Matthew T. Larkin
Revenue Requirement Senior Manager
mlarkin@idahopower.com

February 24, 2023

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
3930 Fairview Industrial Drive SE
P.O. Box 1088
Salem, Oregon 97308-1088

Re: Docket No. UM 2035
Idaho Power Company's Transportation Electrification Plan

Attention Filing Center:

Attached for electronic filing in the above-referenced matter is Idaho Power Company's Reply Comments.

If you have any questions, please do not hesitate to contact me.

Very truly yours,

Matthew T. Larkin

MTL/sg

Attachments

BEFORE THE PUBLIC UTILITY COMMISSION OF OREGON

UM 2035

In the Matter of Idaho Power Company, TRANSPORTATION ELECTRIFICATION PLAN	**IDAHO POWER COMPANY'S REPLY COMMENTS**

Idaho Power Company ("Idaho Power" or "Company") appreciates the comments on the Company's draft 2023-2025 Transportation Electrification ("TE") Plan ("TE Plan") presented by the Public Utility Commission of Oregon ("Commission") Staff. In these Reply Comments, Idaho Power will respond to Staff's Comments dated February 10, 2023, requesting additional information on specific topics related to TE Plan elements set forth in OAR 860-087-0020.

I. Rate Impact

Staff recommended that Idaho Power confirm Staff's conclusion that the Company's TE Plan will be de minimis to rates.[1] Idaho Power's TE budget balances the Company's desire to accelerate the adoption of electric vehicles with the equity concerns and economic realities of the region. As a result, the Company does not intend to use customer funds to pay for TE programs included within the TE Plan. Due to the estimated budget of about $15,000 per year for the 2023-2025 planning period, Idaho Power anticipates that this Plan will be de minimis to customer rates.

II. Benefit/Cost Analysis

To evaluate the load shape of public charging more fully, the Commission Staff asked Idaho Power to compare the load shape of charging at its two Direct Current Fast Charging ("DCFC") sites in its Oregon territory with the load shape used in the Company's benefit/cost

[1] UM 2035, Staff Comments at 11-12 (Feb. 10, 2023).

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Boise, ID 83702

analysis. Idaho Power's benefit/cost analysis results as filed in its draft TE Plan are based on an EV charging load shape from the Regional Technical Forum ("RTF"). Based on Staff's recommendation to compare the load shape used in its benefit/cost analysis with the load shape from the Company's two DCFC charging sites in its Oregon service territory[2], Idaho Power has also developed load shapes based on the 2022 utilization data of both the Electrify America site in Huntington and the Tesla site in Ontario. The below table shows the results of each benefit/cost analysis using the three different load shapes.

Load Shape	PCT	RIM	TRC/SCT
RTF	2.20	1.75	0.77
Electrify America	2.20	1.76	0.78
Tesla	2.20	1.69	0.77

The Company found that the three load shapes were not significantly different from each other, and ultimately did not have a significant impact on the results of the benefit/cost analyses. Confidential Attachment 1 filed with these comments shows the load shape calculation for the Tesla and Electrify America sites.

III. Charging Infrastructure Need - TEINA

Idaho Power used the Transportation Electrification Investment Needs Assessment ("TEINA") model to forecast EVSE charging needs from 2020 – 2035 for light-duty vehicles. The Company ran three scenarios in TEINA: a starting forecast, an aggressive forecast, and the TEINA default scenario. In its draft Plan, the Company evaluated the results for Malheur County, which is where the majority of Idaho Power's Oregon customers reside. In addition, the Company evaluated needs based on EV growth in the service area, not including the need from corridor traffic.

In preparing the revised TE plan to be filed March 10, 2023, the Company made the

[2] *Id*. at 6.

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1221 West Idaho Street
Boise, ID 83702

following changes to its infrastructure needs analysis based on suggestions articulated in Staff's Comments. First, the Company evaluated needs for all census tracts in Idaho Power's Oregon service area, instead of just Malheur County.[3] Second, the Company incorporated the corridor model into its analysis, which calculates charging infrastructure need from traffic passing through the service area.[4] Lastly, the Company updated the "Home Charging Access" percentage input in TEINA.[5] As Staff discussed in their comments, the Home Charging Access input value represents the percentage of drivers assumed to have access to home charging in 2035. The Company agrees with Staff that the default value of 60 percent does not likely represent Idaho Power's Oregon service area. The Company has updated this input to 85 percent. Updated TEINA model results, as well as workbooks that provide the underlying data to the tables in these Reply Comments can be found in Attachments 3 – 8.

The tables below show the Company's TEINA results for the starting, aggressive, and TEINA default scenarios for the sum of all census tracts in the Company's service area. While some census tracts fall only partially in Idaho Power's service area, the port totals in each scenario are for the entirety of each census tract. In addition, each of these scenarios assumes corridor charging will serve the needs of both local residents and corridor traffic.

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[3] *Id.*

[4] *Id.*

[5] *Id.*

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Boise, ID 83702

Starting Scenario

Current Total		Additional Ports Required			Ending Total
Type	2022	2025	2030	2035	2035
Level 2	5	**0**	0	35	40
DCFC/Corridor	16	**0**	0	7	23

The starting scenario does not identify additional charging ports needed in the 2023 – 2025 planning period.

Aggressive Scenario

Current Total		Additional Ports Required			Ending Total
Type	2022	2025	2030	2035	2035
Level 2	5	**42**	233	479	759
DCFC/Corridor	16	**18**	66	139	239

The aggressive scenario identifies 42 additional Level 2 charging ports and 18 additional DCFC or corridor charging ports needed by 2025.

TEINA Default Scenario

Current Total		Additional Ports Required			Ending Total
Type	2022	2025	2030	2035	2035
Level 2	5	**144**	549	824	1522
DCFC/Corridor	16	**66**	159	227	468

The TEINA default scenario identifies 144 additional Level 2 charging ports and 66 additional DCFC or corridor charging ports needed by 2025.

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1221 West Idaho Street
Boise, ID 83702

IV. Equity in Infrastructure Need

The Company also analyzed the charging infrastructure needs by individual census tract for each scenario. The results of this analysis are provided in the tables below.

Starting Scenario

				Current Total	Add'l Ports Required			Ending Total
Census Tract ID	City	County	POP_SQMI	2022**	2025	2030	2035	2035
41001950100*	Greenhorn	Baker	2.5	0	**0**	0	3	3
41001950300*	Huntington	Baker	4.1	8	**0**	0	0	3
41001950600*	Halfway	Baker	1.9	1	**0**	0	2	3
41023960100*	Granite	Grant	0.7	0	**0**	0	3	3
41025960200*	Undefined	Harney	0.2	0	**0**	0	3	3
41045970200	Ontario	Malheur	170.5	0	**0**	1	5	6
41045970300	Ontario	Malheur	609	0	**0**	0	3	3
41045970400	Ontario	Malheur	1183.6	9	**0**	0	0	5
41045970500	Nyssa	Malheur	78.1	0	**0**	1	5	6
41045970600	Vale	Malheur	31.1	2	**0**	0	4	6
41045970700	Adrian	Malheur	14.3	1	**0**	0	2	3
41045970900*	Jordan Valley	Malheur	0.6	0	**0**	1	4	5
41063960100*	Joseph	Wallowa	1.2	0	**0**	0	3	3

*Census tract falls only partially in Idaho Power's Oregon service area

No need has been identified in the 2023 – 2025 planning period for any census tract in the starting scenario.

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Boise, ID 83702

Aggressive Scenario

				Current Total	Add'l Ports Required			Ending Total
Census Tract ID	**City**	**County**	**POP_SQMI**	**2022**	**2025**	**2030**	**2035**	**2035**
41001950100*	Greenhorn	Baker	2.5	0	**4**	16	36	56
41001950300*	Huntington	Baker	4.1	8	**0**	9	31	48
41001950600*	Halfway	Baker	1.9	1	**2**	18	36	57
41023960100*	Granite	Grant	0.7	0	**3**	12	27	42
41025960200*	Undefined	Harney	0.2	0	**3**	14	26	43
41045970200	Ontario	Malheur	170.5	0	**7**	33	68	108
41045970300	Ontario	Malheur	609	0	**5**	23	46	74
41045970400	Ontario	Malheur	1183.6	9	**0**	31	69	109
41045970500	Nyssa	Malheur	78.1	0	**7**	33	70	110
41045970600	Vale	Malheur	31.1	2	**5**	34	72	113
41045970700	Adrian	Malheur	14.3	1	**2**	11	23	37
41045970900*	Jordan Valley	Malheur	0.6	0	**7**	31	64	102
41063960100*	Joseph	Wallowa	1.2	0	**3**	17	33	53

*Census tract falls only partially in Idaho Power's Oregon service area

The Company has highlighted the census tracts with the highest need in the 2023 – 2025 planning period according to the aggressive scenario. Excluding the census tracts where the majority of the population is outside of Idaho Power's Oregon service area (Greenhorn, Granite, and Joseph), the census tracts with the biggest charging infrastructure need by 2025 are in Malheur County.

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1221 West Idaho Street
Boise, ID 83702

TEINA Default Scenario

				Current Total	Add'l Ports Required			Ending Total
Census Tract ID	**City**	**County**	**POP_SQMI**	**2022**	**2025**	**2030**	**2035**	**2035**
41001950100*	Greenhorn	Baker	2.5	0	**11**	40	61	112
41001950300*	Huntington	Baker	4.1	8	**1**	35	52	96
41001950600*	Halfway	Baker	1.9	1	**10**	41	62	114
41023960100*	Granite	Grant	0.7	0	**8**	31	44	83
41025960200*	Undefined	Harney	0.2	0	**9**	31	47	87
41045970200	Ontario	Malheur	170.5	0	**22**	78	117	217
41045970300	Ontario	Malheur	609	0	**15**	52	80	147
41045970400	Ontario	Malheur	1183.6	9	**11**	80	116	216
41045970500	Nyssa	Malheur	78.1	0	**22**	79	120	221
41045970600	Vale	Malheur	31.1	2	**19**	82	123	226
41045970700	Adrian	Malheur	14.3	1	**6**	27	40	74
41045970900*	Jordan Valley	Malheur	0.6	0	**20**	75	111	206
41063960100*	Joseph	Wallowa	1.2	0	**11**	38	58	107

*Census tract falls only partially in Idaho Power's Oregon service area

The Company has highlighted the census tracts with the highest need in the 2023 – 2025 planning period according to the TEINA default scenario. In line with the aggressive scenario, excluding the census tracts where the majority of the population is outside of Idaho Power's Oregon service area, the greatest charging port need by 2025 exists in Malheur County.

Each of the major population centers in the highlighted census tracts are located along a designated alternative fuel corridor according to the Oregon Department of Transportation's National Electric Vehicle Infrastructure ("NEVI") Plan. As a result, it is likely that the majority of the charging needs according to the starting scenario for both local use and corridor travel can be met with NEVI funding.

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1221 West Idaho Street
Boise, ID 83702

V. Average Emissions

Idaho Power's draft TE Plan includes a table (reproduced below) that shows transportation emissions reductions as a result of the reduction in gas-powered vehicles in the Company's Oregon service area. The reductions shown in the table directly impact the air quality in the Company's Oregon service area. The analysis, however, did not include the negative impact on air quality in the area where the power is generated, nor a calculation of the net emissions reductions as a result of the conversion from gas-powered vehicles to BEVs or PHEVs.

Emissions from average light duty vehicle	Grams/ Mile[6]	Grams/ Year	Reductions from 37 BEVs (Grams)	Reductions from 15 PHEVs (Grams)	Total lbs. Reduced
Total Hydrocarbons (HC)	0.25	2,901	107,337	n/a	236.64
Exhaust CO	3.81	44,051	1,629,887	n/a	3,593.28
Exhaust NOx	0.16	1,814	67,118	n/a	147.97
Exhaust PM2.5	0.00	46	1,702	n/a	3.75
Brake wear PM2.5	0.00	35	1,295	525	4.01
Tire wear PM2.5	0.00	12	444	180	1.38

Staff included a discussion of the net emissions calculation in their comments, stating the below.

> *Understanding both the GHG and tailpipe emission reductions from transportation electrification requires a comparison of the average emissions per mile of combustion engines and the average emissions per mile of EVs from the electricity generated from power plants.*[7]

Idaho Power agrees that in order to calculate the net emissions reductions as a result of switching from gas-powered vehicles to EVs, emissions from charging an EV and

[6] Emissions from Light Duty Vehicle: https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and

[7] Staff Comments at 9.

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1221 West Idaho Street
Boise, ID 83702

emissions from EVs themselves (brake and tire wear) must be considered in the calculation.

Regarding Staff's request that Idaho Power provide the basis to support reduced EV brake and tire wear emissions,[8] Idaho Power does not have data that is specific to EVs, so would assume the same average emissions as the equivalent gas-powered vehicle. As a result, Idaho Power will remove brake and tire wear emissions reductions data from its revised TE Plan to be filed March 10, 2023.

Emissions from charging an EV in the Company's Oregon service area can be estimated with the average per kWh emissions of Idaho Power's generation. This calculation is straight-forward for GHG pollutants,[9] however, for non-GHG pollutants, may require additional analysis.

Because reducing GHG emissions provides a global benefit, regardless of where the emissions source is located, calculating the net benefit from switching from a gas-powered vehicle to an EV in Idaho Power's Oregon service area only requires looking at the net reduction in emissions.

However, non-GHG pollutants require an analysis of the benefit of reduction in non-GHG emissions in one area (due to the reduction in gas-powered vehicles), and also the negative benefit of the non-GHG emissions in another area (source of the generation). Non-GHG emissions impact public health based on the proximity to the generation source. Due to the fact that the benefit in emissions reductions for non-GHG pollutants depends on the airshed, background air quality, and the proximity of the local residents to the emissions, the net benefit calculation from switching from a gas-powered vehicle to an EV is less straight-forward.

With this in mind, Idaho Power has provided the requested average per kWh

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[8] *Id.*

[9] Idaho Power's average per-kWh GHG emissions is calculated annually by the Oregon Department of Environmental Quality. For 2021, Idaho Power's average metric tons of CO2e per kWh was 0.000333.

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1221 West Idaho Street
Boise, ID 83702

emissions in Attachment 2 filed with these comments and would appreciate the opportunity to continue working with Staff on the appropriate emissions reduction benefit calculation prior to filing its revised TE Plan on March 10, 2023.

VI. CONCLUSION

Through the proposed TE Plan, Idaho Power intends to improve visibility and awareness of EVs in its Oregon service area through targeted outreach, education, and technical assistance. Idaho Power appreciates the feedback from Staff and other stakeholders and looks forward to finalizing its 2023 – 2025 TE Plan. A revised Plan will be filed for review on March 10, 2023. Idaho Power also intends to respond to informal feedback received from stakeholders before March 10, 2023.

Respectfully submitted this 24th day of February 2023.

Matthew T. Larkin
Revenue Requirement Senior Manager

Idaho Power Company
1221 West Idaho Street
Boise, ID 83702

ATTACHMENT 1
TO IDAHO POWER COMPANY'S REPLY COMMENTS

CONFIDENTIAL PURSUANT TO
GENERAL PROTECTIVE ORDER NO. 23-014

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1221 West Idaho Street
Boise, ID 83702

ATTACHMENT 2
TO IDAHO POWER COMPANY'S REPLY COMMENTS

(SEE ATTACHED SPREADSHEET)

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ATTACHMENT 3
TO IDAHO POWER COMPANY'S REPLY COMMENTS

(SEE ATTACHED SPREADSHEET)

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ATTACHMENT 4
TO IDAHO POWER COMPANY'S REPLY COMMENTS

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ATTACHMENT 5
TO IDAHO POWER COMPANY'S REPLY COMMENTS

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ATTACHMENT 6
TO IDAHO POWER COMPANY'S REPLY COMMENTS

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Boise, ID 83702

ATTACHMENT 7
TO IDAHO POWER COMPANY'S REPLY COMMENTS

(SEE ATTACHED SPREADSHEET)

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Boise, ID 83702

ATTACHMENT 8
TO IDAHO POWER COMPANY'S REPLY COMMENTS

(SEE ATTACHED SPREADSHEET)

Idaho Power Company
1221 West Idaho Street
Boise, ID 83702

CERTIFICATE OF SERVICE

UM 2035

I hereby certify that on February 24, 2023, I served a true and correct copy of Idaho Power Company's Reply Comments, by e-mail to said person(s) as indicated below.

Eric Shierman
Public Utility Commission of Oregon
eric.shierman@puc.oregon.gov

Graham Bates
Oregon Department of Environmental Quality
graham.bates@deq.oregon.gov

Neil Baunsgard
The Environmental Center
neil@envirocenter.org

Annabel Drayton
Northwest Energy Coalition
annabel@nwenergy.org

Evan Elias
Oregon Department of Energy
Evan.m.elias@energy.oregon.gov

Jason Salmi Klotz
Portland General Electric
Jason.klotz@pgn.com

Gerik Kransky
Oregon Department of Environmental Quality
gerik.kransky@deq.oregon.gov

Renee Samson
Freewire
rsamson@freewiretech.com

Rebecca Smith
Oregon Department of Energy
rebecca.smith@energy.oregon.gov

Francesca Wahl
Tesla
fwahl@tesla.com

Michael Orman
Oregon Department of Environmental Quality
michael.orman@deq.oregon.gov

Wendy Simons
Oregon Department of Energy
wendy.simons@energy.oregon.gov

Scott Dunbar
Keyes & Fox
sdunbar@keyesfox.com

Alexandra Leumer
Chargepoint
alexandra.leumer@chargepoint.com

Betsy Bridge
Oregon Department of Justice
betsy.bridge@doj.state.or.us

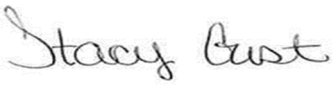
Carolyn Cilek
Green Energy Institute
carolinecilek@lclark.edu

Idaho Power Company
1221 West Idaho Street
Boise, ID 83702

Erick Karlen
Shell Recharge Solutions
ekarlen@shellrecharge.com

Kate Ayres
Oregon Citizens Utility Board
kate@oregoncub.org

Michael Goetz
Oregon Citizens' Utility Board
mike@oregoncub.org



Stacy Gust, Regulatory Administrative Assistant

Idaho Power Company
1221 West Idaho Street
Boise, ID 83702