Sustainable Energy in Washington

Clean, Safe Energy That's Renewable and Efficient

Did you know ... that the price of photovoltaic electricity has dropped dramatically from $15 per kilowatt-hour in 1975 to less than 25¢ per kilowatt-hour today; the cost of wind energy has dropped over 50%?

And... that hydropower is Washington's leading source of electricity, but the state's undeveloped wind resources could generate more electricity than it currently consumes?

Jobs in Sustainable Energy

The U.S. Department of Energy's (DOE's) National Renewable Energy Laboratory (NREL) leads the nation in research and development and lab-scale demonstration of sustainable energy technologies. In FY 1997, a total of $3,367,555 in research contracts, service subcontracts, and procurements was awarded to Washington organizations by NREL.

NREL's many programs help facilitate technology development with interested consumers and potential partners from industry, business, academia, and the global community. NREL's technologies, which are clean and green, include:

- Photovoltaics
- Wind
- Biofuels
- Biomass power
- Hydrogen
- Superconductivity
- Solar thermal
- Geothermal
- Hybrid vehicles
- Building energy systems
- Industrial applications of solar power.

DOE's Federal Energy Management Program (FEMP) activities could add 283 jobs each year and save people in Washington $14.8 million in annual energy costs.

Clean Energy = Clean Environment

The clean electricity generated from renewable energy sources in Washington from both utility and nonutility generators displaces about 18,587 tons of carbon dioxide per year (measured in carbon units) that would be emitted by coal-fired power plants.

Between March 1996 and March 1997, EPA Green Lights and Energy Star programs helped save 300 million kilowatt-hours in Washington, saving the state's consumers at least $12 million in energy bills and preventing 25 million pounds of carbon dioxide from entering the atmosphere. Projected cost savings through the year 2000 resulting from energy investments already made is $57.2 million.

Economic Benefits

In FY 1996, DOE's Office of Energy Efficiency and Renewable Energy (EE) invested $73 million in Washington. Washington's consumer energy cost savings from EE research and development products are estimated to be more than $3.3 billion.[1]

- Thirty-nine businesses in Washington specialize in renewable energy-related products and services.
- State weatherization programs, aided by federal funding from DOE, helped at least 1,230 low-income and other disadvantaged Washington families last year.
- Among its several missions, the Pacific Northwest National Laboratory (PNNL) in Richland does considerable work in sustainable energy. In 1996, DOE's EE invested more than $18 million in the PNNL to conduct research and development in environmental science and to deliver technologies that mitigate environmental damage, prevent pollution, and minimize waste. The laboratory employs more than 3,500 people in an array of activities that cut across most of EE's programs, including biofuels and wind energy systems, cogeneration, hydrogen, research in electric and magnetic field effects, and energy storage systems.

Did you know... that 12.2% of Washington's electricity is generated from coal, 8.7% from nuclear, 79% from hydroelectric, and 0.1% comes from other sources, including natural gas, petroleum, and biofuels?

And... that, despite its extensive hydropower resources, Washington is a net energy importer, meaning that more electricity comes into the state than goes out of the state?

- The Wind Turbine Company of Bellevue has won a $20 million DOE contract that is expected to give a substantial boost to the domestic wind industry. Greater reliance on wind, an abundant source of nonpolluting, renewable energy, will significantly help the United States to lower its dependence on imported oil and reduce greenhouse gases that contribute to global warming. The company's new turbines are being designed for sites with moderate wind speeds that average 13-15 miles per hour. The ability to use sites with moderate wind speeds is expected to open up large, new regions of the United States to wind energy development, reduce the cost of wind-generated power by 20–25 percent, and help expand both domestic and overseas markets for U.S. technology.
- Kyocera Industrial Ceramics in Vancouver is developing a cost-effective manufacturing technology required for ceramic turbine rotors that are used in turbochargers for heavy-duty diesel truck and bus applications. EE funding for this project is approximately $2 million.
- The Army's Fort Lewis used FEMP technical assistance, the utility, and an energy savings performance contract to undertake a $25 million renovation—the largest energy efficiency project in the Northwest. Fort Lewis is achieving annual electricity cost savings of $1 million.

Want More Information?

Office of Energy Conservation Consumer Hotline
800-OEC-6662

Energy Efficiency and Renewable Energy Clearinghouse (EREC)
800-363-3732
http://www.eren.doe.gov

National Renewable Energy Laboratory (NREL)
800-644-NREL
http://www.nrel.gov

Federal Energy Management Program (FEMP)
http://www.eren.doe.gov/femp/

National Association of State Energy Officials
http://www.naseo.org/

U.S. Environmental Protection Agency's (EPA) Green Lights and Energy Star
http://www.epa.gov/energystar.html

[1]Based on a GAO review and validation of the energy savings of EE research and development success stories.

Questions?
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National Renewable Energy Laboratory
NREL is a national laboratory of the U.S. Department of Energy (DOE), managed for DOE by Midwest Research Institute

BR-24-715