

"Electricity is an essential service. It's a unique commodity; it cannot be stored. When you need it, you need it now. It's risky to be dependent on imports"

- Steve Davis, president, Independent Power Producers Association of British Columbia

# Powering green

The natural choice for B.C.

By Corey Van't Haaff

With all the buzz over 2010 and the Olympics, 2016 may be an equally significant year for B.C. It's the year by which the province is mandated to become energy self-sufficient. It's a key goal, given that we use more energy, on average, than other Canadians, and that our own energy needs are forecast to increase by 1.7 per cent annually for each of the next 10 years.

It's a goal with a plan, and with support. BC Hydro and independent power producers (IPPs) are working hard on the development of power projects that provide electricity through efficient fuel sources, such as wind, water, geothermal, biomass, waste heat and others. And many IPPs are looking at ICE.

No, ICE isn't frozen water. It's the Innovative Clean Energy Fund, a \$25-million fund created by the provincial government to solve challenges, protect the environment, grow the economy and attract customers to environmentally sound energy solutions.

"In 2007, legislation allowed a 0.4 per cent levy in the sale of non-transportation-related fuels. If you spend \$100 on electricity, that's 40 cents. It's very minimal," says Ida Chong, B.C.'s minister of technology, trade and economic development. The fund anticipates an annual allocation of \$25 million. The first round of funding announced in July 2008 went to 15 different projects in five regions (11 communities total).

The minister thinks it's great that five regions were successful, but there's still a need for more rural involvement: "A second call was announced for rural projects, to encourage remote communities. I know there are a lot of innovative ideas there."

"You know, the ICE Fund is not about developing new technologies but assisting in the acceleration of pre-commercial activities,"

she says, adding that the first round of projects attracted substantial funding from the private sector. "The \$25 million leveraged \$80 million. It shows the government's commitment to the clean technology sector. My understanding is that B.C.'s clean technology sector is the third largest in the world, by size and value."

The ICE Fund's existence ensures awareness by other jurisdictions and countries of B.C.'s clean technology. China and India, says Chong, have growing economies that will surpass that of the U.S. They'll be looking for clean, sustainable alternative energy.

"B.C. is one jurisdiction best able to weather what has happened with the economy," she says. "We've got some of the best talent and minds here. We need to keep technology here and the brain trust here. ... [Businesses] need to keep their costs down by reducing their dependency on fossil fuels. We will be energy self-sufficient by 2016: the ICE Fund will help."

So will BC Hydro's Clean Power Call, an RFP for providers to supply up to 5,000 GW-h/year of clean electricity through projects using proven technologies.

The program defines clean electricity as electricity generated in B.C. in a facility that complies with all applicable federal and provincial environmental regulations and that uses a clean, renewable source. In other words, think water, wind, solar, biogas, biomass and geothermal.

"This is the first time [that] the requirement is that they be clean," says Dag Sharman, spokesperson for BC Hydro. He says that our growing requirement for electricity is behind the call. At least half our shortfall in locally produced electricity will be met through conservation efforts, such as BC Hydro's Power Smart program. B.C. has, however, imported 10 to 15 per cent of its

electricity over seven of the last 10 years.

Sharman says that 90 per cent of the power that BC Hydro generates is clean and that the utility is committed to the province's energy plan and need for self-sufficiency by 2016.

"All new generating projects have to have zero net greenhouse gas emissions. All clean power call proposals have to meet the provincial government's definition of clean."

Since it cannot accomplish this itself, BC Hydro made the call, and IPPs may bid on providing clean, renewable energy. Of the proposals received to date, 45 are run-of-river projects (using the power of moving water to turn a turbine and create electricity), and 19 are wind.

"A lot were wind proposals: more than in the past," says Sharman. "I don't know why that is yet; I'm not sure what that means."

With zero net greenhouse gas emissions and a long-term goal of no net incremental environmental impact by 2024, new projects won't increase the environmental footprint.

Syntaris Power Corporation is one company that answered BC Hydro's call. It calls itself a green energy company. "Specifically, we have a team of experts in small hydro projects," says Bob Fraser, its president and chief executive officer. Green energy, he adds, is an appealing and fulfilling sector to be in personally and a good business to be in altogether.

The company has applied for projects on about 40 creeks, in the area of run-of-river power generation. Once an application is accepted (the province owns all the creeks), the licence-holder may look at a project and decide whether it's feasible to proceed with it.

Says Fraser, "Economy comes from cost of construction,



Bob Fraser, president and chief executive officer, Syntaris Power Corporation

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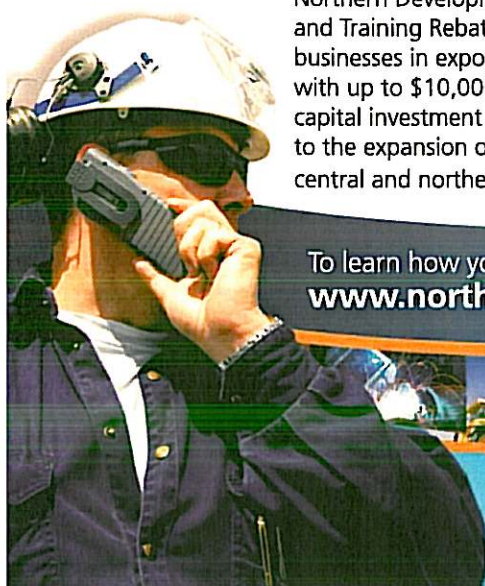
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which is determined by the proximity to roads and transmissions lines, and the complexity of construction, compared and contrasted with the amount of water and distance it flows. With elevation, it creates head, and head and flow tell you the amount of energy produced, which tells you the economy and the amount of income you can make."

IPPs, he says, supply a very small percentage of the power needed, but that percentage is becoming absolutely necessary as we go through the next 20 years.

"Independent power producers are organizations, other than BC Hydro, that generate electricity and sell it to the grid, which is really BC Hydro," says Steve Davis, president of the Independent Power Producers Association of British Columbia.

He says these organizations look around the province for sources of electricity, such as steep and deep creeks, windy ridges, piles of wood waste or geothermal hotspots.

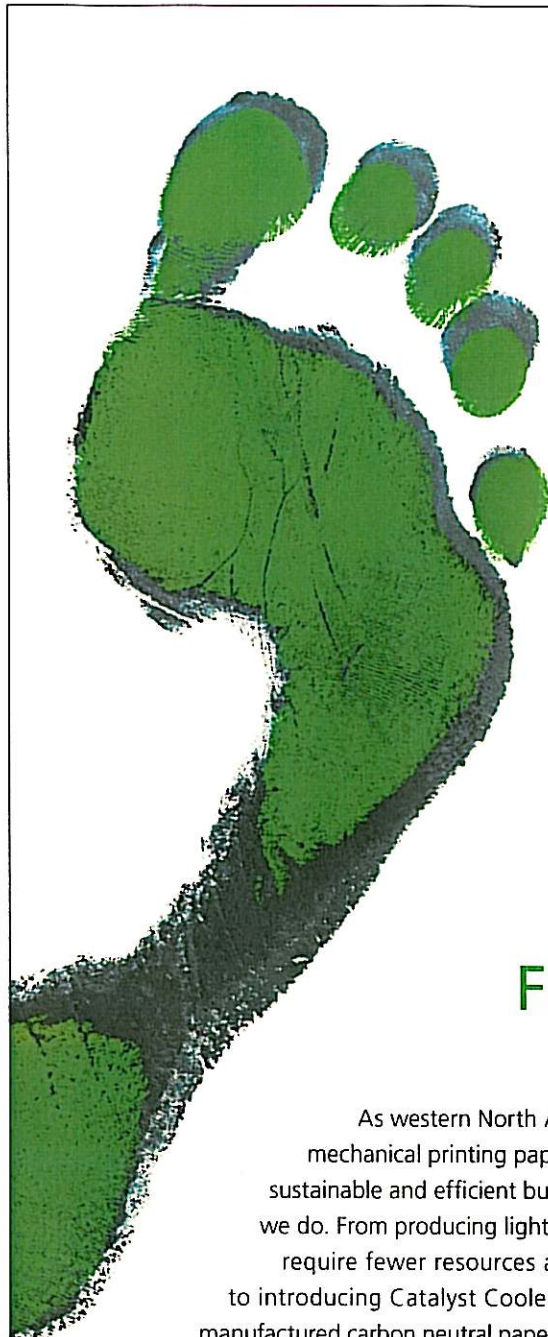
"BC Hydro has not built a major power-generation facility since 1984, and the provincial requirement for electricity has increased hugely. Supply has not kept up with demand. B.C. is a net importer of electricity since 2001, to the point that one in eight houses on any block runs on electricity imported from the U.S. or Alberta."

According to Davis, B.C. consumes about 58,000 GW-h annually and that over the last few years, 6,000 to 7,000 GW-h have had to be imported: "I think it's worrisome. The government concurs. Electricity is an essential service. It's a unique commodity; it cannot be stored. When you need it, you need it now. It's risky to be dependent on imports."

The province depends on rain or snow for 90 per cent of its electricity. Davis points out that while BC Hydro is world-famous for large-scale reservoir storage hydro dams, the IPPs have expertise in generating electricity through wind, biomass, geothermal and tidal: all areas in which BC Hydro hasn't worked before.

Davis says there are 36 run-of-river projects in existence today, the first having been built in 1980.


"I hope there are more to come. If you want green electricity, run-of-river has one of the lowest environmental impacts. They're built above where the fish are. They help us avoid use of the type of power generators with bigger environmental footprints." ■



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