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Additional submitted attachment is included below.

**STATE OF CALIFORNIA
STATE ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

IN THE MATTER OF:
DISTRIBUTED ENERGY RESOURCES
IN CALIFORNIA'S ENERGY FUTURE

DOCKET No. 22-OII-01
ORDER INSTITUTING
INFORMATIONAL PROCEEDING
Order No. 22-0309-8

**COMMENTS OF 350 BAY AREA ON ORDER INSTITUTING
INFORMATIONAL PROCEEDING ON DISTRIBUTED ENERGY RESOURCES
IN CALIFORNIA'S ENERGY FUTURE**



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**COMMENTS OF 350 BAY AREA ON ORDER INSTITUTING INFORMATIONAL
PROCEEDING ON DISTRIBUTED ENERGY RESOURCES IN CALIFORNIA'S
ENERGY FUTURE**

I. INTRODUCTION

350 Bay Area strongly supports the Commission's continued efforts to modernize California's energy systems to improve efficiency and equitable access while reducing economic, societal and environmental costs. The Commission's focused attention on distributed energy resources ("DER") is essential to guide and coordinate planning and policy development across agencies to effectively utilize these resources and recognize the major role they play in meeting the State's goals on energy and related matters.

350 Bay Area appreciates the opportunity to submit these comments on the *Order Instituting Informational Proceeding in the matter of Distributed Energy Resources in California's Energy Future* ("DER Future OIIP"), dated March 9, 2022 and the subsequent Lead Commissioner Workshop to launch this proceeding on June 1, 2022.

350 Bay Area is a non-profit organization focused on ensuring a sustainable climate and associated environmental and economic justice for all, with a reach of over eighteen thousand people, primarily concentrated in the nine Bay Area counties. The vast majority of 350 Bay Area's members obtain residential electrical service from Pacific Gas & Electric or from Community Choice Energy organizations. We therefore comment from the perspective of both an environmental and ratepayer advocate.

II. COMMENTS

350 Bay Area strongly supports the Commission's opening of this OIIP on the role of DER in our energy future, and the Commission's attention to the voices and concerns of tribes, community-based and environmental justice organizations to address the value and benefits of

DERs to Californians, the challenges faced by those who have been most disproportionately impacted by or not benefiting from past practices and policies, and recommendations on how the CEC, CPUC, CAISO and related agencies such as CARB should address these issues in ways that equitably maximizes the value and benefits of DERs for these communities and the population at large.

We particularly note and support the starting premise of the OIIP is that “DERs are essential for achieving state goals for decarbonization, resilience, and energy equity and environmental justice.” And that in order to realize the full potential value of DERs, we need:

- A robust, open marketplace for DERs
- Full, accurate valuation and fair compensation of DER benefits
- Broad customer choice as well as community-scale DER/microgrid development for local resilience, economic, and health benefits.

The OIIP aims to “explore the role of local energy planning and energy equity as drivers of DER investment, and will examine what kinds of policies would achieve robust, broadly beneficial growth of DERs. The OIIP will then project DER growth scenarios for use in electricity system planning based on policy pathways (i.e., the projected potential DER growth if those policies were enacted).”

This is good, but it is also far too limited – DER must be understood to be foundational. DER should not be seen as an “add on” or something to be integrated into the grid as the CPUC has proposed, and planning must not view these resources merely as a static exogenous growth scenario input to be imported into modeling and planning activities.

Additionally, and importantly, the OIIP appears to focus on DER solely as customer sited or “behind the meter” resources. While this is a very important subset of DER with unique value and adoption factors, it is critical that the Commission recognize that all resources located with the distribution system constitute DER, including generation or storage facilities up to 20 MW that may be contracted by any load serving entity. Development and coordination of both customer-sited and “front of meter” grid side resources is particularly important where communities may be temporarily islanded from the wider grid and need to independently operate as a local grid, but larger local DER also defer or avoid the need for equivalent resources further from where the need exists.

350 Bay Area offers the following recommendations to strengthen the OIIP and the proceeding outcomes.

Community Focused Planning

Climate change legislation indicates the immediate and absolutely urgent need for reducing reliance on fossil fuels, maximizing energy efficiency, producing renewable energy and conserving our natural resources. Together, these strategies advance environmental stewardship at the state, regional, and municipal levels. However, no real planning is occurring or emerging at the neighborhood level to ensure that neighborhoods enter the green economy as economic partners engaged in the production of renewable energy and as environmental stewards - not just as dependent consumers of energy in constant need of financial assistance from utility companies.

The practice of environmental justice must prioritize neighborhood-focused energy planning - energy use, technology that allows for local energy production and distribution, and environmental stewardship are essential parts of today's urban planning process. Comprehensive neighborhood-focused energy plans are needed to ensure that disadvantaged neighborhoods are included as equal partners in the region's green economy.¹

DER supports a bottom-up approach to California's Energy Future

In planning for California's energy future is critically important to assess the appropriate Fundamental Perspective – We recommend understanding electric grid architecture, needs and operations as addressing customer needs where their associated load exists. Meeting this demand for services is inherently locational, those services are needed where the customer actually is.

This starts with energy efficiency (the first and commonly most cost-effective variety of DER), and then incrementally adding and sharing resources from the bottom up between loads and resources, between customers, circuits and nodes, and across increasingly larger scales as needed to fill gaps and efficiently share resources. This customer and load centric approach sees not a single grid with generation at one end and load at the other, but a stacked and coordinated

¹ Race & Place in Sacramento, Sept 2021, A report for the City of Sacramento to support preparation of the Environmental Justice Element of the Sacramento 2040 General Plan Update, p 140; JCH Research.

macrogrid built up from incrementally smaller grids working together, starting with customer sited and other local distributed resources.

California's energy efficiency standards have kept average household energy use essentially flat since their introduction in the 1970's despite increases in average home size and the proliferation of new and often larger appliances and devices. By comparison, elsewhere in the US customer loads have been seen to double over the same period. As such, we can and should see energy efficiency as having mitigated and met needs that would otherwise have required nearly doubling our entire state-wide capacity for generation, transmission and distribution. Efficiency is meeting 30-50% of our needs where they occur, reducing both the individual and shared costs of addressing our needs.

Likewise, various forms of demand response (DR) include not only load shedding but also load shifting and shaping at the customer location to both reduce peak capacity needs at higher levels of the grid and take advantage of preferred resources when they are most available. This flexibility in demand is the second foundational building block in best meeting demand.

Electric systems began as local municipal level operations. Economies of scale in combustion generation and hydro power favored locally centralized facilities, and there will continue to be value in connecting population centers to share and exchange available resources. However, loads will remain completely distributed, and common forms of modern generation and storage are also highly scalable, allowing installation at or near where loads occur. Additionally, increasing localized outages and issues in reliability and resilience call for the urgent development of local resources to mitigate both the outages and the extraordinary costs of conventional alternatives such as undergrounding or planned safety power shutoffs.

As we seek to meet the remaining demand and our adopted targets for emission reduction, distributed solar photovoltaic generation has installed nearly as many megawatts of capacity as have all the large utility scale projects ever deployed in California, and increasingly in the past half decade. And Title 24 building standards effectively require on site or local PV for new residences. Similarly, households are adopting electric vehicles (EVs) as fast as the market can provide them, with each typically offering in excess of 50kWh of available energy storage capacity, and potentially with the ability to charge or even discharge in coordination with local needs.

As such, it is critical to view these inherently local loads the collocated or nearby DER that meet and mitigate these loads as the foundational basis of our electrical system. DER can meet some or all of each load either within an individual site, block, neighborhood circuit, or community substation. Building from the bottom up, each of these successively larger components of our grid should be connected together to the degree and only to the degree that this supports complementary resources and meets needs more effectively, equitably, and efficiently than otherwise. Failing to plan for, develop, and fully utilize the local distributed resources that are being deployed will result in redundant capacity building and procurement at higher levels. Redundant development beyond the local distribution level will incur major unnecessary ongoing capital and maintenance costs to ratepayers and land use or conservation impacts associated with development large scale generation facilities and their accompanying transmission lines.

General comments

350 Bay Area strongly supports the Commission’s continued efforts to modernize the electric grid integrating high levels of distributed energy resources and carry forward the work of prior proceedings. These actions provide a strong foundation to better align the investor-owned utilities’ (“IOUs”) investment decisions with ratepayer interests, while working towards California’s energy, environmental and equity goals.

Through the adoption of a series of decisions in the prior distribution planning and DER integration proceedings R.14-08-013 and R.14-10-003, the CPUC established four key working principles, appropriately reflected in the OIR:²

- (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;

² Rulemaking 21-06-017, Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resources Future (OIR) at 5.

(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.

We broadly support these principles, but the devil is in the details in the approaches to implementation, and the importance of achieving the implied goals. Likewise, the CPUC’s *Distributed Energy Resources Action Plan: Aligning Vision and Action* (“DER Action Plan”) established some clear vision and action elements that provided crucial guidance and coordination across multiple proceedings. However, this remains short of a bottom-up perspective both technically in relation to grid design and operation, and societally in centering equity and community goals related to the energy system – local factors including emissions, reliability, ownership, control, investment, employment and revenue.

Given the complexity of the issues that the CPUC faced in meeting the requirements of Pub. Util. Code § 769, compliance with all requirements and goals has not yet been achieved.³ 350 Bay Area strongly agrees with the conclusion that much critical work remains, and supports ensuring that both the unfulfilled requirements of Pub. Util. Code § 769 are met, and that the beneficial opportunities presented by a high DER future be fully realized. In particular we emphasize the central role of the distribution system operators in enabling utilization of DER, and we strongly support both the CPUC’s and the CEC’s attention to DSO models and the application of performance based regulatory approaches as mechanisms to this end. Much as we recognized the importance of decoupling the IOU business model from incentives to increase energy usage, it also needs to be shifted away from capital investments, and to optimize operations with efficient use of both new and existing DER located on either side of customer meters.⁴

Much of the purpose and design of a high DER system should be to coordinate and optimize all of the resources within it. A largely unrealized vision of prior proceedings and pilots was precisely to leverage the value of coordinating DER and optimizing distribution design and operation. We now have more than 10 GW of DER already installed, with smart inverters and

³ See R.21-06-017, at 4, fn. 7.

⁴ OIR Appendix B: *An Overview of Distribution System Operator Models*, February 2020, at 90-97.

Advanced Metering Infrastructure, but little has been done to realize the potential ratepayer and environmental savings.

The Commission should leverage the coordination of new and existing resources and programs to work together for stacked value and maximum benefit. Viewing each DER as only serving a single purpose, providing single service, or participating in a single program or market has been a long-standing problem in DER policy. Limiting the use of each resource or program means it provides fewer benefits relative to cost, and this artificially reduces the value and cost effectiveness of each resource and program. Formal participation in markets designed for utility scale resources and individual facilities has long created barriers to DER participation and utilization; consideration of alternatives should understand DER as a multi-technology flexible resource that can be constantly reconfigured and repurposed in aggregation across dispersed locations.

The baseline value of DER can best be assessed by comparing forecasts of total future systemwide capacity investments needed to meet growing demand in the “No New DER Scenario” to a forecast that reflects only that portion of customer needs remaining after incorporating expected and potential DER development, including coordinated utilization of aggregated DER capacity to serve multiple needs and services simultaneously throughout the day, shifting between individual components as warranted.

Modeling for DER optimization

The Commission develops crucial forecasts of energy supply, demand, and related factors necessary for modeling and planning purposes. However, current adopted models such as SERVIM and RESOLVE utilizing these forecasts for Integrated Resource Planning, the Transmission Planning Process, and related studies are designed only for study at the system level above the substation or transmission node; distribution systems and all of the associated load and DER is reduced to a single static net value in this approach, obfuscating the role of DER and the potential for optimization of DER at each level of aggregation. This treatment of the distribution system as an exogenous input rather than a resource and opportunity has long been recognized as a shortcoming but little action has been taken. The scale of this failure was finally captured objectively in the 2021 study ‘Role of Distributed Generation in Decarbonizing

California by 2045’⁵ The results indicate that utilizing a comprehensive balanced approach including modeling of distribution circuits and selecting DER when lower cost would yield \$120B savings for California ratepayers by 2050 compared to a ‘business as usual’ scenario of meeting load forecasts. \$120 billion dollars is significant. Even if only a fraction of that value was available, it warrants attention proportionate to the scale of ratepayer savings even before considering non-energy benefits to communities and ecosystems related to the siting of generation resources.

Additional Workshops

This proceeding is a critical and timely, if not belated, opportunity to improve fundamental coordination in policy related to DER, distribution system operations, and the realization and allocation of associated benefits and value.

350 Bay Area appreciated the Opening Workshop held on June 1st. We strongly support the attention to access and participation by communities that are commonly under represented, and encourage continued efforts and funding to enable ongoing participation.

We also support the four areas of planned efforts highlighted at the workshop, including support for underserved and marginalized communities. However we note that the OIIP identifies eight areas of focus and planned development of recommendations or proposals, and we are moderately concerned that some of these were given no specific attention in the opening workshop. In particular, we look forward to opportunities for the Commission to elicit input to engage the following scoped activities which are of critical foundational importance:

- Investigate co-optimization of utility-scale resources and DER by documenting energy and non-energy benefits of utility-scale and distributed technologies and resulting impacts to transmission and distribution infrastructure.
- Assess architectural and functional models for a high-DER future electricity system in California.
- Identify technology gaps and needs for research and development.
- Assess data needs and collect data necessary to support analyses under this OIIP.

⁵ https://www.vibrantcleanenergy.com/wp-content/uploads/2021/07/VCE-CCSA_CA_Report.pdf

Each of these warrant discussion, potentially within a workshop and comment process.

We take the opportunity here only to note that access to data is often a fundamental barrier both to regulatory research and analysis and to operation of DER in response to needs identified by the distribution or system operators and load serving entities — specifically settlement meter data as well as operational telemetry at each POI. In the 1990s restructuring, the Meter Data Management Agent function was developed, based on the notion that in the new world, multiple parties need access to the same data for both commercial and operational purposes. Even now the CCAs can't get timely AMI data for load bidding because the utilities view the data as a competitive asset. Consider creating an independent regulated structure for collecting, managing and appropriately disseminating settlement and telemetry data, as has been established in the UK.

Additional Topic Area

Last but not least, we strongly recommend adding one additional and critical area of consideration to this OIIP -- Addressing barriers to DER adoption, deployment and utilization.

These barriers include:

- Transmission planning and cost allocation (TAC) - the impact of both failing to value DERs contribution to avoided growth in transmission capacity needs, and deterrent effect of applying transmission charges to local DER energy sourced by any LSE and delivered through an IOU distribution system. These charges discourage CCAs from developing resources in their own communities.
- Interconnection, in which DER bear individual responsibility for upgrades compared to transmission interconnection in which project owners are typically reimbursed for such costs.
- Procurement, in which “least cost best fit” cost effectiveness analysis doesn't include total future ratepayers cost of transmission, which is roughly equal to the cost of energy and rising.
- The complexity of compensation for stacking DER value and revenue streams for all potential services, foregoing full utilization and cost optimization.

III. CONCLUSION

350 Bay Area thanks the Commission for this opportunity to submit comments on the OIIP and supports the Commission's continued efforts to both modernize the electric grid and leverage the enormous opportunities provided by DER to advance State goals and public interest. We appreciate consideration of our recommendations and look forward to working with staff and parties throughout this proceeding.