

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1811

In the Matter of)
)
PORTLAND GENERAL ELECTRIC)
COMPANY,)
)
Application for Transportation Electrification)
Programs)

DIRECT TESTIMONY OF

DR. ABDELLAH CHERKAOUI

ON BEHALF OF

THE ELECTRIC VEHICLE CHARGING ASSOCIATION

August 25, 2017

1 **I. INTRODUCTION**

2 **Q Please state your name and address**

3 A My name is Dr. Abdellah Cherkaoui. My business address is 155 De Haro St., San
4 Francisco, California.

5 **Q Please describe your background, experience, and expertise.**

6 A I am Senior Vice President (“VP”) of Government, Original Equipment Manufacturers
7 (“OEMs”) & Utilities Market Development at Volta Charging, LLC. In this role, I work
8 directly with utilities, OEMs and federal, state and local governments as well as relevant
9 public agencies to support the broad and effective development of electric vehicle
10 charging infrastructure and accelerate the adoption of electric transportation. I am also a
11 founding Board member, and former Policy Chair of the Electric Vehicle (“EV”)
12 Charging Association (“EVCA” or the “Association”), a not-for-profit organization that
13 brings the collective experience and expertise of leading companies in the electric vehicle
14 charging industry to policymakers, stakeholders and members of the public to promote
15 the critical role of EV technology, infrastructure and services, and to advocate for
16 policies that will expand clean transportation.

17 Prior to joining Volta, I provided independent advising and consultancy for the
18 development of technology platforms for sustainable electric mobility and energy
19 management in North America and Europe. From 2009 to 2012, I served on
20 ChargePoint’s European management team as CIO and VP in charge of technology and
21 operations, overseeing product management and technical implementation of the
22 ChargePoint network in Europe. I worked directly with municipalities and utilities to
23 support their implementation of EV charging solutions. Prior to this, I held applied

1 research and academic positions at the University of California in Santa Cruz and at the
2 University of Washington in Seattle.

3 I hold a Ph.D. degree from the University of Washington in Seattle and a Master's degree
4 in engineering from the Rabat School of Mines in Morocco. I am also a Fulbright
5 Doctoral Fellow and a NASA International Fellow.

6 **Q On whose behalf are you testifying?**

7 A I am testifying on behalf of the EVCA. I am currently the Secretary and Treasurer of the
8 EVCA Board of Directors.

9 **II. SUMMARY**

10 **Q What is the purpose of your testimony in this proceeding?**

11 A The purpose of my testimony is to address the proposal from Portland General Electric
12 Company (“PGE”) for its transportation electrification programs (“Application”), which
13 was filed with the Public Utility Commission of Oregon (“OPUC” or “Commission”)
14 December 27, 2016 (and revised on March 15, 2017), and which was docketed in UM
15 1811. Specifically, my testimony will address the Stipulation and Testimony in support of
16 the Stipulation. The Stipulation was joined by PGE, Commission Staff, the Citizens’
17 Utility Board of Oregon, the Oregon Department of Energy, Tesla, TriMet, Forth and
18 Greenlots.

19 EVCA worries that PGE’s current proposal may not promote EV development
20 through competition, innovation, and customer choice. With this testimony, EVCA
21 intends to highlight how the Stipulation contrasts with EVCA’s principles of utility
22 investment in electric vehicle charging infrastructure, focused on the foundation of the
23 competitive market for charging equipment in Oregon. This testimony will show how the

1 Stipulation affects the competitive market for EV charging throughout Oregon, and
2 articulate our concerns on the precedential impact. EVCA would like to offer
3 recommendations for an alternative application design that fosters competitive market
4 offerings and innovation, while enabling utility investment in the deployment of charging
5 infrastructure. Finally, with this testimony EVCA requests it and all stakeholders be
6 included in post-Stipulation approval discussions, and broader long-term strategy
7 proceedings.

8 **Q Please summarize your recommendation for the Commission.**

9 A I recommend that the Commission directs PGE to modify its Application to own and
10 operate public charging stations to align with the charging industry principles of EVCA.
11 Under those principles, PGE would incent the development of a smart charging network
12 in a way that will stimulate innovation, competition, and customer choice in the market
13 for EV charging equipment and services. I recommend that, instead of PGE's proposed
14 ownership model, a more successful EV program would use utility investment in the
15 form of rebates for EV charging hardware, services, and installation that would
16 encourage customer investment in competitive charging technologies. PGE's investment
17 could be recovered as a regulatory asset.

18 Should the Commission disregard our recommendation for modifications,
19 however, I recommend allowing EVCA and other stakeholders to inject their valuable
20 insight in post-approval discussions regarding cost recovery and precedential impact.
21 These meetings should not be restricted to the signatories of the Stipulation, as it would
22 limit the potential for a more comprehensive strategy for this pilot program, and beyond.

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III. EVCA AND THE EV MARKET

Q Please describe EVCA’s membership and expertise in the EV charging market.

A EVCA is a not-for-profit organization comprised of member-companies representing a vast majority of the diverse competitive electric vehicle charging infrastructure market. EVCA’s mission is to educate policymakers, stakeholders, and members of the public about the critical role of EV technology, infrastructure, and services. EVCA advocates for policies that will expand clean, electrified transportation.

EVCA’s member organizations develop, manufacture, deploy, maintain electric vehicle charging infrastructure and manage data networks to support EV supply equipment, EV charging services for site hosts and for EV drivers.

Q What are examples of the products and services that EVCA’s member-companies offer to the market?

A EVCA member companies span a wide spectrum of the various EV charging use cases, applications and value chain. Members provide energy storage infrastructure to offset EV charging consumption, and develop solar-powered battery storage. EVSE offered by members include product lines of home and commercial L2 and DCFC stations and services, which are designed for different applications and use cases, depending on the segment of the market served. For example, companies may offer L2 dual-port stations for public and workplace charging, and may offer a more compact product for residential uses. EVCA members have partnered with retailers, developers, and government sites to bring advanced energy and accessible EV charging to more drivers.

Q Where do EVCA member-companies operate?

A EVCA’s membership has operations worldwide, with some members currently serving

1 charging stations in 48 out of 50 states in the US, including L2 and DC fast charging
2 stations in Oregon.

3 **Q Who are typical customers of EVCA's member-companies' charging stations?**

4 A Customers include workplaces, governments, hotels, colleges and universities, hospitals,
5 electric utilities and other energy companies, parking garages, airports, multifamily
6 housing, auto dealerships and other businesses.

7 **Q Should utility commissions be considering utility investment in EV charging
8 infrastructure?**

9 A Yes. EVCA believes that there is a need for commissions to consider the full range of
10 roles for a regulated monopoly that will help support and encourage the near-term
11 accelerated deployment of smart EV chargers, both in Oregon and nationwide.

12 Investments should be thoughtful, deliberate, and risk averse to help develop a robust and
13 sustainable EV market that promotes grid benefits for all ratepayers. EVCA believes that
14 through its consideration of the various models for EV charging station deployment that
15 involve utility investment, commissions can support near- and longer-term goals for
16 wider EV adoption.

17 **Q Should the utilities be playing a role in the EV charging market?**

18 A Yes. EVCA believes that electric utilities are the indispensable party to facilitate the
19 transition of the transportation sector to a sustainable electric-fueled future. The utilities'
20 size, operational role in the distribution system, and expertise can help address some of
21 the obstacles currently preventing wider deployment of networked EV charging
22 equipment. The Commission should authorize strategic, risk averse activities and cost-
23 effective ratepayer-funded infrastructure investments that will help accelerate expansion
24 of EV charging and EV adoption. Critically, there are a number of successful market

1 models to support a utility role in EV infrastructure investment that do not involve utility
2 ownership of customer-side equipment.

3 **Q Can utility ownership and operation impede upon the competitive market?**

4 A Yes. Utilities should not be permitted to leverage ratepayer funds to compete with
5 businesses selling EV charging equipment and services. More specifically, utilities
6 should not be able to offer a fully-subsidized product in an existing competitive market,
7 as it may distort market forces. The competitive market for charging solutions is
8 impacted when utilities do not provide site hosts with a choice of charging technologies
9 most appropriate for their circumstances and/or provide only one charging solution for a
10 large deployment throughout its service territory. This limits the ability for charging
11 providers to compete and sell directly to utility customers, and additionally may result in
12 a proprietary, closed network of stations.

13 **Q Would utility ownership and operation of charging stations result in an**
14 **administrative burden for the utility that is unique to the charging market?**

15 A Yes. There are entire business lines and models in the competitive market to serve EV
16 charging site hosts and customers. In entering this competitive space, utility companies
17 would be required to go outside of their traditional roles, going behind-the-meter to
18 effectively sell hardware products to consumers. In cases where utilities indicate that they
19 will supply a networked solution, utilities may be required to maintain data collection
20 infrastructure, a technical team to operate the network. In addition, utilities would be
21 required to service and maintain all charging equipment over the life of the assets. Again,
22 competitive EV charging suppliers currently serve these roles in markets nationwide.

1 **Q Why do charging station site hosts invest in EV charging solutions available in the**
2 **competitive market?**

3 A EV charging station site hosts choose to invest in EV charging for a wide range of
4 reasons, and each site host has its own reason for providing charging services. For many
5 employers, it may be a low-cost benefit provided to employees to encourage adoption of
6 clean transportation technologies that support corporate sustainability. Apartment
7 building owners may provide charging as an amenity and will typically charge for the
8 service as they do for a coin-operated laundry. Cities and counties may deploy charging
9 stations to encourage low-emission driving and support local air quality, and they may
10 charge cost-recovery fees in order to avoid giving away charging services at taxpayer
11 expense.

12 **Q Should a site host be required to actively manage on-site charging stations, or is a**
13 **utility best equipped to operate charging stations on behalf of site hosts?**

14 A Potential EV charging station site hosts should have the ability to choose any EV
15 charging solution and service that best fits their needs and desired level of management.
16 Some site hosts prefer to leverage specific tools offered by certain types of stations that
17 fit their specific needs, but some site hosts prefer to have minimal involvement with the
18 charger or its management after installation, and prefer a turnkey service. These site hosts
19 typically have the choice to sign a preventative maintenance contract with third-party EV
20 charging station vendors for the oversight and maintenance of the EV charging station
21 and customer services. A utility program is not needed to meet these site hosts' needs.
22 Furthermore, a one-size-fits all utility program will not be able to address the wide range
23 of site host needs and wants.

1 **Q Why is it important for site hosts to have a choice in the type of EV charging**
2 **equipment and services?**

3 A Site hosts have preferences regarding the hardware and services related to EV charging.
4 Not a single technology or business model available today is exactly right for all charging
5 scenarios. There are pros and cons to each alternative, depending on the location and the
6 driver base that the charging station aims to serve. The range of choices in EV charging
7 goods and services is a strength indicating that the quickly evolving market is meeting the
8 varied needs of its wide range of consumers. Site hosts are able to tailor the particular
9 options for station fees, driver authentication, accessibility, payment collection and other
10 transaction capabilities, advertisement, and data management and output (e.g., energy,
11 station usage, and environmental benefits). Site hosts are also the best suited to make
12 choices about the number of charging stations needed on their site. This is especially true
13 when site hosts participate in the purchase of the charging station, which will help ensure
14 that charging stations are deployed efficiently and in places where they will get the most
15 use. A critical aspect of EV charging is the management and important value of parking,
16 which is under the control of and a valuable asset of the site host.

17 **Q Why should site hosts have the ability to control pricing for the EV charging**
18 **stations installed on their premises?**

19 A EVCA strongly believes that EV charging station site hosts must be allowed to control
20 siting, pricing, as well as access, to ensure that charging stations meet the needs of both
21 EV charging site hosts and drivers. Empowering businesses with the flexibility to provide
22 charging services at variable pricing enables site hosts to incent EV drivers to utilize
23 charging equipment in the most effective and efficient ways, depending on the conditions
24 at that site. Pricing for charging services can impact driver behavior and effectively serve

1 as a signal to EV drivers to stay at certain charging locations and leave those locations as
2 a site host determines. With the ability to make decisions about EV charging stations and
3 services, site hosts will be able to incorporate more efficient energy use on their property
4 and thereby produce a beneficial load to the grid. Examples of site host pricing options
5 may include: free charging sessions, fixed-rate per session, per kilowatt-hour pricing,
6 fixed-rate by time, time-of-day pricing, and pricing with different policies by driver
7 groups.

8 For example, retail site hosts may invest in charging stations and control pricing
9 to attract new customers. Some retailers provide completely free charging at their own
10 expense to attract customers for their core business. Other retailers will offer free
11 charging for a set amount of time and charge a fee thereafter to ensure maximum
12 utilization of the charging station, or offer free charging during certain hours to incent
13 customers to come at those times. The site host is best suited to take site specific actions
14 to ensure optimal use of the charging assets affixed to their property.

15 **Q With services available in the competitive EV charging market, do utilities have to**
16 **own and operate charging equipment to access data from smart charging stations?**

17 **A** No. EVCA members currently offer networked stations that give access to critical data
18 without the need for utilities to own stations. Member-companies may offer open
19 application program interfaces (“APIs”), which allow for utilities to view and manage
20 data from third-party owned charging stations in their service territories. This
21 arrangement avoids the cost of ratepayer investment in hardware, and additionally avoids
22 costs associated with administration and maintenance of a network, while providing all of
23 the benefits of networked charging to utilities.

1 **Q Does EVCA’s position on utility ownership of charging stations vary among**
2 **different charging technologies (i.e., residential, public level 2, and DC Fast)?**

3 A No. EVCA’s members believe that maintaining the competitive market and site host
4 choice of technologies is critical to any utility investment in EV charging. This position
5 applies to all levels of charging.

6 **Q Are there any potential exceptions to limiting utility investment for ownership and**
7 **operation of EV charging stations?**

8 A Yes. Utilities may have a role in deploying charging infrastructure in segments of the
9 market that may be underserved, specifically in disadvantaged communities. Those
10 communities may benefit from utility investment in charging equipment, however, utility
11 programs should maintain the core principle of site host choice in charging technology.

12 **IV. STIPULATION**

13 **Q Does EVCA have a position on the Stipulation?**

14 A Yes. EVCA opposes aspects of the Stipulation, as further discussed below. EVCA
15 opposes the Stipulation on the basis that it may limit customer choice, not be ultimately
16 cost effective to the ratepayer, and it could significantly stifle innovation and impact the
17 competitive market.

18 **Q Does the Stipulation acknowledge the role of site hosts in selecting technologies most**
19 **appropriate for their properties?**

20 A No. The Stipulation omits concepts of site host selection or customer choice. The
21 Company will complete a vendor selection based on its own criteria. In the most robust
22 EV markets, site hosts drive demand for charging stations, leading to the most efficient
23 siting of charging infrastructure.

24 **Q How would the Stipulation impact innovation in Oregon’s EV charging market?**

25 A The entrance of a regulated monopoly into the EV charging market in the manner

1 proposed in the Stipulation would set a precedent that could ultimately chill innovation
2 should the program serve as a model for future expansion of EV charging infrastructure.
3 Non-utility actors attempting to sell equipment and services for a market-based price
4 would be unable to compete directly with PGE and its ratepayer-funded equipment,
5 which will supply to the market at no cost. Non-utility actors would begin responding to
6 utility-defined product specifications, rather than from EV market signals. Instead of
7 harnessing the innovative capacity of the competitive market, Oregon will be limited to
8 the specifications of a single utility procurement process. Technology is advancing
9 rapidly in the EV charging space, and utility procurement processes are less efficient than
10 the active competitive marketplace. Technologies selected through a utility procurement
11 process may lock in that technology for many years and prevent the introduction of new,
12 more innovative products and solutions as they become available.

13 **Q In taking on the role of competitive market participants, would PGE assume**
14 **administrative burdens specific to the charging industry?**

15 A Yes. The competitive market currently provides support for a variety of functions to
16 maintain EV charging infrastructure. Most significantly, in owning and operating
17 networked charging stations, PGE would require network maintenance capabilities, a
18 sales force to drive deployment, trained customer service for troubleshooting, and a team
19 of experts to keep equipment up to date and functioning. This administrative burden may
20 hamper the Company's ability to meet customer expectations for charging equipment.

21 **Q Do you recommend the Commission's approval of the Stipulation as proposed?**

22 A No. EVCA recommends the Commission approve a modified pilot program that aligns
23 with the core principles of preserving the active competitive market in Oregon,
24 supporting customer choice of charging solutions, and stimulating the EV charging

1 infrastructure deployment through programmatic utility incentives.

2 **Q Do you have any recommendations for modifying the Stipulation?**

3 A Yes. In keeping with the principles laid out above, I have recommendations for the
4 Stipulation. The Association agrees that it is in Oregon's interest to accelerate the EV and
5 EV charging infrastructure markets, but it must be done in a way that results in scalable
6 and sustainable growth. An alternative proposal to the Stipulation can be summarized
7 with the following points:

- 8 • **Utility Ownership:** PGE should not be permitted to own and operate public
9 charging stations, but may be permitted to own and operate charging stations in
10 disadvantaged communities.
- 11 • **Utility Investment and Rate Recovery:** PGE should be permitted to invest in
12 rebate incentives for the hardware, services, and installation of charging
13 infrastructure at a customer's site. The Commission should deem rebates for EV
14 charging infrastructure as regulatory assets and permit PGE to recover costs and
15 earn a rate of return.
- 16 • **Hardware Ownership and Customer Choice:** Site hosts should be empowered
17 to choose among appropriate charging technologies for their sites and control
18 charging tools and data associated with each technology. This includes siting,
19 pricing, access controls, and type of charging,
- 20 • **Ongoing Education:** PGE should engage education and outreach on electricity as
21 a transportation fuel to help drive awareness of EV technologies and market
22 acceptance.

1 **Q Explain the rebate-based approach to utility investment in charging stations.**

2 A In a rebate model, utility investment is directed toward the hardware, services, and
3 installation of charging infrastructure. In incenting hardware, services, and installation, a
4 utility can decrease barriers for private investment in EV charging. For rapid deployment,
5 make-ready work can be performed by a licensed electrician, as scheduled by a site host,
6 and the utility may offset the costs of that installation. The utility rebate is considered a
7 regulatory asset, as it enables a utility to access valuable data regarding grid reliability,
8 load growth, and offers the potential for demand response.

9 **Q Does the rebate model preserve customer choice and competition in EV charging**
10 **markets?**

11 A Yes. In this program design, utilities provide a direct financial incentive to site hosts for
12 the installation of the qualified EV charging equipment of their choice. Since utility
13 investment is directed to offset the costs of charging stations to customers, site hosts can
14 choose, purchase, own, and operate charging stations on their properties. This
15 arrangement allows for competitive market participants to continue to meet customer
16 demands and serve the market, while also allowing utilities to invest in charging
17 deployments without the risks of large-scale ownership and operation. Additionally,
18 rebate programs may allow utilities to gain insights into the grid from networked
19 charging, without building and maintaining the complex networking capabilities already
20 offered in the competitive market. Overall, this program design reduces the cost barrier to
21 EV adoption, allows the charging station site host to determine which equipment and
22 services best meet their needs, and builds a sustainable EVSE marketplace.

1 **Q Should the Commission approve the Stipulation, how should it take additional**
2 **action to explore a longer-term vision for electric vehicle charging?**

3 A Should the Commission approve this Stipulation, EVCA requests that all stakeholders be
4 permitted to attend post-approval meetings involving the signatories of the Stipulation.
5 Involving all stakeholders in discussions related specifically to this Stipulation is crucial,
6 as these meetings will likely affect how Oregon develops its long-term strategy for EV
7 charging infrastructure. Such a comprehensive review would allow the Commission to
8 hear from a full range of industry perspectives, and subsequently make a well-rounded
9 decision on how to proceed with cost recovery and precedential impact of the program.
10 EVCA has been excluded from discussion up until this point, and request that we and
11 other stakeholders' expertise is taken into account to develop a lasting strategy for
12 expeditiously and efficiently deploying EV charging infrastructure.

13 Furthermore, the Commission should consider a broader proceeding to fully
14 examine and determine the most scalable and sustainable approach to growing the EV
15 and EV charging markets in Oregon. Stakeholders for this process should include, at a
16 minimum, a range of policymakers and industry representatives from across the EV and
17 EV charging ecosystem. This forum should provide for the following objectives:

- 18 • Determine whether the Commission should regulate the competitive market for
19 electric vehicle charging services, and more specifically regulate the sale of EV
20 charging equipment or services by non-utility providers. Several states have
21 examined and granted a regulatory exemption for charging services.
- 22 • Implement EV-specific rate pilots to determine the applicability of innovative rate
23 designs afforded by networked charging technologies, such as EV-only time-of-
24 use rates;

- 1 • Engage in rate reform to lessen the barriers created by high operating costs of
2 higher-powered charging equipment from demand charges through innovative
3 cost recovery mechanisms;
- 4 • Expand development of equitable access to clean/electrified transportation; and,
- 5 • Prepare for higher rates of charging for the next generation of vehicles by
6 implementing new internal processes for longer-term planning to incorporate EVs
7 in utility strategic roadmaps.

8 V **CONCLUSION**

9 Q **Does this conclude your testimony?**

10 A Yes.