

# CLEAN ENERGY SUPPLY & STORAGE

## British Columbia Market Sector Snapshot



**GLOBE  
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### GROWING BC'S CLEAN ECONOMY

The “clean” or “green” economy is neither an abstract concept nor a separate component of the larger economic system. It represents a shift in the host economy toward less carbon-intensive solutions and longer-term sustainability-based planning and programming.

Three sectors exist at the “core” of BC’s clean economy. These are the Clean Energy Supply and Storage, the Clean Transportation, and the Green Building and Energy Efficiency sectors.

This summary sheet provides a snapshot of the Clean Energy Supply and Storage sector in British Columbia, a sector that is a driving force behind what will ultimately be this province’s single most powerful competitive advantage: a cleaner and more sustainable economy.

**“In 2011, the sector was estimated to generate some \$4.9 billion in GDP and 25,100 full-time equivalent jobs.”**

### REPORT SNAPSHOT

- In 2011, the sector was estimated to have generated some \$4.9 billion in gross domestic product (\$3.9 billion direct and \$1.0 billion indirect) and 25,100 full-time equivalent jobs (13,000 direct and 12,100 indirect).
- The sector is divided into three key market opportunity segments: clean energy generation; technology development and manufacturing; and smart grid and transmission.
- Experienced engineers, technicians, and skilled construction trades people continue to be among the most difficult occupations to source for this sector.
- BC requires public policy support in order to accelerate investment and employment growth in this sector, as well as for developing expertise to exploit domestic and international market opportunities.
- Collaboration with key players in this sector will be required to develop comprehensive labour market strategies to ensure that the current and future supply of skilled workers aligns with demands.

## CLEAN ENERGY JOBS AND GDP

In this study, clean energy is defined as energy produced from renewable sources in a process that has minimal impact to the environment. Examples of clean power include energy produced from the sun, wind, biomass, ocean currents and waves, and geothermal sources and adhere to rigorous environmental standards.

British Columbia's long-term commitment to having renewable energy account for at least 90% of the province's energy mix, combined with the continuous renewal and upgrading of existing transmission infrastructure and the increasing global demand for BC clean energy solutions and technologies, are the primary drivers for industry growth.

As such, the province has established itself as a clean energy leader over the past decade. Clean Energy Generation accounts for the majority of the employment in this sector, with some 9,800 direct FTE jobs or approximately 75% of total employment (see Figure 1).

The Smart Grid and Transmission segment, which comprises companies active in transmission upgrades and the deployment of smart grid infrastructure and metering, accounts for approximately 1,220 jobs or 10% of total employment in the sector.

The Clean Technology Development and Manufacturing segment, which includes firms involved in research and development for biofuels, wood pellet production, and other clean energy technologies, is not a huge generator of wealth in the province (equal to approximately 4% of total sector GDP as illustrated in Figure 2), which is partly due to the pre-commercial stage of many companies. However, employment in this segment is relatively high and constitutes some 1,980 FTE jobs or 15% of the total employment in this sector. While this segment is relatively small, it is key to BC's standing as one of the largest clean technology clusters in North America which attracts investment and strategic alliances with larger global players.

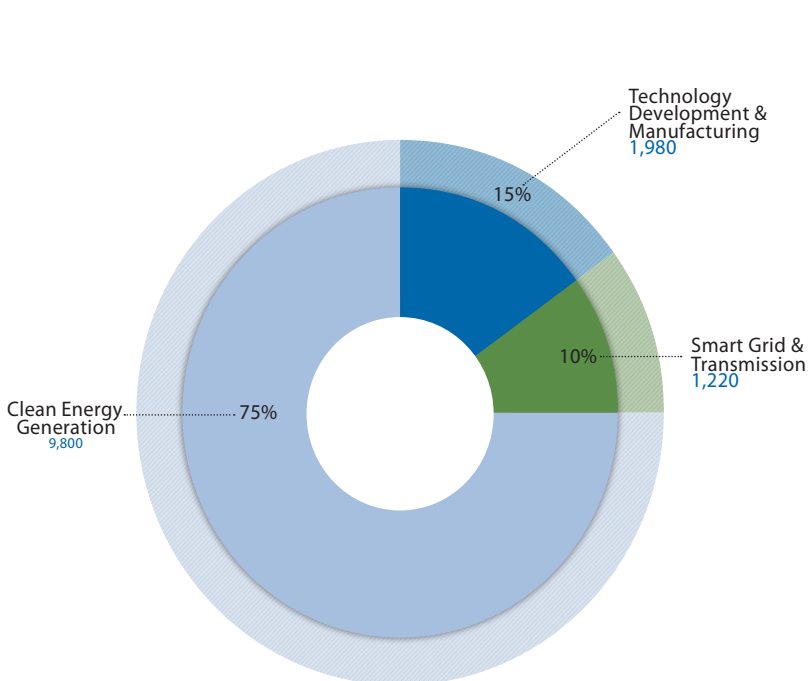


Figure 1:  
Employment (direct full-time equivalent jobs)  
in British Columbia's Clean Energy Supply  
and Storage sector by segment, 2011.

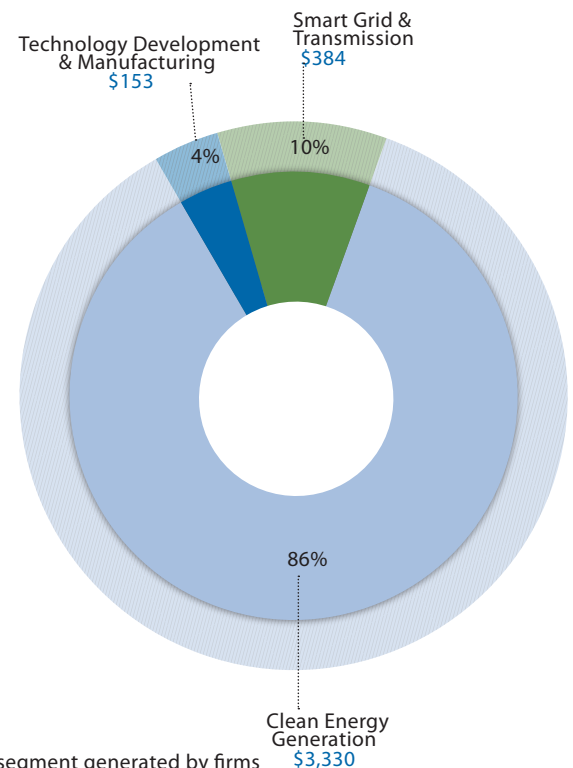


Figure 2:  
Direct GDP by segment generated by firms  
active in British Columbia's Clean Energy  
Supply and Storage sector, 2011 (\$ million).

## CURRENT TRENDS

The Clean Energy Supply and Storage sector in British Columbia is undergoing profound changes. The public policy landscape, technology pricing and performance, social acceptance, and other broader market and economic conditions are critical factors influencing developments in this sector.



**Photo:**  
Tantalus Systems

**Credit:**  
Scott McAlpine

BC Hydro forecasts that the province's electricity needs will grow by up to 50% between now and 2030. This growth is due primarily to new industrial activity in the mining and natural gas extraction and export sectors, including the provincial government's new Liquefied Natural Gas (LNG) Strategy and plans to build LNG terminals in Kitimat.

In its 2012 draft Integrated Resource Plan, BC Hydro has set out measures to ensure the province can meet its own demand for power over the next two decades. These measures include pursuing aggressive demand-side management targets, the construction of the Site C storage hydro project, and potential future calls for private clean energy.

BC clean energy technology companies are also providing innovative solutions to help address the increasing global appetite for energy. Accelerated by government funded initiatives such as the BC Bioenergy Network, the Innovative Clean Energy (ICE) Fund, and Sustainable Development Technology Canada's (SDTC) SD Tech Fund, clean energy technology companies are reaching international export markets with products such as biomass gasification systems, next generation cellulose-based biofuels, wood pellets, and advanced energy storage solutions.

## IN SUMMARY

The following is a list of elements that can help to accelerate growth in British Columbia's Clean Energy Supply and Storage sector.

1. A clear and stable policy framework;
2. Pursuit of clean energy and emissions planning (CEEP);
3. Increased partnerships and collaboration;
4. Greater export support and capacity building for trade;
5. A level playing field with non-renewable energy sources;
6. A focus on increasing productivity; and
7. Promotion of knowledge transfer.

## JOB CREATION OPPORTUNITIES

There are many opportunities within the Clean Energy Supply and Storage sector that span the entire value chain.

While most of the opportunities for clean energy projects at both the utility- and district-scale are during the construction phase, there are opportunities that exist throughout the project and product lifecycles for both clean energy project and clean energy technology development, respectively.

The sector offers a number of employment creation opportunities for BC, particularly related to:

- Project management and business support services for clean energy project development;
- Construction and development of clean energy facilities;
- Research and development of clean energy technologies and systems;
- Smart grid infrastructure development, deployment, and maintenance; and
- Engineering services for clean energy generation and storage.

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## ABOUT GLOBE ADVISORS

GLOBE Advisors, a subsidiary of the Vancouver-based GLOBE Group, was established in 2005 in response to an increasing demand for project-based consulting services in the environmental business sector. GLOBE's vast networks and extensive experience in the areas of project management, consulting, partnership development, and market research makes them well positioned to undertake a number of endeavors to further the business of the environment.

To explore how GLOBE Advisors can assist your organization with its strategic objectives, please contact:

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