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April 24, 2017

Via Electronic Filing

Public Utility Commission of Oregon
Attn: Filing Center
201 High St. SE, Suite 100
Salem OR 97301

Re: In the Matter of PORTLAND GENERAL ELECTRIC CO.
Application for Transportation Electrification Programs
Docket No. UM 1811

Dear Filing Center:

Please find enclosed the redacted version of the Confidential Reply Testimony and Exhibits of Bradley G. Mullins on behalf of the Industrial Customers of Northwest Utilities. The confidential portions of Mr. Mullins' testimony will follow via Federal Express to the Commission and via U.S. Mail to qualified persons as defined in Order No. 17-132.

Thank you for your assistance. If you have any questions, please do not hesitate to call.

Sincerely,

/s/ Jesse O. Gorsuch
Jesse O. Gorsuch

Enclosures

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I have this day served the confidential pages of the **Reply Testimony of Bradley G. Mullins** upon the parties shown below by mailing copies via First Class U.S. Mail, postage prepaid.

Dated at Portland, Oregon, this 24th day of April 24, 2017

Sincerely,

/s/ Jesse O. Gorsuch

Jesse O. Gorsuch

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BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1811

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

CONFIDENTIAL REPLY TESTIMONY OF BRADLEY G. MULLINS

ON BEHALF OF THE INDUSTRIAL CUSTOMERS OF NORTHWEST UTILITIES

(REDACTED VERSION)

April 24, 2017

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Bradley G. Mullins, and my business address is 333 SW Taylor Street, Suite
3 400, Portland, Oregon 97204.

4 **Q. PLEASE STATE YOUR OCCUPATION AND ON WHOSE BEHALF YOU ARE**
5 **TESTIFYING.**

6 A. I am an independent energy and utilities consultant representing large energy consumers
7 throughout the western United States. I am appearing on behalf of the Industrial
8 Customers of Northwest Utilities (“ICNU”). ICNU is a trade association whose members
9 are large electric customers served by electric utilities throughout the Pacific Northwest,
10 including Portland General Electric (“PGE” or the “Company”).

11 **Q. PLEASE SUMMARIZE YOUR EDUCATION AND WORK EXPERIENCE.**

12 A. I have a Master of Science degree in Accounting from the University of Utah. After
13 obtaining my Master’s degree I worked at Deloitte, where I ultimately specialized in
14 research and development tax incentives for multi-national corporate clients.
15 Subsequently, I worked at PacifiCorp as an analyst involved in regulatory matters
16 surrounding power supply costs. I currently provide services to utility customers on
17 matters such as power costs, revenue requirement, rate spread and rate design. I have
18 sponsored testimony in numerous regulatory jurisdictions throughout the United States,
19 including before the Oregon Public Utility Commission (“Commission”). A list of my
20 regulatory appearances can be found in Exhibit No. ICNU/101.

21 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

22 A. I address the Company’s application for a transportation electrification program
23 (“Application”), including the Application’s potential to provide net benefits to
24 customers and the Application’s alignment with regulatory principles of cost-causation.

1 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.**

2 A. I recommend that the Commission deny the Company's Application as filed. The
3 Company has not adequately demonstrated that the programs it proposes will provide net
4 benefits to customers. Furthermore, the Company's Application violates basic
5 ratemaking principles by failing to provide any meaningful benefits to nonresidential
6 customers even though these customers will be required to pay for a portion of program
7 costs. Consequently, if the Commission is to approve the Company's Application, it
8 should require that the Company provide concrete benefits to nonresidential customers.

9 **Q. PLEASE PROVIDE SOME BACKGROUND ON THE COMPANY'S FILING.**

10 A. The Company filed its Application in compliance with Section 20 of Senate Bill 1547,
11 also known as the Oregon Clean Electricity and Coal Transition Plan, passed by the
12 legislature in 2016. This section requires both PGE and PacifiCorp to file applications
13 "for programs to accelerate transportation electrification" by December 31, 2016. The
14 Commission recently concluded a rulemaking to implement Section 20 of SB 1547 that
15 prescribes the form and manner of the Company's Application.^{1/}

16 Section 20 requires the Commission to consider six factors when evaluating the
17 Company's Application: (1) whether the proposed expenditures are within the
18 Company's service territory; (2) whether they are prudent "as determined by the
19 commission;" (3) whether they are reasonably expected to be used and useful, also "as
20 determined by the commission;" (4) whether they are reasonably expected to enable the
21 electric company to support its electrical system; (5) whether they are reasonably
22 expected to improve electrical system and operational flexibility; and (6) whether they

^{1/} Docket No. AR 599, OAR 860-087 *et seq.*

1 are reasonably expected to stimulate innovation, competition and customer choice in
2 electric vehicle charging and related infrastructure and services.^{2/}

3 To meet these requirements, the Company’s Application proposes four areas for
4 investment: (1) education, outreach, and technical assistance; (2) electric mass transit
5 pilot; (3) electric avenue network pilot; and (4) residential smart charging pilot.^{3/} The
6 Company’s Application shows that these investments will cost customers \$8.142 million,
7 which will be partially offset by revenue received through EV charging payments, for a
8 net cost of approximately \$4 million.^{4/} The Company also shows that, on a net present
9 value basis, the programs in its Application produce a net benefit to customers of
10 between \$4.7 million and \$6.6 million, depending on the cost-effectiveness test used.^{5/} If
11 the Company’s Application is approved, Section 20 of SB 1547 mandates that its costs
12 “be recovered from all customers of an electric company in a manner that is similar to the
13 recovery of distribution system investments.”^{6/} The Company proposes to file a deferral
14 to capture the costs of its transportation electrification programs if its Application is
15 approved.^{7/}

16 **Q. HAS THE COMMISSION PREVIOUSLY CONSIDERED AUTHORIZING**
17 **UTILITIES TO RECOVER COSTS OF TRANSPORTATION**
18 **ELECTRIFICATION INVESTMENTS IN RATES?**

19 A. Yes. In Docket No. UM 1461, the Commission investigated matters related to electric
20 vehicle charging, including issues related to cost recovery. In Order No. 12-013, the
21 Commission stated that “[u]tility requests for rate recovery for EVSE investment will be

^{2/} SB 1547 § 20(4).

^{3/} PGE/100 at 1-2.

^{4/} Id. at 24.

^{5/} Id., Appen. A at 4

^{6/} SB 1547 § 20(5)(a)(B).

^{7/} PGE/100 at 24.

1 very closely scrutinized.”^{8/} It went on to state that it expected “a utility that requests rate
2 recovery for EVSE investment to make a *compelling* case that the utility’s ownership and
3 operation of the EVSE is beneficial to ratepayers – not just the public generally.”^{9/}
4 Finally, the Commission determined that any finding of prudence that would allow rate
5 recovery “requires a showing of net benefits to customers.”^{10/}

6 **Q. IS THIS ORDER STILL APPLICABLE IN LIGHT OF THE REQUIREMENTS**
7 **OF SECTION 20 OF SB 1547?**

8 A. Yes. One of the legislative findings in Section 20 is that “[d]eploying transportation
9 electrification and electric vehicles creates the opportunity for an electric company to
10 propose ... that a net benefit for the customers of the electric company is attainable.”^{11/}
11 Consequently, the legislature was itself apparently concerned with the need for a utility to
12 show that its investments in EV infrastructure provides net benefits to ratepayers.
13 Furthermore, one of the criteria the Commission must consider when evaluating the
14 Company’s Application is whether the investments are “prudent as determined by the
15 commission.”^{12/} In Order No. 12-013, the Commission has already determined what
16 constitutes a prudent utility investment in EV infrastructure – it “requires” a showing of
17 net benefits.^{13/} Moreover, nothing in the rules governing transportation electrification
18 programs that the Commission approved expressly modifies this standard either.^{14/}

^{8/} Docket No. UM 1461, Order No. 12-013 at 10 (Jan. 19, 2012).

^{9/} Id. (emphasis in original).

^{10/} Id.

^{11/} SB 1547 § 20(2)(f).

^{12/} Id. § 20(4)(b).

^{13/} Order No. 12-013 at 10.

^{14/} See OAR 860-087-0030(1)(f)(C) (requiring utility to describe “how a net benefit to ratepayers is attainable”).

1 **Q. DO YOU BELIEVE THE COMMISSION SHOULD APPROVE THE**
2 **COMPANY'S APPLICATION?**

3 A. Not as proposed. The Company has not adequately demonstrated that its Application
4 provides net benefits to customers. First, the Company estimates that the net revenue
5 requirement increase for customers will be approximately \$4 million; however, the gross
6 revenue requirement impact of over \$8 million is far more certain than the net revenue
7 requirement. This is because the Company has a far better understanding of the costs of
8 its proposed programs, which will be incurred in the near term, than it has of the revenue
9 it will receive from customer payments to offset these costs. The Company estimates it
10 will receive approximately \$4.2 million in revenue from customer payments, but this
11 figure represents the NPV of these payments over a ten-year period.^{15/} Moreover, the
12 Company uses a number of assumptions to arrive at its projected revenue figure, which
13 are necessarily based on extremely limited data and, therefore, it is difficult to assess their
14 reliability.^{16/}

15 Additionally, the results of the Company's cost-effectiveness analyses for its
16 proposed EV programs are questionable. At the outset, it is worth noting that even the
17 Company's own analysis finds that its proposed electric mass transit pilot is not cost-
18 effective under any scenario, and by a significant margin.^{17/} The Commission, therefore,
19 should not approve this program as prudent. The Company does purport to show that
20 there are overall net benefits from all of its proposed programs.^{18/} However, the basis for
21 these conclusions is not entirely clear. For instance, the Company assigns a cost to

^{15/} PGE/100 at 24 (table 5).

^{16/} ICNU/102 at 1-2 (PGE Resp. to ICNU DR 001).

^{17/} PGE/100, Appen. A at 23-25.

^{18/} Id. at 17-22.

1 increased capacity necessary to accommodate an expanding EV market. This cost is
 2 based on “electric vehicle charging coincidence with system peak demand,” but there is
 3 no identification of how this coincidence is determined.^{19/} Notwithstanding the impact of
 4 EVs on peak loads, the demand-related costs associated with EVs are likely significant,
 5 but it is unclear the degree to which the Company has accounted for this. Additionally, to
 6 account for the benefits from its programs, the Company calculates the avoided cost of
 7 gasoline based on the retail price of gasoline, but in accounting for costs, it calculates the
 8 increased energy supply costs based on the wholesale price of electricity.^{20/} This biases
 9 the cost/benefit analysis because it assigns a higher value to the benefits than it does to
 10 the costs associated with increased EV usage. Rather, the Company should be basing the
 11 avoided cost of gasoline on the wholesale price, as this is ultimately what will be avoided
 12 by fewer gas-powered cars on the road.

13 Finally, the fundamental assumptions the Company makes in its cost-
 14 effectiveness analyses are highly speculative and questionable. The Company assumes
 15 that its education and awareness program will alone result in an increase to EVs of [REDACTED] in
 16 2017 and growing to as high as [REDACTED] in 2020.^{21/} Yet, the Company provides no apparent
 17 basis for these numbers. The only justification for any increase from this program
 18 appears to come from the Navigant report attached to the Company’s testimony. That
 19 report notes that “[s]urveys of PGE customers show that awareness of plug-in electric
 20 vehicles is low and uncertainty regarding operation, reliability, costs, and charging is
 21 high relative to the conventional vehicle options.”^{22/} Based solely on this statement,

^{19/} Id. at 26.

^{20/} Id.

^{21/} PGE Resp. to Staff DR 010, Attach. A (“Deployment” tab).

^{22/} PGE/100, Appen. A at 10.

1 Navigant then “assume[s]” that an education and awareness program will have an early
2 and direct impact on the EV market.^{23/} Moreover, Navigant never discusses how it
3 arrives at the extent of the impact from this program. As the surveys Navigant cites
4 indicate, a significant percentage of customer concerns over EVs include battery
5 reliability, which is a significant cost of an EV and may materially shorten an EV’s
6 lifespan.^{24/} There are also significant barriers associated with charging time – even the
7 fastest chargers take far longer than it takes to fill a car up with gas. The Company does
8 not address how its education and outreach program will overcome these barriers and
9 increase EV sales.

10 For these reasons, I disagree that the Company has made a “compelling” case that
11 its Application will provide net benefits to ratepayers.

12 **Q. ARE THERE OTHER PROBLEMS WITH THE COMPANY’S APPLICATION?**

13 A. Yes. The Company’s Application is inconsistent with fundamental cost-allocation
14 principles. As noted above, if the Application is approved, all customers will be required
15 to bear the costs of the Company’s programs. Yet, the Company has proposed no
16 meaningful offerings to nonresidential customers (other than TriMet). This violates the
17 ratemaking principle that customers who do not benefit from an investment should not
18 bear its costs.

19 **Q. WHY DO YOU CONCLUDE THAT THE COMPANY HAS PROPOSED NO**
20 **MEANINGFUL OFFERINGS TO NONRESIDENTIAL CUSTOMERS?**

21 A. With the exception of its proposed partnership with TriMet to install bus charging
22 stations, a proposal that benefits a single identified customer, all of the Company’s

^{23/} Id. at 11.

^{24/} Id. at 10 n. 7.

1 programs are directed toward residential customers, including installing charging stations
2 around its service territory and pursuing a “residential smart charging pilot.” The only
3 alleged benefit the Company is proposing for nonresidential customers is a full time
4 employee (at the cost of \$183,000 in 2018) to provide “ad-hoc technical assistance” for
5 nonresidential customers considering fleet electrification or installing workplace charging
6 infrastructure.^{25/} When asked what “ad-hoc technical assistance” meant, the Company
7 stated that it periodically responds to requests from nonresidential customers who are
8 investigating procuring plug-in electric fleet vehicles or installing charging
9 infrastructure.^{26/} According to the Company, its incremental investment in this assistance
10 “would operationalize much of the ad-hoc work we do today and make this a dedicated
11 offering to all business customers.”^{27/}

12 In other words, the Company would simply pay more to institutionalize what it
13 already does today. There is no reason to conclude that this investment will have any
14 impact on nonresidential customers’ investment in EV infrastructure or will benefit these
15 customers in any way.

16 **Q. IF THE COMMISSION IS TO APPROVE THE COMPANY’S APPLICATION,**
17 **WHAT DO YOU RECOMMEND?**

18 A. I recommend that the Company recognize that nonresidential customers will have some
19 financial responsibility for these programs and, therefore, should receive some concrete
20 benefits. Rather than attempting to influence nonresidential customers to invest in EV
21 infrastructure through “ad-hoc technical assistance,” the Company could propose a
22 concrete and verifiable benefit to these customers by assisting them in the cost to procure

^{25/} PGE/100 at 7, 10.

^{26/} ICNU/102 at 3 (PGE Resp. to ICNU DR 003).

^{27/} Id.

1 and install this infrastructure. In PacifiCorp’s transportation electrification application,
2 for instance, the utility is proposing a “Demonstration and Development Pilot” that would
3 implement a competitive grant funding process for non-residential customers.^{28/} These
4 customers would propose creative, customer-driven transportation electrification projects
5 and would be eligible to receive funding for up to 100% of the project cost.^{29/}

6 The Company need not necessarily implement PacifiCorp’s proposal, but some
7 financial incentives to nonresidential customers as a component of an overall
8 transportation electrification strategy is warranted. Nonresidential customers are a
9 crucial component of widespread electric vehicle adoption. By including charging
10 stations at their businesses they encourage their employees to purchase an electric vehicle
11 because these employees know they will have a place to charge while they work.
12 Additionally, these businesses can procure large numbers of EVs to use as fleet vehicles,
13 which can quickly increase the penetration of EVs in the market.

14 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

15 **A.** Yes.

^{28/} Docket No. UM 1810, PacifiCorp Supplemental Application at 84.

^{29/} Id.

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1811

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

EXHIBIT NO. ICNU/101

REGULATORY APPEARANCES OF BRADLEY G. MULLINS

1 **Q. PLEASE PROVIDE A LIST OF YOUR REGULATORY APPEARANCES.**

2 A. I have sponsored testimony in the following regulatory proceedings:

- 3 • Wa.UTC, UE-161204: In re Pacific Power & Light Company, Revisions to Tariff
4 WN-U-75 (Net Removal Tariff)
- 5 • Wa.UTC, UE-161123: In re Puget Sound Energy's Revisions to Tariff WN U-60,
6 Adding Schedule 451, Implementing a New Retail Wheeling Service
- 7 • Bonneville Power Administration, BP-18: 2018 Joint Power and Transmission Rate
8 Proceeding
- 9 • Or.PUC, UP 334 (Cons.): In re Portland General Electric Company Application for
10 Approval of Sale of Harborton Restoration Project Property
- 11 • Ar.PSC, 16-028-U: In re An Investigation of Policies Related to Renewable
12 Distributed Electric Generation
- 13 • Ar.PSC, 16-027-R: In re Net Metering and the Implementation of Act 827 of 2015
- 14 • Ut.PSC, 16-035-01: In re the Application of Rocky Mountain Power for Approval of
15 the 2016 Energy Balancing Account
- 16 • Wa.UTC, UE-160228, UG-160229: In re Avista Corporation Request for a General
17 Rate Revision
- 18 • Wy.PSC, 20000-292-EA-16: In re the Application of Rocky Mountain Power to
19 Decrease Current Rates by \$2.7 Million to Recover Deferred Net Power Costs
20 Pursuant to Tariff Schedule 95 and to Increase Rates by \$50 Thousand Pursuant to
21 Tariff Schedule 93

- 1 • Or.PUC, UE 307: In re PacifiCorp, dba Pacific Power, 2017 Transition Adjustment
2 Mechanism
- 3 • Or.PUC, UE 308: In re Portland General Electric Company, 2017 Annual Power Cost
4 Update Tariff (Schedule 125)
- 5 • Or.PUC, UM 1050: In re PacifiCorp, Request to Initiate an Investigation of Multi-
6 Jurisdictional Issues and Approve an Inter-Jurisdictional Cost Allocation Protocol
- 7 • Wa.UTC, UE-152253: In re Pacific Power & Light Company, General rate increase
8 for electric services
- 9 • Wy.PSC, 20000-469-ER-15 In The Matter of the Application of Rocky Mountain
10 Power for Authority of a General Rate Increase in Its Retail Electric Utility Service
11 Rates in Wyoming of \$32.4 Million Per Year or 4.5 Percent
- 12 • Wa.UTC, UE-150204: In re Avista Corporation, General Rate Increase for Electric
13 Services
- 14 • Wy.PSC, 20000-472-EA-15: In re the Application of Rocky Mountain Power to
15 Decrease Rates by \$17.6 Million to Recover Deferred Net Power Costs Pursuant to
16 Tariff Schedule 95 to Decrease Rates by \$4.7 Million Pursuant to Tariff Schedule 93
- 17 • Wa.UTC, UE-143932: Formal complaint of The Walla Walla Country Club against
18 Pacific Power & Light Company for refusal to provide disconnection under
19 Commission-approved terms and fees, as mandated under Company tariff rules
- 20 • Or.PUC, UE 296: In re PacifiCorp, dba Pacific Power, 2016 Transition Adjustment
21 Mechanism

- 1 • Or.PUC, UE 294: In re Portland General Electric Company, Request for a General
2 Rate Revision
- 3 • Or.PUC, UM 1662: In re Portland General Electric Company and PacifiCorp dba
4 Pacific Power, Request for Generic Power Cost Adjustment Mechanism Investigation
- 5 • Or.PUC, UM 1712: In re PacifiCorp, dba Pacific Power, Application for Approval of
6 Deer Creek Mine Transaction
- 7 • Or.PUC, UM 1719: In re Public Utility Commission of Oregon, Investigation to
8 Explore Issues Related to a Renewable Generator's Contribution to Capacity
- 9 • Or.PUC, UM 1623: In re Portland General Electric Company, Application for
10 Deferral Accounting of Excess Pension Costs and Carrying Costs on Cash
11 Contributions
- 12 • Bonneville Power Administration, BP-16: 2016 Joint Power and Transmission Rate
13 Proceeding
- 14 • Wa.UTC, UE-141368: In re Puget Sound Energy, Petition to Update Methodologies
15 Used to Allocate Electric Cost of Service and for Electric Rate Design Purposes
- 16 • Wa.UTC, UE-140762: In re Pacific Power & Light Company, Request for a General
17 Rate Revision Resulting in an Overall Price Change of 8.5 Percent, or \$27.2 Million
- 18 • Wa.UTC, UE-141141: In re Puget Sound Energy, Revises the Power Cost Rate in
19 WN U-60, Tariff G, Schedule 95, to reflect a decrease of \$9,554,847 in the
20 Company's overall normalized power supply costs

- 1 • Wy.PSC, 20000-446-ER-14: In re the Application of Rocky Mountain Power for
2 Authority to Increase Its Retail Electric Utility Service Rates in Wyoming
3 Approximately \$36.1 Million Per Year or 5.3 Percent
- 4 • Wa.UTC, UE-140188: In re Avista Corporation, General Rate Increase for Electric
5 Services, RE: Tariff WN U-28, Which Proposes an Overall Net Electric Billed
6 Increase of 5.5 Percent Effective January 1, 2015
- 7 • Or.PUC, UM 1689: In re PacifiCorp, dba Pacific Power, Application for Deferred
8 Accounting and Prudence Determination Associated with the Energy Imbalance
9 Market
- 10 • Or.PUC, UE 287: In re PacifiCorp, dba Pacific Power, 2015 Transition Adjustment
11 Mechanism.
- 12 • Or.PUC, UE 283: In re Portland General Electric Company, Request for a General
13 Rate Revision
- 14 • Or.PUC, UE 286: In re Portland General Electric Company's Net Variable Power
15 Costs (NVPC) and Annual Power Cost Update (APCU)
- 16 • Or.PUC, UE 281: In re Portland General Electric Company 2014 Schedule 145
17 Boardman Power Plant Operating Adjustment
- 18 • Or.PUC, UE 267: In re PacifiCorp, dba Pacific Power, Transition Adjustment, Five-
19 Year Cost of Service Opt-Out (adopting testimony of Donald W. Schoenbeck).
- 20

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1811

In the Matter of)
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PORTLAND GENERAL ELECTRIC)
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Application for Transportation Electrification)
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EXHIBIT NO. ICNU/102

COMPANY RESPONSES TO DATA REQUESTS

April 20, 2017

TO: Jesse O. Gorsuch
Industrial Customers of Northwest Utilities

FROM: Karla Wenzel
Manager, Pricing

**PORTLAND GENERAL ELECTRIC
UM 1811
PGE Response to ICNU Data Request No. 001
Dated April 6, 2017**

Request:

Please identify all data and assumptions PGE used to develop the Estimated Customer Payments provided in PGE/100 at 24 (table 5).

Response:

The calculation of customer payments for the Electric Avenue Network can be found in PGE's response to OPUC data request 026, which is protected and subject to Protective Order 17-132, on the tab labeled Rev Req_Total. Total revenue from customer payments in the table at the bottom is derived from the revenue requirements models for each of the three parts of the Network: the Pilot Program (Rev Req_Pilot tab), the existing Electric Avenue station (Rev Req_Existing tab), and the Existing 11 Satellite Stations (Rev Req_BlinkPowin tab). Each of the three revenue requirements tabs incorporates capital carrying costs (calculated on the Carrying Cost tab), operating expenses (including purchased power costs, transaction costs, fixed O&M, land lease costs and state tax credits), and revenue (calculated on the Revenue tab).

The Revenue tab, in turn, borrows inputs from the Assumptions tab to forecast charges, kwh usage, and revenue for the DC quick chargers and L2 chargers for each of the three programs (Pilot, Existing Electric Avenue, and Existing Satellite Stations). Because of the pricing structure, we forecast fixed and variable charges for the on- and off-peak periods for both monthly subscription customers and pay-per-use (non-subscription) customers.

PGE's experience with the Existing Electric Avenue served as a starting point for the forecast of charges for the Network. Because Existing Electric Avenue only charged customers for parking (but not for energy) in 2016, we assumed a drop in usage going forward when we implement the Electric Avenue Network pricing. For Existing Electric Avenue and the Pilot Program, we

assumed escalation of 4.5% per year based on the compound annual growth that a large owner of Oregon charging stations has observed.

April 20, 2017

TO: Jesse O. Gorsuch
Industrial Customers of Northwest Utilities

FROM: Karla Wenzel
Manager, Pricing

**PORTLAND GENERAL ELECTRIC
UM 1811
PGE Response to ICNU Data Request No. 003
Dated April 6, 2017**

Request:

Refer to PGE/100 at 7:6-7. Please explain what PGE means by “ad-hoc technical assistance.” Please provide an example of this type of assistance that PGE currently provides to business customers, and an example of this type of assistance that PGE would offer to business customers with respect to EVs.

Response:

PGE periodically receives calls from business customers requesting information regarding electric vehicles or EV charging infrastructure. Often these requests are driven by facility or sustainability managers who are investigating procuring plug-in electric fleet vehicles or want to provide charging infrastructure for their employees or customers. By “ad-hoc technical assistance,” PGE means that we respond to questions via phone or email and may conduct customer specific site visits. At a site visit, PGE may discuss the customer’s needs, evaluate vehicle options, evaluate charging options, and provide guidance on optimal locations for siting chargers (based on use case, electric infrastructure, budget, etc.). Examples of this type of ad-hoc work is when we provided charging siting assistance to a Schedule 85 customer who was interested in potentially providing a charging option on-site for employees.

The proposed pilot would operationalize much of the ad-hoc work we do today and make this a dedicated offering to all business customers. We would develop targeted web content and outreach collateral, standardize site visit process, develop a standard report, document siting criteria considerations, document vehicle siting considerations, etc. such that customers would receive customized assistance based on their individual needs and circumstances.