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RE: 2022 Draft Scoping Plan Update to Achieve Carbon Neutrality by 2045

The Joint Utilities Group (JUG) appreciates the opportunity to offer comments on the California Air Resources Board's (CARB) Draft 2022 Scoping Plan Update (SPU). The JUG is a coalition of investor-owned, publicly-owned, and electric cooperative utilities in California.[1][2][3][4][5]

The JUG recognizes and appreciates the many hours spent by CARB staff, E3, the Rhodium Group, and UC Irvine in creating and modeling scenarios, holding public workshops, discussing with stakeholders, and compiling the Draft SPU. The Scoping Plan is an important planning process for the state to move toward a decarbonized future cohesively. This Plan will serve as a compass to help ensure that all agencies and stakeholders are "rowing in the same direction" and to increase the likelihood of reaching the state's goals on schedule. The JUG acknowledges that there is no silver bullet or perfect solution to economywide decarbonization; every potential scenario, those studied and other potential scenarios not studied, will contain both favorable and unfavorable elements in the eyes of the many different Scoping Plan stakeholders. **The challenge is to find a scenario that balances achieving environmental and equity goals, ensuring a reliable and technologically feasible energy supply system, ensuring that electricity rates are affordable, and resulting in an overall cost-effective path forward.**

The Proposed Scenario Aligns with GHG Emission Reductions, Environmental, and Equity Goals in California's Statute and Executive Orders

The Draft SPU has identified Alternative 3 as the "Proposed Scenario," noting that it "is the alternative that most closely aligns with existing statute and Executive Orders. It is the proposed alternative because it best

[1] This JUG letter represents the collective comments of the following utilities: Pacific Gas & Electric Company, San Diego Gas & Electric Company, Southern California Edison, Los Angeles Department of Water and Power, Turlock Irrigation District, Sacramento Municipal Utility District, Southern California Gas Company, the Golden State Power Cooperative, the Northern California Power Agency, Southern California Public Power Authority, and the California Municipal Utilities Association.
[2] The Northern California Power Agency (NCPA) is a nonprofit California joint powers agency established in 1968 to construct and operate renewable and low-emitting generating facilities and assist in meeting the wholesale energy needs of its 16 members: the Cities of Alameda, Biggs, Gridley, Healdsburg, Lodi, Lompoc, Palo Alto, Redding, Roseville, Santa Clara, Shasta Lake, and Ukiah, Plumas-Sierra Rural Electric Cooperative, Port of Oakland, San Francisco Bay Area Rapid Transit (BART), and Truckee Donner Public Utility District—collectively serving nearly 700,000 electric consumers in Central and Northern California.
[3] The Southern California Public Power Authority (SCPPA) is a joint powers agency whose members include the cities of Anaheim, Azusa, Banning, Burbank, Cerritos, Colton, Glendale, Los Angeles, Pasadena, Riverside, and Vernon, and the Imperial Irrigation District. SCPPA Members collectively serve nearly five million people throughout Southern California. Each Member owns and operates a publicly-owned electric utility governed by a board of local officials who are directly accountable to their constituents.
[4] The California Municipal Utilities Association is a statewide organization of local public agencies in California that provide electricity and water service to California consumers. CMUA membership includes publicly-owned electric utilities that operate electric distribution and transmission systems. In total, CMUA members provide approximately 25 percent of the electric load in California.
[5] Golden State Power Cooperative (GSPC) is the association representing California's three rural electrical cooperatives: Anza Electric Cooperative, Plumas-Sierra Rural Electric Cooperative (PSREC), and Surprise Valley Electric.

achieves the balance of cost-effectiveness, health benefits, and technological feasibility.[6]" The JUG agrees that the Proposed Scenario aligns with existing statutes, regulations, and Executive Orders, and in addition, it is the alternative that better aligns with the implementation timelines needed to reduce GHGs, criteria pollutants, fuel demand, and vehicle miles traveled (VMT). Importantly, out of the four alternatives analyzed by CARB, the Proposed Scenario is the one with the most feasible timeline for meeting the state's ambitious goals, increasing the likelihood of success, and is the least likely to compromise energy reliability or exacerbate the existing electricity rate crisis. Further, the Proposed Scenario is also projected to improve air quality and its impact on public health as shown in Table 2-2 of the draft Scoping Plan. While the Proposed Scenario meets state requirements, the JUG recommends that CARB continue refining the Draft SPU Proposed Scenario to maximize cost-effective emissions reductions throughout the economy. For each ton of direct reductions achieved, the need for carbon removal, and its associated electrical load, is reduced.

The Proposed Scenario Timeline is the Most Feasible, However, Electric Reliability Remains Unresolved.

A reliable electric grid is a mandatory foundation upon which to build California's clean energy future. Indeed, ensuring reliability is critical; as articulated by CEC Vice-Chair Siva Gunda, "…if we stumble on *keeping the lights on* the whole climate agenda is at risk."[7]

The JUG supports the timeline selected in CARB's Proposed Scenario. Many California-wide carbon neutrality studies[8][9] have noted that reaching carbon neutrality will be extremely challenging to implement in an accelerated time period, but that 2045 may be a plausible timeline. Independent modeling by The Brookings Institution, CATF, E3, EDF, Stanford University, Princeton University, and UC San Diego conclude carbon neutrality is possible, but only if sufficient clean firm dispatchable electricity resources are available. These studies also caution that there may be insufficient land to support the necessary build-out of renewable generation.[10] The lack of transmission infrastructure to deliver renewable energy from remote sources to urban centers could also be a limiting factor. The JUG concurs that the 2035 target proposed by alternatives 1 and 2 is simply not feasible and supports CARB's choice of looking to 2045 as the target to achieve statewide carbon neutrality.

Achieving carbon neutrality within California will require a reliable electricity supply. As acknowledged in the Draft SPU, California needs to further electrify other sectors of the economy to meet its clean energy goals. The success of this necessary electrification depends not only on a sufficient supply of renewable and zero-emission electricity generating resources but also on a reliable electric grid to deliver electricity to the end users. The JUG reiterates its previous comments on the critical need to assess electric grid reliability as part of the Scoping Plan analysis to determine if electricity portfolios can reliably produce and deliver clean energy 24 hours per day, 365 days a year to support electrification. CARB, the CPUC, and the CEC acknowledged that

[6] Draft SPU page iv

[7] California Energy Commission (CEC) workshop updating the outlook for summer 2022 through 2026 and midterm electric system reliability; May 20, 2022.

[8] E3, Achieving Carbon Neutrality in California – PATHWAYS Scenarios Developed for the California Air Resources Board (Oct. 2020)

[9] The Brookings Institution, CATF, E3, EDF, Stanford University, Princeton University, UC San Diego. "California Needs Clean Firm Power, and so Does the Rest of the World: Three detailed models of the future of California's power system all show that California needs carbon-free electricity sources that don't depend on the weather." Issues in Science and Technology. 2021

[10] Ibid

the first SB 100 report does not include a reliability assessment[11]; the Draft SPU, similarly lacks this analysis, leaving a significant gap in the overall examination and feasibility assessment.

The JUG is concerned that all four alternatives, including the Proposed Scenario, fail to adequately model electric grid reliability, and fail to address the risks to electrification efforts if grid reliability is jeopardized. The JUG recommends that the SPU modeling team address the potential reliability risk by running a full Loss of Load Expectation (LOLE) reliability assessment and providing an opportunity for public review and comment before finalizing the SPU. The full LOLE analysis should include realistic assumptions about land-use limitations and energy needs for all resource types in the evaluated scenarios, including carbon dioxide removal (CDR) and green hydrogen electrolysis, both of which the draft report identified as being sourced "off-grid." Ignoring these assumptions could lead to under-forecasting electricity supply needs or overestimating the feasibility of technologies within the scenario. To prevent additional stress on the electric grid resulting from energy-intensive end uses, it is necessary to include these additional energy needs in reliability assessments to ensure that sufficient renewable build is identified in the planning stage. The JUG recommends that the Draft SPU update all incomplete resource assumptions such as the energy needs for new technologies. These updated assumptions should then be incorporated as part of the LOLE analysis. If a full LOLE is not possible before the release of the final SPU, then the final SPU must recognize that reliability has not been adequately addressed and acknowledge that the scenario modeling is only directional, due to abbreviated reliability validations. Furthermore, the final SPU should also include language that clarifies where and when a complete LOLE analysis on the Scoping Plan Scenario will be performed in the future. Options for where this analysis could be performed include in SB 100 proceedings, as part of an E3 carbon-neutrality study, or in the CAISO's transmission planning process.

The JUG understands that the current scope of the SPU is to evaluate statewide energy needs, and more specifically, that local needs are largely out-of-scope. This has also been true for other planning efforts such as the CPUC's Integrated Resource Planning (IRP) and the SB 100 Report. But as utilities, we need to elevate the need for local planning and reliability assessments. As the state starts making decisions about where to locate new resources and transmission, planning for local needs and testing for reliability at the local as well as statewide level will be increasingly necessary. Progress in this direction is already beginning. At the June 3, 2022 CEC Gas Decarbonization Order Instituting Informational Proceeding (OIIP) workshop, the CPUC stated that the IRP will begin incorporating more locational planning. The JUG recommends that CARB also consider incorporating some level of local planning in the future.

The SPU Must Address Ongoing Energy Affordability

Achieving statewide carbon neutrality goals will require broad electrification within multiple sectors of the economy. This shift will reduce business and residents' dependence on other energy sources. Increased decarbonization will also increase Californians' exposure to electricity rates and pricing impacts. Electrification of the transportation sector and existing buildings will largely depend on consumer choice and will thus be encouraged under low and affordable electricity rates. Affordable and reliable electricity is a necessity to ensure the successful implementation, adoption, and continued public support for expanded electrification. It is also essential to improve public health and the welfare of the people, especially low-income and vulnerable communities. CPUC Commissioner Darcie Houck's opening statements at the February 28, 2022, Affordability

[11] 2021 SB 100 Report March 15, 2021, page 62: "A comprehensive reliability assessment is not included in this first report; so the portfolio composition and associated costs may change after a more rigorous analysis is completed."

En Banc cautioned that "if handled incorrectly, California's policy goals could result in rate and bill increases that would make our policy goals more difficult to achieve and could result in overall energy bills becoming unaffordable for Californians.[12]" The JUG applauds the Draft SPU's focus on this topic in Appendix F and the call for legislative action to mitigate rate impacts. Affordability and equity of energy rates that do not result in cost-shifting are critically important and drawing attention to this topic in the Draft SPU will likely be helpful to spur future action at the regulatory and legislative levels. It is important, however, that the feasibility and cost-effectiveness analyses do not assume that this funding is a foregone conclusion.

The Proposed Scenario is the least-cost option modeled and also minimizes job losses. The JUG appreciates CARB's recognition of the significance of cost impacts and effects on employment. An area of concern, as raised by E3 at the SPU April 20th Initial Air Quality & Health Impacts and Economic Analyses Workshop, is the lack of data available to estimate industrial capital costs for implementation. The JUG agrees that industrial capital cost data is necessary to assess the true costs to industry. Industry costs have a direct impact on carbon leakage. High industrial capital costs could cause businesses to move their operations and emissions outside California; losing industry would likely lead to job losses. The JUG recommends reassessing leakage and job loss risks once industrial capital cost data becomes available.

Conclusion

The JUG appreciates the balanced approach CARB has taken in constructing its Proposed Scenario, and we support a vigorous plan for attaining carbon neutrality. While the selected timeline is consistent with previous studies that conclude carbon neutrality is possible by 2045, several areas would benefit from additional analysis, including reliability, industrial capital cost data, leakage risks, and potential job losses associated with leakage. Electricity grid reliability and affordability are critical to achieving the state's environmental goals, continued support by Californians, and the potential exportability of California's roadmap to decarbonization. To further enhance the robustness of the draft Scoping Plan, the JUG recommends that staff strengthen the underlying analyses in the coming months as identified in this document and further refine the Proposed Scenario based on the results.

[12] CPUC 2022 Affordability En Banc opening statements by Commissioner Houck at approximately minute 4:16 https://www.adminmonitor.com/ca/cpuc/en_banc/20220228/