



WASHINGTON STATE

CLEAN TECHNOLOGY



CHANGING THE FUTURE OF ENERGY

With 50,000 miles of rivers and streams generating enough clean hydroelectric energy to supply nearly three-quarters of the state's power needs, Washington State is a natural choice for the development and deployment of next-generation clean technology products and services.

As the nation's low-cost electricity leader (as low as 4.25¢ per kWh), Washington State's researchers and businesses are continually bringing new ideas to the table, capitalizing on the state's unique culture of collaboration and cross-pollination that utilizes best-in-class ideas gleaned from the information technology, aerospace, advanced manufacturing and clean technology sectors to find new methods for creating, storing and managing energy resources.

Washington's main focus in this area is on alternative and renewable energy, pollution

reduction, grid management and large-scale storage. More than 92,000 scientists, researchers, technicians and specialists are employed in the clean technology sector, supported by nearly \$200 million in venture capital and some of the leading research labs in the country, including the University of Washington, Washington State University and the Pacific Northwest National Laboratory – one of only 10 such federal research labs in the United States.

They are joined by 100+ companies that are leading the way in finding new solutions to the complex issues of energy production, storage, conservation and management in the areas of biomass, biofuels, ocean, solar and wind as well as traditional energy sources.



A CLEAN ENERGY POWERHOUSE



CLEAN TECHNOLOGY - SECTOR OVERVIEW

Washington's clean technology sector covers a wide range of processes, services and products, from public and mass transit programs to sustainable forestry products and green architecture and construction. Jobs in the clean technology sector are growing at a rate slightly faster than Washington jobs as a whole. In a recent four-year period, the sector added more than 8,000 jobs, achieving a growth rate of 9.7%.

Part of this growth comes in clean tech industries such as lighting, appliances and HVAC and building control systems. Companies are able to tap into Washington's robust information and communication technology (ICT) sector, sharing new ideas in software, hardware, cloud computing, smart homes and transportation systems that can be applied to the clean technology sector. A good example of this can be found in grid-scale batteries, system controllers and software that allow integrated units to capture, store and deliver

electrical energy generated from renewable sources. Public utilities and clean tech companies are partnering to develop new vanadium-flow and lithium-ion battery-based systems to demonstrate their potential in a smart grid environment.

Companies in Washington hold hundreds of patents in clean technology, serving more than a dozen different sub-sectors. Their work is supported by a network of trade and industry organizations, including the CleanTech Alliance, Washington Technology Industry Association and Northwest Energy Efficiency Council. The clean tech industry gets the enthusiastic support of Washington State government at all levels, right up to the Governor's office. Combined with incentives and R&D funding, Washington State can bring new ideas from conceptualization to market quickly.



TOP 10 FASTEST GROWING INDUSTRIES IN WASHINGTON STATE

Lighting	152.9%
Appliances	106.7%
HVAC & Building Control Systems	72.4%
Energy Saving Consumer Products	51.9%
Solar, Thermal	51.3%
Solar, Photovoltaic	51.2%
Wind	38.0%
Recycling & Reuse	33.4%
Organic Food & Sustainable Farming	23.2%
Green Architecture & Construction Services	21.6%

TOP PROJECTS

Northwest Innovation Works – \$1.8 billion project to build the most efficient and lowest carbon-intensive natural gas to methanol conversion plant in the world to replace methanol produced in China using gasified coal. Project is the first to use Washington's carbon-free electricity to replace a fossil fuel production process.

Amazon EcoDistrict Project – A unique partnership between developers and utilities, this Clean Energy Fund project recycles excess waste heat from a downtown Seattle server farm to Amazon's new world headquarters across the street, reducing the complex's carbon footprint.

Pacific Northwest Smart Grid Demonstration Project – Managed by the Pacific Northwest National Laboratory, this smart grid demonstration covers 60,000 metered customers across five western states. The resulting pioneering technology, utility applications, customer

engagement strategies and policies will serve as the foundation for the nation's next-generation smart grid management systems.

Grid-Scale Battery Storage – \$28 million in Clean Energy Fund grants has been invested in groundbreaking research, development and demonstration projects involving three of the state's largest public- and investor-owned utilities to evaluate the technical and economic advantages of grid-scale battery storage systems.

THE FUTURE OF CLEAN TECHNOLOGY

Washington continues to invest heavily in the future of clean technology. The state's voters passed legislation that mandates that 15% of Washington's energy going forward comes from new energy sources such as wind, tidal, biofuel and solar.

To attract new clean technology companies to come to Washington, the state offers a number of incentives, including:

- Business and occupation tax reductions for manufacturers of solar energy systems, components or semiconductor materials.
- Sales and tax exemptions for semiconductor gases and chemical purchases.
- Sales and tax credits for equipment that generates electricity using renewable energy.
- Business and occupation tax credits and sales tax exemptions for forest-derived biomass harvesters.

Another key part of the state's clean energy strategy is the Clean Energy Fund. This fund is driving innovation and development of new clean energy technologies that save energy, reduce energy costs, lower harmful emissions, or otherwise increase energy independence throughout the state. The Washington State Legislature allocated \$36 million in funding for the program in 2013-15 and an additional \$40 million for 2016-17.

Through this fund, researchers, organizations and utilities can get matching grants to explore a range of promising technologies or to support advanced solar or renewable energy manufacturing in the state. Utilities can use funds to explore transmission and distribution control system improvements to increase the reliability and integration of distributed and renewable resources and technologies to retail customers. There are also grants designed to match federal funds or other non-state funding sources in order to conduct research and to develop and demonstrate new clean energy technologies and systems.

CONTACT OUR CLEAN TECHNOLOGY TEAM TODAY!

If you're a company exploring or producing next-generation clean energy products, technologies or concepts, even those still on the drawing boards, come to Washington State.

Our culture of innovation and invention offers you dynamic partnerships with other high performing companies; a workforce of highly-skilled, out-of-the-box thinkers; a pro-business environment in which there's no such thing as a personal income tax; and a stunning natural landscape that will inspire you to create and succeed in exploring new energy sources and technologies that protect the environment and reduce our carbon footprint.



CONTACT US

To learn more about Washington's clean tech industry, whether you're a startup bent on bringing the next big thing to market or a multinational firm looking for new investment or growth opportunities, contact one of our business experts at the Washington State Department of Commerce.

Give us a call at (206) 256-6100 or email us at moreinfo@choosewashington.com and we'll be happy to answer your questions and help your company succeed in Washington State.

Visit us online at www.choosewashingtonstate.com



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