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December 30, 2016

Public Utility Commission of Oregon  
Filing Center  
201 High Street SE, Suite 100  
P.O. Box 1088  
Salem, Oregon 97301

RE: UM \_\_\_\_ - Application for Electric Vehicle Awareness & Education Program

Attention Filing Center:

In compliance with Sections 20 and 29 of Senate Bill 1547 and OAR 860-087-0030, Idaho Power Company ("Idaho Power" or "Company") submits the attached application for its Electric Vehicle Awareness & Education Program ("Program").

Idaho Power is proposing the Program to increase the awareness of electric vehicles ("EV") and educate customers on the potential benefits of EVs, including lower fuel costs, lower maintenance costs, little to no emissions, vehicle performance benefits, energy independence, and local economic benefits. The Program will also help customers understand vehicle and charging technology and the options that are available. By providing awareness and education, Idaho Power will address key barriers to EV adoption within its Oregon service area, including driving range, price, charging, and other technical concerns.

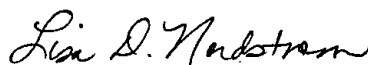
It is respectfully requested that all formal data requests to the Company regarding this filing be addressed to the following:

By email (preferred): [dockets@idahopower.com](mailto:dockets@idahopower.com)

By regular mail: Lisa Nordstrom  
Lead Counsel  
Idaho Power Company  
1221 W. Idaho Street  
Boise, Idaho 83702

If you have any substantive questions about this application, please contact Matt Larkin, Revenue Requirement Manager, at 208-388-2461 or [mlarkin@idahopower.com](mailto:mlarkin@idahopower.com).

Very truly yours,



Lisa D. Nordstrom

LDN/kkt  
Enclosure  
cc: AR 599 Service List via email



## **Electric Vehicle Awareness & Education Program**

### **December 30, 2016**

Pursuant to OAR 860-087-0030 and Oregon Laws 2016, Chapter 028, Sections 20 and 29 (SB 1547), Idaho Power Company (“Idaho Power” or “Company”) hereby respectfully applies to the Public Utility Commission of Oregon (“Commission”) for an order authorizing Idaho Power to implement an Electric Vehicle Awareness & Education Program (“Program”). Idaho Power is proposing the Program to increase the awareness of electric vehicles (“EV”) and educate customers on their potential benefits of EV ownership, including lower fuel costs, lower maintenance costs, little to no emissions, vehicle performance benefits, energy independence, and local economic benefits. The Program will also help customers understand vehicle and charging technology and the options that are available. Through awareness and education, Idaho Power will address key barriers to EV adoption within its Oregon service area, including customer perception surrounding driving range and price, dealership availability, and access to public charging.

### **I. PROCEDURAL BACKGROUND**

Section 20 of Oregon Senate Bill 1547 (“SB 1547”), signed into law March 8, 2016, pertains to Transportation Electrification Programs. Within Section 20, the Legislative Assembly declares that transportation electrification (“TE”) is necessary to reduce petroleum use, achieve optimum levels of energy efficiency and carbon reduction, meet federal and state air quality standards, meet Oregon’s greenhouse gas emission reduction goals, and improve public health and safety. Section 20 also mandates that the Commission direct each Oregon electric utility to file applications, in a form and manner prescribed by the Commission, for programs to accelerate TE. As a result of this mandate, the Commission initiated a rulemaking in Docket No. AR 599 to establish rules concerning utilities’ applications for TE programs.

In Order No. 16-447 in Docket No. AR 599, the Commission adopted OAR 860-087-0030, which requires an electric company to file applications for TE programs, and identifies what each application must include and the date by which the first application must be filed, which is on or before December 31, 2016. In compliance with OAR 860-087-0030, Idaho Power submits this application for a TE Program.

### **II. PROGRAM DESCRIPTION (OAR 860-087-0030 (1)(a))**

Idaho Power’s proposed TE Program is designed to increase EV awareness and accelerate the adoption of EVs. As presented by Portland General Electric at its August 2, 2016, EV workshop, the consumer purchase cycle begins with awareness of the technology, followed by consideration to determine if that vehicle will meet the consumer’s needs. Once a customer has determined that the technology could work, they begin to evaluate the different options and eventually may purchase a vehicle.

**Program elements, objectives, timeline, and expected outcomes (OAR 860-087-0030 (1)(a)(A))**

**Program Elements**

Raising awareness of EVs and providing EV education will be achieved through a multi-faceted approach, including (1) increasing the visibility of EVs in the Company's Oregon service area, (2) providing resources to customers interested in learning more about EVs, and (3) providing EV training to trade allies.

*1. Increasing the Visibility of EVs*

Idaho Power will aim to increase the visibility of EVs in the Company's Oregon service area by showcasing its electric fleet vehicles in at least two events per year. Idaho Power has identified the following events as potential options:

- Four Rivers Classic Car Show, Ontario, Oregon, January 28-29, 2017
- Oregon Trail Days & 4<sup>th</sup> of July Rodeo, Vale, Oregon, July 2017
- Malheur County Fair, Ontario, Oregon, August 1-5, 2017
- 4-H National Youth Science Day, Malheur County, October 2017
- Treasure Valley Community College Rodeo, Ontario, Oregon, October 2017
- Veteran's Day Parade, Ontario, Oregon, November 11, 2017
- Treasure Valley Community College, Ontario, Oregon, TBD
- Ontario Community Library, Ontario, Oregon, TBD

The Company has identified these events as potential opportunities to provide EV education and increase the visibility of EVs. However, the Company has not specifically determined which events it will participate in at this time. Idaho Power wants to be sure to use Program funds efficiently and reach as many customers as possible. As such, the Company will evaluate the potential events with respect to cost, expected attendance, and potential for success, to determine which events will provide the most value as they approach in the coming year.

*2. EV Materials & Resources*

The Program will also consist of providing EV materials and resources to customers interested in learning more about the costs and benefits of EVs. Idaho Power will leverage existing resources including the Company webpage dedicated to EVs, EV marketing materials, and customer access to an EV subject matter expert. An example of Idaho Power's existing EV marketing materials is provided in Appendix A.

### 3. *EV Training*

Another component of the Program will include providing training and education to trade allies. Idaho Power plans to hold at least one training annually to trade ally groups with a role in EV adoption. Idaho Power has identified the following as potential training events:

- A continuing education course for electricians on residential and/or commercial EV charging station installation and maintenance
- A safety course for first responders to provide training for incidents involving alternative fuel vehicles, including electric and hybrid vehicles
- Training for dealership sales team members on EV technology and the benefits of EV ownership

Idaho Power has identified these trainings as potential opportunities for trade ally outreach, but has not yet determined which training event(s) would provide the most value in the coming year. The Company will continue to research these opportunities to determine which training(s) to host in 2017 that will provide the greatest value. By providing EV education through public events and training, Idaho Power hopes to reach multiple audiences and achieve greater levels of awareness and understanding of EV technology.

#### Program Objectives

Idaho Power's strategy to increase awareness is to provide EV education and create more visibility of EVs for its Oregon customers. Specifically, Idaho Power wants customers to be aware of the advancing technology and the increased range capabilities of EVs. The Company also wants to inform customers of the federal and state incentives available for EV purchases, which may help align the cost of an EV with traditional gasoline engine vehicles. Lastly, Idaho Power wants to help customers understand the cost savings of fueling and maintaining an EV versus a traditional gasoline engine vehicle. At this time, Idaho Power believes that through education, it can best help lower the barriers to EV adoption.

#### Program Timeline

Idaho Power will implement the Program upon Commission approval and run the Program for three years, spanning 2017-2019. During and after the initial three years, Idaho Power will assess the market to determine if continuation is warranted, or if modifications are necessary. As indicated above, Idaho Power will complete two on-site EV showcase events and at least one EV training event by year-end in each of the initial three years.

### Expected Outcomes

The Company believes that providing an Education and Awareness Program will help improve customer understanding of the benefits of EVs and address common concerns and misconceptions that hinder adoption, but is unlikely to result in short-term adoption of EVs. However, the Company believes that EV education and awareness is a necessary and appropriate first step to accelerating EV adoption. Given the state of the eastern Oregon market, the Company views its Program as building a solid foundation of understanding that will set the stage for the implementation of future programs.

### **Market baseline assumptions (OAR 860-087-0030 (1)(a)(B))**

Idaho Power believes the majority of its customers in eastern Oregon are in the awareness phase of the purchase cycle. According to an August 2016 survey of Idaho Power's Empowered Community,<sup>1</sup> less than 9 percent of respondents were "very familiar" with EVs, and nearly 50 percent of respondents were "not very familiar" or "not familiar at all" with EVs. According to data from the Oregon Department of Environmental Quality ("DEQ"), as of June 30, 2016, there were 14 EVs registered in Oregon counties that are partially or fully served by Idaho Power. Anecdotally, at Idaho Power's recent EV Open House in Ontario, Oregon, which will be discussed in further detail later in this application, employees of the event center expressed excitement at seeing an EV as they had never seen one in eastern Oregon before.

### **Major performance milestones (OAR 860-087-0030 (1)(a)(C))**

Major performance milestones for this Program include the selection of community events to showcase the Company EVs, the selection of EV training event(s) for trade ally groups, and marketing the events to customers through online and print communication channels. As discussed later in this application, execution of these training events will provide the Company will valuable information regarding the effectiveness of the Program in increasing education and awareness.

### **Where applicable, a description of program phases, including a proposal for when each subsequent program phase will be submitted for Commission review (OAR 860-087-0030 (1)(a)(D))**

Not applicable. Idaho Power's initial Program does not include multiple phases.

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<sup>1</sup> The Empowered Community is an online survey group facilitated by Idaho Power, consisting of Idaho and Oregon customers in various rate classes.

**Expected utilization, participation, eligibility, and any incentive structures (OAR 860-087-0030 (1)(a)(E))**

Program participation will be voluntary and available to all customers with no participant costs. Consequently, Program utilization will be dependent upon participation in the local events at which Idaho Power selects for its EV showcase events, as well as participation in the proposed EV training. The Program does not have any incentive structures; however, the EV training component may offer continuing education credits for certain professions.

**Identification of market barriers, program implementation barriers & program strategies to overcome the identified barriers (OAR 860-087-0030 (1)(a)(F))**

Common barriers to EV adoption include driving range, access to public charging, dealership availability, and price. These barriers exist for Idaho Power's Oregon customers, and are exacerbated by the characteristics of the service area.

Idaho Power's Oregon service area spans some of the most remote landscape across eastern Oregon. The service area encompasses 4,744 square miles, and is largely comprised of rural communities. The largest town in Idaho Power's Oregon service area is Ontario, which has a population of roughly 11,000. The next largest towns are Nyssa, with a population of approximately 3,000, and Vale with a population of approximately 2,000. The majority of the remaining towns in Idaho Power's Oregon service area have populations of less than 300. As of year-end 2015, Idaho Power's Oregon service area consisted of 18,772 total customers, 13,384 of which are residential customers.

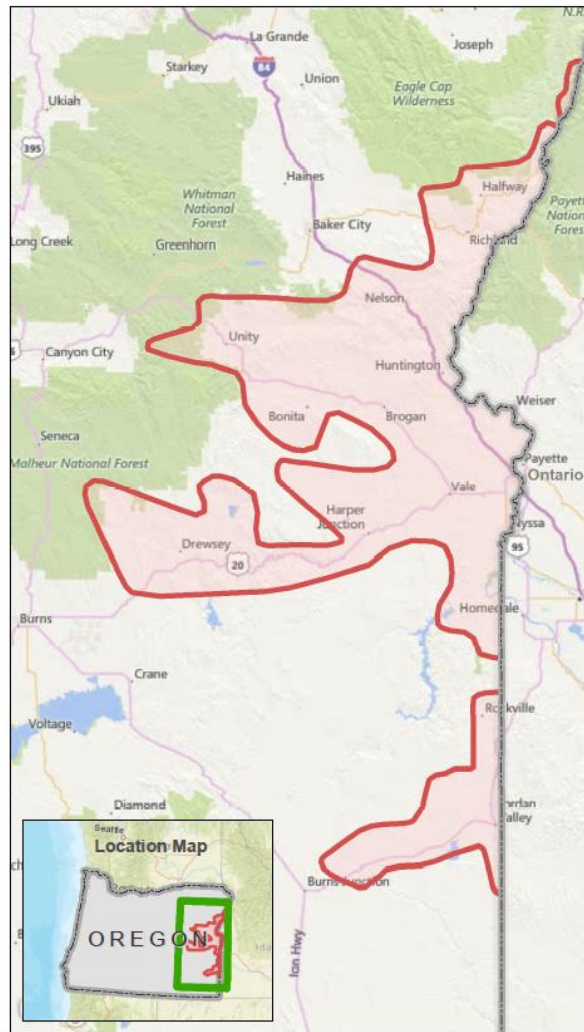
**Market Barrier: Driving Range**

Idaho Power's Oregon service territory is located in a remote portion of eastern Oregon. The distance between Ontario and Vale, two of the largest towns in the Company's Oregon service area, is 16 miles. The closest metropolitan statistical area is Boise, Idaho,<sup>2</sup> which is 56 miles east of Ontario, Oregon. The closest metropolitan statistical area within Oregon is Bend,<sup>3</sup> which is 260 miles west of Ontario. Below is a map of Idaho Power's service area in Oregon:

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<sup>2</sup> "July 2015 Office of Management and Budget Bulletin No. 15-01." *Census.gov*. U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau.

<sup>3</sup> "July 2015 Office of Management and Budget Bulletin No. 15-01." *Census.gov*. U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau.



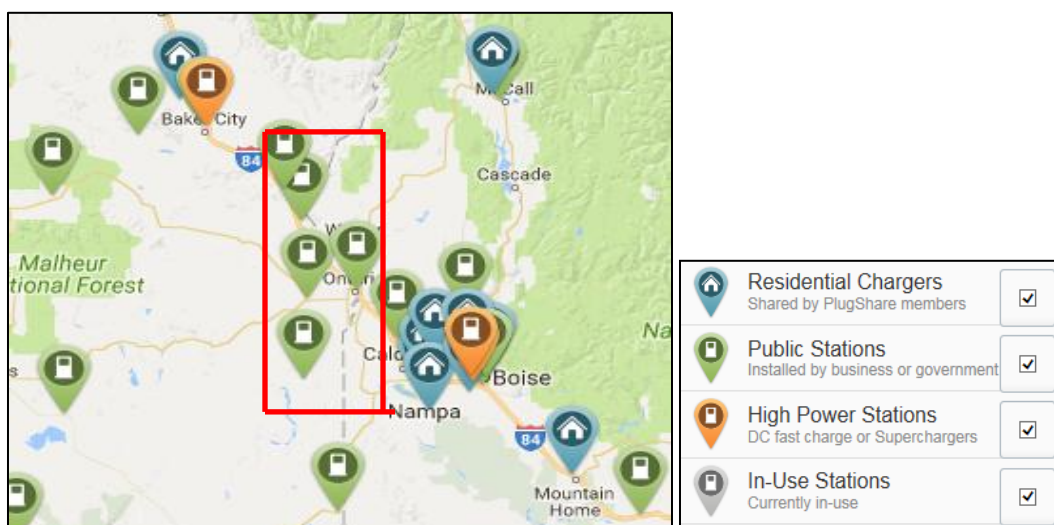
The rural nature of Idaho Power's Oregon service territory presents a challenge to the current range capabilities of midlevel EVs. In order to travel outside the rural area, or even between many of the towns within this area, customers would need a more expensive, longer-range EV, or access to public charging, which is limited, as discussed in the following section.

Recently, Idaho Power employees were presented with the challenge of transporting an EV from Boise, Idaho to Ontario, Oregon for the Company's EV Open House, which will be discussed in further detail later in this application. It was of particular importance to the Company to have an EV at the event to increase exposure to its Oregon customers. However, due to the distance between Idaho Power's headquarters in Boise, Idaho and the destination in Ontario, Oregon, the Company had to transport its EV to its Canyon Operations Center located halfway between Boise and Ontario, leave it overnight to charge, and then continue to Ontario the next day. This process was repeated for the trip back to Boise following the event. The multi-day process required to transport the EV the 56 miles between Boise and Ontario exemplifies the challenges regarding the

remote location of the Company's Oregon service territory and current EV range limitations.

#### Market Barrier: Public Charging

Public charging station availability is limited within Idaho Power's Oregon service area. Plugshare.com, a website that allows users to find and review charging stations, currently reports that five EV charging stations are located within the Company's Oregon service territory. Of those stations, one is exclusively for Tesla vehicles, three of the stations are RV hookups that are accessible to EVs with purchase of an RV space, and one of the stations consists of a standard exterior wall outlet at a hotel and is exclusively for hotel guests. Below is a map of charging station availability in Idaho Power's Oregon service area, provided by PlugShare.com:



#### Market Barrier: Dealership Availability

As mentioned on page 4 of the application, as of June 30, 2016, there were 14 EVs registered in counties that are partially or fully served by Idaho Power. A contributing factor to the absence of EV's in eastern Oregon is the lack of dealership availability. In August 2016, Idaho Power contacted the five car dealerships located within its Oregon service territory and two dealerships adjacent to its Oregon service territory to determine the availability of EVs. Of these dealerships, only one carries EVs, the Toyota Prius Plug-in Hybrid, but was not carrying any at the time. The other dealerships cited no plans to carry EVs due to the required investment for equipment and employee training. The closest dealership to Idaho Power's Oregon service area that sells EVs is located in Boise, Idaho, 56 miles from Ontario.



### Market Barrier: Price

Although the range and cost of EVs are improving as technology advances, the price of EVs remains a barrier to adoption. This barrier is amplified when considering the income levels of Idaho Power's Oregon customers. According to the United States Census Bureau,<sup>4</sup> the median household income for Ontario, Oregon is \$27,760, compared to \$50,323 for Boise, Idaho and \$55,003 for Portland, Oregon. Furthermore, in a report released in May 2015, the Oregon Department of Human Services<sup>5</sup> identified Malheur County, the county in which the majority of the Company's Oregon customers reside, as a "high poverty hotspot,"<sup>6</sup> or a geographic concentration of poor residents. The report states that Malheur County has three high poverty locations; two of which are located in and around Ontario and the other in Vale, Oregon.

Given the rural nature of the Company's Oregon service area and the range issues detailed above, it is unlikely that an EV could serve as a household's primary vehicle. This limitation in conjunction with the income levels of this area presents a significant barrier to EV adoption. Therefore, in developing its proposed TE Program as part of this docket, Idaho Power was mindful of these characteristics, particularly the financial impact that programs can have on its 18,772 Oregon customers.

As discussed later in Section IV of this application, Idaho Power has been promoting EVs for several years and has launched several projects and initiatives to accelerate the adoption of EVs. Due to Idaho Power's extensive experience with EV-related projects, the Company does not anticipate any implementation barriers with this Program.

Idaho Power's strategy to addressing the identified barriers is to provide EV education through public events and training. In doing so, Idaho Power hopes to reach multiple audiences and achieve greater levels of awareness and understanding of EV technology. EV education will include informing customers of advancing EV technology and the increased range capabilities of EVs. The Company will also continue to monitor and inform customers of federal and state incentives available for EV purchases. Idaho Power will also aim to help customers understand the cost savings of fueling and maintaining an EV versus a traditional gasoline engine vehicle. At this time, Idaho

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<sup>4</sup> Data derived from US Census Bureau American Fact Finder. Median Household Income in the past 12 months (in 2015 inflation-adjusted dollars). 2011-2015 American Community Survey 5-year estimates. Dataset ID: B1901. Analysis derived data for Ontario, and separate analyses derived the same data for the cities of Boise and Portland for comparison purposes.

<sup>5</sup> "High Poverty Hotspots – Malheur County" *Oregon.gov*. Oregon Department of Human Services Office of Forecasting, Research, & Analysis.

<sup>6</sup> Hotspot: The US Census Bureau's definition of a poverty area is a tract with a poverty rate of 20 percent or more. The Oregon Department of Human Services defines a high poverty hotspot as a census tract or contiguous group of tracts with poverty rates of 20 percent or more for two consecutive measurements. Poverty rates were measured in the Census Bureau's 2008-2012 American Community Survey and 2009-2013 American Community Survey.

Power believes that through education, it can best help tackle the barriers to EV adoption.

**Description of the electric company's role and, if applicable, a discussion of how the electric company proposes to own or support charging infrastructure, billing services, metering, or customer information OAR 860-087-0030 (1)(a)(G)**

Idaho Power's role in the Program is to increase the awareness of EVs and inform customers on their potential benefits through education and training. At this time, a discussion of how the Company proposes to own or support charging infrastructure, billing services, metering, and customer information is not applicable for the Company's Oregon service area. While the Company stands ready to serve as the primary source of EV information to interested stakeholders, the Company believes the components in this section are premature at this time given the current state of the eastern Oregon market.

**Whether transportation electrification adoption attributed to the program will likely necessitate distribution system upgrades (OAR 860-087-0030 (1)(a)(H))**

Not applicable. As the proposed program is an awareness and education program, it is not likely to necessitate distribution system upgrades in the near-term.

**Where applicable, a discussion of ownership structures (OAR 860-087-0030 (1)(a)(I))**

Not applicable.

**Where applicable, a discussion addressing interoperability of invested equipment (OAR 860-087-0030 (1)(a)(J))**

Not applicable.

**Where applicable, a discussion of any national standards for equipment and communication (OAR 860-087-0030 (1)(a)(K))**

Not applicable.

**Any other information requested by the Commission (OAR 860-087-0030 (1)(a)(L))**

Not applicable.

### **III. PROGRAM DATA (OAR 860-087-0030 (1)(b))**

#### **Data used to support the descriptions provided in paragraphs (1)(a)(A)-(L) of this rule (OAR 860-087-0030 (1)(b))**

Where available, supporting data for the Program has been provided above and is summarized in Appendix B.

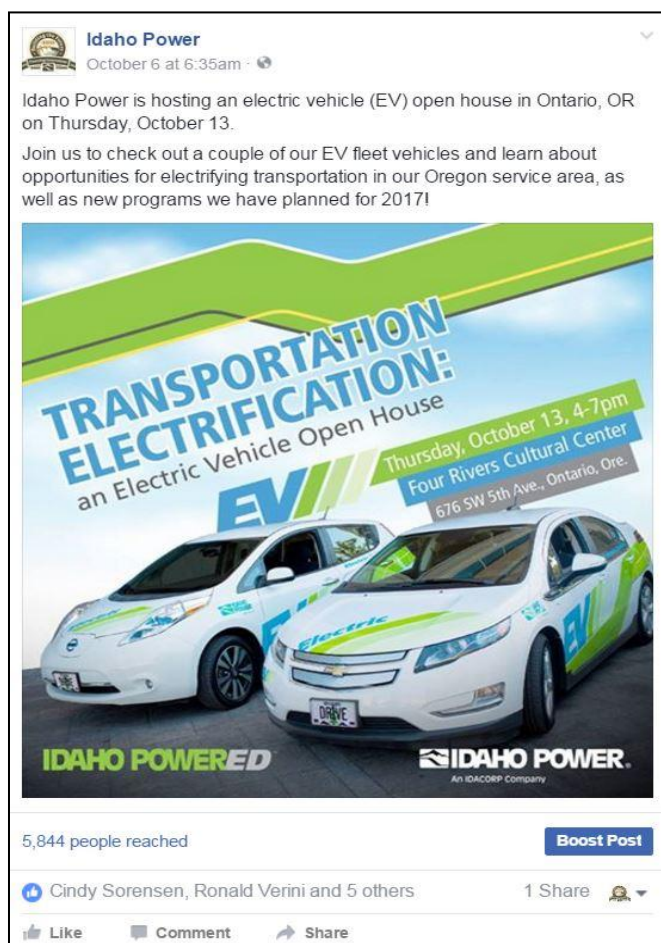
### **IV. PROGRAM COORDINATION (OAR 860-087-0030 (1)(c))**

#### **A description of stakeholder involvement (OAR 860-087-0030 (1)(c)(A))**

As part of OAR 860-087-0030 (1)(c)(A), Idaho Power is required to seek stakeholder involvement in TE program development. In an effort to attain maximum stakeholder input, Idaho Power held two workshops: a workshop in Ontario, Oregon, to provide local customers with the opportunity to provide input, and a workshop at the Company's corporate headquarters in Boise, Idaho. The Company held the Oregon workshop as an informal EV Open House to provide EV education and solicit feedback on proposed TE programs, with program presentation offered at two different times. Idaho Power also had one of its electric fleet vehicles on display at the EV Open House to provide customers with a hands-on EV experience. Both workshops were broadcast via telephone and WebEx with call-in information provided to all parties to Docket No. AR 599. Below are three photos from Idaho Power's EV Open House:



The Company held its EV Open House at the Four Rivers Cultural Center in Ontario, Oregon on October 13, 2016. Idaho Power's efforts to promote the EV Open House included advertisements in local newspapers, social media posts, and distribution of promotional flyers to the local community college, Ontario Chamber of Commerce, and large customers. A picture of a social media post and the promotional flyer promoting the EV Open House is included below. Unfortunately, Idaho Power's EV Open House attendance included one person from the public passing through to view the EV and no customer presence for the program presentations. A member from ChargePoint attended the event, while another member from ChargePoint and a member from the Oregon DEQ participated via WebEx.



Idaho Power's second workshop was held on October 26, 2016, at the Company's corporate headquarters in Boise, Idaho and was tailored for parties participating in Docket No. AR 599. The second workshop was attended by Commission Staff, with members from the Citizens Utility Board of Oregon, NW Energy Coalition, Greenlots, and CleanFuture participating via WebEx. At this workshop, the Company reviewed the presentations and feedback received from the EV Open House held in Ontario, Oregon. The workshop also included a more detailed discussion of the Company's TE strategy

and proposed TE program. Stakeholders provided meaningful feedback at both workshops and expressed support of Idaho Power's proposed Program.

**A description of efforts to coordinate with related state programs (OAR 860-087-0030 (1)(c)(B))**

Due to the educational nature and size of Idaho Power's Program, the Company is not coordinating with any related state programs at this time. In the future, if the EV market in Idaho Power's Oregon service area expands and warrants more charging infrastructure, the Company will coordinate with related state programs in developing proposed TE programs. One such state program may be Oregon's Clean Fuels Program,<sup>7</sup> which aims to reduce the average carbon intensity of Oregon's transportation fuels by 10 percent over a 10 year period. The Clean Fuels Program allows businesses that power vehicles with electricity an opportunity to generate and sell clean fuels credits. The Company is also following state efforts for both Oregon and Idaho around the Volkswagen settlement,<sup>8</sup> as well as, potential funding resulting from the National Alternative Fuels Corridors<sup>9</sup> designations submitted by the states of Oregon and Idaho under the Fixing America's Surface Transportation Act. Both states designated Interstate 84, which runs through Idaho Power's Oregon and Idaho service areas, in their plans. Idaho Power will consider these state programs in the development of future program proposals. However, given the educational nature of the Company's proposed Program, coordination with these related state programs does not currently apply.

**A description of coordination, if any, of delivery with other market actors and activities, and how the market and other market actors can leverage the underlying program or projects within the program (OAR 860-087-0030 (1)(c)(C))**

In an effort to coordinate with other market actors and leverage regional efforts to promote EVs, Idaho Power will coordinate with the Treasure Valley Clean Cities Coalition ("TVCCC"). Idaho Power is an active TVCCC stakeholder and participates in all regional meetings. Although headquartered in Idaho, the TVCCC is involved in promoting alternative fuels throughout the region, including eastern Oregon. Idaho

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<sup>7</sup> "Oregon Clean Fuels Program. 2016: Program Launch". *Oregon.gov*. State of Oregon Department of Environmental Quality.

<sup>8</sup> For violations of The Clean Air Act, Volkswagen is required to invest \$2 billion toward improving infrastructure, access and education to support and advance zero emission vehicles. \$1.2 billion will be directed toward a national EPA-approved investment plan and \$800 million will be directed toward a California-specific investment plan. <https://www.ftc.gov/news-events/press-releases/2016/06/volkswagen-spend-147-billion-settle-allegations-cheating>

<sup>9</sup> "National Alternative Fuels Corridors." *Energy.gov*. U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy.

Power will also leverage trainings developed or hosted by TVCCC and potentially bring the trainings to the Company's Oregon service area.

Idaho Power will continue to engage other stakeholders such as Drive Oregon, the Oregon Department of Transportation, PacifiCorp, and Portland General Electric throughout this Program, and in the development of other proposed programs, to develop and implement a coordinated and leveraged approach to promoting EV ownership.

## **V. IDAHO POWER'S LONG-TERM STRATEGY (OAR 860-087-0030 (1)(d))**

### **A description of the electric company's long-term strategy to accelerate transportation electrification in its service territory in an effective and efficient manner and how the proposed program fits within the long-term strategy. (OAR 860-087-0030 (1)(d))**

Idaho Power has been actively working to promote TE for several years. In Idaho Power's Annual Sustainability Report,<sup>10</sup> the Company has identified Sustainable Transportation Alternatives as one of its focus areas since 2014. Both the 2014 and 2015 sustainability reports specifically call for the support of sustainable transportation alternatives by designing and implementing an EV adoption strategy in Idaho Power's service area. See Appendix C and Appendix D for excerpts from Idaho Power's 2014 and 2015 Sustainability Reports, respectively. There are several overarching aspects to Idaho Power's long-term strategy to accelerating TE, including:

- Serving as a subject matter expert on EVs, charging equipment, and electrified industrial equipment
- Educating customers and other stakeholders on the benefits associated with EVs
- Hosting and participating in EV-related marketing and promotional activities
- Encouraging and educating businesses and others on the benefits of offering workplace charging
- Developing charging infrastructure in key locations
- Collaborating with other stakeholders such as state agencies, municipalities, non-profit organizations, dealerships, and others to develop and implement a coordinated and leveraged approach to promoting EV ownership and creating meaningful incentives to increase EV ownership

Idaho Power has launched several initiatives in support of its TE adoption strategy. For several years Idaho Power has been preparing for accelerated consumer adoption of EVs and how the Company could help customers better understand the technology. To get familiar with the emerging technology, Idaho Power added several passenger EVs

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<sup>10</sup> <https://www.idahopower.com/AboutUs/Sustainability/default.cfm>

to its fleet, as well as hybrid-electric bucket trucks, an all-electric Genie Lift, two all-electric forklifts, and battery-assisted trucks. Below are pictures of two of Idaho Power's all-electric fleet vehicles:



The Company also installed several charging stations of varying make and model at its regional offices to allow for charging of fleet vehicles, as well as, employee workplace charging. The Company's workplace installations provide valuable hands-on experience with multiple types of EV charging equipment. In addition to the regional office charging stations, the Company has installed a charging station showcase at its headquarters in Boise, Idaho to allow residents and businesses to learn about charging technology and available options. The showcase currently includes five types of EV charging stations.

In September 2016, Idaho Power hosted a National Drive Electric Week event at its Boise, Idaho headquarters. The event was co-sponsored by the Idaho Sierra Club and TVCCC. With the support of local EV owners and dealers, 52 EVs, 15 electric bikes and a solar go-kart were on site for the nearly 300 visitors to view and learn about. Visitors were encouraged to roam from car to car and talk to EV owners about their EVs. Idaho Power employees fielded questions about EV charging, electric fleet vehicles and the benefits of EVs. Below is a picture from Idaho Power's National Drive Electric Week event:



Idaho Power has also positioned itself to be a reference for customers interested in EVs and EV charging equipment. The Company has a website<sup>11</sup> specifically dedicated to EVs, including information on the technology, benefits, fuel economy, charging, and incentives available to customers. The Company also has an email address, [ev@idahopower.com](mailto:ev@idahopower.com), providing customers a reference point to ask questions and/or request additional marketing information on EVs.

In addition, Idaho Power initiated a Workplace Charging Station Incentive program in April 2016. Idaho Power launched the program in recognition that the second most useful location for EV charging is at work. Charging at work or in public places can help EV drivers nearly double their all-electric daily commuting range.<sup>12</sup> It also provides a charging location for employees and customers who may not have access to home charging.

Idaho Power's Workplace Charging Station Incentive program allows business customers to apply for incentives to offset the costs of installing charging stations for their employees, fleet vehicles or customers. Participants in this program applied for incentives of up to 50 percent of the project costs for installing one or more EV charging stations, up to a maximum of \$7,500 per company or municipality, per site. The incentives were available to all Idaho Power business customers, both in Idaho and Oregon. As of December 12, 2016, nine Idaho businesses had taken advantage of the incentive; no Oregon businesses had yet applied. The incentives were funded by Idaho

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<sup>11</sup> <https://www.idahopower.com/AboutUs/Sustainability/Stewardship/ElectricVehicles/ElectricVehicles.cfm>

<sup>12</sup> "Workplace Charging Challenge: Join the Challenge." *Energy.gov*. U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy.



Power shareholders. Information of Idaho Power's Workplace Charging Station Incentive Program is provided in Appendix E. Below is a picture of Idaho Power President and Chief Executive Officer, Darrel Anderson, presenting an Idaho Power Workplace Charging Station Incentive check to Dennis Johnson, President and Chief Executive Officer of United Heritage Insurance.



As discussed above, Idaho Power is actively working to support TE and has explored several projects and initiatives to accelerate TE. While Idaho Power has been promoting TE in both its Idaho and Oregon service areas, participation and interest in the company's Oregon service area is low, which is likely due to the current state of the TE market and market barriers as discussed above. Idaho Power's proposed Program is an integral part of the Company's long-term strategy as increasing awareness and providing education is the first step to addressing barriers to adoption and ultimately accelerating EV adoption.

**A discussion of the current condition of the transportation electrification market in the electric company's service territory and the outlook for development of the market in the absence of the proposed program (OAR 860-087-0030 (1)(d)(A))**

TE, and specifically EV technology, is essentially nonexistent in the region of eastern Oregon, and as such there is a general lack of awareness, interest and acceptance. Attendance at the Company's EV Open House, as well as research on the state of the market and market barriers, illustrate the distinct position in which the Company finds itself. Due to Oregon customers' limited exposure to TE, limited accessibility to EVs

and EV charging infrastructure, income levels, and the remote location of the Oregon service area, the Company expects that the adoption of TE will take longer than that of urban areas. Idaho Power's proposed Program is intended to increase EV awareness and spur EV adoption, and the development of the market. . In the absence of the proposed Program, the Company believes the EV market in eastern Oregon would remain minimal. As discussed below, the Company's Program is intended to improve awareness and interest, which is the first step in accelerating the adoption of TE.

**The strategy discussion shall include a discussion of the near and long-term market barriers to the development of transportation electrification and how the electric company proposes to specifically address those barriers (OAR 860-087-0030 (1)(d)(B))**

As discussed in detail on pages 5 through 8 of this application, market barriers to the development of TE, and specifically EVs, in Idaho Power's Oregon service area include driving range, access to public charging, dealership availability, and price.

The current range capabilities of midlevel EVs make it difficult to travel outside, and even within, the rural area of eastern Oregon. Traveling in an EV is made even more difficult for Idaho Power's Oregon customers given the limited number of EV charging stations in the area. Another barrier to development of the EV market is the lack of dealership availability. As of August 2016, no dealerships located within Idaho Power's Oregon service area carried EVs. Lastly, the price of EVs is a barrier to adoption due to the median household income levels and concentration of poor residents within Idaho Power's Oregon service area.

Idaho Power's long-term strategy to accelerating TE in its Oregon service area is primarily focused on education. The Company believes that education will be the primary focus for the next several years, especially within the Company's Oregon service area, as this is a logical first step in accelerating TE adoption. Because the path to EV adoption is expected to take years, the Company believes that education and awareness are the most efficient and effective channels through which to focus its efforts. Therefore, in support of Idaho Power's long-term TE initiatives, the Company is proposing the EV Awareness & Education Program to spur the adoption and acceleration of TE. This Program is intended to generate interest and awareness in order to address the barriers surrounding customer perception of driving range, cost, and vehicle capabilities. Additionally, improved consumer interest as a result of improved awareness and understanding is intended to improve customer demand in the area, which in turn would provide greater motivation for local dealers to offer EV options. As mentioned previously, the Company's Program is intended to address market barriers by building a solid foundation of understanding and awareness upon which future efforts may be built.

**A discussion of the near and long-term opportunities for improving the operation and reliability of the electric company's power system through transportation electrification and how the electric company proposes to specifically take advantage of those opportunities (OAR 860-087-0030 (1)(d)(C))**

It is premature to address the opportunities to improve power system operation and reliability (OAR 860-087-0030 (1)(d)(C)) until greater adoption is achieved. While the Company believes education and awareness is an important first step, it expects that discussion of operational and reliability impacts will not occur for several years until the TE market in eastern Oregon has further developed.

**Other factors pertinent to the electric company's plans for transportation electrification (OAR 860-087-0030 (1)(d)(D))**

Not applicable.

**VI. PROGRAM COSTS (OAR 860-087-0030 (1)(e))**

**Estimate total program costs, including incentives, program delivery, evaluation, marketing, and administration costs (OAR 860-087-0030 (1)(e)(A))**

Idaho Power estimates that total program costs including delivery, marketing, administration and evaluation will be \$8,000 per year. The Company proposes to cap annual spending on the Program at this amount. The estimated program costs are provided in the table below.

<b>Category</b>	<b>Cost</b>	<b>Activities Funded</b>
Events & Training	\$5,000	Two community events & one training event per year, includes participation fees
Marketing	\$2,000	Advertising – online & print
Administration	\$500	Travel
Evaluation/Research	\$500	Focus Groups, Surveys

The Company anticipates that the Program will require approximately 160 hours annually for management and project oversight. However, the Company has not included labor expense in the cost assumptions for the Program, as the Company expects to rely on its existing workforce to serve the administrative function for this Program. Idaho Power proposes to track all spending related to the Program in accordance with OAR 860-087-0040 (1)(c).

**Estimated participant costs (OAR 860-087-0030 (1)(e)(B))**

As mentioned on page 5 of this application, there are no participant costs for the Program.

**How the electric company proposes to recover costs (OAR 860-087-0030 (1)(e)(C))**

The Company is not seeking cost recovery for the Program at this time. Rather, the Company intends to expense all costs associated with the Program, and may seek cost recovery in a future rate case by including Program costs in test year expenses.

**Any other information requested by the Commission (OAR 860-087-0030 (1)(e)(D))**

Not applicable.

**VII. PROGRAM BENEFITS (OAR 860-0870030 (1)(f))**

**A description of the expected program benefits, including to whom and when benefits are accrued (OAR 860-087-0030 (1)(f)(A))**

There are intangible benefits directly related to the Program including increased consumer awareness for Program participants and continuing education credits for EV training participants. Also, the Program has the potential to stimulate consumer demand for EVs and increase EV adoption, and there are many direct benefits to customers through EV ownership. Although new EVs have a higher upfront cost than traditional gasoline engine vehicles, all-electric and plug-in hybrid cars are eligible for a federal income tax credit of up to \$7,500, aligning the cost with traditional gasoline engine vehicles.

EV owners are also likely to see net benefits in the form of lower fueling, operation, and maintenance costs. According to the U.S. Department of Energy, the current e-Gallon in Oregon is \$0.99, compared to \$2.48 per gallon for regular gasoline. Also, maintenance costs for an EV are approximately 35 percent less than a standard vehicle, according to plugincars.com.<sup>13</sup> Lastly, EVs have lower emissions than traditional vehicles. According to the U.S. Environmental Protection Agency,<sup>14</sup> the average gasoline vehicle emits 358 grams of CO<sub>2</sub> per mile. An all-electric vehicle would not have any CO<sub>2</sub> emissions.

**Electrical system benefits (OAR 860-087-0030 (1)(f)(B))**

As the proposed program is an awareness and education program, and given the current state of the EV market in Idaho Power's Oregon service area, the program is not

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<sup>13</sup> <http://www.plugincars.com/eight-factors-determining-total-cost-ownership-electric-car-127528.html>

<sup>14</sup> Average gasoline emissions is based on model year 2015 personal vehicles, including passenger cars, sport utility vehicles, minivans, and all but the largest pickup trucks and vans. Data is derived from the US Environmental Protection Agency's Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 through 2016 Report.

expected to provide near-term electrical system benefits. In the long-term, as EV adoption continues to increase, Idaho Power expects to educate customers on efficient vehicle charging patterns, such as charging during off-peak times, and the opportunities to maximize benefits to the electrical system. Future programs will be developed alongside the development of the TE market in eastern Oregon and will be tailored to meet the needs of the Company's customers at that time.

**A discussion of how a net benefit to ratepayers is attainable (OAR 860-087-0030 (1)(f)(C))**

As the proposed program is an awareness and education program, immediate financial benefits to customers are not quantifiable. Idaho Power will attempt to estimate the benefits credited to this Program through its annual Program evaluation process. The Company will attempt to determine if a net benefit to ratepayers is attainable, which will play a role in determining if Program continuation is warranted following the initial three-year period.

**VIII. PROGRAM EVALUATION (OAR 860-087-0030 (1)(g))**

**Timeline of program evaluation and proposed evaluation reporting schedule (OAR 860-087-0030 (1)(g)(A))**

Idaho Power will evaluate the Program annually, with the first evaluation occurring after the close of the calendar year in which the Commission approves the Program. The Program evaluation report will address all reporting requirements specified in ORS 860-087-0040(1).

**Estimated cost of evaluation (OAR 860-087-0030 (1)(g)(B))**

As presented on page 18 of this application, Idaho Power estimates that Program evaluation will cost \$500 annually, primarily for printing costs and focus group costs.

**How the evaluation will be conducted and whether third-party evaluation is necessary (OAR 860-087-0030 (1)(g)(C))**

Due to the cost of third-party evaluations for an education program of this size, Idaho Power will conduct Program evaluations internally using low cost methods.

**How the evaluation will address identified barriers (OAR 860-087-0030 (1)(g)(D))**

During the three-year Program period, Idaho Power expects to evaluate Program impact on market barriers as well as trends in the data to help quantify the pace and extent of EV adoption in its service area. Specifically, evaluation efforts will attempt to determine if and how the Program impacted EV awareness, the number of EVs, and

the availability of EVs and EV charging stations within Idaho Power’s Oregon service area. Data used for this evaluation is detailed in the following section.

**A discussion of the method of data collection that is consistent with subsection (1)(b) of this rule and how the data will be used to evaluate the effectiveness of the program (OAR 860-087-0030 (1)(g)(E))**

Idaho Power proposes to use a combination of existing data sources and internal survey instruments to measure program impact. Program impacts and evaluation sources to be used are provided in the table below.

<b>Program Impact</b>	<b>Evaluation Sources</b>
Number of Customers Reached	<ul style="list-style-type: none"> <li>• Attendees at events</li> <li>• Social media click-through rates</li> <li>• Attendees at trainings</li> </ul>
Awareness Achieved	<ul style="list-style-type: none"> <li>• Empowered Community Online Panel</li> <li>• Company-facilitated focus groups</li> <li>• Surveys</li> </ul>
Number of EVs	<ul style="list-style-type: none"> <li>• Data from the Oregon DEQ</li> </ul>
Availability of EVs	<ul style="list-style-type: none"> <li>• Dealership contact</li> </ul>
Number of Public Charging Stations	<ul style="list-style-type: none"> <li>• Plugshare.com</li> </ul>

Idaho Power will conduct Program evaluations using low cost methods which may include the Company’s online customer survey panel, focus groups and in person surveys at events. In addition, the Company’s internal Program administrator will collect data from publically available sources such as PlugShare.com and the Oregon DEQ.

**Any other evaluative information requested by the Commission (OAR 860-087-0030 (1)(g)(F))**

Not applicable.

**IX. A DESCRIPTION OF HOW THE PROGRAM ADDRESSES THE CONSIDERATIONS IN OREGON LAWS 2016, CHAPTER 028, SECTION 20(4)(a)-(f) (ORS 860-087-0030(1)(h))**

OAR 860-087-0030 (1)(h) requires the Company to address whether investments and other expenditures related to the Company’s proposed TE program meet the following criteria identified in Oregon Laws 2016, Chapter 028, Section 20(4)(a)-(f):

- Are within the service territory of the electric company;
- Are prudent as determined by the Commission;
- Are reasonably expected to be used and useful as determined by the Commission;

- Are reasonably expected to enable the electric company to support the electric company's electrical system;
- Are reasonably expected to improve the electric company's electrical system efficiency and operational flexibility, including the ability of the electric company to integrate variable generating resources; and
- Are reasonably expected to stimulate innovation, competition and customer choice in electric vehicle charging and related infrastructure and services.

**Oregon Laws 2016, Chapter 028, Section 20(4)(a)**

The proposed Program is designed to provide EV education and awareness for Idaho Power's Oregon customers in Malheur, Baker and Harney counties. In addition to online resources, the Company will specifically engage its Oregon customers by showcasing Company EVs at community events and hosting EV training(s) within its Oregon service area.

**Oregon Laws 2016, Chapter 028, Section 20(4)(b)**

SB 1547 requires the Company to file an application for program(s) to accelerate TE. Idaho Power believes that its EV education and awareness program is a prudent first step towards accelerating TE and achieving the objectives established by the Legislative Assembly in SB 1547.

**Oregon Laws 2016, Chapter 028, Section 20(4)(c)**

As mentioned previously, EV technology is essentially nonexistent in Idaho Power's Oregon service area, and as such there is a general lack of awareness, interest and acceptance. Idaho Power's proposed Program will provide useful, comprehensive education and training that is designed to be accessible to and used by all types of customers.

**Oregon Laws 2016, Chapter 028, Section 20(4)(d)**

The Program is not likely to have a material effect on the Company's electrical system in the near-term, as discussed on pages 19-20 of this application. In the long-term, as EV adoption continues to increase, Idaho Power will educate customers on efficient vehicle charging patterns, such as charging during off-peak times, in an attempt to maximize benefits to the electrical system.

**Oregon Laws 2016, Chapter 028, Section 20(4)(e)**

The Program is not likely to have a material effect on the Company's electrical system efficiencies and operational flexibility, including the ability to integrate variable generating resources in the near-term.

**Oregon Laws 2016, Chapter 028, Section 20(4)(f)**

As the proposed Program emphasizes awareness and education, it is unlikely that it will have an impact on innovation, competition, and customer choice in the near-term. Perhaps in the long-term, the Program may have an indirect impact on these elements through increased consumer demand for EVs and charging equipment. Idaho Power will be attentive to these components in future program proposals when the EV market in its Oregon service area has expanded and warrants more infrastructure.

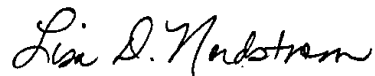
**X. CONCLUSION & REQUEST FOR ACKNOWLEDGEMENT**

Lack of awareness of EVs in Idaho Power's service area has been a common theme throughout the AR 599 Rulemaking process, Idaho Power's EV Open House, and Company surveys. Through the proposed Program, Idaho Power intends to improve visibility and awareness of EVs in its Oregon service area through targeted education, including showcasing EVs at local events, providing resources to customers interested in learning more about EVs and offering EV training to trade allies. The Company believes the Program is an essential first step to gaining customer understanding of the costs and benefits of EVs. The Company also believes that greater understanding of EVs will eventually lead to increased adoption and acceleration of TE.

Idaho Power respectfully requests that the Commission issue an order authorizing the Company to implement the Program and finding that the Program meets the requirements of Oregon Laws 2016, Chapter 028, Sections 20, 29 (SB1547) and OAR 860-087-0030.

Dated this 30<sup>th</sup> day of December 2016.

Idaho Power Company



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Lisa D. Nordstrom  
Attorney for Idaho Power Company



**IDAHO POWER COMPANY**

**ELECTRIC VEHICLE AWARENESS  
& EDUCATION PROGRAM**

**Appendix A**  
**EV Quick Facts Brochure**

# IDAHO POWERED™

Fluctuating gas prices, advancements in battery technology, environmental concerns and federal incentives have all led to an increased interest in electric vehicles (EVs). As your electricity provider, Idaho Power is preparing for accelerated consumer adoption of EVs and wants to help our customers better understand the technology.

## Idaho Power's leading the way:

To get familiar with the technology, Idaho Power has added several passenger EVs to our fleet, as well as hybrid-electric bucket trucks, electric utility vehicles and battery-assisted trucks. We also installed five charging stations of varying make and model at our Downtown Boise office, specifically for employee workplace charging. We will continue to monitor advancements in EV and charging station technology to make sure our customers have the information they need.

Email [ev@idahopower.com](mailto:ev@idahopower.com) for information.

# Electric Vehicles 101



## What is an EV?

EVs run off an electric motor and a battery pack. They're powered entirely by electricity and have zero tailpipe emissions. Also referred to as Battery Electric Vehicles (BEVs) or Plug-in Electric Vehicles (PEVs), EVs are charged by plugging into a charging station. **Example: Nissan Leaf.**

Plug-In Hybrid Electric Vehicles (PHEVs) are hybrids with larger battery packs and an Internal Combustion Engine. PHEVs can be plugged into a charging station to recharge their battery pack(s) or run off gasoline. **Example: Chevy Volt.**

Thinking about adding an

## EV TO YOUR FLEET?

Come see ours in **ACTION!**



Learn more at  
[idahopower.com/ev](http://idahopower.com/ev)



P.O. Box 70  
1221 W. Idaho St.  
Boise, ID 83702  
[www.idahopower.com](http://www.idahopower.com)

CID#53695/04-16 © 2016 Idaho Power



Nissan Leaf

Chevy Volt

## What are the benefits of owning an EV?

**Fuel savings:** Electricity as a fuel is significantly cheaper than gasoline or diesel.

**Better air quality:** EVs are zero-emissions vehicles, which improves air quality.

**Local fuel:** More than half of Idaho Power's energy is generated in our service area, meaning your fuel dollars stay at home.

**Less maintenance:** EVs have far fewer moving parts to be maintained than traditional vehicles.

**Performance:** Unlike traditional engines, EVs are always "on," meaning instant acceleration.

## What about Idaho Power's Time of Day plan?

We're encouraging EV owners to consider our Time of Day pricing plan instead of the Standard plan. The Time of Day plan has lower prices weekdays after 9 pm and all day on weekends and holidays. This option could save you money and, by charging during off hours, you'll help even out demand on the power grid. For more information, visit [idahopower.com/TOD](http://idahopower.com/TOD).

The first step to determining which plan is right for you is to register to use myAccount. Signing up is easy and you'll get access to detailed information about your account and energy use. To enroll, go to [idahopower.com/register](http://idahopower.com/register).

## I'm interested – how do I charge it?

EVs are powered all or in part by electricity. The time it takes for a full charge depends on the type of vehicle, temperature, driving habits and the type of charging station, among other factors.

### There are three options for charging:

#### Level 1 – 120V, dedicated 15-20A circuit.

Used both at home and work, Level 1 charging draws a lower electrical demand but takes longer to charge a car than the other options.

#### Level 2 – 240V, dedicated 30-40A circuit.

Typically found at businesses and public sites, these units are also available for home use. This type of unit will recharge an EV much faster than Level 1, allowing multiple users throughout the day.

#### DC Fast Charging – 480V.

These units are typically found at public facilities. Note that not all EVs are equipped for fast charging.



3 kWh = 10 mi

## How much energy does it take to charge an EV?

It takes about 0.3 kilowatt hours (kWh) to go one mile in an EV. So for example, a 10-mile commute to work would require 3 kWh of electricity.

DOE's eGallon calculator provides up-to-date gasoline vs. electricity prices at: [www.energy.gov/maps/egallon](http://www.energy.gov/maps/egallon).

## I'm Ready to Buy – What's Next?

- 1 Choose the vehicle that best suits your driving needs.
- 2 Decide which charging method is right for you.
- 3 Have a licensed electrician inspect your service panel to ensure your home is ready for EV charging.
- 4 Examine your energy use and how charging will affect it, and choose which pricing plan is right for you.



The Alternative Fuel Infrastructure Tax Credit has been extended through 2016. For details visit [www.afdc.energy.gov/laws/10513](http://www.afdc.energy.gov/laws/10513)

Visit [www.PlugShare.com](http://www.PlugShare.com) to find public charging locations in your area.

Idaho Power recommends using a licensed electrician for any home or workplace electrical work.

**IDAHO POWER COMPANY**

**ELECTRIC VEHICLE AWARENESS  
& EDUCATION PROGRAM**

**Appendix B**  
**Supporting Data for Proposed Program**  
**OAR 860-087-0030(1)(b)**

## Appendix B

### Data used to support the descriptions provided in paragraphs (1)(a)(A)-(L) of this rule (OAR 860-087-0030 (1)(b))

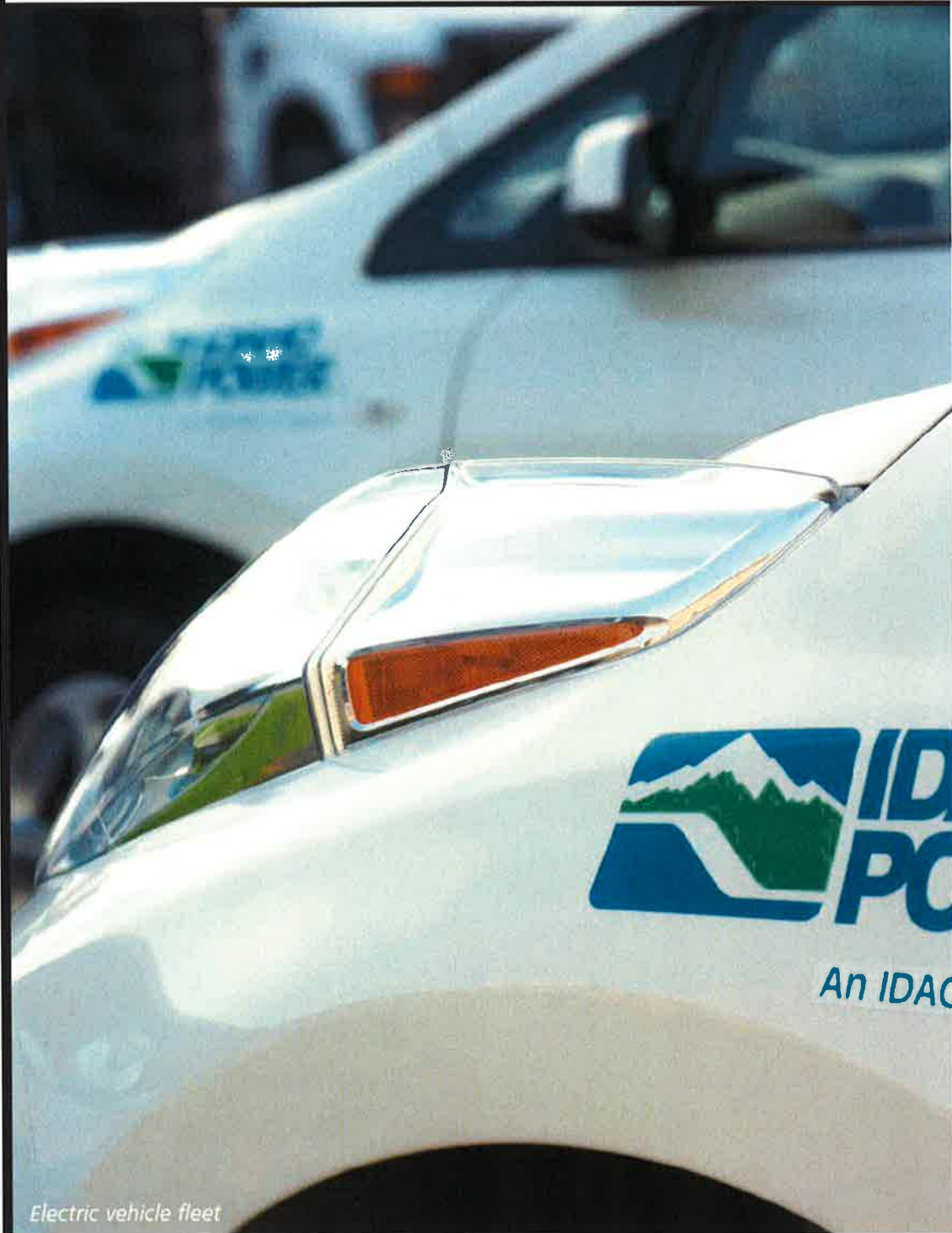
Data used to support the Program application and the applicable pages in which that data appears is provided below:

Page 2	Portland General Electric, EV workshop, August 2, 2016
Page 6	Idaho Power's Empowered Community, EV survey, August, 2016. The Empowered Community is an online survey group facilitated by Idaho Power, consisting of Idaho and Oregon customers in various rate classes.
Page 6	Oregon Department of Environmental Quality, EV registration data, June 30, 2016
Page 8	U.S. Census Bureau, Metropolitan Statistical Area data, July, 2015. "July 2015 Office of Management and Budget Bulletin No. 15-01." <i>Census.gov</i> . U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau
Page 9	Plugshare.com, Charging Station data, December 2016
Page 11	U.S. Census Bureau, Median Household Income, 2015, Data derived from US Census Bureau American Fact Finder. Median Household Income in the past 12 months (in 2015 inflation-adjusted dollars). 2011-2015 American Community Survey 5-year estimates. Dataset ID: B1901. Analysis derived data for Ontario, and separate analyses derived the same data for the cities of Boise and Portland for comparison purposes.
Page 11	<p>Oregon Department of Human Services, Poverty rate data, May 2015, "High Poverty Hotspots – Malheur County" <i>Oregon.gov</i>. Oregon Department of Human Services Office of Forecasting, Research, &amp; Analysis</p> <p>The US Census Bureau's definition of a poverty area is a tract with a poverty rate of 20 percent or more. The Oregon Department of Human Services defines a high poverty hotspot as a census tract or contiguous group of tracts with poverty rates of 20 percent or more for two consecutive measurements. Poverty rates were measured in the Census Bureau's 2008-2012 American Community Survey and 2009-2013 American Community Survey.</p>

**IDAHO POWER COMPANY**

**ELECTRIC VEHICLE AWARENESS  
& EDUCATION PROGRAM**

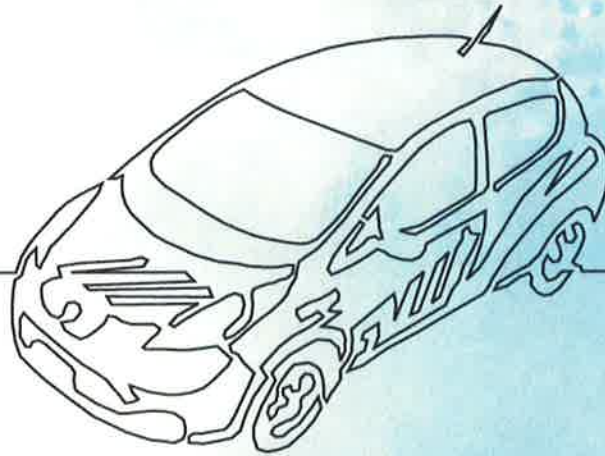
**Appendix C**  
**2014 Sustainability Report Excerpt**



Electric vehicle fleet



**Idaho Power** ~ Our new Nissan Leaf fleet cars: zero emissions and fueled by 100% Idaho power :)



## SUSTAINABILITY PROJECTS

In 2014 – and what’s now an annual tradition at Idaho Power – our employees were asked to submit ideas for projects that promote sound and enduring financial, environmental and social stewardship throughout the company. The following are just two examples of projects that were funded and implemented in 2014:

### **Electric Vehicles for Treasure Valley Employees**

Two Nissan Leafs were purchased for use by employees traveling between our Treasure Valley properties. The vehicles yield substantial fuel savings, require little maintenance, divert emissions from the Treasure Valley airshed, and promote EV adoption and awareness. To ensure the vehicles remain properly “fueled,” five charging stations were installed throughout the Boise-area properties.

### **Data Center HVAC Upgrades**

Installing dry-cooler fan variable-frequency drives at our company’s data centers will result in substantial energy savings. This measure alone is estimated to yield savings of approximately 240,000 kWh per year. Further, we incorporated computer room “occupancy programming” into the Building Management System at our Boise Campus West facility. This allows one air-conditioning unit to be idled when the system detects the room is unoccupied, bringing an additional annual energy savings of over 33,000 kWh.





*Nissan Leaf fleet vehicles*



*Senior Safety Professional Joe Passalacqua leads a tower-rescue training exercise*

### **Environmental Stewardship**

- As we address relevant river- and watershed-related environmental issues, advocate for implementing cost-effective, sustainable solutions to preserve the long-term health of the Snake River and Eastern Snake River Plain Aquifer.
- Work to sustain current Snake River flows while pursuing cost-effective opportunities to increase flows and maximize hydro-electric generation.
- Enhance employee awareness and support for conserving resources and promoting efficiency in company facilities and processes.
- Support sustainable transportation alternatives by committing 5 percent of Idaho Power's annual fleet budget for purchasing electric vehicles (EVs), and by designing and implementing an EV adoption strategy in our service territory.

### **Engaged, Empowered Workforce**

- Consistent with our critical success factors and existing corporate objectives, enhance our efforts to maintain an effective and motivated workforce.
- Continually strive to improve our culture and core value of safety by integrating four vital behaviors throughout our organization: Focus, Assess, Make the Safe Choice, and Speak Up. Additionally, we will continue our work to further reduce the frequency and severity of workplace injuries, and outperform industry averages.
- Recognize and report on employee-driven initiatives in the annual Sustainability Report.

### **Strong Community Partnerships**

- Leverage all available media channels to strengthen community relationships, and promote company initiatives and endeavors.
- Explore methods of enhancing our company's role in the economic development of the communities we serve.
- Engage and inform the public in general safety-related issues pertinent to our communities and our region.

**IDAHO POWER COMPANY**

**ELECTRIC VEHICLE AWARENESS  
& EDUCATION PROGRAM**

**Appendix D**  
**2015 Sustainability Report Excerpt**

## Environmental Stewardship

Address relevant river- and watershed-related environmental issues and advocate for implementing cost-effective, sustainable solutions to preserve the long-term health of the Snake River and Eastern Snake River Plain Aquifer.

### **PROGRESS:** On Track and Ongoing

In Dec. 2015, the company filed a "complete" Hells Canyon 401 water quality application with the states of Idaho and Oregon. In that application we proposed a landscape-scale river restoration program to address impacts to water quality downstream of our projects.

Work to sustain current Snake River flows while pursuing cost-effective opportunities to increase flows and maximize hydroelectric generation.

### **PROGRESS:** On Track and Ongoing

In 2015, the company expanded its cloud seeding efforts to promote greater snowfall from winter storm clouds.

Additionally, multi-year upgrades to the Brownlee hydroelectric generation plant were launched in 2015 to promote enhanced equipment reliability, environmental improvements and operating efficiencies.

Enhance employee awareness and support for conserving resources and promoting efficiency in company facilities and processes.

### **PROGRESS:** On Track and Ongoing

Once again, multiple sustainability projects — suggested by employees to enhance operations, reduce waste, promote safety, etc. — were investigated and implemented. Projects included installation of occupancy sensors at company facilities, purchase of bicycle repair stations for installation at company office buildings and campground parks, and installation of idle reduction monitors in company vehicles.

Support sustainable transportation alternatives by committing five percent of Idaho Power's annual fleet budget for purchasing EVs and by designing and implementing an EV adoption strategy in our service territory.

### **PROGRESS:** On Track and Ongoing

In 2015, the company purchased an all-electric Genie Lift and two all-electric forklifts, and ordered three hybrids trucks. We also purchased two plug-in hybrid EV Chevy Volts for use in Twin Falls and Pocatello and 11 EV charging stations for use by employees participating in the company's EV workplace charging station program, which kicked off on Dec. 21, 2015.

Additionally, 2015 marked the second year Idaho Power has provided company-funded bus passes enabling all employees to use the Treasure Valley bus system.

# applicABILITY

## What's Old Is New Again: **Electric Vehicles**

While EVs have been making bigger waves in the last few years, EVs are not a modern invention. In fact, they've been around longer than Idaho Power. At the turn of the 20th century, one-third of all vehicles on the road were electric, especially in urban areas. Compared to gas-powered vehicles, the first EVs were quieter, easier to drive, and didn't emit foul-smelling pollutants.

Now, in addition to the benefits of the first generations of EVs, EV owners enjoy a much lower cost of "fuel." According to DOE, it costs about half as much to fuel an EV compared to a conventional engine. Here in Idaho, that number can fall to about one-third the cost.

In 2015, in order to demonstrate to our communities that Idaho Power is committed to the future of EVs and hybrid-electric vehicles, we increased our number of EV charging stations throughout the service area and established a pilot workplace charging program for employees who drive plug-in electric vehicles (PEVs).

"One of the goals of the program is to establish the company as the go-to organization for starting up workplace charging programs and to provide information on the benefits of PEVs," Operations Strategy Director Karl Bokenkamp said. "PEVs are a new and growing segment of the transportation sector. Supplying electricity to 'fuel' this market creates significant and positive opportunities for Idaho Power to engage with and provide value to customers."

Tracking the usage data will enable Idaho Power to share charging data with other employers as they consider adding workplace charging stations.

"Idaho Power is leading the way by encouraging our employees to drive their PEVs to work and by helping other employers to decide if charging stations will work for them," said Engineering Project Leader and PEV owner Kent McCarthy. "Who better to test it and be the experts than a power company?"

In addition to the increase of PEV charging stations, Idaho Power also incorporated new PEVs to our fleet, bringing our total to seven passenger car PEVs (four Nissan Leafs and three Chevrolet Volts) and six plug-in or hybrid bucket trucks, with 15 more on order for 2016.

Whether it's encouraging our employees to demonstrate how easy it is to own and operate an EV, or reminding our customers that EVs are just as big a part of our past as they are our future, Idaho Power is well positioned to be the go-to experts for EV growth throughout our service area.



Nissan LEAF

Chevy VOLT

IDAHO POWERED™

2015 US EV  
sales

114,706

Data from Electric Drive Association



22

**IDAHO POWER COMPANY**

**ELECTRIC VEHICLE AWARENESS  
& EDUCATION PROGRAM**

**Appendix E**  
**EV Workplace Charging Brochure**

Fluctuating gas prices, advancements in battery technology, environmental concerns and federal incentives have all led to an increased interest in electric vehicles (EVs). As your electricity provider, Idaho Power is preparing for accelerated consumer adoption of EVs and wants to help our customers better understand the technology.

### What is an EV?

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Email [ev@idahopower.com](mailto:ev@idahopower.com) for information.

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**CHARGING STATIONS**  
in **ACTION?**  
*Schedule a visit.*



Learn more at  
[idahopower.com/ev](http://idahopower.com/ev)

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Boise, ID 83702  
[www.idahopower.com](http://www.idahopower.com)

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An IDACORP Company

# EV WORKPLACE Charging





## Charging an EV

EVs are powered all or in part by electricity. The time it takes for a full charge depends on the type of vehicle, temperature, driving habits and the type of charging station, among other factors.

### There are three options for charging:

#### Level 1 – 120V, dedicated 15-20A circuit.

Used both at home and work, Level 1 charging draws a lower electrical demand but takes longer to charge a car than the other options.

#### Level 2 – 240V, dedicated 30-40A circuit.

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#### DC Fast Charging – 480V.

These units are typically found at public facilities. Note that not all EVs are equipped for fast charging.



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## Workplace Charging

Installing workplace charging stations for employee, customer and fleet vehicles offers a low-cost benefit that will expand your business' transportation and parking options. Charging at work or in public places can help EV drivers double their all-electric daily commuting range and provides a charging location for employees and customers without access to home charging. Charging stations cost anywhere from \$1,000 to over \$7,500, depending on the number of ports and functionality. Installation costs are additional.

**For employees:** Most employees spend 40 hours a week or more at work, and studies show that next to home, work is the preferred place to charge.

**For your fleet:** Adding EVs to your company fleet demonstrates your company's commitment to sustainability. EVs are fun to drive, easy to maintain, and may even reduce your business' transportation-related operating costs.

**For your customers:** Installing charging stations for customers with EVs provides a convenient way to recharge while they visit your business, and may encourage them to stay longer or visit more frequently.



## How much energy does it take to charge an EV?

It takes about 0.3 kilowatt hours (kWh) to go one mile in an EV. So for example, a 10-mile commute to work would require 3 kWh of electricity.

DOE's eGallon calculator provides up-to-date gasoline vs. electricity prices at: [www.energy.gov/maps/egallon](http://www.energy.gov/maps/egallon).

## I'm Ready to Buy — What's Next?

- ⚡ Choose the EV charging station that best suits your needs.
- ⚡ Consult with the product manufacturer on any special installation requirements.
- ⚡ Get bids from contractors and electricians before proceeding.
- ⚡ Ensure all local, state, and federal codes are met.



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The Alternative Fuel Infrastructure Tax Credit has been extended through 2016. For details visit [www.afdc.energy.gov/laws/10513](http://www.afdc.energy.gov/laws/10513)