Application No.: A.18-06-015
Exhibit No.: SCE-02A
Witnesses: M. Backstrom
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SOUTHERN CALIFORNIA EDISON®

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(U 338-E)

Amended Rebuttal Testimony in Support of Southern California Edison Company's Application for Approval of its Charge Ready 2 Infrastructure and Market Education Programs

Before the

Public Utilities Commission of the State of California

Rosemead, California
January 22, 2019

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I.

INTRODUCTION

Southern California Edison Company ("SCE") respectfully submits the following rebuttal testimony in response to intervenor testimony served by various parties[1] in connection with SCE's Application for Approval of its Charge Ready 2 Infrastructure and Market Education Programs ("Charge Ready 2," or "Application").

As SCE has consistently demonstrated, Charge Ready 2 aligns with statutory requirements to advance widespread transportation electrification and improve air quality, while building on the lessons learned from SCE's successful Charge Ready Phase 1 Pilot Program ("Pilot"). Both the scope and scale of Charge Ready 2 are appropriate and have been intentionally designed to make significant strides towards achieving the State's climate goals, while also providing ample opportunity for non-utilities to make contributions to the electrification market. Each feature of Charge Ready 2 was developed to specifically target a key barrier or customer need in SCE's service territory, and these features must be maintained to ensure the most effective set of programs for all of SCE's customers. In particular, SCE's efforts to address multi-unit dwellings—including its "Own and Operate" proposal, its proposed reduction in minimum-port requirements, and its marketing, education and outreach programs—are necessary to target this important customer segment, which has experienced significant barriers to electric vehicle charging station deployment in SCE's territory to date. For the reasons set forth in SCE's Application and this rebuttal testimony, SCE urges the Commission to act expeditiously to review and approve SCE's Charge Ready 2 Application and to continue the important progress in electrifying the transportation sector.

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[1] The following parties served intervenor testimony: California Choice Energy Authority ("CCEA"); California Public Advocates Office ("CalPA"); ChargePoint, Inc. ("ChargePoint"); EVGo; Green Power Institute and Community Environmental Council ("GPI/CEC"); Greenlining; Natural Resources Defense Council, the Coalition of California Utility Employees, Plug In America, Green Lots, Siemens, Electric Motor Werks, Inc., American Honda Motor Co. Inc., the Association of Global Automakers Inc., and the Alliance of Automobile Manufacturers (collectively, "Joint Parties"); Lyft; Small Business Utility Advocates ("SBUA"); The Utility Reform Network ("TURN"); and Union of Concerned Scientists ("UCS").

II.

CHARGE READY 2 ADVANCES TRANSPORTATION ELECTRIFICATION ACTIVITIES PURSUANT TO SB 350

In accordance with Senate Bill ("SB") 350 and the 2016 Assigned Commissioner's Ruling Regarding the Filing of Transportation Electrification Applications ("ACR"),[2] SCE's Charge Ready 2 Application satisfies statutory requirements to advance "widespread transportation electrification" as a means of achieving ambient air quality standards and the State's climate goals.[3] The proposed Charge Ready 2 program would provide significant benefits to disadvantaged communities ("DACs"), and focus on resolving electric vehicle ("EV") adoption barriers in key customer segments like multi-unit dwellings ("MUDs"). The proposed program is also carefully sized to achieve meaningful contributions toward the State's climate goals without impeding competition from non-utility enterprises. In short, the Charge Ready 2 program is designed to maximize customer benefits, minimize customer costs, and leverage SCE's existing efforts and continued learnings to build on the successes of its Charge Ready Pilot.

A. Charge Ready 2 aligns with California's climate and transportation goals and incorporates lessons learned from Charge Ready Pilot.

Most parties continue to strongly support SCE's Charge Ready 2 proposals, citing both the Application's alignment with the State's climate and transportation goals,[4] [5] and its focus on increasing customer EV adoption.[6] Parties also applaud the Application's incorporation of learnings from the Charge Ready Pilot, which enables SCE to strategically address some of the key barriers to EV adoption

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2 Assigned Commissioner's Ruling Regarding the Filing of the Transportation Electrification Applications Pursuant to Senate Bill 350 (September 14, 2016), *available at* http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M167/K099/167099725.PDF.

3 Senate Bill (SB) 350, Pub. Util. Code. § 740.12(a)(2).

4 Including, but not limited to: Executive Order S-3-05 (2005), Executive Order B-48-18 (2018), SB 350.

5 Joint Parties Testimony, pp.1-3; UCS Testimony, p. 10; Lyft Testimony, p. 7; GPI/CEC Testimony, p. 13.

6 GPI/CEC Testimony, p. 12.

and improve upon SCE's transportation electrification ("TE") programs more broadly. For example, The Joint Parties commend SCE's Application for recognizing the urgency of California's climate, equity, and air quality goals, as well as its support of widespread TE that builds upon the successes of the Pilot.[7] Similarly, UCS argues that SCE's Application meets the requirements for contributions to EV deployment in the service of greenhouse gas ("GHG") reduction goals and the promotion of equity objectives; and that it adequately incorporates lessons from SCE's Pilot learnings, including important lessons on multi-unit dwelling participation.[8]

However, TURN and CalPA express some concerns regarding the scale of Charge Ready 2. For example, CalPA questions whether SCE's proposal balances the State's GHG and TE goals with the impacts on customers.[9] TURN similarly questions the program's proposed budgets and recommends drastic reductions and changes to the size and scope. As further discussed in Section III. A, these arguments are based on flawed assumptions and analysis and should be rejected. The Charge Ready 2 proposal was designed using an approach that assessed both: (1) anticipated market needs for EV charging ports and (2) potential customer participation. After conducting this assessment, SCE proposed a program that would address ***about one-third of the projected market need*** for EV charging ports during Charge Ready 2's duration as a means of ensuring ample opportunities for non-utility enterprises to propose additional investments for the substantial remaining market needs in SCE territory. In fact, parties, like UCS, argue that even more programs will be needed in SCE's territory to meet the anticipated need for charging infrastructure.[10]

SCE's Application carefully considers and balances GHG and TE goals with impacts on SCE customers by ensuring Charge Ready 2 can provide benefits for ***all customers and communities*** that SCE serves, both broadly and specifically. By establishing goals for siting charging infrastructure in DACs, SCE will be targeting adoption of cleaner modes of transportation and air quality improvement in

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7 Joint Parties Testimony, p. 3.

8 UCS Testimony, p. 10.

9 CalPA Testimony, p. 1-11.

10 UCS Testimony, p. 10.

the communities most significantly impacted by socioeconomic and environmental harms. Moreover, by designing features of Charge Ready 2 that specifically address barriers to EV adoption identified in the Charge Ready Pilot, SCE is focusing efforts and incentives on customer segments with lower EV infrastructure adoption, like MUDs. For example, with SCE's proposed rebates for new construction at MUDs, and a reduced minimum-port requirement, SCE predicts greater adoption in a market segment that has experienced significant barriers in adopting EV infrastructure to date. Moreover, with SCE offering to own and operate some of the charging stations in MUDs, Charge Ready 2 can further increase participation in this critical market segment by reducing the burden on building managers to own and operate charging stations. On a broader scale, ***all*** SCE customers can benefit from the proposed initiatives to increase EV adoption, including the program's anticipated downward pressure on customers' utility rates, as further described in Section II. B.

B. <u>TURN's argument that Charge Ready 2 will prohibit downward pressure on rates relies on a short-term-focused method and outdated assumptions resulting in incorrect conclusions.</u>

As referenced in Section II. A, above, one of the most significant benefits of Charge Ready 2 is the downward pressure that EV adoption will have on customers' rates as a result of the infrastructure and marketing, education and outreach programs that SCE will provide. TURN argues that the cost of SCE's proposal is "prohibitive to 'downward pressure' on rates,"[11] and presents analysis that attempts to show that SCE's Charge Ready 2 proposal does not provide these benefits and conversely leads to rate increases[12] by comparing the present value of net revenue from EV charging to the full undiscounted cost of SCE's proposal. There are several flaws in this analysis.

First, it is inconsistent to compare a ***discounted*** stream of ***benefits***—in this case, the net revenue from EV charging—to the ***full undiscounted costs*** of the proposed program because the costs of the program would be incurred and flow to customers over several years. An improved representation of

[11] TURN Testimony (Borden), pp. 6-9.

[12] A traditional cost-effectiveness analysis is not appropriate or required for SCE's Charge Ready 2 proposal. SCE's proposal does in fact satisfy the statutory and regulatory requirements for approval. *See* Pub. Util. Code § 740.12(b).

the net costs or benefits from EV adoption and the Charge Ready 2 program would be to analyze the discounted flows of both the costs and the revenues, an "apples-to-apples" comparison.

Second, TURN uses SCE's Charge Ready 2 expenditures during the 2019 to 2023[13] period rather than the actual annual revenue requirement customers will pay. To better assess the effects on rates from EV deployment in SCE's area, SCE recommends conducting the analysis using the annual revenue requirements from 2019 to 2029, and comparing those costs to the net revenues from EV charging during that timeframe. Comparing the costs of SCE's program to the net revenues from EV charging over this period is more useful since this improved analysis considers the net revenue of EV adoption in the years after SCE's proposal is complete.

Additionally, SCE does not endorse any of the assumptions TURN has made in its rates analysis including, most importantly, TURN's use of Governor Brown's[14] outdated state goal of 1,500,000 EVs statewide by 2025, with an estimate of 32% of that goal in SCE's territory, and holding that level of vehicles constant through 2030. TURN's analysis hinges on this highly conservative assumption of the number of vehicles forecasted for SCE's territory from 2019 and beyond. If, for example, instead of using TURN's assumed electric vehicle forecast, the analysis uses the updated draft 2018 CEC IEPR EV forecast, the results show that NPV of net revenues, using TURN's model, increase substantially. Therefore, also in Figure II-1, SCE presents an update to TURN's analysis using the up-to-date Mid Case of EV adoption in SCE's territory from the CEC 2018 IEPR Forecast Update,[15] which yields a net present revenue cost from 2019 to 2029 of only $5.0 million for SCE's Charge Ready 2 proposal, which is the difference between the Charge Ready 2 NPV revenue requirement of $594.7 million and revenues of $589.7 million in Table II-1. Further, using the CEC's High and Aggressive Cases of EV adoption yields a positive benefit of $96.7 and $145.5 million, respectively.

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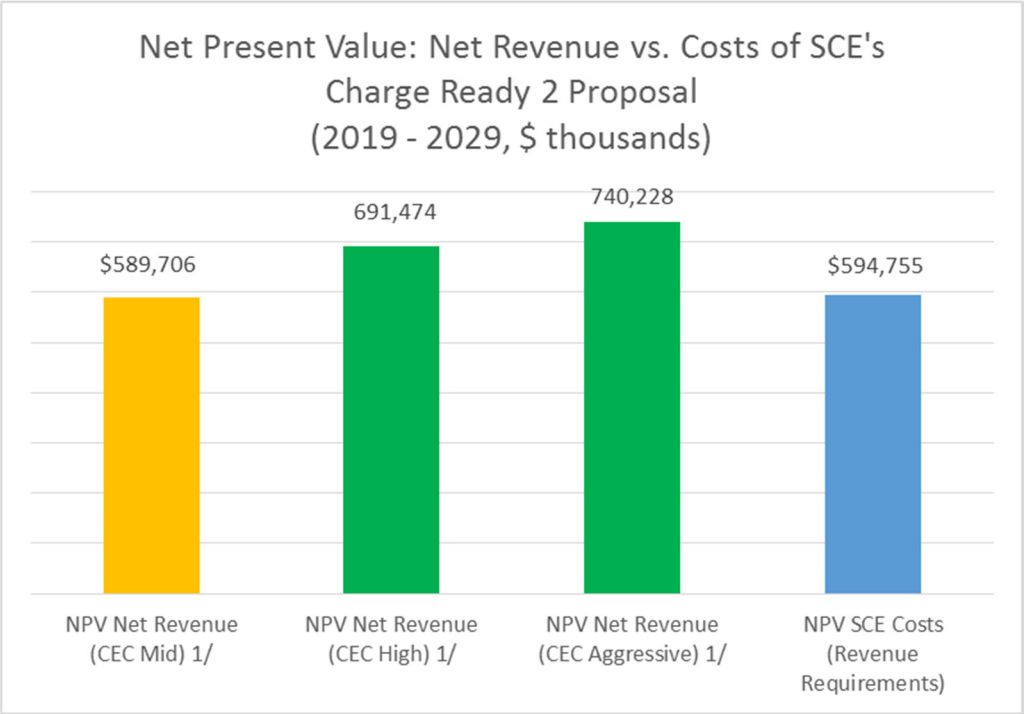
[13] TURN Testimony (Borden), pp. 7-9.

[14] On March 23, 2012, Governor Brown issued Executive Order B-16-2012, which set a long-term goal of having the necessary infrastructure to support 1 million ZEVs by 2020 and 1.5 million ZEVs on California's roadways by 2025.

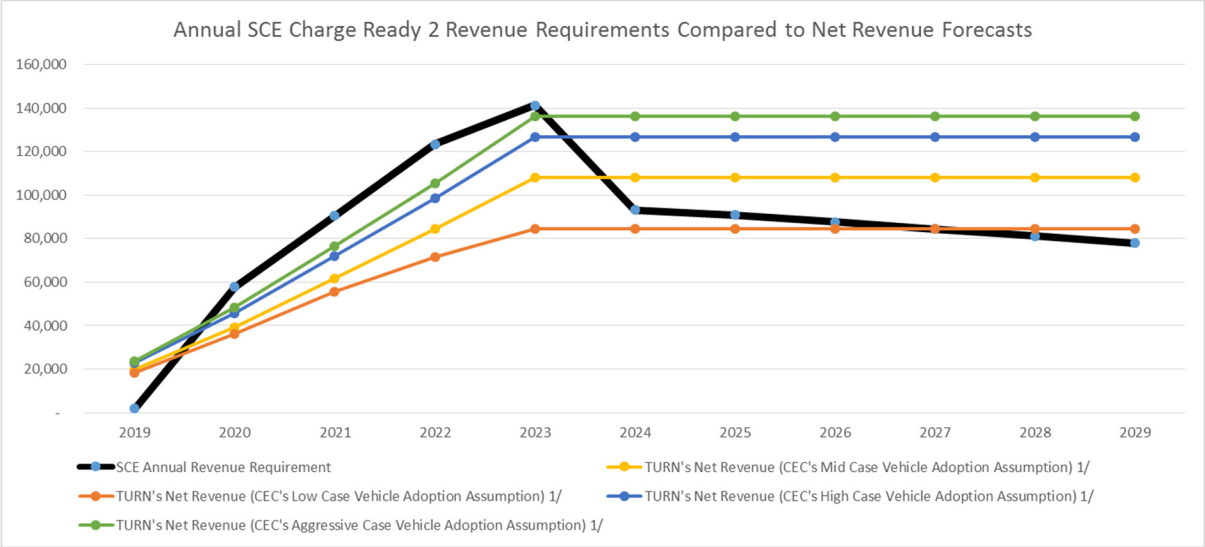
[15] CEC: DAWG Demand Forecasting Pup - 2018 IEPR Forecast Update November 2018.

Figure II-1



Third, while continuing to use TURN's model to calculate net revenues to simplify the discussion of potential downward pressure on rates, SCE believes a more useful method to measure downward rate pressure is to estimate what year the annual costs in terms of revenue requirements will be less than the annual net revenues from EV charging. The primary issue with a net present value analysis, such as TURN's, is that the earliest years more heavily influence the results, which does not tell us when downward pressure on rates may occur. Stated another way, the NPV method focuses the analysis on the early years of SCE's program and discounts the outer years. The reality is that SCE's Charge Ready 2 infrastructure program is an investment in long-lived assets with a corresponding marketing and outreach program that will increase EV awareness and education for years and, therefore, EV adoption is expected to continue to increase for some time after SCE's program has been completed. To better reflect the EV adoption that occurs in the years following the infrastructure investment, Figure II-2 shows that by 2024 SCE's Charge Ready 2 program will result in downward pressure on rates using the IEPR Mid, High and Aggressive Cases of EV adoption and by 2027 using the IEPR Low Case EV adoption.

Figure II-2



In sum, there are a number of complexities to consider when performing a rate analysis, both in terms of methods and assumptions. As demonstrated above, simply changing the source for the EV adoption forecast from TURN's highly conservative assumption to the CEC's updated draft IEPR forecast yields dramatically different results that align more closely with SCE's expectation of the impacts of EV adoption and charging on customer rates. SCE's Charge Ready 2 proposal is of a scale and size to encourage widespread EV adoption in SCE's territory and, therefore, SCE's believes it is reasonable to update TURN's analysis using the CEC's forecasts of EV adoption to provide a range of anticipated EV growth. Indeed, given that the CEC forecast of EV adoption also includes both a High and Aggressive Case of EV adoption (which are less than what SCE identifies as what is needed to most economically achieve California's 2030 GHG reduction goals), SCE believes the CEC forecasts of EV adoption in Table II-2 above present a conservative but improved estimate of the potential downward pressure on future rates. Finally, the benefits to customers from downward rate impacts from electric vehicles are one of many customer and societal benefits, which include cleaner air, reductions in GHG emissions, and reduced expenditures in gasoline.

III.

SCE'S PROPOSED SCOPE AND SCALE OF CHARGE READY 2 INFRASTRUCTURE INVESTMENTS ARE REASONABLE AND JUSTIFIED

Since the filing of SCE's Charge Ready 2 Application on June 26, 2018, two significant reports have been released describing unprecedented global environmental changes and the need for immediate actions over the next decade within energy, transportation, and other sectors to limit the most severe impacts of climate change on the economy, environment and human health.[16,17] Further, Governor Brown signed an Executive Order that directs California to achieve carbon neutrality no later than 2045.[18] This is in addition to California's already-significant existing targets to reduce GHG emissions 40 percent by 2030[19] and to reduce petroleum use 45 percent by 2030.[20]

In spite of these important policy developments, TURN argues that SCE's statewide electric vehicle forecast is too high because it "…is significantly above both the governor's goal in Executive Order B-48-18, as well as the California Energy Commission (CEC) forecasts."[21] However, these arguments are based on flawed reasoning and assumptions. In fact, E3 (in a CEC-funded study) finds that one of the most cost-effective solutions for achieving a 40 percent GHG reduction, as targeted by California, requires higher levels of electric vehicles than ***both*** the Governor's goal and 2017 IEPR (*i.e.*,

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16 Intergovernmental Panel on Climate Change, *Global Warming of 1.5°C* (October 2018), *available at* https://www.ipcc.ch/site/assets/uploads/sites/2/2018/07/SR15_SPM_High_Res.pdf.

17 U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II, Impacts, Risks, and Adaptation in the United States* (November 2018), *available at* https://nca2018.globalchange.gov/.

18 Executive Order B-55-18 (Sept. 10, 2018), *available at* https://www.gov.ca.gov/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf.

19 *See* Senate Bill (SB) 32, *available at* https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32.

20 California Air Resources Board, *California's 2017 Climate Change Scoping Plan* (Nov. 2017), *available at* https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

21 TURN Testimony (Borden), p. 17.

CEC) forecasts.[22] As previously stated in SCE's testimony, SCE found that 7 million electric vehicles are needed statewide in order to most economically achieve the 2030 GHG reduction goal.[23] Given the urgency with which the world needs to act to limit climate change impacts and the new commitments California has made, one could argue that SCE's electric vehicle forecasts do not go far enough to meet policy objectives.

Parties agree that even more TE is needed to address climate and air quality goals. For example, UCS describes the scope of SCE's Charge Ready 2 Program as "at a minimum appropriate in the context of the number of light-duty vehicles currently deployed in SCE's service territory and the necessary growth of electric vehicles in the area to meet the state's electric vehicle deployment and greenhouse gas reduction goals," continuing, "additional charging in the territory may be necessary."[24] Moreover, the Joint Parties explain, "[e]lectrifying the vast majority of the transportation sector is an essential component of any feasible pathway to achieve California's climate, air quality, and equity goals... Californians are already experiencing the adverse impacts of climate change; those real world impacts will only be further exacerbated if we fail to act quickly."[25]

A. TURN'S analysis reflects several layers of flawed reasoning and assumptions resulting in its inadequate ports recommendation.

1. SCE's EV Forecast is reasonable and appropriately accounts for achieving California's transportation and climate policy goals.

TURN's arguments to reduce the number of ports deployed through Charge Ready 2 are based on analysis that relies on flawed reasoning and assumptions and should be dismissed. As noted above, TURN argues that SCE's vehicle forecast is unreasonable because it is "significantly above both

[22] California Energy Commission, *Deep Decarbonization in a High Renewables Future* (June 2018), p. 18, *available at* https://www.ethree.com/wp-content/uploads/2018/06/Deep_Decarbonization_in_a_High_Renewables_Future_CEC-500-2018-012-1.pdf.

[23] *See* SCE-01A, Appendix B - Southern California Edison, *The Clean Power and Electrification Pathway* (Nov. 2017).

[24] UCS Testimony, p. 7.

[25] Joint Parties Testimony, p. 1.

the Governor's goal and the CEC's forecasts."[26] Although SCE's Clean Power and Electrification EV outlook may appear ambitious relative to the Governor's goal and the CEC's previous EV forecast, it reflects the trajectory necessary to economically achieve California's GHG goals for 2030 and beyond. As such, SCE's forecast is not "unreasonable." In fact, the growth in the CEC's updated 2018 Integrated Energy Policy Report ("IEPR") High and Aggressive EV forecasts shows that the CEC's outlook is starting to converge with SCE's in the range of 663,651 and 700,354 EVs by 2023.[27] Additionally, SCE's Clean Power and Electrification EV outlook through 2030 is comparable to other notable forecasts, including Bloomberg New Energy Finance's (BNEF) 2018 light duty EV forecast. Using BNEF's U.S. EV outlook, SCE estimates that the portion of forecasted EVs expected to be in SCE's territory is approximately 760,000 EVs by 2023.[28] SCE's EV outlook therefore is not only reasonable in comparison to other prominent forecasts, but it reflects what is ***actually needed*** to economically meet California's GHG targets. Importantly, for SCE's outlook—and for the other, higher forecasts—to be realized, a portfolio of new policies and programs is necessary to achieve California's climate and transportation goals. This portfolio includes an increased focus on deploying sufficient charging infrastructure as appropriately identified in SCE's Charge Ready 2 Application.

2. SCE's proposed port deployment—addressing approximately one-third of total anticipated EV market need—is reasonable and should be maintained.

TURN recommends that Charge Ready 2 decrease its target deployment to only 26,044 ports in existing and new construction at MUDs, workplaces and public locations through program

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[26] TURN (Borden) Testimony, p. 17.

[27] DAWG Meeting *2018 IEPR Update Light Duty PEV Forecast,* (November 14, 2018), *available at* 2018 IEPR Forecast Update, November 2018, *available at* http://dawg.energy.ca.gov/sites/default/files/meetings/04%20-%20Aniss%20%28CEC%29%20-%20Electric%20Vehicles.pdf.

[28] Bloomberg New Energy Finance, *Long-Term Electric Vehicle Outlook 2018, available at* https://about.bnef.com/electric-vehicle-outlook/, Subscription required. SCE assumes that California will make up 40 percent of the U.S. EV stock and that 38 percent of the EVs in California will be in SCE's territory by 2023. SCE makes these two adjustments BNEF's U.S. EV forecast to estimate SCE's portion.

rebates and make-readies.[29] This modification would reduce SCE's target number of ports by approximately 50 percent. Since Charge Ready 2 was designed to deploy about one-third[30] of the estimated ports needed in SCE's service territory by 2023, TURN's recommendation would cut deployment so that it would reach only 17 percent of that total need. TURN's recommendation, therefore, puts California at risk of not meeting its GHG goals at precisely the time when the State should be aggressively increasing its efforts to decarbonize the transportation sector. TURN's recommendations take the State in the wrong direction, and its arguments to decrease the scale of infrastructure deployment must be rejected.

To arrive at its conclusions to support the recommended lower port target, TURN uses flawed reasoning and assumptions, and displays a misunderstanding of SCE's port estimate analysis. First, TURN argues that drivers of plug-in hybrid EVs ("PHEVs") may not face range anxiety, and that because of this, port estimates should be reduced. SCE, in fact, agrees with TURN that drivers of PHEVs, especially PHEVs with low electric ranges, may not maximize electric vehicle miles traveled ("eVMT"), which is why SCE accounted for this consideration in its analysis. As stated on page C-3 of SCE's Charge Ready 2 testimony, SCE reflected this assumption in the development of SCE's port needs estimate by significantly reducing the National Renewable Energy Laboratory's ("NREL") original attachment rate of PHEV-20 (142.5 plugs per 1000 vehicles) to equal the attachment rate of a PHEV-50 (41.5 plugs per 1000 vehicles). This results in a 43 percent reduction in the Level 2 ("L2") away-from-home ports need between 2020 and 2023. SCE has already made the adjustment that TURN is recommending, and that adjustment resulted in the approximately 20,000 L2 workplace and public port need that SCE used to inform the scale of the Charge Ready 2 proposal.

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[29] TURN Testimony (Borden), p. 40.

[30] SCE-01 A, Appendix D. SCE based the estimated amount of make-readies to be delivered through the Charge Ready 2 program on the projected incremental market need from 2020-2023, approximately 92,000 ports. Charge Ready 2's Make-Ready Expansion program size of 32,000 ports installed represents approximately 35 percent of the incremental market need. SCE distinguishes the incremental need from the total market need or the ports needed from 2018-2023, which is approximately 154,000 ports. SCE assumes that the market or other programs will install the ports that makes up the difference between the total market need and incremental market need.

Figure III-2
Attachment Rate Comparison

NREL: National Infrastructure Analysis
Attachment Rate (Assumes 88% Home Charging)

	Plugs per 1000 Vehicles		
	L2 WORK	L2 PUBLIC	DCFC
PHEV20	142.50	62.00	-
PHEV50	41.50	22.50	-
PHEV20 SUV	152.00	66.00	-
BEV100	18.00	7.00	5.70
BEV250	-	1.00	0.50
BEV250 SUV	-	1.00	0.50

SCE Attachment Rate
Attachment Rate (Assumes 88% Home Charging)

	Plugs per 1000 Vehicles		
	L2 WORK	L2 PUBLIC	DCFC
PHEV20*	41.50	22.50	-
PHEV50	41.50	22.50	-
PHEV20 SUV	41.50	22.50	-
BEV100	18.00	7.00	5.70
BEV250	-	1.00	0.50
BEV250 SUV	-	1.00	0.50

It should also be noted that, while low-electric-range PHEVs do not necessarily maximize eVMT, UC Davis found that when workplace charging was available PHEV users were able to greatly increase their eVMT.[31]

SCE also agrees with TURN's assessment that uncertainty remains with respect to the total number of ports required to support the level of vehicles needed to reach California's GHG goals. SCE has accounted for this uncertainty in its analysis as well, and, as previously noted, determined to target about one-third of the estimated total MUD, workplace, and public ports needed by 2023. TURN mistakenly concludes that SCE does not account for non-utility public and private development of non-residential charging stations. As stated above, SCE hypothesizes that most of the total port need through 2023 and beyond (*i.e.*, nearly 70 percent) would be provided outside of Charge Ready 2. Indeed, all 18,000 of the existing and presumed planned port deployments that TURN identifies as occurring outside of Charge Ready 2 represents only a portion of the total port need to be served by the market and other programs.[32]

As further illustration of the reasonableness of SCE's charging-port-need estimates, according to the *CEC Staff Report: California Plug-In Electric Vehicle Infrastructure Projections:*

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[31] Nicholas, M., Tal, G., Terrentine, T. *Advanced Plug in Electric Vehicle Travel and Charging Behavior Interim Report* (Jan. 8, 2017), UC Davis, Institute of Transportation Studies, pp. 31, 35, *available at* https://phev.ucdavis.edu/wp-content/uploads/2017/08/25.-Advanced-Plug-in-Electric-Vehicle-Travel-and-Charging-Behavior-Interim-Report-.pdf.

[32] TURN Testimony (Borden), p. 22.

2017-2025, in order to support 1.3 million plug-in electric vehicles by 2025, between 99,000 and 133,000 destination charging ports near workplaces and public locations, and 9,000-25,000 public DC fast charging ports are needed. Furthermore, the report states that 121,000 charging ports for MUDs are needed.[33] In SCE's territory, this translates to a MUD, workplace, and public port need range **between 71,000 and 89,000** ports to support the approximately 500,000 EVs by 2025 assumed in the CEC report. These port need estimates far exceed the 32,000 ports that Charge Ready 2's Make-Ready Expansion program would serve, and confirm that there is sufficient market need for ports that can and should be met through a portfolio of actions and programs including: utility programs such as Charge Ready 2; other programs such as the CEC's California Electric Vehicle Infrastructure Project ("CALeVIP") or Electrify America; and charging ports installed by electric vehicle supply providers ("EVSPs") outside of these programs.

B. SCE's site forecast is reasonable and should not be adjusted to arbitrarily weight costs toward larger sites.

Both CalPA and TURN appear to arbitrarily forecast a distribution of program sites that may participate in Charge Ready 2, which, according to their results, decreases total program costs below SCE's estimated costs. Although these hypothetical distributions appear to reduce the total cost of the program, they are either incorrect or not supported by data, and therefore do not reflect a realistic forecast for participation. This faulty forecasting approach increases the likelihood that the program will not achieve its deployment goals.

Because costs accrue based on the components required to construct a site (*e.g.*, mobilization, trenching), it is important to realistically forecast the number and type of sites a program may construct. Therefore, CalPA's methodology of determining the number of sites based ***only*** on the distribution of the number of ports in the Charge Ready Pilot,[34] as opposed to the ***distribution of different-sized sites***, is

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[33] CEC Staff Report: California Plug-In Electric Vehicle Infrastructure Projections: 2017-2025, pp. 4-5, *available at* https://www.nrel.gov/docs/fy18osti/70893.pdf.

[34] CalPA Testimony, p. 1-10.

inappropriate and leads to unrealistic results.[35] CalPA's misunderstanding of what drives costs is likewise demonstrated in its reasoning for increased cost-per-port at sites with greater than 40 ports relative to sites with 27 to 40 ports.[36] CalPA argues that this increased cost-per-port is due to the "small sample size"[37] when, in fact, this increased cost is due to the special construction work required to service extremely large sites (*e.g.*, lengthy deployment distances through parking lots or parking structures, high-voltage transformers and switchgear to maintain adequate power and voltage to end-point EVSEs, distribution panels placed at even intervals throughout the deployment, deployment on multiple floors of parking structures, triggered seismic and structural requirements for conduit and equipment mounting).

Similarly, TURN incorrectly assigns its own preferred generalized distribution of program participating sites in an effort to increase the average number of ports per site and drive down the total cost of the program.[38] TURN's methodology is also flawed, given that its allocation is only loosely based on actual Charge Ready Pilot data.[39]

Both TURN and CalPA attempt to demonstrate that total program costs could be driven down by either artificially or incorrectly forecasting greater participation from large sites without any data to support their assumptions and arguments—neither from the Charge Ready Pilot nor other deployment programs. TURN, specifically, challenges SCE's assumption that 84 percent of sites will contain less than 13 ports.[40] Not only is SCE's assumption, however, derived from actual Charge Ready Pilot data, it also mirrors results from NRG settlement installations. NRG/EVGo has deployed over 6,000 make-ready ports at over 720 sites with an average of 8.4 ports per site. Because NRG/EVGo's deployment size and customer locations are similar to what is proposed in Charge Ready 2, it is telling that 86

[35] For example, proportion of total ports at small sites as opposed to proportion of small sites relative to all sites.

[36] CalPA Testimony, p. 1-10.

[37] *Id.*

[38] TURN Testimony (Borden), pp. 25-28.

[39] *See* TURN Testimony (Borden), p. 29.

[40] TURN Testimony (Borden), pp. 26 and 29.

percent of the MUD sites installed have less than 13 ports and 92 percent of all sites have less than 13 ports.[41]

The artificial increase of ports per site would have the real-world effect of lowering the cost threshold of sites able to participate in the program. This would, consequently, hurt MUDs, small businesses, and more densely populated urban areas in favor of large corporate workplace locations that have sufficient parking lot space to accommodate large charging station deployments. TURN has opposed programs that favor large organizations, which they refer to as "wealthy"[42] and, yet, paradoxically, TURN's proposal would most likely focus the benefits of electrification away from the more disadvantaged sectors of the population. SCE's forecasted site composition, on the other hand, is more realistic and supports broader diversity of customers, including MUDs and small businesses.

C. CalPA's cost comparison is inappropriate and should be dismissed.

CalPA asserts that SCE's costs per port are too high by incorrectly comparing SCE's costs with what CalPA refers to as "similar programs and studies."[43] The referenced data are, however, neither similar programs nor studies. CalPA does not attempt to clarify or adjust the data to make a legitimate comparison. For example, the data relied on by CalPA is from installations over half a decade old, and in some cases, does not account for cost inflation, which could add nearly 20 percent to the reported costs.[44] Additionally, there is little clarity as to what types of installations and cost components are represented by the data (*e.g.*, actual or assumed number of ports per site, customer-side work involved,

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[41] NRG Energy, Inc. Settlement Year 6 – Second Quarter Progress Report to California Public Utilities Commission, Electric Vehicle Charging Station Project. *See* Appendix B. Report covers the third quarter reporting period, although is titled "Second Quarter Progress Report." *Available at* http://www.cpuc.ca.gov/General.aspx?id=5936

[42] *See*, *e.g.*, A.17-01-020, TURN Opening Brief, p. 10, referencing "wealthy free-riders;" A.17-01-020, TURN Opening Comments on Proposed Decision, p. 7, stating that "SDG&E specifically seeks to primarily partner with a large wealthy corporation, UPS, for this project. There is no reason why UPS should receive 100% ratepayer subsidized charging infrastructure;" A.17-01-021, TURN Protest, p. 4, stating that "The primary financial beneficiaries of SCE's programs will be wealthy customers and corporations, subsidized primarily by low and middle-income ratepayers via increased rates on their utility bill."

[43] CalPA Testimony, p. 1-3.

[44] *See* CalPA Testimony, pp. 1-3 through 1-5.

utility-side infrastructure needed). CalPA's lack of due diligence causes confusion and its conclusions should be dismissed.

SCE has researched these studies and isolated several examples that show why they are not appropriate to compare to Charge Ready 2:

EPRI - Electric Vehicle Supply Equipment Installed Cost Analysis[45]

EPRI's survey of national site installation costs from 2010 to 2013 consists of 385 commercial charging sites that installed 989 ports. The survey participants averaged 2.5 charge ports per site and 92 percent of sites only installed one EVSE, which likely did not require the type of upgrades proposed in SCE's filing (*e.g.*, new panel, transformer, extensive site demolition and restoration). This conclusion is additionally supported by the fact that the majority of sites surveyed did not require "site or structural factors" to complete installation. As such, the surveyed sites do not include significant construction costs that are required and accounted for in the Charge Ready installations. It is evident that the sites surveyed by EPRI from 2010 to 2013 for this study are significantly different installations from what SCE is proposing and do not represent appropriate cost-comparison sources.

Rocky Mountain Institute blog post - Pulling Back the Veil on EV Charging Station Costs[46]

This data is not part of a program and should not be referred to as a "study." This blog post from 2014 does not reference where or how data was collected and the assertions do not make sense within the Charge Ready 2 context (*e.g.*, RMI cites permitting costs as low as $50 for construction and installation, assumes that electrical labor is $50 per hour, and assumes that a contractor could complete the entire installation in a single visit). The blog post assumes no cost for utility-side infrastructure and no cost for customer-side design, utility locating, mapping, trenching, demolition, restoration, panel upgrades and switchgear, Americans with Disabilities Act ("ADA") compliance, stub preparation, or safety equipment installation. CalPA's recommendations around cost-per-port and the impact they have

[45] Electric Power Research Institute, "Electric Vehicle Supply Equipment Installed Cost Analysis." (Dec. 2013), *available at* https://www.epri.com/#/pages/product/000000003002000577/?lang=en-US.

[46] Rocky Mountain Institute**,** "*Pulling Back the Veil on EV Charging Station Costs*" (April 29, 2014), *available at* https://rmi.org/pulling-back-veil-ev-charging-station-costs/.

on total program cost should be ignored due to the fact that its analysis relies upon ambiguous information that is not comparable to SCE's proposed program.

NYSERDA – EV Charging Station Rebate[47]

As with the previously mentioned examples, this is neither a comparable program nor a study. NYSERDA's program is more comparable to the New Construction Rebate proposed by SCE. CalPA, again, fails to identify what is assumed in the costs. CalPA relies on NYSERDA's claim that the $4,000 rebate will support up to 80 percent of typical installation costs. CalPA incorrectly assumes that this claim appropriately scales to cover large sites.[48] NYSERDA's program, however, seems to focus on small parking lots with at least eight parking spaces and MUDs that serve at least five units. Again, this comparison of likely one- and two-port installations is not comparable to SCE's Charge Ready 2 program.

NRG Settlement –Electric Vehicle Charging Station Project[49]

As with the previous studies, the NRG settlement project provides no clarity on what costs are included in the assessment. An audit of the NRG program found that a significant number of "make-ready stubs contained inadequate fixtures and/or that require additional conduit/infrastructure to connect to an EVSE [which] may require additional costs and inconvenience to the host."[50] The auditor went on to say that the additional labor and materials to be ready for EVSE were at least $2,035 per stub. It is unknown whether the NRG sites contain additional omissions that are necessary and included in SCE forecasts, and therefore should not be used for comparison.

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47 Governor Cuomo Press Release (September 18, 2018), *available at* https://www.nyserda.ny.gov/About/Newsroom/2018-Announcements/2018-09-18-Governor-Cuomo-Launches-First-Electric-Vehicle-Charging-Station-Installation-Rebate-Initiative-for-Public-and-Private-Locations.

48 CalPA Testimony, p. 1-5.

49 Examination of NRG, Inc. *Compliance with Electric Vehicle Infrastructure Settlement*, pp. 6-7, *available at* http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442459320.

50 Examination of NRG, Inc. Compliance with Electric Vehicle Infrastructure Settlement (July 11, 2018), p. 30, *available at* http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442459320.

IV.

SCE'S OWN & OPERATE PROGRAM ADDRESSES SIGNIFICANT BARRIERS TO EV ADOPTION

Most parties supported SCE's Own and Operate Proposal,[51] which offers a turnkey solution where, in addition to the make-ready, SCE would own and operate a limited number of charging stations deployed in MUDs and at government locations. Three parties, CalPA, GPI, and TURN, questioned whether Own and Operate was necessary and appropriate given the identified scope and scale that SCE proposed in its Application. GPI/CEC simply expressed a "preference" for SCE make-readies over utility ownership,[52] while TURN recommended scaling back ownership to 2,500 ports in DAC-MUDs,[53] and CalPA recommended that SCE not be permitted to own and operate any ports.[54]

A. SCE's Own and Operate option facilitates adoption at MUDs and government locations.

SCE's Own and Operate proposal should be approved because this feature of the Charge Ready 2 program was developed in direct response to SCE's learnings from the Charge Ready Pilot. For example, this proposal would alleviate concerns from government locations that expressed interest in a turnkey solution to address problems with acquiring federal funding, and it would assist MUD building owners who would like to offer charging stations to their residents, but who may find owning and operating these charging stations burdensome. MUD customers cited difficulty with prioritizing the installation of EV charging over other types of amenities that would directly benefit all residents. Additionally, SCE's Own and Operate proposal would alleviate concerns expressed by MUD owners, particularly in low-income communities, that the costs associated with charging equipment maintenance would have to be passed on to their residents. SCE's Own and Operate proposal should increase EV adoption in market segments that previously experienced barriers to participation during the Charge

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[51] Joint Parties Testimony, pp. 4-5; Lyft Testimony, p. 10; ChargePoint Testimony, p. 12; SBUA Testimony, p. 4.

[52] GPI/CEC Testimony, p. 8.

[53] TURN Testimony (Borden), p. 35.

[54] CalPA Testimony, p. 1-25.

Ready Pilot—specifically MUD and government customers. With a cap of 4,231 ports, the Own and Operate proposal makes up a small fraction of SCE's Charge Ready 2 Make-Ready Expansion program, but it will offer valuable learnings as to how owning and operating charging infrastructure can address barriers to adoption among key customer segments and facilitate EV adoption in market segments facing critical barriers.

As demonstrated by Table 9 of CalPA's testimony,[55] SDG&E's program (which contains a utility ownership component) has realized thirteen times the MUD participation on a percentage basis compared to SCE's Charge Ready Pilot (which does not have a utility ownership option). CalPA correctly points out that "only a few of the reasons that SCE lists [as MUD challenges] could be addressed with utility ownership." CalPA goes on to list additional significant MUD challenges including parking limitation. For these very reasons, SCE has proposed complementary programmatic changes (e.g., lowering the minimum-port requirement and providing a turnkey offering) explicitly to increase participation by MUDs. The Commission should approve both of these program features as solutions to support MUD participation.

One of the additional findings of the Charge Ready Pilot was that several potential government customers could not participate in the Pilot because they did not have the resources to procure, own, and operate charging stations. These customers were frequently smaller cities located in DACs. SCE also discovered that some customers require internal processes which restrict their ability to procure charging stations in a timely manner or limit how their funds can be used. The majority of these customers were federal and local government entities. For example, SCE observed the following:

1. Some federal government customers have expressed interest in providing charging at their locations for privately owned vehicles but are restricted from using federal funds to do so. A turnkey solution would make this possible, and the government entity would be willing to grant a long-term easement to support this solution. For example, a local Air Force base with 5,000 employees on its campus currently has only 10 to 12 employees

[55] CalPA Testimony, p. 1-26.

driving private EVs. The site believes that if private vehicle charging were available, it would significantly increase the number of base employees willing to transition to EVs.

2. Receiving approval to connect to the government's network is challenging because of cyber security requirements. If SCE owned and operated the charging stations, there would be no need to access the government's network.
3. Several customers, including several local water districts and cities, also agreed that this solution would be appealing and would significantly reduce approval times.

B. On-bill financing does not address barriers that SCE's Own and Operate proposal seeks to resolve.

In addition to dismissing CalPA's recommendation to eliminate the Own and Operate feature of SCE's proposal and TURN's recommendation to limit Own and Operate to MUDs located in DACs, the Commission should also reject CalPA's recommendation to explore alternatives like on-bill financing,[56] which do not address the barriers SCE's Own and Operate proposal was designed to mitigate. For the reasons stated above, SCE believes that its Own and Operate proposal would more directly address concerns raised by SCE's customers, including both operational and procurement issues. CalPA's recommendation for on-bill financing would not address these issues and, as such, would be less effective at encouraging adoption than SCE's proposal to offer MUD and government customers an option to select SCE ownership and operation of the charging stations.

V.

CHARGE READY 2 PROGRAM IMPLEMENTATION

A. Charge Ready 2 proposals targeting adoption barriers for MUDs should be maintained, and proposals that hinder adoption in MUDs should be dismissed.

As previously discussed, SCE has proposed several measures in its Charge Ready 2 proposal to specifically address barriers to adoption at MUD sites. These features—including SCE's proposed two-port minimum—should be maintained to encourage greater adoption in this important customer

[56] *See* CalPA Testimony, p. 1-33.

segment. Similarly, any recommended changes to Charge Ready 2 that may discourage adoption in MUDs should be dismissed, including requiring MUDs to allow public access to their charging stations.

1. SCE's proposed two-port minimum will address barriers identified in the Charge Ready Pilot to facilitate customer participation in MUDs and small businesses.

While GPI/CEC strongly supports SCE's "thoughtful solutions," to reduce the required port minimum and enable a greater dispersion of sites throughout its territory,[57] CalPA argues that the Commission should reject SCE's proposal and maintain the port-per-site minimum from the Charge Ready Pilot to maintain customer participation and minimize per-port cost.[58] CalPA, however, acknowledges that higher minimum-port requirements will, in fact, decrease participation as they requested that DAC sites have a lower average installation requirement than non-DAC sites because higher requirements "may have the unintended effect of reducing DAC participation."[59]

SCE agrees that per-port cost is typically cheaper in sites with a greater number of ports due to economies of scale; however, in order to facilitate widespread TE consistent with the goals of SB 350, SCE must balance these considerations with targeting the barriers to TE among all customer segments. Because MUDs had the lowest participation among customer segments in SCE's Charge Ready Pilot, SCE designed new features in its Charge Ready 2 proposal to specifically address barriers at MUDs. SCE strongly believes that numerous customers would benefit from lowering the minimum required number of ports per site to two—particularly MUDs and small businesses. Approximately 46 percent of MUDs in SCE's territory have ten or fewer parking spaces. Maintaining the minimum number of ports at five or ten would likely exclude most of these customers from participating in the program, as building owners and management agencies are very unlikely to see 50 to 100 percent EV adoption in their small buildings over the next few years. Further, a two-port minimum could enable street-side charging that could serve residents of MUDs without EV charging available. A higher port

[57] GPI/CEC Testimony, p. 5.

[58] Under the Charge Ready Pilot, the minimum ports per site is five in DACs, and ten in non-DACs.

[59] CalPA Testimony, p. 1-11.

minimum could prevent this type of arrangement that therefore decrease MUD access to charging and adoption.

Small business owners are likely to have many of the same concerns as MUD owners and managers. Approximately 86 percent of businesses in SCE's territory employ fewer than 20 people.[60] These business owners are unlikely to see an immediate need to devote 50 percent of their employee parking to EV charging. While the number of requested charge ports was not a required field in the application, 52 applications, of the total 479 received to-date, ***specifically requested*** fewer than five ports (despite the five- and ten-port minimums in the Pilot). As such, SCE's proposed two-port minimum directly responds to customer feedback and should position SCE well for increasing adoption among customer segments like MUDs and small businesses that found the previous port minimum to serve as a barrier to program participation.

2. A program-wide minimum-average-port requirement would limit participation by MUDs and small businesses and create unnecessary program complexity.

CalPA's alternative recommendation to adopt a mandatory port-per-site average for the program[61] would create a backlog of small customer sites eager and willing to install charging stations that could not participate in the program until a significant number of very large sites have elected and been approved to participate. This recommendation should be rejected because it, again, places emphasis on the number of ports per site as opposed to cost. Additionally, customer experience would likely suffer because funding would be inaccessible for periods of time during the program, which would slow the market down as opposed to accelerating it.

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[60] American Fact Finder – Census Bureau. The raw data provide numbers of business establishments by employment size class for detailed industries. Statistics are provided by detailed industry for five-digit ZIP codes. SCE applied GIS mapping of ZIP codes within SCE service territory to sort data, *available at* https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=BP_2015_00CZ2&prodType=table.

[61] CalPA Testimony, p. 1-11.

3. Requiring MUDs to offer public access to charging stations would discourage MUD customers from participating in Charge Ready 2.

CalPA argues that charging stations at or near MUDs should target MUD residents and be publicly accessible to maximize utilization during the day.[62] SCE agrees that charging stations at or near MUDs should target MUD residents but strongly opposes requiring MUDs to offer publicly accessible charging. Requiring MUDs to provide public access to their charging stations would likely discourage most MUD owners and homeowner associations ("HOAs") from applying to the program. Allowing public access to private parking areas could violate HOA by-laws, raise safety concerns, and potentially exacerbate issues with limited parking availability or assigned parking. MUDs with controlled access to parking lots and structures would not be able to meet this requirement and would be deemed ineligible for the program. SCE strongly opposes CalPA's recommendation as it works against the goal of trying to place more charging in MUDs by severely limiting the number of MUD participants who would be willing or able to meet the requirement. Providing public access should be optional for MUD participants as it is with workplace participants.

B. SCE's Charge Ready 2 program supports CCAs' TE objectives and CalChoice's proposed modifications are inappropriate.

CalChoice's testimony primarily argues that Charge Ready 2 should provide funding and carve outs to the City of Lancaster, one of CalChoice's member cities.[63] Such carve outs are not within the scope of Charge Ready 2 and are unnecessary because Charge Ready 2 is designed to benefit ***all*** SCE customers, and ***all*** eligible customers can participate in the Charge Ready 2 programs, whether those customers receive generation services from SCE, CCAs, or electric service providers. SCE is eager to collaborate with Lancaster and other cities and CCAs to identify and reach customers that may be a good fit for the Charge Ready 2 programs and leverage the unique capabilities and customer

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[62] CalPA Testimony, p. 1-2.

[63] CalChoice Testimony (Wells), p. 1.

relationships they may have, but CalChoice's proposed modifications are not necessary or appropriate to achieve these results.

CalChoice requests that SCE set aside 50 sites in the Make-Ready Expansion program for locations identified by Lancaster to expedite implementation and advancement.[64] SCE does not believe it is appropriate to reserve sites for an external entity's selection. SCE is attempting to achieve many goals through its implementation of the Make-Ready Expansion program, and it needs to view site applications holistically to balance the objectives of the program throughout its implementation. SCE is also concerned that reserving a specific number of sites for an external entity's selection could have the opposite of Lancaster's stated desire (to expedite implementation). Instead, SCE could be forced to stop accepting applications if it has to reserve funding for 50 unknown sites with unknown costs.

CalChoice also requests that SCE set aside 100 of the charge ports that SCE plans to offer for MUD and government customers that choose to have SCE own and operate the charging stations.[65] There may be customers that would like to select Lancaster to own and operate their charging stations. Nothing in SCE's Make-Ready Expansion prevents such an arrangement, assuming that the participating customers meet all other program requirements. There is no reason to set aside 100 charge ports out of the small percentage of total charge ports that customers can elect to have SCE own and operate. Lancaster and participating customers can negotiate their own arrangements if customers want Lancaster to own and operate their changing stations.

CalChoice makes several requests related to Charge Ready 2 marketing, education and outreach ("ME&O"). First, CalChoice requests that SCE transfer $300,000 of its customer-funded ME&O budget to Lancaster, conditioned on Lancaster's promised adherence to undefined goals and requirements.[66] CalChoice states that this will "ensure that CCA customers are not paying for ME&O twice (once through generation charges paid to the CCA program and once through distribution charges paid

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[64] CalChoice Testimony (Wells), p. 4.

[65] *Id.*

[66] CalChoice Testimony (Wells), pp. 4, 16.

to SCE).[67] Requiring all SCE customers to pay Lancaster to subsidize Lancaster's ability to double charge its own customers does not make logical sense. SCE has no control over what costs CCAs, including Lancaster, choose to include in their generation rates. SCE's Charge Ready 2 will be fully funded through its distribution charges, which CalChoice correctly notes are paid by all customers for programs that are available to and benefit all customers. This practice is consistent with Commission precedent.[68] If Lancaster chooses to double charge its customers for an SCE distribution infrastructure program that is fully funded through distribution rates and that Lancaster does not provide or incur any costs for, unfortunately there is nothing that SCE, or the Commission, can do about it.

In addition to paying Lancaster part of SCE's overall ME&O budget, CalChoice requests that all communications in any CCA area include the logos of both SCE and the CCA.[69] This is not appropriate or necessary because SCE's Charge Ready 2 program will be available and marketed to all eligible customers. Cobranding is not necessary or helpful to ensure that CCA customers do not mistakenly believe that they are ineligible by virtue of their status as CCA customers. SCE will clearly state program eligibility requirements in the materials and provide contact information for customers that have questions or would like additional information. In fact, cobranding would contradict CalChoice's next recommendation, that marketing "be applicable to all customers" and "remain neutral."[70] There is no reason that CCAs need to "endorse" any marketing for an SCE infrastructure program that has been approved by the Commission.

CalChoice also recommends that SCE "be directed to work in good faith with its CCA partners in implementing ME&O."[71] This recommendation is unnecessary as SCE always works in good faith

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67 CalChoice Testimony (Wells), p. 16.

68 *See* D.14-12-024, p. 48, which states: "We find it equally reasonable that tariffs and programs, including pilots, available to all customers should be paid for by all customers." *See also* the California Solar Initiative ("CSI") and Self Generation Incentive ("SGIP") programs, which are funded through distribution rates, and the State's Energy Efficiency, Demand Response, and California Alternate Rates for Energy ("CARE") programs, which are funded through Public Purpose Program rates that are paid for by all customers.

69 CalChoice Testimony (Wells), p. 16.

70 *See* CalChoice Testimony (Wells), p. 17.

71 CalChoice Testimony (Wells), p. 17.

with the CCAs in its jurisdiction as well as any other third parties with whom it partners in implementing its programs. Although SCE does not agree that CalChoice's proposed modifications are necessary or appropriate, SCE applauds Lancaster's efforts to encourage and facilitate transportation electrification. SCE also acknowledges that Lancaster is well-situated to identify and communicate with customers in its jurisdiction that may be a good fit for Charge Ready 2. SCE anticipates using third parties to implement many aspects of its ME&O, and looks forward to continuing collaborating with Lancaster, who may be able to act as a vendor in the program (similar to other community-based organizations).

Finally, CalChoice requests that Charge Ready 2 programs "be available to all customers on an equal basis."[72] As SCE confirmed in response to CalChoice's protest of SCE's Charge Ready application, Charge Ready 2 will be available and marketed to all eligible customers, regardless of whether they are bundled or unbundled customers.[73] CalChoice's recommendation that "the Commission require that the generation supply for *any* new EV charging stations under Charge Ready 2 be provided by the relevant Community Choice Aggregator if the location owner is a CCA customer"[74] is not necessary and could conflict with the rules that govern new CCA service accounts, which allow customers to opt out of CCA service if they choose.[75] SCE will implement its Charge Ready 2 problem in compliance with all applicable laws, regulations, and tariffs, including the requirements to initiate new service in a CCA's jurisdiction.

C. Requiring an advice letter requesting approval of SCE's proposed siting prioritization methodology is unnecessary and would result in delays and limit flexibility.

CalPA proposes that, in addition to consulting with SCE's PAC to establish a site prioritization methodology, the Commission should require SCE to file a Tier 2 advice letter requesting approval of

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[72] CalChoice Testimony (Wells), p. 18.

[73] *See* SCE Reply to Protests, p. 11.

[74] CalChoice Testimony (Wells), p. 19 (emphasis in original).

[75] *See*, *e.g.*, SCE Tariff Rule 23.

the completed site prioritization methodology.[76] CalPA supports SCE's proposed prioritization criteria and recommends that SCE also include "supporting new EV adoption" as an additional element.[77] SCE agrees that supporting new EV adoption, as opposed to simply supporting existing EVs, is a reasonable element to factor in site prioritization. SCE disagrees, however, that filing a Tier 2 advice letter seeking Commission approval for the site prioritization methodology is necessary or appropriate. As CalPA notes, SCE proposed to consult with its Transportation Electrification Program Advisory Council ("PAC"), which includes the Commission's Energy Division, regarding its site prioritization methodology. This process allows SCE to receive helpful feedback and improve its proposals, without creating unnecessary delay. Further, this process preserves flexibility for SCE, in consultation with its PAC, to adjust the prioritization methodology throughout the duration of the program, if appropriate. This flexibility is particularly important in a four-year program, where SCE and its stakeholders will be learning and improving throughout the program. Based on these lessons learned, SCE and its PAC may agree that it is appropriate to add or adjust criteria in the prioritization methodology. For example, it may be appropriate to adjust the prioritization methodology to improve participation among multi-unit dwellings, which is an emphasis of SCE's proposed Charge Ready 2. Requiring Commission approval of these implementation details is not necessary, especially when the Commission is represented by the Energy Division on SCE's PAC, and the delays that could result from filing a Tier 2 advice letter could jeopardize the flexibility to improve the Charge Ready 2 program in a timely manner.

[76] CalPA Testimony, p. 1-19.

[77] *Id.*

D. SCE is amenable to reducing charging station rebates in some customer segments, but full MUD and DAC rebates should be maintained to increase adoption in these key market segments.

1. SCE is amenable to reducing charging station rebates to Pilot levels for some customer segments.

Both CalPA and TURN argue that the Commission should reject SCE's proposal to provide 100 percent rebates to all customers and recommend setting charging station rebate levels at lower percentages.[78] SCE believes that substantial rebates are necessary and appropriate to encourage widespread EV adoption, particularly in MUDs and DACs. At a minimum, SCE's proposed 100 percent rebates must be maintained for MUDs and DACs where customers face even more significant barriers to EV adoption. SCE is amenable to reducing charging station rebates in other customer segments to pilot levels (*i.e.*, 25 percent for non-DAC workplaces, fleets, and destination centers) that may not face as significant barriers to acquiring and installing the charging stations as these two customer groups.

2. SCE is amenable to reducing new construction rebates to $3,500.

Both the Joint Parties and TURN propose reducing the proposed $4,000 rebate applicable to new construction.[79] TURN suggests lowering the rebate to $3,500 but retaining the scale of the program at 16,000 ports.[80] The Joint Parties propose to retain the total budget of $64 million with a reduced rebate level allowing for greater deployment of charging ports.[81] The proposed rebate is a cap based on actual costs to the site owner/developer. Therefore, rebates actually paid cannot exceed the cap, but could be much lower if a customer's actual costs are lower than the cap. SCE is amenable to lowering the cap per port to $3,500 while retaining the program component cost cap of $64 million, which SCE estimates would fund a minimum of 18,285 ports instead of 16,000.

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[78] CalPA Testimony, p. 1-1; TURN Testimony (Borden), p. 30.

[79] Joint Parties Testimony, p. 5; TURN Testimony (Borden), p. 34.

[80] TURN Testimony (Borden), p. 34.

[81] Joint Parties Testimony, p. 23

E. SCE agrees with the Joint Parties' recommendation to make the pass-through of TOU price signals to EV drivers a default arrangement.

The Joint Parties recommend that SCE should make the pass-through of demand response and time-of-use ("TOU") price signals to EV drivers a default arrangement for all EVSEs owned by third parties as a means of ensuring that drivers charge in a manner consistent with grid conditions.[82] SCE understands the Joint Parties' arguments and agrees with the importance of promoting charging in a manner that aligns with grid needs. SCE is therefore amenable to the Joint Parties' recommendation of establishing a default arrangement that the site host reflect TOU price signals aligned with SCE's TOU rates in the charges they develop for the purpose of charging end-users (*i.e.*, drivers using the charging stations) for energy. Passing on a TOU price signal would be the default arrangement for participating site hosts, while allowing site hosts to opt out of the arrangement. This will promote charging in a manner that is consistent with grid conditions, offer the opportunity for drivers to realize fuel cost savings, and preserve flexibility to accommodate site host operational needs.

F. SCE's DCFC proposal is a reasonable addition to Charge Ready 2 and serves an important market need.

CalPA and TURN argue that DCFC is inappropriate at long-dwell locations.[83] SCE agrees that DCFC stations would be inappropriate at sites where they may not be utilized regardless of the classification of long-dwell or short-dwell. Several other parties, however, reinforced the importance of DCFC stations and their benefits to the market, and supported their inclusion in Charge Ready 2.[84] Lyft, particularly, stated that a "major challenge TNC drivers face is the lack of adequate public fast-charging stations, including in disadvantaged communities (DACs) and Multiple Unit Dwellings (MUDs) where they live."[85] Consequently, and as stated in SCE's testimony, SCE will develop criteria to determine DCFC

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[82] Joint Parties Testimony, p. 17.

[83] CalPA Testimony, p. 1-17; TURN Testimony (Borden), p. 36.

[84] Lyft Testimony, pp. 7-8; EVGo Testimony, p. 3.

[85] Lyft Testimony, p. 4.

site eligibility "which may include factors such as proximity to customers needing charging, proximity to MUDs, site host agreement for public access, location in DAC, access for low income customers, cost of charging for drivers, or site size."[86] SCE plans to seek input from its TE PAC before finalizing this criteria if its DCFC proposal is approved by the Commission.

G. GPI/CEC's recommendation to appoint an Independent Evaluator is not necessary to ensure costs are as low as feasible.

GPI/CEC recommends that an Independent Evaluator be appointed to ensure that SCE's costs on Charge Ready 2 are as low as feasible.[87] SCE disagrees that an Independent Evaluator is necessary or appropriate to keep program costs low. As discussed in SCE's Reply to Protests, through the Charge Ready Pilot, SCE shared program cost data with all stakeholders who could comment if any costs appeared unreasonable or recommend ways to reduce costs. SCE will continue this information-sharing practice during Charge Ready 2 implementation, including through SCE's PAC, which meets quarterly to share progress and data from all of SCE's TE programs and pilots. Moreover, SCE has incorporated lessons learned from the Charge Ready Pilot to reduce costs, such as creating packaged site designs, conducting site feasibility reviews, using customer distribution facilities, and implementing a streamlined plan with Authorities Having Jurisdiction ("AHJ") to reduce the time and costs associated with permitting and plan checks. Certain costs per site should be reduced due to SCE's ability to procure equipment more efficiently and through competitive processes. Further, presumably SCE would have to devote a portion of its Charge Ready 2 budget to pay the independent evaluator, which would have the effect of increasing total program costs.

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[86] SCE-01, p. 41.

[87] GPI/CEC Testimony, p. 3.

VI.

SCE'S MARKETING, EDUCATION AND OUTREACH ARE CRITICAL FOR ADDRESSING AWARENESS AND ADOPTION BARRIERS

As described in Section III, California's ambitious climate and transportation policy goals require a large-scale increase in the adoption of EVs and the infrastructure needed to support them. SCE's proposed Charge Ready 2 ME&O programs are necessary to accelerate EV adoption within SCE's service territory and are critical to achieving statewide clean energy goals.

Research shows there are significant barriers to EV adoption. Some of the key barriers include:

- **Familiarity:** Overall lack of familiarity with EVs. A 2017 study found that only 21 percent of people felt they knew "a fair amount" about EVs.88
- **Cost:** Lack of awareness about the long-term savings of driving EVs as well as of incentives and subsidies. Additional concerns about EVs include the cost and effort associated with installing charging stations and the impact charging will have on utility bills.
- **Range Anxiety:** Concerns around limited mileage per charge and lack of charging infrastructure.
- **Safety:** Misperceptions about the safety of EV models.
- **Performance:** Concern that the experience of driving an EV is sub-par compared to internal-combustion engine vehicles.

SCE has a vital role to play in educating its customers and shifting perceptions around EVs, helping to reduce the barriers and increase awareness of the benefits of EVs. Research demonstrates that greater awareness and knowledge of EVs significantly increases EV consideration. Research also

88 The International Council on Clean Transportation, *Literature review of electric vehicle consumer awareness & outreach activities*, (March 2017), "A survey by Consumer Federation of America" (CFA, 2015), revealed that greater consumer knowledge about electric vehicles and their desire to purchase one are correlated. However, only 21 percent of the respondents said they know a "fair amount" about electric vehicles, and far fewer reported knowing a "great deal" about them.

shows consumers trust utilities to give them accurate information about EVs more so than they trust information from the government or the auto industry.89

A. SCE's EV Awareness Campaign, Customer Education Program, and TE Advisory Services each serve distinct goals that build on one another to deliver comprehensive results.

SCE has proposed to tackle key EV adoption barriers and address customer needs through its comprehensive ME&O effort, to improve EV awareness and understanding of the benefits of fueling from the grid and assist customers as they consider adopting EVs. While many parties support[90]—and even wish to devote additional funding[91] to—SCE's ME&O efforts, TURN and CalPA both argue that SCE's Awareness Campaign and Customer Education Programs are not necessary and that they could be reduced or eliminated in favor of maintaining the TE Advisory Services alone.[92] Both parties make inaccurate assumptions about SCE's existing and ongoing coordination to leverage private partnerships and fail to recognize how SCE's programs are intentionally designed to target existing gaps in addressing EV awareness barriers. Each component of SCE's ME&O program serves a distinct and important purpose, and each program feeds into, and builds off the other programs in the ME&O portfolio. As such, all the programs proposed in SCE's Application are necessary to address EV adoption barriers and must be maintained.

SCE's EV Awareness Campaign employs marketing tactics, such as mass media advertising, direct marketing, outreach through local community organizations, and a new EV Ambassador Network to encourage EV purchases. The proposed $28,739,000 EV Awareness Campaign was developed by SCE's creative agencies who will be working with SCE to develop and implement the programs:

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89 Plug In America, *Evaluating Methods to Encourage Plug-In Electric Vehicle Adoptions*, (Oct. 2016) "Consumers trust utilities more than government or auto industry sources for PEV information (EEI, 2014). At least one market researcher is confident that the involvement of some utilities is a key reason for California's high adoption rate in some areas (Navigant, 2016a)." *Available at* https://pluginamerica.org/wp-content/uploads/2017/03/PIA-Incentive-Survey-Paper-Final-Oct.-2016.pdf.

90 Lyft Testimony, pp. 11-12.

91 GPI/CEC Testimony, pp. 12-14.

92 TURN (Alexander) Testimony, pp. 12-14; CalPA Testimony, p. 1-34.

- Mass media, which covers awareness building and education and is based on past SCE campaigns. The budget is recommended to build awareness among business owners and decision makers, and will cover the SCE service territory to reach a broad target audience including fleet operators, MUD owners, workplaces, charging destinations, etc.
- Direct response, including personalized, trackable, measurable, targeted marketing (*e.g.*, social media ads with a specific call to action, to elicit a quick response from customers).
- Website, which includes site development, asset creation, and deployment.
- Sponsorships, which includes costs to secure sponsorships/venues, creative development and production of event/sponsorship graphics including booth(s) and collateral materials/signage/banners and staffing presence at events.
- Public relations, including campaign development, event promotions, digital posts to news sites and blogs, press releases, speaking opportunities, managing 3rd-party endorsements, etc.
- Research, which includes pre-production concept testing -- focus groups and surveys to ensure that creative and messaging are resonating with our customers, as well as Campaign Effectiveness surveys to gauge campaign effectiveness, track awareness levels, and track progress against key performance indicators.
- Production, which includes agency costs related to media strategy and planning, creative strategy, creative/content development and production based on final media mix including video, print advertising, digital banners and other opportunities to be determined.

The Customer Education Program will build on the proposed EV Awareness Campaign to provide further education about EVs through SCE's website, enhanced education and training materials, hands-on ride-and-drive events and experiential events. These tools will be mobile-optimized and intended to overcome barriers to adoption including, for example, understanding the total cost of ownership and finding ways to locate charging away from home. Total cost for the Customer Education Program is $7,514,000.

These complementary marketing programs will work along with the TE Advisory Services and the Charge Ready 2 Marketing Program to familiarize SCE's customers with EVs and increase their awareness of the long-term savings associated with driving them, the incentives that are available to help offset the up-front cost of purchasing them, and the safety and performance of EVs. Without these efforts, there would be a significant gap in addressing EV adoption barriers which could inhibit EV sales and diminish the overall benefits of SCE's vehicle electrification efforts.

B. SCE's ME&O programs would complement its existing efforts to leverage partnerships and forums that bring awareness to transportation electrification efforts.

CalPA and TURN argue that the Charge Ready 2 ME&O programs do not meet the requirements of the 2016 ACR and believe that these programs could be scaled back dramatically if SCE instead focused its efforts on increasing awareness through private partnerships.[93] CalPA believes that SCE fails to leverage Electrify America in its outreach efforts, when SCE already collaborates closely with other partners at various forums throughout California.

The Charge Ready 2 ME&O programs do, in fact, meet the requirements for ME&O as outlined in the 2016 ACR.[94] They will: (1) continue to leverage existing resources to avoid duplication, (2) reach a specific audience, and (3) deliver specific messages relevant to the target audience. The efficacy of the programs will be measured and reported annually in reports filed with the Commission.

SCE currently leverages existing resources to promote transportation electrification and will continue to do so. SCE President Ron Nichols sits on the Veloz board, which includes Electrify America CEO, Giovanni Palazzo. In 2018, SCE collaborated with Plug In America by co-sponsoring its PlugStar auto dealer training program with LADWP, and ride-and-drive events like the National Drive Electric Week event held at LADWP in 2018. SCE intends to participate in 20 similar events in 2019.

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[93] TURN Testimony (Alexander), p. 10; CalPA Testimony, p. 1-37.

[94] ACR p. 24 states "If proposed programs within the TE application contain an education and outreach component, the electric utility shall provide a logic model in its application why such an intervention is needed: i.e. what existing resources the utility will leverage to avoid duplication, the audience that the utility is trying to target, what types of messaging will be provided to customers, intended outcomes of education and outreach, and means to measure efficacy of the education/outreach activities."

While Veloz, Electrify America, and Plug In America effectively reach broad audiences across Southern California with campaigns like "Electric for All" and ride-and-drive events, SCE can communicate with its customers via direct response marketing to raise their EV awareness, and address barriers to adoption. Working with its creative agencies, SCE can target customers specifically, focusing on groups like EV purchasers, EV intenders, and auto intenders with an EV profile. Additionally, SCE will be working with its creative agencies to develop and launch broad market campaigns to raise EV awareness.

Once targeted, SCE will deliver messages to customers about the benefits of driving EVs. EV purchasers will be informed about EV charging station availability, and the availability of programs like SCE's Home Installation Rebate Program and Clean Fuel Reward Program. EV intenders and auto intenders with an EV profile may receive messages like, "Driving EVs helps you save," emphasizing saving money on gas, and saving time and money on maintenance. Other messages like, "Driving EVs helps create a Clean Energy Future" can be delivered, emphasizing that driving EVs helps the environment by reducing GHG emissions and improving air quality. Upon approval, SCE will engage its creative agencies to develop specific messaging and will test it prior to deployment. The results of the campaigns and their efficacy will be reported to the Commission via annual reports.

SCE applied lessons learned from the Pilot when designing the Charge Ready 2 ME&O by including public relations in the plan to broaden the reach. Campaign Effectiveness surveys will gauge campaign effectiveness, track awareness levels, and report out key metrics. EV awareness surveys will be conducted prior to deployment to establish a baseline, and measured against surveys conducted during the campaign, and at the campaign's conclusion. Public relations will include digital posts to news sites and blogs, press releases, and speaking opportunities.

SCE will also coordinate with local, State, and industry education programs for EV adoption as it currently does with organizations like the Center for Sustainable Energy, which helps to promote SCE's Charge Ready Home Installation Rebate and Clean Fuel Reward Programs. SCE will track and measure website traffic, EV charging station applications and installations, and will conduct pre- and post-

ME&O surveys at events like ride-and-drives. The data will be published in annual reports to the Commission.

SCE's EV Awareness Campaign and Customer Education Program must be maintained. They are important for increasing EV adoption and helping customers to make informed decisions about their EV purchases. They are designed to work in tandem with other Statewide organizations, and deliver complementary messages, all focused on educating the public about the benefits of EVs, and the need for rapid adoption.

C. CalPA incorrectly assumes ME&O is not needed due to Charge Ready Pilot success.

CalPA infers that ME&O is not important for Charge Ready 2 based on the success of the Charge Ready Pilot.[95] Although the Charge Ready Pilot was fully subscribed shortly after the launch, it should not be assumed that most SCE customers already know about SCE's transportation electrification programs. The quick response to the Charge Ready Pilot was largely due to pent-up demand and is not indicative of the overall awareness and perception of EVs and their benefits. Similarly, it is not reasonable to conclude that because the Charge Ready Pilot was fully subscribed shortly after launch that customers have an adequate awareness of the benefits of EVs. As noted above, the purpose of the EV Awareness Campaign and Customer Education Program is not limited to enrolling customers in SCE's infrastructure programs, but rather focuses on increasing awareness, consideration and adoption of EVs for SCE's customers generally. Many other customers still face significant barriers to EV adoption, and the ME&O will address these barriers, targeting specific market segments.

D. The budgets for the proposed TE Advisory Services and Charge Ready 2 Market Education Programs are reasonable and appropriate.

TURN argues that the budgets for the Proposed TE Advisory Services and Charge Ready 2 Marketing Campaign should be revised to reflect Mr. Borden's reduction in the size of the Charge Ready 2 infrastructure program.[96] As previously discussed in Section III. A above, TURN's arguments

[95] CalPA Testimony, p. 1-34.

[96] TURN Testimony (Alexander), pp. 21-22.

to justify its recommendations to reduce the budget of the Charge Ready 2 infrastructure program are based on flawed analysis and assumptions and should be dismissed. Accordingly, TURN's arguments to reduce aspects of the ME&O budget based on Borden's testimony should likewise be dismissed.

As described above, SCE's proposed Charge Ready 2 ME&O programs are necessary to accelerate EV adoption within SCE's service territory beyond what can be done with infrastructure investment alone. The proposed programs will greatly assist in meeting California's clean energy goals for air quality and greenhouse gas reductions. The four components of the Charge Ready 2 ME&O—the EV Awareness Campaign, the Customer Education Program, TE Advisory Services, and the Charge Ready 2 Marketing Campaign—work in concert and complement each other.

ME&O Component	**Description/Purpose**	**Total Cost**
EV Awareness Campaign	To increase EV adoption, SCE will implement a broad EV awareness campaign through mass media, direct marketing, outreach through local community organizations, and a new EV Ambassador network.	$28.8M
Customer Education Program	Builds on the proposed EV Awareness Campaign to provide further education on EVs through new, online self-service tools, enhanced education and training materials, hands-on ride-and-drive events and experiential events.	$8M
TE Advisory Services	Expansion of the Pilot TE Advisory Services to include new services for more business customers. These services will primarily focus on technical education and support commercial, governmental and fleet-operating customers from initial awareness to training, hands-on experiences, and TE-related assessments performed by SCE or its vendors.	$4.8M

Charge Ready 2 Marketing	Proactive customer recruitment effort. Includes increased use of media, website refresh, fact sheets, FAQs, videos, program enrollment portal, and associated collateral and documents.	$9.7M

VII.

SCE PROPOSES SUFFICIENT PERFORMANCE ACCOUNT ABILITY METRICS

A. SCE agrees to reasonable targets for DAC and MUD deployments.

CalPA and TURN suggested that SCE include performance-based accountability metrics associated with the Charge Ready 2 Make-Ready Expansion program.[97] SCE proposes using two metrics to measure performance: (1) percent of ports in DACs and (2) percent of MUD sites. The target for ports in DACs should be 30 percent to align with what SCE proposed in its Charge Ready 2 Application. SCE proposes a 15 percent[98] MUD port target for make-ready installations (*i.e.*, SCE will target installing 15 percent of the total number ports in the Charge Ready 2 program in at MUD sites). While the proposed MUD target represents a portion of the potential demand for on-site charging among EV drivers living in MUDs, the amount of MUDs that will complete an application is unknown. For this reason, SCE proposes reserving funds for MUD sites for two years. At the end of the first two years, any remaining MUD funds will be released for any customer segment. These proposed performance targets are wholly contingent on maintaining the proposed Charge Ready 2 program features as proposed in the application, including a two-port minimum, ME&O, and the option for SCE to own and operate the charging stations at MUDs. These characteristics are designed to encourage MUD participation and the MUD target must be adjusted accordingly if these program elements are changed. SCE believes both the DAC and MUD are appropriate to help meet the overall goal of the program to increase EV adoption in these segments.

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[97] CalPA Testimony, p. 1-43; TURN Testimony (Borden), p. 42.

[98] 15 percent MUD port target approximates the percent of charging port demand in MUDs with 20+ onsite parking spaces relative to the incremental charging port market demand in SCE's territory, *i.e.* 12000/92000. *See* SCE-01A, Appendix D, p. D-2.

B. SCE will estimate GHG reductions in its annual reports.

CalPA recommends that SCE submit a Tier 2 advice letter estimating the GHG reductions attributable to the program and provide estimates of the GHG reductions attributable to the Charge Ready 2 program in annual reports.[99] SCE supports providing the GHG emissions reduction estimates based on the actual throughput of the charging stations installed by the program in annual reports. However, providing these estimates ahead of program deployments adds little value since the annual utilization and timing of vehicle charging is largely uncertain. Additionally, SCE cautions that the avoided GHG emissions resulting directly from the charging throughput of the ports installed through the program greatly underestimates the GHG emissions attributable to the program as a whole. Each of the program elements proposed in Charge Ready 2 is designed to overcome various market barriers that leads to greater adoption of EVs in SCE's territory. For example, SCE's ME&O campaign may have the added benefit of reaching non-SCE customers. Additionally, many customers may utilize both the chargers installed pursuant to the Charge Ready 2 program as well as other chargers, located in SCE's service territory or in other locations. SCE views the avoided GHG emissions calculated from Charge Ready 2 installed ports' throughput as the absolute minimum value of GHG reductions attributable to the program.

C. TURN's use of a 7 percent utilization metric is not appropriate.

TURN's proposed port utilization metric is not appropriate for two reasons. First, port utilization does not reflect customer benefits from the program, and second, TURN's proposal for removing infrastructure from ratebase does not align with the principles of group depreciation.

1. Utilization is not an accurate measure of customer benefits.

TURN argues that a 7 percent utilization requirement is needed to ensure benefits from charging stations accrue to all customers.[100] SCE opposes this metric, which is not an accurate measurement of customer benefits. Moreover, TURN's calculation for producing this 7 percent figure is

[99] CalPA Testimony, p. 1-43.

[100] TURN Testimony (Borden), p. 42.

flawed in that it artificially inflates the utilization percentage by assuming a low port demand. This miscalculation increases the utilization percentage target by 33 percent, which does not represent results realized through the Charge Ready Pilot.[101]

A percentage utilization requirement is inappropriate for evaluating program benefits for several reasons. First, a driver's charging level choice (*i.e.*, L1 or L2) can impact the total throughput at a site if vehicles using L1 charging are occupying charging stalls and preventing other vehicles from charging. This may be the case regardless of how many EVs were purchased as a result of the newly available charging stations at the site. Moreover, utilization percentages are dictated by many other factors that are outside of SCE's direct control—namely, customer vehicle choice and charging decisions. The type of vehicles that are using the charging stations can impact the total kWh throughput at a site (*e.g.*, Chevy Volt EV limits charging to 3.3 kW while different model years of Nissan Leaf range from 3.3 kW to 6.6 kW). The mileage driven by site tenants will also impact total throughput and utilization calculations regardless of how influential the availability of program charging stations were in the driver's vehicle purchase decision. As such, sites with low-mileage drivers may be penalized even if EV adoption at their site increases due to the program. Furthermore, utilization metrics alone do not capture whether drivers are charging consistently with beneficial grid conditions—incentives for any away-from-home charging would also need to be incentivized to ensure greater consistency in daytime charging in accordance with grid needs.

Finally, the utilization metric fails to acknowledge that site utilization typically increases over time.[102] With infrastructure useful lives of at least a decade, TURN's arbitrary cutoff at three

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[101] TURN Testimony (Borden), p. 49, Footnote 123. TURN uses a weighted average demand for level 2 charge ports of 4.95 kW when, in fact, charging station demand is closer to 6.6 kW (nearly all sites in the Charge Ready Pilot chose level 2 charge ports as opposed to level 1). TURN's calculation assesses total kWh divided by potential kWh. When using 4.95 kW, the potential kWh (denominator) is decreased, which increases the overall percentage. TURN does not recommend this methodology, however, it does recommend the inflated result based on this methodology.

[102] Charge Ready Pilot data shows that site usage over 17 months can increase or decrease from month to month but sites, on average, have realized 12 percent monthly growth in total kWh throughput.

years[103] may also penalize sites that grow over the program's five-year duration. This near-term focus further demonstrates how utilization is not an appropriate way to evaluate site reasonableness.

2. TURN's proposal is inconsistent with cost-of-service ratemaking and may hinder the success of the program.

TURN's proposal to assign to shareholders the cost of infrastructure failing to achieve a 7 percent utilization threshold is fundamentally unfair and violates traditional ratemaking practices. TURN's proposal is fundamentally unfair because it would assign to shareholders the cost of assets that do not achieve the 7 percent utilization threshold, while failing to provide additional return for assets exceeding TURN's proposed threshold. Such a proposal violates cost-of-service ratemaking practices. In cost-of-service ratemaking, utility customers receive the benefit of long-lived assets and pay for a proportional share of the costs (including a return of and on the assets) over the assets' expected useful life regardless of the assets' utilization. A utility pole does not receive a different level of return or cost recovery based on the number of customers it serves (for example, poles in rural areas serving fewer customers will be recovered over the same period of time and by the same customers as a pole in a dense urban environment that is more highly utilized). TURN's proposal rejects this long-held cost recovery practice and attempts to create a new standard for utility service that is beyond the scope of this proceeding. By moving away from cost-of-service ratemaking, TURN's proposal increases the risk of investment in the program and may hinder efforts to achieve wider availability of EV charging stations.

VIII.

COST RECOVERY

A. FERC regulations require SCE to capitalize customer-side infrastructure.

TURN argues that customer-side ("behind-the-meter") infrastructure costs should be recovered immediately as an operating expense. TURN's basis for this conclusion is that these costs are typically

[103] TURN Testimony (Borden), pp. 4, 42.

the domain and responsibility of the customer and that SCE need not own the investment to accomplish program goals. This testimony will address TURN's proposal to expense a capital asset.

Under SCE's proposed program design, customers have the option to have SCE finance, own, and operate all of the infrastructure required to provide service to the make-ready stub.[104] As a result, SCE's behind-the-meter assets[105] will have the same ownership and maintenance obligations as the balance of SCE's before-the-meter infrastructure. When the operating requirements for the behind-the-meter costs are the same as before-the-meter costs FERC accounting guidelines state the costs should be capitalized.[106] TURN's proposal to expense long-lived assets draws an arbitrary line at the meter for infrastructure that will have the same operations, maintenance, and service life expectations as before-the-meter assets and in doing so, violates FERC accounting guidelines and traditional ratemaking practices.

Traditional ratemaking practices allocate the costs of assets to the customers who receive their benefit. TURN's proposal to treat utility owned infrastructure as an operating expense ignores this practice and assigns the total cost of the assets only to current customers. TURN supports its conclusion by summing the decades-long capital revenue requirement and comparing it to the revenue requirement using TURN's expense proposal. Ignoring the issues created by TURN's comparison of nominal dollar revenue requirements,[107] TURN's figures fail to recognize the burden of its expense proposal falls solely to current customers. SCE's pending proposal is consistent with traditional ratemaking, FERC

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[104] SCE-01A, pp. 29-30.

[105] Including the transformer upgrades, service drop, panel, trenching, wiring, conduit, step-down transformers, and other equipment, as needed. SCE-01A, p. 32.

[106] CFR 18, Part 101 Uniform System of Accounts ("USOA") states that customer-side costs should be recorded to Plant Account 371 – Installation on customers' premises. "This account shall include the cost installed of equipment on the customer's side of a meter when the utility incurs such cost and when the utility retains title to and assumes full responsibility for maintenance and replacement of such property."

[107] When comparing multi-period revenue requirements, a comparison of nominal dollars ignores the effects of inflation and present valuation of the cost of the program.

accounting guidance, and achieves fair allocation of costs to customers receiving the benefit of the assets.

B. The Commission should reject proposals to allocate all revenues not related to distribution hardware on an equal-cents-per-kWh basis.

SCE opposes proposals made by TURN and CalPA to allocate all Charge Ready 2 expenditures on an equal-cents-per-kWh basis and recover those costs through the Public Purpose Programs charge.[108] The costs of Charge Ready 2 should be recovered based on the distribution allocator because the expenditures are for distribution assets and associated labor and non-labor costs. Indeed, 78 percent of the requested funding is directly related to distribution capital assets, or O&M-related costs to field and support distribution assets. SCE agrees with TURN's assertion that "TE programs are intended to benefit all ratepayers,"[109] as all distribution assets benefit all ratepayers. SCE revenues are functionalized by category on a system basis, which determines the revenue allocator used. SCE expenditures are not bucketed by individual expenses pertaining to specific rate classes to create unique revenue requirements for the purposes of revenue allocation. Revenue allocation is conducted at the functionalized system level prior to the rate design process, with the purpose of aligning cost recovery with the drivers of those costs. SCE has not and will not specify that specific expenditures are made on behalf of specific customer groups. Instead, SCE classifies its cost into functional categories based on the nature of the cost item. In D.18-05-040, the Commission determined that SCE had properly functionalized TE-related costs in the Distribution function.[110] TURN and CalPA have not presented new information demonstrating the distribution infrastructure to be installed under Charge Ready 2 is in anyway different from the infrastructure installed for other distribution-related projects involving transformation, ducts, structures and cables. For these reasons, the Commission should deny TURN's and CalPA's request.

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[108] TURN Testimony (Borden), p. 43; Cal PA Testimony, p. 2-2.

[109] TURN Testimony (Borden), pp. 43-44.

[110] D.18-05-040, pp. 123-124.

To the extent the Commission adopts the TURN and CalPA proposal for recovering program revenues on an equal-cents-per-kWh basis, such as through the Public Purpose Programs charge, the Commission should not require the change to be effective until implementation of SCE's 2021 GRC Phase 2 proceeding. The Commission has only recently adopted the Revenue Allocation Settlement agreement in SCE's 2018 GRC Phase 2 (A.17-06-030), where parties, including TURN and CalPA, agreed to a revenue allocation applicable to distribution-related costs. The agreement was entered into with the knowledge that distribution-related costs recovered during the attrition years would be allocated on the basis of the agreed-to, capped distribution revenue allocation factors. The GRC Phase 2 allocations already protect residential customers from any disproportionately high impact through the application of average rate caps and floors that limit the amount of Distribution revenue allocated to each rate group. This allocation included forecasted distribution revenues and was part of the settlement agreed to by both CalPA and TURN. It would be disingenuous to all parties involved if the allocation of distribution-related cost were to change during the term of the 2018 GRC Phase 2 settlement agreement. Furthermore, addressing revenue allocation methodologies in disparate proceedings outside of a GRC Phase 2 has the potential of leading to inconsistent results across the proceedings for revenues that are functionally the same. Revenue allocation proceedings serve the purpose of consolidating multiple issues related to functionalized revenue allocation and gathering the parties most knowledgeable with these issues to argue the merits of the various proposals. SCE's request to defer implementation until the 2021 GRC Phase 2, should the Commission find in TURN's and CalPA's favor, has the potential of resulting in a more equitable solution, including for those parties not involved in this instant proceeding, by allowing for a more thorough and comprehensive review by the parties interested in and affected by TURN's and CalPA's proposal.

C. SCE's proposed balancing account and reporting provide appropriate visibility of program costs.

TURN recommends creating a separate one-way balancing account to track the New Construction Rebate program.[111] However, SCE disagrees that a separate balancing account for this one item is necessary, since SCE will provide an annual report, similar to reporting provided in the Charge Ready Pilot, with details of all of the Charge Ready 2 program capital expenditures and O&M expenses by the categories shown in Table V-8 of SCE's testimony.[112] SCE proposes to record the revenue requirements associated with the Charge Ready 2 program capital expenditures and O&M expenses in a separate sub-account within the existing CRPBA.

In general, a balancing account is used to record the revenue requirements associated with the total costs of a project or program that has a unique Commission decision and authorization separate from the GRC or any other proceeding. And, although a balancing account provides a formal mechanism for cost recovery and review of the recorded revenue requirements, it is not the most useful format for reviewing cost details. In addition to annual reporting, SCE will present a full showing of Charge Ready 2 recorded costs, including rebates, in its ERRA Review proceeding and this showing of recorded costs will have a one-to-one relationship with the revenue requirements recorded in the Charge Ready 2 sub-account in the CRPBA.

[111] TURN Testimony (Borden), p. 34.

[112] SCE-01A, p. 93.