

1 **BEFORE THE PUBLIC UTILITY COMMISSION**
2 **OF OREGON**

3 **UM 2035**

4 In the Matter of
5 Idaho Power Company,
6 TRANSPORTATION ELECTRIFICATION PLAN
7

**IDAHO POWER COMPANY'S
REPLY COMMENTS**

8 Idaho Power Company ("Idaho Power" or "Company") appreciates the comments on
9 the Company's 2019 Transportation Electrification ("TE") Plan presented by the Public Utility
10 Commission of Oregon ("Commission") Staff, Portland General Electric Company ("PGE"),
11 and ChargePoint, Inc. In these reply comments, Idaho Power will respond to Staff's request
12 for additional information on specific topics related to TE Plan elements set forth in OAR
13 860-087-0020. Staff states that the additional information requested from Idaho Power will
14 give Staff adequate information to recommend the Commission accept the Company's TE
15 Plan.¹

16 **I. CURRENT CONDITIONS OF THE TE MARKET (OAR 860-087-0030(3)(a))**

17 **a. Charging Visibility on the Plugshare Application**

18 Staff requests that Idaho Power address Commissioner Tawney's observation that
19 the Company's EV charger demonstration site is not visible to the PlugShare app. The
20 demonstration site that Commissioner Tawney refers to is located at Idaho Power's
21 corporate headquarters in Boise, Idaho, and includes five types of EV chargers. The
22 Company's EV charging site serves three functions: (1) an educational site to provide EV
23 charging education to residential and business customers; (2) employee workplace
24 charging; and (3) fleet vehicle charging. The site is not open to the public for EV charging.
25 Consequently, Idaho Power has not identified this location on the PlugShare app. The

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¹ Staff's Comments/Page 4.

1 Company has considered adding the site to the app with a “Restricted Use” label, but has
2 concerns that this label may be received negatively by the general public or create
3 confusion. Idaho Power is willing to list the demonstration site on the PlugShare app with
4 the “Restricted Use” label if the Commission so desires.

5 **II. EXISTING STATE POLICIES AND PROGRAMS (OAR 860-087-0030(3)(a)(A))**

6 **a. Oregon Clean Fuels Program Participation**

7 In Order No. 18-376, the Commission adopted Staff’s Report dated October 1, 2018,
8 in which Staff determined that Idaho Power does not have sufficient EVs in its Oregon
9 service area to warrant the expense of administering a program using Clean Fuels Program
10 revenues.² Staff is now requesting that Idaho Power explain what threshold of EV ownership
11 would warrant the administrative expense of participating in Oregon’s Clean Fuels Program.

12 According to the Oregon Department of Environmental Quality (“Oregon DEQ”), the
13 EVs in Idaho Power’s Oregon service area generated 71 Clean Fuels Credits in 2019, as
14 compared to 43,516 and 12,206 for PGE and PacifiCorp, respectively. Since inception of
15 the Clean Fuels Program, 381 Clean Fuels Credit transfers among buyers and sellers have
16 taken place. The average number of credits per transfer is 3,553, which is 50 times the
17 number of credits generated annually by EVs in Idaho Power’s service area.

18 Idaho Power’s participation in the Clean Fuels Program is not a matter of meeting a
19 specific number of EVs that would warrant the cost of participation, but more so about the
20 general state of the market and the general lack of interest in EVs in Idaho Power’s Oregon
21 service area. In 2019, the Company found it difficult to attract participation in its EV
22 educational events and trainings, as well as incentive offerings, despite the Company’s
23 efforts to market and recruit participants in these offerings through multiple channels. For
24 example, in an attempt to garner participation in an electrician training for installing EV

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26 ² *In the Matter of Public Utility Commission of Oregon, Revised Principals and Process for
Utility Use of Revenue from Clean Fuels Program.* Order No. 18-376, Appendix A, p. 11. October 11,
2018.

1 chargers, Company employees went door to door to local businesses after receiving no
2 responses to emailed invitations. The training event was eventually cancelled due to no
3 electricians signing up. Additionally, Idaho Power has encouraged local businesses to take
4 advantage of the Company's workplace charging incentive, which offers rebates of \$7,500
5 - \$20,000 for installing workplace charging equipment, yet not a single business in its
6 Oregon service area has applied. The workplace charging incentive offering has been in
7 place since 2016. The Company has also found that participation in its public EV education
8 events has been lackluster.

9 Due to the state of the market, spending additional funds on Clean Fuels Program
10 participation is not in the best interest of customers. The Company would be incurring costs
11 to participate in a program that would yield revenues for programs and offerings in which
12 Idaho Power's customers have shown little to no interest. Currently, Idaho Power's Clean
13 Fuels Credits are designated to the state's credit aggregator, Forth, and are used to promote
14 statewide education and outreach. Leveraging the partnership with the credit aggregator is
15 more effective and efficient at this time. The Company will continue to monitor the
16 appropriateness of participating as a credit generator and will provide updates to the
17 Commission through its TE Plan.

18 **b. Forecast Number of EVs in the Company's Service Area (OAR 860-087-**
19 **0030(3)(a)(D))**

20 Staff asks that Idaho Power explain how it arrived at the estimated future number of
21 EVs in its service area of 37 EVs by December 2020 and 130 EVs by December 2025. As
22 described in the Company's TE Plan, the number of EVs in Idaho Power's Oregon service
23 area increased 13.64 percent between December 2018 and June 2019. Due to current
24 market conditions and significant barriers to adoption, including dealerships citing no plans
25 to carry EVs in the near future, Idaho Power expects growth to remain stable for the next
26 few years. Based on this expectation, the Company estimated the future number of EVs by

1 holding the growth rate stable at 13.64 percent. The table below illustrates expected growth
2 in the number of EVs in Idaho Power's Oregon service area.

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FORECAST # OF EVS IDAHO POWER'S OREGON SERVICE AREA	
Reporting Period	Forecast # of EVs
December 2018	22 (actual)
June 2019	25 (actual)
December 2019	28
June 2020	32
December 2020	37
June 2021	42
December 2021	47
June 2022	54
December 2022	61
June 2023	70
December 2023	79
une 2024	90
December 2024	102
June 2025	116
December 2025	132

14 As described in Idaho Power's TE Plan, the Company is particularly optimistic about
15 the introduction of electric trucks in the future as trucks are very common in Idaho Power's
16 service area. Currently there are many types of electric trucks under development with a
17 few models expected to enter the market this year and next year. Idaho Power is hopeful
18 that local dealers will be inclined to carry these electric trucks when they become more
19 widely available.

20 **III. IDAHO POWER'S TE PROGRAM AND FUTURE TE CONCEPTS**

21 **(OAR 860-087-0030(3)(b))**

22 **a. Lessons Learned**

23 Staff requests that Idaho Power provide a detailed description of which outreach
24 programs work the best, and which outreach programs the Company has learned to be less
25 effective in any of its TE programs. In terms of the Company's outreach programs in its
26 Oregon and Idaho service areas, Idaho Power has found that car shows are effective

1 venues. Car shows draw vehicle enthusiasts who like to look at and learn about cars.
2 Currently, there is one car show in Idaho Power's Oregon Service area. The Company had
3 an EV and educational display at this event in 2020. The event was indoors in January with
4 a dozen vehicles on display. An outdoor car show event in the summer months would likely
5 draw more members of the community, but the Company has not been able to find such an
6 event in its Oregon service area. It will continue to look for this type of opportunity.

7 Idaho Power has found that hosting EV educational booths at events focused on fun,
8 such as fairs and concerts, have been less effective. These are difficult venues as people,
9 especially those with children, typically attend to have fun, not learn. Idaho Power had an
10 EV display (with an EV) at Ontario, Oregon's Live After Five concert event in 2018, as well
11 as the Malheur County Fair in Ontario in 2018 and 2019. These events draw a community
12 audience, however, the majority attend these events to socialize, listen to music, and have
13 fun.

14 Idaho Power has found that events with an environmental focus have been
15 particularly effective in the Company's Idaho service area. The Company has participated
16 in sustainability and Earth Day events in Idaho. These events have other environmentally-
17 friendly themed exhibits focused on clean water, clean air, recycling, health, etc. People at
18 these types of events typically attend to learn or have a willingness to learn and our EV
19 messaging has been well received. The Company has not been able to find any
20 environmentally-friendly themed events in its Oregon service area. Idaho Power did attend
21 a sustainability event at the Treasure Valley Community College. However, the other
22 vendors included a gaming establishment, toy store, and other local retail services rather
23 than environmentally-focused organizations. The event drew students, but not the greater
24 community.

25 In Idaho Power's Idaho service area, events co-sponsored by allied groups have
26 been effective. The Company has co-sponsored trainings and events with groups like the

1 Idaho Sierra Club, Idaho Conservation League, Idaho state agencies, and the Treasure
2 Valley Clean Cities Coalition. The co-branding draws in more people and each group can
3 market to their members. However, these types of associations are not present in the
4 Company's Oregon service area. Additionally, unlike the Company's Idaho Service area,
5 Idaho Power's Oregon service area lacks local trade associations that can help promote EV
6 trainings. There are fewer businesses serving the area, and of those only a fraction may be
7 willing to devote time to training. In 2020, Idaho Power's training strategy will focus less on
8 hosting centralized trainings, and instead focus on targeted site visits to deliver information
9 one business at a time.

10 **b. Future TE Concepts**

11 Staff requests that Idaho Power describe the expected timeline and costs for the
12 potential future TE concepts described in the Company's TE Plan if they were ultimately
13 pursued, and how these programs will be prioritized. Idaho Power's TE Plan states that the
14 Company intends to explore these concepts (residential charging station incentive, rest area
15 electrification, truck stop electrification, and a charging station for TE program events) for
16 potential implementation in future years. Given the current state of the EV market in Oregon,
17 and the Company's expected growth rate in local EV ownership, Idaho Power has not
18 determined expected costs or a timeline for implementation. Similarly, the Company has
19 not determined priority of these concepts, but it is likely that a charging station demonstration
20 site and/or a residential charging station incentive would be prioritized as these efforts would
21 allow for a continued focus on education, outreach, and home charging, which is where the
22 majority of charging occurs.

23 Idaho Power is devoted to advancing TE in its Oregon service area and will continue
24 to monitor the most effective ways to promote EV adoption and TE. The Company will
25 continue to keep the Commission apprised of its efforts through the Company's TE Plan
26 updates and TE Program Evaluation Reports.

1 **IV. CHARGING AND VEHICLE TECHNOLOGY UPDATES**

2 **(OAR 860-087-0030(3)(a)(F))**

3 **a. Impacts of Cold Weather on EV Range**

4 Staff asks that Idaho Power comment on the effect cold weather might have on the
5 variance of EV range in Idaho Power’s Oregon service area. According to the U.S.
6 Department of Energy (“U.S. DOE”), extreme weather – very hot or very cold – impacts
7 range in EVs. The additional heating or cooling needed for passenger comfort requires more
8 energy than moderate temperatures would. Cold batteries also have greater resistance to
9 charging and do not hold a charge as well.³

10 The Company’s Oregon service area does experience very cold temperatures in the
11 winter months. The average low temperatures in December, January, and February in
12 Ontario, Oregon are 22 degrees, 23 degrees, and 27 degrees, respectively. In 2019,
13 Ontario, Oregon had a total of 5,163 Heating Degree Days, as compared to 4,165 for
14 Portland, Oregon. These cold winter temperatures likely reduce the range of EVs, which
15 can be particularly troublesome for the Company’s customers who often travel long
16 distances between rural areas and to large metro areas. The U.S. DOE states that EV
17 manufacturers are improving temperature-control technology to compensate for some of
18 these temperature issues. For instance, several models are now available with battery
19 heaters or other technology to heat the battery and improve efficiency in cold climates.
20 Idaho Power is hopeful that advanced technology will minimize weather impacts on EV
21 batteries, and reduce one of the many causes of range anxiety.

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26 ³<https://www.energy.gov/eere/electricvehicles/maximizing-electric-cars-range-extreme-temperatures>

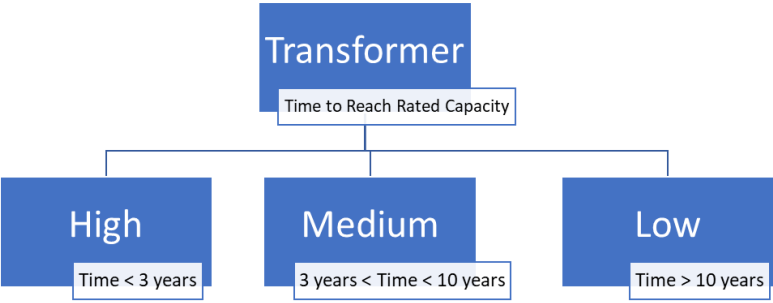
1 equivalent emissions reductions annually. As discussed previously, Idaho Power expects
2 that EV ownership will increase to 132 EVs by December 2025, which would contribute to
3 626.5 tons of CO₂ equivalent emissions reductions annually.

4 **VII. SYSTEM IMPACTS RESULTING FROM INCREASED TE**
5 **(OAR 860-087-0030(3)(f))**

6 Staff requests that the Company describe what level of EV penetration in its Oregon
7 service area would materially impact Idaho Power’s system. The Company performed a
8 locational capacity value analysis as part of the Resource Value of Solar (“RVOS”) docket,
9 Docket No. UM 1911, that is also informative with regard to the impact of potential EV load
10 on the Company’s system. The Company’s locational capacity value analysis focused on
11 substation transformers, given that these assets are usually the limiting factor in a
12 distribution system. The Company collected data for each of the 30 substation transformers
13 that serve load in Oregon including:

- 14 • Transformer name
- 15 • Rated capacity
- 16 • Peak load
- 17 • Growth rate

18 The number of years needed to reach the rated capacity of each transformer was
19 calculated using the transformer rated capacity, the transformer peak load, and the
20 transformer load growth rate. Each transformer was given the label of high-, medium- or
21 low-value depending on the number of years before each reaches its rated capacity, as
22 follows:



The results of the transformer-by-transformer analysis are shown in the table below:

Transformer	Summer Planning Capacity Limit (MW)	Summer Peak Load (MW)	Summer Growth Rate	Winter Planning Capacity Limit (MW)	Winter Peak Load (MW)	Winter Growth Rate	Season	Overall Growth Rate	Years to 100%	H/M/L
CAROT061	19.60	18.29	1.65%	22.00	13.89	1.65%	Summer	1.65%	4.34	M
HMDLT061	13.72	9.34	1.86%	15.40	15.34	3.28%	Winter	3.28%	0.12	H
JMSNT061	4.90	4.62	3.85%	5.50	2.64	3.85%	Summer	3.85%	1.57	H
JNVYT061	1.97	1.96	1.01%	2.21	1.38	1.09%	Summer	1.01%	0.51	H
ONTOT135	36.58	34.30	1.01%	41.06	16.13	1.01%	Summer	1.01%	6.58	M
PRMAT062	33.32	22.15	2.45%	22.00	12.65	2.45%	Summer	2.45%	20.58	L
WESRT061	13.72	12.67	1.74%	15.40	11.12	1.74%	Summer	1.74%	4.76	M
HFWYT061	6.54	3.74	1.32%	7.34	5.95	0.80%	Winter	0.80%	29.16	L
HMDLT062	N/A	N/A	N/A	22.00	17.27	1.40%	Winter	1.40%	19.61	L
HOLYT061	9.19	7.19	2.06%	10.32	5.18	2.06%	Summer	2.06%	13.50	L
NYSAT061	13.72	11.94	1.93%	15.40	12.33	1.93%	Summer	1.93%	7.72	M
OIDAT061	27.44	22.81	0.50%	30.80	22.90	0.50%	Summer	0.50%	40.60	L
ONTOT134	29.40	22.28	2.15%	33.00	20.53	2.15%	Summer	2.15%	14.86	L
VALET061	13.72	11.36	1.77%	15.40	10.28	1.77%	Summer	1.77%	11.74	L
ADRNT061	10.29	4.44	1.23%	11.55	4.82	0.93%	Summer	1.23%	107.18	L
CWVYT061	3.43	2.21	0.76%	3.85	2.18	0.00%	Summer	0.76%	72.44	L
DRKET061	0.97	0.41	2.28%	1.09	0.50	2.28%	Winter	2.28%	51.75	L
DUKET061	5.64	0.11	0.00%	6.34	0.10	0.00%	Summer	0.00%	-	L
DWSYT061	0.97	0.44	0.37%	1.09	0.55	0.37%	Winter	0.37%	265.36	L
HGTNT061	3.43	0.94	3.43%	3.85	0.91	3.43%	Summer	3.43%	77.23	L
HOPET061	6.54	3.36	0.25%	7.34	2.59	1.08%	Summer	0.25%	374.30	L
HRPRT061	3.43	1.39	0.61%	3.85	1.86	0.00%	Winter	0.00%	-	L
JNTAT061	0.65	0.22	0.00%	0.73	0.41	0.00%	Winter	0.00%	-	L
JNVYT062	1.47	0.55	1.60%	1.65	0.63	1.34%	Winter	1.34%	120.82	L
LIMET061	3.43	0.32	0.00%	3.85	0.30	0.00%	Summer	0.00%	-	L
MRBTT061	10.29	6.41	0.33%	11.55	3.19	0.40%	Summer	0.33%	182.61	L
NYSAT062	13.72	8.36	3.22%	15.40	5.63	3.22%	Summer	3.22%	19.91	L
PNCKT061	1.47	0.52	1.85%	1.65	0.29	1.85%	Summer	1.85%	98.75	L
PRMAT061	13.72	7.33	1.95%	15.40	8.46	1.95%	Winter	1.95%	42.07	L
UNTYT061	3.43	1.68	4.16%	3.85	1.40	4.16%	Summer	4.16%	25.04	L

Based on these rankings, and given that a typical level II home charging unit charges at a rate of 7-19 kilowatts, the three transformers with a high-level ranking are likely to be impacted if additional EVs are charging during peak hours. For instance, the Jameson substation transformer (JMSNT061) has available summer peak capacity of 0.28 megawatts, which means it could support between 14 and 40 EVs charging during peak hours. However, it is important to note that there are currently 25 EVs in Idaho Power's Oregon service area, which encompasses 4,744 square miles.

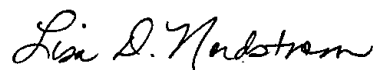
The transformer analysis performed for the RVOS docket is a good starting point in determining the potential system impacts of EVs. However, a study of feeder-level impacts

1 from EV charging would provide additional information, as there may be differences in the
2 number of EVs a feeder can support versus a substation transformer. Idaho Power commits
3 to studying the potential feeder-level impacts from increased EV adoption for the next TE
4 Plan update.

5 **VIII. CONCLUSION**

6 Through its TE Plan, Idaho Power intends to improve visibility and awareness of EVs
7 in its Oregon service area through targeted education. The Company aims to support
8 customers' transition from EV skeptics to EV advocates by providing education on the many
9 benefits of EVs and addressing common misconceptions and barriers. In the long-run,
10 Idaho Power's TE Plan is expected to accelerate TE by increasing the adoption of EVs, as
11 well as increasing access to electricity as a form of transportation fuel. Idaho Power will
12 continue to develop its vision and strategy towards the acceleration of TE in its Oregon
13 service area. Idaho Power is hopeful that the additional information presented herein will
14 give Staff adequate reason to recommend the Commission accept the Company's TE Plan.

15 Respectfully submitted this 20th day of March 2020.

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