Such investments will create jobs and build wealth in DACs and help eliminate remaining legacy fossil fuel utility

plants in such communities. Such investments should be self-funding in a well-priced DSO environment, and the Commission should consider providing credit support for such investments much as it provides credit support for utilities.

The Role of Microgrids. The MRC believes that microgrids are a key element of the grid of the future. They should have an important place in the distribution system planning process that prepares the grid for a world in which DERs are commonplace and customer energy transactions are plentiful. The defining characteristic of microgrids – their ability to operate as self-balancing islands – is simply a special case of their broad ability to manage their load shape. As a result, they not only are the principal means of supplying resilience, but they can manage variable solar generation locally, integrate TE infrastructure, and provide balancing and frequency control services to the grid. Except in the case of resilience for critical facilities or DACs, the MRC does not suggest that microgrids be compensated differently than any other DER for providing an identical service. However, monetizing distribution level grid services will also enable the indirect monetization of resiliency solutions, without the need for subsidies. We encourage the Commission to acknowledge the role of microgrids in the grid of the future throughout this proceeding.

Give Priority to Enabling DER Services. While the MRC supports Track 1 consideration of the DSO model, we are concerned that it raises many complex issues that will not be quickly resolved. We strongly suggest a parallel track to immediately identify areas where DER can provide grid services, to consider eliminating barriers to DER integration, and to move beyond pilots in creating pricing mechanisms for DER services.

Understanding DER Capabilities. The Commission should avoid reliance on utilities or "independent consultants" to learn about the needs of customers and communities and about the capabilities of the DER industry. In particular, industry experts can provide deeper insight into the safety and technical capability of grid edge technology, alternative grid architecture, and the successful implementation of these technologies in other states and RTOs.

IV. Comments on Major Scoping Issues.

1. Grid Architecture and Integrated Planning

We strongly encourage the Commission to require the utilities to reimagine their current grid architecture to take advantage of substantial expansion of DERs. That requires not only revamping the distribution system to accommodate interconnection and provision of services by DERs, but also a revision of the planning process that enables energy planning to take place at the appropriate levels.

The current grid architecture is tied to a model of central delivery of power from transmission to distribution to customers. We suggest that the appropriate architecture is based on two-way flows at each level so that customer to distribution and distribution to transmission flows are fully enabled. In operation, each level of the grid should be able to optimize its own operations responding to price signals from the next level. Individual customers, community DERs, or multi-customer microgrids can optimize based on real-time prices for both import and export. The DSO can optimize based on actual conditions at individual substations though purchase prices or contracts with DERs as well as nodal prices on the transmission system. CAISO operations are already consistent with this model, but they are likely to have more aggregated DER resources to take advantage of either through the DSO or third-party aggregators.[9] Transmission should generally be paid for based on actual flows at transmission nodes.

As a consequence, system planning should be enabled at all three levels. Customers and communities should be able to plan for resources to meet their own loads and needs for resilience with a clear understanding of the economic benefits and costs of grid service and export sales. The DSO should plan the distribution system to optimize the value to customers given the equity considerations outlined above. CAISO should manage planning of the transmission system to accommodate needed flows given the increasing DER availability, and utilities should not be permitted to undertake unsupervised transmission additions. The Utility Costs En Banc found that transmission projects that had not received prior Commission or CAISO approval were a major cause of customer price increases.[10]

Planning should be dynamic, not static. Building electrification and EVs will increase load, and DERs and energy efficiency will decrease centrally served load. If anticipated growth exceeds

[9] See also FERC Order 2222 https://www.ferc.gov/media/ferc-order-no-2222-fact-sheet

[10] California Public Utilities Commission Report: *Utility Costs and Affordability of the Grid of the Future* February 2021; pg. 7-8, 37-40 https://www.voiceofsandiego.org/wp-content/uploads/2021/02/Feb-2021-Utility-Costs-and-Affordability-of-the-Grid-of-the-Future.pdf

expected DER growth, departing load charges should be eliminated. If DER growth is expected to exceed load growth, any departing load charges should decline rapidly over a reasonably short planning horizon.

As a part of the three-tier planning and operation process DSOs should build out their local networks to accommodate and take advantage of DERs. This includes not only preparing for two-way flows but also sectionalizing and looping the distribution system with semiautonomous controls, so that DERs can support the local grid when transmission fails or is shut down due to PSPS events.

Finally, planning for load changes should be integrated with planning for resilience and decarbonization. DSO tariffs should provide payments for microgrids that support community-identified critical facilities, whether publicly or privately owned, and for DER that can support sectionalized grid areas during a transmission outage. Lastly, the Commission should adopt a uniform decarbonization policy for all DER across all proceedings. CARB (along with local air districts) is the entity charged with setting standards for all generation including DER, and the Commission should generally not second guess it on a proceeding-by-proceeding basis except where specifically required by law (as in NEM). The Commission recently imposed *ad hoc* standard for microgrids in its Track 3 order in R.19-09-009 after an abbreviated proceeding with three weeks to build a record.[11] By contrast, this proceeding offers an opportunity for the Commission to collaborate with CARB and CEC to establish a consistent way to accomplish the state's goals.

We suggest that the Commission, in this evaluation, give special consideration to DERs that contribute to resource adequacy, ramping capability, and resilience for critical facilities. Such a standard can also give effect to CARB standards for eligible fossil DER that evolve over time with the year of DER deployment and can also take account of multifuel capabilities that will allow the DER to evolve with the markets for clean fuels. Grid planning should be based on achieving safe, effective, low-cost solutions for all customers taking maximum advantage of private and local community investment. This planning process should assist distribution utilities in rethinking grid architecture to take maximum advantage of DER.

[11] D.21-07-011 Adopting Suspension of Capacity Reservation Component of Standby Charges, July 16, 2021

2. Obligation to Serve.

With a DSO model and two-way, three level architecture, planning can take a different view of the DSO obligation to serve. The DSO should plan for load growth (taking DER growth into account) but can also plan to manage load shape with the help of DERs. In this context, the DSO can flatten load from the bottom up, not top down, and more importantly it can plan peak load, rather than planning *for* peak load. To do this, DSOs under the supervision of the Commission should establish emergency load maximums for residential customers based on number of occupants and for C&I customers based on number of full-time employees. (Other standards may be necessary for schools and other places with high variable occupancy if they are critical.) Customers whose load at peak exceeds those levels would be required to have internal load shedding capability though clean generation or load control. On the other hand, if a large home is built to net zero standards, it should not incur an obligation to reduce load at peak. (We suggest that backup diesel generation not count, both because of emissions and because they are generally not designed for sustained operation.) This avoids having average customers, and particularly low-income customers, pay the full cost of a system designed to meet the needs of high use customers on rare occasions. As it stands, the poor are paying for lifestyle insurance for the wealthy.

3. Implementing DSOs

The MRC believes that utilities must be both rewarded and directed to shift their focus away from centralized solutions, big transmission, and sales of power. Centralized provision of services by monopolies inherently leads to high prices. A focus on "utility scale systems" leads to a proliferation of dangerous and expensive transmission lines, to renewable energy solutions that pave fertile farmland and ecologically fragile deserts with glass, and to dependence on long transmission lines and out of state resources. Utilities should be encouraged to invest in a two-way, networked distribution system that allows DERs to assist in powering the grid on a day-to-day basis as well as in emergencies.

We believe that a DSO model is a necessary element of this transition. Change will require enthusiastic support for DERs that improve grid function and pricing. Unless and until the utilities prove incapable of implementing this model, we support distribution utilities acting as DSOs.

However, that cannot realistically happen if utility financial incentives continue to support central asset accumulation. There is only one real cure for this: assure that investments in distribution and transmission are paid a safe but *below-market* rate of return and make the overall level of profitability of the utility depend on achieving the goals of customers and communities such as reducing price and increasing resilience. Incentive ratemaking, as such, is beyond the proposed scope of this proceeding, but unless the Commission is ready to substantially revise utility incentives, discussion of high levels of DER will prove, we fear, to be empty talk. On the whole we support properly incentivized utilities over an independent DSO fighting with mis-incentivized utilities. Having different DSOs in the traditional utility territories allows for experimentation with best practices, and the Commission can step in, as needed, to assure uniformity to the extent required by efficiency or equity.

Operationally the function of the DSO should be to price the use of the distribution system in much the way that CAISO prices the use of the transmission system. It optimizes flows from customers that are net importers, customers that are net exporters, IFOM DER on the distribution system and potential imports from and exports to the transmission grid at CAISO prices. Consistently high congestion pricing signals the need to expand capacity at a local substation, either through wires investment or DER or storage procurement. Consistently high local ramp requirements should not be met with wires, but with local ramping capability. If there are consistently high prices in DACs, the utilities should be required to take prompt action. In other load pockets they should be required to give planning priority.

The biggest market power problem in this model (after utility investment incentives) is utility monopoly on the sale of power. This monopoly is being broken down haphazardly by CCAs and BTM DERs, but still presents risks for mismanaging. If the cost of power is treated as a pass-through rather than a profit center it reduces incentives to manipulate power or distribution pricing. In most of the states that have adopted (and kept) retail competition utilities conduct supervised procurement for power that allows them to serve as a provider of last resort.[12] A related problem

[12] California abandoned its experiment with retail competition in the midst of a crisis caused by poorly designed wholesale markets, not due to any flaw with retail competition. The need to stabilize utility finances with retail sales has passed. The Commission, of course, would have to ask the legislature for permission to move back in this direction.

arises if utilities seek to sell, install, or operate BTM DERs for customers. This is an inherent conflict of interest that will cause utilities to continue to attempt to withhold customer information and slow interconnection for competitors. It will also not serve customers well if the DSO serves as the only aggregator that can compete in CAISO markets. This would be inconsistent with FERC Order 2222.[13] The DSO that we suggest will own and optimize use of the distribution wires without having a significant stake in higher customer energy prices.

Addressing these market power concerns will hasten the rate at which utility ownership or control of generation is reduced. It follows that California cannot ask utilities to single-handedly solve problems relating to the entire generation fleet. New decentralized models for resource adequacy (in collaboration with CAISO) and for the transition to decarbonized electricity[14] must be adopted.

4. Transparent, Two-Way Pricing

The MRC is skeptical of planning to meet existing grid structure rather than forward-looking customer needs. Having said that, appropriate DSO pricing for DER exports can and should reflect the value of power to the grid at the local substation, rather than at a transmission node. Managing this local optimization is part of the DSO's job. This is particularly appropriate for IFOM DERs but should not deter BTM DERs that are sized approximately to customer load or less and may be undertaken for resilience or other customer purposes. The MRC favors formalizing consultation or other methods of understanding local needs and plans. A DSO model, however, should empower customers and communities to plan for themselves, and utility consultation is not a substitute for the ability to take direct action. Transparent DSO pricing and the ability to consult with the DSO are critically important.

In non-emergency circumstances, DSOs should pay for the ability of DERs to manage load, by operating DERs. The pricing for that service should be independent of whether it takes the form of demand response or actual exports. On the other hand, DERs that have uncontrolled load shape should pay the DSO for load management services. Unbuffered solar is essentially asking the grid to act as its battery, and the costs of that service can be determined by reference to the

[13] FERC Order 2222 https://www.ferc.gov/media/ferc-order-no-2222-fact-sheet

[14] Discussed [below] at __.

batteries or ramping capacity involved. As with energy itself, the customer can choose self-provided or grid provided services. The MRC has raised questions about the cost of standby service in other contexts,[15] the more flexible DER there are, the lower standby charges should be.

5. Elimination of Barriers

In general, elimination of barriers to DER deployment and barriers to efficient operation of DERs will aid in the management of load shape and peaks. The former includes departing load charges and excessive standby charges as well as expensive and time-consuming interconnection processes for export capable DER. The latter includes restrictions on serving neighboring properties behind the meter (to the extent they impose limits not required by law), Rule 18 restrictions on resale of power,[16] and restrictions on the source and pricing of battery charging. NEM restrictions, if needed, can be imposed through metering and accounting. We suspect, however, that if pricing for DER exports is truly based on real time prices, distinctions between NEM and other DER will disappear.

6. Equity

Disadvantaged communities (DACs) have suffered from decades of federal, state, and local governmental policies that directly discriminated in many cases specifically against black Americans and in other cases against all non-white Americans. These policies specifically included location of industrial facilities including major fossil fueled power plants and toxic waste facilities in non-white neighborhoods, and included policies that prevented residents of these communities from receiving credit on comparable terms to white citizens in other communities.[17] We are not aware of specific studies of investment in grid infrastructure in disadvantaged communities, but anecdotally we are aware of situations in which interconnection of DER such as rooftop solar in disadvantaged communities is difficult or expensive because of low feeder voltage

[15] The Hawaii PUC eliminated this requirement in its microgrid proceeding. Docket 2018-0163 Decision & Order 37786, May 17, 2021; https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A21E17B53628J00121

[16] R.19-09-009 Microgrids & Resiliency; Track 2 includes a discussion of Electric Rule 18 as a barrier to microgrids that wish to serve adjacent properties; D.21-01-018 provides a limited exemption to Electric Rule 18 for certain public agencies, but only during an outage and with other limitations that make it difficult to implement in practice http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=361442167

[17] *See, generally,* The Color of Law, Richard Rothstein (2017).

or low substation capacity. The persistent underinvestment in these communities that resulted from these policies must be remedied, and to the extent subject to Commission jurisdiction can be addressed in this proceeding. We suggest several specific areas where the Commission can take such action.

First, we suggest that the Commission review the ability of distribution infrastructure to support DER in DACs. The Commission should inquire of the Utilities in this proceeding whether the distribution infrastructure in disadvantaged communities is, on average, older or of poorer quality than in the rest of the grid. In any event, we suggest that this proceeding consider a rule that a resident of a DAC or a government or NGO representing a DAC should never pay more to interconnect DER on a per KW basis than the systemwide median. If Utilities have underinvested in distribution infrastructure in DACs, the cost to upgrade those communities should be borne by all utility ratepayers or by utility investors.

Second, the Commission should take steps in its power to ensure that residents, governments, and organizations in or representing DACs can own or directly benefit from DER at rates comparable to other grid customers. The Commission's report and En Banc on Utility Costs and Affordability determined that DERs such as rooftop solar have been adopted in DACs at a lower rate than on the rest of the grid.[18] This has raised concerns that costs were being shifted to low-income communities.[19] We believe that this is a result of looking at the problem through the wrong end of the telescope – if DERs are the most economical way to generate energy, the Commission should be assuring that customers in DACs have the benefit of DERs as well. To the extent that low adoption in DACs does not result from interconnection costs, a major impediment in our experience is lack of access to appropriate financing or the landlord-tenant barrier from communities of concern not owning property.[20]

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[18] California Public Utilities Commission Report: *Utility Costs and Affordability of the Grid of the Future* February 2021; pg. 6 https://www.voiceofsandiego.org/wp-content/uploads/2021/02/Feb-2021-Utility-Costs-and-Affordability-of-the-Grid-of-the-Future.pdf

[19] Discussions of "cost shifting" have occurred within multiple venues in recent years, including R.19-09-009 Resiliency & Microgrids, R.20-08-020 Net Metering, and other distributed energy proceedings

[20] Of course, there are others, including suitability of rooftops for solar and restrictive community solar rules.

Most energy efficiency and clean energy upgrades pay for themselves over time. Those investments build wealth for the investors. Locally owned DER, whether community or individually owned, and individual EE improvements, build community wealth and provide local jobs. Utility rates are designed to assure that utility investments do pay for themselves. They assure utility credit ratings. We don't suggest that utilities engage in direct finance of locally owned improvements, but they should be required to offer on-bill collection of payments for such improvements.

In our experience, the best way to assist with uptake of local EE and RE improvements is to provide local or regional programs to assist customers in evaluating and undertaking those investments. They can be run by local governments, CCAs or NGOs. They could be run by utilities, but only if the utilities or their affiliates aren't competing for the installation business. State and local governments should undertake this, but the Commission could take other steps such as using public interest payments to fund a reserve to support lending in these communities. This would be the analog of the Commission's current support for utility credit and would provide a level playing field. Rather than building wealth for utility shareholders, the Commission should adopt policies that build wealth and create jobs in DACs.

As one important step to community empowerment, the Commission should consider adoption of a community microgrid tariff that allows DACs and DAC customers to benefit from their own investment in community microgrids. The CMEP program proposed by PG&E requires all power generated in a community microgrid to be sold to CAISO and requires all customers to pay regular retail prices.[21] We have proposed two tariff models in a presentation to the Resiliency and Microgrids Working Group in Docket R. 19-09-009 that would allow participating community members to pay rates based on the actual cost of generation within the microgrid.[22] In any event,

[21] See PG&E Community Microgrid Enablement Tariff https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/CM-Enablement-Tariff.pdf

[22] Microgrid Resources Coalition presentation to Resiliency & Microgrids Working Group (RMWG), April 19, 2021; https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/resiliency-and-microgrids/resiliency-and-microgrids-events-and-materials/2021-04-19_rmwg_presentation_gpi-and-mrc-proposals.pdf

the planning process contemplated by this proceeding should be based on expected expansion of DERs with artificial barriers eliminated, not assuming a constrained future.

Finally, we believe that equitable application of cost causation principles requires a review of how peak system costs are allocated. See section IV. 2. Above for a discussion of avoiding charging typical customers for the cost of providing services at peak to high intensity users.

7. Safety and Technology

In the M&R proceeding the MRC has encountered frequent suggestions that microgrids will somehow compromise grid safety. Since microgrids are just collections of DERs with sophisticated controls, there may be efforts to paint all DERs with this brush. We cannot speak for all DERs, but MRC members have operated microgrids for decades. In response to a questionnaire circulated to the MRC membership, no member reports experiencing a microgrid failure that led either (i) to death or serious injury to persons or (ii) to fire or serious damage to buildings or infrastructure. Our members generally install their systems underground, and it is our understanding that this is the standard industry practice. Moreover, it isn't just that the distribution systems are underground, but they are looped and have controls that allow the operators to isolate damaged lines, reconfigure, and continue supplying power in most events. We suspect that the rest of the DER industry is no less sophisticated. The Commission should satisfy itself in this proceeding that any purported safety issues are properly addressed in the record or otherwise are given no weight.

The High DER OIR proposes a focus on smart inverters. We suggest that the Commission should also familiarize itself with the other technologies that will be critical to the three-tier grid of the future. These include microgrid controllers, home energy management devices, and the technologies involved in sophisticated DER aggregation, including forecasting, bidding in RTO or other markets, and communications with the grid operator. The Commission should also investigate the ability of smart metering to implement NEM policies regarding clean energy accounting without imposing restrictions on NEM battery charging.

8. Microgrids

Not surprisingly, the MRC believes that microgrids can help to accomplish all of these objectives. Microgrids can buffer intermittent solar, can provide resilience to critical facilities, and can provide resource adequacy and ramping capability to the grid. They can reduce peak load to the benefit of all customers. To that end, we are disappointed that the preliminary scoping memo appears to consider microgrids, and in particular community microgrids that may incorporate or interconnect multiple DERs, as an afterthought or ancillary issue that should still be siloed in its own proceeding.[23] Moreover, a footnote in the preliminary scoping memo implies that microgrids will not be comprehensively considered in this proceeding, yet the very next footnote describes how commercial or community scale solar may be considered.[24] The MRC strongly encourages the Commission to break down the siloes that exist in the current regulatory structure and give community level microgrids their own place in the grid architecture that this proceeding seeks to establish.

We encourage the Commission to create space in this new DSO regime for customer and community-owned microgrids. The Commission should coordinate *very closely* with the M&R proceeding R.19-09-009 to encourage the deployment of customer-owned community microgrids, and not box out DERs that may form community microgrids as a separate issue. The Commission generally appears to desire to break down siloes by inviting consideration of many issues in this High DER Future proceeding, which we appreciate. The MRC strongly encourages the Commission to continue that inclusive trend by formally bringing customer-owned community-level microgrids into the scope of this proceeding R.21-06-017. Community-level microgrids will be an integral part of the layered grid architecture that California is moving towards and should be accounted for in planning of our electric grid of the future.

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[23] R.21-06-017 Preliminary Scoping Memo on a High DER Future, pg. 19

[24] Id. "Policies related to DERs organized as microgrids pursuant to the Code Section 8370 definition are scoped into proceeding R.19-09-009. Microgrid and resiliency issues will be addressed in proceeding R.19-09-009. To the extent the proceeding opened pursuant to this OIR addresses distribution planning and grid modernization issues that impact microgrids and resiliency issues, the proceeding will coordinate closely with proceeding R.19-09-009."

"43 Commercial/industrial rooftop or community-scale solar installations could be cost-effective for powering EVSE as opposed to installing new distribution infrastructure (Distribution Costs and Distributed Generation, February 8, 2021, at https://energyathaas.wordpress.com/2021/02/08/distribution-costs-and-distributed-generation)"

V. Comments on Procedure.

1. Give Priority to Enabling DER Services including Microgrids.

The Commission should prioritize Track 1 on the DSO model. It will lay a strong foundation for the urgent work ahead to transition California's energy system and the antiquated utility business model to a forward-looking, customer-centric, networked electric grid that is fit to power the world's 5th largest economy in the 21st century. Track 1 of this proceeding should include a discussion of performance-based regulation and how the incumbent utilities will transition to a platform service provider role while maintaining financial viability. Given their role in wildfires and PSPS events with disastrous consequences for ratepayers and the state as a whole, we feel it is appropriate for the utilities to transition to a new business model that is leaner and more focused on the Bulk Distribution System and facilitating transactions between communities, rather than attempting to serve every end-use customer and respond to local needs. That should be handled by more localized entities in a more democratized energy system where certain decisions like resilience investments are made at the local level.

Concurrently while Track 1 is underway (which could be designated as Track 1A and serve as the core of this proceeding), the Commission should develop an accelerated Track 1B and take immediate steps to allow delivery of DER services to the Grid. The Commission with stakeholder input should develop a standardized streamlined DSO interconnection tariff for export DERs, whether behind the meter or in front of the meter, and a robust menu of grid services rate schedules that can be utilized by all types of DERs including co-located aggregations. This would, in the process, finally achieve the creation of a microgrid tariff, since microgrids are by definition an interconnected group of DERs that have the ability to act as a single controllable resource. If the Commission appropriately leverages microgrids in this proceeding and coordinates with R.19-09-009, the transition to a High DER Future can happen in a much more rapid manner. The software that controls a microgrid, a grid-interactive building management system, a battery in an electric vehicle, a heat pump, a smart appliance, or a virtual power plant share common functions and internal architecture. The Commission should stop proliferating technology siloes and instead focus on creating a system where all the technologies – and the software running them – can participate in the grid of the future under a standardized and streamlined process.

The final scoping memo for this proceeding should include a dedicated track that creates a robust DER/microgrid tariff, in close coordination with the staff for R.19-09-009, with highly valued distribution grid services and a menu of grid services rate schedules. This will allow resilience to be *indirectly* monetized without "subsidies" but enable customers and communities to benefit from the resilience that is *inherent* in their DER investments. Compensation for services is *not* "cost-shifting" and in any event, that term needs to be retired because it preserves static 20th century thought processes and does not reflect the realities of a dynamic 21st century grid.

Considering the extensive work the Commission has completed to evaluate the value of diesel generation and resilience already in R.19-09-009 with the ADL Ventures Report finding that it costs ratepayers $182/kW-year + $0.30/kWh to run diesel[25], and the Governor's recent proclamation on grid reliability calling for energy reduction payments of $2.00/kWh in an emergency,[26] it is not a stretch to suggest the Commission could come up with an initial tariff and rate schedule within 6 months that includes those values to DERs and microgrids that provide grid services to the distribution system. SEIA has also completed extensive calculations on a locational DER tariff proposal in R.14-10-003 that could be incorporated into this effort.[27] The MRC is supportive of transportation electrification and optimized electric vehicle charging being considered as a specific item on the grid services "rates menu" or considered separately under Track 2. As V2G and V2X technologies become commercialized and mainstream, it may make sense to develop a track of this proceeding that specifically considers how microgrids can support optimized charging of vehicles and other mobile electric assets.

Within this proceeding, the Commission can and should also create a new tariff for community microgrids that permits community customers to benefit from investment in and management of DER included in the microgrid. The Commission can affirm, which coincides with the transportation electrification decision, that community microgrids are *not* public utilities and are not subject to the limitations of Electric Rule 18 on sale or resale to separate premises.[28] The

[25] ADL Ventures Alternatives to Diesel Report pg. 2

[26] Governor Newsom Emergency Proclamation to Expedite Clean Energy Projects issued July 30, 2021; Section 3b. pg. 4

[27] R.14-10-003 Solar Energy Industries Association (SEIA) Locational Tariff Proposal, filed February 15, 2019; https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M288/K330/288330395.PDF

[28] See Electric Rule 18 Section 6C and Public Utilities Code 218 (b)(1)

Commission should ensure that community-level, customer-owned DER, including microgrids, have a place in our High DER future grid. This issue can be coordinated closely with R.19-09-009 but it should be explicitly included in scope of this rulemaking so that the Commission breaks down siloes between proceedings. This will allow the Commission to appropriately plan for a future where communities can easily build and operate community microgrids for their own benefit and that of the distribution grid. Many communities have voiced support for this concept, and this proceeding is the place for the Commission to create space for community microgrids in California's energy system.[29] As we enter a (hopefully temporary) period of lower grid reliability with the closing of OTC plants and Diablo Canyon, the Commission should create strong incentives for customers to *stay connected* to the macro-grid instead of defecting when resilience and reliability technology costs drop enough to become affordable to more Californians.

2. Incorporate Industry Expertise.

If the Commission desires to create a California-specific roadmap with actionable steps that can be taken in the incumbent utility transition to a DSO, the MRC would support a consultant-led process that includes a deliverable report of recommendations. However, the MRC would like to see robust stakeholder involvement and input in the issues at hand. In particular, the Commission should get input from industry players that are already implementing the types of solutions called for in this proceeding in other states and RTOs. To that end, the MRC would suggest a call for stakeholder presentations and paper proposals *first*, permit the consultant scope of work to include a review and evaluation of all stakeholder proposals and technical presentations, and allow the consultant to incorporate them into the final report of recommendations. The MRC would also prefer that a new consultant be chosen in lieu of the Commission's "usual suspects" so that a more neutral, open-minded consultant may lead the process and hopefully better engage stakeholders throughout this endeavor.

VI. Party Status

[29] EcoBlock is a California Energy Commission grant awardee seeking to build a community microgrid under the own-use exemption under Public Utilities Code 218; See legal analysis: https://escholarship.org/uc/item/1s88n8c6

Pursuant to Section 12 of the Commission's order, and in accordance with Commission Rule 1.4(a)(2), we request that the MRC be made a party to the proceeding. Service of notices, orders, and other communications and correspondence in this proceeding should be directed to MRC's counsel at the address set forth below:

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Electronic service is accepted and preferred.

VII. **Conclusion**

The MRC thanks the Commission for the opportunity to provide comments on the scope of this proceeding. We look forward to engaging further with the stakeholder process as the Commission moves forward.

Respectfully submitted,

C. BAIRD BROWN

By: */s/ C. Baird Brown*

C. Baird Brown

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