

Electric Vehicles: The Portland Way



Electric Vehicles (EVs): Arriving *this* year

- Nearly all the major auto manufacturers will launch all-electric or plug-in vehicles
- First mass market vehicles expected 4Q 2010

Nissan LEAF



Chevy Volt



Some currently available and upcoming electric vehicles



Understanding EV Technologies

- **Hybrid Electric Vehicles (HEV):**
 - Electric motor and gasoline engine; Not plugged in
 - *Examples: Toyota Prius, Ford Fusion Hybrid*
- **Battery Electric Vehicles (BEV):**
 - All electric with no gasoline engine; Plugged in to charge
 - *Examples: Nissan LEAF, Think EV, Mitsubishi iMiEV*
- **Plug-in Hybrid Electric Vehicles (PHEV):**
 - Electric motor and gas engine; Plugged in to charge
 - Can work solely on electric power for a limited distance
 - *Examples: Chevrolet Volt, Fisker Karma, retrofitted HEVs*

EV Charging Infrastructure



- EVSE - Electric Vehicle Service Equipment
- **“Level 2”**
 - 208/240V typical
 - Full charge in 4 to 8 hours
- **“DC Fast Charge”**
 - Charge from 0-80% in 30 min.

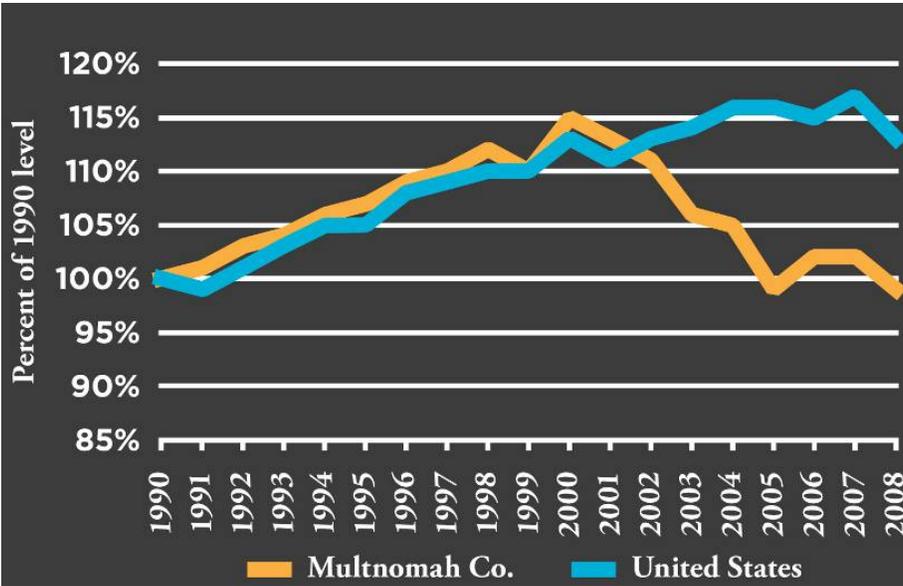


“The EV Project”

- **Ecotality North America**
 - \$137 Million awarded nationally
 - Oregon one of five primary US markets
 - Over 2,000 charging stations installed by mid-2011 in Willamette Valley
 - 900 Nissan LEAFs will participate in project
 - First units to be installed this fall

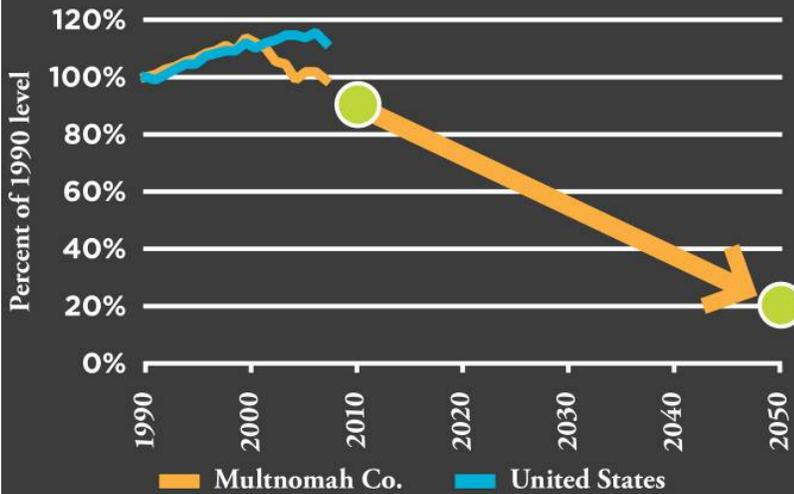


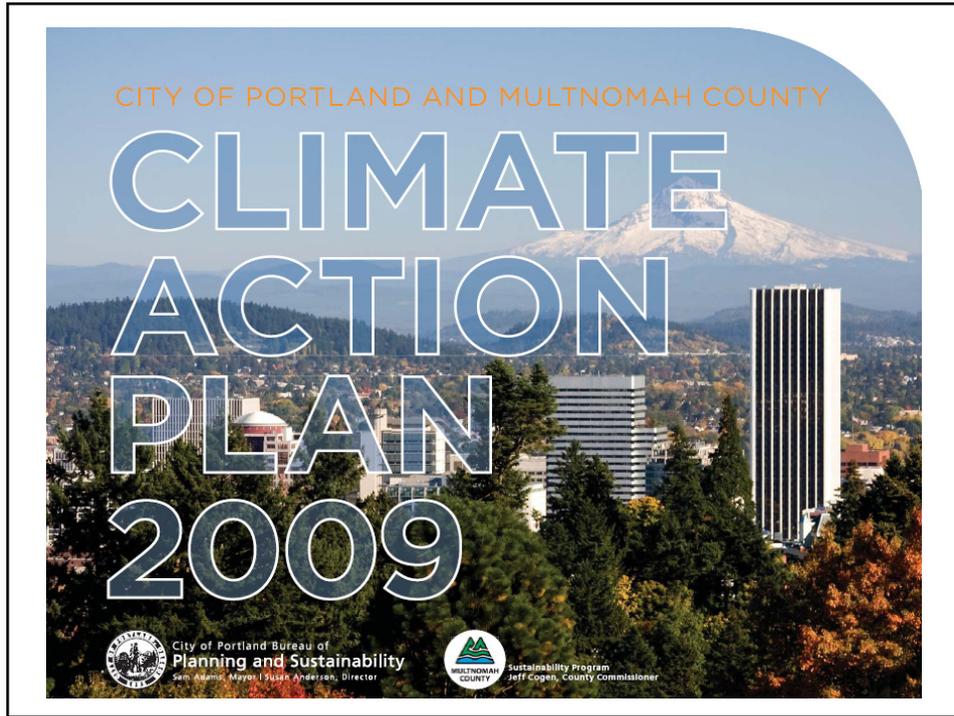
Local Carbon Emission Trends



2050 Carbon Challenge

Greenhouse gas emissions trend

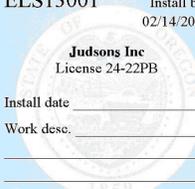




Permitting Initiatives

- **Streamlined Permitting Process**
 - Minor label program
 - Online permit program

- **Right-of-Way Charging Policy**
 - Up to 50 charging stations in the right-of-way

ELS13001	Install by 02/14/2007
 <p>Judsons Inc License 24-22PB</p>	
Install date	_____
Work desc.	_____
<p>Oregon Minor Label Program 503-555-5555 www.minorlabels.info</p> <p>ELS13001</p>	



Partnership Initiatives

- Charging stations in SmartPark Garages
- Zipcar reservation technology for garage free homes
- Opportunities to partner with TriMet at future park and rides



zipcar®

TRIMET



City Fleet Initiatives

- Exploring full range of EV options, including:
 - Step vans, sedans, utility vehicles, micro-cars, medium duty, motorcycles and bicycles
- Purchase 10 Nissan LEAFs and charging stations in partnership with Multnomah County.
- Recommend bureaus purchase EVs for their fleet when a good fit.
- **Goal:** 20% of City's Fleet EVs by 2030





PDC Initiatives

- Portland/Oregon Electric Vehicle Industry Cluster
 - PDC identified, convened and supported group
 - Catalyze growth of this emerging cluster
 - Build on the over 40 companies in the space
- Establishing a “Last Mile” program
 - Support local businesses seeking to install charging equipment to complement the EV Project



Maintaining Portland's Leadership

- Local, regional and national partnerships
 - Promote EV adoption
 - Showcase pilot projects
- Ease of permitting EV charging infrastructure
- Bureau fleet buying decisions



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QUESTIONS?

