2012 Washington State Energy Strategy

April 19, 2012
Energy and Climate Policy, PBAF 595
University of Washington Evans School
goals & principles
Three Legislated Goals

1. Maintain **competitive energy prices** that are fair and reasonable for consumers and businesses and support our state’s continued economic success.

2. Increase competitiveness by fostering a **clean energy economy and jobs** through business and workforce development.

3. Meet obligations to **reduce greenhouse gas emissions**.

*Source: RCW 43.21F.010(4)*
1. Competitive Energy Prices

Source: U.S. Energy Information Administration state rankings, September 2011 R0229
2. Clean Energy Economy & Jobs

- 26% of nation’s hydro; #5 in wind capacity
- agricultural & silvicultural resources
- high tech center
- university system
- Pacific Northwest National Laboratory
- Boeing & agriculture spearhead export economy
- Evergreen Jobs Act of 2009
- Clean Energy Leadership Council

Source: U.S. EIA Electric Power Monthly Table 1.13.B R0228 (hydro); U.S. DOE Wind Powering America R0227 (wind). Data annum 2010.
3. Washington’s GHG Targets

- **By 2020** reduce GHG emissions to 1990 levels
- **By 2035** reduce emissions to 25% below 1990 levels
- **By 2050** reduce emissions 50% below 1990 levels

Source: RCW 70.235.020 (GHG targets); 2008 Washington State Greenhouse Gas Inventory S0027 (GHG sources and amounts)
Nine Legislated Principles

1. Pursue **conservation** as the preferred energy resource
2. Ensure our energy system meets the needs of citizens, especially **vulnerable populations**
3. Maintain and enhance **economic competitiveness**
4. **Reduce** dependence on **fossil fuels**
5. Improve efficiency of **transportation** energy use
6. Meet green house gas limits and **environmental requirements**
7. Build on our **clean electrical grid**
8. Make **state government** a model
9. Maintain & enhance **existing infrastructure**

*Source: RCW 43.21F.088*
process
Washington State Energy Strategy Process

Analytic Process

- Commerce Energy Policy
- Technical Experts Panel
- Other efforts, e.g. NPCC power plans, WSDOT VMT strategy

Sep 2010
- Preliminary scenarios & forecasts

Sep 2011
- Release scenarios & forecasts

Permanent capacity

Prior work

Compile menu of promising options

Policy & Implementation

- Commerce
- Advisory Committee
- Other efforts, e.g. CELC, WUTC conservation & renewables

Jul 2010
- 2011 Update

Dec 2010
- 2011 Update

Dec 2011
- 2012 Energy Strategy

2015

Department of Commerce
Innovation is in our nature.
# Advisory Committee

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<tr>
<th>Name</th>
<th>Organization/Company</th>
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<tr>
<td>Sharon Nelson</td>
<td>NCEP / Itron</td>
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<td>Rogers Weed</td>
<td>Department of Commerce</td>
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<td>Ben Bagherpour</td>
<td>SEH America, Inc.</td>
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<td>Angela Becker-Dippmann / Mike Davis</td>
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<td>David Benson</td>
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<td>Terry Brewer</td>
<td>Grant County PUD</td>
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<td>Shari Brown</td>
<td>Weyerhaeuser</td>
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<td>Jerome Delvin</td>
<td>Senate, R-Richland</td>
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<td>Bob Drewel</td>
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<td>Dave Finet</td>
<td>Bellingham Opp’y Council</td>
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<td>KC Golden</td>
<td>Climate Solutions</td>
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<td>Don Guillot</td>
<td>IBEW Local 77</td>
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<td>Kimberly Harris</td>
<td>Puget Sound Energy</td>
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<td>Nancy Hirsh</td>
<td>NW Energy Coalition</td>
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<td>Tom Karier</td>
<td>Northwest Power &amp; Conservation Council</td>
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<td>William Kidd</td>
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<td>Steve Klein</td>
<td>Snohomish County PUD</td>
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<td>Bob Link</td>
<td>AREVA NP Inc.</td>
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<td>Rick LeFaivre</td>
<td>OVP Venture Partners</td>
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<td>John McCoy</td>
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<td>Kris Mikkelsen</td>
<td>Inland Power &amp; Light Co.</td>
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<td>Steve Rigdon</td>
<td>Yakama Power</td>
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<td>Phil Rockefeller</td>
<td>Senate, D-Bainbridge</td>
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<td>Dave Sauter</td>
<td>Klickitat County comm.</td>
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<td>Shelly Short</td>
<td>House, R-Addy</td>
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<td>Larry Smith</td>
<td>City of Vancouver council</td>
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Innovation is in our nature.
Technical Experts Panel

- **Northwest Power and Conservation Council**
  Howard Schwartz

- **Pacific Northwest National Laboratory**
  Marc Cummings, Dennis Stiles

- **Puget Sound Regional Council**
  Matthew Kitchen

- **University of Washington**
  Mark Hallenbeck, Daniel Schwartz

- **Washington State Department of Commerce**
  Roel Hammerschlag, Greg Nothstein

- **Washington State Office of Financial Management**
  Ta-Win Lin

- **Washington State University**
  Todd Currier, Chad Kruger
Scenario Planning Process

- innovation & opportunity
- geopolitical stability
- turmoil
- stagnation

- Corporate World
- iFuture
- Dark Age
- Inertia
2012 Energy Strategy Areas of Focus
Focusing the 2012 Energy Strategy

- Transportation Efficiency
- Buildings Efficiency
- “Distributed Energy”
“Distributed Energy”

district heat

distributed generation

CHP

Sources trillion Btu
- petroleum 686
- natural gas 319
- coal 84
- renewable 135
- hydropower 249
- nuclear 69

Consumption trillion Btu
- transportation 609
- industrial 293
- commercial 174
- residential 238
- export 46

Source: Washington State Energy Office W0006
Washingtonians’ GHG footprint

Source: Washington State Energy Office W0002
Energy bill of average WA household (2008)

- Vehicle: $2,987 (64%)
- Space Conditioning: $607 (13%)
- Water Heating: $304 (7%)
- Refrigerator: $146 (3%)
- Other: $621 (13%)

Source: U.S. EIA Residential Energy Consumption Survey W0008
2012 Energy Strategy Recommendations
## Near-term recommendations: transportation

### vehicles & fuels
- **3.4.1** electric vehicle support
- **3.4.2** RFS
- **3.4.3** diesel engine fuel efficiency improvements

### travel efficiency
- **3.4.4** Commute Trip Reduction program expansion
- **3.4.5** smart growth and transportation planning
- **3.4.6** transportation systems management
- **3.4.7** Regional Mobility Grants

### pricing
- **3.4.8** electric vehicle mileage pricing pilot
- **3.4.9** car sharing and mileage based insurance
Near-term recommendations: buildings

**performance & transparency**
- 4.4.1 non-residential disclosure
- 4.4.2 residential disclosure
- 4.4.3 marketing and quality assurance

**funding & financing**
- 4.4.4 meter-based financing
- 4.4.5 energy efficient property conversions

**low income & rental housing**
- 4.4.6 minimum standards for rental housing
- 4.4.7 sustaining investment in low-income weatherization programs
- 4.4.8 prevailing wage class for weatherization
Near-term recommendations: distributed energy

facilitating DE development

5.3.1 interconnection standards
5.3.2 net metering policies
5.3.3 streamlined permitting for distributed energy

financial incentives

long-term options only
### Long-term policy options: transportation

<table>
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<th>Vehicles &amp; Fuels</th>
<th>Travel Efficiency</th>
<th>Pricing</th>
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<td><strong>3.5.1</strong> revenue neutral feebate</td>
<td><strong>3.5.5</strong> comprehensive trip reduction program</td>
<td><strong>3.5.7</strong> emerging pricing methods</td>
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<td><strong>3.5.2</strong> low carbon fuel standard</td>
<td><strong>3.5.6</strong> energy efficient transportation choices</td>
<td>- congestion pricing</td>
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<td><strong>3.5.3</strong> advanced aviation fuels</td>
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<td>- mileage pricing</td>
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<td><strong>3.5.4</strong> improvements to railroads</td>
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<td>- cordon pricing</td>
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<td><strong>6</strong> carbon pricing</td>
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Long-term policy options: distributed energy

facilitating DE development

5.4.1 DE-compliant power purchase agreements

5.4.2 distributed energy in I-937 *(contingent on I-937 revision)*

5.3.3 streamlined permitting for distributed energy

financial incentives

5.4.3 rationalize DE incentives
- renewables sales tax
- production incentives
- biomass incentives
- distributed energy credit in I-937 *(contingent on I-937 revision)*

6 carbon pricing
Policy Activity Since Release
2012 Legislature

- **HB 2384** Regulating personal vehicle sharing programs *recommendation 3.4.9*

- **HB 2361** Concerning usage-based automobile insurance *recommendation 3.4.9*

- **HB 2422** Supporting the development of aviation biofuels production *long term option 3.5.3*
2012 Legislature

• **HB 2660** Addressing transportation revenue
  • 10(3)(a) Electric vehicle fee for analyzing “road user assessment system” (road user charge) revenue model;

• **HB 2190** Making 2011-2013 supplemental transportation appropriations.
  • 205(4) feasibility of transitioning from gas tax to a road user assessment system ($775,000) *long term option 3.5.7*
  • 214(1)(a) assessing the operational feasibility of a road user assessment system ($225,000)
  • 214(1)(b), road user assessment pilot with EVs (if appropriated) *recommendation 3.4.8*
  • 308 (11), security and operational planning for liquid natural gas (LNG) in the Washington ferry fleet ($1,000,000) *recommendation 3.4.3*
Other Initiatives

- **Transportation Energy Efficiency Education** – collaboration on transportation energy efficiency education (*supports several near and long term options*)
for more information...
roelh@commerce.wa.gov