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In June of this year Dwight Duncan, the Minister of Energy of Ontario, Canada announced, "After more than a decade of mismanagement in Ontario's electricity sector, our ability to keep the lights on has been compromised. It is absolutely critical that we move forward quickly to boost new supply, increase conservation and maintain price stability for consumers so that we can ensure continued prosperity in the province."

Is the Ontario electricity sector, with one of the most sprawling grids in North America, in crisis? A summary of the supply/demand situation clearly shows the magnitude of the problem.

As stated by the Ministry, "Ontario needs to refurbish, rebuild, replace or conserve 25,000MW of generating capacity by the year 2020 to meet growing demand while replacing its polluting, coal-fired generating plants. That represents 80% of Ontario's current generating capacity and would require an investment of \$25bn to \$40bn."

The figure above clearly shows that as early as 2005 there will be potential for supply to be insufficient to meet the demand allowing for a reasonable margin. Therefore, immediate action is required if a crisis in electricity is to be averted. Over the past year, the Ontario government has taken on the challenge with a vengeance as they have moved forward on a large number of key initiatives to address the need to maintain a viable electricity sector.

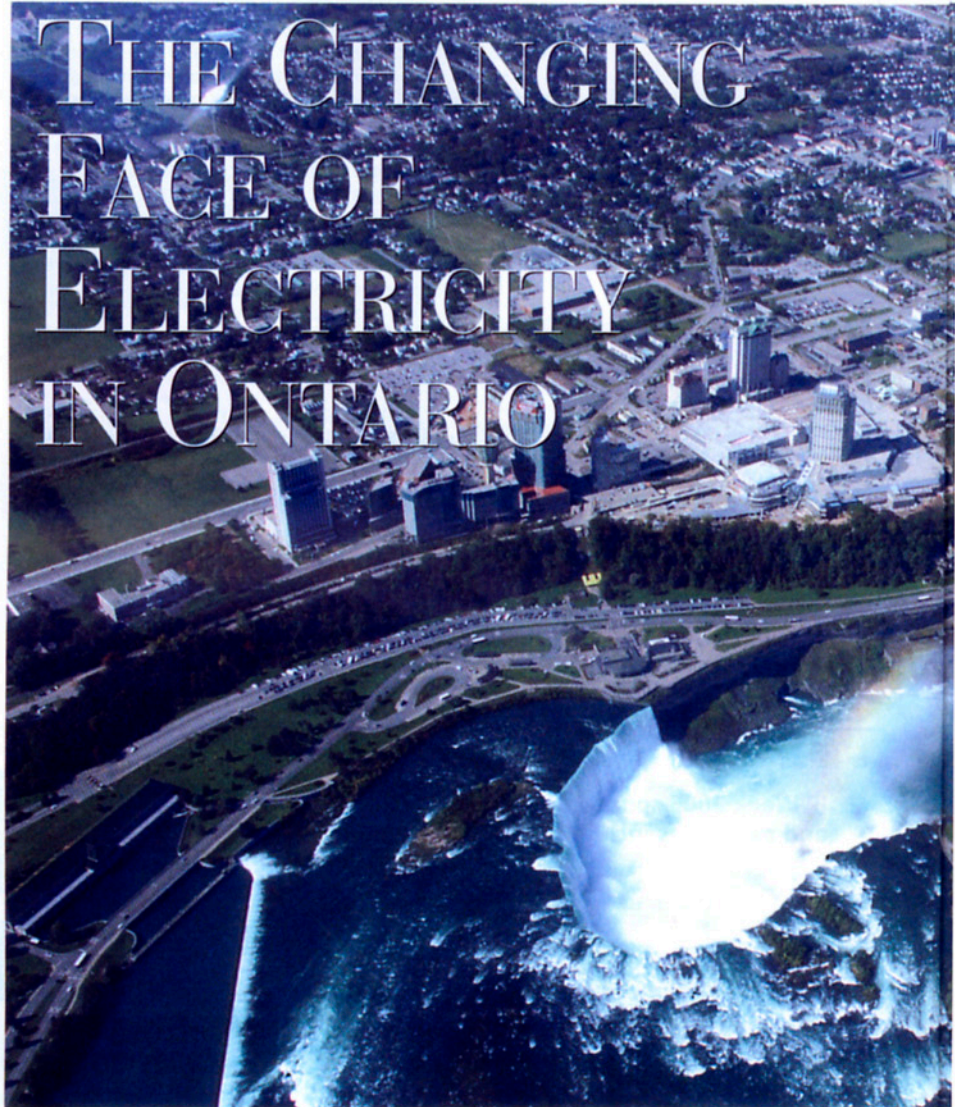
Similar to other jurisdictions, the mantra of the late 1990s in Ontario was deregulation. This resulted in the Electricity Act of 1998 that broke up the monopoly of Ontario Hydro and established a real time electricity market. The changes were to be implemented over time with Ontario Power Generation (OPG), the successor generation company to Ontario Hydro) shedding assets over a decade to reduce its share of the market to a non-dominant position, and for the market to open its prices to consumers after developing an experience base.

On May 1, 2002, the electricity market was opened to competition and the result was a significant increase in the price of electricity. In some cases, electricity bills doubled or more over the ensuing summer months. By the autumn of 2002, the government had to back track and placed a cap on the price, retroactive to May 1, 2002.

So what went wrong? Unfortunately, the market opened up in a time of undersupply, due to a number of factors including the delay in restarting the idled Pickering A nuclear units on Lake Ontario, east of Toronto, as well as a very hot summer setting new peaks for demand.

Therefore in June 2003, an inquiry called the Electricity Conservation & Supply Task Force was established to develop an action plan for attracting new generation, promoting conservation and enhancing the reliability of the transmission grid. During its mandate there was a change of government in Ontario with a key element of the new government's platform being the promise to eliminate all coal generation from the province by 2007 – a formidable task given that the province was in undersupply and that coal represented almost one-quarter of the generation!

In January of 2004, the task force reported, and the conclusion was clear. They provided an excellent review of the situation with a series of



# THE CHANGING FACE OF ELECTRICITY IN ONTARIO

recommendations that touched all aspects of the sector but with a clear focus on the structural reforms necessary to improve the market and make it work into the next decade. The report sets out a call to action to government stating:

"Ontario faces a looming electricity supply shortfall as coal-fired generation is taken out of service and existing nuclear plants approach the end of their planned operating lives. Early action is needed to ensure that Ontarians continue to enjoy an affordable and reliable supply of power and that electricity prices in the province remain competitive with prices in jurisdictions with which Ontario competes for investment and jobs."

Some of the key recommendations of the task force included: a blended price approach, a conservation culture, that demand reduction be treated as supply, that the Independent Electricity Market Operator (IMO) should plan supply and ensure it is achieved, providing long term certainty to investors, implementing a new agency to take on contracting function, taking quick action to implement renewables, using gas for peaking or intermediate loads,

using a diverse supply mix and balanced approach to filling the gap and that OPG be a supplier of last resort.

The government of Ontario definitely paid attention to the outcome of this report. Since it was issued, the announcements to make changes in the electricity sector have been coming fast and furious.

A key part of the new direction for the electricity sector in Ontario was the introduction of Bill 100, a major step forward in market structuring as it amends both the Electricity Act and the Ontario Energy Board Act of 1998. The purpose of the Bill is to restructure Ontario's electricity sector, promote the expansion of electricity supply and capacity, including supply and capacity from alternative and renewable energy sources, facilitate load management and electricity demand management, encourage electricity conservation and the efficient use of electricity and regulate prices in parts of the electricity sector.

The bill makes some key structural changes to the sector. First, it increases the focus of the

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River as well as the nuclear units at Pickering and Darlington as units to be regulated.

There are also a number of changes planned for the electricity market. Today, the market in Ontario is a real time market. This means that supply is bid continuously as the system is managed. There are two key new mechanisms that are being planned. There will be a new Day Ahead Market (DAM) in which greater price certainty and greater operational certainty will be achieved.

There will also be a new Resource Adequacy Market (RAM). The purpose of this market is to address the long-term commitments for power generation for Ontario for the coming decades. If this market works, it will ensure that the OPA will only contract for new supply as a last resort.

Will the new market structure work and attract the \$25bn to \$40bn of new investment required to keep the system viable? The government has accepted that the current market structure will not encourage any new build of any kind. Therefore, the current initiatives to add supply, the 300MW Renewable RFP and the 2,500MW Clean Energy Supply RFPs will provide long-term price certainty to the bidders thus taking these sources of supply out of the market.

What does this mean for the future of the market? Ontario will have a hybrid structure in which there will be a regulated portion of supply, the OPA contracted supply and the free market. At this point in time, it is impossible to know what the relative size of each portion of this market will be. In other words, the relevance of the free market is not clear since it may be a significant portion of the total generation or it may be relegated to a very small portion. Only time will tell if this experiment in market structuring will work.

So will the lights go out in Ontario? The response to the current RFPs for both renewables and clean energy supply has been encouraging. It is understood that the renewable RFP had on the order of 1,000 MW of bids and that the first phase of the 2,500MW RFP had over 150 companies qualify representing over 60,000MW potential (note that this is only at the prequalification stage. The actual bidding will result in a much lower amount of MW).

And how is the province coping today. The IMO 18 month forecast issued in September 2004 for the period of October 2004 to March 2006 says that the amount of supply needed to meet the demand will be adequate. Since the last quarterly outlook, both the Brighton Beach and Kirkland Lake units have been completed adding 612MW to the grid. The decision to restart Pickering A will add another 515MW by the fall of 2005. However, in 2005, the first coal unit, the Lakeview generating unit will be taken out of service so that the system will lose 1,150MW. This demonstrates the magnitude of the effort required if the commitment to take out the rest of the coal units by 2007 is to be achieved.

While it is too soon to know if disaster will be averted, electricity is certainly a priority on the agenda of the government and they are demonstrating a clear will to take decisions that need to be taken to meet the challenge of keeping the lights on in Ontario.

Independent Electricity Market Operator (IMO) on systems operation, renaming it the Independent Electricity Systems Operator. Some of its previous functions related to supply planning will go to a new Ontario Power Authority (OPA). This organisation will have the responsibility to undertake medium and long term forecasting of electricity demand and long-term system adequacy. In fact, the OPA will be responsible for ensuring an adequate and reliable electricity supply, a function that does not exist in the current market system.

To meet this need, the OPA will have the ability to issue requests for proposals (RFPs) and sign long term contracts with generators providing them with the stability needed to encourage new generation. The OPA will also include the province's first conservation bureau led by a Chief Conservation Officer.

Bill 100 also makes key changes to the Ontario Energy Board (OEB). The OEB will now regulate electricity prices for certain customers as set out in the regulation. These rates will consist of a blend of the forecast market prices,

Ontario installed electricity capacity (MW)	
Nuclear	10,831
Coal	7,564
Hydro	7,676
Oil/Gas	4,364
Other (wood & waste)	66
<b>Total</b>	<b>30,501</b>

Source: Ontario Power Generation

the prices for electricity contracted for by the OPA and the price of electricity for the regulated generating stations of Ontario Power Generation (OPG). It is anticipated that this rate will be trued up to account for differences to the actual market rate with the OPA holding the deficits and surpluses in the short term.

A key element of the restructuring is to keep part of the generation in public hands. This segment would be regulated to pass on the lower costs of these older legacy units to consumers to balance the higher costs of new generation. The current draft of the Bill identifies OPG's hydro units at Niagara Falls and on the St Lawrence