Transportation Electrification

Electricity as transportation fuel

Oregon Electric Vehicle Association

EV Update

Jan 12, 2012

Infrastructure Projects- Update

EV Project

- Over 400 residential and fleet chargers installed
- Over 170 Public Level 2 and DC Quick Chargers installed
- Chevrolet Volt added to the EV Project
- DC Quick Charge stations
  - 1 x 3 more coming soon
  - Hillsboro, Fairview and Sandy

State of Oregon DC Quick Charge

- Southern Oregon ARRA Funding
  - 8 Charger installations by end of Jan 2012 (4 completed)
  - All will be commissioned at the same time. Level 2 are co-located and operational now
- Tiger II Grant - 22 additional
  - Support identified transportation corridors
  - Installation by end of 2012

Electric Avenue On-Street Demonstration Project

(SW Montgomery between 6th and Broadway)

- DC Quick Charge plus 7 parking spots for Multi Vendor Level 1 and 2 Stations
- Changes coming: 2 stations will replaced
- New ones: 1- First of a kind in US 1- First of a kind in Oregon
Oregon: an early EV deployment market

<table>
<thead>
<tr>
<th>Model</th>
<th>Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tesla Roadster</td>
<td>Spring 2010</td>
</tr>
<tr>
<td>Toyota Plug-in Prius</td>
<td>Jun. 2010</td>
</tr>
<tr>
<td>Nissan Leaf</td>
<td>Dec. 2010</td>
</tr>
<tr>
<td>Ford Transit Connect EV</td>
<td>May 2011</td>
</tr>
<tr>
<td>Smith Electric Newton Truck</td>
<td>Fall 2011</td>
</tr>
<tr>
<td>GM (Chevy) Volt</td>
<td>Fall 2011</td>
</tr>
<tr>
<td>Mitsubishi “i”</td>
<td>Fall 2011</td>
</tr>
<tr>
<td>Ford Focus EV</td>
<td>Early 2012</td>
</tr>
<tr>
<td>Freightliner Electric Truck</td>
<td>Early 2012</td>
</tr>
<tr>
<td>Honda Fit EV</td>
<td>Jul. 2012</td>
</tr>
</tbody>
</table>

*Many more models to come in 2012 - 2013*
**Will all charging locations work with my car??**

<table>
<thead>
<tr>
<th>Level 1</th>
<th>120 volts Dedicated outlet</th>
<th>All new cars will come with a special cordset to plug into 120 volt outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2</td>
<td>208 or 240 volts Special Connector</td>
<td>Most new vehicles will come with this standard connector</td>
</tr>
<tr>
<td>DC Quick Charge</td>
<td>3 Phase Power</td>
<td>Nissan Leaf Mitsubishi i-Miev</td>
</tr>
</tbody>
</table>

**Know any good locations?**

**Level 2 or DC QC**

- Willing property owner and host
  - Willing to accept a free charger and $$ towards installation
  - This will probably be the last opportunity for “free stuff”
  - Have a publicly available- dedicated parking spot
  - Unless the installation is really close to available power may need to contribute funds
  - Some tax credits might still available for contribution you may need, but don’t count on them
Choosing a location

Considerations

- Covered area is best for protection from the elements, but the equipment is designed for operation in wet weather.
- To reduce costs, need a location where power is close to the parking lot (Contact your utility!!!)
- Consider an electric rate that charges for only the electricity not a Demand Charge (PGE Rate Schedule 38)

Multi Family still a challenge

Tenants needs:

- A convenient place to charge their vehicle when they want
- Willing to pay for the electricity for charging, but not pay too much
- Might help pay for installation but don’t want to subsidize others use of it
- Don’t want to be inconvenienced
  - Share space and have to move cars around
  - Walk many blocks away
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