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

OPENING COMMENTS OF THE CLIMATE CENTER ON THE ORDER INSTITUTING RULEMAKING TO MODERNIZE THE ELECTRIC GRID FOR A HIGH DISTRIBUTED ENERGY RESOURCES FUTURE

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August 16, 2021

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The Climate Center thanks and commends the Commission for convening this proceeding to consider how to prepare for a High Distributed Energy Resources Future ("High DER Future"). The questions posed in the Order Instituting Rulemaking (OIR) and their ultimate resolution in the form of effective regulations and policies will have a profound effect on the rate and quality with which California achieves its urgent goals for decarbonization, resilience and environmental and social justice.

The Climate Center is a California 501(c)(3) nonprofit organization founded in 2001 with a mission to deliver rapid greenhouse gas reductions at scale, starting in California, and intends to be an active party in this proceeding.

I. Introduction

The starting point for The Climate Center's comments is the recognition that the transition to a high-DER future electricity system is both necessary and inevitable. This means shifting our perspectives on DERs from seeing them mainly as a disruptive force to be contained to seeing them as essential to a sustainable and just energy future. This is not to deny the fact that DERs present real challenges to existing grid operating practices, revenue models and core policies such as Resource Adequacy, but rather to point out that trying to contain the disruptive impacts with regulatory measures to suppress DER growth or allow the regulated monopoly utilities to dominate the DER arena will be needlessly costly to ratepayers and society, will slow progress on our urgent environmental goals, and will worsen energy-related inequities in California.

The High DER Future is inevitable because electricity customers of all classes are adopting DERs at increasing rates due to their benefits and cost-effectiveness. The global electric power industry is changing dramatically due to the confluence of five factors: rapidly worsening climate and ecosystem instability, the rapid advances of renewable generating and storage resources on the grid and retirement of conventional

generation, customers' and communities' needs and demands for more resilient and affordable electricity services, the long-standing, unfair distribution of benefits and burdens of our energy systems, and the rapidly increasing cost-effectiveness of clean, scalable DER technologies. The Climate Center sees the High DER Future as the natural trajectory of the interplay of these factors.

The High DER Future is necessary because the bulk power system alone cannot meet today's urgent needs for decarbonization, resilience and equity. Decarbonization of the biggest carbon-emitting activities, especially transportation and buildings, will be achieved through targeted local initiatives by cities and counties, tribes and communities, that can use cost-effective DERs to meet new electrification loads and provide other local benefits. DERs can also serve to facilitate integration of utility-scale renewables into the bulk system. A recent study of California's transition path to a carbon-free electricity system estimates $120 billion in savings by building distributed solar and storage co-optimized with bulk system resources compared to a purely bulk system solution.[1]

Resilience is first and foremost a local attribute, the ability of communities to perform essential functions when a major disruption occurs and takes out grid electricity service, which intrinsically requires local DERs. Likewise, equity must be defined by and responsive to the needs of communities who have suffered adverse health and economic impacts due to a legacy of externalities which subsidize energy for the rest of us by keeping rates below true costs. Locally-owned carbon-free electricity assets can remedy many present and past inequities by providing revenues to fund direct local benefits as well as resilience and health benefits that the bulk system cannot provide.

Given these factors driving industry change, the challenge for energy policy and regulation is to create frameworks for DER growth that facilitate and guide bottom-up DER investment and operating decisions so as to yield the greatest benefits for the

[1] From a press release on Vibrant Clean Energy's California study, emphasis in original: "These savings are the result of generating electricity closer to where it is used, **reducing the need for expensive transmission and distribution infrastructure** like poles, wires, and substations, as well as **reducing how much bulk-scale power** is needed to serve the state's grid."
https://www.localsolarforall.org/news/ca-solar-saves-120b

entire electricity system and for society as a whole, in addition to the direct benefits of DERs to the customers and communities who adopt them. To this end the High DER Future OIR is asking the right questions.

Many of the factors of change are beyond the Commission's control. Clean scalable energy technologies continue to get more powerful and less costly while grid costs increase without showing noticeable benefits. Electricity users want what DER technologies have to offer — resilience, power quality, environmental attributes, security — and so we see the growth of a new "behind-the-meter" (BTM) market which competes directly with the grid. Attempts to protect the century-old grid monopoly on electricity services, for example by imposing fixed charges on self-producers, create positive feedback that reinforces the economics of grid defection. While those of us involved in energy policy and regulation struggle with the tension between urgent societal needs for what DERs have to offer versus their disruptive impacts on traditional grid operations and business models, customers of all types with financial resources are already investing in on-site energy assets and reducing their dependence on the grid.[2] The Climate Center is concerned that this process of unstructured DER adoption by financially-capable customers, which may outpace needed regulatory and policy innovation, will worsen the already-severe environmental and economic inequities in California and slow progress on our resilience and decarbonization goals.

That said, there are actions within the Commission's purview that can substantially shape the path to the High DER Future and the qualities of that future when it arrives. The OIR correctly highlights the crucial role of the electric distribution IOUs and the need to explore whether and how to redefine their roles, responsibilities and incentives so they may best support an efficient and just high-DER transition.

By itself, the phrase High DER Future doesn't say much about California's energy future other than it will involve a proliferation of DERs. It doesn't convey how DERs will fit into

[2] Recent articles on adoption of private microgrids in California by: owners of luxury mansions (https://microgridknowledge.com/cleanspark-luxury-home-microgrids/); the city of Gonzales (https://microgridknowledge.com/concentric-microgrid-gonzales/); and Chick-fil-A restaurants, who promote their restaurant microgrids as community centers for people who have lost grid power (https://microgridknowledge.com/solmicrogrid-install-microgrids-chick-fil-a/).

the overall energy landscape, how rapidly DERs will contribute to decarbonization, resilience and equity, how other structural features of the energy industry will evolve to optimize the benefits of the High DER Future. Some parties may think a High DER Future implies the retirement of the bulk power system, but the Climate Center views growth of DERs as complementary to, not in conflict with, production and transmission of renewable energy on the bulk system, gradually evolving to a bimodal electricity system that serves customers with varying amounts of local DERs and bulk system supply. We suggest this model of a High DER Future — with a diverse participatory distribution side that complements the bulk power system — as a destination vision toward which to coordinate solutions and strategies developed in the High DER Future proceeding.

The Climate Center looks forward to participating in this proceeding and collaborating with the stakeholder community toward our shared goals. In the next section we offer our responses to questions posed in the OIR.

II. Responses to OIR questions

II.A. General questions relevant to all tracks

1. ESJ Action Plan goals

The proceeding can advance ESJ goals provided that the Commission makes environmental and social justice a central focus of its activities and decisions, with an emphasis on including the voices of ESJ communities and achieving specific outcomes that address their needs. To this end we urge the Commission to engage environmental justice organizations and community-based organizations active in ESJ communities on a paid contractual basis (e.g., through an RFP process) to identify needs of these communities that can be addressed through deploying local DERs and bring their findings into the working group activities. Including the Disadvantaged Community Advisory Group (DAC-AG) in proceeding workshops is necessary and valuable, but not

a sufficient substitute for more direct engagement with communities through their trusted representatives.

The Climate Center expects that most ESJ communities would benefit from DERs in at least two ways. First, from increased climate resilience through creation of carbon-free resilience hub microgrids that can provide shelter, cooling and other basic needs for people when grid service is out, especially under extreme weather conditions. Second, from the local economic benefits of deploying DERs that provide revenues to the community through local ownership or profit-sharing models. ESJ participants in the stakeholder workshops will likely expand on these suggestions and offer others. Although it may be beyond the scope of this proceeding to provide for funding and deployment of local DERs, the issues addressed here should simplify the path for DER developers to implement such projects as state and federal funding becomes available.

2. DER definition

The first defining criterion for DER is the point of interconnection (POI), which is the state-jurisdictional electric distribution system as distinct from the FERC-jurisdictional CAISO grid. Many of the questions raised in the OIR, particularly in Track 1, are affected by the operational and jurisdictional divide at the transmission-distribution (T-D) interfaces.

After the POI criterion, the definition should be broad to include devices on either side of the customer meter that affect power system operations, planning and markets, as well as the control systems that coordinate DERs and loads, operate microgrids and manage interfaces between grid-interactive buildings and microgrids and the utility grid. The definition should be flexible enough to accommodate advances in technology and should allow a hybrid resource, such as DC-connected solar PV plus battery storage at a single POI, to be classified and operated as a single DER. The definitions cited in footnote 1 of the OIR are an appropriate starting place, to which the Commission may add refinements if needed.

II.B. Track 1: Distribution System Operator Roles and Responsibilities

1. Redefining electric distribution IOU roles and responsibilities

The Climate Center believes this is a central question to investigate in this proceeding, and that investigation should begin promptly. Indeed, the Commission began investigating this question in the DRP and IDER proceedings, which the new OIR needs to continue and extend for several reasons. First, the traditional role of the electric distribution system has been to provide one-way delivery of energy (kWh) from the bulk power system to end-use customers. This is clearly insufficient for a high-DER system where DER owners have diverse objectives and power can be injected anywhere and can flow in either direction over any given grid asset. Second, the revenue model based on one-way kWh delivery cannot reflect the full range of services a high-DER network needs to provide to its users. It will be necessary to specify the services a high-DER system provides to users and determine how to charge for those services.[3] Third, as the OIR notes in Section 4, the IOUs' profit model based on large capital investments conflicts with the objective of enabling DER growth to substitute for grid infrastructure upgrades. Fourth, a distribution network that serves diverse DER owners must be subject to measurable performance requirements with metrics that affect the distribution utility's profits.

The Climate Center recommends the Commission convene a stakeholder workshop process with third-party facilitation to take up this question in a logical sequence of steps described below.[4] For each of the steps we offer specific elements to consider, but the proposed stakeholder workshop process would develop these ideas more fully. The first steps of this process would establish a foundation for the technical report the OIR mentions (page 14) and as such should be part of the technical report scoping exercise in Q1/2022.

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[3] Trying to make up for kWh revenue losses due to BTM energy production by applying fixed charges also does not reflect the actual services a high-DER distribution system provides to its users and will likely do more harm than good by reinforcing the economic incentives for grid defection.

[4] To support ESJ goals the Commission should provide funding for local CBOs to bring the voices and needs of ESJ communities into these workshops and should also engage the DAC-AG.

Step 1. The first step is to articulate the greater societal goals the high-DER electricity system must support. The Climate Center has consistently identified decarbonization, resilience and environmental justice as the primary high-level energy-related societal goals for the 2020s and beyond. Decarbonization refers to the long-term goal of eliminating carbon-emitting energy practices, first in the electricity system itself and then by electrifying other fuel-using activities including buildings and transport. Resilience refers to the urgent need to prepare for the immediate threats due to decades of climate and ecosystem degradation. Environmental justice entails remediating past inequities and ensuring we leave no communities behind in the transition to clean energy.

Step 2. The second step is to specify the ways the High DER Future will contribute to the goals. The Climate Center has consistently advocated for DER-based solutions including local electricity resources and microgrids as necessary for achieving the three major goals. Resilience, for example, is about protecting the lives and well-being of people and communities impacted by disruptive events. As such it must go beyond grid hardening to provide electricity service for essential needs when grid service goes down, which it inevitably will do with life-threatening consequences, and which means a need for islanding-capable microgrids. Another way DERs can contribute to the greater goals is by flattening net load profiles on distribution circuits and at T-D interfaces, which increases the capability of the system to integrate renewable generation with minimal operational problems and reduced need for capacity upgrades.[5] We return to this theme below in the context of DSO functions.

Step 3. The third step is to describe the requirements on the electric distribution system to deliver the outcomes specified in step two. The OIR points to some of these in the question statement: "… to accommodate a high-DER future grid, appropriately limit market power, and ensure open access for DER providers and aggregators offering retail and wholesale grid services …" The idea of "open access" will need further definition, and that would be part of step three. It would include detailing distribution grid

[5] On this point see the Vibrant Clean Energy study for California: https://www.vibrantcleanenergy.com//wp-content/uploads/2021/07/VCE-CCSA_CA_Report.pdf, as well as their study of the entire US power system: https://www.vibrantcleanenergy.com/wp-content/uploads/2020/12/WhyDERs_ES_Final.pdf

services DERs can provide for compensation, streamlining interconnection procedures, increasing transparency and public participation in distribution planning, and supporting local and tribal government and community-level DER planning (building on the Microgrid Track 1 decision D. 20-06-017). The Climate Center would like to see regulatory reforms to enable grid-interactive neighborhood retrofit projects like EcoBlock[6] proliferate in urban residential areas, to optimize placement of solar and storage resources with tree canopy, vehicle charging and stormwater capture to provide multiple energy, health, resilience, economic and environmental benefits.

Step 4. The fourth step is to specify the functional roles and responsibilities of the electric distribution utility that are required to fulfill what was laid out in the first three steps. This step gets into specifics of activities such as distribution operations and planning, details of interconnection procedures, short-term and long-term forecasting, coordination with the CAISO at T-D interfaces, supporting DER participation in the CAISO market, and procurement of distribution grid services from DERs.

The fourth step should focus on functions rather than entities. Today's distribution IOUs include at least two distinct functions: the distribution wires function (owning, maintaining and operating the distribution network) and the load-serving entity (LSE) function (providing kWh to retail customers).[7] We recommend focusing this step on the distribution wires function, which has natural monopoly properties, and provisionally parking the LSE function which is competitive and includes other non-utility providers. These two functions have distinct roles and responsibilities and will have different operational and data needs to perform their roles.

The important takeaway from the above discussion is that the Commission's investigation should follow this logical sequence: starting with the high-level societal goals, then describing how the high-DER electricity system should support those goals, and from there specifying activities and functions the high-DER distribution network

[6] EcoBlock is currently a pilot project funded under the CEC EPIC program; at present there is no policy or regulatory framework to enable broad replication of the model. See https://ecoblock.berkeley.edu

[7] One could increase the functional granularity and identify additional distinct functions depending on the analytical needs. One example is the meter data management agent (MDMA) or metering authority function, which is part of the distribution IOU functions today but in some jurisdictions may be provided by a separate entity.

should perform and outcomes it should deliver, including the practical meaning of "open access." These first three steps then form the basis for defining the functional roles and responsibilities of the electric distribution utility or DSO.[8] The Climate Center has offered some specifics above on each of the four steps to help clarity the concepts, but we offer these details only as input to the proposed stakeholder workshop series which will develop the four steps in detail.

2. DSO effects on ratepayer costs and equity

At the most basic level the term "DSO" is simply a recognition that an electric distribution utility must have greater functional capabilities for operating a high-DER system than were required when it was simply a one-way kWh delivery service. In that basic sense, not having a DSO is not a tenable option for a high-DER future. That said, there are alternative ways to specify the full set of DSO functional roles and responsibilities and possible organizational structures (e.g., whether the incumbent IOU should become the DSO or an independent DSO is needed). The Climate Center recommends that Step 4 of the process described above, which involves specifying the roles and responsibilities of the DSO, include a review and assessment the alternatives, with focus on both the long-term vision and the transition path. An effective stakeholder process on this subject, supplemented by the proposed consultant report, should illuminate ratepayer benefits and costs and equity impacts.

3. Grid Architecture

Grid architecture, as the OIR notes, is a discipline and a set of methodologies and tools for understanding, representing and managing the complexity of the ultra-large-scale system that is the electricity system.[9] As a discipline, grid architecture supports the logic of our response to Track 1 Question 1 above; that is, to start by articulating high-level

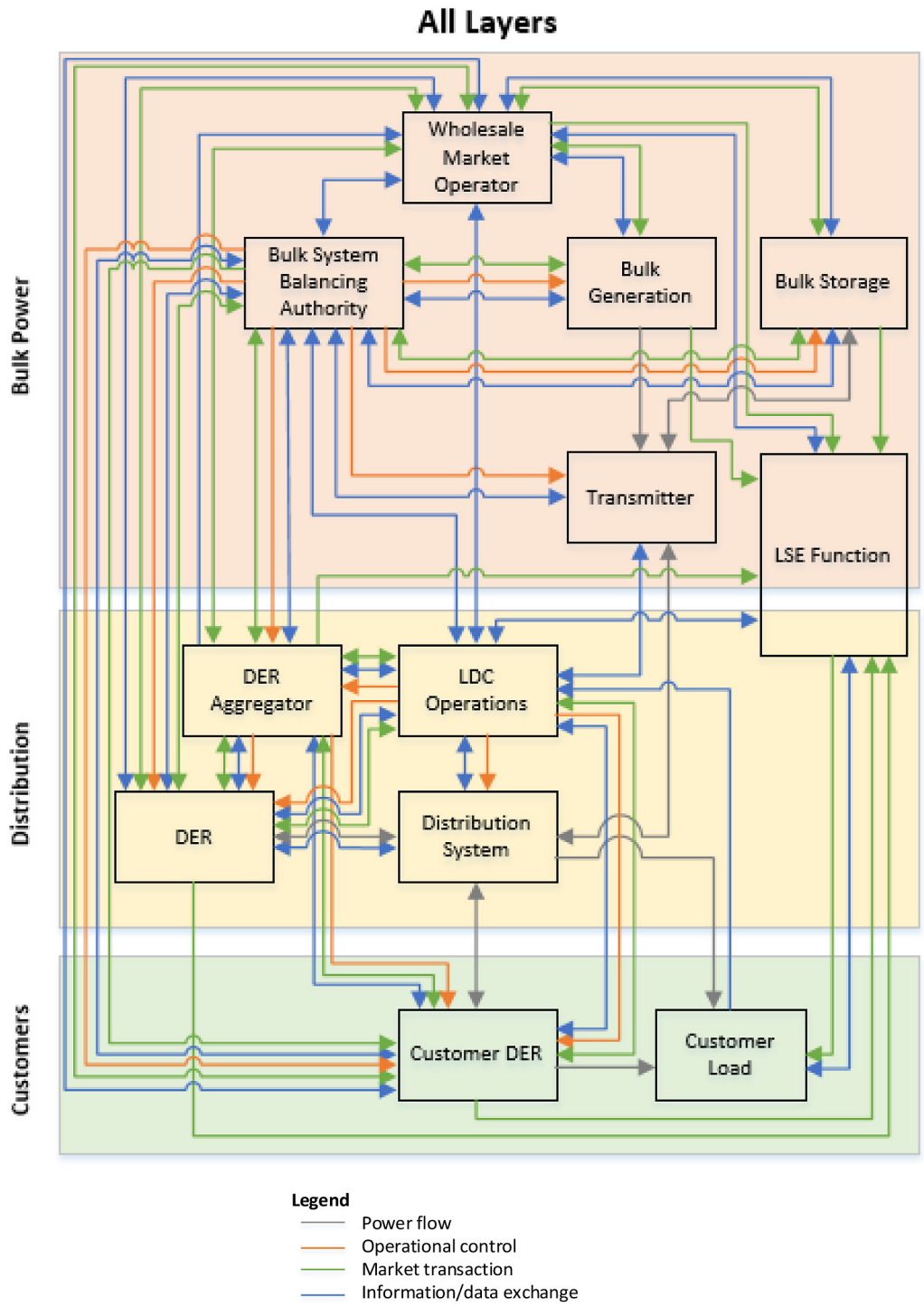
[8] There is a fifth step to the process, which is design and implementation of technical means to enable each key actor — the DSO in particular — to perform its functional roles and responsibilities, as well as the details of the regulatory framework to oversee and enforce the responsibilities assigned to regulated entities and their interactions with other key actors. We return to this in the discussion of Track 3.
[9] The primary author of these comments has been involved with the US DOE's grid architecture efforts since 2014, has co-authored articles on grid architecture with PNNL's Chief Architect (for example, see https://resnick.sites.caltech.edu/documents/13356/Two_Visions.pdf), and currently serves on the DOE Gridwise Architecture Council (https://www.gridwiseac.org).

societal goals, then derive implications for how the high-DER electricity system should advance those goals, then move to a more granular level to describe specific functions the system must perform, and then assign functional roles and responsibilities to the key actors whose activities comprise the performance of the whole system.

This fourth step — assigning functions to actors and specifying necessary interactions between the actors — is what grid architecture refers to as "structure." One grid architecture tool that would be especially useful in Step 4 of the process described above and in the consultant study to compare DSO models is the "structure diagram," which is a visual map showing the key actors in the system and the different types of interactions and relationships between them. A structure diagram contains layers for each of several types of interactions between the actors, typically distinguishing: physical electrical connections; communications and data exchanges; operational controls; and economic and market transactions. Thus, if the Commission adopts the process we recommend in response to question 1 or similar process to "establish an overarching grid vision" for the High DER Future, this grid architecture tool will enable all parties to visualize the practical functioning of the bigger vision and bring clarity to the complexity for specifying regulatory provisions and technical capabilities needed to realize the vision.

Below is an example of a grid architecture structure diagram.[10]

[10] Additional structure diagrams are available in the report prepared by ICF for the Ontario Independent Electricity System Operator (IESO): https://www.ieso.ca/-/media/Files/IESO/Document-Library/White-papers/IESO-T-D-Coordination-Framework.ashx



4. IOU Incentives

The incentive structure which bases IOU profits entirely on return on capital investment is not conducive to moving towards the High DER Future. As noted earlier, widespread

deployment of DERs, particularly in support of electrification, resilience and equity goals, will reduce the need for traditional infrastructure investment compared to a scenario that pursues decarbonization mainly through bulk system expansion. Of course, transitioning the electricity distribution IOUs to become operators of high-DER distribution networks rather than one-way kWh delivery services will entail significant capital investment in technologies to support the new functions, so compensating the utility via a fair rate of return on capital investment need not be eliminated entirely.

Additional new incentives will be needed that reward the DSO for performance of services that facilitate the transition to and ongoing operation of the high-DER network. These should be designed to incentivize superior performance of the functional roles and responsibilities assigned to the DSO as a result of the process described in response to Track 1 Question 1. The Climate Center urges the Commission to investigate performance-based regulation frameworks such as that adopted by the Hawai'i PUC referenced in the OIR to identify examples of metrics and incentives that will align the IOUs' performance with the DSO functional responsibilities required for the High DER Future.

The Climate Center recommends that the Commission take a functional perspective on the distribution IOUs in considering alternative incentive structures. As noted in the discussion of Step 4 above, today's distribution IOUs perform two major functions, as electric distribution system owner-operators and LSEs. These two functions have very different responsibilities, operational needs and areas of expertise. Moreover the distribution system function has natural monopoly characteristics whereas the LSE function operates within a competitive market structure. These differences entail very different relationships between the IOU and the other actors in the high-DER system: on the one hand as a monopoly service provider to a variety of participants in a competitive marketplace, and on the other hand as one of the competitors.

To expand on the last point, one central question in the Commission's investigation should be the appropriate boundary of the regulated monopoly DSO in a high-DER system. The Climate Center urges the Commission to consider, in its investigation, reforming the distribution IOU structure to separate a regulated open access monopoly

"wires company" (DSO) and a competitive affiliate that could play various roles including LSE and provider of DERs and other customer services in level competition with other companies. Then the incentives and revenue model of the DSO can be clearly focused on provision of electric distribution network services and operating distribution-level markets in which the DSO itself is not a participant. A level playing field for LSEs, DERs, microgrids and other customer services will encourage innovation and private investment and risk-taking.

5. Increasing the scope of DER grid services in the near term

The Climate Center believes that one of the most promising and thus far under-recognized values DERs can provide is to coordinate DER activities to flatten net load profiles at various levels of the system, including distribution circuits and distribution transformers, and ultimately the transmission-distribution interfaces with the CAISO. The famous "duck curve" has been a leading concern for nearly a decade with hardly any mitigation of its problematic operational impacts over that time. We know that solar PV is the main cause of the duck curve, and that distribution level PV constitutes roughly 40 percent of the PV in the CAISO system, much of which manifests as "ducklings" on distribution circuits with high rooftop PV penetration.

The Climate Center urges the Commission to take on flattening of net load profiles at various distribution system levels as a near-term priority function of the distribution IOUs. Such a service would provide immediate benefits at distribution level by increasing hosting capacity on high-PV circuits without having to upgrade circuit capacity, and at transmission level by filling the belly and flattening the neck of the duck to reduce the need for fast ramping and peaking capacity for the post-sunset net peak.

A good starting place would be to create a distribution circuit-level net load flattening service that DERs and DER aggregators could provide for compensation[11] based on, for example, the value of increased hosting capacity on the circuit to accommodate additional rooftop PV. Flattening of an LSE's share of coincident peak through

[11] The "load shift" variant of demand response is a good step in this direction, but the demand response participation model does not provide for dispatch and compensation of net power injection, which is needed to realize the full value of net load flattening.

aggregation of BTM storage devices could either count as a virtual power plant (VPP) to meet its system and local RA requirements or just reduce its RA requirements. The Vibrant Clean Energy studies referenced above identify use of distributed solar and storage to flatten net load profiles at T-D interfaces as a major source of cost savings in decarbonizing the grid by increasing capacity utilization of the bulk system. Between these grid effects and the benefit of mitigating near-term capacity shortfall concerns, creating a vehicle for monetizing the services of DERs for profile smoothing would be a direct and effective path for accelerating the participation and benefits of DERs.

II.C. Track 2: Distribution Planning, Data Portals, Community Engagement, and DER Integration

Distribution planning needs to become a more collaborative process starting with communities, local and tribal governments, and their needs and goals. Fulfilling ESJ goals requires bottom-up approaches. It requires bringing the voices of communities fully into the process to speak for themselves. ESJ also means taking into account historical inequities, harms and externalities, some ongoing, which some communities have endured for the benefit of other ratepayers.

Coordinating with local government[12] planning is another aspect of bottom-up process. Many of these entities have or are developing Climate Action and Adaptation Plans (CAAP) and are taking initiatives for electrification and resilience. Such coordination will be essential for transportation electrification planning, as mobility, public transportation and uses of public space are traditional elements of local planning. The DSO's functions could include being a neutral collaborator to provide technical information and expertise to help local governments and communities plan DERs for local needs that will also provide grid and societal benefits as participants in the DSO network.

Another aspect is technical participation. Distribution planning should allow DER providers to propose DER alternatives to any DSO network upgrades needed to accommodate a community or local government energy project, and should select these

[12] "Local government" in these comments is intended broadly to include tribal authorities as well as city and county governments and their agencies.

alternatives if more cost-effective. The idea is to co-optimize local DERs with grid-supplied power to meet locally-defined needs while supporting an efficient DSO network to maximize grid and societal benefits of DERs.

Pursuant to the suggestion in response to question 5 above, distribution planning should take into account the DSO functional responsibility to flatten net load profiles at the T-D interfaces. That function would be a strong vehicle for obtaining value from DERs for the whole electricity system and should factor into both distribution planning and grid modernization.

Data portals should be designed to enable the above functions. They should be accessible with low transaction costs, reliable and efficient, and meet other requirements as may be identified in the course of the proceeding.

II.D. Track 3: Smart Inverter Operationalization, Grid Modernization, and GRCs

In a footnote to the four-step process described in response to Track 1 Question 1, we noted that specification of technical capabilities, such as situational awareness, communications, controls for a high-DER system constitute the fifth step, the implementation design, which follows logically from the specification of the functions the DSO must perform and its required interactions with the other actors in the system. Ideally decisions on grid modernization in IOUs' GRCs would follow from decisions on the roles and responsibilities of the DSO and its relationships with the other key actors who collectively determine the performance of the whole system.

That said, The Climate Center has been an unequivocal advocate of the urgent need to transform our energy systems, specifically to move forward expeditiously with the high-DER transition. We therefore recognize that the Commission must proceed with some grid modernization decisions before completing Track 1 of this proceeding. To this end The Climate Center recommends the Commission revisit and update the grid modernization framework adopted in D.18-03-023. First, the expanding impacts of wildfire destruction and PSPS have accelerated customer adoption of islanding-capable

DERs and elevated local government and tribal concerns about energy resilience. This means that valuing grid modernization proposals based on portfolio optimization in the IRP will be very incomplete, as community and customer needs are becoming primary drivers of DER growth. This requires a more bottom-up approach to DER growth scenarios using intelligence gathered through planning collaboration between the IOUs and local authorities as discussed in our comments on Track 2.

Second, grid modernization should address requirements of the DSO function of flattening net load profiles at the T-D interface level (discussed under Track 1 Question 5 above). Although full consideration of distribution utility roles and responsibilities will take time to complete, The Climate Center believes that the profile flattening function can offer substantial benefits to the grid as a whole and to ratepayers, and therefore the Commission should develop the specifics of this function through the stakeholder workshops and direct the IOUs to address this function explicitly in their grid modernization proposals.

II.E. Process and Timing Considerations

This section offers comments on specific process and timing questions posed in the OIR on pages 29-30.

1. The Climate Center recommends two aspects of the proceeding be given high priority in terms of early initiation and ongoing emphasis. The first is to expand stakeholder participation beyond the usual participants to include the communities most in need of the decarbonization, resilience, economic and health benefits the High DER Future can offer, as well as the local and tribal governments and agencies who will be developing and implementing DER-related projects for their jurisdictions. Effective action on ESJ goals requires building from the bottom up, which we believe has to start with bringing in local and often marginalized voices to represent their needs and goals. The second is the substantive investigation into reform of the distribution IOUs as the OIR proposes for Track 1, which we have discussed earlier.

2. The timetable on OIR page 26 includes: “DSO roles and responsibilities white paper and workshop on scope of technical report,” scheduled for Q1/2022. The Climate Center supports this timing for the report scoping[13] but recommend advancing the overall Track 1 timetable by a year, to deliver the technical report and hold the en banc in Q3/2023 and issue a proposed decision in Q4/2023. We cannot over-emphasize the importance of structural decisions including DSO roles, responsibilities and regulatory framework as foundation for shaping the transition to the High DER Future. Clarifying these structural matters sooner rather than later will help to align Commission queries and decisions in many other related proceedings, including but not limited to transportation electrification.

We also recommend that workshops conducted for the Q1/2022 report scoping explicitly initiate the four-step process we described in answer to Track 1 Question 1 and include stakeholder discussion on the substance of the first two steps: articulation of California’s over-arching policy goals related to energy (i.e., decarbonization, resilience and equity) and outlining specific performance the high-DER electricity system must deliver to support these goals. Once the scope is developed, stakeholder workshops including presentations by stakeholders as well as the consultant should continue throughout the course of the consultant study.[14]

3. As discussed earlier, a more transparent and participatory distribution planning process (DPP) for the High DER Future will require expanding the scope of participation and coordination with communities and local and tribal authorities. Consultant technical reports will be a valuable part of Track 2, but designing the future DPP should not be viewed entirely in technical terms. The Climate Center recommends that for developing an enhanced DPP the Commission engage consultants who have relationships with community-based organizations and tribal groups as well as a track record in engaging

[13] For scoping the proposed technical report The Climate Center recommends that the Commission not place great weight on the DNV GL report attached to the OIR. That report frames the DSO question too narrowly for the scope of the present proceeding, and its descriptions of activities in other jurisdictions are not current.

[14] The Climate Center participated in the recent workshop series to implement the Microgrid Incentive Program adopted in the microgrid proceeding and believes that format with independent facilitation and opportunities for stakeholder presentations is a good model to follow.

marginalized communities on government policy matters, not to exclude but in addition to consultants with the needed technical expertise.

4. The Climate Center supports the proposal to separate the smart inverter work stream from the grid modernization and GRC work stream. The High DER Future will incorporate the diverse ways DERs on both sides of customer meters can participate in the electricity system by providing grid services and engaging in various types of market transactions. Further efforts to develop inverter requirements can proceed toward the High DER Future vision of a diverse participatory distribution side in a least regrets manner, such that the results of these efforts can be equally applicable to and supportive of different future DSO variants.

III. Conclusion

With the High DER Future OIR the Commission has initiated a proceeding that will have profound impacts on California's energy future as we move through the coming years of severe climate disruption, The Climate Center hopes the comments we've offered here will be helpful to the Commission in formulating the scope, structure and timetable of the proceeding. We look forward to collaborating with the Commission and with all stakeholders to arrive at the most beneficial solutions on these matters of utmost urgency.

Respectfully submitted,

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August 16, 2021