

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider  
Alternative-Fueled Vehicle Programs,  
Tariffs, and Policies.

Rulemaking 13-11-007  
(Filed November 14, 2013)

**OFFICE OF RATEPAYER ADVOCATES REPLY COMMENTS  
ON ALTERNATIVE-FUELED VEHICLES**

**I. INTRODUCTION**

Office of Ratepayer Advocates (ORA) submits its reply comments on the *Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs, and Policies* (OIR or Rulemaking). ORA limits its reply to parties' comments on issues regarding: (1) Vehicle-Grid Integration (VGI); (2) rates and tariffs; and, (3) financing of Alternative-Fueled Vehicles (AFVs).

**II. DISCUSSION**

**A. VEHICLE-GRID INTEGRATION**

Several parties commented on conducting pilots and surveying and educating customers, before adopting VGI-related tariff changes. Many of the parties' opinions are consistent with ORA's opening comments. ORA replies to various parties' comments below.

**1. National Resources Defense Council (NRDC)**

NRDC recommends the Commission prioritize the VGI program by first adopting "incentivized charging," followed by controlled charging, then by battery second life and, lastly, vehicle-to grid activities.<sup>1, 2</sup> ORA agrees with this prioritization, which is consistent with ORA's recommendation in opening comments.<sup>3</sup>

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<sup>1</sup> NRDC Comments, p. 1.

NRDC recommends that the Commission avoid the unintended consequence of PEV grid support resulting in a decrease in the percentage of electric miles driven by plug-in hybrid electric drivers, or even worse, the direct use of gasoline power to provide electricity to the grid.<sup>4</sup> ORA supports this proposal. ORA also agrees with NRDC's recommendation on utility notification of, and customer education on, various benefits such as the Low Carbon Fuel Standard (LCFS) credits, and maximizing charging during off-peak periods to encourage more PEV purchases.<sup>5</sup>

NRDC interprets the energy storage proceeding decision as having established a hard cap of 200 MW on customer-side storage. ORA disagrees. Thus, ORA does not agree with NRDC's recommendation that the Commission should reconsider the 200 MW limit.<sup>6</sup> NRDC believes that this "hard cap" will prevent many PEV owners from receiving compensation for value they provide to the grid. The 200 MW amount was established as a customer-side energy storage goal and not as a cap. There is no artificial cap set by the Commission in the energy storage proceeding to prevent more PEVs from providing energy storage services to the grid. If the market provides sufficient incentive to the PEV owners to provide these services (without unintended consequences), there would not reason to place artificial limits on the growth of this market.

## **2. Southern California Edison (SCE)**

SCE recommends the OIR include a more complete list of key adoption drivers to accelerate the market, including market education, vehicle features, and infrastructure.<sup>7</sup> ORA supports SCE's recommendations in this area.

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<sup>2</sup> Examples for these four steps are: "Incentivized charging" includes time-of-use rates, "controlled charging" is the same as V1G, "battery second life" is using battery as energy storage after its useful life in the PEV is ended, and "vehicle-to-grid" activities is the same as V2G.

<sup>3</sup> ORA Comments, p. 5.

<sup>4</sup> NRDC comments, p. 4.

<sup>5</sup> NRDC Comments, p. 11.

<sup>6</sup> NRDC comments, p. 7-8.

<sup>7</sup> SCE comments, p. 2.

SCE recommends minimizing unintended consequences and consumer net costs from VGI activities. SCE identifies additional consumer net costs, such as the costs from potential stranded assets, networking, participation in the grid services, redundant or high back-office costs, and higher costs for charging equipment and vehicle capabilities/features.<sup>8</sup> SCE also identifies unintended consequences such as counting the same grid benefit twice,<sup>9</sup> interfering with the usefulness of the vehicle (e.g., reducing electric vehicle miles travelled), and adding complexity that could confuse PEV customers, dealers, automakers and other stakeholders.<sup>10</sup> ORA shares these concerns and supports SCE's recommendations in this area. The Commission should consider the potential costs and unintended consequences before adopting new VGI-related rules and tariffs.

### **3. Vote Solar**

Comments from Vote Solar are similar to ORA's comments in that the focus of this proceeding should be on what consumers want as opposed to grid needs. Vote Solar also recommends conducting surveys on behavior of consumers in general instead of that of early-adopters of EVs.<sup>11</sup> As stated in ORA's opening comments, if the consumer (PEV owner/driver) does not have the incentive to participate in the VGI program, the likelihood of its success is low.

In addition, Vote Solar suggests that consumer outreach and education be incorporated as part of any VGI program implementation.<sup>12</sup> This recommendation also is consistent with ORA's position on this issue, and ORA supports its adoption.

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<sup>8</sup> SCE comments, p. 8-9.

<sup>9</sup> For example, the settlement of electric vehicle load participating across both retail and wholesale markets may result in double-payments to the PEV owner.) .

<sup>10</sup> SCE comments, p. 8-9.

<sup>11</sup> Vote Solar comments, p. 1.

<sup>12</sup> Vote Solar comments, p. 2.

#### **4. EV Grid**

EV Grid’s assumptions of energy and capacity available from VGI produced by the one million PEVs may be overly optimistic. EV Grid assumes that 15 to 45 GWH of energy and 4.5 GW to 22.5 GW of PEV capacity will be available for VGI services.<sup>13</sup> This forecast, while mathematically may be correct, has many unproven assumptions. Even if one assumes that there will be one million vehicles by 2025 in California, only a small fraction of the energy and capacity from these vehicles likely will be available to the grid. Indeed, the vast majority of the electricity delivered to these vehicles will be consumed for the vehicles’ primary purpose of transportation. In addition, if a small fraction of this energy/capacity is not used for mobility and is utilized for grid support, it will likely not be all available at the same time. Therefore, there will be an even smaller quantity available for VGI services.

#### **5. San Diego Gas & Electric Company (SDG&E)**

SDG&E’s comments are consistent with ORA’s comments on several issues, including a recommendation that the Commission ensure that utility customers are educated about AFV technologies and benefits.<sup>14</sup>

SDG&E comments also state that there could be a negative impact on the grid transportation electrification and increased societal costs if customer-centered policies and measures are not taken to enable efficient and effective Vehicle-Grid Integration.<sup>15</sup> SDG&E further states that it “believes that understanding and appreciating customer preferences and behavior are critical to the success of VGI,”<sup>16</sup> and that “PEV customers need to be the focus of the value opportunity since they are the key actors who will ultimately decide whether or not PEVs will become VGI resources.”<sup>17</sup> ORA agrees with all the above comments from SDG&E. ORA recommends the Commission adopt these

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<sup>13</sup> EV Grid Comments, p. 1.

<sup>14</sup> SDG&E Comments, p. 2.

<sup>15</sup> SDG&E Comments, p. 2.

<sup>16</sup> SDG&E Comments, p. 5.

<sup>17</sup> SDG&E Comments, p. 6.

proposals before implementing any large-scale state-wide rules and policies related to VGI services.

## **6. PG&E**

PG&E identifies certain impediments to PEV adoption, one of which is “[c]onsumer knowledge and awareness of the benefits and costs of PEVs.”<sup>18</sup> ORA supports PG&E’s recommendation on this issue, which is consistent with ORA’s recommendation to conduct surveys and pilots to determine the level of consumer (PEV owner/driver) interest in participating in the VGI program.

### **B. RATES and TARIFFS**

ORA finds much to agree with in many of the parties’ comments on PEV rate design, and especially commends SCE, General Motors (GM), Natural Resources Defense Council (NRDC), and California Center for Sustainable Energy (CCSE) for thoughtful and well-balanced comments. Specific aspects of these parties’ comments are addressed below in conjunction with ORA’s reply to PG&E’s opening comments.

On the other hand, ORA strongly disagrees with PG&E’s contention that rate design should be de-emphasized in this proceeding. PG&E states:

PG&E does not recommend a focus on PEV electric rates, because the research PG&E has conducted has found that this is not a major impediment to PEV adoption<sup>19</sup>... PG&E does not recommend pursuing additional PEV-specific rates in this Rulemaking, because the existing PEV-specific rates and other rates that the utilities offer provide a stable and sustainable foundation for customers to receive the operating benefits from PEVs.<sup>20</sup>

In contrast to PG&E, many parties commented on elements of both residential and nonresidential rate designs that could, and should, be improved to remove barriers to

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<sup>18</sup> PG&E Comments, p. 2.

<sup>19</sup> PG&E Comments, p. 2.

<sup>20</sup> Id, p. 3.

PEV ownership. These are discussed below for both residential and nonresidential markets.

### **1. Residential PEV Charging Rates**

While PG&E's new residential PEV rate options EV A and EV B<sup>21</sup> are a positive step, more can be done to improve the PEV rate options as well as the customer outreach and education associated with these options. First and foremost would be to encourage more PEV owners to sign up for time-of use (TOU) rates<sup>22</sup>, either on a whole-house or separately-metered basis. PG&E estimates about two-thirds of its residential PEV owners (about 13,000 customers) are *not* on TOU rates.<sup>23</sup> SCE's estimates are similar.<sup>24</sup> In terms of actual rates, ORA's opening comments discuss how a single TOU rate design is insufficient to meet the needs of both Level 1 and Level 2 chargers.<sup>25</sup> Similar comments are offered by GM and others.<sup>26</sup>

The estimated 13,000 PG&E customers (who are not on TOU rates) are on inclining block rates (IBR)<sup>27</sup>. IBR penalizes PEV usage (along with all other incremental usage) as it likely occurs in a more expensive block. Moreover, IBR provides no incentive to charge off peak. As such, as SDG&E and SCE indicated<sup>28</sup>, the natural inclination of these customers is to plug in their vehicles as soon as they return home from work, often during early evening hours. Nearly all of those customers would

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<sup>21</sup> EV A and EV B are new TOU rate schedules that have been available since August 1, 2013. See, PG&E Comments, p. 6.

<sup>22</sup> Time of use rates feature two or three distinct prices depending on the time of day, weekday vs. weekend, and season. Time-of-use pricing periods are fixed in advance, and prices are typically lowest in the overnight hours.

<sup>23</sup> PG&E, p. 7.

<sup>24</sup> SCE, p. 18.

<sup>25</sup> Id.

<sup>26</sup> GM, p. 1; SDG&E, p. 10; SCE, p. 6; Charge Point, p. 6; NRDC, p. 6.

<sup>27</sup> Inclining block rates feature a rate that increases with usage, according to pre-defined usage blocks or "tiers". For example, PG&E's E-1 rate has four tiers, with tier 1 usage priced at about 13 cents per kWh and tier 4 at about 36 cents per kWh. IBRs usually do not vary by time of use, although IBR can be combined with TOU rates. PG&E's E-9 PEV rates are examples of such rate designs.

<sup>28</sup> SDG&E, p. 9; SCE, p. 10.

benefit from charging off peak with separately-metered TOU rates—if separate metering of the PEV charging load could be achieved at a suitably low cost.<sup>29</sup>

The low participation of residential PEV owners in TOU rate options suggests that PG&E is not doing all that it could do to inform PEV owners of TOU rate and metering options and the pros and cons of such rates compared to the standard domestic IBR. ORA applauds those commenters such as GM, EV-Grid, CCSE, NRG, NEMA, and NRDC, who focused on the need for low-cost metering and PEV-friendly TOU rate options.<sup>30</sup>

Clearly, metering cost is only one of the barriers to optimal residential PEV rate design. As several parties pointed out, availability of rate options and inadequate customer education concerning those options are additional barriers.<sup>31</sup> PG&E’s proposal that the Commission not focus on rate design issues would perpetuate these barriers.

## **2. Nonresidential PEV Charging Rates**

ORA also disagrees with PG&E’s recommendation not to pursue additional PEV-specific rates in the nonresidential arena. PG&E states, “existing electric rate schedules for commercial loads...are adequate to support workplace PEV charging.”<sup>32</sup>

However, ORA is not alone in observing that demand charges (which are standard features of Medium and Large commercial rates) can be barriers to optimal charging in nonresidential settings. Several parties, including SCE, pointed out the need for PEV-specific rates without demand charges for nonresidential PEV charging.<sup>33</sup>

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<sup>29</sup> For example, PG&E’s off-peak residential PEV rates, at about 10 cents per kWh for EV-A and EV-B, are lower than its standard non-TOU residential E-1 baseline tier 1 rate of about 13 cents per kWh. Many PEV owners on the whole-house E-1 rate pay a Tier 3 or Tier 4 rate (about 32 cents, or 36 cents, per kWh, respectively), regardless of when they charge their PEV. The current PG&E Tier 4 rate is roughly the equivalent of \$3.00 per gallon of gasoline. See <http://www.pge.com/notes/rates/tariffs/ERS.SHTML#ERS>

<sup>30</sup> GM, p. 8-10; EV-Grid, p.7; CCSE, p.5; NRG, p.7; NEMA, p.3; and NRDC, p.8.

<sup>31</sup> EV-Grid, p.4; CCSE, p.5; GPI/CEC, p.3 and p.9; NRDC, p.9.

<sup>32</sup> PG&E, p.8.

<sup>33</sup> See SCE, p.25; GPI/CEC p.4, p.14; Charge Point, p. 16; CCSE, p. 6; CALSTART, p. 4.

## C. FINANCING

Six parties expressed at least qualified support for utility financing of PEV infrastructure,<sup>34</sup> and an equal number expressed opposition.<sup>35</sup> Most of the proponents of utility financing discussed the potential of on-bill financing (OBF) or on-bill repayment (OBR). Among the strongest proponents of OBF/OBR was Charge Point. ORA does not support utility financing of PEVs or PEV infrastructure.

### 1. Charge Point

Charge Point recommends that the Commission adopt policies that the IOUs participate in innovative financing models similar to the kind experienced in the California solar industry, and explore the use of “on-bill financing” like in energy efficiency programs to assist ratepayers in purchasing EVs and smart charging equipment.<sup>36</sup> Further, Charge Point envisions a possible role for the utility as an “equity sponsor or commercial participant in an “EVSE Deployment Fund” and/or utilization of existing utility sponsored financing programs.<sup>37</sup> Charge Point states,

As a potential participant in financing, the utility could actively promote rapid acquisition of EV charging infrastructure. Importantly, the ability of the utility to enter into large scale deployment programs as an investor in a third party model would facilitate the interest of the financial community and enable the attraction of long term capital into this sector. There may be other roles and opportunities for the utility to use their balance sheet of scale and size to command lower financing costs for EV infrastructure.<sup>38</sup>

ORA disagrees. Charge Point’s proposals go well beyond the traditional utility role of providing basic energy utility services. In addition to the four policy reasons<sup>39</sup>

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<sup>34</sup> CESA, p. 8; MEA, p. 6; GM, p. 12; GPI/CEC, p. 4; Charge Point, p.4 and CCSE, p. 9.

<sup>35</sup> See SDG&E, p. 12; PG&E, p. 9; SCE, p. 28; NRG p. 9; and TURN, pp. 10-12.

<sup>36</sup> Charge Point, p.4.

<sup>37</sup> Id, p. 10.

<sup>38</sup> Id, p. 12.

<sup>39</sup> These are (1) inappropriateness of utility financing absent a showing that nonparticipating ratepayers would benefit; (2) multiple alternate sources of financing; (3) potential transfer of wealth from poorer to richer customers; and (4) potential to favor PEV technology over other technologies that could reduce GHG emissions.



cited by ORA in its opening comments,<sup>40</sup> the Commission investigated the possibility of on-bill financing for customer energy efficiency investments in pilot form. The benefits of OBF, as they relate to the cost of financing relative to the value of the energy savings, have not yet been assessed. Moreover, they will not be reported in the utility impact evaluations until 2015. Thus, Charge Point's proposals should be dismissed.

The Commission deemed OBF for energy efficiency as costly, and utilities anticipated challenges in rolling it out cost-effectively.<sup>41</sup> Furthermore, the Commission limited OBF to the commercial and industrial sector. Residential on-bill financing was found to be quite expensive. There are significant transaction costs to adding the lender's bill to the utility bill.<sup>42</sup> This gives rise to the question of whether PEV ratepayers (or PEV retailers/manufacturers) would be willing to front the cost of on-bill financing so that it is not spread to all ratepayers. The other unanswered question is whether a non-payment of the PEV loan would entail disconnection of utility service. There is the legitimate issue whether funds from partial payments would go first to the utility bill or the financing bill. These are questions that would need answers.

In any case, OBF which entails a 0% interest loan from ratepayers raises the issue of wealth transfers from ratepayers to PEV owners. For these reasons, as well as the reasons stated in ORA's and other parties' opening comments,<sup>43</sup> ORA opposes Charge Point's OBF proposal, as well as its proposal that the Commission "host a special workshop on [PEV] financing issues."<sup>44</sup>

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<sup>40</sup> ORA comments, pp. 15-16.

<sup>41</sup> The OBF program was not considered an energy resource program in the 2010-2012 Energy Efficiency program cycle and was thus not evaluated in terms of its impact. Impacts of OBF will be determined in the current 2013-2014 Energy Efficiency cycle.

<sup>42</sup> D.09-09-047, p. 275: "Utility comments underscored the fact that early trials of non-residential on bill financing by SCE, SDG&E and SoCalGas, and review of the experience with similar programs on the East Coast, revealed some challenges to cost-effectively providing this program. All of the utilities expressed significant concerns regarding the risk of default. "

<sup>43</sup> See SDG&E, p. 12; PG&E, p. 9; SCE, p. 28; NRG p. 9; and TURN, pp. 10-12.

<sup>44</sup> Charge Point's comments, p. 13.

### III. CONCLUSION

In conclusion, ORA respectfully requests the Commission consider and adopt ORA's recommendations in response to the questions posed in the Rulemaking. ORA also appreciates the opportunity to respond to the parties' comments in this proceeding.

Respectfully submitted,

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