

# Section 3. Resources

## Regarding Electric Vehicle Infrastructure and Batteries

### Resource Documents

- City of Austin, Texas, *Resolution No. 050301-48* (04-12-94). “Buy Green, Drive Clean Program.”
- City of Austin, Texas, *Electric Vehicle Incentives — Guidelines, Dealerships, and Vehicles* (2008).
- City of Boise, Idaho Administrative Services Manager (John Eichmann) Memorandum to Mayor and Council recommending approval of *Zero Emission Vehicle (ZEV) Parking Ordinance* amending Boise City Code 10-17 to enable limited free parking at parking meters for Zero Emission Vehicles (2008).
- City of Davis, California Municipal Code 22.16.0 *Electric Vehicles*.
- City of Houston, Texas, *Project Get Ready: Preparing Cities for the Plug-in Electric Vehicle: Power of the Plug-in Program* (11-17-09).
- City of Indianapolis, Indiana, *Project Get Ready: Preparing Cities for the Plug-in Electric Vehicle — Indianapolis Region: Project Plug-IN* (2010).
- City of Minneapolis, Minnesota, John Bailey, David Morris, *Electric Vehicle Policy For the Midwest — A Scoping Document*. Prepared for the RE-AMP Network, New Rules Project (12-09).
- City of New York, *PlaNYC Exploring Electric Vehicle Adoption in New York City* (01-10).
- City of Sacramento, California, *Resolution No. 94189 of the Sacramento City Council Supporting Electric Vehicle Readiness Program* (04-12-94).
- City of San Diego, California, *Council Policy 600-27 Affordable Housing/In-Fill Housing and Sustainable Building Expedite Program* (05-20-03); *Council Policy 900-14, Sustainable Building Policy* (05-20-03); *Resolution No. 715-00* (07-28-00).
- City and County of San Francisco, California, *Resolution No. 715-00, File No. 001399; Resolution encouraging California Governor Gray Davis to uphold the existing California Air Resources Board zero emission vehicle mandate, which requires that at least four percent of the 2003 model year passenger cars and light duty trucks offered for sale in California be zero emission vehicles* (08-07-00).
- City of San Jose, California, *Resolution No. 74769 — A Resolution of the Council of the City of San Jose Amending the Master Parking Rate Schedule to Increase Flexibility in Setting Parking Rates at the Convention Center and Almaden/Woz Parking Lots for Events at the Convention Center; and Repeal Resolution No. 74210 Effective on July 1, 2009* (01-27-09).
- City of Tacoma, Washington, Community and Economic Development Dept., Annual Amendment Application No. 2010-08, *Electric Vehicle Infrastructure* (01-25-10).
- City of Toronto, Ontario, Canada, *The Toronto Atmospheric Fund — Fleetwise Program* (1998-2010).
- City of Vacaville, California, *City of Vacaville’s Electric Vehicle (EV) Program* (2004).
- City of Vancouver, British Columbia, Canada, *Building By-Law No. 9936 amending Building By-law No. 9419 §13.2.1 Electric Vehicle Charging; §13.2.1.1 Parking Stalls; §13.2.1.2 Electrical Room* (04-20-11).

- City of Vancouver, British Columbia, Canada, *Policy Report Development and Building Report on Electric Vehicle Charging* (06-22-09).
- County of Sonoma, California, *Building Green Policy, Resolution No. 08-0947* (11-04-08). *Draft Resolution Adopting Guidelines, Rating Systems and Compliance Thresholds for the Sonoma County Green Building Program* proposed to be adopted 02-2010.
- David Diamond, Ph.D., LMI Research Institute, *Impact of High Occupancy Vehicle (HOV) Lane Incentives for Hybrids in Virginia* (2008).
- Don Chandler, Past President, Vancouver Electric Vehicle Association, *Pulling the Copper* (November 2009).
- Electric Transportation Engineering Corporation, sponsored by Natural Resources Canada, *Electric Vehicle Charging Infrastructure Deployment Guidelines British Columbia* (July 2009).
- eTec, an ecotality company, *Electric Vehicle Charging Infrastructure Deployment Guidelines for The Central Puget Sound Area* (April 2010).
- Great London Authority, *London's Electric Vehicle Infrastructure Strategy* (December 2009).
- Kelly Sims Gallagher and Erich J. Muehlegger, John F. Kennedy School of Government, Harvard University, *Giving Green to Get Green? Incentives and Consumer Adoption of Hybrid Vehicle Technology* (October 2007).
- National Electrical Code Handbook, *Article 625, Electric Vehicle Charging System* (2008).
- Oregon Advisory Team, *The EV Project, Summary of Localization Findings* (02-05-10).
- Plug In America, *Charged Up & Ready to Roll, The Definitive Guide to Plug-In Electric Vehicles, 1<sup>st</sup> Edition* (January 2010).
- State of California Department of General Services Division of the State Architect: DSA — California Access Compliance Policy 97-03 *Interim Disabled Access Guidelines for Electrical Vehicle Charging* (06-05-97).
- State of California Public Utilities Commission, Policy and Planning Division, Staff White Paper *Light-Duty Vehicle Electrification in California: Potential Barriers and Opportunities* (05-22-09).
- State of California Public Utilities Commission, *Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Tariffs, Infrastructure and Policies to Support California's Greenhouse Gas Emissions Reductions Goals* (08-24-09).
- State of California, San Francisco Bay Area Mayors, Mayor News Release *Mayors Aim to Make San Francisco Bay Area the Electric Vehicle Capital of the U.S.* (11/20/08).
- State of California Vehicle Code § 22511, *Zero-Emission Vehicles: Display of Decal* (01-01-03).
- State of Delaware, Senate Bill No. 153 *An Act to Amend Title 26 of the Delaware Code Relating to Customer Sited Energy Resources* (06-09-09).
- State of Florida, draft *Electric Automobile Incentives Bill, (3) Tax Credits for Installation of Public Charging Stations* (2010).
- State of Florida, draft *Electric Vehicle Incentives Bill* (Proposal) (2009).
- State of Hawaii, Act 290 (S.B. 1160), *A Bill for an Act Relating to Electric Vehicles* (07-01-97).
- State of Hawaii, Revised Statutes §291-71 *Designation of parking spaces for electric vehicles; charging units and §291-72 Parking spaces reserved for electric vehicles; penalties* (2009) (effective 01-01-12).
- State of Hawaii, S.B. No. 1202, *A Bill for an Act relating to Transportation Energy Initiatives* (2009).

- State of Hawaii, S.B. 2231 § 196 *Placement of electric vehicle charging system* (2010).
- State of Minnesota, Chapter 134-H.F. No. 1250, *An act relating to transportation; regulating electric vehicle infrastructure; amending Minnesota Statutes 2008, sections 16C.137, subdivision 1; 169.011, by adding subdivision; 216B02, subdivision 4; 216B-241, subdivision 9; Laws 2006, chapter 245, section 1; Laws 2008, chapter 287, article I, section 118; proposing coding for new law in Minnesota Statutes, chapter 325F* (05-21-09).
- State of Oregon, Building Codes Division, Statewide Alternate Method No. OESC 09-01 (Ref: ORS 455.060) *Approval of the use of a demand factor table for calculating Electric Vehicle charging equipment services and feeders* (09-04-09).
- State of Oregon, Department of Consumer and Business Services, Building Codes Division, Division 311, *Miscellaneous Electrical Rules* (Effective 10-01-09).
- State of Oregon, Department of Consumer and Business Services Press Release *New building codes standards support electric vehicle growth* (10-14-08).
- State of Oregon, Dennis Clements, Chief Electrical Inspector, Building Codes Division, *Expediting the permit process for installation of EVSE* (02-12-10).
- State of Oregon, Alternative Fuel Vehicle Infrastructure Working Group, *Report of the Alternative Fuel Vehicle Infrastructure Working Group* (January 2010).
- Teal Brown, John Mikulin, Nadia Rhazi, Joachim Seel, and Mark Zimring, Goldman School of Public Policy, University of California, Berkeley, Renewable & Appropriate Energy Laboratory (RAEL) Policy Brief, *Bay Area Electrified Vehicle Charging Infrastructure: Options for Accelerating Consumer Access*, (June 2010).
- The Massachusetts Division of Energy Resources, *Installation Guide for Electric Vehicle Charging Equipment* (September 2000).
- The Royal Academy of Engineering, London, England, *Electric Vehicles: charged with potential* (May 2010).

## Glossary of Terms

- **AC** — Alternating Current, an electric current which changes direction with a regular frequency.
- **AFV** — Alternative Fuel Vehicle.
- **AHJ** — Authority Having Jurisdiction, a term used in National Electric Code to denote lead jurisdiction on electrical matters.
- **BEV** — Battery Electric Vehicle (see definitions Chapter in Model Regulations).
- **Circuit Breaker** — A device designed to open and close a circuit by non-automatic means and to open the circuit automatically on a pre-determined overcurrent without damage to itself when properly applied within its rating.
- **Commerce** — Washington State Department of Commerce.
- **Continuous Load** — A load where the maximum current is expected to continue for 3 hours or more.
- **Current** — The flow of electricity commonly measured in amperes.
- **DC** — Direct Current, an electric current that moves in one direction from anode to cathode.
- **DOE** — United States Department of Energy.
- **DOT** — United States Department of Transportation.
- **DW** — Dangerous Waste, under Ecology rules.
- **Ecology** — Washington State Department of Ecology.
- **EPRI** — Electric Power Research Institute, a utilities industry-based research group.
- **EREV** — Extended Range Electric Vehicle (see PHEV).
- **EV** — Electric Vehicle (see definitions Chapter in Model Regulations).
- **EVI** — Electric Vehicle Infrastructure (see EVSE).
- **EVSE** — Electric Vehicle Supply Equipment, industry acronym for charging hardware located at charging stations provided for the purpose of charging electric vehicle batteries.
- **FHWA** — US Federal Highways Administration.
- **GHG** — Greenhouse Gases.
- **GMA** — Washington State Growth Management Act.
- **HB 1481** — Second Substitute House Bill 1481, from the 2009 session of the Washington State Legislature.
- **ICE** — Internal Combustion Engine.
- **Inverter** — An electrical device which is designed to convert direct current into alternating current.
- **J1772** — Industry-wide standard EV connector.
- **JARI** — Japan Automobile Research Institute.
- **kWh** — Kilowatt hour, a unit of energy commonly used for measuring the energy capacity of a battery. This is the normal quantity used for metering and billing electricity customers.
- **Lithium-ion** — The type of chemistry used in a majority of modern electric vehicles. Lithium-ion batteries are lighter in weight and have higher energy density than previous types of batteries designed

to power these vehicles. Unlike prior generations of rechargeable batteries, lithium-ion batteries lose very little energy when stored or not in use, and are considered to be highly recyclable due to their construction with generally non-hazardous materials.

- **L&I** — Washington State Department of Labor and Industries (also, LNI).
- **MUTCD** — Manual on Uniform Traffic Control Devices, maintained by the U.S. Department of Transportation (Federal Highway Administration).
- **NEC** — National Electrical Code. A code/guideline used for the safeguarding of people and property from hazards related to the use of electricity. It is sponsored and regularly updated by the National Fire Protection Association.
- **NEV** — Neighborhood electric vehicle, largely synonymous with LSV, for low speed vehicle.
- **NiMH** — Nickel metal hydride, a popular battery type for hybrid electric vehicles.
- **NREL** — National Renewable Energy Laboratory, a Colorado-based unit of the U.S. Department of Energy.
- **Phase** — Classification of an AC circuit, usually single-phase, two wire, three wire, or four wire; or three-phase, three wire, or four wire.
- **PHEV** — Plug-in hybrid electric vehicle (see definitions Chapter in Model Regulations).
- **PSRC** — Puget Sound Regional Council.
- **RCW** — Revised Code of Washington.
- **SAE** — SAE International, formerly the Society of Automotive Engineers.
- **SEPA** — Washington State Environmental Policy Act.
- **TEPCO** — Tokyo Electric Power Company.
- **TOU** — Time of Use, an electricity billing method with rates based upon the time of usage during the day.
- **UTC** — Washington State Utilities and Trade Commission.
- **VMT** — Vehicle Miles Traveled.
- **Volt** — The electrical potential difference or pressure across a one ohm resistance carrying a current of one ampere.
- **Volt Ampere** — A unit of apparent power equal to the mathematical product of a circuit voltage and amperes. Here, apparent power is in contrast to real power. On AC systems the voltage and current will not be in phase if reactive power is being transmitted. Usually abbreviated VA.
- **V2G** — Vehicle-To-Grid, the concept of using electric vehicles as energy storage devices for the electric grid.
- **Watt** — A unit of power equal to the rate of work represented by a current of one ampere under a pressure of one volt.
- **WAC** — Washington Administrative Code.
- **WEVA** — World Electric Vehicle Association, a group with local affiliates including the Seattle and Tacoma Electric Vehicle Associations.
- **WSDOT** — Washington State Department of Transportation.
- **ZEV** — Zero Emission Vehicle.

## Footnotes

- <sup>1</sup> Washington State Legislature, 61<sup>st</sup> Legislature, 2009 Regular Session, Chapter 459, Laws of 2009, *Electric Vehicles*, (07/26/09).
- <sup>2</sup> State of Washington Department of Commerce, State Energy Strategy, update due December 2010, <http://www.commerce.wa.gov/site/1327/default.aspx>.
- <sup>3</sup> State of Washington Department of Commerce, Local Government Division, Growth Management Services, *Keeping Your Comprehensive Plan and Development Regulations Current*, "A Guide to the Periodic Update Process under the Growth Management Act," (April 2010).
- <sup>4</sup> March 22, 2010 Memorandum from Plug In America on Electric Vehicle Infrastructure Code Research.
- <sup>5</sup> March 22, 2010 Memorandum from LightMoves on Local Government Electric Vehicle Infrastructure Phone Interviews.
- <sup>6</sup> RCW 36.70A.130(1)(d).
- <sup>7</sup> RCW 36.70A 130(2)(a).
- <sup>8</sup> RCW 36.70A.130(2)(b).
- <sup>9</sup> RCW 43.21C.031.
- <sup>10</sup> RCW 43.21C.030(2)(c).
- <sup>11</sup> WAC 197-11-704(1).
- <sup>12</sup> The Washington Constitution prohibits state and local governments from giving or loaning public funds to private individuals, companies, or associations. Const. art. VII, §§ 5, 7.
- <sup>13</sup> *Citizens Protecting Resources v. Yakima County*, 152 Wn. App. 914, 920, 219 P.3d 730 (2009) and RCW 40.01.250(1).
- <sup>14</sup> *Washington State Attorney General's Office v. Washington Utilities*, 128 Wn. App. 818, 116 P.3d 1064 (2005).
- <sup>15</sup> See Resource Documents in Section 3.
- <sup>16</sup> *Washington Utilities and Transportation Commission v. Washington Natural Gas Company*, Third Supplemental Order Granting Motion to Dismiss Public Refueling Station Schedule, Docket No. UG-920840 (March 12, 1993).
- <sup>17</sup> WAC 480-100-505 (Adopted February 25, 2010. Commission filed its Adoption Order with the Code Reviser on March 24, 2010. Effective April 24, 2010.).
- <sup>18</sup> eTec, Final *Electric Vehicle Charging Infrastructure Deployment Guidelines for The Central Puget Sound Area* (April 2010). Also See Plug In America, *Charged Up & Ready to Roll*, The Definitive Guide to Plug-In Electric Vehicles, 1<sup>st</sup> Edition (January 2010).
- <sup>19</sup> See sources cited at note 18.
- <sup>20</sup> State of Oregon, Alternative Fuel Vehicle Infrastructure Working Group, *Report of the Alternative Fuel Vehicle Infrastructure Working Group* (January 2010).
- <sup>21</sup> State of Minnesota, Chapter 134-H.F. No. 1250, *An act relating to transportation; regulating electric vehicle infrastructure; amending Minnesota Statutes 2008, sections 16C.137, subdivision 1; 169.011, by adding subdivision; 216B02, subdivision 4; 216B-241, subdivision 9; Laws 2006, chapter 245, section 1; Laws 2008, chapter 287, article 1, section 118; proposing coding for new law in Minnesota Statutes, chapter 325F* (05-21-09).
- <sup>22</sup> City of Davis, California Municipal Code 22.16.0 *Electric Vehicles*.

- <sup>23</sup> May 4, 2010 Memorandum from Plug In America on Web-based Electric Vehicle Consumer Survey.
- <sup>24</sup> U.S. Department of Transportation, *Manual on Uniform Traffic Control Devices for Streets and Highways: 2009 Edition*, <http://mutcd.fhwa.dot.gov/pdfs/2009/mutcd2009edition.pdf> (2009).
- <sup>25</sup> Federal Highway Administration Transportation Pooled Fund Program TPF-5(065) Traffic Control Device (TCD) Consortium <http://www.pooledfund.org/projectdetails.asp?id=281&status=4> (Jan-Mar 2010)



**Department of Commerce**  
Innovation is in our nature.

**Washington Department of Commerce**  
Energy Policy Division  
900 Columbia Street SW  
Olympia, WA 98504-2525  
360-725-4000 • [www.commerce.wa.gov](http://www.commerce.wa.gov)

**Puget Sound Regional Council**  
**PSRC**

**Puget Sound Regional Council**  
1011 Western Avenue, Suite 500  
Seattle, WA 98104-1035  
206-464-7532 • [www.psrc.org](http://www.psrc.org)