

Recycle waste energy, expert urges

Visit comes during day of record use

Crunch forces province to import power

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TYLER HAMILTON

ENERGY REPORTER

A U.S. energy expert says Ontario could reduce its power load by more than 10 per cent and forever wean itself off coal if it recycled waste energy from existing industrial and commercial activities.

Thomas Casten, chief executive of Oak Brook, Ill.-based Primary Energy and a staunch advocate of energy recycling, was flown in from Chicago yesterday by the Ministry of Energy to share his message with the minister.

The timing of his arrival, in the middle of a stifling heat wave and record-setting electricity consumption, couldn't be more fitting.

Despite a province-wide appeal for conservation, Ontarians' demand for electricity reached 27,005 megawatts during the afternoon peak yesterday, soaring past the previous record set last July by a hefty 845 megawatts.

The power crunch forced the province to import nearly 1,800 megawatts of electricity, mostly from Quebec. By noon the market prices for imports reached 20 cents per kilowatt-hour, or four times higher than the year's average.

Casten, who will sit down this afternoon with Energy Minister Dwight Duncan to talk about the province's energy crisis, told the Star that up to 3,000 megawatts of electricity could easily — and profitably — be recovered from the wasted heat, flu gases and gas pressures that result from industrial activities.

He called energy recycling an untapped "secret weapon" for energy planners. In the context of power generation, such recycling is often called "combined heat and power" because the heat by-product of generating electricity is captured and reused.

By recycling the heat, energy efficiency of a system can jump from 33 per cent to between 65 and 80 per cent.

"Very few people are aware that the recycled industrial waste energy is out there," Casten said in an interview, prior to giving a public presentation at Toronto City Hall. "That recycled energy is as clean and pristine as if it came from solar panels or a wind mill, except that it's significantly cheaper."

He should know, having been involved in 250 combined heat and power plants over his 30-year career. One coal processing plant in Indiana was able to profitably produce 90 megawatts of electricity and heat for a nearby steel mill by just harnessing waste heat.

Casten said if the province embarked on new combined heat and power projects for schools, apartment and office buildings, subdivisions and new industrial complexes, another 6,000 megawatts could be produced.

Jose Etcheverry, a policy analyst with the David Suzuki Foundation, called new communities the low-hanging fruit, and said it would make sense to have a 1-megawatt combined heat and power plant supplying both electricity and district heating directly to a new subdivision.

"They're popping up across the province and present the best opportunity to start from scratch with the best available technology," he said. "You would be remiss not to choose these options."

Etcheverry called Casten a "maverick" and said he hoped Duncan would be swayed by his message, which discourages massive, central nuclear-type builds and encourages a more decentralized electricity system.

The McGuinty government announced in March a \$40 billion plan to refurbish some of its existing nuclear fleet and build 1,000 megawatts of new nuclear reactors, while delaying closing the province's remaining coal plants until further study.

Casten said there's no reason why Ontario couldn't follow in the path of a country such as Denmark, which gets 52 per cent of its power from combined heat and power, up from 10 per cent 20 years ago.

"Denmark in 1980 was just like Ontario, served by a handful of large power plants. Today it has thousands and thousands of generating sources, a combination of combined heat and power, wind and biomass," said Casten.

"If anything it's easier to do here. We have more high rises, there's good population density and you've got a lot of industry. There's no technological or economic reasons not to do it."

He said the biggest barriers are conventional thinking and adherence to regulation that discourages consideration of combined heat and power projects.

"I'm old enough to remember all the computer professionals saying, 'If we allowed all the PCs to hook up to the network, you could destroy it.' The electrical guys talk the same story today."

The Ontario government, he added, needs to send the right signal by shifting tax policy to promote construction of such projects and providing loan guarantees to lower risk.

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