

## 5 things to know before you go

- 1** The West Coast Electric Highway is a network of more than 100 publicly-accessible EV DC fast-charging stations on I-5, at key locations near major travel destinations, and along heavily-traveled highway corridors radiating out from I-5 every 40-60 miles.
- 2** It will take between 20-30 minutes to refuel at a fast-charger. EV drivers on the West Coast Electric Highway could refuel their vehicle at a charging station in less time than it takes to stretch their legs and refuel their own system with a large cup of coffee.
- 3** Sixty-five percent of present U.S. light-duty vehicles could be powered by existing off-peak generating capacity.
- 4** Electric motors can convert up to 85% of the chemical energy in batteries to power the wheels while internal combustion engines only convert about 20% of the energy stored in gasoline to the wheels.
- 5** In 2010, Oregon drivers traveled an average of 28.4 miles per day, well within the current 100-mile range on a charge that the EVs out in the marketplace today can get.



WEST COAST  
ELECTRIC  
HIGHWAY

Drive cleaner. Drive smarter. Drive electric  
*and save!*

For more information on Oregon's electric highway visit [www.oregonelectrichighway.com](http://www.oregonelectrichighway.com)

For more information on Washington's electric highway visit [www.westcoastelectrichighway.com](http://www.westcoastelectrichighway.com)

For more information on EVs and Clean Cities go to [www.cleancities.energy.gov](http://www.cleancities.energy.gov)

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# Oh, the places we'll go.

## Transportation Electrification for a Clean, Energy-Independent Future.



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ELECTRIC  
HIGHWAY

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Electric Highway Map inside >



Washington State  
Department of Transportation



Oregon  
Department  
of Transportation



COLUMBIA - WILLAMETTE  
CLEAN  
CITIES

# Get plugged in!

## Making the case for a shift towards electric transportation

*Energy independence. National security. Economic stability. Clean environment.*

Moving toward other sources of energy, especially renewable sources, is an increasing priority for people and governments, including the states of Oregon and Washington. America's transportation sector, highly reliant on oil, offers a prime opportunity to make such a move. That's where electric vehicles (EVs) come in.

Oregonians spend \$7 billion per year for petroleum, money that mostly disappears from the state's economy. EVs, powered by locally generated electricity, keep the money near home.

About one-third of Oregon's greenhouse gas emissions (GHG) come from the transportation sector, including traditional, internal combustion engine vehicles. Replacing these vehicles with EVs can make a significant impact on reducing overall GHG emissions.

All of these variables have created the conditions for a nationwide effort to move to electric transportation, using a sustainable, reliable and cleaner transportation-fueling source.

## The West Coast Leading the Charge on Electric Transportation

*The nation's transportation sector is poised for a sea change and the West Coast is at the helm of the ship leading the country towards electric transportation.*



The West Coast Electric Highway projects are an investment in sustainable transportation infrastructure that will provide long-term economic and environmental benefits, and establishes the West Coast once again as pioneers in a new frontier, blazing the electric transportation trail.



To advance electric transportation, Washington and Oregon have designed a border-to-border network of EV fast-charging stations along I-5, the first stage of a planned network called the "West Coast Electric Highway."

With American Recovery and Reinvestment Act (ARRA) funding, the Washington State Department of Transportation (WSDOT) installed 11 AeroVironment fast-chargers along I-5, U.S. Route 2, and I-90 in 2012.

To further facilitate travel along the "Main Street" of the West Coast, the Oregon Department of Transportation (ODOT) used ARRA funds from the Oregon Department of Energy to install 10 AeroVironment fast-chargers along I-5 in 2012. All of these chargers will augment the multitude of level 2 and DC fast-chargers that ECOTality has installed through the national ARRA-funded EV Project.

In addition to the I-5 installations, ODOT will install 33 AeroVironment fast-chargers in Oregon along the Gorge, Coast, Central Oregon, and the Willamette Valley. These chargers will provide multiple charging opportunities in areas that radiate out from the major population corridors.



## Charging 101

### Level 1

Level 1 charging stations come with your car and can be plugged into any common 110 Volt wall outlet giving you endless opportunities to charge wherever you go.

### Level 2

Level 2 charging stations use the same type of 240 Volt circuits as an electric stove or dryer. This makes recharging your EV at home or in public convenient, easy, and inexpensive.

The level 2 uses a J1772 connector standard that all new EVs in the market can access. This charging regimen is often called opportunity charging, because it calls for recharging during "opportune" down time such as sleep, work, or play.

### DC FAST CHARGE

(or "DC quick-charge") DC fast-charging stations operate on 480 Volt commercial circuits, enabling you to get a quick charge and get on your way when you take longer trips. Fast-chargers use a CHAdeMO connector, which the Nissan Leaf and Mitsubishi iMiEV can utilize. DC fast-charging is ideal for public charging infrastructure like the West Coast Electric Highway.



## Benefits of Electric Transportation

Making the shift to electric transportation will:

- Lower the cost to refuel a vehicle by using electrons instead of oil
- Reduce environmental impacts from greenhouse gas emissions
- Reduce vehicle maintenance costs
- Help displace oil as the nation's dominant fuel source
- Utilize a reliable fuel with price stability and predictability
- Boost national security through energy independence
- Support economic growth with the emergence of a new industry; vehicles; vehicle repair and maintenance; associated new technology; infrastructure growth and improvement; and more



# Now let's drive on and explore!

A 100% electric vehicle can now coast the 585 miles of I-5, the major transportation vein through Oregon and Washington, without using a single drop of gasoline

Fasten your seatbelts and begin your gas-free journey in Bellingham, Washington. Plug in and charge your EV with the AeroVironment fast-charger at Sehome Village Shopping Center. You might want to grab a cup of coffee at Starbucks and check out some outdoor equipment right next door at REI for your upcoming adventures along the West Coast Electric Highway!

Hop onto U.S. Route 2 from I-5 and head towards Leavenworth to refuel your EV while you enjoy a ride on a horse-drawn carriage around the Bavarian Village, refueled by a steaming cup of hot chocolate.



Fully charged and worry-free, you can continue your emission-free trip along I-5 towards Oregon, refueling as needed at the fast-chargers located every 40-60 miles. A highway sign will notify the EV driver of an available charger off the highway with the symbol to the left.

Make your first fast-charging stop in Oregon on Electric Avenue in the heart of Portland State University's campus.

Thinking about dusting off those skis you picked up at REI in Bellingham while charging? From Portland you can head straight over to Government Camp and ski the iconic Mt. Hood. Just about 56 miles via U.S. Route 26, you can rest assured that you can refuel with fast-chargers located every 30-60 miles.

Enjoy a 21st century refueling experience at the Wolf Creek Inn right off I-5 in beautiful Southern Oregon, a historic 1800s stagecoach stop.

Don't own an EV? Coming to Portland or Eugene from out of town and want to take a gasoline-free ride? You can rent an EV in Eugene and Portland! With fast-chargers along I-84, you can take your EV rental just over 60 miles to Hood River to enjoy the world-renowned wind surfing on the Columbia River.

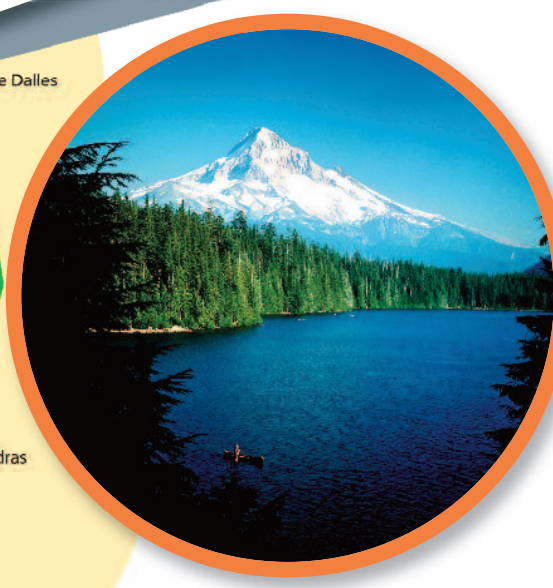
Drive west to travel the famed U.S. 101 coastline, with over 180 miles of roadway EV-ready. You can travel fully charged from historic Astoria all the way to Florence, home of the Sea Lion Caves.

Refuel cleaner, drive longer, and save money along the West Coast Electric Highway. What a great place to explore in your EV!



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In 2009, the U.S. Department of Energy began the EV Project which deployed DC Fast Charge and level 2 chargers in metropolitan areas while collecting and analyzing data to study vehicle use. U.S. DOE awarded management of this project to ECOTality. Oregon and Washington were chosen as project participants and now have more than 640 public Blink charging stations. The yellow dots identify regions where the EV Project has deployed level 2 and DC Fast Charge EV charging stations.

For more information on the EV Project go to: [www.theevproject.com/](http://www.theevproject.com/)



## Fast-Charging Network

### Legend

- AeroVironment® DC Fast charger and Level 2 – Now Open
- AeroVironment® DC Fast charger and Level 2 – Coming Soon
- AeroVironment® DC Fast charger and/or Level 2 – Coming 2014
- Level 2 Charging at Safety Rest Area
- Range Accessible to Most Electric Vehicles
- The EV Project

\* Join the Network  
 Subscribe to the charging network and get a personal key fob to access the West Coast Electric Highway stations.  
[www.evolutions.com/evnetwork](http://www.evolutions.com/evnetwork)

In Oregon and Washington there are more than 1,520 charging stations at more than 595 locations with more being added monthly. To find charging locations visit the U.S. Department of Energy's Alternative Fueling Station locator at:

[www.afdc.energy.gov/](http://www.afdc.energy.gov/)

