

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

Application of Pacific Gas and Electric Company  
for Approval of its Electric Vehicle Charge 2  
Program

Application No. 21-10-010  
(filed October 26, 2021)

**TESTIMONY OF  
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ON BEHALF OF SMALL BUSINESS UTILITY ADVOCATES**

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March 2, 2022



## TABLE OF CONTENTS

I.	Identification & Qualifications .....	1
II.	Introduction .....	2
III.	State Targets for Transportation Electrification Infrastructure .....	4
IV.	EVC 2 Site Investments .....	9
	A. PG&E’s Overall Approach to Level 2 Retrofit Projects .....	10
	B. Comparison of PG&E and CALeVIP Project Costs .....	14
	C. Multi-Family Housing Level 2 Retrofit Component.....	20
	D. Workplace and Public-destination Level 2 Retrofit Component .....	25
	E. Multi-Family Housing Level 2 New Construction Component.....	27
	F. Public-destination DC Fast Charger Component .....	32
V.	Cost Controls for Site Investments .....	35
VI.	EVC 2 Costs, Other Than Site Investments .....	38
	A. Site Installation Support Costs .....	39
	B. Other Cost Reduction Opportunities .....	42
VII.	To-the-Meter (TTM) Work Costs and Upgrade Process .....	42
VIII.	Cost Allocation.....	44

## ATTACHMENTS

Attachment JDW-1.	<i>Qualifications of John D. Wilson</i>
Attachment JDW-2.	<i>PG&amp;E, Response to TURN_003-Q005, “Atch01-tabRate_Comparison”</i>
Attachment JDW-3.	<i>PG&amp;E, Responses to CalAdvocates_001-Q04, “Atch01”</i>
Attachment JDW-4.	<i>PG&amp;E, Response to CalAdvocates_003-Q04</i>
Attachment JDW-5.	<i>PG&amp;E, Response to CalAdvocates_002-Q09</i>
Attachment JDW-6.	<i>PG&amp;E, Response to NDC_004-Q012</i>
Attachment JDW-7.	<i>PG&amp;E, Response to NDC_006-Q005</i>

- Attachment JDW-8. *PG&E, Response to Cal Advocates\_001-Q016*
- Attachment JDW-9. *PG&E, Response to TURN\_004-Q004*
- Attachment JDW-10. *PG&E, Response to TURN\_001-Q001, "AtchCONF (Updated)" Attachment omitted due to length and confidentiality*
- Attachment JDW-11. *PG&E, Response to SBUA\_001-Q04 Attachment "a-Part I-CONF" omitted due to length*
- Attachment JDW-12. *PG&E, Response to SBUA\_002-Q001*
- Attachment JDW-13. *PG&E, Response to CalAdvocates\_002-11*
- Attachment JDW-14. *PG&E, Response to NDC\_003-Q008*
- Attachment JDW-15. *Energy Solutions, Low-Power EV Charging, case study for Peninsula Clean Energy (January 2021).*
- Attachment JDW-16. *PG&E, Response to TURN\_003-Q10*
- Attachment JDW-17. *PG&E, Response to TURN\_002-Q017, "Atch 1"*
- Attachment JDW-18. *PG&E, Responses to Cal Advocates\_001-Q06*
- Attachment JDW-19. *Energy Solutions, Electric Vehicle Infrastructure Cost Analysis Report for Peninsula Clean Energy (PCE) & Silicon Valley Clean Energy (SVCE) (November 20, 2019).*
- Attachment JDW-20. *PG&E, Response to CalAdvocates\_003-Q05*
- Attachment JDW-21. *PG&E, Response to TURN\_002-Q013*
- Attachment JDW-22. *PG&E, Response to CalAdvocates\_004-Q002*
- Attachment JDW-23. *PG&E, Response to CalAdvocates\_001-Q15*
- Attachment JDW-24. *PG&E, Response to SBUA\_001-Q07*
- Attachment JDW-25. *PG&E, Response to CalAdvocates\_001-Q01, "Atch02CONF" Attachment omitted due to length; Note that PG&E has confirmed that the portion of the document referred to in testimony is non-confidential*
- Attachment JDW-26. *Center for Sustainable Energy, Accelerating Electric Vehicle Adoption in the Bay Area (May 29, 2020)*
- Attachment JDW-27. *Peninsula Clean Energy, EV Charging in California*

1 **I. Identification & Qualifications**

2 **Q: Mr. Wilson, please state your name, occupation, and business address.**

3 A: I am John D. Wilson. I am the research director of Resource Insight, Inc., 10 Court St.,  
4 Arlington, Massachusetts.

5 **Q: Summarize your professional education and experience.**

6 A: I received a BA degree from Rice University in 1990, with majors in physics and history,  
7 and an MPP degree from the Harvard Kennedy School of Government with an emphasis  
8 in energy and environmental policy, and economic and analytic methods.

9 I was deputy director of regulatory policy at the Southern Alliance for Clean Energy  
10 for more than twelve years, where I was the senior staff member responsible for SACE's  
11 utility regulatory research and advocacy, as well as energy resource analysis. I engaged  
12 with southeastern utilities through regulatory proceedings, formal workgroups, informal  
13 consultations, and research-driven advocacy.

14 My work has considered, among other things, the cost-effectiveness of prospective  
15 new electric generation plants and transmission lines, retrospective review of generation-  
16 planning decisions, conservation program design, ratemaking and cost recovery for utility  
17 efficiency programs, allocation of costs of service between rate classes and jurisdictions,  
18 design of retail rates, and performance-based ratemaking for electric utilities.

19 My professional qualifications are further summarized in Attachment JDW-1.

20 **Q: Have you testified previously in utility proceedings?**

21 A: Yes. I have testified more than thirty times before utility regulators in California, five  
22 other U.S. states and Nova Scotia, and appeared numerous additional times before various  
23 regulatory and legislative bodies. I have testified before the California Public Utilities  
24 Commission in nine proceedings.

1 **II. Introduction**

2 **Q: On whose behalf are you testifying?**

3 A: I am testifying on behalf of Small Business Utility Advocates. SBUA’s mission is to  
4 represent the utility concerns of the small business community. Promoting an electricity  
5 rate structure that facilitates the success of small commercial customers with cost effective  
6 utilities supplying clean and renewable energy is central to this mission.<sup>1</sup>

7 There are approximately 3,941,201 small businesses in the state that comprise of  
8 99.8% of all employer firms, provide 48.8% of private sector employment, account for  
9 over 280,000 net new jobs, and comprise approximately 43.2% of California’s \$152.1  
10 billion in exports.<sup>2</sup> Small businesses are not only vital to California’s economic health  
11 and welfare but also constitute an important class of ratepayers for utility companies.

12 Small and medium commercial class ratepayers have historically consumed more  
13 than 16,000 gigawatt-hours of electricity annually, representing 20% of PG&E’s load and  
14 \$3 billion in revenues.<sup>3</sup> The ratepayer interests of this class often diverge from residential  
15 ratepayers and larger commercial customers on a variety of utility matters. It is vital to  
16 small businesses that rate allocation and rate treatment are fair to all energy consumers.

17 **Q: What is the scope of your testimony?**

18 A: My testimony will address whether PG&E’s Electric Vehicle Charge 2 (EVC 2)  
19 application has met the requirements set out in the *Decision Setting Near-Term Priorities*  
20 *for Transportation Electrification Investments by the Electrical Corporations*, issued July  
21 21, 2021 (D. 21-07-028). Specifically, I will focus on:

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<sup>1</sup> See, SBUA website at [www.utilityadvocates.org](http://www.utilityadvocates.org).

<sup>2</sup> California Small Business Profile, U.S. Small Business Administration Office of Advocacy. See [www.sba.gov/sites/default/files/advocacy/2018-Small-Business-Profiles-CA.pdf](http://www.sba.gov/sites/default/files/advocacy/2018-Small-Business-Profiles-CA.pdf).

<sup>3</sup> Based on PG&E’s 2020 GRC Phase II workpapers.

- 1           • Whether PG&E has incorporated lessons learned to maximize ratepayer  
2           benefits and reduce per port costs;
- 3           • Whether PG&E sufficiently demonstrates that its proposal will help California  
4           meet the state EV charging targets without excessively burdening ratepayers;
- 5           • Whether PG&E’s proposals to own no more than 50 percent of the EVSE and  
6           of the BTM infrastructure—and to own EVSE and BTM infrastructure only in  
7           sites in underserved communities—are appropriate compared to competitive  
8           options for customer/site host ownership of the BTM infrastructure.

9           My testimony will show that PG&E’s budget of \$278.5 million can be substantially  
10          reduced through a substantial increase in customer/site host ownership and other changes.  
11          I recommend that the Commission direct PG&E to implement my recommendations and  
12          refile a revised program that transfers less of the costs to ratepayers.

13                 As PG&E notes, it is not requesting Commission direction as to the specific number  
14          of ports for each customer type it proposes to serve in this program, but is rather requesting  
15          “flexibility to install more or less ports within the approved budget.”<sup>4</sup> My testimony will  
16          show that PG&E has not optimally identified the overall target for the number of charger  
17          ports, or the components targets that guide its program application.

18                 SBUA strongly encourages the Commission to exercise strong diligence in  
19          managing the costs of this program because EVC 2 is forecasted to increase customer  
20          bills by about 0.5%.<sup>5</sup> While this bill impact alone is not severe, it is an unnecessarily large  
21          contributor to the overall trend of bills increasing for customers. If the Commission  
22          intends to minimize bill increases over the next few years, the recommendations outlined  
23          in my testimony may help the Commission significantly reduce the cost of PG&E’s

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<sup>4</sup> PG&E, Testimony, Ch. 3, p. 3 lines 15-17.

<sup>5</sup> Attachment JDW-2, “Atch01-tabRate\_Comparison.”

1 proposed EVC 2 program while maintaining forward progress towards the state’s  
2 transportation electrification infrastructure goals.

### 3 **III. State Targets for Transportation Electrification Infrastructure**

4 **Q: Please summarize California’s targets for transportation electrification (TE)**  
5 **infrastructure that PG&E anticipates the EVC 2 program will help meet.**

6 A: SBUA supports California’s goals to improve air quality and reduce GHG emissions in  
7 as part of a broader policy to mitigate global climate change. SBUA is also supportive of  
8 the goals to maintain California’s leading role in electrifying transportation, and seeks to  
9 see those goals achieved in a manner that will be inclusive of and cost-effective for small  
10 businesses.

11 PG&E’s testimony summarizes the state’s overall clean transportation strategy,  
12 which broadly aims to increase the percentage of zero emission vehicles (ZEVs) sold  
13 statewide across all vehicle sectors. Its testimony explains that its TE programs are  
14 responsive to SB 350, which requires the Commission to direct PG&E and other IOUs  
15 “to file applications for programs and investments to accelerate widespread transportation  
16 electrification.” (PUC Code § 740.12(b)). Its testimony cites D.21-07-028, which  
17 supports additional TE infrastructure investments by PG&E and other IOUs.<sup>6</sup>

18 PG&E gives several reasons that its proposed TE infrastructure is a needed step  
19 towards implementing the state’s overall strategy: *i.e.*,

- 20 • Vehicle manufacturers are shifting production from internal combustion  
21 vehicles to ZEVs, with their pricing trending lower and more accessible. ZEVs  
22 are “forecasted to become the passenger vehicle choice for drivers.”<sup>7</sup>

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<sup>6</sup> PG&E, Testimony, Ch. 1, p. 5 line 7 through p. 6 line 29.

<sup>7</sup> PG&E, Testimony, Ch. 1, p. 7 line 11 through p. 8 line 12.

- 1           • The California Energy Commission (CEC)'s AB 2127 EV Infrastructure Needs  
2           Assessment ("AB 2127 Assessment") finds that 57,000 chargers, above and  
3           beyond those installed or planned, are needed to meet the states 2025 goal. The  
4           study indicates that well over a million public and shared private chargers will  
5           be needed in just over eight years.<sup>8</sup>
- 6           • The AB 2127 Assessment and private charging infrastructure developers  
7           indicate that, in the words of EVgo, "the combination of low volumes of EVs  
8           on the road, relatively early stage technology, and high 'effective kWh' rates"  
9           inhibits private investment in TE infrastructure.<sup>9</sup>

10           PG&E suggests that the 16,000 ports proposed as part of PG&E's EVC 2 program  
11           will bring the total number of chargers installed or planned to about six percent of the  
12           need estimated in the AB 2127 Assessment.<sup>10</sup> PG&E further explains that, "[t]hrough  
13           2025, PG&E plans to deploy 187 DC fast charging ports in the program, which is  
14           approximately 43% of the total 430 DC fast charging ports estimated to be needed to  
15           achieve the State's 2025 DCFC goal and is in line with the size of PG&E's service  
16           territory relative to the State."<sup>11</sup> PG&E does not cite any modeling in support of its  
17           proposal or include any references that demonstrate whether six percent is more, less, or  
18           just the right amount of progress towards the state's need.

19           PG&E also links its program to state goals by citing its proposed marketing,  
20           education and outreach (ME&O) activities as well as its "simplified customer journey

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<sup>8</sup> PG&E, Testimony, Ch. 1, p. 9 line 19 through p. 10 line 7.

<sup>9</sup> PG&E, Testimony, Ch. 1, p. 10 line 21 through p. 11 line 2; EVgo "The Costs of EV Fast Charging Infrastructure and Economic Benefits to Rapid Scale-Up", p. 11.

<sup>10</sup> PG&E, Testimony, Ch. 1, p. 10 lines 14-17. See also Attachments JDW-3 and JDW-18, part (c).

<sup>11</sup> Attachment JDW-4.



1 with many customer touchpoints and minimal decision points,” which are intended  
2 promote EV adoption and participation in demand response programs.<sup>12</sup> PG&E’s ME&O  
3 plans include publicizing the pre-owned EV rebate for qualified customers that PG&E  
4 plans to offer as a part of its proposed LCFS Implementation plan.

5 **Q: What other justification does PG&E provide for its proposed program targets?**

6 A: PG&E explains that customer demand far exceeded the opportunity available through the  
7 EVCN and EV Fast Charge programs and concludes that there is a need for “larger  
8 budgets and timelines to adequately address market demand.”<sup>13</sup> “EVCN received four  
9 times more applications than could be served through the program. Of unserved  
10 applications, 76 percent were for workplaces, thus demonstrating the significant unmet  
11 demand for utility support of L2 workplace charging installations and justifying the  
12 inclusion of workplaces as a qualifying segment once again for EVC 2.”<sup>14</sup>

13 **Q: What is the focus of PG&E’s EVC 2 proposal?**

14 A: PG&E’s proposal is focused on the needs of customers in multi-family housing (MFH)  
15 and what it terms AB 841 prioritized communities (PCs). PG&E’s program is intended to  
16 tackle these needs both directly and indirectly. PG&E cites the finding in the AB 2127  
17 Assessment that existing charging infrastructure is less prevalent in areas with high  
18 population density and research by PG&E and others that indicate customers in multi-  
19 family housing (MFH) are concerned with the range of ZEVs and a “lack of public  
20 charging stations.”<sup>15</sup>

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<sup>12</sup> PG&E, Testimony, Ch. 1, p. 12 lines 8-18; p. 13 lines 1-2; p. 15 lines 1-6.

<sup>13</sup> PG&E, Testimony, Ch. 2, p. 2 line 23 through p. 3 line 6.

<sup>14</sup> PG&E, Testimony, Ch. 3, p. 10 lines 6-10.

<sup>15</sup> PG&E, Testimony, Ch. 1, p. 8 line 13 through p. 9 line 3; p. 11 line 17 through p. 12 line 4.

1 PG&E proposes to site 6,400 L2 ports at MFH sites, as well as 8,500 L2 ports at  
2 workplaces and public destinations and 1,100 DCFC ports at public destinations that it  
3 expects “can reliably serve MFH customers and EV-only owners” and at DCFC “site  
4 hosts whose locations are near high-density MFH ..., with a goal of serving a multitude  
5 of MFH customers close to home via MFH-serving public DCFC.”<sup>16</sup>

6 The distinction between workplace and public destination chargers appears to be  
7 one of access. “PG&E will not require workplace chargers to be made available to the  
8 public, although the Site Host may elect to make them available if desired, as long as the  
9 primary intended users of the infrastructure are workplace employees.”<sup>17</sup>

10 Even though PG&E cites workplace charging as necessary because some MFH will  
11 not install chargers, “PG&E does not propose to evaluate individual workplace  
12 applications on their basis to impact EV adoption at MFH sites.”<sup>18</sup>

13 **Q: What other benefits does PG&E claim the proposed EVC 2 program will deliver?**

14 A: PG&E testifies that its program will help meet state policy goals on Vehicle-Grid  
15 Integration (VGI).<sup>19</sup> PG&E also suggests that EVC 2 will “cost-effectively increase  
16 throughput (measured in kWh) with a goal of creating long-term downward pressure on  
17 utility rates.”<sup>20</sup>

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<sup>16</sup> PG&E, Testimony, Ch. 3, p. 3, Table 3-1; p. 10, lines 2-5; p. 12, lines 14-16. “PG&E does not distinguish between workplace and public destination L2 port counts in its EVC 2 application or its workpapers. However, PG&E recommends using a 50%/50% split for the requested segment data.” Attachment JDW-5.

<sup>17</sup> Attachment JDW-6.

<sup>18</sup> Attachment JDW-7.

<sup>19</sup> PG&E, Testimony, Ch. 1, p. 12 lines 21-32.

<sup>20</sup> PG&E, Testimony, Ch. 1, p. 14 lines 8-10.

1 **Q: Has PG&E developed its investment targets in a manner consistent with recent**  
2 **Commission decisions?**

3 A: No. In D.20-08-045, approving SCE’s Charge Ready 2 program, the Commission  
4 endorsed—and devoted six pages of its decision to applying—NREL’s “National Plug-in  
5 Electric Vehicle Infrastructure Analysis.” The Commission relied heavily on this model  
6 and its application by SCE and TURN to determine that SCE should target 12,000 public  
7 and workplace charge ports and 10,200 multi-unit dwelling ports for SCE’s Make-Ready  
8 Expansion program.<sup>21</sup>

9 While PG&E is correct that its 16,000 charger ports would be just a step towards  
10 the state goal, that does not mean that this is the right step at the right time. In approving  
11 SCE’s program, the Commission considered evidence of deployments by other parties,  
12 including the California Energy Commission (CDC) and Electrify America.<sup>22</sup>

13 **Q: Has PG&E developed its ownership model in a manner consistent with Commission**  
14 **decisions?**

15 A: Technically, yes. PG&E states that it will comply with D.21-07-028 by spending at least  
16 50 percent of its infrastructure spend in AB 841 PCs and by owning no more than 50  
17 percent, on a cost basis, of behind-the-meter (BTM) make-ready infrastructure and  
18 Electric Vehicle Supply Equipment (EVSE). PG&E proposes that utility-owned BTM  
19 infrastructure in EVC 2 will be limited to AB 841 PCs.<sup>23</sup>

20 However, as discussed throughout my testimony, PG&E provides less-than-  
21 compelling evidence that it needs to own much, if any, of the TE infrastructure it proposes  
22 to fund through the EVC 2 program.

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<sup>21</sup> D.20-08-045 (August 27, 2020), pp. 51-56.

<sup>22</sup> *Id.*, p. 55.

<sup>23</sup> PG&E, Testimony, Ch. 3, p. 2 line 19-25.

1 **Q: What do you recommend?**

2 A: I recommend that the Commission rely upon any credible evidence presented in the  
3 proceeding to determine a reasonable number of charger ports that should be targeted in  
4 the program. If PG&E submits further analysis on this topic, parties should be given an  
5 opportunity to review that evidence and respond.

6 For purposes of this testimony, I will assume the levels proposed by PG&E, but that  
7 should not be considered an endorsement of those targets.

8 **IV. EVC 2 Site Investments**

9 **Q: Please summarize the components of PG&E’s EVC 2 proposal.**

10 A: PG&E proposes to install approximately 16,000 charger ports, targeted in seven  
11 categories, as shown in Table 1. PG&E plans to own the BTM infrastructure supporting  
12 only 3,134 (20%) of those ports, but since that 20% will include the vast majority of the  
13 relatively costly DCFC sites, PG&E anticipates owning very close to 50 percent on a cost  
14 basis, the limit set in D.21-07-028.

15 **Table 1: EVC 2 Program Component Targets<sup>24</sup>**

<b>Program Component</b>	<b>Utility- Owned*</b>	<b>Customer- Owned</b>	<b>Total</b>
MFH L2, AB 841 PC	396	132	528
MFH L2, Non-AB 841 PC		1,872	1,872
Workplace/Public L2, AB 841 PC	1,913	637	2,550
Workplace/Public L2, Non-AB 841 PC		5,949	5,949
MFH New Construction L2, AB 841 PC		2,000	2,000
MFH New Construction L2, Non-AB 841 PC		2,000	2,000
Public DCFC, AB 841 PC	825	276	1,101
<b>Total</b>	<b>3,134</b>	<b>12,866</b>	<b>16,000</b>

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<sup>24</sup> PG&E, Workpaper Attachment 2, tab “Ch. 7 – Port Deployment.”

1 “Utility-owned” refers to the BTM infrastructure, not including the EV charger. Customers will  
 2 purchase and own the EV charger in every component except at the 396 MF L2, AB 841  
 3 sites, where PG&E will purchase and own the EV chargers.

4 Of the \$276 million that PG&E requests for this program, \$225 million are costs  
 5 directly related to Level 2 Retrofits (MFH and Workplace/Public), New Construction  
 6 (MFH), and DCFC (Public) site investments, as shown in Table 2. PG&E is targeting 58%  
 7 of its site investment costs towards L2 site infrastructure.

8 **Table 2: EVC 2 Site Investment Costs, by Component** (\$millions after escalation, if  
 9 applicable)<sup>25</sup>

<b>Program Component</b>	<b>Capital</b>	<b>Capital PM<sup>26</sup></b>	<b>Expense</b>	<b>O&amp;M<sup>27</sup></b>	<b>Total</b>
MFH L2, AB 841 PC	\$ 7.61	\$ 0.48	\$ 2.38	\$ 0.37	<b>\$ 10.83</b>
MFH L2, Non-AB 841 PC	-	-	22.46	-	<b>22.46</b>
Workplace/Public L2, AB 841 PC	23.56	2.24	7.64	0.25	<b>33.70</b>
Workplace/Public L2, Non-AB 841 PC	-	-	59.49	-	<b>59.49</b>
<i>Subtotal, L2 Retrofit</i>	<b>\$ 31.17</b>	<b>\$ 2.72</b>	<b>\$ 91.97</b>	<b>\$ 0.62</b>	<b>\$ 126.48</b>
MFH New Construction L2, AB 841 PC	-	-	8.00	-	<b>8.00</b>
MFH New Construction L2, Non-AB 841 PC	-	-	8.00	-	<b>8.00</b>
<i>Subtotal, L2 MFH New Construction</i>	-	-	<b>\$ 16.00</b>	-	<b>\$ 16.00</b>
Public DCFC, AB 841 PC	55.46	0.82	18.49	0.63	<b>75.39</b>
Contingency, Escalation, Cancelled Projects	5.47	0.25	1.10	0.21	<b>7.03</b>
<b>Total</b>	<b>\$ 92.10</b>	<b>\$ 3.79</b>	<b>\$ 127.49</b>	<b>\$ 1.45</b>	<b>\$ 224.90</b>

10

11 **A. PG&E’s Overall Approach to Level 2 Retrofit Projects**

12 **Q: Please summarize PG&E’s overall approach to Level 2 retrofit projects.**

13 A: PG&E proposes to focus more than half of its site investments on Level 2 retrofit projects,  
 14 including MFH and workplace /public destination sites.

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<sup>25</sup> PG&E, Workpaper Attachment 2, tabs “Ch. 7 – Capital Proj Costs,” “Ch. 7 – Capital PM Costs,” “Ch. 7 – Exp Proj Costs,” “Ch. 7 – O&M Costs.”

<sup>26</sup> Capital project management.

<sup>27</sup> Before escalation and contingency.

1 PG&E asserts it “performed extensive research and customer outreach to determine  
 2 customer willingness-to-pay,” including a survey, program lessons learned, other  
 3 research, and meetings with customers.<sup>28</sup> From its survey of MFH and workplace site  
 4 hosts and non-participants, PG&E found that, “Participants would like to see more rebates  
 5 and grants, Non-Participants wanted greater transparency – especially in upfront costs.  
 6 ...respondents said that securing the lowest upfront cost to their organization was the most  
 7 important consideration in pursuing an EV charging project, the next most important  
 8 being a turnkey process.”<sup>29</sup>

9 Overall, PG&E concluded that “project participation is less likely once customers  
 10 are asked to pay over \$2,000 per port,” that workplace site hosts frequently cite  
 11 “alignment with sustainability goals” as their primary reason for participation, and that  
 12 “MFH site hosts are likely to have the lowest willingness-to-pay for EV infrastructure  
 13 upgrades.”<sup>30</sup>

14 Based on these lessons learned, PG&E proposes that its BTM cost target will be  
 15 \$10,000, \$12,000 or \$16,500, depending on the site type and location, as shown in Table  
 16 3. If the BTM cost target is exactly met, the customer cost participation requirement of  
 17 0–20 percent would be \$2,500 for workplace / public destination sites (\$1,333 if located  
 18 within AB 841 PC) and \$1,333 for MFH non-AB 841 PC sites.

19 **Table 3: PG&E L2 Retrofit BTM Make-Ready Incentives per Port<sup>31</sup>**

	AB 841 PC	Non-AB 841 PC
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<sup>28</sup> PG&E, Testimony, Ch. 3, p. 14 lines 10-14, 21-23.

<sup>29</sup> PG&E, Testimony, Ch. 2, p. 6 lines 17-22.

<sup>30</sup> PG&E, Testimony, Ch. 3, p. 14 lines 19-20, 23-25, p. 15, lines 6-9.

<sup>31</sup> PG&E, Testimony, Ch. 3, Table 3-1.

<b>MFH</b>	100 percent up to \$16,500 <sup>32</sup>	90 percent up to \$12,000
<b>Workplaces / Public Destinations</b>	90 percent up to \$12,000	80 percent up to \$10,000

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PG&E will allow projects that exceed the BTM cost target of \$10,000 or \$12,000 to participate in the program, but the customer will be responsible for all costs in excess of the BTM cost target. PG&E explains that during its EVCN program, some of the customers who were turned away due to high costs “indicated they may have been willing to contribute more had they been given the opportunity.”<sup>33</sup>

Other than meeting the BTM cost targets, PG&E does not appear to be prioritizing sites with lower costs per port. PG&E defines a “cost effective” site as a site “that falls within the thresholds of site cost and port cost at the time it is being evaluated.”<sup>34</sup> PG&E has not provided those thresholds, although its workpapers give a good indication of what they are likely to be.

**Q: Are there any general site eligibility targets for L2 retrofit projects?**

A: Yes. PG&E proposes to focus on L2 retrofit sites with 20 or more ports because PG&E found that costs were lower at L2 retrofit sites with 20 or more ports in its EVCN pilot – PG&E believes this is because “fixed costs do not scale proportionally with site size.”<sup>35</sup> Projects with fewer ports may be included if customers pay more so that their projects fall within PG&E’s cost thresholds.<sup>36</sup>

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<sup>32</sup> PG&E’s BTM target for MFH retrofits in AB 841 PCs includes the make-ready infrastructure, EVSE, and a grant for five years’ worth of O&M costs. PG&E suggests that it will not apply the BTM target strictly for these projects, as PG&E will define cost reasonableness as “approximately \$16,500 per port, on average, and escalated by year.” Attachment JDW-8.

<sup>33</sup> PG&E, Testimony, Ch. 2, p. 8 lines 1-3.

<sup>34</sup> Attachment JDW-9.

<sup>35</sup> PG&E, Testimony, Ch. 2, p. 6 lines 29-31; p. 7 lines 9-21.

<sup>36</sup> PG&E, Testimony, Ch. 2, p. 7 lines 2-5.

1 **Q: Do you believe that PG&E is correctly applying its experience from the EVCN pilot to**  
2 **its L2 retrofit proposal?**

3 A: No. I believe that PG&E’s general interpretation of the willingness-to-pay data is too  
4 conservative. PG&E acknowledges that the EVCN pilot was “oversubscribed and had a  
5 waitlist with 35 percent of sites located within DACs and 25 percent within MFH.”<sup>37</sup>  
6 PG&E’s estimates for willingness-to-pay may be significantly underestimating potential  
7 customer cost sharing.

8 **Q: Do you have any other evidence that customers may be willing to pay more?**

9 A: Yes. As summarized in the following section, CALeVIP’s rebate model has installed L2  
10 chargers with lower expenditures than PG&E, including a higher cost-share by customers.

11 **Q: Are there any other areas where PG&E may be misinterpreting its experience from**  
12 **the EVCN pilot?**

13 A: Yes, I believe PG&E’s is too focused on excluding projects with fewer than 20 ports and  
14 that its emphasis on utility-owned turnkey projects is unnecessary. As I will discuss in  
15 Section IV.B, CALeVIP has demonstrated that projects with fewer than 20 ports can be  
16 completed cost-effectively. CALeVIP has also demonstrated success in applying a rebate  
17 model, rather than a turnkey utility-owned model, for a wide range of project types.

18 PG&E is requesting an exception to Rule 29 for its turnkey projects.<sup>38</sup> For reasons  
19 discussed throughout this section of my testimony, I do not believe this exception is  
20 widely justified. As discussed in several subsections below, there may be good reason to  
21 authorize only very limited exceptions to Rule 29 to build awareness in AB 841 PCs  
22 where potential site hosts need additional encouragement to participate.

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<sup>37</sup> PG&E, Testimony, Ch. 6, p. 2 lines 2-6.

<sup>38</sup> PG&E, Testimony, Ch. 4, p. 12 line 25 through p. 13 line 2.



1 **B. Comparison of PG&E and CALeVIP Project Costs**

2 **Q: What is the CALeVIP program?**

3 A: The California Energy Commission’s California Electric Vehicle Infrastructure Project  
4 (CALeVIP) provides streamlined Clean Transportation Program incentives for light-duty  
5 electric vehicle charging infrastructure.

6 CALeVIP project provides incentives for the purchase and installation of  
7 electric vehicle infrastructure in specific regions throughout the state, with  
8 funding targeted at regions that have low rates of infrastructure installation or  
9 lack adequate incentives from utilities and other sources.

10 Through 2021, the CEC has allocated \$200 million (\$186 million for rebates  
11 and \$14 million for administrative fees) for charger rebates through  
12 CALeVIP... Dedicated funding amounts or higher incentive amounts or both  
13 are also available under CALeVIP for project sites within disadvantaged  
14 communities and multifamily complexes.<sup>39</sup>

15 CALeVIP has also leveraged \$34 million in funding from partners (principally local  
16 governments and councils of governments).

17 **Q: Please summarize your comparison of PG&E EVCN pilot costs with those from**  
18 **CALeVIP’s program.**<sup>40</sup>

19 A: CALeVIP has installed 971 L2 ports, compared to PG&E’s installation of 4,827 L2 ports  
20 in its EVCN pilot. There are significant differences in the practices of the program.  
21 CALeVIP sites tend to have relative few ports installed compared to PG&E.

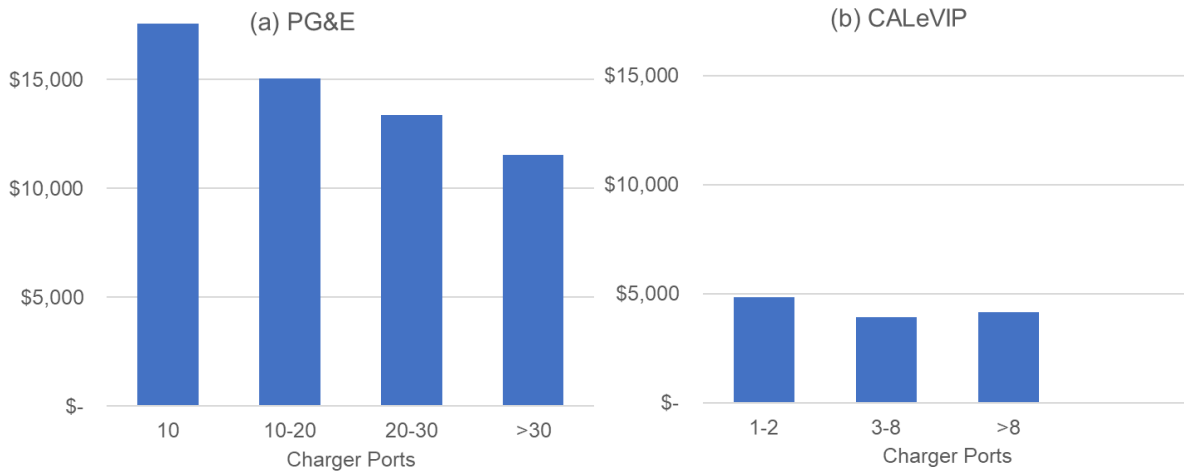
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<sup>39</sup> California Energy Commission, 2021-2023 Investment Plan Update for the Clean Transportation Program, CEC-600-2021-038-CMF (December 2021), pp. 44-45.

<sup>40</sup> All data in Section IV.B sourced to: California Energy Commission, CALeVIP Cost Transparency data supplied by the Center for Sustainable Energy (obtained on January 7, 2022); Attachments JDW-10, “Atch01CONF (Updated),” and JDW-11, “a-Part I-CONF”. While the underlying data are confidential, PG&E has confirmed that summarization does not require redaction.

1 As shown in Figure 1, CALeVIP’s rebate model has resulted in much lower BTM  
 2 expenditures than PG&E. For PG&E, the BTM expenditures in Figure 1(a) vary from  
 3 about \$17,500 per port for smaller installations to about \$11,500 for the sites with the  
 4 most L2 chargers installed. To calculate PG&E’s BTM program expenditures, we have  
 5 excluded costs associated with to-the-meter (TTM) infrastructure and deducted any  
 6 participant contribution. CALeVIP’s rebates, Figure 1(b), have averaged less than \$5,000  
 7 per port.<sup>41</sup>

8 **Figure 1: PG&E (a) and CALeVIP (b) Overall Behind-the-Meter Program Expenditures**



9 **Q: Are projects funded by PG&E more costly than CALeVIP?**

10 **A:** Yes. As shown in Figure 2(b), the average cost of CALeVIP projects is about \$8,885 per  
 11 port, including all reported project costs (before application of the rebate).<sup>42</sup> In contrast,  
 12 PG&E’s average BTM cost is about \$13,800 per port – more than 50 percent higher.  
 13

14 As shown in Figure 2(a), PG&E’s total per port costs vary from nearly \$15,000 to  
 15 about \$25,000, depending on project size. A significant portion of PG&E’s program costs

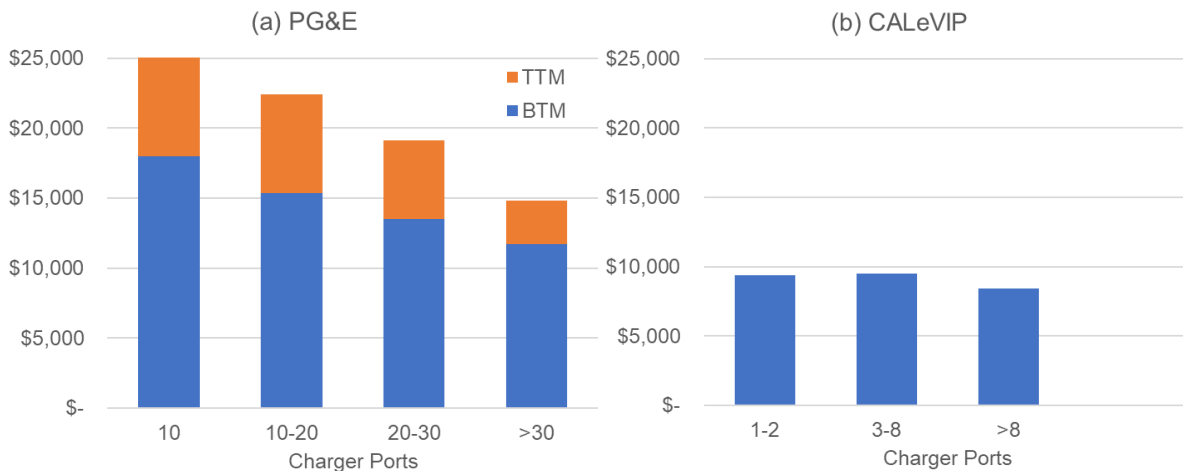
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<sup>41</sup> For projects with both L2 and DCFC chargers, the costs have been allocated based on equipment cost.

<sup>42</sup> The average varies depending on whether projects with both L2 and DCFC chargers are or are not included.

are TTM costs, which are generally not included in CALeVIP’s reported costs. So a more reasonable cost comparison for PG&E is BTM-only costs, which have varied from \$11,700 to nearly \$18,000 per port, depending on project size. Yet even considering just the BTM costs, PG&E’s cost per port is still much higher than CALeVIP.

**Figure 2: PG&E (a) and CALeVIP (b) Total Project Costs**



**Q: What explains the finding that both project costs and expenditures are higher for PG&E than for CALeVIP?**

A: Neither PG&E nor CALeVIP have provided an answer to this important question. PG&E states that it “has not analyzed CALeVIP cost data ... and offers no explanation for the difference at this time.”<sup>43</sup>

PG&E does suggest two significant differences between PG&E and CALeVIP data. First, PG&E suggests that the reported costs for CALeVIP do “not provide an all-inclusive report of staffing costs, administrative, and overhead costs for each project.”<sup>44</sup> This is unlikely to explain the difference, as CALeVIP’s administrative costs are \$14 million

<sup>43</sup> Attachment JDW-12.

<sup>44</sup> *Id.*

1 relative to total costs (including partner funding) of around \$234 million, or about 6  
2 percent.<sup>45</sup> Furthermore, the PG&E expenditures and project costs that are shown in Figure  
3 1(a) and Figure 2(a) may also exclude some program costs such as ME&O or software  
4 development.

5 Second, PG&E points out that “CALeVIP recipients can and do receive funding  
6 from IOUs for to-the-meter costs through Rule 15 and 16,” which are not considered in  
7 CALeVIP reported expenditures and project costs shown in Figure 1(b) and Figure 2(b).  
8 As discussed above, I have attempted to identify PG&E’s BTM costs in Figure 2(a) to  
9 provide for a reasonable comparison.

10 In the absence of an explanation sufficient to explain the substantial difference in  
11 expenditures and project costs, I will speculate. CALeVIP rebates covered about half of  
12 total project costs, and site hosts were responsible for project management. This provided  
13 site hosts with a very strong incentive to control costs.

14 In contrast, project participant contributions to PG&E project costs averaged only  
15 about two percent of total project costs. With little at stake, site hosts may not have been  
16 motivated to control costs. And while PG&E states that it is “adept at spotting site  
17 conditions which may increase project costs beyond program targets,”<sup>46</sup> it does not appear  
18 that it was able to decrease project costs much below program targets.

19 **Q: Have you explored any other potential explanations for PG&E having higher project**  
20 **costs than CALeVIP?**

21 A: Yes. I considered whether CALeVIP participants might not fully report costs. CALeVIP  
22 participants are required to report all project costs in order to receive the rebate, but it is

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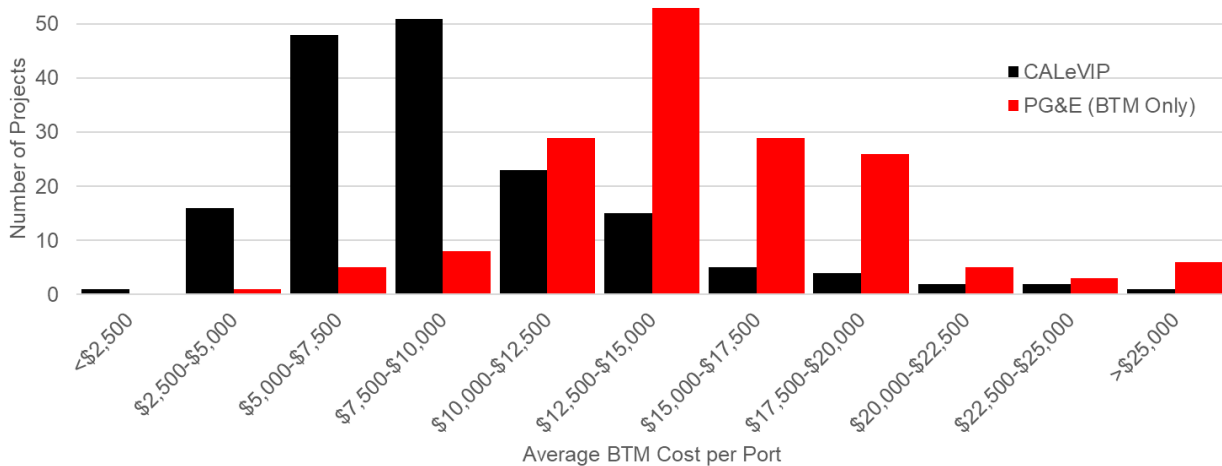
<sup>45</sup> California Energy Commission, 2021-2023 Investment Plan Update for the Clean Transportation Program, CEC-600-2021-038-CMF (December 2021), pp. 44-46.

<sup>46</sup> PG&E, Testimony, Ch. 2, p. 6 lines 23-24.

possible that some participants might not bother reporting some costs. For example, if CALeVIP participants only reported 65% of their total project costs, then CALeVIP's project costs might actually have been nearly as high as PG&E's project costs.

However, I believe it is unlikely that nearly all CALeVIP participants are substantially underreporting costs. As shown in , the BTM cost per port for PG&E projects is generally higher than for CALeVIP projects. While 83% of CALeVIP projects had a BTM cost per port *less* than \$12,500, 74% of PG&E project costs were *higher* than \$12,500. The cost difference cannot be attributed to a few outliers.

**Figure 3: Comparison of BTM Project Costs for CALeVIP and PG&E**



**Q: Based on your comparison of PG&E and CALeVIP expenditure and project cost data, what do you recommend?**

A: I recommend that the Commission adopt a *very strong* preference for a rebate model over turnkey projects. While PG&E believes that customer contributions of over \$2,000 per project will harm participation rates, I believe PG&E is mistaken, for three reasons.

- Much of PG&E's evidence for this threshold is obtained from its surveys, which essentially ask customers what they want to pay. Of course site hosts would like PG&E to cover the vast majority of costs.

- 1 • PG&E also estimates customers' revealed willingness-to-pay data from its
- 2 pilot, but that program did not test higher participant contributions, and in fact
- 3 turned away participants who expressed a willingness to pay more.
- 4 • The CALeVIP data is reliable and from an established state program. Even
- 5 modest differences in reporting methods (which could cut either way) are not
- 6 likely to explain away CALeVIP's more cost-effective results.

7 I will provide more specific recommendations below. Even though PG&E reports that  
8 project participants prefer turnkey projects, these data provide substantial evidence that  
9 satisfying that desire is very costly to PG&E and its ratepayers.

10 Furthermore, I recommend that the Commission not accept PG&E's finding that it  
11 should favor projects with 20 or more ports. As shown in Figure 2(b), the CALeVIP data  
12 demonstrate that projects with fewer than 10 ports can be completed at lower BTM costs  
13 than PG&E's pilot projects. While PG&E can and should prefer more cost-effective  
14 applications, CALeVIP shows that even the smallest projects can be cost-effective.

15 **Q: Is it reasonable for PG&E to just refer all the small projects to its LCFS program?**

16 A: No. PG&E suggests that one way it can serve smaller port count sites is by referring those  
17 applications to PG&E's low-port count Low Carbon Fuel Standard (LCFS) Holdback  
18 program for small MFH and small businesses.

19 PG&E's LCFS Holdback program offers direct install of Level 1 and Level 2  
20 chargers where the chargers can leverage existing panel capacity and do not trigger  
21 upstream grid updates.<sup>47</sup> While I agree that applications that meet the LCFS Holdback

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<sup>47</sup> PG&E, PG&E's 2021 Low Carbon Fuel Standard Implementation Plan, AL 6226-E (June 15, 2021), pp. 31-35. With a total pilot budget of \$25.23 million and a target of 2,000 ports, the average cost per port would be \$12,615. While this cost projection is reasonable for a pilot project, PG&E should endeavor to drive costs down to closer to the \$5,000 per port cost described in the Peninsula Clean Energy project (see page 23).

1 criteria should be referred to that program, not all low port count sites will meet those  
2 criteria. That leaves a gap for installations of less than 20 chargers that require panel  
3 upgrades.

4 In many cases, small MFH and small businesses may require fewer than 10 charging  
5 ports, but their building's panel capacity may not be adequate for even those requirements.  
6 In such cases, the cost-effectiveness of the application to the EVCN 2 program should be  
7 judged on its own merits and not subject to less preferential treatment simply because the  
8 site host seeks fewer than 20 ports.

9 And, as suggested above, I generally recommend that PG&E adopt a rebate model  
10 in which customers are generally offered a maximum rebate per port, depending on the  
11 market. If the Commission directs PG&E to adopt a rebate model for workplace / public  
12 destination retrofit projects then there is simply no benefit to screening applications based  
13 on the number of ports.

14 **C. *Multi-Family Housing Level 2 Retrofit Component***

15 **Q: Please summarize PG&E's Level 2 MFH investment proposal.**

16 A: PG&E proposes to fund about 2,400 L2 ports at MFH retrofit sites, mostly customer-  
17 owned, outside of AB 841 PCs. PG&E expects BTM infrastructure at these sites to cost  
18 an average of \$16,500 per port, regardless of whether PG&E also owns the EV charger.<sup>48</sup>

19 PG&E justifies investment in L2 ports at MFH retrofit sites based on evidence of a  
20 close relationship between consumer interest in purchasing an EV and “the ability to  
21 refuel via electric charging conveniently at one's residence where the vehicle would  
22 typically be parked for large portions of the day.”<sup>49</sup> PG&E expects that MFH building

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<sup>48</sup> PG&E, Workpaper Attachment 2, tab “Ch. 7 – Per-Port Cost.”

<sup>49</sup> PG&E, Testimony, Ch. 3, p. 4 lines 8-11.

1 owners are unlikely to invest in retrofit TE infrastructure because of “a ‘split incentive’  
2 between the building owner and tenant, a lack of dedicated parking space for each  
3 resident, ability and desire to manage construction projects and/or charging equipment  
4 post-installation, and other [reasons].”<sup>50</sup>

5 As summarized in Section IV.A, PG&E will require site hosts at non-AB 841 PCs  
6 to cover 10 percent of costs, which would represent \$1,200 if the maximum BTM cost  
7 target of \$12,000 per port is incurred. PG&E justifies its proposed cost sharing level by  
8 triangulating data from “Ecology Action’s Innovation in Electric Vehicle Charging for  
9 Multi-Unit Dwellings Report, results of PG&E’s EVCN participant and non-participant  
10 survey, and revealed willingness-to-pay in EVCN.”<sup>51</sup> By “revealed willingness-to-pay,”  
11 PG&E means:

12 In EVCN, MFH Charge Sponsors outside of disadvantaged communities  
13 (DACs) were responsible for a program participation payment of \$1,150 per  
14 port. This segment revealed a willingness-to-pay of at least \$1,150 by virtue  
15 of their demand for EVCN: 84 MFH sites outside of DACs submitted  
16 applications and 17 sites representing 302 ports had completed projects in  
17 EVCN.<sup>52</sup>

18 The EVCN data establish that many MFH sponsors are willing to pay at least \$1,150 per  
19 port, but provides no information on the actual willingness to pay.

20 **Q: Please summarize PG&E’s support for utility ownership in its Level 2 MFH**  
21 **investment proposal.**

22 A: PG&E states that the majority of MFH applicants to its EVCN program requested PG&E  
23 ownership. PG&E claims that, “[t]he requirement [in D.21-07-028] for customer

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<sup>50</sup> PG&E, Testimony, Ch. 3, p. 4 lines 20-24, citing USDN report by Cadmus.

<sup>51</sup> PG&E, Testimony, Ch. 3, p. 16 lines 15-20.

<sup>52</sup> Attachment JDW-13.



1 ownership can increase costs and project deployment responsibilities for many  
2 participating customers... [which] may decrease customer demand...”<sup>53</sup>

3 **Q: Are retrofit projects more costly at MFH sites than at workplace and public**  
4 **destination sites?**

5 A: There is some evidence that MFH retrofit projects may cost more than other projects.  
6 Based on my evaluation of the CALeVIP data (see Section IV.B), it appears that MFH  
7 projects may cost \$2,000-3,500 per port more than projects at other sites, as shown in  
8 Table 4.

9 **Table 4: Average CALeVIP Cost per Port, by Site Type**

Site Type	Cost per Port
Multi-Unit Dwelling	11,205
Commercial	8,623
Public Facility	7,788
Workplace	8,935
<b>All Projects</b>	<b>\$ 8,885</b>

10  
11 However, I conducted a similar analysis of PG&E’s EVCN costs comparing MFH and  
12 workplace retrofit projects and found that projects at MFH sites are slightly *less* costly.

13 **Q: Do you have concerns about PG&E’s approach to Level 2 MFH infrastructure?**

14 A: Yes. PG&E’s proposal seems extremely costly, especially considering the utilization rates  
15 of MFH charging infrastructure. PG&E states that, “utilization at MFHs in DACs is the  
16 lowest across all EVCN charger types.” PG&E attributes low utilization to the prevalence  
17 of chargers funded through its EVCN program being dedicated to specific units. In  
18 contrast, other agencies funding TE infrastructure exclude dedicated parking spots.<sup>54</sup>

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<sup>53</sup> PG&E, Testimony, Ch. 2, p. 3 lines 10-20, 26-28, p. 4 lines 1-3.

<sup>54</sup> PG&E, Testimony, Ch. 2, p. 4 line 22 through p. 5, line 2.

1 Even though dedicated parking spots have inherently lower charger usage potential  
2 than shared parking spaces, it is important for PG&E's program design to respect the  
3 importance that MFH building owners and other stakeholders have placed on offering  
4 charging infrastructure at dedicated parking spots.<sup>55</sup> However, the dedicated chargers  
5 need not be Level 2, since the spot will be available to a single user for long period, such  
6 as overnight.

7 **Q: Are there more cost-effective alternatives to L2 MFH infrastructure?**

8 A: Yes. Energy Solutions' low-power EV charging case study examined a small MFH  
9 charging project in which Peninsula Clean Energy avoided a \$20,000 per port cost for L2  
10 chargers by installing electrical infrastructure and L1 chargers at a cost of \$4,500 per  
11 port.<sup>56</sup>

12 **Q: How do you suggest that PG&E address the need for MFH retrofits to serve  
13 dedicated parking spaces?**

14 A: PG&E should revise its MFH retrofit program to include L1 infrastructure. One approach  
15 suggested by Peninsula Clean Energy as a low-cost strategy is to install L1 infrastructure  
16 for dedicated parking, complemented with L2 charging in shared parking spaces, as  
17 needed.<sup>57</sup>

18 DCFC installation may also make sense for MFH projects if the DCFC is likely to  
19 have a similar utilization rate to other DCFC projects funded by EVC 2, either because  
20 the charger is publicly accessible or because of high demand from multiple residents with  
21 EVs.

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<sup>55</sup> Attachment JDW-14, part (b); Attachment JDW-26, p. 49.

<sup>56</sup> Attachment JDW-15.

<sup>57</sup> Attachment JDW-27, p. 16.

1           An approach for larger MFH projects that combines L1, L2, and DCFC charging  
2           may help achieve cost-effectiveness by providing residents dedicated access to chargers  
3           with sufficient capability to meet daily commuting needs, along with convenient access  
4           to higher capacity (paid) chargers to allow for more rapid re-charging after (or in  
5           preparation for) longer journeys.

6   **Q: What is your recommendation for the MFH retrofit projects?**

7   A: I recommend that the Commission direct PG&E to use a rebate model for MFH retrofit  
8           projects. PG&E should begin with rebates of about \$5,000 per port, which may be used  
9           for L1 or L2 infrastructure.<sup>58</sup> It may be reasonable to offer slightly higher rebates in AB  
10          841 PCs and, if PG&E does not receive a sufficient number of project applications, then  
11          it could raise the rebate amount gradually.

12           Instead of offering utility turnkey support to MFH L2 retrofit projects, it may be  
13          reasonable for PG&E to provide a higher level of site installation support (see Section  
14          VI.A) in AB 841 PCs than its current proposal offers for customer-owned sites. Of course,  
15          EVSE suppliers may begin offering turnkey project delivery. Another option is for the  
16          Commission to authorize a limited number of PG&E turnkey projects, targeted  
17          geographically to help build awareness in areas where MFH owners need additional  
18          encouragement to participate.

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<sup>58</sup> PG&E should also expand its DCFC project eligibility to include MFH when L1 infrastructure is deployed and either (a) the DCFC EVSE will be publicly accessible or (b) if PG&E determines that even if public access is limited, the DCFC EVSE is projected to have a similar utilization rate to other DCFC projects funded by EVC 2.

1 **D. Workplace / Public Destination Level 2 Retrofit Component**

2 **Q: Please summarize PG&E’s Level 2 workplace / public destination investment**  
3 **proposal.**

4 A: PG&E proposes to fund about 8,500 L2 ports at workplace / public destination retrofit  
5 sites, mostly customer-owned, outside of AB 841 PCs. PG&E expects BTM infrastructure  
6 at these sites to cost an average of \$12,000–13,000.<sup>59</sup>

7 Notably, PG&E proposes that more than half of the utility-owned turnkey projects  
8 (1,913 out of 3,134) would be installed at workplace / public destination retrofit sites.

9 As discussed above, the distinction between workplace and public destination  
10 chargers appears to be one of access. “PG&E will not require workplace chargers to be  
11 made available to the public, although the Site Host may elect to make them available if  
12 desired, as long as the primary intended users of the infrastructure are workplace  
13 employees.”<sup>60</sup>

14 As summarized in Section IV.A, PG&E would require site hosts in AB 841 PCs to  
15 cover 10 percent of costs which would represent \$1,333 at PG&E’s maximum BTM  
16 investment target of \$12,000 per port. Other sites would be required to cover 20 percent  
17 of costs, which would represent \$2,500 at PG&E’s maximum BTM target of \$10,000 per  
18 port.

19 **Q: Are the relatively low participant contributions justified?**

20 A: No. According to PG&E,

- 21 • Potential public destination site hosts see “a substantial value proposition from  
22 increased dwell time of customers in stores, competitive advantage in  
23 recruiting customers, or alignment with company sustainability goals.”

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<sup>59</sup> PG&E, Workpaper Attachment 2, tab “Ch. 7 – Per-Port Cost.”

<sup>60</sup> Attachments JDW-6 and JDW-16.

- 1           • Potential workplace site hosts see benefits from “employee retention and  
2           alignment with company sustainability goals resulting in a stronger brand.”

3 PG&E concludes that workplace site hosts are likely to have a higher willingness-to-pay  
4 for workplaces than MFH site hosts.<sup>61</sup> However, PG&E’s testimony suggests that it has  
5 no idea what workplace willingness-to-pay might be. As PG&E states, its EVCN pilot  
6 program was “fully subscribed” before PG&E was able to conduct in-market message  
7 testing.<sup>62</sup>

8 **Q: What is your recommendation for the workplace / public destination L2 retrofit**  
9 **projects?**

10 A: I recommend that the Commission direct PG&E to use a rebate model for workplace /  
11 public destination L2 retrofit projects. As with MFH projects, PG&E should begin with  
12 rebates of about \$5,000 per port. It may be reasonable to offer slightly higher rebates in  
13 AB 841 PCs. If PG&E does not receive a sufficient number of project applications, then  
14 it could raise the rebate amount gradually.

15           Instead of offering turnkey support to all workplace / public destination L2 retrofit  
16 projects, it may be reasonable for PG&E to provide a higher level of site installation  
17 support (see Section VI.A) to AB 841 PCs than its current proposal offers for customer-  
18 owned sites. This may be particularly useful for public destination projects whose site  
19 hosts have limited internal project management capacity. EVSE suppliers may also begin  
20 to offer turnkey support. As with MFH projects, another possibility is that the  
21 Commission could authorize PG&E to implement a limited number of turnkey projects,  
22 targeted geographically to help build awareness in areas where public destination site  
23 hosts need even more encouragement or support to participate.

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<sup>61</sup> PG&E, Testimony, Ch. 3, p. 16 line 26 through p. 17 line 10.

<sup>62</sup> PG&E, Testimony, Ch. 6, p. 7 lines 2-9.

1           On the other hand, PG&E should be more reticent to offer site installation support  
2           to customers, such as large businesses, that do have internal project management capacity  
3           (even if they claim that their resources are already committed).

4    ***E. Multi-Family Housing Level 2 New Construction Component***

5    **Q: Please summarize PG&E’s Level 2 MFH new construction proposal.**

6    A: PG&E proposes to rebate up to \$4,000 for 4,000 L2 ports at MFH new construction sites,  
7           split evenly within and outside of AB 841 PCs. The rebate is intended to incentivize  
8           developers to exceed state California Green Buildings Standards Code (CALGreen) EV  
9           Capable requirements. CALGreen requires sites to have the electrical capacity necessary  
10           to support a minimum of 10 percent of parking spaces with chargers, and raceways to  
11           those spaces that allow for wiring and chargers to be conveniently installed. PG&E  
12           estimates that the cost to upgrade an EV Capable space with wiring, signage, and a  
13           mounted charger will be \$3,690–\$4,483 per port.<sup>63</sup> Thus, the \$4,000 rebate is “designed  
14           to cover 100 percent of the cost differential between an EV Installed and EV Capable  
15           space.”<sup>64</sup>

16           In addition to the justifications PG&E cites for MFH retrofit projects, PG&E  
17           explains that new construction sites face “added complexity and longer timeframe[s]” in  
18           the EVCN pilot, and that new construction timelines were difficult to accommodate in the  
19           three years planned for the EVCN pilot.<sup>65</sup>

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<sup>63</sup> Attachment JDW-17.

<sup>64</sup> PG&E, Testimony, Ch. 3, p. 6 lines 7-12.

<sup>65</sup> PG&E, Testimony, Ch. 2, p. 13 line 27 through p. 14 line 2.

1 **Q: Do you believe the “added complexity and longer timeframes” will be an issue for**  
2 **PG&E’s proposed MFH new construction rebate?**

3 A: No. The challenge that PG&E faced in the EVCN pilot was dealing with BTM  
4 infrastructure. As PG&E acknowledges, MFH construction is now required to install  
5 make-ready BTM infrastructure, and so PG&E’s engineers will no longer be required to  
6 review and analyze technical construction drawings.<sup>66</sup>

7 **Q: Does PG&E offer any incentives for increasing the number of EV Capable spaces?**

8 A: No. Energy Solutions estimates that the cost to add additional EV Capable spaces at a  
9 MFH project beyond the 10% code requirement is about \$1,002–1,410 per parking space.  
10 In contrast, the cost of a future retrofit to make an additional space EV Capable is \$3,854  
11 to \$4,443.<sup>67</sup>

12 **Q: Does PG&E expect a strong response by MFH developers to its offer to cover 100%**  
13 **of the cost to upgrade an EV Capable space to also include a functioning charger?**

14 A: Oddly, no. Even with 100% differential covered, PG&E based its budget on a forecast  
15 that only 10% of new MFH housing projects would participate.<sup>68</sup> PG&E does not explain  
16 why it thinks developers would turn down free chargers and installation.

17 **Q: Do you believe PG&E has designed the optimal MFH new construction program?**

18 A: No. New construction is the least-cost opportunity to promote installation of EV charging  
19 infrastructure, with benefits accruing over the full lifetime of the property. Yet PG&E has  
20 targeted only \$16 million out of its \$217 million, or 7 percent, in forecast project costs

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<sup>66</sup> PG&E proposes \$4,000 rebate at non-PCs because “in the interest of program simplicity and market need, and because its extension program application is not required to meet the guidance for new building program Advice Letters.” PG&E, Testimony, Ch. 2, p. 13 line 27 through p. 14 line 2.

<sup>67</sup> Attachment JDW-19, p. 12.

<sup>68</sup> Attachment JDW-3, Atch01.

1 towards this area. This program should be a much higher priority, especially for projects  
2 serving AB 841 PCs.

3 The lack of an incentive to go beyond the CALGreen requirement to make just 10%  
4 of parking spaces charger-ready is a glaring deficiency.

5 It is also entirely unnecessary to cover 100% of costs to install charging equipment  
6 at EV Capable spaces. MFH developers and EVSE suppliers will both benefit from  
7 investing in this equipment, and PG&E customers do not need to carry the full cost of  
8 these investments. I think it is likely that a very high percentage of new construction  
9 projects would seek to take full advantage of a 100% rebate. Considering that many may  
10 be willing to contribute towards these costs, it seems unnecessary to offer such a generous  
11 rebate. Even with lower rebates, PG&E should be able to achieve more than 10%  
12 participation.

13 **Q: What changes do you recommend to the MFH new construction program?**

14 A: First, I recommend that PG&E offer an incentive to install additional EV Capable spaces.  
15 I am suggesting two levels of upgrade: spaces that meet the CALGreen EV Capable  
16 definition, and spaces that meet that definition, except lacking electrical capacity  
17 upgrades.

18 I am suggesting an upgrade level that does not include the electrical capacity  
19 upgrades because PG&E may determine that a site would require substantial to-the-meter  
20 (TTM) investments to accommodate the potential power demand from such upgrades. In  
21 such circumstances, this would result in substantial distribution costs that may not benefit  
22 any EV drivers for several years. However, installing the raceways and other non-  
23 electrical infrastructure will generally be relatively inexpensive compared to retrofitting



1 that same equipment at a later date. PG&E refers to this concept as “futureproofing,” but  
 2 does not suggest applying futureproofing to this circumstance.<sup>69</sup>

3 In the example of MFH new construction project shown in Table 5, futureproofing  
 4 expense of \$32,409 on the non-electrical infrastructure during new construction avoids a  
 5 later expense of \$157,248. However, futureproofing expenditures on electrical  
 6 infrastructure at the time of construction<sup>70</sup> have a relatively smaller benefit.

7 **Table 5: Incremental Cost of Installing EV Capable Infrastructure, New Construction**  
 8 **vs Retrofit (60-Unit Multi-Unit Dwelling with 9 L2 and 45 L1 Ports Added)<sup>71</sup>**

	<b>New Construction</b>	<b>Retrofit</b>
Electrical Panel	\$ 15,960	\$ 26,008
Main Electrical Room	13,609	43,911
Transformer	14,164	12,743
<b>Electrical Infrastructure</b>	<b>\$ 43,733</b>	<b>\$ 82,662</b>
Raceway and In-slab conduit	18,059	77,247
Electrical Components	11,366	20,131
Demolition	0	31,940
Paving	0	7,889
Permitting & Inspection	2,435	15,592
Construction Management	549	4,449
<b>Non-Electrical Infrastructure</b>	<b>\$ 32,409</b>	<b>\$ 157,248</b>
<b>Total</b>	<b>\$ 76,142</b>	<b>\$ 239,909</b>
Total per Port	\$ 1,410	\$ 4,443

9  
 10 Based on Energy Solutions’ estimate of incremental per port costs, I suggest the  
 11 following general approach. PG&E should offer a higher level of incentive for AB 841

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<sup>69</sup> “PG&E has experience tactically deploying futureproofing solutions for a variety of customer segments through its EV programs and expects that this can save customers and ratepayers money in the long-term.” PG&E, Testimony, Ch. 2, p. 13 lines 9-11.

<sup>70</sup> Electrical infrastructure upgrades may also trigger TTM costs (covered by the utility). Thus, electrical infrastructure futureproofing may not be a cost-effective investment.

<sup>71</sup> Attachment JDW-19, Appendix A, Table 12.

1 PCs, following PG&E’s general approach but also recognizing that many developers in  
 2 those areas may be serving higher-income clientele. Rebates should be set at a level to  
 3 cover less than the cost of a typical project so that nearly all developers or EVSE suppliers  
 4 participate in covering project costs. I propose illustrative values in Table 6. If the  
 5 Commission adopts my recommendation, it should direct PG&E to determine the final  
 6 values (particularly the adder for accessible spaces directed in D.21-07-028) consistent  
 7 with its decision.<sup>72</sup>

8 **Table 6: Illustrative EV Capable Parking Space Incentive**

Incentive	AB 841 PC	Non-AB 841 PC
EV Capable Spaces in Excess of CALGreen	\$1,000	\$750
EV Capable Spaces w/o Electrical Infrastructure	\$500	\$500
Adder for Accessible Spaces	\$200	\$200

9  
 10 Second, I suggest three changes to PG&E’s proposed rebate for fully upgrading EV  
 11 Capable spaces to EV Installed spaces, as follows.

- 12 • **Reducing the size of the rebate:** As PG&E notes, this equipment will usually  
 13 be installed in a dedicated parking space and benefit only one household. In  
 14 many cases, developers and tenants will consider Level 1 EVSE to be  
 15 sufficient. As this benefit is similar to that of single-family EVSE equipment,  
 16 the average rebate should not exceed \$2,500 and non-AB 841 PC site hosts  
 17 should cover a minimum 10 percent of costs to ensure all site hosts have some  
 18 incentive to economize.
- 19 • **Differentiating the rebate for AB 841 PCs:** Following PG&E’s general  
 20 approach, there should be a higher rebate in AB 841 PCs.

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<sup>72</sup> D.21-07-028, p. 61.

- 1           • **Making the rebate available at any time:** As there is no great advantage to  
2           installing this during construction, the upgrade rebate should be available for  
3           any EV Capable space, funding permitting.

4           Considering these three changes, I recommend that for AB 841 PCs the rebate should be  
5           capped at \$2,500 per port. For projects that are outside AB 841 PCs, the rebates should  
6           be limited to \$2,000 per port, with a minimum participant contribution of 10 percent. This  
7           proposal is consistent with the Commission’s guidance in D.21-07-028 regarding rebates  
8           for new construction programs for non-AB 841 PCs.<sup>73</sup>

9    ***F. Public Destination DC Fast Charger Component***

10 **Q: Please summarize PG&E’s DCFC investment proposal.**

11 A: PG&E proposes to fund about 825 utility-owned DCFC ports at public destinations inside  
12 AB 841 PCs, plus 276 customer-owned ports outside those areas. PG&E expects BTM  
13 infrastructure at these sites to cost an average of \$74,370 per port.<sup>74</sup> PG&E will require  
14 site hosts to cover 10 percent of costs, up to \$67,000 per port.

15           PG&E also anticipates that EVSPs will drive applications for DCFC sites. (This is  
16 in contrast to L2 retrofits). PG&E states that, “EVSP’s submitted 250 EV Fast Charge  
17 applications for that program as of October 18, 2021, nearly five times the sites needed to  
18 meet the program’s 52 target sites.”<sup>75</sup>

19           As with most of its other investments, PG&E prioritizes DCFC sites to address the  
20 needs of MFH residents. PG&E supports this strategy with evidence of a trend that has

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<sup>73</sup> Attachment JDW-20. As PG&E correctly points out, D.21-07-028 does not bind PG&E’s application. Nonetheless, it does represent the Commission’s findings based on evidence in R.18-12-006.

<sup>74</sup> PG&E, Workpaper Attachment 2, tab “Ch. 7 – Per-Port Cost.”

<sup>75</sup> PG&E, Testimony, Ch. 6, p. 10, lines 10-15.

1 “emerged among market and policy leaders” to “overcome the barrier of MFH residents  
2 and those who rent single family homes (SFH), whose building managers do not or cannot  
3 participate in EV charging programs.”<sup>76</sup>

4 In support of these assertions, PG&E cites data from Ecology Action, stating that,  
5 “59 percent of MFH operators say they have no existing budget for EVSE installation;” a  
6 Luskin School report, “43 percent of MFH residents say public DCFC is their primary  
7 charging solution;” and an ICCT study that “reveals that there is an emerging trend of EV  
8 drivers using fast chargers close to home.”<sup>77</sup> PG&E also cites the Energy Division Staff  
9 Proposal’s Draft Transportation Electrification Framework that states, “By building  
10 plazas containing multiple DCFCs located near, but not at, MUDs we are testing whether  
11 a more gas station-like approach could serve the needs of ... residents of nearby MUDs  
12 and/or DACs.”<sup>78</sup>

13 **Q: Are DCFCs a reasonable investment compared to L2 chargers?**

14 A: Yes. While PG&E estimates that BTM costs for DCFCs are about six times greater than  
15 those for L2 chargers, they have two advantages. First, well-sited DCFCs can have very  
16 high utilization rates compared to L2 chargers. Usage rates are evolving as siting practices  
17 and EV adoption mature. My impression from various reports is that that DCFCs are  
18 likely to have usage rates as much as six times higher than L2 chargers.

19 Second, DCFC sites provide existing and prospective EV drivers with confidence  
20 that they can complete ad-hoc and regional trips. Visibility, including a demonstrated high

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<sup>76</sup> PG&E, Testimony, Ch. 2, p. 4 lines 18-22, p. 5, lines 16-19.

<sup>77</sup> PG&E, Testimony, Ch. 3, p. 11 lines 18-27.

<sup>78</sup> Attachment JDW-21, citing CPUC Energy Division, Transportation Electrification Framework, Staff Proposal (February 3, 2020), p. 52.

1 usage rate, is particularly important for public destinations and high-traffic corridors. As  
2 PG&E states,

3 For customers looking to adopt EVs as a sole vehicle, a prospective EV owner  
4 will need confidence that their EV could be used for predictable day-to-day  
5 driving as well as ad-hoc and longer regional trips, much in the same way that  
6 ICEV drivers can easily refuel when needed. Without visible charging located  
7 in public destinations and workplaces, it is unlikely drivers considering an EV  
8 will feel confident to make the switch.<sup>79</sup>

9 **Q: What is your reaction to PG&E’s DCFC investment proposal?**

10 A: While I find PG&E’s argument for prioritizing these investments compelling, I am less  
11 convinced by the cost model. As PG&E acknowledges, “direct feedback from EVSPs”  
12 indicates that customers are willing to pay a portion of DCFC costs.”<sup>80</sup> Given this  
13 evidence, PG&E’s justification for 90 percent cost coverage (“for simplicity of program  
14 offering [PG&E proposes] to cover the same percentage of costs as for L2 workplaces  
15 and public destinations”) seems unreasonable,<sup>81</sup> as does its proposal for utility ownership  
16 at most DCFC sites in the program.

17 Also, as discussed in Section III, PG&E has not developed its investment targets in  
18 a manner consistent with recent Commission decisions. For example, PG&E states that a  
19 “meaningful percent of MFH residents in PG&E territory can have a new DCFC port  
20 within a short driving distance if DCFC ports are distributed strategically across the

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<sup>79</sup> PG&E, Testimony, Ch. 3, p. 9 lines 19-25.

<sup>80</sup> PG&E, Testimony, Ch. 3, p. 17 line 30 through p. 18 line 7.

<sup>81</sup> PG&E, Testimony, Ch. 3, p. 17 line 30 through p. 18 line 7. Also, “PG&E found insufficient data to support a single willingness-to-pay dollar value” for DCFCs. PG&E, Testimony, Ch. 3, p. 17, lines 18-21.

1 state,”<sup>82</sup> but I do not find any evidence that PG&E has quantified how many such ports  
2 are needed and how they might be distributed strategically.

3 Similar to the MFH new construction proposal, PG&E’s targets for this component  
4 of EVC 2 seem insufficient, but I have not located sufficient information to suggest an  
5 alternative. Lower PG&E spending per port and increased port numbers would increase  
6 benefits for all parties.

## 7 **V. Cost Controls for Site Investments**

8 **Q: Does PG&E propose any potentially successful cost controls for its EVC 2 site**  
9 **investments?**

10 A: Yes, I identified three potentially successful cost control proposals. PG&E’s main cost  
11 control strategy is the promotion of Automated Load Management (ALM). “ALM is used  
12 to share available electrical capacity among charging stations to avoid the installation cost  
13 of additional electrical capacity.”<sup>83</sup>

14 PG&E states that its use of ALM in the EVCN pilot enabled PG&E to reduce the  
15 “originally requested capacity by more than 50 percent to stay within the electrical  
16 capacity of the existing or lower cost infrastructure. This resulted in cost savings ranging  
17 from \$30,000 to \$200,000 per project.”<sup>84</sup> PG&E proposes to use ALM as a “cost-reducing  
18 measure from the beginning of each project design, rather than just when a project exceeds  
19 cost targets.”<sup>85</sup>

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<sup>82</sup> PG&E, Testimony, Ch. 2, p. 5 lines 19-21.

<sup>83</sup> PG&E, Testimony, Ch. 2, p. 9 lines 23-32.

<sup>84</sup> PG&E, Testimony, Ch. 2, p. 10 lines 1-5.

<sup>85</sup> PG&E, Testimony, Ch. 2, p. 9 line 9 through p. 10 line 8.

1 PG&E will also increase its use of third party EVSP project sponsorship. In addition  
2 to allowing EVSPs to operate and maintain EVSEs,<sup>86</sup> PG&E should also consider  
3 encouraging EVSPs to own BTM TE infrastructure with the approval of the site host.

4 Finally, PG&E will continue to meet with other agencies' grant administrators to  
5 share "grant or rebate recipient lists (and dollar values) between agencies to ensure  
6 customers receive the maximum level of support and to ensure that agencies are not  
7 paying customers in excess of customer project costs."<sup>87</sup>

8 **Q: Do you expect PG&E's proposed application of ALM to be successful as proposed?**

9 A: No. Because PG&E's proposed participant portions of project costs are so low (zero to  
10 20 percent), there is little incentive for site hosts to accept ALM restrictions on the use of  
11 their EVSE. Since site hosts will derive revenue from the total charge energy, slowing  
12 down charging with ALM will reduce the potential revenues, particularly during high-  
13 demand periods when ALM is likely to be activated.

14 PG&E provides an apt example, as follows.

15 If costs per port come in below the program cost thresholds, savings will be  
16 shared with the host customer via the cost share methodology and tiered  
17 incentive structure of EVC 2. For example, consider a workplace site in an AB  
18 841 PC that would cost \$11,000 per port without ALM. PG&E, as part of its  
19 evaluation process, recommends a level of ALM that could best meet site  
20 host's charging needs while lowering total BTM costs per port by \$1,000.

21 If the customer were to decline the recommendation and proceed without  
22 utilizing ALM, PG&E would pay for 90% of the per port project costs (\$9,900)  
23 and the customer would be responsible for the remaining 10% (\$1,100). If the  
24 customer instead accepts the recommendation to utilize ALM, the cost per port  
25 would then be \$10,000. PG&E will cover 90% of the costs of the project

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<sup>86</sup> Attachment JDW-22, part (b).

<sup>87</sup> PG&E, Testimony, Ch. 2, p. 11 lines 19-27.

1 (\$9,000), and the customer will be responsible for the remaining 10%  
2 (\$1,000).<sup>88</sup> (PG&E footnotes omitted for clarity.)

3 In PG&E’s example, ALM only provides a one-time benefit of \$100 to the host customer.  
4 Outside an AB 841 PC, that benefit would rise to \$200. It does not seem to me that this  
5 would motivate many customers to accept PG&E’s recommendation to utilize ALM and  
6 forgo unknown future charging revenue. The situation would be different for installations  
7 that would require many thousands of dollar of extra investment, but for the ALM; it is  
8 not clear how often such situations would arise.

9 As I have recommended throughout Section IV, the Commission should direct  
10 PG&E to primarily rely on rebates, with an expectation that participants will cover a  
11 higher percentage of costs. A higher cost responsibility also means a greater opportunity  
12 for savings presented by utilizing ALM. Thus, my recommended increase in participant  
13 cost sharing should enhance the effectiveness of PG&E’s ALM efforts.

14 **Q: Do you believe any of PG&E’s proposed cost controls are likely to be counter-**  
15 **productive?**

16 A: Yes. PG&E proposes to disfavor “L2 charging sites with 20 or more ports and DCFC  
17 sites with four or more ports,” because “fixed costs do not scale proportionally with site  
18 size.”<sup>89</sup> As I discussed in Section IV.B, PG&E’s pilot results support its claim about  
19 falling per-port costs for sites with more ports. However, CALeVIP’s project costs  
20 suggest that sites with fewer ports can be installed at lower cost than PG&E’s results for  
21 even the largest installations. Furthermore, PG&E’s estimate for EVSE costs at MFH new  
22 construction actually show costs per port *increasing* at modeled sites with more ports.<sup>90</sup>  
23 Thus, as I discussed in Section IV.B, PG&E’s proposed cost control should be rejected

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<sup>88</sup> Attachment JDW-23.

<sup>89</sup> PG&E, Testimony, Ch. 2, p. 6 lines 29-31; p. 7 lines 9-21.

<sup>90</sup> Attachment JDW-17, “Atch 1.”



1 because the evidence in its favor is not strong enough to justify the downside of  
2 discouraging otherwise cost-effective projects.

3 **Q: Do you have any further recommendations for cost controls?**

4 A: Yes. Considering that the CALeVIP program has a demonstrated track record of  
5 delivering TE infrastructure projects at a lower cost per port, the Commission should  
6 direct PG&E to join CALeVIP as a partner. CALeVIP could take responsibility for site  
7 installation rebates, which may help ensure the lowest possible costs.

8 If the Commission accepts this recommendation, it would not preclude approval of  
9 PG&E proving some of the ME&O, software, and perhaps other services included in the  
10 EVC 2 proposal.

## 11 **VI. EVC 2 Costs, Other Than Site Investments**

12 **Q: Please summarize PG&E's proposed EVC 2 costs that are not directly related to its**  
13 **site investment proposals.**

14 A: PG&E proposes approximately \$51 million in expenditures not directly tied to site  
15 investments. PG&E's \$51 million for non-site investment expenses represents 18 percent  
16 of its total proposed budget for EVC 2. In comparison, CALeVIP's administrative costs  
17 are \$14 million relative to total investments of around \$200 million, or about 7 percent.<sup>91</sup>

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<sup>91</sup> CEC, 2021-2023 Investment Plan Update for the Clean Transportation Program, CEC-600-2021-038-CMF (December 2021), p. 45-46.

1 **Table 7: EVC 2 Costs, Other Than Site Investments** (\$millions after escalation – if  
 2 applicable)

	<b>Total</b>
EV Savings Calculator	1.15
EV Site Prioritization Tool	1.73
Grid Visibility Tool	1.14
Site Host Data API	1.12
<i>Subtotal, New Technology</i>	<b>\$ 5.14</b>
ME&O	9.61
Preliminary Design and ROM Process	3.71
Internal Labor (Customer Acquisition)	13.54
Internal Labor (PMO+Proj Delivery)	7.09
<i>Subtotal, Site Installation Support</i>	<b>\$ 33.95</b>
Equity Initiatives	4.48
Existing IT	4.26
Program Evaluator	2.96
Program Survey	0.15
<b>Total</b>	<b>\$ 50.93</b>

3

4 **A. *Site Installation Support Costs***

5 **Q: Please explain what you mean by site installation support costs.**

6 A: I have grouped four internal activities as “site installation support;” they have a total  
 7 budget of \$33.4 million and are described by PG&E as follows.

- 8 • **ME&O:** PG&E’s Marketing, Education, and Outreach (ME&O) activities will  
 9 encourage prospective customers to apply to be site hosts and provide education  
 10 materials to site hosts to help encourage electric vehicle (EV) adoption.<sup>92</sup>

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<sup>92</sup> PG&E, Testimony, Ch. 6, p. 1, lines 5-9.

- 1 • **Internal Labor (Customer Acquisition):** PG&E “will work with potential site  
2 hosts to help them to complete the online application[,] ...support the customer  
3 once an application is completed,” and prioritize applications.<sup>93</sup>
- 4 • **Preliminary Design and ROM Process:** PG&E will conduct a “desktop  
5 review,” site walk, and a rough order of magnitude cost estimate.<sup>94</sup>
- 6 • **Internal Labor (PMO+Proj Delivery):** PG&E assigns a project manager for  
7 “pre-construction planning and construction buildout.”<sup>95</sup>

8 **Q: Do you have any concerns about these proposed expenses?**

9 A: Yes. While I have not reviewed all of these costs in detail, the total proposed budget for  
10 site installation support seems very high. The \$33.95 million budget equates to \$2,122 per  
11 port (for 16,000 ports). While this budget also accomplishes other tasks—such as general  
12 promotion of EV adoption—it represents a substantial investment in what PG&E calls the  
13 “customer journey.”

14 PG&E’s testimony includes considerable discussion of the topic of customer  
15 interest in PG&E ownership of TE infrastructure. It appears to me that were it not for the  
16 requirement in D.21-07-028 for customer ownership, PG&E would have proposed a far  
17 higher level of PG&E ownership.

18 It is unsurprising that PG&E has found that customer ownership “can increase costs  
19 and project deployment responsibilities,”<sup>96</sup> as PG&E proposes to continue offering costly

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<sup>93</sup> PG&E, Testimony, Ch. 4, p. 4, line 2 through p. 5, line 4.

<sup>94</sup> PG&E, Testimony, Ch. 4, p. 6, lines 15-24. PG&E justifies this effort based on its experience in the EV Fast Charge Program, in which it used the more complex information regarding site conditions and utilization potential (compared to the EVCN pilot) to to prioritize sites for cost-effectiveness and utilization. PG&E, Testimony, Ch. 2, p. 8 lines 11-22.

<sup>95</sup> Attachment JDW-25.

<sup>96</sup> PG&E, Testimony, Ch. 2, p. 3 lines 10-20, 26-28, p. 4 lines 1-3.

1 site installation support services. It is evident that in addition to the site development  
2 work, there are substantial “soft costs” associated with TE infrastructure projects,  
3 regardless of whether the customer, an EVSE supplier, or PG&E takes responsibility for  
4 project deployment.

5 Furthermore, PG&E’s proposal advises that it may request authorization to  
6 eliminate the regulatory constraint on offering a turnkey solution to all applicants.<sup>97</sup> If it  
7 does so, it is likely that the cost of site installation support services will increase as a  
8 percentage of the overall budget, since PG&E will take over the costs of project  
9 deployment that its customers would otherwise cover.

10 **Q: Has PG&E taken steps to control its site installation support costs?**

11 A: Yes. PG&E will allow EVSPs to complete program applications on a site host’s behalf.  
12 Compared to the EVCN pilot, the EV Fast Charge pilot demonstrated that EVSP  
13 engagement enables site hosts to become “more informed and prepared for participation,”  
14 as well as enabling “PG&E to collect more technical information in the application.”<sup>98</sup>

15 **Q: Do you have any recommendations to reduce site installation support costs?**

16 A: The Commission should consider two options. First, the Commission could consider  
17 setting a per port cost cap on site installation support that is significantly lower than the  
18 \$2,112 per port proposed by PG&E. As PG&E has not developed its workflow and  
19 staffing plan to a high level of detail at this point, it is not possible to conduct a budget  
20 audit to identify specific savings. So, the Commission could simply determine that a lower  
21 budget is reasonable, and leave it to PG&E to prioritize spending within that constraint.

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<sup>97</sup> PG&E, Testimony, Ch. 2, p. 4 lines 4-6.

<sup>98</sup> PG&E, Testimony, Ch. 2, p. 9 lines 4-20.

1           Second, the Commission should strongly discourage any request for additional site  
2           installation support costs if PG&E proposes to eliminate the regulatory constraint on  
3           turnkey projects.

4    ***B. Other Cost Reduction Opportunities***

5    **Q: Do you have any recommendations to reduce other costs?**

6    A: No, although I would encourage the Commission to consider any recommendations from  
7           other parties to reduce costs related to new technologies and to existing IT, which is  
8           vaguely justified.<sup>99</sup> I often find that IT projects are poorly scoped and result in  
9           unnecessary expense. As these budget items are a relatively small percentage of the  
10          overall request, the details of PG&E's proposed spending in these areas may be worth  
11          further scrutiny.

12          Perhaps the Commission could obtain further evidence from the California Energy  
13          Commission regarding administrative, IT and other support costs related to CALeVIP or  
14          other non-IOU programs that indicate costs are just higher. I attempted to obtain further  
15          information from the CEC and the Center for Sustainable Energy, but the specific cost  
16          data I hoped to find remained elusive.

17    **VII. To-the-Meter (TTM) Work Costs and Upgrade Process**

18    **Q: Please summarize how PG&E proposes to complete TTM work.**

19    A: PG&E will perform all TTM work under PG&E's Rule 29: EV Infrastructure Rule. The  
20          costs for TTM are not included in PG&E's proposal, per Public Utilities Code Section

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<sup>99</sup> PG&E, Testimony, Ch. 4, p. 15, line 30 through p. 16, line 6.

1 740.19.<sup>100</sup> For projects with customer-owned BTM infrastructure, PG&E proposes to  
2 await completion of BTM work before beginning its TTM work.<sup>101</sup>

3 Furthermore, PG&E will utilize the its traditional interconnection process to  
4 determine whether the distribution grid has sufficient capacity to accommodate any  
5 demand increase due to a customer-owned project.<sup>102</sup> PG&E proposes to offer a simpler,  
6 but only “illustrative” version of its Grid Visibility Tool to inform customers about  
7 interconnection constraints.<sup>103</sup> PG&E cautions that customers will need to invest “more  
8 time to be able to make informed decisions” for projects lacking the benefit of its internal  
9 site installation support (which is expensive, as discussed in Section VI.A).<sup>104</sup>

10 **Q: If TTM costs are not a part of PG&E’s proposal, why are they relevant?**

11 A: Under Rule 29, PG&E ratepayers as a whole will be responsible for the revenue  
12 requirement resulting from TTM costs. Thus, it is important that the Commission consider  
13 whether aspects of PG&E’s EVC 2 might lead to unnecessary TTM costs.

14 **Q: How can PG&E avoid unnecessary TTM costs?**

15 A: Two approaches recommended in my testimony should help avoid unnecessary TTM  
16 costs.

17 First, as discussed in Section VI.B, PG&E is proposing to use Automated Load  
18 Management (ALM) to reduce the cost of TE infrastructure investments. As I noted in  
19 that section, customers will only be motivated to accept utilization of ALM if there is an  
20 opportunity to share savings (or a requirement to share costs), and that opportunity will

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<sup>100</sup> PG&E, Testimony, Ch. 3, p. 2 line 19-25.

<sup>101</sup> PG&E, Testimony, Ch. 4, p. 9, lines 22-27.

<sup>102</sup> PG&E, Testimony, Ch. 4, p. 10, line 29 through p. 11 line 6.

<sup>103</sup> PG&E, Testimony, Ch. 4, p. 11, lines 7-28.

<sup>104</sup> PG&E, Testimony, Ch. 4, p. 11, lines 4-6.

1 only be available if participants are exposed to a larger portion of project costs than PG&E  
2 proposes in EVC 2.

3 Second, as discussed in Sections IV.C and IV.E, consideration of L1 chargers for  
4 MFH installations, rather than investing only in more costly L2 charger infrastructure,  
5 may reduce the increase in peak load and thus the potential to cause TTM work resulting  
6 either directly from the project load or from future increase in feeder loads.

### 7 **VIII. Cost Allocation**

8 **Q: How does PG&E propose to allocate the revenue requirement resulting from EVC**  
9 **2?**

10 A: PG&E proposes to allocate these costs using the same allocation method that is used for  
11 other distribution revenues. PG&E states that this proposal is consistent with the 2020  
12 GRC Phase II Revenue Allocation Settlement (RA Settlement) adopted by D.21-11-  
13 016.<sup>105</sup>

14 **Q: Do you agree with PG&E’s interpretation of the RA Settlement and D.21-11-016?**

15 A: No. As the Commission notes in D.21-11-016, “The only language referring to the  
16 treatment of EV costs in the RA settlement is: ‘[t]he RA Settling Parties agree to keep EV  
17 program revenues in Distribution, using the same standard allocation method that is used  
18 for all other Distribution revenues.’”<sup>106</sup>

19 As PG&E notes, the EVC 2 program costs are incremental to the 2020 GRC.<sup>107</sup>  
20 Thus, it does not seem reasonable to assert that those costs were covered by the terms of  
21 the settlement, which only considered the costs and revenue requirement in the

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<sup>105</sup> Attachment JDW-24, part (f).

<sup>106</sup> D.21-11-016, p. 157, FN 361.

<sup>107</sup> PG&E, Testimony, Ch. 7, p. 1 lines 14-16.

1 evidentiary record for A.19-11-019. It is also not reasonable to apply the RA Settlement’s  
2 term to “keep” program revenues in distribution if the program revenue requirement did  
3 not exist within the scope of the RA Settlement. As the Commission further noted in its  
4 decision, “the RA settlement itself does not state a specific desire by the settling parties  
5 to retroactively affect Commission decisions on this issue,”<sup>108</sup> and neither does it state  
6 any specific desire to proactively affect future Commission decisions. The RA settlement  
7 merely confirmed that the parties accepted the status quo.

8 **Q: How should the revenue requirement responsibility for EVC 2 be allocated?**

9 A: The Commission should direct that EVC 2 costs should be recovered through PPP rates  
10 and allocated to customers on an equal percent of total revenues (EPT) basis, for the  
11 following reasons.

- 12 • PG&E confirms that, “Zero percent of program costs will be incurred for  
13 equipment installed on PG&E’s distribution system,” and “100 percent of  
14 program costs will be incurred for costs related to equipment installed behind-  
15 the-meter.”<sup>109</sup>
- 16 • Other programs whose costs it tracks through the Transportation Electrification  
17 Balancing Account (TEBA) and recovers through distribution rates include  
18 both BTM and TTM program costs.<sup>110</sup>
- 19 • Programs that include only BTM incentives, such as energy efficiency  
20 programs, are recovered through PPP rates and are allocated to customers on  
21 an equal percent of total revenues (EPT) basis.<sup>111</sup>

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<sup>108</sup> D.21-11-016, pp. 156-157.

<sup>109</sup> Attachment JDW-24, parts (a)-(b).

<sup>110</sup> Attachment JDW-24, part (h).

<sup>111</sup> Attachment JDW-24, part (g).



1           Furthermore, the RA Settlement was filed on April 8, 2021, and thus the parties to  
2           the RA Settlement were unable to consider the implementation of Rule 29 through  
3           Commission Resolution E-5167, which was approved on October 7, 2021. Resolution E-  
4           5167 determined the eligibility of TTM EV Infrastructure costs for recovery in  
5           distribution rates, and it explicitly excludes consideration of cost responsibility for  
6           customer-side infrastructure.<sup>112</sup>

7           Therefore, as BTM costs are, by Resolution E-5167, not assigned to distribution  
8           rates, and because they are similar to energy efficiency costs, the Commission should  
9           direct PG&E to also recover the BTM costs from EVC 2 through PPP rates and allocate  
10          those costs to customers on an equal percent of total revenues basis, consistent with D.21-  
11          11-016.

12   **Q: Does this conclude your testimony?**

13   A: Yes.

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<sup>112</sup> “As no ratepayer funding will go towards the purchase and maintenance of customer-side infrastructure, and because the applicant will be responsible for procuring the customer-side infrastructure ...” Commission Resolution E-5167 (October 7, 2021), p. 20.