**BEFORE THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

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

# OPENING COMMENTS OF THE NATURAL RESOURCES DEFENSE COUNCIL (NRDC) ON THE ORDER INSTITUTING RULEMAKING TO MODERNIZE THE ELECTRIC GRID FOR A HIGH DISTRIBUTED ENERGY RESOURCES FUTURE

August 16, 2021

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Pursuant to Rules 1.9 and 1.10 of the California Public Utility Commission's ("Commission" or "CPUC") Rules of Practice and Procedure, the Natural Resources Defense Council (NRDC) respectfully submit these opening comments on the *Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resource Future* ("Order" or "OIR") issued July 2, 2021.

## I. Introduction

NRDC appreciates the Commission's initiation of this important rulemaking. Preparing the grid to reliably and cost-effectively integrate vital new electric loads while enabling reductions in emissions is a critical component of achieving the state's greenhouse gas reduction goals and addressing the climate crisis. Doing so in a least cost and an equitable manner, e.g., by prioritizing the needs of low-income and disadvantaged communities and ensuring that the benefits of addressing the climate crisis accrue to these communities, is critical for meeting the state's equity priorities and the principles outlined in the CPUC's Environmental and Social Justice Action Plan.[1] NRDC is eager to engage on the question posed by this OIR of how to "prepare the electric grid for a high number of distributed energy resources"[2] within this context.

[1] California Public Utilities Commission. *Environment and Social Justice Action Plan*. (February 21, 2019), http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M263/K673/263673090.PDF.

[2] OIR, page 1.

## II. Comments

We limit our initial comments to three recommendations related to the scope of this proceeding:

### A. Explicitly include building electrification in the scope of the proceeding

The OIR references building electrification, noting: "Legislation aimed at reducing GHG from buildings, Commission proceedings, and local reach codes are likely to further drive electrification."[3] But the OIR does not include building electrification in the scope explicitly. Switching from gas to electricity for end uses such as water heating and space heating will have impacts on the electric grid that must be forecasted and included in distribution planning. For example, high heat pump penetration could create winter morning capacity constraints, particularly in geographies with low air conditioning (AC) penetration where the grid isn't sized for high summer AC use. With appropriate supportive policies, smart thermostats and pre-heating strategies can help mitigate these impacts.

New electric appliances, such as heat pump water heaters, can also be controlled to "charge" in a way that supports grid management and reduces costs. Analysis NRDC conducted with Ecotope found that electric heat pump water heaters (HPWHs) can shift their entire evening electricity load into the middle of the day's solar peak, with 70 percent of the water heater electricity use taking place while solar power is abundant and low-cost, and almost no power used during the evening.[4] Last summer, the California Energy Commission (CEC) voted unanimously to adopt a new appendix to the state's building energy code, called "Joint Appendix 13" (JA13), that enables the code to reward smart electric HPWHs.[5] These grid benefits are analogous to those that can be provided by electric vehicles (EVs) or other storage devices. Additionally, all locational impacts of transportation electrification on the distribution grid also apply to building electrification, albeit in a scaled down manner. Therefore, like EVs and battery

[3] OIR, page 9.

[4] Pierre Delforge, *Heat Pump Water Heaters as Clean-Energy Batteries* (January 07, 2020): https://www.nrdc.org/experts/pierre-delforge/heat-pump-water-heaters-clean-energy-batteries

[5] Pierre Delforge, *California Moves Toward Smart and Efficient Water Heating* (July 08, 2020): https://www.nrdc.org/experts/pierre-delforge/california-moves-toward-smart-and-efficient-water-heating

storage, building electrification should be included as a distributed energy resource and as an important factor to consider in the forecasting and grid planning that is part of this proceeding.

**B. Identify and address grid barriers to customer choice in this proceeding.**

In alignment with the DRP proceeding's goal to "enable customer choice of new technologies and services that reduce emissions and improve reliability in a cost-efficient manner,"[6] we urge the Commission to include in this proceeding identifying and reducing barriers to customers adopting technologies that would help meet the state's climate goals. While "reducing barriers" could encompass a wide range of activities, this proceeding could focus on distribution grid-specific barriers to customer adoption of new technologies.

One issue that NRDC would like to see considered and addressed in this context are direct expenses for grid improvements that customers may incur when adopting new technologies. For example, grid improvements may be needed to accommodate EVs, new electric appliances, or other DERs. In some cases, customers may be charged directly for these costs even though the improvements are fully aligned with the state's climate goals. This issue was addressed for EVs in D.11-07-029 where the utility's expenses in excess of the allowance were treated as a common facility cost to be recovered from all utility customers.[7] It was found that these expenses were minimal in total, but could be substantial for an individual residential customer who wanted to add an EV charger simply due to the condition of their local grid—resulting in delays, administrative burden, or deterring customers from adopting these technologies.

Under the current Rules 15 and 16, customers pay any costs above the allowances calculated in Rules 15 and 16 if their incremental load triggers any utility distribution or service line upgrade—even if the upgrade will likely be used by other customers in the near future. Recognizing the unfairness and disincentive inherent in this result, the Commission exempted single family homes from paying for a utility service upgrade in the infrequent instances when their incremental EV-related load would require a utility service upgrade. The Commission stated that facility upgrade costs associated with EV charging at these sites should be treated as a common facility, rather than a cost paid by the individual customer. This time-limited decision

[6] OIR, page 4.

[7] D.11-07-029, pages 50-60.

was extended in subsequent decisions, and recently made permanent by the legislature in AB 841 (Ting). The Commission should consider extending this treatment of grid costs to other new and permanent loads, such as heat pump water heaters and space heaters, to avoid discouraging customer choices that are aligned with state policy.

**C. The ESJ Action Plan goals should be integrated into every track of this proceeding**

The focus on how to "prepare the electric grid" could potentially distract from questions about how the people who use this grid, especially those in disadvantaged communities, are included (or excluded) and impacted (positively or negatively). We appreciate that the first question the Commission poses is, "How could this proceeding advance or challenge achievement of the nine ESJ Action Plan goals?" There is no easy answer to this question, but the first goal is clear, the Commission must "consistently integrate equity and access considerations"[8] throughout this proceeding. This should apply to the issues prioritized in this proceeding and to each Track. Of the ESJ Action Plan goals, most relevant may be how this proceeding will **increase investment** in clean energy resources to benefit ESJ communities, especially to improve local air quality and public health (Goal 2) and how this proceeding will **improve climate resiliency** in low-income and disadvantaged communities (Goal 3). Our initial ideas for how this proceeding might advance the ESJ Action Plan include:

- Identify and prioritize opportunities for DERs to displace sources of air pollution in environmental justice communities, such as internal combustion engine (ICE) vehicles and power plants.
- Include a demographic / economic screen when considering locational investments in DERs, and prioritize locations where investments would also provide economic and resiliency benefits to low-income and disadvantaged communities.
- Enable utilities and other providers to offer higher incentives and additional support to low-income and disadvantaged communities where DERs would provide system benefits.

[8] See Goal 1 from: *Environment and Social Justice Action Plan*. (February 21, 2019), http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M263/K673/263673090.PDF.

- Require that utilities prioritize upgrading the grid in low-income and disadvantaged communities, in partnership with these communities and the local government, to enable vehicle electrification, building electrification, and other DERs.

## III. Conclusion

NRDC appreciates the opportunity to engage on these important topics, and we look forward to working with the Commission and other parties in this proceeding.

Dated August 16, 2021

Respectfully submitted,

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