



Executive Summary

Members of the Pacific Coast Collaborative (PCC), in particular California, Oregon, Washington, and British Columbia, commissioned this report by GLOBE Advisors (GLOBE) and the Center for Climate Strategies (CCS). The report identifies opportunities for accelerated job creation, investment, and market capture in each jurisdiction by leveraging the potential of the emerging West Coast “clean economy” through the power of regional collaboration.

The “clean economy” represents a shift in the host economy toward less carbon-intensive solutions and longer-term, sustainability-based planning and programming. The fundamentals of a cleaner economy promote enhanced economic performance and global competitiveness, energy and environmental security, and sustained investment.

More specifically, however, there are sectors within the economy that are directly responsible for supplying technologies, products, and services that have measurable environmental benefits in terms of their abilities to reduce greenhouse gas (GHG) emissions and improve both energy and resource security and efficiency. These specific sectors can in fact be thought of as a subset of the larger economy and are the core focus of this study.

Research has shown that clean economy jobs have grown on average 2-3 times faster than total jobs in the economy over the last decade, and they are more resilient to market volatility and vulnerabilities.

Drawing upon the many departments and agencies of the governments of California, Oregon, Washington, and British Columbia, and supplemented by extensive research and the resources of GLOBE and CCS, a detailed examination was conducted of the opportunities for investment and employment in the region's clean economy.

A parallel analysis was conducted of programs and policies in each jurisdiction to identify factors enabling or impeding job creation and investment attraction and to highlight successful strategies that could form the basis for region-wide collaboration.

KEY MARKET OPPORTUNITY AREAS

This report identifies five key clean economy sectors or "market opportunity" areas: Clean Energy Supply, Energy Efficiency and Green Building, Clean Transportation, Environmental Protection and Resource Management, and Knowledge and Support.

The areas of highest potential in terms of job growth and industrial development within the five market opportunity sectors are:

- i. **Energy Efficiency & Green Building** – In particular, related to whole building retrofitting, energy efficient equipment, and new, high-efficiency green building construction.
- ii. **Environmental Protection & Resource Management** – In particular, greater recycling and reuse, more efficient infrastructure, and the enhancement of measures to promote the conservation of natural resources and the restoration of damaged ecosystems.
- iii. **Clean Transportation** – In particular, electric and alternative fuel vehicles, enhanced public transit infrastructure, and lower-carbon intensive energy sources such as natural gas.
- iv. **Clean Energy Supply** – In particular, distributed energy systems, smart grid infrastructure and transmission, and enhanced integration of energy from clean and renewable sources.
- v. **Knowledge & Support** – In particular, educational institutions for workforce skills development and strengthening centers of excellence that build on the knowledge base of the clean economy.

The analysis shows that by 2020, the West Coast region's clean economy could grow by more than 200% through the adoption of progressive policy measures that build upon anticipated economic growth, both locally and in rapidly expanding Asian economies in need of clean solutions. This represents up to \$95.5 billion in new GDP contributions, 1.03 million new, net clean economy jobs, and investment opportunities conservatively estimated at between \$147 and \$192 billion (in \$2010) by the year 2020. These estimates represent growth on top of the \$47.2 billion in GDP contributions, 508,000 full-time equivalent (FTE) direct production jobs, and existing investment levels throughout the West Coast region's clean economy in 2010.

Employment growth can be attributed particularly to the Energy Efficiency and Green Building and the Environmental Protection and Resource Management areas of the economy. The Clean Transportation and the Clean Energy Supply components would also contribute significantly to new job growth, although to a lesser degree.



REALIZING THE MARKET OPPORTUNITIES

Significant opportunities exist for accelerating the transition to a cleaner economy, but this will require a clear vision, proactive leadership, and strategic, systems-based planning approaches. Leveraging on the strengths of each jurisdiction can result in regional collaborative synergies and a globally competitive market for clean technology, products, and services. However, this growth cannot be sustained by public policy action alone and requires active participation by the business community and investment by the private sector. The two are linked: public sector policy creates private sector opportunity for clean economic action.



Source: Carmanah Technologies (Victoria, British Columbia)

Achieving the clean economy requires a leveling of the playing field for clean energy, energy efficiency, and clean transportation solutions.

Promoting price mechanisms that include the full costing of carbon and energy, as well as other non-price mechanisms that remove barriers, are equally important in stimulating innovation and driving private sector investment.

In keeping with the founding mission of the PCC, this report presents a range of opportunities for cooperative action amongst the four West Coast jurisdictions to create new jobs, attract new investment, expand positive synergies, capture emerging markets, and to enhance an already unparalleled quality of life. Benefits from regional collaboration include:

- i. Harmonized codes and standards that can reduce transaction and program administrative costs for firms and governments, respectively, remove barriers, and foster investment by driving large-scale market demand for energy efficiency;
- ii. Development of a regional market which allow firms to develop products and services for larger markets and gain important economies of scale;

- iii. Inter-regional workforce development that can help deliver learning curricula targeting clean economy production and process skills, as well as addressing knowledge shortages;
- iv. Positive network externalities that allow for the creation and exploitation of synergies that would not occur by the efforts of a single jurisdiction;
- v. Economic gains from inter-regional trading that can be achieved from comparative advantages created through specialized clean economy goods and service production within the jurisdictions; and
- vi. Strong regional policy alignment designed to attract outside capital and lift up new forms of sustainable infrastructure and environmental services and stimulate high job creation potential.

Some of the overarching enablers that will accelerate clean economy growth include:

- i. Clear and stable policy frameworks that encourage private sector investment and public sector support for demonstration projects and the early adoption of clean technologies;
- ii. Financial assistance programs and mechanisms that facilitate investments in energy efficiency and green building for households, commercial establishments, and public buildings, including greater use of bonds to finance clean economy investments; and
- iii. Broad-based public awareness, post-secondary education and training, and K-12 education programs that build a wider appreciation of the clean economy, strengthen the “knowledge” components of the labor force, and better prepare civil society for clean economy employment opportunities.

POTENTIAL AREAS FOR FUTURE COLLABORATION

The PCC and its member jurisdictions may wish to pursue some of the following opportunities as part of future agendas to accelerate the transition to a cleaner economy and stimulate job creation by:

- i. Working cooperatively to expand private investment in the region's clean energy sector and leveling the playing field to facilitate deployment of clean energy supply throughout the west coast region.
- ii. Promoting the use of "highest" green building standards for public buildings, particularly with respect to energy efficiency retrofits and new building construction; promoting the use of zero-net energy building design and practices; and encouraging private sector support for innovative financing mechanisms.
- iii. Building on the West Coast Green Highway initiative by expanding on additional, region-wide clean transportation initiatives that include using joint purchasing power for low carbon vehicles; integrating electrification and /or alternative fuel use in port activities and coastal ferry systems; exploring the regional benefits of high-speed rail corridors; and lowering the carbon footprint of long-haul trucking operations.
- iv. Continuing to collect and share data and information for use in monitoring efforts and for developing the region's climate adaptation and resiliency strategies, including the potential to further develop emergency response plans and create a region-wide natural capital index.
- v. Establishing a resource recovery initiative to develop a market for recycled goods and deconstruction resources, diverting potentially reusable material away from landfills and creating immediate employment and business opportunities.

vi. Harmonizing environmental and energy efficiency standards and requirements, where appropriate, to accelerate clean economy initiatives and to provide greater levels of transparency, predictability, and certainty to businesses, entrepreneurs, and private sector investors.

vii. Creating a network of existing centers of excellence to facilitate greater collaboration on research and development by lowering associated costs and improving information sharing.

viii. Attracting and retaining high caliber workers, researchers, and investors from around the world by developing shared vision and leveraging marketing and branding efforts to promote the strengths of the West Coast region's clean economy.

In summary, the research supporting this report points to the clean economy as the next major global economic opportunity. For the West Coast region, the clean economy and the policies that drive it are a path to global competitiveness and prosperity. That being said, it would be wrong to assume that this future will happen of its own accord, or that the region's abundant natural resources will sustain its current high standards of living or insulate it from the stresses and shocks present in the larger global economy. The clean economy and its employment opportunities can be won or lost depending on decisions made now.

