Green Jobs in Washington State: Progress, Opportunities and Challenges

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Washington: A Green Economy Leader

Washington State is a national leader in the development and implementation of policies and initiatives that have supported the development of a clean energy future and environmental protection. These building blocks have helped to form a solid foundation for the development of the state's growing green economy.

Some Green Economy Drivers

Washington's green economy has deep historical roots in energy. Electricity generation represents just under half of the state's total energy use, and three-quarters of that comes from hydro power. But Washington is also heavily dependent on energy imports: Most of the state's total energy consumption is in petroleum used for transportation. In addition to energy, the state's vast natural resource assets, diverse industrial base, high-tech leadership and strong public support for environmental protection has also helped to focus regional and state-level green economy initiatives.

Regional Context: Regional energy and climate policy has significantly influenced the development of Washington's emphasis on developing a green economy. One good example is the Northwest Power Act, which was enacted by Congress in 1980 and required the Bonneville Power Administration to reduce power demand by increasing the efficiency of its customers' energy use. The Power Act also drove development of the Northwest Electric Power and Conservation Plan, which spells out strategies for meeting regional power demand through energy efficiency and renewable energy. The current *Draft Sixth Power Plan* supports aggressive targets for energy efficiency that represent 58 percent of new regional electricity demand by 2014, and 85 percent of new demand by 2029.[1]

Washington has actively participated in regional efforts to address climate change and the development of clean energy solutions through its leadership in initiatives such as the West Coast Governor's Global Warming Initiative, the Clean and Diversified Energy Initiative sponsored by the Western Governor's Association, and the Western Climate Initiative, which has promoted a "cap and trade" program to reduce emissions.

State Leadership: Washington State has a long list of policies and legislation which supports the greening of the state's economy. In the last five years alone, a number of major state legislative actions have been instituted that address a broad range of related topics, including the adoption of stronger greenhouse gas emission standards, building energy codes that increase energy efficiency, and growing the state's clean technology sector.[2] Some are long-standing regulations that have been regularly updated, while others are more recent and reflect growing support for clean energy and energy efficiency:

- The Washington State Energy Code, which was established in 1977 and has been enhanced many times, sets the minimum standard for energy efficiency for newly constructed buildings and is credited with a large proportion of the total energy savings achieved in the state since it was enacted.[3]

- On a per capita basis, Washington has the most buildings of any state that meet the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) standard,[4] and the state is a national leader in conservation as evidenced by national rankings such as *Forbes Magazine* and the American Council for an Energy Efficient Economy. [5]

- Washington voters passed Initiative 937 (I-937), a renewable portfolio standard enacted in 2006 which requires that 15 percent of the power sold to Washington consumers must come from renewable resources by 2020. Washington was the first in the nation to include energy efficiency targets as well as renewable electricity; Washington utilities are required to achieve all cost-effective energy savings. [6]

Green-Industry Opportunities: Washington has great potential for expanding industry leadership in clean and energy efficiency-related manufacturing, new technology development, and continued development of construction and retrofit projects to reduce energy use and enhance environmental protection. The state has also been supporting the growth of renewable energy and related technologies that will spur new industry growth and job creation. Some of these renewable sectors are well-established, while others are relatively small and in the early stages of development. In several areas, Washington has strong growth potential now and into the future:

- Solar system design and manufacturing
- Wind power development
- Green-building design
- Bioenergy and biofuels
- Combined heat and power (CHP)
- Small hydro and hydro upgrades
- Smart-grid technologies
- Solid waste and recycling
- Water resource conservation

Growing the Green Economy: 'Going green' has emerged as a popular term among states and the nation and it has stimulated considerable discussion and research. A large number of studies, reports and position papers by various industries, trade, environmental, and social advocacy groups point to the potential of green economy initiatives as a driver for accomplishing a range of multi-faceted goals, including attracting, retaining and supporting growth among green businesses, and boosting domestic and global trade. Going green is viewed as a strategy for revitalizing national and state economies, advancing environmental goals, boosting job creation, and providing new opportunities for economically disadvantaged populations that enhances social equity. [7] In Washington, House Bill 2815, which passed during the 2008 legislative session, lays the groundwork for the pursuit of these goals, calling for the state to stimulate development of a green economy and increase the number of green jobs in the state.

Green Jobs in Washington: Reviews of green economy research show that just as there is no common definition of a green economy, there is no uniform definition of a green job. Moreover, until recently, few systematic studies have been completed by states to define and measure green

jobs. And, most studies have employed different definitions, research methods and measures that resulted in job estimates that are not readily comparable.[8]

In 2009, Washington's Employment Security Department completed one of the first state-sponsored statistical studies in the nation that defined and measured green jobs: *2008 Washington State Green Economy Jobs.* The study was required under House Bill 2815, and surveyed employers to estimate the number of green jobs in the state and establish a statistical foundation for measuring green job growth over time. Recently-passed legislation (HB 2227) calls for additional research and a follow-up survey that will be completed in February, 2010.

In the Green Economy Jobs study a random sample of all Washington state employers was surveyed about business activities and employees who have direct employment in specific green industries. Over 9,500 private-sector employers responded to the survey. The study defined the green economy as rooted in the development and use of products and services that promote environmental protection and energy security. The study included industries and businesses engaged in:

- Energy efficiency
- Renewable energy
- Preventing and reducing pollution
- Mitigating or cleaning up pollution

"Green jobs" were defined as jobs that promote environmental protection and energy security. The study identified 47,194 green jobs, or about 1.6 percent of total state employment in 2008. As shown below, positions in the energy efficiency core area made up the most significant portion of green jobs, representing over half of all green jobs in the state. Construction-related industries and occupations accounted for 70 percent of employment in energy efficiency, followed by professional and technical services such as architecture and engineering. Preventing or reducing pollution was the second largest core area, accounting for one-third of all green jobs. Agriculture-related industries and occupations represented over half of all employment in this area.

Table 1. Full and Part Time Employment by Green Core Area (2008)

Total Full Time and Part Time Green Jobs by Core Area								
	Energy Efficiency		Renewable Energy		Reducing Pollution		Poll. Cleanup-Mitigation	
	#	%	#	%	#	%	#	%
Full Time by Core Area	23,241	93%	1,523	75%	12,472	80%	3,815	85%
Part Time by Core Area	1,735	7%	503	25%	3,204	20%	668	15%
Total Full Time and Part Time*	24,976	100%	2,027	100%	15,676	100%	4,483	100%
Percent of All Green Jobs	**52.9%**		**4.3%**		**32.2%**		**9.5%**	

***The total for all green jobs is greater than the row and column total by 32 jobs because some respondents did not report green jobs by any core area.

The study concluded that the large proportion of employment in the energy efficiency core area stems in part from the fact that energy efficiency products and services are found in a wide variety of industries and occupations; and that these products and services have strong markets and historical connections with residential, commercial, and industrial construction. The findings may also represent the current and future market expectations of construction-related employers, who are positioning themselves to pursue retrofit or renovation-related projects until the market for new building construction rebounds. The prominence of crop production, agricultural and forestry support-related industries and occupations were tied, in part, to the growing use of sustainable farming and harvesting practices, organic farming and other methods that help prevent or reduce pollution.

Challenges and Solutions

Washington continues to suffer the effects of the national recession marked by record job losses, high unemployment and a second year of serious revenue shortfalls that will require additional cuts in state spending. Arguably, the current economic conditions render the development of a green economy an even more essential strategy for generating new jobs, stimulating business activity, and increasing state revenue. Governor Gregoire and the state legislature have established a leadership structure to help boost the state's green economy:

- The Evergreen Jobs Initiative, established under House Bill 2227, brings business, labor, education and government together to coordinate activities that will help advance development of the state's green economy and the creation of 15,000 new green economy jobs by 2020. The state's Workforce Training and Education Coordinating Board and the Department of Commerce are co-chairing the Evergreen Jobs Leadership Team, which is working to pursue, support and distribute resources, include federal Recovery Act funds to help Washington advance the state's green economy.

- A newly created Clean Energy Leadership Council, established in 2009 under Senate Bill 5921, will focus on getting Washington's energy policies, technologies and capital aligned to ensure Washington continues to be a leader in clean energy development. The council will deliver a clean energy strategy and recommendations by December 1, 2010.

These groups will also advise the Governor and legislature on ways to support continued growth in the green economy, and this work will include consideration of some of the challenges to future growth. Governor Gregoire recently proposed a combination of tax breaks and development of a new program at the Department of Commerce aimed at generating new job growth in clean technology and energy efficiency. Other legislation to create jobs to do energy efficiency upgrades at public buildings has also been proposed. Moreover, the state has received and begun to invest federal stimulus funds for a variety of projects. Several federal grants have already been awarded that will help boost jobs and green economy initiatives, and additional applications by state and regional partnerships for federal funding are now under review.

At the same time, Washington faces a number of challenges to growing the state's green economy and generating new jobs. *Washington State's Green Economy: A Strategic Framework* is a report completed by the state's Department of Commerce under HB 2815 that identifies a number of opportunities, challenges and strategies for supporting green industry growth.[9] The

following summarizes some of those general challenges and others that deserve attention, including some potential solutions:

Invest in Research and Innovation: Private-sector funding for research and development is essential for generating new green products and services that can compete in global markets, but public investments through leading research institutions and universities—including efforts to commercialize publicly-funded intellectual property—is also an important strategy for stimulating innovation that supports green economy company growth, job creation and competitive advantage. Even during a recession, strategic investments of available federal and state resources are needed that leverage public research expertise and private-sector innovations that lead to the development of new green products, services and job growth.

Support Green Industry Growth: Some state policies, regulations and incentives are often cited by employers as cumbersome, confusing or inconsistent. Firms who are starting up or expanding green businesses have called for greater certainty in regulation, and stability in incentives for innovation, new green startups and business expansion. A review of regulatory structures and laws, tax incentives and technical assistance, some of which are already underway, should be accelerated to identify opportunities to create a level playing field and boost support for emerging green industries and jobs.

Build a Skilled Workforce: The availability of a skilled workforce is essential to supporting green economy growth, however state population trends suggest that the labor pool will shrink just as projected numbers of retirements among baby-boomers is increasing.[10] Many new labor force entrants will be ethnic minorities who have been underserved by education, and together these factors will create greater competition for fewer qualified workers in many green economy industries in the coming years. Industry leaders need to work with education and training institutions to identify where these labor shortages are likely to be severe, and companies should intensify development of succession plans that anticipate and reduce the effects of these imminent labor shortages. Stronger partnerships between industry and government leaders need to consider enhancements in state education and training programs to equip the future labor force so they can be as productive as the workers they replace. Models including state-funded industry skill panels and industry-focused Centers of Excellence provide useful vehicles for this work.

Create Good Green Jobs: Most green jobs are in traditional industries and occupations, and many of these jobs provide gainful employment and opportunities for promotion. In some industries, federal stimulus funds and new and state investments aimed at job creation may help generate many new green jobs at the entry-level, such as in building retrofits and weatherization. However policies and programs that include career pathways are needed to help identify next-level career opportunities, earnings, and the required skills for advancement.

Expand Education and Training Capacity: State universities, community and technical colleges, registered apprenticeship programs, and other industry-based training providers are essential green economy partners and are needed to help prepare new workers and to upgrade incumbent employee skills as new technologies, skill requirements and occupations emerge. While a number of new green-focused education and training programs have emerged, there are concerns that the capacity of these education and training partners may be inadequate to support continued

green economy growth.[11] Industry, labor and government leaders should continue efforts to coordinate existing support for effective programs and invest in new education and training programs that meet the skill requirements of employers and prepare workers to sustain future green industry growth. Tools such as industry-defined skill standards can help employers and educators develop high-quality education and training that meets industry requirements and provide students and workers develop the skills and credentials needed to enhance their careers.

Conclusion

Washington has established a solid foundation for the continued 'greening' of the state's economy. Building on current strengths, leveraging new opportunities and addressing current and future challenges will help ensure that the state is well-positioned for future growth in green businesses and related employment.

References and Notes

[1] Northwest Power and Conservation Council Draft Sixth Plan: http://www.nwcouncil.org/energy/powerplan/6/default.htm

[2] For a useful summary of state legislative actions see: *Facing the Challenge of Climate Change; Five Years of Action - Laws and Executive Orders (2005 – 2009).* Washington State Department of Ecology, http://www.ecy.wa.gov/climatechange/docs/2009_ClimateChangeActions_071509.pdf.

[3] Washington State Building Code Council: http://www.sbcc.wa.gov/

[4] Washington State Department of Ecology's Green Economy website: http://www.ecy.wa.gov/climatechange/GreenEconomy.htm#wil

[5] Forbes environmental rankings: http://www.forbes.com/2008/03/17/miami-seattle-orlando-biz-logistics-cx_tvr_0317cleanest.html and business ranking: http://www.forbes.com/2007/07/10/washington-virginia-utah-biz-cz_kb_0711bizstates.html. For the ACEEE ranking on green energy policies, see: http://www.theolympian.com/southsound/story/610086.html

[6] For a complete description and details about determining 'cost effectiveness' of efficiency measures, see: http://www.cted.wa.gov/site/1001/default.aspx

[7] See: "Green jobs: Towards sustainable work in a low-carbon world." Washington DC: Worldwatch Institute for the United Nations Environment Programme, 2008 (September). See also: Manufacturing climate solutions: Carbon-reducing technologies and U.S. jobs." Center on Globalization, Governance & Competitiveness, Duke University, 2008 (November). Also: "Carbon-free prosperity 2025: How the northwest can create green jobs, deliver energy security, and thrive in the global clean-tech marketplace." Clean Edge, Inc., and Climate Solutions, 2008 (October). Also: "Clean energy corps: Jobs, service, and equal opportunity in America's clean energy economy." Executive Summary: The Apollo Alliance, the Center for American Progress Action Fund, the Center on Wisconsin Strategy, Energy Action Coalition, Green For All (2008).

[8] A brief review of recent studies, including results and methodological issues, can be found in: *2008 Washington State Green Economy Jobs* (2009), Washington State Employment Security Department, Labor Market and Economic Analysis.

[9] See: "Washington State's Green Economy: A Strategic Framework, Discussion Draft." Olympia, WA: Department of Commerce (CTED), 2009 (January).

[10] Hardcastle, A. (2008). *Workforce Challenges of Electric Sector Employers in Washington and Oregon*. Washington State University, Extension Energy Program (January).

[11] See: Hardcastle, A., Waterman-Hoey, S., & R. Kunkle (2009). *Renewable Energy Industry Trends and Workforce Development in Washington State.* Olympia, WA: Washington State University, Extension Energy Program. See also: Washington State Workforce Training and Education Board Employer Survey: http://www.wtb.wa.gov/EmployerSurvey.asp,. See also: *Higher Education and Washington's Green-Jobs Economy – Creating the Conditions for Green Jobs Growth*, (2008) unpublished paper, prepared by Higher Education Coordinating Board and Economic Modeling Specialists, Inc. Also: Hardcastle, A., & Waterman-Hoey, S. (2009). *Energy Efficiency Industry Trends and Workforce Development in Washington State.* Olympia, WA: Washington State University, Extension Energy Program