

Growing the Green Economy in Washington State

A proposal to develop an “Eco-nomic” Center in Washington State

(Revised 1/09/17)

A changing climate creates significant challenges and opportunities on a global scale. Governments and businesses around the world are responding to climate change with strategies to mitigate (reduce greenhouse gas emissions) and adapt (prepare for inevitable changes). Mitigation and adaptation strategies require innovative engineering, technologies, and products to address a myriad of changing circumstances. Washington State and the Puget Sound region are uniquely positioned to respond to these emerging global needs. **This proposal calls for an economic analysis of four market sectors essential to address climate change (energy, water, agriculture and forestry, and building materials), as a first step towards development of an “Eco-nomic Center” in Washington State and the Puget Sound region.**

New technologies and products to address climate change touch many economic sectors including: energy, water resources, building materials, agriculture and forestry, transportation, information technology, marine sciences, health sciences, and more. Washington State, and the Puget Sound Region, are particularly well positioned to provide the essential elements (land, labor, capital and culture) to develop, nurture and grow new technologies, manufacture products, and provide services for these emerging market sectors.

Vision and leadership in developing the green economy provide an important counterbalance to arguments that: we cannot afford to take action on climate change, or dealing with climate change is too expensive and disruptive to the economy, or that climate change is not occurring. Providing real examples of new economic models and opportunities is essential to address adaptation and mitigation, and to engage the private and public sectors as essential partners in this most critical matter of survival on this planet.

Some of the Washington State and Puget Sound region’s attributes include:

- Supportive culture for a healthy environment - air, water, food, energy, non-toxic building materials and triple bottom line economics.

- Professional engineering, legal, finance and technical expertise already working globally on the cutting edge of climate, energy and natural resource issues.
- World class companies and leaders in manufacturing, technology and IT with access to global markets and global supply chains
- Access to venture capital
- Highly skilled work force experienced in high-tech manufacturing
- Education opportunities for work force training
- World class higher education institutions with R & D capabilities including engineering and environmental sciences led by WSU, UW, WWU, & TESC
- Land base with infrastructure to accommodate manufacturing needs and growth
- Multi-modal transportation
- Public Utility Districts and municipal utilities committed to sustainability
- Nationally recognized “Masterbuilders – green build” center
- Aerospace, defense and health care institutions
- Supportive public sector - government institutions
- Tribes responding to climate change
- Extensive and diverse NGOs already addressing climate change

Responding to climate change and the movement toward a mega region requires a new economic model based on meeting global demands for research and development and manufacturing of products focused on sustainability, resilience and a triple bottom line economics. A changing climate will bring corresponding changes and demands for new technologies and products to economic sectors including: energy, water, agriculture and forestry, and building materials. These four sectors are well represented in the fabric of Washington’s economy, and the capacity for further research and development of new products to serve a world economy is here as well.

The Association of Washington Cities, Center For Quality Communities (AWC) is committed to help prepare cities to be resilient and respond to a

changing climate and culture; and to help Washington cities realize their potential to lead on this important global issue. AWC is convening this effort, serving as a catalyst for change, and bringing together the leadership necessary to build the green economy in Washington State.

Project Proposal and Overview

The AWC desires an economic assessment of clean technology assets and opportunities in Washington state across four identified sectors: 1) energy; 2) water; 3) agriculture & forestry; and 4) building materials. Analytics will include a landscape survey of existing capabilities, assets, and technologies present in each of these sectors and an assessment of how Washington's current strengths align with global trends in clean technology demand. Findings will help inform a broader dialogue with various entities across Washington State and beyond, on how economic development practitioners, higher education and other stakeholders can craft policies supporting these economic opportunities, and build the green economy in response to a changing climate.

The product of this work will be a report including "sector roadmaps" for each of the four sectors. The sector roadmaps will include an analysis of each sector and strategies for further development of products and services to reduce GHG and respond to adaptation and resiliency, as well as education, R & D opportunities, and workforce training and development in Washington State.

Task 1. Formation of Advisory Committee and Technical Advisory Groups

AWC will assemble two advisory bodies to assist in the development of this project: an "Advisory Committee" providing expertise and critical thought leadership for the overall project, and "Technical Advisory Groups" with more focused expertise in each of the four sectors.

The Advisory Committee will include higher level policy representatives from organizations representing public, private, NGO and academic organizations. Examples may include the Governor's Office, Washington State Departments of Commerce and Agriculture, Climate Solutions, The Bullitt Foundation, higher education (UW, WSU, TESC, WWU, EWU and others), tribal organizations, organizations focused on national and international environmental issues and social justice, and others.

The Advisory Committee will provide expertise and critical input as the work progresses.

Deliverables: Facilitated discussions throughout the project, thought leadership, imagination and networking for the project and applications for the study.

Budget: \$15,000

Technical Advisory Groups will consist of experts in each of the four sectors who will add technical input and value to the research and economic analysis for each sector. Technical Advisory Group members would be active in the respective fields being studied, and would provide input to the consulting team in the design and conduct of the analysis.

Deliverables: Technical advice, direction and interaction with the consultant/project team for each of the four sectors throughout the project.

Budget: \$15,000

Task 2: Project Approach, Overview and Initial Research

For each sector, identify sector characteristics, develop a preliminary projection of impacts and needs. For example, climate change is expected to reduce and/or alter water supply for potable water, irrigation and natural resource needs. Based on existing research and literature, the study would examine: what are the likely scenarios for addressing these changing circumstances? What is the status of research and development in each sector? What technologies, products and services can be developed in Washington State and the Puget Sound Region to address these needs regionally, nationally and globally? What advantages and/or disadvantages does Washington State have in each sector?

The Technical Advisory Groups will assist in the development of the likely scenarios, status of the research, and evaluation of the products and development possibilities for each sector in Washington State. The initial research will, whenever possible, leverage existing research for each sector, including past reports, research products, news articles, and other relevant sources. The findings will be augmented with a data-rich understanding and presentation of leading firms and economic trends in Washington, through use of state and federal data sources, as well as private and NGO sectors, and auxiliary information.

Findings from above will be used to assess existing potential alignment of Washington-based industries and research with current and future U.S. and

global demand. Findings will be presented in a report format, with exhibits, technical addenda, succinct executive summary, and a matrix helping stakeholders map assets to opportunities.

Meta-Analysis of Global Trends in Clean Technology R&D and Demand

Conduct an extensive review and consultation with existing research, interviews, and other sources to produce an assessment of leading trends in clean technology R&D and demand for all four sectors. Preliminary findings will review key sources of clean technology R&D and demand in the U.S. and globally across each sector. Subtasks to include:

- Literature review. Intensive use of existing research on clean technology R&D and global demand.
- Interviews with industry experts. Based on a literature review, and in coordination with the Technical Advisory Groups, we will reach out to experts to validate and expand on preliminary findings.
- Data summaries. Summary statistics on leading R&D and industry trends, in the U.S. and globally. Work will leverage global trade data, industry data published by the IMF, World Bank, OECD, and other relevant sources.

Deliverable: Interim project report #1

Budget: \$15,000

Task 3. Asset Inventory in Washington

The next phase will entail a comprehensive review of clean technology assets and capabilities in Washington. Subtasks to include:

- Assemble industry profiles: data and information on leading trends and capabilities across each sector in Washington. Profiles will include consultation with Technical Advisory Groups. Analytics to include workforce human capital, investment, R&D, and other industry metrics specific to clean technology capabilities and applications in each sector.
- Innovation and research. Information on leading clean technology products, services, and innovation across each sector happening in Washington.

Deliverable: Interim project report #2

Budget: \$12,000

Task 4. Opportunity Assessment – Sector Roadmaps

Based on analytics produced above, develop an assessment of how well positioned Washington businesses, organizations, research centers, and

other entities across sectors are to take advantage of leading clean technology trends and opportunities. Analytics will include a matrix helping stakeholders map these opportunities to Washington state assets, as well as a means to understand where gaps may exist and investment potentially needed (Sector Roadmaps).

Deliverable: Interim PPT #3 and matrix document

Budget: \$12,000

Task 5. Draft Final Reports

Draft final reports to include technical addenda, an executive summary, and supporting documentation. Draft reports will be circulated to the Advisory Committee and each of the respective Technical Advisory Groups.

Deliverable: Draft and final reports

Budget: \$5,000

Task 6: Preparation of Final Report and Outreach

The final study report will include an education element, workforce training element, and recommendations regarding policy actions and investments that might be considered. The final report will also be distributed broadly with an outreach effort across Washington State.

Deliverable: Final study report, recommendations and outreach

Budget: \$10,000

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Eco-Nomics

Building the Green Economy in Washington State



Energy

- Technical Working Groups
- Sector Analysis
- Sector Road Maps
- Analysis & Recommendations for Business Development

Water

- Technical Working Groups
- Sector Analysis
- Sector Road Maps
- Analysis & Recommendations for Business Development

Agriculture & Forestry

- Technical Working Groups
- Sector Analysis
- Sector Road Maps
- Analysis & Recommendations for Business Development

Building Materials

- Technical Working Groups
- Sector Analysis
- Sector Road Maps
- Analysis & Recommendations for Business Development

