



## 2010 REASONS TO DO BUSINESS IN CANADA



### HYDROPOWER EXCELLENCE FLOWS

With nearly 12% of total global production, Canada is the world's second largest producer of hydroelectricity. Second only to China, Canadian production of hydroelectricity surpasses that of all other countries in the world, including the United States, Brazil, Russia, Norway, India and Japan. Today, over 60% of Canada's electricity needs are met by hydroelectric sources and close to 65% of the country's total electricity exports are hydro-based.

The Vancouver 2010 Olympic and Paralympic Winter Games marked a new milestone for Canada's hydropower industry. Through such initiatives as BC Hydro's Green Energy Innovations project, Canadian expertise in the design and operation of hydroelectric stations was demonstrated to international audiences. For example, through advance planning the overall dependence on diesel backup generators resulted in a 90% reduction in greenhouse gas emissions from generators as compared to previous Games.

Canadian expertise is not only limited to the provision of hydroelectric power, however. In alignment with the objective of making the 2010 Winter Games the cleanest Games to date, additional projects were undertaken through BC Hydro's High Performance Building Project to ensure the design and construction of energy saving venues, such as the expansion of the Vancouver Convention Centre. These projects not only helped to ensure the provision of a cleaner source of power to the 2010 Winter Games, but also helped to ensure lower energy costs, more

sustainable power use and a significantly smaller environmental footprint.



Photo courtesy of Vancouver Convention Centre

### World-Renowned Expertise

Canada is widely considered a world leader in the development of hydropower products and services, offering unique expertise across all areas of the global value chain.

From a manufacturing perspective, Canadian firms are globally recognized for their unique expertise in the design, manufacturing, testing and installation of various hydropower components, including:

- generators
- turbines
- valves
- electrical switchgears
- transformers



Canadian expertise is not limited to manufacturing and design. Canadian firms also offer over 100 years of industry experience, and are able to provide distinct services in a number of areas, such as:

- surveys and project feasibility studies
- social and environmental impact assessments
- large plant operation & management expertise
- engineering, consulting and financial services
- computer modeling and simulation tools
- expertise in ice and pipeline freezing issues



Photo courtesy of BC Hydro

## Small Hydro

The development of small-scale hydro facilities is an essential component of Canada's hydropower industry. Of the 475 hydropower stations currently operating in Canada, a significant number are small-scale facilities producing less than 15 megawatts (MW) of power. On an annual basis, small hydro contributes an estimated C\$150 million to the Canadian economy and employs close to 2,000 Canadian workers nationwide.

Globally, Canada is well-known for its products and services in the provision of small hydro. In particular, Canadian firms are highly-regarded for:

- powerhouse automation systems
- turbine efficiency, upgrades and retrofitting

- control systems for off-grid applications
- computer modeling for flow-through turbines

## Hydropower Projects

A large number of hydroelectric projects are currently underway in Canada. These projects make use of Canadian capabilities in the design and construction of new facilities, as well as the upgrade and refurbishment of many existing facilities. Several notable projects that are currently underway in Canada include:

Project	Location	Cost	Details
<b>Romaine Hydroelectric Complex</b> (Hydro-Quebec)	Havre-Saint-Pierre, QC	C\$6.5 billion	<ul style="list-style-type: none"> <li>• Four new generating stations</li> <li>• 1,550 MW additional installed capacity</li> <li>• Smart Grid control</li> <li>• Completion in 2020</li> </ul>
<b>Niagara Tunnel Project</b> (Ontario Power Generation)	Niagara Falls, ON	C\$985 million	<ul style="list-style-type: none"> <li>• One of the largest tunnels in North America</li> <li>• Will divert an additional 500 cubic metres of water per second to Sir Adam Beck Stations</li> </ul>
<b>East Toba and Montrose Run of River Project</b> (Plutonic Power Corporation)	Powell River, BC	C\$660 million	<ul style="list-style-type: none"> <li>• Construction of a 196-megawatt run-of-river hydroelectric facility</li> </ul>

## Global Presence

Canadian expertise is not limited, however, to the domestic market. Increasingly, Canadian expertise is sought out in a number of areas worldwide. In particular, Canadian firms have undertaken a wide variety of roles in the design and construction of such notable international projects as:

- Alto Anchicaya (Colombia)
- Bayano (Panama)
- Kpong (Ghana)
- Manantali (Mali)
- Nalubaale (Uganda)
- Bersia and Kenering (Malaysia)
- Magat (Philippines)
- Idukki and Chamera (India)

Source: Canadian Hydropower Association

## Canada's Future

Today, Canada generates over 70,000 MW of hydroelectric power. With an additional 163,000 MW of capacity still undeveloped, Canadian firms

will be able to further expand their global industry presence well into the future. Canada's untapped potential, coupled with its distinct ability to leverage its infrastructure and expertise, will help to ensure the continued growth and success of the Canadian hydropower industry.

### **The Canadian Trade Commissioner Service (TCS)**

The Canadian Trade Commissioner Service is a key resource for anyone interested in doing business internationally. Our global network of trade offices and dedicated officers are there to provide assistance and resources to maximize engagement with companies and government. For more information on Canadian expertise, we encourage you to contact one of Canada's local Trade Commissioners. You can access their knowledge and networks at:

[www.tradecommissioner.gc.ca](http://www.tradecommissioner.gc.ca)

### **For More Information...**

Foreign Affairs and International Trade Canada:

[www.dfait-maeci.gc.ca](http://www.dfait-maeci.gc.ca)

Industry Canada:

[www.ic.gc.ca](http://www.ic.gc.ca)

National Research Council of Canada:

[www.nrc-cnrc.gc.ca](http://www.nrc-cnrc.gc.ca)

Natural Resources Canada – CanmetENERGY:

[canmetenergy-canmetenergie.nrcan-rncan.gc.ca](http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca)

Sustainable Development Technology Canada:

[www.sdtc.ca](http://www.sdtc.ca)

Canadian Hydropower Association:

[www.canhydropower](http://www.canhydropower)

