

“MAKING THE CONNECTION: CREATING PATHWAYS TO CAREER  
SUCCESS FOR THE NEXT GENERATION OF WORKERS”

Field hearing of the U.S. Senate H.E.L.P. Subcommittee  
on Employment and Workforce Safety

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CLEAN TECHNOLOGY ARRIVES  
IN WASHINGTON STATE

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A GROWTH INDUSTRY

During the past several years, as a result of the perfect storm of rising oil prices, energy dynamics and increased awareness of climate change our State has seen an explosion of investment in research, products and construction of all that is “Clean Technology”. Like many other regions in the nation Washington State has built an early reputation for its leadership in Clean Technology and in fostering growth of this “new” economic sector. Clean Technology with its many “clean the planet” aspects clearly represents an opportunity to become the next industrial revolution.

Nationally, investment in the Clean Tech industry has grown 78% in the past year and nearly 400% in the past five years (source: American Venture Magazine). Clean Tech is now the third largest venture investment category, with projections boasting some \$19 billion in investments by 2010 that is expected to create more than 500,000 new jobs. The most notable and talked about subsectors, renewable and alternative energy, are growing exponentially but those are just part of the story. Energy efficiency, recycling, bio-synergy (waste to power), sustainable design, product re-engineering and remediation technologies are all creating a buzz.

Washington State possesses many of the critical elements required to be successful in Clean Technology cluster. It has natural resources second to none. It has a citizenry that is known for its stewardship of the environment. Washington State is regularly recognized for its entrepreneurial and innovative workforce. And those are the attributes that will attract and grow firms in this sector; a sector that will make a significant impact on the Washington State economy and job creation for many years to come.

## JOBS, SKILLS, OPPORTUNITIES

One of the most compelling aspects of the emerging Clean Tech industry is that it brings with it a wide array of jobs/careers across many disciplines. Unlike its predecessor “industrial” industries in the 20<sup>th</sup> century, Clean Tech will require a much broader workforce representing myriad skill sets and educational backgrounds. Because of the innovative nature of this cluster the field of science will play a key role. Chemistry, physics and biology have made their presence known already and several other science needs are emerging. Engineering is a clear driver of Clean Technology with mechanical, electrical, automotive, ceramic, geosciences, thermal and civil engineering some of the leaders.

On the “execution” side of Clean Tech positions in the “executive suite” will be in high demand as well. Business and financial management is critical here, as many firms will be of start-up nature and most facing an incredible growth profile. Manufacturing, production and operations positions will be needed and will have to adapt to new processes and industrial paradigms. Skilled crafts and career positions will flourish as well. Construction trades will also be in high demand and in fact are already experiencing upswings due to these new technologies. In addition many technical crafts will be emerging in and around the operation of plants and the delivery of services etc.

The most exciting news here is wages and benefits. Unlike much of the workforce in traditional industrial type jobs, the Clean Tech sector will have primarily high-wage or family-wage jobs with 21<sup>st</sup> century benefits! In the past few years virtually every Clean Tech type firm we have met, worked with or contracted to have primarily high wage positions. The emerging Clean Tech industry is dependent on and committed to working

with all interested parties to enhance worker training and education. Because of the fact that many of the processes and applications will be new, training for these positions is a necessity rather than a luxury. We anticipate partnerships with trade unions, apprenticeship programs, workforce development organizations, community colleges, four year institutions and local government agencies will be required to meet the needs of the future.

## REGIONAL IMPACTS ABOUND

In Washington State there exist some 400 Clean Tech companies with more than 5000 jobs at the present time. Many of these firms are growing extremely fast. My firm, McKinstry has added more than 250 jobs directly attributed to our energy and Clean Tech work in just three years. Many others in biofuels, alternate energy and sustainable design have even steeper job growth! In fact, in a recent study Washington State was reported to be a leader in both alternate fuels and green building strategies. Our region is currently collaborating with other western states and provinces on fuel cell research and the “hydrogen highway” as well as greenhouse gas reduction programs. Also of note, our unique position as a gateway to the Pacific Rim is making Clean Tech a growth export industry.

We are rapidly becoming a center for innovation and new technology, thanks to the University of Washington, Washington State University and PNNL/Battelle, among others. As of this report, new projects in the pipeline represent hundreds of millions of dollars of new investment and thousands of jobs. Research by enterpriseSeattle (formerly EDC of Seattle and King Co.) and its Clean Technology Cluster team, indicate however, the growth and activity with new ventures is so robust that we are already depleting our current skilled workforce.

## WCTA IS BORN

In 2002 the Puget Sound Regional Council embarked on creating a regional plan to ensure the economic vitality of our region (and State). Coined the Prosperity Partnership, it developed a regional work plan that now serves as a great roadmap for many aspects of our growth. Its final report identified five economic clusters that will drive our economy for many years and set forth to bolster the infrastructure of each of those clusters

(educational needs, workforce, economic development strategies, etc.) The first four were obvious drivers: aerospace, life sciences, trade and logistics, and IT/software. The fifth, Clean Technology was the “new kid on the block”. Because it was a new idea that needed to be congealed a small group of public/private volunteers worked for several months and decided to launch a vertical trade organization called the Washington Clean Technology Alliance. In February of 2007 WCTA hosted a kickoff event which yielded 35 charter members that represent virtually every element of the industry. From alternate energy to sustainability, recycling to clean manufacturing and from public representative to service firms, we have it all!

The mission of the WCTA is to help strengthen the Clean Tech Sector by providing information, networking opportunities, and advocacy. Additionally we established an overarching goal to create a Washington State clean technology “Brand” to compete globally in this sector. We have been active with monthly networking sessions, member promotion, educational panels and sponsorships and will be representing the State at GLOBE 08, with a trade show delegation. GLOBE is one of the world’s largest and most revered clean technology/environmental conference held every other year in Vancouver, B.C.