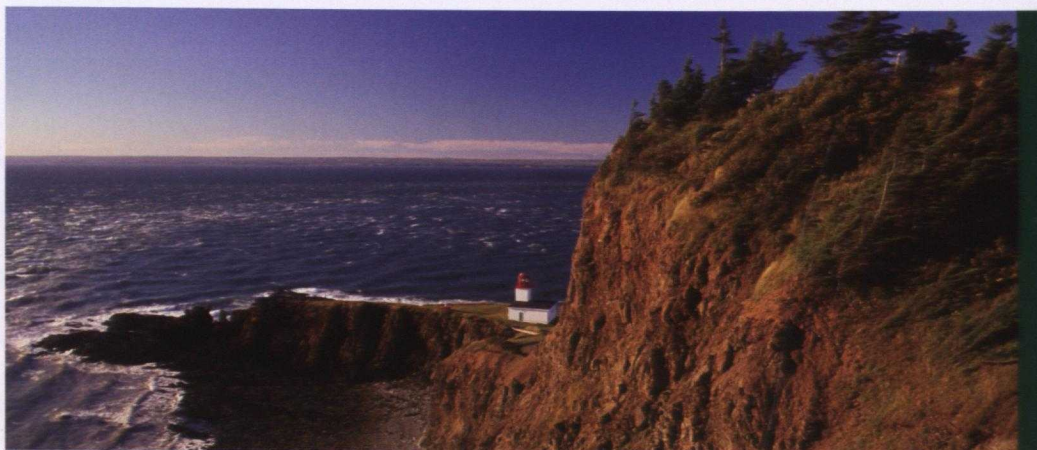


The Bay of Fundy, situated between the provinces of Nova Scotia and New Brunswick, is known for having the greatest difference in water level in the world between its high and low tides. Twice a day, 14 billion tonnes of seawater move through this channel—equivalent to the combined flow of every river on earth.



cell cluster is the world's largest in terms of both employment and number of companies, and is based in Vancouver. In addition to being North America's #1 centre for U.S.-registered fuel-cell patents,⁵ Vancouver is frequently recognized as the world's most liveable city. Metro Vancouver-based **Ballard Power Systems Inc.** is an industry pioneer, and its fuel cells powered the world's first zero-emissions vehicle in 1993. In 2009, **Daimler AG** of Germany signed a \$24-million deal to receive products for its fuel-cell cars and buses from Ballard. Another anchor in Vancouver is **Powertech Labs**, which has built the world's first public-use 700-bar fast-fill hydrogen fueling station.

Hydro and Ocean Power

Canada offers investors considerable expertise in hydropower, its oldest green industry. **ALSTOM Hydro**—a joint venture between French multinationals **ALSTOM** and **Bouygues**—has a strong Canadian presence, with its Canadian operations having specialist capabilities in the design and development of hydroelectric and thermal energy plants. Germany's **Andritz Group AG**—a world leader in industrial plants, systems and services—has a plant in Lachine, Quebec.

With the longest coastline of any country in the world, Canada is well positioned to become a major producer of ocean energy. **OpenHydro Group Ltd.** of Ireland recently partnered with utility **Nova Scotia Power Inc.** to create a tidal demonstration project in the Bay of Fundy, site of the world's

highest tides. The United Kingdom's **Marine Current Turbines Ltd.** has a tidal-energy agreement with Nova Scotia's **Minas Basin Pulp and Power Co. Ltd.**

Canadian Government Programs in Renewable Energy

Government programs and funds support the growth of Canada's renewable-energy industry. Canada's federal ecoENERGY for Renewable Power program has thus far invested \$1.48 billion to boost electricity from renewable sources, including wind, solar, biomass, geothermal and ocean energy.

For cleantech solutions at the late-stage development and pre-commercial phases, Canada has initiated a \$550-million Sustainable Development Technology Canada Tech Fund. In addition, Canada has invested \$500 million in the NextGen Biofuels Fund, which backs first-of-a-kind commercial-scale demonstration facilities for producing renewable fuels. Both funds are among the largest funds of their kind in the world.⁶

In its March 2010 budget, the federal government has introduced several measures encouraging companies to increase their investments in renewable power from forestry waste. This includes a four-year \$100-million fund for the development, commercialization and implementation of advanced clean energy technologies in the forestry sector, and accelerated capital cost allowances applicable to clean-energy equipment.

KEY VALUE-CHAIN STRENGTHS

- **Research and development:** Wind energy, solar energy, biofuels and biogas, hydrogen and fuel-cell technology, wave technology, tidal energy demonstration projects
- **Product development:** Biodiesel, grain ethanol, cellulosic ethanol, biogas, syngas, zero-emissions vehicles, vertical tidal turbines
- **Manufacturing:** Wind turbine towers and components, solar thermal systems, solar photovoltaic modules, ethanol production plants, biomass gasification systems, fuel-cell power systems
- **Distribution:** Completely integrated into the North American electricity grid

KEY SEGMENT STRENGTHS

- Wind, hydro, solar
- Hydrogen and fuel cells
- Bioenergy
- Tidal and wave energy