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Comments of the Center for Energy Efficiency and Renewable Technologies (CEERT) on the 2021 IEPR Draft Scoping Order

Additional submitted attachment is included below.



February 19, 2021

California Energy Commission
Docket No. 21-IEPR-01

Written Comments of The Center for Energy Efficiency and Renewable Technologies (CEERT) on the Draft Scoping Order for the 2021 Integrated Energy Policy Report

CEERT greatly appreciates the opportunity to comment on the Draft Scoping Order for the 2021 Integrated Energy Policy Report (IEPR). The California Energy Commission's (CEC's) IEPR process is critical to meeting California's statutory climate and decarbonization goals. As such, the 2021 IEPR must reflect the early steps the State needs to take to accomplish those goals through conducting robust forecasts of future electrification load impacts, such as building and transportation decarbonization, and modeling of grid infrastructure required to support that effort.

The benefits of a fully comprehensive electric load modeling effort are clearly displayed by the National Renewable Energy Laboratory's (NREL's) work with the Los Angeles Department of Water and Power (LADWP), in which their modeling results demonstrate a need for a 50% larger grid than initially expected.¹ Furthermore, the results of this 2021 IEPR cycle will be critical in spurring job growth and creation to lead the State's economic recovery in the wake of COVID-19. The CEC must seize the opportunity present in this 2021 IEPR by conducting comprehensive studies of California's future grid reality. In turn, the results of this IEPR will incentivize technological innovation, send correct market signals for clean energy and transportation activities, and effectively jump start progress towards meeting the State's climate goals.

Overall, CEERT strongly supports the main topics outlined in the Proposed Scope of the 2021 IEPR. Each topic section presents relevant energy issues in California, the results of which can be effectively used to inform the State's decarbonization policies. CEERT will address each of the four topic areas in more detail below.

Nonetheless, CEERT recommends the CEC take a more comprehensive analytical approach in the 2021 IEPR to limit information siloing to the greatest extent possible. For example, as detailed further in Section IV, CEERT recommends the CEC conduct special modeling scenarios that include all sources of increased electricity demand, including both transportation and building decarbonization load impacts. This will allow the State to realistically account for the electric load impacts from California's economy-wide decarbonization efforts. Especially in the face of growing reliability concerns as California continues to experience the direct consequences of climate change, analyzing the fundamental interaction between the electric sector and electrification of other sectors is critical to the success of the State's climate goals.

I. ENERGY RELIABILITY OVER THE NEXT 5 YEARS

CEERT supports the efforts outlined under Topic 1 of the Proposed Scope, especially as it focuses on preferred resource integration and the various clean resource solutions available to help California meet a

¹ See, e.g., LADWP and NREL Presentation on The Los Angeles 100% Renewable Energy Study (LA100) to the Los Angeles City Council Energy Subcommittee, February 18, 2021. <https://cityclerk.lacity.org/councilagenda/> Meeting ID=9060, Agenda Item (2).

functional reliability standard. CEERT appreciates the CEC's focus on evaluating reliability in context of moving towards California's decarbonization goals, in part through analyzing the role of distributed energy resources (DERs) and demand response (DR). In light of the contingency events of Summer 2020 and the misplaced focus on natural gas resources to rectify the State's reliability issues, in addition to recent fossil fuel and electric reliability events outside of California, this analysis is critical to demonstrate that high renewable penetration and a reliable electric grid are complementary goals. In combination with increased demand from electrification of other parts of the State's economy, effectively planning for and procuring clean energy resources to replace retiring conventional generation must be a top priority of the State.

Thus, CEERT applauds the CEC's proposed progress evaluation of replacement measures for Diablo Canyon and the Once-Through-Cooling (OTC) plants. Furthermore, CEERT strongly supports the CEC conducting an evaluation of opportunities to reduce reliance on fossil gas-fired electric generation over the next five years while maintaining reliability. CEERT wishes to underscore the importance of framing this analysis around the need for an orderly and equitable transition away from natural gas generation. This effort should focus on understanding the best path forward to transition the State away from reliance on fossil fuels, starting with natural gas plants disproportionately affecting California's most vulnerable communities.

Furthermore, the effects of gas system costs and the impact to ratepayers must be thoroughly analyzed as part of this effort. Thus, CEERT supports the CEC's proposed evaluation of the natural gas pipeline infrastructure in Southern California and limitations of Aliso Canyon. As discussed in Section II below, CEERT recommends the CEC evaluate not only the reliability impacts, but also the consumer rate impacts resulting from over-utilization of this inefficient system and/or significant incremental investments to shore up the ability of existing infrastructure to meet today's demand. While ensuring reliability for the next five years is critical as obsolete conventional resources retire and other sectors decarbonize — in large part through increased electrification — the State must not lose sight of its long-term goals. Thus, conducting a robust analysis will allow for mutually beneficial solutions to arise that meet both reliability and renewable energy goals.

Furthermore, CEERT strongly recommends the CEC develop forecasts and monitor actual hourly loads and load shapes for each load-serving entity (LSE) in the electricity demand forecast. This granular exercise is critical to support regulatory reform efforts, such as emerging "bottom up" Resource Adequacy program improvements, that are essential for facilitating a complementary relationship between fossil fuel retirements, renewable energy integration, and maintenance of electric grid reliability.

II. EVOLVING ROLE OF PIPELINE GAS: TRENDS AND OUTLOOKS

CEERT recognizes the importance in understanding the impacts of the transition away from reliance on fossil fuels and the gas pipeline system that delivers imported energy to the load centers. In addition to the fragile gas system posing serious public health and safety hazards and creating major price spikes in ratepayer bills, as renewable energy prices continue to fall, mitigating the impacts of plummeting natural gas demand is critical to California's just and equitable decarbonization transition. The corollary to a much larger electric grid is a much smaller gas grid. Both represent serious rate and reliability challenges. Thus, CEERT strongly supports the CEC's thorough evaluation of gas system utilization, especially the key areas of focus on gas prices — both commodity and burner tip, gas system costs, impacts on rates, and electric/gas system reliability.

III. BUILDING DECARBONIZATION AND ENERGY EFFICIENCY

Transitioning California’s buildings “from gas appliances to electric appliances powered by the state’s increasingly decarbonized electric grid is the lowest societal cost path to building decarbonization—up to \$20 billion less expensive per year by 2050 than a scenario with no building electrification.”² Furthermore, as of January 25th, 2021, 42 cities in the State have committed to phasing out natural gas in new buildings.³ Thus, CEERT strongly supports the CEC’s evaluation of building decarbonization efforts, especially as it relates to meeting the State’s goals in an equitable manner through increased financing opportunities. However, while it understands and supports the evaluation of building decarbonization, CEERT maintains that reducing information siloes, created by the historic bifurcation of staff and regulatory process between gas and electricity, is critical to making this 2021 IEPR analysis as useful as possible to California’s decarbonization goals.

Building and transportation decarbonization and their effects on California’s electric grid continue to be treated as separate pieces of California’s economy-wide decarbonization effort. However, electrification is a major decarbonization solution in both the building and transportation sectors. The State must ensure the electric grid is adequately prepared for these major increases in electric load, or risk continuing to rely on fossil fuel generation as the marginal energy supply — leading to frustration of decarbonization goals, exposure to price shocks and compromised reliability. Therefore, the CEC should model both building decarbonization and transportation electrification comprehensively in a special modeling scenario to maximize the accuracy of analysis from both of these major electric load impacts.

The draft “SB 100 Study”, while a useful initial step, clearly calls for additional analysis, particularly on the reliability impacts. The grid reliability analyses conducted to date have relied on RESOLVE, a capacity expansion model designed only to advise on future resource portfolios. It was not designed for, and therefore does not analyze, operations in any meaningful way. In order to understand operational impacts, there are clear next steps that can be taken in this IEPR cycle. Namely, SB 100 portfolios should be analyzed using a robust production cost model, ideally PLEXOS. As the production cost model that CAISO uses, PLEXOS best simulates the real time state estimator that operates the actual system. Such an analysis should be run for every hour of the future year (e.g., 2030, 2035), using multiple weather years, and exploring the value of flexible demand — a key component of grid flexibility and reliability. This type of analysis will provide insight into viable interim targets on the path towards 100% clean energy. It is important that California does not get caught in paralysis by analysis of an uncertain far distant future. Instead, the State must take meaningful next steps towards that goal. This kind of study will not be the final word (additional risk analysis and stability analysis will be needed further down) but is a much needed next step.

IV. ENERGY DEMAND

CEERT supports the CEC’s energy demand analysis objective to address “the impacts on electricity demand of climate change, behind-the-meter generation, adoption of battery storage, energy efficiency standards, fuel substitution programs [(i.e, building decarbonization)], and transportation electrification trends.”⁴ Additionally, CEERT strongly supports the CEC’s forecast timeframe extension from 10 years to 15 years to better reflect the State’s 2035 goals.

² California’s Building Transition: Recommendations for Gas Transition Regulatory Proceedings at the California Public Utilities Commission, Kiki Velez, Building Decarbonization Coalition, at p. 3. (in reference to Energy and Environmental Economics, Inc.’s (E3’s) Final Project Report to the California Energy Commission on the Challenge of Retail Gas in California’s Low Carbon Future).

³ California’s Cities Lead the Way to a Gas-Free Future, Matt Gough, Sierra Club (updated January 25, 2021).

⁴ Notice of Request for Public Comments on the Draft Scoping Order for the 2021 Integrated Energy Policy Report, at p. 6.

However, CEERT maintains that the CEC should evaluate these load modifying factors in concert, including the items outlined above *plus* existing infrastructure decarbonization, to gain a comprehensive and robust understanding of the future realities of California's electric grid. These factors must include electrification plans by the Ports of Long Beach, Los Angeles, and Oakland, related heavy-duty transportation electrification for goods movement from the ports, airport decarbonization plans at LAX and SFO, and discrete electrification plans of other major facilities in the State. The CEC should acquire the latest updates from these wide ranging decarbonization plans and evaluate the resulting load forecasts from the corresponding LSE to accurately account for the major electric load increases they present.

In summary, CEERT greatly appreciates the CEC's diligent and dedicated work in addressing barriers to California's clean energy transition through this IEPR process. CEERT strongly supports the topics included in the 2021 IEPR scope, and recommends the CEC organize a robust set of modeling scenarios to most effectively seize this opportunity. CEERT specifically recommends that the CEC conduct comprehensive special modeling scenarios for load increases from major electrification projects in the State – including building decarbonization and transportation electrification efforts. It is universally critical to all parts of California's decarbonization efforts, including other agency activities such as Resource Adequacy reform and clean energy procurement in the Integrated Resource Plan at the California Public Utilities Commission (CPUC) and the California Air Resources Board's (CARB's) Scoping Plan updates, for the CEC to comprehensively analyze the moving parts of California's clean energy transition in this 2021 IEPR cycle.

Sincerely,



V. John White
Executive Director



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