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January 20, 2021

California Energy Commissioners
1516 9th St.
Sacramento, CA 95814

Re: San Diego Gas & Electric Comments on Draft 2020 Integrated Energy Policy Report Update Volume I: Blue Skies, Clean Transportation

San Diego Gas & Electric Company (“SDG&E”) appreciates the opportunity to comment on the proposed Draft 2020 Integrated Energy Policy Report Update Volume I: Blue Skies, Clean Transportation (“Draft IEPR Update Vol. 1”). We strongly support many of the efforts in the rule, and are grateful for the opportunity to present a few recommendations.

SDG&E Agrees that California Must Do More to Promote and Effect an Equitable Transition to Zero-Emission Vehicles

In multiple locations, the Draft IEPR Update Vol. 1 stresses the need for California to do more to make equitable planning and investments. This is not to undermine the important steps made to date. The California Energy Commission (“CEC”), Public Utilities Commission, and Air Resources Board, among other key state actors, have invested significant effort and funds to pursue an equitable transition. However, SDG&E agrees that California must do even more. Per the CEC’s own recent SB 1000 report, communities with lower incomes have less access to charging.¹

In particular, SDG&E would like to underscore the Draft IEPR Update Vol. 1’s recognition that more “direct collaboration with communities” is needed to “understand their needs” and develop meaningful solutions. Underserved communities must have an authoritative voice when developing solutions and assessing the effectiveness of equity strategies. Further, as noted in Chapter 4, it is crucial that the CEC continue its willingness to dedicate funds to support equity, by offering subsidies, requiring metrics related to equity, or otherwise making designing programs that promote and achieve equity.

SDG&E Encourages VGI and Exploration of Load Management, but The IEPR Inaccurately Summarizes the Utility-Side Tariff and Its Impacts

Pages 92-94 of the Draft IEPR Update Vol. 1 discusses the importance of load management and down-scaling infrastructure by factoring in smart charging impacts and continues to state that existing utility programs and the AB 841 tariff disincentivize the exploration of load management and infrastructure sizing. This description of investor-owned utility programs and the proposed utility-side tariff under AB 841 is inaccurate and should be corrected. AB 841 directs the utilities to file advice letters proposing new tariffs to provide the electrical distribution infrastructure up to the customer meter for separately-metered EV charging outside of single-family homes. It is not accurate to state that AB 841 tariffs will remove the incentive for project developers to reduce capital expenditures, as customers will still bear the cost of the customer-side electrical distribution infrastructure and electric vehicle supply equipment.

¹ SB 1000 Electric Vehicle Charging Infrastructure Deployment Assessment

The separate-metering requirement of the AB 841 tariff is not expected to reduce the incentive for participants to manage their load. The California Public Utilities Commission has required separate metering of EV load in numerous utility EV rates and infrastructure programs. The EV-specific rates offered by utilities encourage load management through demand-based billing mechanisms such as subscription charges and through steeply time-varying rates, which encourage off-peak charging. Furthermore, it is not clear if commonly metering EV and non-EV load actually results in balancing EV and non-EV load, as this balancing – in effect ensuring that EVs are never charged when a building is consuming significant electricity – may not be practical for customers.

SDG&E, in fact, strongly supports continually improving vehicle-grid integration (“VGI”), and is exploring advanced forms of VGI, like innovative rates, vehicle-to-grid, and automated load management, through existing programs and CPUC proceedings. Further exploration of VGI can occur through utility programs, the utility-side tariff per AB 841, as well as other avenues. Advocating against utility programs can only hurt the market and our progress toward meeting state goals, including VGI goals. SDG&E has provided suggested wording modifications in the included Appendix A.

Fuel Cell Electric Vehicles (“FCEVs”) Are a Unique Technology and Require Appropriate Attention from the State

SDG&E agrees that the state should continue investments in fuel cell electric vehicles, particularly for medium- and heavy-duty vehicles. As noted in the Draft IEPR Update Vol. 1, “FCEVs typically have longer ranges and faster refueling times than [battery electric vehicles], which make this technology particularly attractive to customers who must travel long distances, have demanding duty cycles, or need to minimize downtime.” These benefits are absolutely critical for many drivers and businesses, and it is incumbent on our state and market leaders to foster an option that customers may prefer to choose. SDG&E also notes that FCEVs also have an advantage over battery electric vehicles (“BEVs”) in that the origin of their fuel supply can shift easily. BEVs typically are charged on grid power, so depending on when they are charged, BEVs can pose a challenge to grid operations. However, FCEVs have much more flexibility in being able to integrate more favorably with the grid with the nature of how electrolyzers can be adaptable, even when considering technologies such as vehicle-to-grid. New renewable hydrogen supply like the proposed Air Liquide project in Nevada suggest that the promise of a robust renewable hydrogen market for transportation edges closer to reality.²

SDG&E also submits the following typographical suggestions:

- Page 104 states: “While passenger FCEVs have these potential benefits over BEVs, FCEV costs remain high, and refueling may face several challenges. For a successful passenger FCEV market, other countries will need to increase sales to build the economies of scale necessary to drive FCEVs costs down.” These sentences do not fit well together. SDG&E suggests: “... refueling may face several challenges. Diversification of hydrogen supply is critical to ensure a consistent steady production and distribution of hydrogen, so the market doesn’t face the disruptions similar to the summer of 2019. Also, economies of scale of FCEV production is needed to drive the costs down, which can be enhanced through bullish demand in other countries like China, Japan, South Korea and Germany.”

² [Air Liquide committed to producing renewable hydrogen for the West Coast mobility market with new liquid hydrogen plant | Air Liquide](#)

- Table 4 of page 107 seems mislabeled as North America instead of California
- Please clarify on Table 4 of page 107 if these numbers are cumulative or annually by 2025

Utilities Have Developed Innovative and Unprecedented Rates, Which Have Led to Substantially Positive Influence to Vehicle Impacts on the Grid

Page 6 of the Draft IEPR Update Vol. 1 states that we need a new approach to utility rates and pages 6 and 82, including Figure 27, describe that electric vehicles will have a tremendous impact on the grid based on utility time-of-use rates. These analyses are tremendously helpful to the market in understanding the trajectories based on current market behavior. From these projections, we can make business and policy decisions to adjust. However, SDG&E recommends some minor, but key suggestions. First, SDG&E, as well as other California utilities, have been leading innovators nationally and internationally in ratemaking for electric vehicles. These rates have included hourly dynamic rates and new approaches to shifting customer behavior for both energy and demand. This innovation has been continual, and we intend to continue this innovation. Thus, it is not accurate to say “new approach” when referring to utility rates, as stated on page 6. It would be more appropriate to say “continued innovation” or something similar.

Second, as mentioned above, the projections included in this Draft IEPR Update, as well as previous IEPR and other CEC reports are tremendously insightful and beneficial. However, SDG&E believes it is important to contextualize forecasts as projections based on current market trends and, more importantly, that there is good reason to believe the market can change significantly with policy adjustments, as has been accomplished previously. Indeed, the projections contained in Figure 27 look significantly different than previous CEC projections. Readers of the report will be benefitted by knowing the past successes of policy changes, and will also have better context in knowing that certain undesirable outcomes are far from foregone conclusions, such as the tremendous load increase at midnight depicted in Figure 27.

Typographical Updates Suggested Regarding Zero Emission Vehicles as an Energy Resilience Resource

SDG&E suggests the following changes to page 121: “With some plug-in electric vehicle (PEV) battery energy containing dozens of kilowatt hours (kWh) and ~~a~~ fuel cell electric vehicle (FCEV) containing similar electrical capacity in its hydrogen tank, some ~~a~~ ZEVs have ~~has~~ the equivalent of up to several days’ worth of energy use for a typical home.” Most of the battery electric vehicles (“BEVs”) in California still have less than 150-mile range and so wouldn’t be able to supply several days’ worth of energy. However, longer range BEVs and fuel cell electric vehicles would be able to.

Sincerely,



Jaron Weston
Clean Transportation Policy Manager
San Diego Gas & Electric

Appendix A: SDG&E Suggested Modifications to Select Portions of the Draft IEPR Update Vol. 1

Beginning on page 92:

“With increasing private investor interest in charging infrastructure technology, it is critical to recognize the potential for VGI solutions enabled by these project developers. VGI solutions can confer benefits for renewables penetration and vehicle owners. For example, additional IOU programs as currently structured may become a less effective use of ratepayer funds and may introduce an uneven playing field, potentially in tension with the investment and cost recovery mechanism identified in Assembly Bill 841 (Ting, Chapter 372, Statutes of 2020). By mid-2021, the CPUC is directed to approve a utility tariff or rule that authorizes IOUs to design and dispatch electric distribution infrastructure for separately metered charging on the utility side of the customer’s meter. The costs are tracked in a memorandum account and would be recovered in the utilities’ subsequent general rate case. ~~Encouraging the development of utility-side electric distribution costs for separately metered charging may remove incentives for project developers and utilities to reduce capital expenditures and manage load. These incentives may be removed because the costs of the EV load are “added not integrated” with the system and would be subject to EV-only rates that cannot be balanced with other non-EV load.¹⁹⁴ This authorization has the potential to disadvantage charging solutions that impact the grid less. It is important for regulators to foresee this well ahead of time and plan for a smooth dovetailing of a private charging market with current funding programs to maximize VGI.~~ While utilities have a role in helping shape this market in response to their own load management capabilities, innovative approaches to using existing funding channels may present a unique opportunity. Optimizing private, public, and ratepayer investment that leverages costs and maximizes infrastructure built per dollar invested may require new approaches that open markets to ensure competitive access for developers, broad availability, and low costs for consumers.

Create Market Opportunities for Accelerating Charging Infrastructure and VGI

During the June 22 and 24, 2020, IEPR workshops on charging and VGI funding, panelists presented a series of funding and business models to develop charging infrastructure. Panelists also presented several challenges to current funding models of charging infrastructure. For example, funding programs typically serve only charging infrastructure electricity demands by increasing the power capacity of the grid. Some charging options are independent of the grid, and others specifically target low grid impacts with behind-the-meter storage. The potential for these to reduce high make-ready costs (or the upfront costs to ensure electrical infrastructure is present to allow for charging), minimize grid load, and provide additional resiliency (Chapter 7) is **may be** large. ~~However, IOU funding programs focused predominantly on utility distribution infrastructure expansion do not value the benefits of these alternatives.~~ A focus on meeting energy demands created by transportation electrification, rather than necessarily increasing the power capacity of the grid, may help the charging infrastructure market value all options more adequately.”