

# Renewable Energy in Washington

## Summary

Hydropower accounts for the largest percentage of Washington's electricity generation. Now that many of the geographic opportunities for large-scale hydropower have been developed, Washington is exploring opportunities to further diversify its energy portfolio with its other renewable energy resources. Contributing to this goal is the state's supportive policy environment for renewable energy, which includes tax incentives, production incentives, and a renewable portfolio standard. Washington still has great room to expand its abundant wave, ocean, geothermal, and other renewable energy resources.

### Installed Renewable Energy Capacity, 2013

Wind Power	2,808 MW	Marine Power	0 MW
Solar Photovoltaic	27 MW	Biomass Power	403 MW
Solar Thermal Electric	0 MW	Ethanol	0 mGy
Geothermal Power	0 MW	Biodiesel	120 mGy
Hydropower	20,903 MW	<b>Totals</b>	24,141 MW; 120 mGy

Sources: See User's Guide for details

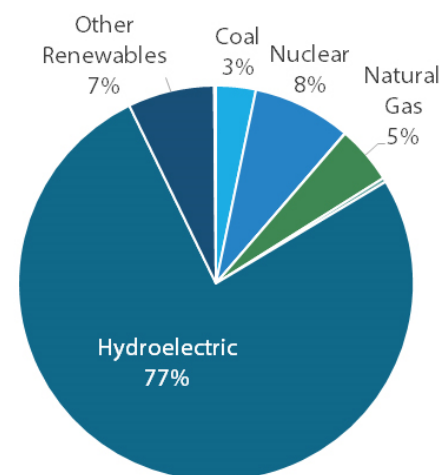
## Market Spotlight

- ▶ In July 2014, the state's Clean Energy Fund awarded \$14.3 million in grants to three utilities for the development of grid-scale energy storage for intermittent renewable energy sources. It will be led by the Pacific Northwest National Laboratory (PNNL).
- ▶ Although Washington is already the largest hydropower electricity generator in the United States, an April 2014 report by the Oak Ridge National Laboratory estimates there to be an additional 6 GW of potential, untapped resources across the state's rivers and streams.<sup>11</sup>
- ▶ Construction of the 267 MW Tucannon River Wind Farm in Columbia County began in December 2013 and is expected to be completed in 2015. The farm will produce enough electricity to power up to 84,000 homes.
- ▶ In March 2014, the Snohomish County Public Utility District received a 10-year license from the Federal Regulatory Commission to install a 600 kW tidal power system in the Admiralty Inlet of the Puget Sound estuary.

## Economic Development

Employment	2011	
Green Goods & Services Jobs	101,593	
Investment (Grossed-up)	2012	2013
Asset Finance	-	\$535m
Venture Capital & Private Equity	\$24.9m	-

Sources: Bureau of Labor Statistics (BLS); Bloomberg New Energy Finance (BNEF). See User's Guide for details.



Electricity Generation, 2013 (EIA)

<sup>11</sup> [http://nhaap.ornl.gov/sites/default/files/ORNL\\_NSD\\_FY14\\_Final\\_Report.pdf](http://nhaap.ornl.gov/sites/default/files/ORNL_NSD_FY14_Final_Report.pdf)

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## State Policy

<b>Renewable Portfolio Standard</b>	<ul style="list-style-type: none"> <li>▶ 15% by 2020; utilities must also undertake cost-effective conservation</li> <li>▶ All electric utilities serving more than 25,000 customers (representing 84.7% of state's electric load)</li> <li>▶ Distributed generation from systems under 5 MW may be counted as double for compliance purposes</li> <li>▶ Utilities must pay \$50/MWh for each MWh below the target</li> <li>▶ Facilities must be located in the "Pacific Northwest" or electricity from the facility must be delivered into Washington on a real-time basis</li> </ul>
<b>Net Metering</b>	<ul style="list-style-type: none"> <li>▶ All utilities</li> <li>▶ System capacity limit of 100 kW; aggregate capacity limit of 0.5% of utility's 1996 peak demand</li> <li>▶ Net excess generation credited to customer's next bill at retail rate; granted to utility at end of 12 months</li> <li>▶ Customer owns renewable energy credits (RECs)</li> <li>▶ Meter aggregation allowed</li> </ul>
<b>Interconnection Standards</b>	<ul style="list-style-type: none"> <li>▶ Investor-owned utilities</li> <li>▶ System cap of 20 MW</li> <li>▶ External disconnect switch generally required for systems up to 300 kW</li> </ul>
<b>Tax Incentives</b>	<p><b>Sales and Use Tax Exemption:</b></p> <ul style="list-style-type: none"> <li>▶ 100% exemption for solar PV systems 1-10 kW and solar thermal systems</li> <li>▶ 75% exemption for other qualifying residential and commercial systems <math>\geq 1</math> kW</li> <li>▶ Applies to the labor and services related to installation and to the sale of equipment and machinery</li> </ul> <p><b>Tax Abatement for Solar Manufacturers:</b></p> <ul style="list-style-type: none"> <li>▶ Reduced business and occupation (B&amp;O) tax rate of 0.275%</li> <li>▶ For manufacturers of PV modules, stirling convertors, solar grade silicon, silicon solar wafers, silicon solar cells, thin film devices, or compound semiconductor solar wafers</li> </ul> <p><b>Property Tax and Leasehold Excise Exemption:</b> For buildings, equipment, and land used to manufacture biofuels or produce biodiesel feedstocks (for six years)</p> <p><b>Biofuels B&amp;O Tax Deduction:</b> For the sale or distribution of biodiesel or E85</p>
<b>Production Incentive</b>	<p><b>Renewable Energy System Cost Recovery:</b></p> <ul style="list-style-type: none"> <li>▶ Incentives of \$0.12/kWh - \$1.08/kWh (max \$5,000/year per project)</li> <li>▶ For electricity produced from solar power, anaerobic digesters, or wind power systems (with special rates for systems using equipment manufactured in state)</li> <li>▶ Customer-generator retains ownership of RECs</li> <li>▶ State's utilities pay incentives and earn a tax credit equal to the cost of those payments</li> <li>▶ Certain community solar projects may also receive production incentives (&lt;75 kW)</li> </ul>
<b>Grants and Loans</b>	<ul style="list-style-type: none"> <li>▶ Competitive grants and low-interest loans for bioenergy production, research, and market development</li> </ul>
<b>Renewable Fuel Standard</b>	<ul style="list-style-type: none"> <li>▶ At least 2% of all diesel fuel sold in state must be biodiesel or renewable diesel</li> <li>▶ At least 2% of total gasoline sold in state must be denatured ethanol</li> <li>▶ Targets may be increased if certain requirements met</li> </ul>
<b>More Info</b>	<ul style="list-style-type: none"> <li>▶ DSIRE Database: <a href="http://www.dsireusa.org/incentives/index.cfm?state=WA">www.dsireusa.org/incentives/index.cfm?state=WA</a></li> <li>▶ Utilities and Transportation Commission: <a href="http://www.utc.wa.gov/regulatedIndustries/utilities/energy">www.utc.wa.gov/regulatedIndustries/utilities/energy</a></li> <li>▶ Department of Commerce: <a href="http://www.commerce.wa.gov/Programs/Energy">www.commerce.wa.gov/Programs/Energy</a></li> <li>▶ Department of Revenue: <a href="http://dor.wa.gov/content/FindTaxesAndRates/TaxIncentives/IncentivePrograms.aspx">http://dor.wa.gov/content/FindTaxesAndRates/TaxIncentives/IncentivePrograms.aspx</a></li> </ul>