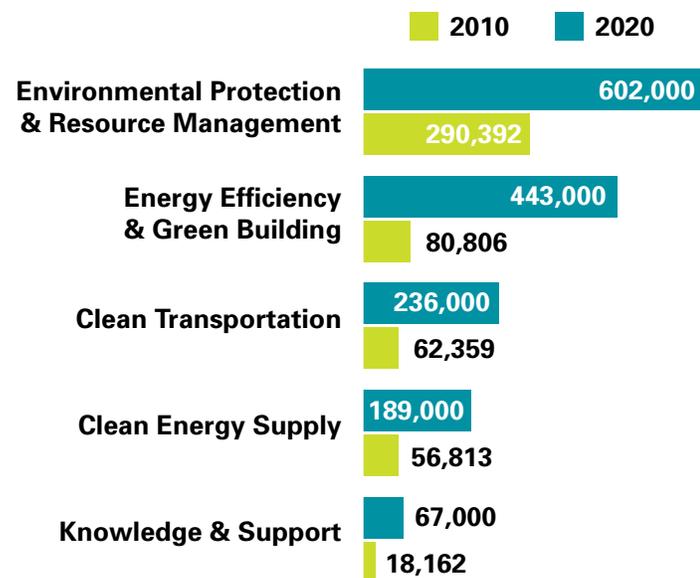


# The West Coast Clean Economy

## Opportunities for Investment & Accelerated Job Creation

Members of the Pacific Coast Collaborative (PCC), in particular, California, Oregon, Washington, and British Columbia, commissioned this report by GLOBE Advisors and the Center for Climate Strategies. 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.

**Figure 1:** Total Net New Full-Time Equivalent Jobs by sector (2010-2020).



A report commissioned by the **Pacific Coast Collaborative**

Prepared by:

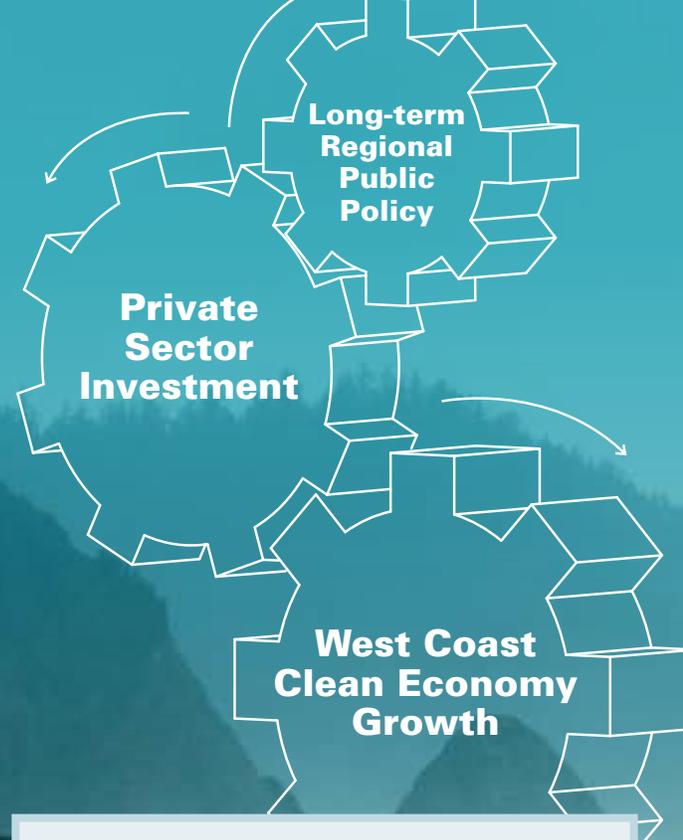


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## KEY MARKET OPPORTUNITIES

This report identifies five key clean economy market opportunity areas as having the highest potential in terms of job growth and industrial development.

- 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 and Support** – In particular, educational institutions for workforce skills development and strengthening centers of excellence that build on the knowledge base of the clean economy.



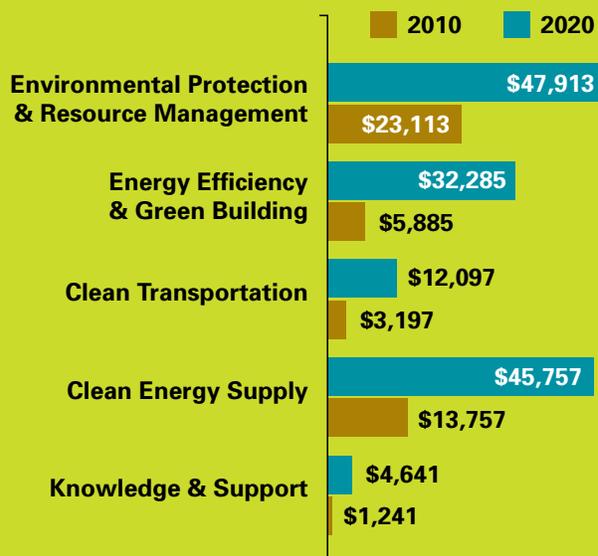
**Research has shown that clean economy jobs have grown on average 2-3 times faster than total jobs in the economy over the last decade, and they are more resilient to market volatility and vulnerabilities.**

# Key Highlights

1. The clean economy is the single most important global opportunity on the medium-term horizon, with revenues expected to reach US \$2.3 trillion by 2020 (HSBC 2010).
2. The West Coast region, which is globally competitive with other global economic powerhouses, is ideally positioned to realize the economic, social, and environmental benefits of clean economic growth.
3. The transition towards a cleaner economy is well underway throughout the West Coast region with a GDP contribution of US \$47 billion and 508,400 Full Time Equivalent (FTE) clean jobs in 2010.
4. It is estimated that up to 1.03 million net new jobs can be created between 2010 and 2020.
5. GDP contributions of up to US \$142.7 billion and increased investments of between US \$147-192 billion are also possible during this period.
6. Five high growth clean economy market opportunity segments exist: Clean Energy Supply, Clean Transportation, Energy Efficiency & Green Building, Environmental Protection & Resource Management, and Knowledge & Support.
7. Regional collaboration will allow the leveraging of each jurisdiction’s strengths to create a strong, globally competitive market for clean technology products and services.
8. Leveling of the playing field for clean energy, energy efficiency, and clean transportation solutions, as well as the true costing of carbon, is essential to achieving clean economic prosperity.

9. Accelerating the transition to a cleaner economy requires vision, leadership, and coherent, economy-wide, strategic approaches.
10. The opportunity cost of inaction related to climate change adaptation are too great to be ignored and the employment growth opportunities in related infrastructure, planning, research, monitoring, and innovation too important to be overlooked.
11. The PCC clearly has a strong foundation upon which to build a prosperous and globally competitive clean economy but will require a long-term public policy approach.

**Figure 2: Total GDP Contribution by Clean Economy Sector (2010-2020)**





Source: <http://www.car2go.com>

## REALIZING THE MARKET OPPORTUNITIES

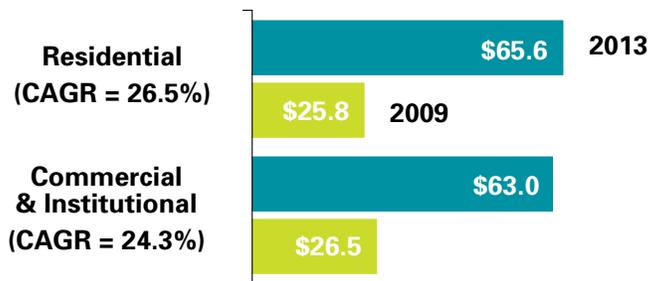
Significant opportunities exist for accelerating the transition to a cleaner economy, but this will require a clear vision, proactive leadership, and strategic, systems-based planning approaches.

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.

**Figure 3: US green building market by segment, 2009-2013 projections (billions of US\$)**

Source: McGraw-Hill Construction Report, 2008



## ENABLERS FOR CLEAN ECONOMIC GROWTH

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.



# HIGH POTENTIAL AREAS FOR REGIONAL COLLABORATION

## CLEAN ENERGY SUPPLY

- 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.

## ENERGY EFFICIENCY AND GREEN BUILDINGS

- Using the "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.
- 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.

## CLEAN TRANSPORTATION

- 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.

## ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT

- Collecting and sharing 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.
- 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.

## KNOWLEDGE AND SUPPORT

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

## CLEAN ECONOMY GROWTH POTENTIAL FOR THE WEST COAST REGION

Key Market Sectors	2010 Baseline Jobs	2020* Policy Driven Potential New Jobs	2010 Baseline GDP (US\$ Millions)	2020* Policy Driven Potential Growth in New GDP (US\$ Millions)
Clean Energy Supply	56,813	Up to 132,000	\$13,757	Up to \$32,000
Energy Efficient & Green Building	80,806	Up to 362,000	\$5,885	Up to \$26,400
Clean Transportation	62,359	Up to 174,000	\$3,197	Up to \$8,900
Environmental Protection & Resource Management	290,332	Up to 312,000	\$23,113	Up to \$24,800
Knowledge & Support	18,162	Up to 49,000	\$1,241	Up to \$3,400
<b>Total</b>	<b>508,462</b>	<b>Up to 1,029,000</b>	<b>\$47,193</b>	<b>Up to \$95,550</b>

\* Modeled scenarios to 2020 are derived in part upon insights garnered from analyses originally related to areas outside the West Coast region. As a result, in order to more accurately assess the macroeconomic dimensions of the West Coast clean economy, further analysis will be required.