

Application No. A.14-04-014

Exhibit No.: SDG&E-9

Witness: Barry Pulliam

Application of SAN DIEGO GAS & ELECTRIC
COMPANY (U902E) for Approval of its
Electric Vehicle-Grid Integration Pilot Program.

Application No. 14-04-014
(Filed April 11, 2014)

And Related Matter.

Rulemaking 13-11-007

**PREPARED REBUTTAL TESTIMONY OF
BARRY PULLIAM
CHAPTER 2
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

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

APRIL 13, 2015



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1 **PREPARED REBUTTAL TESTIMONY OF**

2 **BARRY PULLIAM**

3 **CHAPTER 2**

4 **I. INTRODUCTION**

5 I offered the following conclusions in Supplemental Testimony submitted on behalf
6 of San Diego Gas & Electric Company (“SDG&E”) on January 14, 2015: “SDG&E’s
7 proposal to provide electric fueling services through the VGI Pilot Program is not likely to
8 significantly limit competition in the PEV fueling services market in the SDG&E service
9 area or cause harm to consumers. The potential for any competitive harm appears small
10 relative to the overall potential benefits associated with the VGI Pilot Program.”¹

11 Several parties raise concerns regarding the potential competitive impact of
12 SDG&E’s proposed pilot program. I address these concerns in my rebuttal testimony below.

13 **II. SUMMARY OF OPINIONS**

- 14 • Contrary to concern expressed by some interveners, SDG&E’s Vehicle Grid
15 Integration (“VGI”) pilot program will not “cripple” the market or “stifle”
16 competition as a result of “predatory pricing.”
- 17 • Rather, SDG&E’s pilot should accelerate demand for (and supply of) Electric
18 Vehicle Supply Equipment (“EVSE”) at targeted locations. This will serve to

¹ SDG&E Supp. (Pulliam) ST-38:15-19. Testimony served in this proceeding will be cited to as follows: Party nickname (witness surname) page(s):lines(s). Examples: TURN (Jones) 6:18-7:5; ORA (Aliaga-Caro) 2-5:11-16. SDG&E’s rounds of testimony will be cited as “SDG&E” [for the direct case served April 11, 2014 and as revised June 3, 2014 (Cynthia Fang) and July 29, 2014 (J.C. Martin)], “SDG&E Supp.” [supplemental served January 14, 2015], otherwise using the forgoing format.

1 accelerate growth in Plug-in Electric Vehicle (“PEV”) demand and demand
2 for EV services at non-targeted locations (*i.e.*, commercial locations) as well.

- 3 • SDG&E’s pilot will provide additional opportunities for current and would-
4 be suppliers of EVSE and EV services.
- 5 • Deployment of EVSE in California and the SDG&E service territory has
6 been heavily dependent on public funding. This will be the case in the near
7 future as well if the State deployment goals for EVSE and PEV in 2020 and
8 2025 are to be met.
- 9 • Interveners’ concerns that the pilot will reduce product quality or innovation
10 opportunities are unfounded.
- 11 • ChargePoint’s proposed modifications to SDG&E’s pilot seeks to preserve
12 ChargePoint’s existing business model, while taking advantage of significant
13 public and/or ratepayer funding of EVSE infrastructure costs to expand its
14 market opportunities. But it denies host sites the *choice* to allow SDG&E to
15 deal directly with PEV drivers, thereby bypassing potentially unnecessary
16 and costly “middleman” services that ChargePoint provides and that hosts
17 may not find valuable or wish to purchase. It also denies PEV drivers the
18 *choice* to deal directly with SDG&E. Finally, it frustrates the ability of
19 SDG&E to provide and implement the VGI pricing that is central to the pilot
20 Program, and to overall ratepayer welfare.

1 **III. IMPACT ON MARKET AND COMPETITION**

2 Some parties express concern that SDG&E’s pilot program will “cripple” the market
3 for EVSE and EVSE services or diminish competition.² The common theme is that by
4 spreading EVSE infrastructure costs across ratepayers, SDG&E will be able to set prices for
5 PEV fueling services below that of its competitors, ultimately harming PEV drivers; what
6 ChargePoint’s Mr. Monsen incorrectly terms “predatory pricing.” They argue competitors
7 will be unable to compete, thereby reducing the total number of EVSE deployed
8 (ChargePoint),³ and/or that PEV drivers will be denied benefits of innovation that might be
9 otherwise expected to occur (ChargePoint, CESA, ORA).⁴ These concerns are unfounded as
10 I show below.

11 **A. Market Definition**

12 Before addressing Mr. Monsen’s predatory pricing argument, I discuss the market(s)
13 he describes and how they compare to the market analyzed in my earlier testimony. I
14 defined the relevant market as PEV fueling services, *i.e.*, the sale or provision of electric fuel
15 to PEV drivers. SDG&E seeks to sell fuel to PEV drivers through the pilot program.

16 Mr. Monsen talks about “the market for EVSE and EV charging services” and
17 “EVSE markets.” He does not define how these markets differ or what specific products or
18 services they include, but it is clear that the customers he references are host sites, not PEV
19 drivers. Under SDG&E’s proposal, the customers are PEV drivers, not host sites. Host

² ChargePoint (Monsen) 22:18-19; California Energy Storage Alliance (“CESA”) (Lin) 3:1-23; and Office of Ratepayer Advocates (“ORA”) (Durvasula) 3-3:12-25.

³ ChargePoint (Monsen) 18-20.

⁴ ChargePoint (Monsen) 23:14-21; CESA (Lin) 3:4-23, 8:9-18; ORA (Durvasula) 3-6:5-3-7:2.

1 sites, which Mr. Monsen incorrectly refers to as SDG&E’s customers, will simply house the
2 EV charging equipment under SDG&E’s proposal.

3 Mr. Monsen’s market description reflects ChargePoint’s business model, at least for
4 multi-unit dwellings (“MUD”) and workplace locations, which is to sell EVSE and/or EVSE
5 charging services to a host site who then sells or provides fuel to PEV drivers. This is not
6 how SDG&E’s pilot program would operate. SDG&E would deal directly with PEV
7 drivers. While host sites would facilitate the installation of EVSE on their properties, they
8 would not own the equipment, nor would they have the responsibility of owning, pricing and
9 maintaining the equipment (or hiring someone to provide these services).⁵

10 The distinction may sound subtle, but it is important to keep in mind when
11 considering the impact of SDG&E’s program. While selling to host sites may be a concern
12 to ChargePoint, it should not be the concern of the California Public Utilities Commission
13 (“Commission” or “CPUC”) when thinking about the potential impact of SDG&E’s
14 proposal on competition. The proper benchmark to evaluate SDG&E’s proposal is
15 consumer welfare, *i.e.*, the welfare of PEV drivers, as discussed in my earlier testimony.

16 **B. Market Concentration Measures**

17 In my Supplemental Testimony I presented an analysis of current market
18 concentration levels and concentration levels at the beginning of the proposed pilot program.
19 I also estimated SDG&E’s market share in the longer term (2025).⁶ Mr. Monsen takes issue
20 with my analysis, arguing that it is misleading because it does not calculate concentration

⁵ SDG&E will obtain an easement from the host site for EVSE installation, but will not sell EVSE equipment to the host.

⁶ SDG&E Supp. (Pulliam) ST-29:11 – 31:3.

1 levels during all years of the pilot deployment (*i.e.*, 2015 – 2018).⁷ Mr. Monsen claims that
2 a proper market concentration test would show SDG&E has increasing market power as a
3 result of the pilot.⁸

4 Mr. Monsen provides an analysis of market concentration levels through 2018 in
5 Table 2 of his testimony, claiming that SDG&E’s pilot will result in higher market
6 concentration levels in 2018 when fully deployed than current levels.⁹ He claims to use my
7 data, though this is only partially correct. Mr. Monsen only uses my market share figures
8 for 2014 as a starting point, but the calculations of market shares and concentration levels
9 for 2015-2018 are based on his assumptions, assumptions that include an average 36.7%
10 annual growth rate in non-pilot EVSE deployment.¹⁰ Mr. Monsen’s assumption is flawed,
11 as are his conclusions as I describe below.

12 The 36.7% growth rate that Mr. Monsen uses is taken from a Navigant Research,
13 Inc. (“Navigant”) study that projects the average worldwide growth rate in commercial
14 EVSE to be 36.7% between 2013 and 2022.¹¹ This is not a growth rate that is specific to
15 California, nor does it account for state policy goals of EVSE deployment capable of

⁷ ChargePoint (Monsen) 12:10-14.

⁸ ChargePoint (Monsen) 15:1-16:2.

⁹ ChargePoint (Monsen) 15:9-10, Table 2.

¹⁰ ChargePoint (Monsen) 15:5-8.

¹¹ ChargePoint (Monsen) 16:13-14.

1 supporting 1 million zero emission vehicles by 2020 and 1.5 million vehicles by 2025.¹²
2 Growth rates in California will have to be much higher than those used by Mr. Monsen to
3 meet policy objectives.

4 Meeting California policy objectives would require approximately 18,860 non-
5 residential EVSE in the SDG&E service territory, using the same assumptions I did in my
6 earlier testimony.¹³ This requires an average annual growth rate of 62.2% outside of
7 SDG&E's pilot contribution, not the 36.7% that Mr. Monsen assumes. Table 1 below shows
8 the number of EVSE in the SDG&E service territory necessary to meet State goals by 2020,
9 along with Mr. Monsen's assumptions regarding total EVSE deployment. Mr. Monsen's
10 growth assumptions result in a shortfall of more than 2,500 EVSE units as of 2018 and
11 8,500 EVSE units as of 2020.

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¹² <http://gov.ca.gov/news.php?id=17472>. Executive Order B-16-2012 calls for PEVs and FCEVs, the overwhelming majority of which will be PEVs. See California Air Resources Board FCEV estimates for 2020, Retrieved from: http://www.driveclean.ca.gov/Search_and_Explore/Technologies_and_Fuel_Types/Hydrogen_Fuel_Cell.php also see GPI (Morris) 5:15:23 which expects only 16,777 FCEVs by 2020.

¹³ SDG&E Supp. (Pulliam) ST-30:7-12. San Diego represents 9.43% of vehicle demand; an EVSE to PEV ratio of 1:5. $1,000,000 \text{ vehicles} \times 9.43\% = 94,300 \text{ vehicles}$. $94,300 / 5 = 18,860 \text{ EVSE}$.

Table 1
Shortfall in EVSE Units
Using Mr. Monsen's Assumptions

| Year | Required To Meet Executive Order B-16-2012 | Mr. Monsen's 36.7% Growth Assumption ¹ | Shortfall Using Mr. Monsen's Assumptions |
|------|--|---|--|
| (1) | (2) | (3) | (2)-(3) (4) |
| 2014 | 733 | 733 | - |
| 2015 | 1,689 | 1,501 | 188 |
| 2016 | 3,429 | 2,874 | 555 |
| 2017 | 6,629 | 5,376 | 1,253 |
| 2018 | 10,577 | 8,055 | 2,522 |
| 2019 | 13,735 | 8,993 | 4,742 |
| 2020 | 18,860 | 10,275 | 8,585 |

Notes: 1. Mr. Monsen's analysis goes through 2018. We estimate his 2019 and 2020 EVSE units based upon the 36.7% annualized worldwide rate through 2022 from Navigant, which Mr. Monsen relies upon for 2015 through 2018.

1 Table 2 shows the market concentration levels (measured by HHI) using an annual
2 growth rate of 62.2% in non-SDG&E pilot EVSE, which would be required along with the
3 maximum proposed 5,500 pilot program EVSE to achieve state goals by 2020. Contrary to
4 Mr. Monsen’s conclusions, market concentration levels remain below current levels during
5 each year of the pilot program deployment using EVSE growth rate assumptions consistent
6 with California policy objectives.

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Table 2
HHI by Year For SDG&E Pilot
EVSE Growth Necessary
to Meet Executive Order B-16-2012

| Year | Non-SDG&E | SDG&E | Total | HHI | Mr. Monsen's HHI |
|------|-----------|-------|------------------|-------|------------------|
| (1) | (2) | (3) | (4) (2) + (3) | (5) | (6) |
| 2014 | 717 | 16 | 733 | 4,207 | 4,207 |
| 2015 | 1,163 | 526 | 1,689 | 3,052 | 3,081 |
| 2016 | 1,887 | 1,542 | 3,429 | 3,352 | 3,790 |
| 2017 | 3,061 | 3,568 | 6,629 | 3,834 | 4,849 |
| 2018 | 4,966 | 5,611 | 10,577 | 3,782 | 5,182 |
| 2019 | 8,056 | 5,680 | 13,735 | 3,221 | 4,475 |
| 2020 | 13,068 | 5,792 | 18,860 | 3,052 | 3,880 |

Note: The Governor's plan calls for 1 million ZEV by 2020.¹
Assuming 9.43% are in SDG&E service territory,²
there would be 94,300 ZEV in SDG&E territory by 2020.
1:5 EVSE to PEV³ suggests 18,860 EVSE are required by 2020.

Source: 1. <http://gov.ca.gov/news.php?id=17472>
2. SDG&E (Martin) (JCM-16)
3. SDG&E (Pulliam) ST-30 fn. 57

C. Predatory Pricing

ChargePoint and Mr. Monsen argue that SDG&E’s pilot program will “cripple” the market; that it is analogous to a firm engaging in predatory pricing because the cost of the program is recovered from ratepayers rather than customers, effectively allowing SDG&E to price below cost.¹⁴ Predatory pricing occurs when a seller sets prices below its costs in an effort to destroy, eliminate or discipline its competitors. Once this goal has been

¹⁴ ChargePoint (Monsen) 4:14-20, 8:8-9:11, 18:6-11, 22:16-19, 23:13-18.

1 accomplished the seller raises prices through the exercise of monopoly or market power
2 during a period of “recoupment.”¹⁵ The ultimate goal of predatory pricing is long run prices
3 which are higher than they would have been but for the predatory behavior. This is not the
4 case here and Mr. Monsen’s predatory pricing analogy is completely inapplicable.

5 Rather than behaving as a “predator,” SDG&E’s program offers incentives to expand
6 a nascent market to the benefit of current and would-be EVSE and EV service providers.
7 SDG&E proposes to contract for services with those very parties based on a competitive
8 bidding process. In addition, with CPUC oversight SDG&E cannot raise future prices above
9 a competitive level.¹⁶ Therefore, there is no potential for consumer harm in the form of
10 higher prices for PEV fueling. Mr. Monsen agrees on this point, stating “[a]s long as the
11 Commission holds SDG&E to its assertions about its lack of interest in expanding its
12 ownership role in EVSE, there is little chance that SDG&E would be able to exercise its
13 market power and unilaterally increase prices in the EVSE markets.”¹⁷ Mr. Monsen also
14 agrees that all else equal, “lower prices enhance consumer welfare.”¹⁸

15 The pilot will help grow the market by benefitting drivers through more selection,
16 suppliers of EVSE and owners of EVSE stations through a broader market, and ratepayers
17 generally through downward pressure on rates; it also improves air quality and advances the
18 movement toward optimized grid integration.

¹⁵ Areeda, P., Hovenkamp, H. & Solow, J. (2002). Antitrust Law Vol. IIA (2nd ed.). New York, NY: Aspen Law & Business, p. 272.

¹⁶ SDG&E Supp. (Pulliam) ST-34:3-38:13.

¹⁷ ChargePoint (Monsen) 17:19-18:2.

¹⁸ ChargePoint (Monsen) 20:13-14.

1 Mr. Monsen argues that service providers may exit (or not enter) the market because
2 host sites are likely to delay purchases of EVSE from third parties like ChargePoint until
3 SDG&E's pilot program is over (after 2018) in the hope that they might receive an EVSE
4 from the SDG&E pilot program and not have to pay for the equipment or installation.¹⁹

5 Using assumed growth rates provided by Navigant, Mr. Monsen calculates that if
6 SDG&E's pilot program is fully subscribed there would need to be nearly 2,500 other EVSE
7 in the SDG&E territory by 2018 to meet PEV fueling needs.²⁰ This represents a growth of
8 about 240% over 2014 EVSE deployment (about 733) in the area. As shown in my Table 2
9 below, correcting Mr. Monsen's assumed growth rate of 36.7% to a rate that would meet
10 State policy goals would require total EVSE deployment in 2018 of over 10,500 EVSE, or
11 5,000 units more than SDG&E could supply even if the pilot were fully subscribed. This is
12 twice as many units as Mr. Monsen estimates and represents nearly a 600% increase relative
13 to 2014 EVSE deployment levels.

14 Mr. Monsen opines that this growth is not likely to occur because EVSE purchasers
15 (host sites) will wait in line for the installation of a free SDG&E pilot program unit.²¹ This
16 delay, he argues, would negatively impact other would-be equipment providers as they
17 decline to participate in the market, leaving customers vulnerable to "price surges and
18 deteriorating service."²²

¹⁹ ChargePoint (Monsen) 21:11-13.

²⁰ ChargePoint (Monsen): 15:9-10, Table 2.

²¹ ChargePoint (Monsen) 21:8-13.

²² ChargePoint (Monsen) 20:17-20.

1 This theory is flawed for several reasons. First, Mr. Monsen does not account for the
 2 fact that SDG&E’s pilot program is targeted to particular segments of the market (MUDs
 3 and workplace locations) -- segments that have been difficult for EVSE providers to
 4 penetrate and are currently underserved. Table 3 below shows a breakdown of non-
 5 residential charging stations in SDG&E’s service area based on Department of Energy
 6 (“DOE”) data.

Table 3
EVSE in SDG&E Service Territory By Location Type

| Location Type | # EVSE per Location | | | Total | As % of Total |
|---------------------|---------------------|------------|--------------|----------------------|---------------|
| | Fewer Than 7 | 8-10 | More Than 10 | | |
| (1) | (2) | (3) | (4) | Sum (2)...(4) (5) | (6) |
| MUD | 13 | - | - | 13 | 2% |
| Workplace | 81 | - | - | 81 | 11% |
| Commercial | | | | | |
| City/County | 81 | 8 | 16 | 105 | 14% |
| Dealer | 72 | - | - | 72 | 10% |
| Education | 85 | 24 | - | 109 | 15% |
| Medical | 10 | 17 | - | 27 | 4% |
| Military | 8 | 16 | - | 24 | 3% |
| Retail | 168 | 28 | - | 196 | 26% |
| SDGE | - | - | 16 | 16 | 2% |
| Travel/Tourism | 80 | 8 | 20 | 108 | 0 |
| Total | 598 | 101 | 52 | 751 | 100% |
| As Percent of Total | 80% | 13% | 7% | 100% | |

Source: DOE data: http://www.afdc.energy.gov/data_download

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1 The DOE data show a total of 751 charging units in the SDG&E service territory at
2 the end of March 2015. Just 13 of those units (2%) are installed at MUDs, while 80 (11%)
3 are installed at workplace locations. Combined, these locations represent just 13% of total
4 non-residential chargers in the SDG&E area.²³ Commercial locations host approximately
5 87% of non-residential charging units.²⁴ The distribution of charging units in the SDG&E
6 service territory is consistent with the picture seen on a state-wide level, which shows
7 MUDs and workplaces accounting for 2% and 10% of non-residential EVSE installations,
8 respectively.²⁵

9 The California Energy Commission (“CEC”) and other authorities recognize that
10 MUD locations in particular are a significantly underserved segment of the market. The
11 CEC reported in March of this year that only 5% of projects (2 out of 41 projects) in its most
12 recent EVSE funding of \$13 million were for installations at MUDs.²⁶ The CEC noted that
13 it had limited awards for MUDs to \$50,000 for rental properties and \$300,000 for owner-
14 occupied properties, which may have been insufficient given the higher costs of these

²³ Throughout this report, “non-residential” refers to the workplace, MUD, commercial and DC Fast Charging.

²⁴ Including 52 DC Fast Chargers. Eleven at Workplaces and 41 at Commercial sites. Commercial locations include retail stores, parking garages, universities, government locations, and other common, publicly accessible destinations, consistent with the CEC’s categorization. See pp. 39-40 of Smith, Charles, and Jacob Orenberg. 2015. *2015-2016 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program* Lead Commissioner Report. California Energy Commission, Fuels and Transportation Division. Publication Number: CEC-600-2014 -009-LCR. (CEC-600-2014-009-LCR).

²⁵ See Table 13 of CEC-600-2014-009-LCR.

²⁶ See pp. 39-40 of CEC-600-2014-009-LCR. The CEC uses the acronym EVSC for Electric Vehicle Charging Station. This appears to be synonymous with the EVSE, or Electric Vehicle Supply Equipment terminology I use in my testimony.

1 installations. The CEC also noted that there are substantial opportunities for growth in the
2 deployment of EVSE at workplace locations.²⁷

3 The lack of EVSE infrastructure and PEV fueling services at MUDs and workplace
4 locations has been cited as a barrier to deployment of PEVs.²⁸ By making the VGI pilot
5 program available to these locations SDG&E should boost demand for PEV's in the
6 SDG&E service territory, a point to which Mr. Monsen agrees.²⁹ An increase in demand for
7 PEVs will in turn lead to an increase in demand for PEV fueling services at commercial
8 locations that are not a part of the SDG&E pilot program.

9 Mr. Monsen's theory of service providers leaving due to the SDG&E pilot program
10 does not account for the growth that can be expected to occur in the commercial segment of
11 the market. This segment accounts for 87% of EVSE units and is not targeted by the
12 SDG&E pilot program. Growth in this segment would happen with or without the SDG&E
13 pilot program, though it should occur more rapidly with and benefit from SDG&E's pilot
14 program as I explain below.

15 Second, Mr. Monsen's argument that host sites will delay purchases of EVSE in
16 hope of receiving a free unit from the SDG&E pilot program ignores the fact that the
17 targeted locations (MUDs and workplaces) are already delaying (or declining) purchases.

²⁷ See pp. 40-41 of CEC-600-2014-009-LCR.

²⁸ See p. 4 of National Research Council. *Overcoming Barriers to Electric-Vehicle Deployment: Interim Report*. Washington, DC: the National Academies Press, 2013. Retrieved from: <http://www.nap.edu/catalog/18320/overcoming-barriers-to-electric-vehicle-deployment-interim-report>; also CEC-600-2014-009-LCR, pp. 40-41; and Quinn, C., *ChargePoint, Inc. Phase I Comments on Proposed Guiding Principles and Current Program Issues* (R.13-11-007, August 29, 2014) pp. 10-11.

²⁹ ChargePoint (Monsen) 7:18-21.

1 As shown in Table 1, MUDs account for only 13 EVSE installations in the SDG&E area,
2 while workplaces account for only 80 EVSE installations.

3 Economics teaches us that lower prices have the effect of increasing demand. If
4 SDG&E can offer EVSE installation and PEV fueling services at prices that are lower than
5 what is otherwise available in the market absent the pilot program, the average price of the
6 service will come down and total demand for EVSE and PEV fueling at these underserved
7 locations should increase relative to what it would be absent the program. In other words,
8 SDG&E's program should accelerate total demand from these host sites relative to what it
9 would be without the program. An increase in market demand during the years the pilot
10 program is being implemented means that more customers will be served (*i.e.*, more PEVs
11 will be fueled) than would otherwise be the case. Consumer (customer) welfare is enhanced
12 if a greater number of PEVs are served at lower prices.

13 Third, as explained in Mr. Schimka's direct testimony (Chapter 2), SDG&E intends
14 to bid out the acquisition, installation, operation and maintenance of the EVSE equipment
15 used in the pilot program to third parties. By doing so the program creates greater
16 opportunities for multiple third parties and contractors, including providers of charging
17 services to host sites (host sites are Mr. Monsen's defined customer base) than would exist
18 absent SDG&E's program, as the program should expand these segments of the market.³⁰

19 Notwithstanding these points, if it turns out that there is excess demand for pilot
20 program EVSE in any given year such that some participants would be forced to delay their
21 participation, this "problem" is easily addressed by allowing SDG&E the flexibility to

³⁰ SDG&E's proposal to hire third party providers of EVSE and EVSE services is discussed at SDG&E (Schimka) RS-8:1 – RS-9:20.

1 accelerate deployment of EVSE units to meet demand during the year, while still keeping
2 total deployment at a maximum of 5,500 units. This would mitigate against the “delaying”
3 concerns expressed by ChargePoint.

4 **D. Concerns Regarding Innovation and Service Quality**

5 ChargePoint, CESA and ORA also express concern that SDG&E’s pilot program
6 will stifle innovation and/or cause a deterioration in quality by driving out potential
7 competitors and/or requiring a “one-size-fits all” application.³¹ Product quality and price
8 (which I discussed above) are both important aspects of consumer welfare. Consumers
9 benefit when service providers are free to compete to provide the most desirable product at
10 the lowest possible price. Ultimately consumers choose some combination of price and
11 product that best suits their needs (*i.e.*, maximizes their welfare).

12 There are a couple of different aspects of PEV fueling to consider when thinking
13 about the potential impact of SDG&E’s proposal on product quality and innovation. The
14 first and most important is reliable delivery of fuel to the PEV. Charging a PEV is
15 analogous to fueling a conventional vehicle, except that PEVs require a longer time to fuel.³²
16 In this respect the service required to fuel a PEV is straightforward. It involves connecting
17 a PEV to an EVSE. Certainly there are different level chargers (L1, L2, DC fast chargers)
18 that deliver the fuel at different rates, but fundamentally they all perform the same basic
19 function: delivering an identical quality fuel to a PEV. If the EVSE is located at an

³¹ ChargePoint (Jones) 13:8-13; CESA (Lin) 3:15-23, 8:9-13; ORA (Durvasula) 3-6:14-3-7:17.

³² See p. 41 of National Research Council. *Overcoming Barriers to Electric-Vehicle Deployment: Interim Report*. Washington, DC: the National Academies Press, 2013.

1 accessible location and is reliably maintained, then one key difference with respect to
2 delivery of fuel from one unit to another is its delivery rate.³³

3 Considering the RFP process proposed by SDG&E, there seems to be little
4 possibility that its program would negatively impact the reliable delivery of fuel to PEV
5 drivers at the locations in question. The process will allow SDG&E to choose reliable
6 EVSE equipment from qualified vendors and utilize third party operating systems to
7 interface with the EVSE to implement the VGI Rate and fulfill charging needs, and will
8 work with third parties to insure that the equipment is properly maintained to provide
9 reliable service over the life of the asset.³⁴ Intervening parties do not express concern that
10 SDG&E’s proposal will impact the reliable delivery of fuel to PEV drivers. The only
11 concern that parties have identified with respect to fuel delivery itself is the appropriate mix
12 between L1 and L2 charging equipment.

13 ChargePoint argues that pricing itself is a quality/innovation related aspect of PEV
14 fueling that will be compromised under the SDG&E proposal.³⁵ Pricing is usually not
15 regarded as a product-quality issue. Rather it is another tool, like product quality, that
16 suppliers use to compete in the marketplace. Some suppliers may offer bulk price discounts,
17 while others offer discounts for purchasing a product or service during periods of slack
18 demand, similar to the VGI proposal contemplated by SDG&E. While parties have
19 complained about SDG&E’s pricing proposal as being too low and “predatory,” they have

³³ Conventional fueling also involves choices regarding the perceived quality of the gasoline (e.g., ARCO or Chevron). This is not an aspect of PEV fueling as there should be no question in drivers’ minds about the quality of electricity dispensed through different EVSEs.

³⁴ SDG&E (Schimka) RS-8:1-9:20.

³⁵ ChargePoint (Jones) 9:5-20, 11:5-12:9.

1 not argued that its lower prices cause a reduction in consumer welfare. Their argument is
2 that lower prices will lead to lower market participation by others, which will deny
3 consumers choice and innovation. Indeed, parties have generally applauded VGI pricing as
4 a positive aspect of SDG&E’s proposal (*i.e.*, welfare enhancing).³⁶

5 Mr. Jones argues that SDG&E’s pilot program will harm host sites because they will
6 not be able to choose the type of pricing they want to offer.³⁷ He cites examples of a
7 workplace site that may want to provide free charging for employees as an employee benefit
8 but charge a small per-kwh for guests and a retail site that may seek to provide free charging
9 for an amount of time commensurate with the dwell time most likely to ensure optimal
10 shopping in their store. However, Mr. Jones does not provide a cogent argument as to how
11 SDG&E’s pilot program might harm these entities, or the PEV drivers that would fuel at
12 these locations.

13 SDG&E’s proposal does not prevent these entities from continuing to engage in
14 these types of pricing behaviors if they find them more attractive for the PEV drivers they
15 want to serve. In the case of the workplace that desires to provide electricity to its
16 employees for free, there is nothing in SDG&E’s program that would prevent it from doing
17 so. It could simply offer to reimburse employees for their charging costs at work. This is
18 similar to programs commonly offered by employers that reimburse employees for parking
19 or mass transit costs. Moreover, the workplace site may find SDG&E’s offering superior to

³⁶ ORA (Willis) 5-1:5-7, 5-11:20-22; CESA (Lin) 9:9-11; ChargePoint (Quinn) 16:7-10; Environmental Defense Fund (“EDF”) (Fine) 7:11-9:17; The Federal Executive Agencies (“FEA”) (Brubaker) 3:17-4:2; KnGrid (Davis) 3; The Utility Reform Network (“TURN”) (Hawiger) 3:4-6; The Utility Consumers’ Action Network (“UCAN”) (Croyle) 6:1-6.

³⁷ ChargePoint (Jones) 11:12-12:9.

1 other offerings because there is no need for the host site to engage in pricing to begin with,
2 or to contract with a third-party to help it manage this aspect.

3 Alternatively, the workplace host could simply decline to enroll in the program and
4 work with non-SDG&E providers, which is an option they already have. They are not
5 obligated to participate in SDG&E's pilot program, but they would have the *choice* to
6 participate, a choice they currently do not have. This does not harm consumer welfare. It
7 enhances it.

8 With respect to retail establishments, these are not specifically targeted sites for
9 SDG&E's pilot program. The pricing examples that Mr. Jones presents in his testimony are
10 all for commercial locations.³⁸ In Mr. Jones's examples, these locations either set pricing on
11 a per-hour basis, or they offer charging to PEV drivers for free (*i.e.*, below their cost). There
12 is absolutely nothing in SDG&E's pilot program that should prevent these types of
13 establishments from engaging in whatever pricing behavior they see fit as SDG&E's plan
14 does not target these sites. SDG&E's pilot should benefit service providers targeting these
15 establishments as it will spur PEV adoption and demand for fueling at commercial and retail
16 facilities. Mr. Jones also argues that MUD host sites may not prefer SDG&E's proposal
17 because it will lessen their control over access and parking.³⁹ As with the workplace
18 example cited above, if MUDs do not like SDG&E's offering they are absolutely free to
19 choose a different offering. If however, they find the package that SDG&E offers to be
20 more desirable overall than alternative programs, they would have a *choice* they currently do
21 not have. Moreover, it is likely that MUDs would find ways to implement rules for access

³⁸ ChargePoint (Jones) 11:7-11 and Table 1.

³⁹ ChargePoint (Jones) 9:16-19.

1 to the extent their stations are over-subscribed, just as they would under a non-SDG&E
2 program.

3 ChargePoint expresses concern that PEV drivers will somehow be denied the
4 benefits that it (or other innovative) providers of EV services provide, such as mapping of
5 network sites and availability. Mr. Monsen complains that “[a]s currently designed,
6 SDG&E will not even seek to procure these services for customers participating in its
7 program.” He claims that this aspect of SDG&E’s program design “will obviously
8 competitively harm companies offering such services, and discourage innovation.”⁴⁰

9 Harm to competitors should not be the focus. Competitors can be harmed when
10 another supplier offers a more attractive product or service, but consumers benefit. The
11 focus should be on consumers and consumer welfare. Having said this, Mr. Monsen does
12 not explain how consumers would be harmed if SDG&E doesn’t “procure these services”
13 for them. If host sites do not like SDG&E’s offering because it does not offer services that
14 ChargePoint or others offer, they are perfectly free to use a different provider. PEV drivers
15 can still subscribe to the ChargePoint network without cost and shop at ChargePoint
16 networked stations even if they also buy their fuel at a MUD or workplace site from
17 SDG&E’s pilot program. Neither consumers, nor innovation are damaged by the fact that
18 SDG&E’s pilot program does not offer the ancillary services that ChargePoint or other
19 providers do. Indeed, with respect to host sites, they may not find these services valuable
20 since SDG&E sells directly to PEV drivers.

⁴⁰ ChargePoint (Monsen) 22:2-12.

1 Some interveners argue that SDG&E’s RFP process is restrictive and/or will result in
2 a one-size-fits all solution to the detriment of innovation.⁴¹ I do not see any evidence to
3 support these contentions in the process outlined by SDG&E. Indeed, as articulated by Mr.
4 Schimka in his rebuttal testimony (Chapter 3), the RFP process is designed to elicit the best
5 ideas from the marketplace through a competitive process. Moreover, there is no statement
6 that a single provider would provide all of the services required. It is likely that SDG&E
7 will utilize multiple service providers as a part of the pilot.⁴²

8 Parties’ concerns regarding product quality and innovation do not stand up to
9 scrutiny. The concerns they articulate are generally vague as to “innovation.” Where
10 specifically articulated they are largely aimed at pricing flexibility and the provision of
11 ancillary services, not the delivery of PEV fuel and so would have no effect on EVSE
12 innovation. As discussed in the paragraphs above, these specific concerns appear
13 unfounded.

14 Intervening parties have not presented any cogent rationale for how SDG&E’s
15 proposal would significantly impact quality, innovation, or importantly consumer welfare.
16 Examination of the different aspects of product quality, as I have done here, shows no
17 indication that the pilot program should have adverse effects on product quality or
18 innovation. To the contrary, SDG&E’s pilot program will provide host sites and PEV
19 drivers with *choices* that they do not currently have, including the innovative VGI Rate and
20 associated enabling applications, including those for mobile phones.

⁴¹ CESA (Lin) 6:5-8:18; ChargePoint (Quinn) 11:10-12:18; ChargePoint (Jones) 12:10-14:15; ChargePoint (Monsen) 21:15-22, 23:3-7; EDF (Fine) 23:1-16.

⁴² SDG&E (Schimka) RS-8:21-22.

1 **E. Summary**

2 Contrary to parties’ concerns, SDG&E’s pilot program is more likely to have a pro-
3 competitive impact (*i.e.*, enhance consumer welfare) in the SDG&E service area rather than
4 an anti-competitive impact. The pilot program should accelerate demand for EVSE at
5 MUDs and workplaces in the SDG&E service area, segments which are currently
6 underserved. The added EVSEs in the underserved market in-turn should help to spur
7 demand for PEVs and EVSE at all locations. The growth in the market for EVSE should
8 provide additional opportunities for suppliers of EVSE and EV services above what would
9 be expected absent the program.

10 There appears to be little chance that SDG&E’s pilot program would lessen
11 consumer welfare from the perspective of product quality or innovation. The fundamental
12 product offering at issue is fueling service to PEV drivers. The proposed program lays out
13 adequate mechanisms for acquiring, installing and maintaining EVSE in proper and reliable
14 working order. There is no indication that the convenience aspect of PEV fueling should
15 suffer as a result of SDG&E’s proposal. In addition, the VGI pricing proposed by SDG&E
16 offers an (innovative) and welfare-enhancing mechanism for pricing fuel that is not
17 currently available in the SDG&E service territory.⁴³ On balance, SDG&E’s pilot program
18 should enhance consumer welfare.

⁴³ ORA (Willis) 5-1:5-7, 5-11:20-22; CESA (Lin) 9:9-11); ChargePoint (Quinn) 16:7-10;
EDF (Fine) 7:11-9:17; FEA (Brubaker) 3:17-4:2; KnGrid (Davis) 3; TURN (Hawiger)
3:4-6; UCAN (Croyle) 6:1-6.

1 **IV. PUBLIC FINANCING OF PEV FUELING SERVICES HAS BEEN AND**
2 **WILL LIKELY CONTINUE TO BE AN INTERGRAL ASPECT OF THE**
3 **MARKET IN THE NEAR FUTURE**

4 In my Supplemental Testimony I stated that PEV fueling services in the SDG&E
5 service area have benefitted from public funding in the form of grants, rebates and subsidies
6 and that these programs are likely to be necessary in the near future if the State is to meet
7 PEV deployment goals.⁴⁴ I further argued that SDG&E’s proposal to spread EV charging
8 infrastructure costs across all ratepayers is similar in form to the public funding of EVSE
9 that the industry has benefitted from and is likely to continue to benefit from in the near
10 future.⁴⁵

11 ChargePoint’s Mr. Jones suggests that public funding is relatively insignificant today
12 and diminishing. As evidence he states that “ChargePoint has been a past recipient of
13 federal and state grant funding for charging station deployments, in 2014 less than 0.5% of
14 our charging locations were paid for with grant funding.”⁴⁶ ChargePoint’s Mr. Monsen
15 relies on Mr. Jones’s testimony to argue that my conclusions regarding the role of public
16 financing in the market “should be given no weight.”⁴⁷ Mr. Monsen does not offer support
17 for his conclusion other than Mr. Jones’s testimony.

18 Mr. Jones shows declining grant-funded for ChargePoint EVSE installations over
19 time in his Figure 2, with just 0.5% of installations being paid for by “grant-funding” in
20 2014. It is not clear from Mr. Jones’s testimony exactly what he includes in this category or

⁴⁴ Exec. Order No. B-16-2012, 23 March 2012. Retrieved from:
<http://gov.ca.gov/news.php?id=17472>

⁴⁵ SDG&E Supp. (Pulliam) ST-11:13-19.

⁴⁶ ChargePoint (Jones) 6:12-7:4.

⁴⁷ ChargePoint (Monsen) 7:14-17.

1 how he defines grant funding.⁴⁸ Regardless, ChargePoint’s experience in San Diego, the
2 CEC’s past and planned funding of EVSE in California, the CPUC’s agreement with NRG
3 Energy, Inc. (“NRG”) to invest \$100 million in EVSE infrastructure, ongoing federal tax
4 credit programs, and a number of studies all support the view that public funding has been
5 and will continue to play a significant role in EVSE infrastructure development. This is
6 particularly true in the MUD segment. Indeed, ChargePoint’s proposed modifications to
7 SDG&E’s proposal call for the vast majority of the funding to come from public and/or
8 ratepayer sources.

9 **A. ChargePoint’s Experience**

10 ChargePoint’s recent experience in California and San Diego show that it relies
11 heavily on public funding for EVSE installation. The CEC awarded ChargePoint \$500,000
12 to install approximately 200 EVSE at MUDs in the San Diego area as part of the Multi-
13 Charge initiative. While the grant was awarded in 2013, it was available for installations
14 through the end of 2014.⁴⁹

15 The program called for the deployment of 200 units. However, it is clear from
16 ChargePoint’s website and from the March 2015 CEC report that it was not successful in

⁴⁸ For example, does the data include only stations owned by ChargePoint, or does it include stations owned by others, but connected to the ChargePoint network? Does “grant funding” include rebates or tax credits? Mr. Jones’s testimony is unclear on these points and ChargePoint has refused to provide supporting data for Mr. Jones’s figures.

⁴⁹ California Energy Commission. (10 January 2013). Energy Commission Awards More Than \$3.2 Million for Clean Transportation Projects [Press release]. Retrieved from: http://www.energy.ca.gov/releases/2013_releases/2013-01-10_transportation_nr.html

1 attracting sufficient interest from MUDs, even with the public funding provided.⁵⁰ As
2 discussed above, the CEC has indicated that grant funding for MUDs in particular may need
3 to be increased to account for the higher cost associated with providing infrastructure to
4 these locations.⁵¹

5 The County of San Diego was awarded a grant of nearly \$500,000 by the CEC in
6 2014 to fund the installation of 35 EVSE at 10 locations.⁵² The units, which are intended for
7 public use, are being installed by ChargePoint, and will be owned and operated by the
8 company for a period of five years. The first six of these chargers under this program began
9 operating in December of 2014. The remaining units are to be installed in 2015.

10 The CEC recently awarded \$600,000 for 50 EVSE units to be installed at federal
11 government locations in at least 10 California locations. At least eight of those units will be
12 within the SDG&E service area.⁵³ It is uncertain at this point whether ChargePoint will be

⁵⁰ ChargePoint shows only 6 EVSE in its network at MUDs in San Diego. *See* https://na.chargepoint.com/charge_point [last accessed 10 April 2015].

The CEC reports that it has provided funding for just 94 EVSE installed at MUDS in all of California. *See* p. 39 of CEC-600-2014-009-LCR.

⁵¹ *See* p. 40 of CEC-600-2014-009-LCR.

⁵² California Energy Commission. (22 July 2014). California Energy Commission Advances Construction of Hydrogen Refueling and Electric Vehicle Charging Stations [Press release]. Retrieved from: http://www.energy.ca.gov/releases/2014_releases/2014-07-22_hydrogen_Refueling_EV_Charging_Stations_nr.html

⁵³ The original contract called for the installation of 50 EVSE. *See* CEC Contract Request Form for Agreement 600-14-004. Retrieved from: http://www.energy.ca.gov/business_meetings/2015_packets/2015-01-14/Item_05_600-14-004_USGSA.pdf. The health impacts report listed 41 of the planned locations as of December 2014. *See* p. 3 of Brecht, Patrick. 2014. *Localized Health Impacts Report*. California Energy Commission, Fuels and Transportation Division. Publication Number: CEC-600-2014-010. Retrieved from: <http://www.energy.ca.gov/2014publications/CEC-600-2014-010/CEC-600-2014-010.pdf>

1 involved in this project. According to *Forbes*, ChargePoint claims that it is installing 90%
2 of new charging units in the U.S. As such, it would appear to be well positioned to bid on
3 this publicly-funded installation.⁵⁴

4 **B. CEC Funding Levels**

5 Examination of the CEC's past and planned funding for EVSE in California
6 indicates that government funding of EVSE is actually increasing, not diminishing. The
7 CEC reported in March 2015 that it had awarded \$38.3 million in funding for EVSE in
8 California to date to support 9,369 charging stations in California.⁵⁵ Of that amount more
9 than 4,000 were non-residential units.⁵⁶ The CEC estimates that it will provide between \$27
10 and \$60 million in additional funding for Level 2 EVSE through 2018.⁵⁷

11 **C. CPUC/NRG Funding**

12 The CPUC reached a settlement with Dynegy, Inc. ("Dynegy") totaling \$120
13 million, \$100 million of which will come in the form of EVSE infrastructure investment in
14 California on the part of NRG, which acquired Dynegy's assets subject to the settlement.⁵⁸
15 The settlement requires NRG to install 200 DC Fast Charging Stations throughout the State,
16 including 20 in the San Diego area. It also requires NRG to install the infrastructure for at

⁵⁴ Kelly-Detwiler, P. (22 January 2014). ChargePoint: Building Out the Electricity Highway One Parking Lot at a Time. *Forbes*. Retrieved from: <http://www.forbes.com/sites/peterdetwiler/2014/01/22/chargepoint-building-out-the-electricity-highway-one-parking-lot-at-a-time/>

⁵⁵ See p. 2 of CEC-600-2014-009-LCR.

⁵⁶ See p. 39 of CEC-600-2014-009-LCR.

⁵⁷ The low end of this range is associated with a "home-dominant" EVSE deployment, while the high end corresponds to a high "public access" deployment of EVSE. See p. 42 of CEC-600-2014-009-LCR.

⁵⁸ The settlement involves claims that Dynegy overcharged the State for power.

1 least 10,000 “make ready” plug-ins at MUDs, workplaces and public interest sites. The
2 settlement provides that at least 600 of these would be located in San Diego County.⁵⁹

3 **D. Federal Funding**

4 The federal government has continued to play a significant role in supporting EVSE
5 infrastructure. The federal government has provided a 30% federal tax credit, up to \$30,000
6 for commercial facilities and \$1,000 for individuals to offset the cost of EVSE installation.⁶⁰
7 The credit was in effect through the end of 2014, it was renewed by congress before year’s
8 end.⁶¹

9 **E. Research Findings on the EVSE Market**

10 Several reports have found that public financing has been and likely will continue to
11 be a key to the growth of EVSE infrastructure in the State. In its March 2015 report, the
12 CEC noted that though financing for EVSE will eventually shift from governmental

⁵⁹ A more reasonable figure is probably around 1,000 units. The settlement calls for 10% of Freedom Stations to be located in San Diego County (p. 13). 60% of the 10,000 MUD units must be distributed following the Freedom Station distribution. This would suggest 600 units in San Diego County (10,000 x 10% x 60%). The remaining 40% are to be “reasonably determined by NRG based upon electric vehicle ownership and subscriber demand and potential property host interest” (pp. 22-23). See the Long-Term Contract Settlement and Release of Claims Agreement by and among the CPUC and Dynegy, et al. dated 27 April 2012. Retrieved from:

<http://www.cpuc.ca.gov/NR/rdonlyres/CD5E3578-5EAD-47BA-BC5A-B6BD398CCBF6/0/JointOfferofSettlement.pdf>.

⁶⁰ See IRS guidelines, Retrieved from:
http://www.irs.gov/publications/p17/ch38.html#en_US_2014_publink1000174923

⁶¹ The program was originally scheduled to expire December 31, 2013, but was extended through the Tax Increase Prevention Act of 2014. This act extends various expiring provisions. Retrieved from: <https://www.congress.gov/bill/113th-congress/house-bill/5771> There is no official indication of whether the program will be extended to cover purchases made in 2015 though a recent amendment proposed extending the credit through 2019. Retrieved from: [https://www.congress.gov/amendment/114th-congress/senate-amendment/120/text?q={%22search%22%3A\[%22%22+Alternative+fuel+vehicle+refueling%22%22\]}](https://www.congress.gov/amendment/114th-congress/senate-amendment/120/text?q={%22search%22%3A[%22%22+Alternative+fuel+vehicle+refueling%22%22]})

1 incentives to private sector lending, public funding will still be needed for at least several
2 years since EVSE are a relatively new technology with uncertain long-term payoffs and
3 risks that may reduce private investor's willingness to fund the infrastructure required to
4 meet State goals.⁶² The report also stated that the lack of EVSE deployment at MUDs
5 creates a market barrier to higher PEV sales in areas with a known potential for growth. It
6 noted that the lack of EVSE infrastructure at MUDs may be caused by a lack of interest on
7 the part of property owners or managers, given the relative complexity, higher installation
8 costs, and uncertain business case compared to other locations. The report stated that future
9 levels of public funding may need to be increased for MUD locations.⁶³ The CEC findings
10 are consistent with a National Academy of Sciences report from 2013, which found that a
11 major barrier to development of PEV fueling infrastructure by the private sector was
12 achieving an adequate return on investment from PEV fueling services.⁶⁴ A 2012 report by
13 the Luskin Center for Innovation at UCLA entitled "Financial Viability of Non-Residential
14 Electric Vehicle Charging Stations" arrived at similar conclusions, finding that PEV
15 charging did not provide a return large enough to attract private capital absent public
16 financing assistance.⁶⁵

⁶² See p. 42 of CEC-600-2014-009-LCR.

⁶³ See p. 40 of CEC-600-2014-009-LCR.

⁶⁴ See p. 41 of National Research Council. *Overcoming Barriers to Electric-Vehicle Deployment: Interim Report*. Washington, DC: the National Academies Press, 2013. Retrieved from: <http://www.nap.edu/catalog/18320/overcoming-barriers-to-electric-vehicle-deployment-interim-report>

⁶⁵ See pp. 21-25 of Daniel Chang, Daniel Erstad, Ellen Lin, Alicia Falken Rice, Chia Tzun Goh, An-An Tsao (August 2012). *Financial Viability of Non-Residential Electric Vehicle Charging Stations*. UCLA Luskin Center for Innovation. Retrieved from: <http://innovation.luskin.ucla.edu/content/financial-viability-non-residential-electric-vehicle-charging-stations>

1 **F. ChargePoint’s Proposal**

2 ChargePoint has suggested modifications to SDG&E’s pilot program. ChargePoint
3 advocates for significant public funding for EVSE installation at the MUD and workplace
4 locations SDG&E targets, stating that such funding will help remove an obstacle to
5 investment in EVSE at many locations.⁶⁶ ChargePoint’s suggestions and stated rationale
6 contradicts the suggestion that public funding of EVSE is a thing of the past.

7 **G. Summary**

8 The considerable evidence presented in my earlier testimony, the evidence discussed
9 above, and ChargePoint’s own proposal clearly show that public funding has played a
10 significant role in EVSE installations to date and is likely to continue to be required in the
11 near future if the State is to meet its PEV deployment goals, or even to maintain the
12 inadequate current level of charging infrastructure deployment.

13 **V. CHARGEPOINT’S CONCLUSION THAT SDG&E’S PILOT DOES NOT**
14 **MEET THE BALANCING TEST IS BASED ON UNSUPPORTED**
15 **ASSERTIONS**

16 Mr. Monsen opines that SDG&E’s proposed pilot program fails the Commission’s
17 balancing test as outlined in D. 14-12-079.⁶⁷ Mr. Monsen’s opinion is based on unsupported
18 predicates, which he lists on page 23 of his testimony. I discuss each of the points that Mr.
19 Monsen offers in support of his conclusion below.

20 First, Mr. Monsen states that “SDG&E’s Pilot clearly gives SDG&E market
21 power.”⁶⁸ This assertion is incorrect. Market power is the ability to raise price by

⁶⁶ ChargePoint (Quinn) 23:3-8.

⁶⁷ ChargePoint (Monsen) 23:9-21.

⁶⁸ ChargePoint (Monsen) 23:13.

1 restricting output.⁶⁹ No intervener has argued that SDG&E would be able to raise prices
2 through the pilot program. Indeed, Mr. Monsen himself states that “it is unlikely that
3 SDG&E would be able to exercise market power to increase prices for EVSE or EV
4 charging services as its market concentration increases.”⁷⁰ Mr. Monsen’s statement suggests
5 a fundamental misunderstanding of basic economic concepts.

6 Second, Mr. Monsen claims that SDG&E’s “predatory pricing” program would
7 cripple competition from third-party suppliers of EVSE and EV charging services. As I
8 show in Section II.A, Mr. Monsen’s theory here is flawed and inconsistent with sound
9 economics. It does not properly consider the segment of the market that SDG&E seeks to
10 serve, the fact that SDG&E will contract with equipment and service providers, CPUC
11 oversight, or the fact that expansion of EVSE services in this segment will benefit other
12 market segments as demand for PEVs increase due to the pilot program itself. This
13 contracting with service providers and increased demand for PEVs will provide
14 opportunities for other service providers at SDG&E pilot program locations and at other
15 locations that do not currently have EVSEs.

⁶⁹ Areeda, P., Hovenkamp, H. & Solow, J. (2002). *Antitrust Law Vol. IIA* (2nd ed.). New York, NY: Aspen Law & Business, p. 89.

⁷⁰ ChargePoint (Monsen) 17:16-18. Mr. Monsen confuses market share with market concentration. His calculations show that market concentration increases as SDG&E implements the pilot program before it comes back down. SDG&E’s market share increases through implementation of the pilot program. Neither SDG&E, nor any other supplier, has “market concentration.”

1 Third, Mr. Monsen opines that the SDG&E pilot program would harm innovation in
2 the EV charging space. His support for this conclusion is Mr. Jones’s testimony.⁷¹ As I
3 show in Section II.B, ChargePoint’s fears as to the impact on innovation are unfounded.

4 Finally, Mr. Monsen opines that “[a]s a result [of these three factors], it is clear that
5 the benefits of utility ownership of charging infrastructure do not outweigh the
6 anticompetitive impacts of such ownership.”⁷² Mr. Monsen’s conclusion lacks appropriate
7 foundation. As I describe in the paragraphs above, the three points Mr. Monsen cites in
8 support of his conclusion are incorrect.⁷³ Mr. Monsen and ChargePoint have not identified
9 any legitimate competitive impacts, and certainly nothing that would harm consumer (*i.e.*,
10 PEV driver) welfare relative to a world without the pilot program.

11 **VI. CHARGEPOINT’S RECOMMENDATIONS RUN COUNTER TO ITS**
12 **ARGUMENTS REGARDING COMPETITIVE IMPACTS AND WOULD**
13 **ELIMINATE A PRIMARY GOAL OF THE PROGRAM: VGI PRICING**

14 ChargePoint’s Ms. Quinn offers an alternative to the SDG&E pilot program.⁷⁴ She
15 agrees with the target size of 550 VGI facilities, but offers at least nine suggested
16 improvements. Several of these suggestions actually run counter to ChargePoint’s stated
17 competitive concerns.

18 First, ChargePoint suggests that ratepayers should shoulder the majority of the cost
19 of the program, including “make-ready” (*i.e.*, provision of electrical infrastructure) and
20 installation costs. As ChargePoint acknowledges, these costs contribute more than 50% of

⁷¹ ChargePoint (Monsen) 23:17-18.

⁷² ChargePoint (Monsen) 23:18-20.

⁷³ Indeed, two of these points contradict each other. SDG&E cannot exercise market power, while at the same time offering services below cost (*i.e.*, predatory pricing).

⁷⁴ ChargePoint (Quinn) 22:14-25:16.

1 the up-front costs of EVSE deployment and will help remove “an obstacle” to investment in
2 EVSE at many locations.⁷⁵

3 ChargePoint recommends that host sites should receive a rebate or some other form
4 of ratepayer or public funding for the purchase of EVSE equipment, but that the host sites
5 also contribute to the funding (*i.e.*, have some skin in the game). ChargePoint does not offer
6 a suggestion as to what amount of “skin” host sites should have in the game. I note that host
7 sites deciding to install EVSE do have skin in the game, even if they do not contribute
8 funding for the equipment or installation. Allocating spots for EVSE is itself a costly
9 undertaking, as noted by prior studies.⁷⁶ They also have responsibility (at least under
10 ChargePoint’s model and proposal) for the EVSE, pricing and billing once the EVSE are
11 installed. This is another cost. Either they perform these functions on their own, or they
12 hire a third party and pay them to do it.

13 Assuming for the sake of discussion that host sites were to contribute 25% of the cost
14 of a \$2,000 EVSE charging unit (or \$500), this would suggest total private investment of
15 \$2.75 million for 5,500 EVSE, a small portion of the total cost of deploying the EVSE
16 infrastructure under the pilot program.

⁷⁵ Based on Mr. Schimka’s figures, these charges are likely to account for closer to 80% or more of EVSE deployment costs. Mr. Schimka estimated total deployment costs for a 10 unit installation of approximately \$100,000, with the cost of the EVSE units and installation at just over \$20,000. SDG&E (Schimka) RS-14:1-15.

⁷⁶ See p. 4 of National Research Council. *Overcoming Barriers to Electric-Vehicle Deployment: Interim Report*. Washington, DC: the National Academies Press, 2013. Retrieved from: <http://www.nap.edu/catalog/18320/overcoming-barriers-to-electric-vehicle-deployment-interim-report>; also pp. 40-41 of CEC-600-2014-009-LCR; Quinn, C., *ChargePoint, Inc. Phase I Comments on Proposed Guiding Principles and Current Program Issues* (R.13-11-007 August 29, 2014), pp. 10-11.

1 Under ChargePoint’s plan, ratepayer and/or public funding would still support the
2 vast majority of the investment required to deploy the EVSE infrastructure proposed under
3 the pilot program.⁷⁷ This suggestion is inconsistent with ChargePoint’s (Jones’s and
4 Monsen’s) assertions that public financing is no longer a necessary element needed to
5 deploy EVSE at these locations.⁷⁸

6 Moreover, the public funding requirement in ChargePoint’s proposal runs counter to
7 its concerns about so called “predatory pricing.” Under ChargePoint’s plan, public funding
8 would still cover the vast majority of costs, the very problem that ChargePoint claims would
9 lead to “predatory pricing.”

10 Requiring host sites to contribute some portion of the cost of the EVSE units would
11 certainly have them putting some “skin in the game.” However, it would also reduce
12 demand for EVSE infrastructure. Host sites are not the ultimate customers of the EVSE
13 service; PEV drivers are the customers. Host sites simply facilitate PEV drivers gaining
14 access to EVSE infrastructure (*i.e.*, fueling). Their interests are not necessarily aligned with
15 the interests of PEV drivers, or the State’s goals, and requiring them to make a capital
16 investment may unnecessarily frustrate deployment goals.

17 Indeed, as I discuss above, host sites already have “skin in the game” even if they do
18 not contribute funds for purchase of EVSE units. They provide the location (*i.e.*, site and
19 parking spots). Requiring host sites to contribute additional funds for EVSE that can be
20 difficult or costly to recover from PEV drivers may unnecessarily stand in the way of EVSE

⁷⁷ Using Mr. Schimka’s figures and assuming host sites were to contribute 25% of the cost of a charging unit, ChargePoint’s proposal would result in public or ratepayer funding of approximately 95% of the EVSE infrastructure costs.

⁷⁸ ChargePoint (Monsen) 7:14-17; ChargePoint (Jones) 6:8-7:7.

1 deployment. Along these lines I note that the March 2015 CEC report stated that the current
2 lack of EVSE infrastructure at MUDs “may be caused by a lack of interest on the part of
3 property owners or managers, given the relative complexity, higher installation costs, and
4 uncertain business case compared to other types of locations.”⁷⁹

5 Finally, ChargePoint recommends that host sites, not SDG&E, maintain control over
6 EVSE, service and pricing. This puts host sites in the business of selling fuel to PEV
7 drivers, a business that they are not currently engaged in and may not be interested in
8 providing, as suggested in the CEC’s March 2015 report.⁸⁰ Moreover, putting host sites in
9 the position of fuel reseller potentially eliminates one of the main goals of the pilot program,
10 the VGI pricing. As SDG&E has demonstrated, and as many other parties have argued, the
11 VGI pricing aspect of the pilot program is one of the fundamental benefits generated from
12 the proposal.⁸¹

13 ChargePoint’s larger concern would appear to be that SDG&E will bypass host sites
14 at MUDs and workplaces by selling fuel directly to PEV drivers. This may “harm”
15 ChargePoint because its business model is to provide services to host sites.⁸² By going
16 directly to PEV drivers, SDG&E’s pilot program may eliminate the need for these
17 “middleman” services that ChargePoint would like to provide to these particular host sites.
18 While this may not be good from ChargePoint’s perspective, it may be valuable from the

⁷⁹ See p. 40 of CEC-600-2014-009-LCR.

⁸⁰ *Id.*

⁸¹ SDG&E Supp. (Avery) ST-1:9-ST-2:2.

⁸² Tilley, Aaron (12 May 2014). Electric vehicle charging station startup ChargePoint raises \$22.6 million. Forbes online. Retrieved from:
<http://www.forbes.com/sites/aarontilley/2014/05/12/electric-vehicle-charging-station-startup-chargepoint-raises-22-6-million/> [Last accessed 11 April 2015].

1 perspective of the host site and PEV drivers. Moreover, it does not harm PEV drivers, as
2 they would always have the ability to become a ChargePoint subscriber (for free) and to fuel
3 at any station on the ChargePoint system.

4 ChargePoint's proposal would allow it to maintain its preferred model, while using
5 public and ratepayer funding to build the necessary EVSE infrastructure to expand the
6 market for the services that it wishes to sell. Those services are the provision of EVSE and
7 the provision of networked services to host sites. It would help ChargePoint move from its
8 current stated market share of 70%, toward its goal of garnering 90-95% of the market for
9 these services, as discussed by its board member, Mr. Linse.⁸³ These are certainly
10 understandable goals from ChargePoint's perspective. However, ChargePoint's proposed
11 modifications do nothing to enhance consumer (PEV driver) welfare beyond SDG&E's
12 proposed plan. Indeed, it appears to do just the opposite.

13 In sum, ChargePoint's proposed modifications would deny host sites the choice to
14 bypass a middleman such as ChargePoint and deny SDG&E the ability to deal directly with
15 PEV drivers. It is understandable why ChargePoint would not want this as host sites are
16 likely to find this aspect of SDG&E's plan appealing, alleviating the host of the need to get
17 involved with management and pricing decisions (or paying someone like ChargePoint to do
18 it for them). It would also deny PEV drivers the choice to contract directly with SDG&E
19 and benefit from the VGI pricing. It would also deny the public in general and ratepayers

⁸³ Tilley, Aaron (12 May 2014). Electric vehicle charging station startup ChargePoint raises \$22.6 million. Forbes online. Retrieved from: <http://www.forbes.com/sites/aarontilley/2014/05/12/electric-vehicle-charging-station-startup-chargepoint-raises-22-6-million/> [Last accessed 11 April 2015]. and ChargePoint (11 November 2014). ChargePoint Welcomes CPUC Decision to Expand Utility Role for EV Charging. [Press Release]. Retrieved from: <http://www.chargepoint.com/press-releases/2014/1115> .

1 specifically the potential benefits associated with the VGI program that are the impetus of
2 the Pilot Program itself.⁸⁴ On balance, ChargePoint's proposed modifications appear to
3 reduce, rather than enhance consumer (PEV driver) and the general public's welfare relative
4 to SDG&E's proposal.

5 This concludes my prepared rebuttal testimony.

⁸⁴ SDG&E Supp. (Avery) ST-1:11– 2:2.