Legislative Assembly of Ontario

Assemblée législative de l'Ontario

STANDING COMMITTEE ON GOVERNMENT AGENCIES

REPORT ON AGENCIES, BOARDS AND COMMISSIONS

ONTARIO POWER GENERATION INC.

2nd Session, 39th Parliament
59 Elizabeth II

ISBN 978-1-4606-3755-5 (Print)
ISBN 978-1-4606-3753-1 [English] (PDF)
ISBN 978-1-4606-3754-8 [French] (PDF)
ISBN 978-1-4606-3798-2 [English] (HTML)
ISBN 978-1-4606-3799-9 [French] (HTML)

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The Honourable Steve Peters, MPP
Speaker of the Legislative Assembly

Sir,

Your Standing Committee on Government Agencies has the honour to present its Report and commends it to the House.

Ernie Hardeman, MPP
Chair of the Committee

Queen's Park
September 2010

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1st Session, 39th Parliament
(as of March 9, 2010)

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1st Session, 39th Parliament
(as of December 12, 2007)

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Clerk of the Committee

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STANDING COMMITTEE ON GOVERNMENT AGENCIES
LIST OF CHANGES TO COMMITTEE MEMBERSHIP

KEVIN DANIEL FLYNN was replaced by LOU RINALDI on February 19, 2009.

RANDY HILLIER was replaced by GERRY MARTINIUK on March 25, 2009.

FRANCE GÉLINAS was replaced by HOWARD HAMPTON on April 9, 2009.

MARIA VAN BOMMEL was replaced by RICK JOHNSON on April 9, 2009.

LOU RINALDI was replaced by LAURA ALBANESE on September 15, 2009.

JULIA MUNRO was replaced by ERNIE HARDEMAN on September 15, 2009.

DAVID RAMSAY was replaced by YASIR NAQVI on September 15, 2009.

LIZ SANDALS was replaced by LEEANNA PENDERGAST on September 15, 2009.

GERRY MARTINIUK was replaced by JIM WILSON on September 15, 2009.

RICK JOHNSON was replaced by DONNA H. CANSFIELD on March 9, 2010.

YASIR NAQVI was replaced by M. AILEEN CARROL on March 9, 2010.

LIST OF TEMPORARY SUBSTITUTIONS

DAVE LEVAC	REZA MORIDI
LIZ SANDALS	PETER TABUNS
MARIA VAN BOMMEL	JOHN YAKABUSKI

CONTENTS

INTRODUCTION

Under Standing Order 108(e) the Standing Committee on Government Agencies is given the mandate to review the operation of all agencies, boards and commissions (ABCs) to which the Lieutenant Governor in Council makes some or all of the appointments, and all corporations to which the Crown in right of Ontario is a majority shareholder. The Committee is empowered to make recommendations on such matters as the redundancy of ABCs, their accountability, whether they should be sunsetted and whether their mandate and roles should be revised.

In accordance with its terms of reference, the Committee reviewed Ontario Power Generation on September 9, 2009.

Appearing before the Committee from Ontario Power Generation (OPG) were Mr. Jake Epp, Chair; Mr. Tom Mitchell, President and CEO; Mr. Donn Hannbridge, Senior Vice-President and Chief Financial Officer; and Mr. William Sheffield, Member of the Board of Directors and Chair, Compensation and Human Resources Committee.

Five presentations were made by stakeholders. The Society of Energy Professionals was represented by Mr. Rod Sheppard, President, and Mr. Joe Fierro, a senior Society official at OPG. The Town of Atikokan was represented by Mayor Dennis Brown. The Organization of CANDU industries was represented by Neil Alexander, President. The Canadian Gas Association was represented by Carol Cameron, Account Manager, Business Development, Union Gas Limited, and Edith Chin, Enbridge Gas Distribution. The Lac Seul First nation was represented by Chief Clifford Bull, and Mr. Chris Angeconeb.

The Committee wishes to express its appreciation to all the witnesses who appeared before it during its public hearings on this agency. For the full presentations that witnesses made, readers should consult the *Hansard* transcripts and the written submissions.

This report presents the Committee's findings on OPG. The Committee urges the Minister to give serious and thoughtful consideration to the Committee's observations.

CONTEXT

Under the *Energy Competition Act, 1998,* Ontario Power Generation (OPG) was created as one of the five successor companies to Ontario Hydro, commencing operations on April 1, 1999. Today, OPG owns one of the largest, low cost and low emission portfolios of power generating assets in North America. A non-classified agency, OPG is incorporated under the *Business Corporations Act* and operates under the terms of Part IV.1 of the *Electricity Act, 1998*. OPG reports to the Minister of Energy, who represents the Province as the Corporation's sole shareholder.

Background

In the 1990s, Ontario Hydro was a vertically-integrated monopoly dominating the generation and transmission of electricity in the province and playing a pivotal role in its distribution. Several factors, including cost overruns in the construction of nuclear facilities, left Ontario Hydro increasingly burdened with debt.[1]

Restructuring Ontario's Electricity Markets

A 1997 government policy paper entitled *Direction for Change—Charting a Course for Competitive Electricity and Jobs in Ontario*, adopted the basic premise of the 1996 Macdonald Report[2] that Ontario Hydro's monopoly should be replaced by a competitive electricity market.[3]

The Energy Competition Act, 1998

Providing a framework for competitive markets, the *Energy Competition Act, 1998* (the Act, passed in October 1998), reflected elements of *Direction for Change,* including the break-up of Ontario Hydro and the separation of potentially competitive components of the system (generation and retail services) from what were regarded as more inherently monopolistic parts (transmission and distribution). The Act also established the Independent Electricity Market Operator (IEMO) and implemented open access to transmission and distribution facilities.[4]

OPG was created to own and operate the electricity generating assets of Ontario Hydro. The Act also established the Market Power Mitigation Agreement (MPMA). Designed to prevent OPG from exploiting its dominant market position, the MPMA imposed a short-term revenue cap, used to provide electricity customers with rebates, and required OPG to reduce its capacity to 35% of Ontario supply over the next decade, a requirement later abandoned.

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[1] By 1996, the debt-to-equity ratio had reached 85%.
[2] Ontario, Ministry of Environment and Energy, *A Framework for Competition—The Report of the Advisory Committee on Competition in Ontario's Electricity System of the Ontario Ministry of Environment and Energy* (Toronto: The Ministry, 1996).
[3] Ontario, Ministry of Energy, Science and Technology, *Direction for Change—Charting a Course for Competitive Electricity and Jobs in Ontario* (Toronto: The Ministry, 1997), p. viii.
[4] Bill 100, the *Electricity Restructuring Act, 2004*, renamed this agency the Independent Electricity System Operator (IESO).

Pickering A Review Panel

In September 2003, Pickering A (nuclear generating) Unit 4 was returned to service two years late and at a cost ($1.25 billion) almost triple what OPG's board had approved ($457 million) in 1999. In December 2003, the Pickering A Review Panel, which investigated the cost overrun and delay, reported that

> the delay in the return to service of Pickering A has adversely affected Ontario's electricity sector and pushed up prices for residential and business consumers. . . . [F]aith has been compromised in the affordability and certainty of the supply of electricity vital to Ontario's citizens and businesses. . . . [U]ltimate responsibility must lie with the OPG Board and senior management and how they exercised their oversight responsibilities.[5]

Subsequently, the government accepted the resignations of OPG's top three officials and the entire OPG board.

The OPG Review Committee

Also in December 2003, the government created the OPG Review Committee to advise on the future role and structure of OPG and the potential for refurbishing Pickering A Units 1, 2 and 3. In March 2004, the Committee recommended that

- OPG focus on its major operating assets—nuclear, hydroelectric, and fossil fuel—exiting non-core businesses such as wind-power, solar, biomass and small hydro projects;
- the Ontario Energy Board (OEB) independently approve the rates at which the output of each OPG generating division is sold;
- OPG be divided internally into two principal operating divisions, the nuclear division and the hydro/fossil division;
- board members be compensated in line with remuneration paid to members of boards of comparable private sector entities;
- instructions or similar directives by the shareholder to OPG be in writing and given as a matter of public record; and
- OPG proceed with the project to return Pickering A Unit 1 to service and wait for clear evidence of success before proceeding with further work on Unit 2 or 3.[6]

The report recommended Ontario begin planning to supplement and eventually replace its existing nuclear assets with new nuclear technology, in order to

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[5] Ontario, *Report of the Pickering A Review Panel* (Toronto: The Panel, 2003), p. 1.
[6] OPG Review Committee, *Transforming Ontario's Power Generation Company: Recommendations,* March 2004. Internet site at http://www.mei.gov.on.ca/en/pdf/electricity/opg/Recommendations.pdf, accessed March 2, 2010.

provide more cost-effective baseload generation than natural gas-fired generation.[7]

Energy Supply and Demand

A number of reports and plans addressing the province's future energy requirements and how to meet them have had obvious implications for OPG.

Electricity Conservation and Supply Task Force (2003)

The Electricity Conservation and Supply Task Force was established in June 2003 to develop an action plan for attracting new generation, promoting conservation, and enhancing the reliability of the transmission grid. Reporting in January 2004, the Task Force predicted a looming energy supply shortfall, and recommended

- creating a "conservation culture", emphasizing education and improved co-ordination among energy providers;
- developing a diverse supply mix;
- keeping coal-fired plants in operation until adequate replacement generation and demand reduction measures are in place; and
- restricting OPG to being an investor of last resort in any contracting for new "green-field" generation.[8]

The Electricity Restructuring Act, 2004

On December 9, 2004, the *Electricity Restructuring Act, 2004* received Royal Assent. The purposes of the Act were to promote the expansion of electricity supply and capacity, facilitate load management and electricity demand management, encourage electricity conservation and efficiency, and regulate prices in parts of the electricity sector.

The Act created a new regulatory body, the Ontario Power Authority (OPA), with a mandate to ensure the adequate medium- and long-term supply of electricity in Ontario. The OPA is also responsible for the Conservation Bureau and the Chief Energy Conservation Officer, which provide leadership in the planning and co-ordination of electricity conservation and load management in Ontario

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[7] OPG Review Committee, *Transforming Ontario's Power Generation Company*, pp. 19-20. Baseload capacity is used to serve a relatively constant level of customer demand. Typically, baseload units operate whenever available. Peak capacity, on the other hand, is intended to operate intermittently, providing power during maximum load peaks. Nuclear and large hydroelectric facilities are relied on for baseload generation.

[8] Electricity Conservation and Supply Task Force, *Tough Choices: Addressing Ontario's Power Needs,* Final Report to the Minister, January 2004. Internet site at http://www.mei.gov.on.ca/en/energy/electricity/?page=reports-ECTF, accessed March 2, 2010.

OPA Supply Mix Advice (2005)

In December 2005, at the request of the Minister of Energy, the OPA issued its *Supply Mix Advice* report for the next 20 years.[9] The OPA forecast that

- Ontario's demand for electricity would increase at the rate of approximately 0.9% per year;
- the province would have an adequate power supply until the year 2014, so long as current procurement initiatives materialized and conservation and demand management (CDM) measures were successful;
- a gap between supply and demand would develop after 2014; and
- by 2025, the province would be required to replace, refurbish, or displace through conservation approximately 10,000 megawatts (MW) of energy.

On that basis, the OPA made the following observations and recommendations:

- Energy efficiency and demand reduction measures could provide 1,800 to 4,300 MW of supply – 1,800 MW being the "reasonable and prudent assumption."
- Renewable sources should provide an additional 7,800 MW of energy by 2025 (i.e., an additional 6,700 MW to procurements then under way). Hydroelectric power, included in the total for renewables, should contribute 1,350 MW beyond existing procurements and wind generation 3,600 MW beyond procurements under way, with imports, biomass, and solar generation contributing up to 1,250 MW, 500 MW, and 40 MW, respectively.
- Natural-gas fired generation should provide only an additional 1,500 MW of capacity (i.e., to what was contemplated by existing procurement directives), "because . . . it [natural gas] presents risk across all three dimensions of cost, environmental impact and financial risk."
- Nuclear generation should contribute between 12,900 and 15,900 MW of capacity by 2025, a target that would require additional refurbishments and "new-build" capacity.
- The replacement of coal-fired generation should continue to be monitored closely, with reliability serving as the first principle of any replacement plan.

[9] Ontario Power Authority, *Supply Mix Advice Report,* Vol. 1, December 2005. Internet site at http://www.powerauthority.on.ca/Report_Static/1139.htm, accessed March 2, 2010. See also, Ontario Power Authority, "Supply Mix Summary," December 2005. Internet site at http://www.powerauthority.on.ca/Storage/18/1338_Part_1-1_Supply_Mix_Summary.pdf, accessed March 2, 2010.

In November 2006, the OPA reported that Ontario would experience supply shortages if coal-fired generating facilities were shut down before 2011. It recommended keeping Nanticoke Generating Station (GS) in service until at least 2014.[10]

Ministerial Directive: Integrated Power System Plan (2006)

In June 2006, the government directed the OPA to develop an Integrated Power System Plan (IPSP) revised to meet the following goals:

- total peak demand reduction through conservation measures of 6,300 MW by 2025, with interim targets of 1,350 MW in 2007, and 2,700 MW by 2010;
- new renewable capacity (hydroelectric, wind, solar and biomass) of 2,700 MW by 2010 and 15,700 MW by 2025;
- a nuclear baseload capacity of 14,000 MW over the period of the plan;[11]
- sufficient capacity for high-efficiency and high-value gas-fired generation for peak periods; and
- a phase-out of coal-fired generation at the earliest opportunity consistent with maintaining adequate system capacity and reliability.

Ministerial Directive: Green Energy (2008)

In September 2008, the government directed the OPA to revise its IPSP to reflect an enhanced commitment to green energy. Specifically, the OPA was asked to review the following:

- the amount and diversity of renewably energy sources;
- accelerating the achievement of stated conservation targets;
- the improvement of transmission capacity in northern Ontario and other parts of the province in order to enhance development of new renewable sources;
- the potential of converting coal-fired assets to biomass fuels;
- the availability of distributed generation; and

[10] Ontario Power Authority, *Ontario's Integrated Power System Plan: Discussion Paper 7, Integrating the Elements—A Preliminary Plan*, November 2006. Internet site at http://www.powerauthority.on.ca/ipsp/Storage/32/2734_DP7_IntegratingTheElements.pdf , accessed March 2, 2010.

[11] The total of 14,000 MW is slightly more than the capacity of all Ontario's existing nuclear units, including those not currently in production (Bruce G1 and G2) and/or taken out of production (Pickering A G2 and G3).

- the potential for pumped storage to contribute to the energy supply at peak times.[12]

In a March 2009 letter, the OPA advised the OEB that it would be revising its IPSP during the summer in response to the passage of the *Green Energy Act, 2009* (Bill 150).

ONTARIO POWER GENERATION

Ontario Power Generation purchased the generation assets of Ontario Hydro and commenced operations on April 1, 1999.

Mandate

Section 53.1(1) of the *Electricity Act, 1998* states that the objects of Ontario Power Generation "include, in addition to any other objects, owning and operating generation facilities."

The Board has responsibilities and powers under several Ontario statutes, including the *Ontario Energy Board Act, 1998*, the *Environmental Assessment Act,* the *Ontario Water Resources Act,* and the *Environmental Protection Act*, as well as under federal laws, including the *Nuclear Fuel Waste Act* and the *Nuclear Safety and Control Act*. The IESO's Market Rules also apply to OPG's operations.

Responsibilities under MOU

OPG falls under the authority of the Minister of Energy. A Memorandum of Understanding (MOU), dated 2005, sets out OPG's responsibilities to the province as follows:

- OPG's core mandate is electricity generation. It will operate its existing nuclear, hydroelectric, and fossil generating assets as efficiently and cost-effectively as possible, within the legislative and regulatory framework. . . . OPG will operate these assets in a manner that mitigates the Province's financial and operational risk.

- OPG's key nuclear objective will be the reduction of the risk exposure to the Province arising from its investment in nuclear generating stations in general and, in particular, the refurbishment of older units. OPG will continue to operate with a high degree of vigilance regarding nuclear safety.

- OPG will seek continuous improvement in its nuclear generation business and internal services. . . . OPG's top operational priority will be to improve the operation of its existing nuclear fleet.

- With respect to investment in new generation capacity, OPG's priority will be hydro-electric generation capacity. . . . This will include

[12] Ministry of Energy and Infrastructure, "Energy Plan to Strengthen Green Ontario," *Press Release*, September 18, 2008. "Orange zones" are those areas in the province where the transmission lines have no capacity to accept new generation.

expansion and redevelopment on its existing sites as well as the pursuit of new projects where feasible. These investments will be taken by OPG through partnerships or on its own, as appropriate.

- OPG will not pursue investment in non-hydro-electric renewable generation projects unless specifically directed to do so by the Shareholder.

- OPG will continue to operate its fossil fleet, including coal plants, according to normal commercial principles taking into account the Government's coal replacement policy and recognizing the role that fossil plants play in the Ontario electricity market, until government regulation and/or unanimous shareholder declarations require the closure of coal stations.

- OPG will operate in Ontario in accordance with the highest corporate standards, including but not limited to the areas of corporate governance, social responsibility and corporate citizenship.

- OPG will operate in Ontario in accordance with the highest corporate standards for environmental stewardship.

Shareholder Directives / Declarations

The MOU also states that the shareholder may direct OPG to undertake special initiatives, issued in the form of written declarations. In testimony before the Committee in February 2007, then OPG president and CEO Jim Hankinson explained that written directions (or declarations) are necessary when the shareholder desires OPG to undertake a project or course of action that is not in "the best commercial interests of OPG."[13] Declarations have been issued to date pertaining to the following matters:

- conversion of Thunder Bay Generating Station from coal to natural gas fuel (October 6, 2005);

- amendment of the Lease Agreement and Used Fuel Agreement between OPG and Bruce Power (October 14, 2005);

- expansion of four hydroelectric generating stations on the Lower Mattagami River (May 23, 2006);

- initiation of feasibility studies for the refurbishment of existing nuclear units and the commencement of the federal approvals process for new units at an existing site (June 16, 2006);

- cancellation of the conversion of Thunder Bay Generating Station (July 12, 2006);

- reducing CO_2 emissions arising from use of coal at coal-fired generating stations (May 15, 2008); and

[13] Standing Committee on Government Agencies, *Hansard*, February 26, 2007, p. A-443.

- requesting expressions of interest for supply and transportation of solid biomass fuel (January 13, 2009).

Generating Assets

OPG owns one of the largest portfolios of generating assets in North America. As of December 31, 2009, OPG was operating 21,729 MW of in-service generating capacity, approximately 61.4% of Ontario's total installed capacity

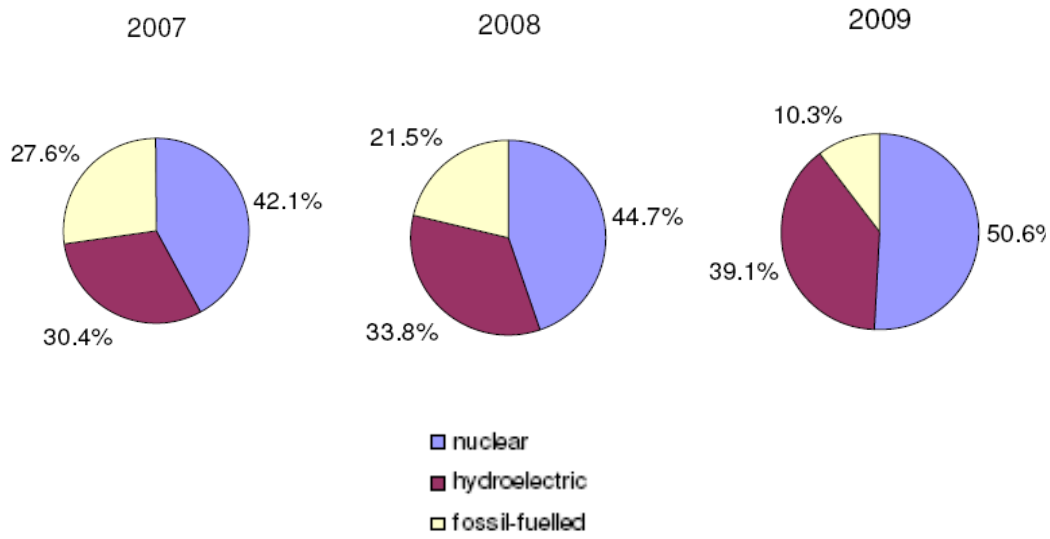
	As at December 31, 2009 Capacity (MW)	2009 Energy (TWh)
Nuclear		
Darlington	3,512	26.0
Pickering B	2,064	15.1
Pickering A	1,030	5.7
	6,606	46.8
Hydroelectric by Plant Group		
Niagara	2,257	12.3
Ottawa St. Lawrence	2,571	13.9
Northeast	1,312	4.7
Northwest	684	4.6
Evergreen Energy	120	0.6
	6,944	36.2
Fossil-Fuelled		
Nanticoke	3,640	5.6
Lennox	2,100	0.1
Lambton	1,920	3.6
Thunder Bay	306	0.1
Atikokan	211	0.1
	8,177	9.5
Wind		
	2	-
Total	**21,729**	**92.5**

Source: OPG *Fact Sheet* (2009)

of 35,370 MW (IESO, August 21, 2009).[14] OPG produced 92.5 terawatt hours (TWh) of electricity in 2009 (down from 107.8 TWh in 2008)—roughly 66.5% of Ontario's primary electricity demand of 139.2 TWh (down from 72.5% of Ontario's 2008 primary electricity demand of 148.7 TWh)—from the facilities listed above. In addition, OPG is co-owner of two gas-fired generating stations: the Portlands Energy Centre in Toronto (with TransCanada Energy Ltd) and the Brighton Beach GS (with ATCO Power Canada Ltd and ATCO Resources Ltd). OPG also owns two nuclear generating stations that are leased to Bruce Power on a long-term basis.

The contribution of each business segment to OPG's total output in the last three fiscal years is presented in Figure 1; the accelerating decline in coal-fired generation over the past three years is evident.

FIGURE 1: CONTRIBUTION OF SEGMENTS TO OPG OUTPUT



Data: OPG *2008 Annual Report* and *2009 Year in Review Fact Sheet*

Electricity Prices

Since April 1, 2005, the pricing system for OPG's output has distinguished between power from "regulated" assets—which receives a fixed price—and power from "non-regulated" assets—which receives the wholesale electricity market price.

[14] By comparison, the highest peak demand in Ontario in 2009 was 25,815 MW on August 18th, with other peaks being 24,333 MW on August 17th, 24,231 MW on December 16th, and 22,983 MW on January 15th. As of February 4, 2010, existing installed generation resources in Ontario stood at 35,485 MW (IESO, *18-Month Outlook Update: March 2010 to August 2011*, p. 9).

Regulated assets consist of OPG's nuclear facilities (Pickering A and B and Darlington) and its baseload hydroelectric production (Sir Adam Beck 1, 2 and Pump Generating Station, DeCew Falls 1 and 2, and R.H. Saunders hydroelectric facilities).

From April 1, 2005 to March 31, 2008, the first 1,900 MWh of baseload hydroelectric production received $33.00/MWh, while power from OPG's nuclear units received $49.50/MWh. Effective April 1, 2008, these fixed prices increased to $36.66/MWh for regulated hydroelectric output and $54.98/MWh for nuclear output. These rates were established by an order of the Ontario Energy Board (OEB) which is now responsible for regulating OPG's rates.[15]

Between April 1, 2005 and November 20, 2008, OPG's output exceeding 1,900 MWh from regulated hydroelectric assets received the spot price on the electricity market, a mechanism designed to encourage hydro-electric production. As of December 1, 2008, the pricing mechanism for hydroelectric output from regulated assets changed to one described as being designed to "optimize" generation.

> Since April 1, 2005, electricity from OPG's remaining (i.e., "non-regulated") hydroelectric assets and its fossil-fueled stations has received the spot electricity market price, with 85% of this output subject to a revenue limit, originally established for a period of 13 months that was to end April 30, 2005, but later extended. The revenue limit was $47/MWh from April 1, 2005 to April 30, 2006, $46/MWh from May 1, 2006 to April 30, 2007, $47/MWh from May 1, 2007 to April 30, 2008, and $48/MWh from May 1, 2008 to April 30, 2009. Revenues above the capped amount were returned to the IESO for distribution to consumers.

As a result of regulated rates and rebate mechanisms, OPG's average electricity sales price in 2009 was 4.5¢ per kWh (down from 4.9¢ in 2008), compared to a weighted average hourly Ontario spot electricity market price of 3.2¢ per kWh (down from 5.2¢ in 2008).

[15] The OEB order establishing the new prices was made on December 2, 2008. Because the prices were approved retrospectively to April 1, 2008, OPG receives an additional $2.18/MWh for its production from regulated hydroelectric facilities and an additional $3.22/MWh for production from nuclear facilities, effective December 1, 2008, in order to collect the retrospective revenue.

Financial Information

Credit Rating

In August 2008, Standard and Poor's (S&P) raised OPG's long-term credit rating from BBB+ with a positive outlook, to A- with a stable outlook, and affirmed OPG's A-2 global scale and A-1(Low) Canadian scale Commercial Paper rating.

The Dominion Bond Rating Service (DBRS) continues to rate OPG's long-term debt and short-term Commercial Paper at A (low) and R1 (low), respectively, both with stable trends.

Financial Statements

Table 1 (next page) provides a three-year summary of OPG's consolidated statements of income as well as providing details of earnings by business segment. For 2009, OPG reported net income of $623 million, compared to $88 million for 2008 ($528 million in 2007), despite decreases in electricity production and in net revenue. 2009 marked the second year in a row in which OPG's net revenue was largely influenced by changes in the value of its nuclear fixed asset removal and nuclear waste management funds. Stronger 2009 earnings largely reflected increased earnings from segregated investment funds dedicated to future nuclear decommissioning and waste management costs. Returns on OPG's regulated assets offset lower returns from those assets subject to the wholesale market price. OPG's fossil-fuelled segment lost $99 million despite a cost recovery arrangement with the Ontario Electricity Financial Corporation (OEFC) that paid OPG $412 million in 2009.

Forecast

In its 2009-2013 Business Plan, OPG had budgeted for net income of $457 million in 2009, and projected that this will fall to $383 million in 2010, reflecting a "one year deferral in the next proposed regulated rate increase."[16] Net income is forecast to be in the range of $750 million in the remaining three years covered by the Plan. OPG notes that the Plan incorporated the OEB's November 2008 rate order, and the modified operation of OPG's coal-fired plants as a result of the Province's CO_2 emission reduction strategy (announced May 2008, discussed below).

[16] OPG, *Summary of OPG's 2009-2013 Business Plan*, p. 7 (OPG Submission to the Standing Committee, Tab 19).

TABLE 1: THREE-YEAR SUMMARY OF CONSOLIDATED STATEMENTS OF INCOME *AND* EARNINGS BY SEGMENT

(millions of dollars)	**2009**	2008	2007
Revenue			
Revenue before revenue limit rebate	**5,640**	6,359	5,887
Revenue limit rebate	**(27)**	(277)	(227)
	5,613	6,082	5,660
Fuel expense	**991**	1,191	1,270
Gross margin	**4,622**	4,891	4,390
Expenses			
Operations, maintenance and administration	**2,882**	2,967	2,974
Depreciation and amortization	**760**	743	695
Accretion on fixed asset removal and nuclear waste management liabilities	**634**	581	507
Losses (earnings) on nuclear fixed asset removal and nuclear waste management funds	**(683)**	93	(481)
Other net expenses	**76**	71	75
	3,669	4,455	3,770
Income before interest and	**953**	436	620
Net interest expense	**185**	165	143
Income tax expense (recovery)	**145**	183	(51)
Net income	**623**	88	528
Electricity production (TWh)	**92.5**	107.8	105.1
Cash flow			
Cash flow provided by operating activities	**299**	870	379

(millions of dollars)	**2009**	2008	2007
Regulated			
Nuclear generation	**390**	235	(58)
Nuclear waste management	**52**	(670)	(26)
Hydroelectric	**327**	310	249
Unregulated			
Hydroelectric	**209**	508	329
Fossil-Fuelled	**(99)**	(25)	74
Other	**74**	78	52
Earnings (income before interest and income taxes)	**953**	436	620

Source: OPG *Annual Reports, 2007-08, 2009 Financial Results*

Structure and Organization

OPG's Articles of Incorporation state that the Corporation shall have a minimum of three and a maximum of fifteen directors, selected by the Minister of Energy. There are presently twelve directors. The chair is elected as director and appointed as chair for a term that ends at the close of the third annual meeting of shareholders of the corporation. There are no requirements or limitations on the directorships, other than those imposed by the *Business Corporations Act*, which stipulates that shareholders (i.e., the Province) must elect directors to hold office for terms of up to three years (s. 119(4)).

The Board meets at least six times a year. Seven Board Committees are also in operation: Audit/Risk, Compensation and Human Resources, Governance and Nominating, Investment Funds, Nuclear Operations, Nuclear Generation Projects, and Major Projects. Each Committee has its own Charter and Committee Chair Position Description, which are available on OPG's website.

According to OPG's filing with the Ontario Securities Commission, each director who is not an OPG employee receives an annual retainer of $25,000, a $3,000 annual retainer for each Committee membership, a $3,000 annual retainer to chair a Committee ($8,000 to chair the Audit/Risk Committee), $1,500 or $750 for each meeting attended, and travel fees, depending on distance travelled to each meeting.

DISCUSSION AND RECOMMENDATIONS

On the morning of September 9, 2009, the Committee heard from and put questions to the senior management of Ontario Power Generation. In the afternoon, stakeholders invited by the Committee appeared to make their input concerning OPG. This section summarizes the hearings and presents the Committee's recommendations.

Ontario Power Generation Management

In their opening remarks to the Committee, OPG Chair Jake Epp and President and CEO Tom Mitchell described the company's efforts to be a "leading low-emissions energy company and generator of choice for Ontario."[17] Mr. Epp noted that Mr. Mitchell, who became President and CEO on July 1, 2009, has the full support of the board as the right person to lead OPG to face the challenges of the next decade.

Mr. Mitchell spoke about OPG's responsibilities as "custodian[s] and steward[s] of the legacy of publicly owned power generation in Ontario."[18] In contrast to Ontario Hydro, which was a fully-integrated utility and near monopoly, OPG operates in a competitive market with other power producers and has only one mandate: "producing electricity to help meet Ontario's electricity needs."[19] Mr. Mitchell noted that while Ontario Hydro was used by governments of the day to achieve specific economic and social policy outcomes, OPG's role as a

[17] Committee *Hansard*, 9 September 2009, p. A-569.
[18] Ibid., p. A-570.
[19] Ibid.

generator is to manage its assets "according to well-defined and established commercial principles."[20]

Ontario's Changing Energy Market

Mr. Epp told the Committee that the current global economic downturn poses new challenges for OPG. Data from OPG's *2009 Financial Results* and the IESO's monthly reports are reproduced in Table 2 and illustrate the scale of reductions in energy demand and in OPG's output over the past eighteen months. The numbers also confirm OPG's observation that lower output in 2009 not only reflects lower demand, but an increase in generation from other Ontario generators.

Table 2: Ontario Electricity Demand / OPG Production

(TWh)	**2009**		**2008**	
	OPG Output	*Ontario Demand*	OPG Output	*Ontario Demand*
1Q	25.6	*37.6*	29.4	*39.5*
2Q	20.9	*32.2*	25.9	*35.1*
3Q	22.6	*34.5*	27.3	*37.5*
4Q	23.4	*34.9*	25.2	*36.6*
Total	**92.5**	***139.2***	**107.8**	***148.7***

Source: OPG, *2009 Financial Results*

At the time of the hearings (September 2009), the IESO was projecting a 4.0% decrease in demand during 2009 (to 142.9 TWh) with a further 0.3% decline in 2010. As of March 2010, data indicated that the decline in 2009 was much steeper (6.1%), to 139.2 TWh, and the IESO was forecasting increases of 0.2% and 0.9% for 2010 and 2011, respectively. As of February 4, 2010, the IESO reported existing installed capacity province-wide of 35,485 MW, with a further 2,600 MW scheduled to come into service between March 2010 and August 2011.

Under conditions that prevailed throughout 2009, a considerable gap existed between the total installed capacity and Ontario's demand for power. Total Ontario demand in 2009 rarely exceeded 21,000 MW, and average monthly demand has been in the 15,000 to 19,000 MW range. As Mr. Mitchell explained to the Committee, these conditions affected OPG in various ways.

Increasing low- and no-emission electricity

The company was able to increase the proportion of low- and no-emission electricity – specifically, the energy from its hydroelectric and nuclear assets – in its output. The share of OPG's total generation from hydroelectric and nuclear stations increased from 78% in 2008 to 89.7% in 2009.

[20] Ibid.

Limiting thermal generation

OPG has been able to reduce generation from its coal-fired facilities, and to concentrate any remaining thermal generation at its cleanest-burning units. Output in 2009 from OPG's coal-fired plants was at its lowest level in 45 years, at 9.5 TWh.

Responding to a question from the Committee about what OPG has done to reduce costs in light of challenging economic times and reduced electricity demand, Mr. Mitchell described two decisions. The first, made in 2008, was to identify and remove $80 million of expenses from the 2009 and 2010 budgets. The second, made "with our understanding that our revenues might be impacted with lower market prices," was to identify a further $85 million of expense reductions for 2010. Mr. Mitchell told the Committee that the permanent closure of four of OPG's 15 coal-fired units (2 units at Lambton GS and 2 units at Nanticoke GS), announced September 3, 2009, will provide "the largest portion of that $85 million."[21] The closure is scheduled for the fourth quarter of 2010.

Province-wide, the use of natural gas to fuel thermal electricity generation has been steadily increasing, to the point where the total installed gas-fired generating capacity now exceeds the total installed coal-fired generating capacity. OPG co-owns two gas-fired stations with a combined capacity of just over 1.2 MW.

Low wholesale electricity price

The low demand for power, combined with an increase in the available supply, kept the wholesale electricity price low during 2009. The weighted average hourly Ontario electricity price (HOEP) for 2009 was 3.16¢ per kWh (compared with 5.16¢ per kWh in 2008). As Mr. Mitchell reminded the Committee, the majority of OPG's power has been subject to regulated prices:

> Every year for the past three years – that is, from 2006 to 2008 – the average sales price OPG has received for its electricity has been lower than the province's weighted average hourly spot market price.[22]

In such conditions, OPG received a higher price for any power generated by its unregulated assets, including its fossil-fuel burning units. However, in 2009, with regulated prices of 3.67¢ per kWh for baseload hydroelectric and 5.5¢ per kWh for nuclear generation, the company has had little incentive to operate its coal-fired units for an average spot price of 3.16¢ kWh.

It is within this context that the company's management, as Mr. Epp reported to the Committee, presented a business case to the Board recommending the shutdown of four coal-burning units.[23]

Asked whether OPG will be seeking an increase in its regulated prices, Mr. Mitchell indicated that OPG will be making a rate submission to the OEB in 2010, but cautioned that it would be premature to speculate whether OPG will request a

[21] Ibid., p. A-581.
[22] Ibid., p. A-570.
[23] Ibid., p. A-583.

rate increase or decrease. The Committee also heard from the Society of Energy Professionals (SEP) that OPG's regulated assets should continue to be funded properly through OEB rate hearings.

Surplus baseload generation

Low demand has also created surplus baseload generation (SBG) conditions. Mr. Mitchell attributed low overall electricity demand "to economic conditions and to the fact that we've had a remarkably cool summer – only three days this year have been above 30 degrees."[24]

In its *2009 Second Quarter Financial Results*, OPG noted that surplus baseload generation (SBG) was a "significant concern" to the company in the first six months of 2009. OPG states that SBG required it

> to shut down fossil-fuelled units overnight, bypass/spill water from hydroelectric generating units to avoid additional generation, and reduce nuclear generation.

A decline in generation from non-regulated hydroelectric assets in the third quarter of 2009 over the same period a year previous was also attributed, in part, to unusual SBG conditions.[25]

OPG also notes that the *Green Energy Act, 2009* permits an unlimited amount of renewable electricity to be added to the grid, which may exacerbate the SBG situation.[26] The SEP recommended that wind power be curtailed at times of excess generation to reduce SBG spill at OPG's hydroelectric generating stations. The Society also suggested that enabler transmission for OPG's hydroelectric projects receive the same treatment as connections for wind power.

Asset Management

Nuclear

Nuclear-fuelled thermal power meets a significant portion of Ontario's energy needs, more than any other mode of generation. In 2009, OPG produced 46.8 TWh of nuclear energy (compared with 48.2 TWh in 2008 and 44.2 TWH in 2007) with the CANDU (Canadian deuterium uranium) reactors in its facilities at Darlington and Pickering. These plants generated 50.6% of OPG's output in 2009 (compared with 44.7% in 2008 and 42.1% in 2007).

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[24] Ibid., p. A-576.
[25] OPG, "2009 Third Quarter Financial Results" (November 2010), p. 1 (pdf file at http://www.opg.com/news/releases/091120Q3Financials.pdf, accessed March 2, 2010).
[26] OPG, "2009 Second Quarter Financial Results" (August, 2009), pp. 11-12 (pdf file at http://www.opg.com/news/releases/090814Q2Financials.pdf, accessed March 2, 2010). "Dispatchable" generation refers to power that may be accepted or declined by the system operator (IESO), depending on system needs and the price at which it is bid into the wholesale market. Power that cannot easily be turned off or on, or modulated on demand, such as power from nuclear or large hydroelectric generators, is usually treated as "non-dispatchable." Ontario has chosen to treat renewable power from intermittent sources such as wind or solar as non-dispatchable—whatever power is generated by these facilities is accepted into the grid.

Darlington Nuclear Generating Station

Located in the Municipality of Clarington, Darlington GS is a 4-unit station with a total output of 3,524 MW that began producing power in 1989. It is Canada's largest nuclear facility and has consistently been one of the country's best performing multi-unit nuclear stations. Questioned by the Committee, OPG officials indicated that the top-performing reactor at Darlington in 2008 was Unit 3, with "a unit capability factor of 99.93%."[27] Darlington was the first nuclear station in North America to be certified under the ISO 14001 environmental standard. In February 2008, the operating licence for Darlington GS was renewed by the Canadian Nuclear Safety Commission (CNSC) for five years.

Pickering Nuclear Generating Station

Located on Lake Ontario just east of Toronto, and at one time among the world's largest nuclear generating facilities, Pickering consists of two generating stations, Pickering A and B. Pickering A has two operating reactors and Pickering B four, with a combined output of 3,100 MW.

Pickering A went into service in 1971 and continued to operate until 1997 when it was placed in voluntary lay-up. Unit 4 was returned to operation in September 2003; Unit 1 in November 2005. In August 2005, OPG's Board determined that the return to service of Units 2 and 3 was commercially unjustifiable. Mr. Mitchell described this decision as "a prime example of our company using a very sound business decision-making process to make a decision."[28]

Asked about the decommissioning of these units, Mr. Mitchell told the Committee that work to isolate the units from the rest of the generating station and complete their move to a safe shutdown state is scheduled to finish in the fall of 2010. At present, he noted, both units are fully defuelled, and within days of being completely vacuum-dried. The units will remain in what is called a "guaranteed defuelled state" until the Pickering station is decommissioned, at some future date. Mr. Hanbridge told the Committee that OPG's funds set aside for decommissioning and for the handling of spent fuel totalled $9.7 billion at the end of June 2009. (At year-end the funds totalled $10.2 billion.)

Pickering B's four reactors have operated safely since they were brought into service in 1983. Mr. Mitchell indicated that in 2008, Pickering Unit 6 had the fifth-best operating record of CANDU reactors world-wide (the top three were units at Darlington). In June 2008, Pickering B's operating licence was renewed by the CNSC for five years.

Pickering B and Darlington Refurbishments

In June 2006, OPG was directed to begin feasibility studies on refurbishing its existing nuclear units, including an environmental assessment (EA) of the refurbishment of the four units at Pickering B, and to begin a federal approvals process for new nuclear units at an existing site.

Early last year (January 26, 2009), the CNSC accepted the EA for the refurbishment of the four units at Pickering B, concluding that the proposed

[27] Correspondence from OPG to the Standing Committee on Government Agencies, September 10, 2009.
[28] Committee *Hansard*, September 9, 2009, p. A-586.

extension of the operating life of this plant will not cause "significant adverse environmental effects, taking into account the identified mitigation measures."[29]

The SEP told the Committee that OPG should be enabled to refurbish the Pickering B and Darlington nuclear facilities.

On February 16, 2010, OPG announced that it will proceed with a planning phase for the mid-life refurbishment of Darlington GS. Mr. Mitchell had told the Committee that while 2018 may be the "nominal date" for the (end of the) working life of the Darlington plant, the real date depends on actual results, which, to date, have been very good. The February 16, 2010 release also announced that the company will not proceed with the refurbishment of Pickering B. Instead, OPG will invest $300 million to extend the operating life of Pickering B until 2020, at which time the process of decommissioning will begin.[30]

Darlington "B"

In September 2006, OPG submitted an application for a Site Preparation Licence to the Canadian Nuclear Safety Commission for the

> construction and operation of up to four new nuclear reactors at the Darlington nuclear site for the production of approximately 4,800 MW of electrical generating capacity for supply to the Ontario grid.[31]

In March 2008, the federal Minister of the Environment, John Baird, accepted the advice of the CNSC and referred the EA for OPG's submission to a joint review panel (as opposed to requiring a lengthier, comprehensive review).

On June 16, 2008, Energy Minister Gerry Phillips announced that Darlington had been selected as the site for Ontario's new nuclear plant. Construction of a Darlington B plant would create 3,500 direct construction and engineering jobs, and another 1,000 jobs long term once it became operational.

When the selection of the Darlington site was made public, the announcement was also made of Phase 2 of the Request for Proposals (RFP) to build a two-unit nuclear power plant. Three companies were invited Respondents for Phase 2: AREVA NP, Atomic Energy of Canada Ltd. (AECL), and Westinghouse Electric.

On June 29, 2009, Energy and Infrastructure Minister George Smitherman indicated that the government was suspending the competitive RFP to build new reactors at Darlington. According to the release, only one company (AECL) had met the terms of the RFP, but "concern about pricing and uncertainty regarding

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[29] OPG, *Pickering B Refurbishment Study: Overview*, Internet site at http://www.opg.com/power/nuclear/pickering/pickB_overview.asp, accessed March 2, 2010.
[30] OPG, "Strategy announced for nuclear investment in the Durham Region," *Press release*, February 16, 2010, Internet site at http://www.opg.com/news/releases/100211%20Nuclear%20Investment%20Strategy.asp, accessed March 2, 2010.
[31] CNSC, *Ontario Power Generation -Proposal to Construct and Operate New Nuclear Power Plant*, Internet site at http://www.cnsc-ccsn.gc.ca/eng/ea/ealist/ongoing/ontario/EA_07_05_29525.cfm, accessed March 2, 2010.

the company's future prevented Ontario from continuing with the procurement."[32] The Minister indicated that the government remains committed to "emission-free nuclear power," but provided no information about when a new RFP process might be initiated.

Mr. Mitchell told the Committee that OPG is continuing with the work needed for an environmental assessment and the site licence process, "in a technology-neutral way." He expressed confidence that OPG can fully operate a CANDU reactor or any other reactor technology (e.g., light water) at the site. In response to questioning by the Committee, OPG indicated that it has spent $57.3 million on the nuclear new build project to date.

The February 2010 press release announcing OPG's plans for Darlington and Pickering B concluded by noting that OPG

> continues to proceed with work that supports the construction and operation of a new nuclear station located at the Darlington site. The Environmental Assessment and site license work for a potential new build will continue in parallel with the [refurbishment] investment activities.[33]

The SEP recommended that OPG be enabled to build a new nuclear plant at the Darlington site.

Changing conditions in the Ontario energy market may have removed some of the urgency for proceeding with a nuclear new-build. On July 23, 2009, Bruce Power announced it was withdrawing its applications to build new reactors at the Bruce site and at Nanticoke, and will focus instead on the feasibility of refurbishing its existing units. These decisions were described by Bruce Power's chair as "business decisions unique to Ontario [that] reflect the current realities of the market."[34]

Hydroelectric

OPG operates 65 hydroelectric stations and 240 dams on 25 river systems, with generating capacities ranging from one MW to more than 1,400 MW. Benefiting from higher water flows in most river systems, OPG produced

36.2 TWh of hydroelectric power in 2009, only slightly less than 36.8 TWh in 2008, which was the highest output from this segment since 1979. This consistency in hydroelectric generation is noteworthy given the overall decline in OPG's output in 2009 by 15.3 TWh.

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[32] Ministry of Energy and Infrastructure, "Ontario suspends nuclear procurement," *Press Release*, June 29, 2009.
[33] OPG, "Strategy announced for nuclear investment in the Durham Region," *Press release*, February 16, 2010.
[34] Bruce Power, "Bruce Power to focus on additional refurbishments at Bruce A and B," *Press Release*, July 23, 2009, Internet site at http://www.brucepower.com/pagecontent.aspx?navuid=1212&dtuid=84013, accessed August 25, 2009.

Table 3: Northern Ontario hydroelectric generation data (2008)

	North West Plant Group	North East Plant Group	North Groups TOTAL	All Plant Groups
2008				
Capacity (MWs)	669	1,316	1,985	6,963
Cost (millions)	$106.5	$129.2	$235.7	$836.7
Production (TWh)	4.89	5.11	10.0	36.4
Surplus Baseload Spill (TWh)	0	0	0	0.07
2009				
Capacity (MWs)	684	1,312	1,996	6,944
Cost (millions)	$108.7	$118.9	$227.6	$849.6
Production (TWh)	4.62	4.74	9.36	36.2
Surplus Baseload Spill (TWh)	0.14	0.17	0.31	0.6
Note: Costs include fuel expense, OM&A, depreciation and amortization, and property and capital taxes.				

Source: OPG, *Correspondence to Committee, April 2010*

Surplus Baseload Generation (SBG) Spill

OPG's ability to capitalize on its hydroelectric generating assets is limited by the ability of the transmission system to deliver power from where it is generated to where a demand for it exists. The decline in forestry-related industries in northern Ontario has resulted in regular periods of surplus generation. According to material supplied by OPG at the request of the Committee, higher than normal SBG spill occurred in 2009 in both the North East and North West Plant groups, on account of higher than normal water levels and low market demand.[35] Data supplied by OPG at the request of the

Committee is summarized in Table 3 (above).

Mr. Mitchell informed the Committee that in addition to generating hydro-electricity, OPG, following guidance from the Ministry of Natural Resources, controls 24 large river systems in the province.

[35] "Spill" refers to water is released at hydroelectric stations without generating electricity and represents potential energy (and revenue) that is foregone. When the spill is forced because demand is not sufficient to take the power that would be generated, it can be regarded as a measure of the hydroelectric "surplus".

Table 4: OPG Hydroelectric Generating Stations

Peaking Stations	Run-of-River Stations			
Sir Adam Beck PGS	Decew Falls ND1	Wawaitin	Auburn	McVittie
Arnprior	Decew Falls NF23	Hound Chute	Big Chute	Merrickville
Barrett Chute	Sir Adam Beck I	Indian Chute	Big Eddy	Meyersberg
Mountain Chute	Sir Adam Beck II	Aguasabon	Bingham Chute	Nipissing
Stewartville	Otto Holden	Alexander	Coniston	Ragged Rapids
Abitibi Canyon	Des Joachims	Cameron Falls	Crystal Falls	Ranney Falls
Otter Rapids	Chenaux	Caribou Falls	Elliot Chute	Seymour
Lower Notch	Chats Falls	Ear Falls	Eugenia Falls	Sidney
Little Long	R. H. Saunders	Kakabeka Falls	Frankford	Sills Island
Harmon	Calabogie	Manitou Falls	Hagues Reach	South Falls
Kipling	Lower Sturgeon	Pine Portage	Hanna Chute	Stinson
	Matabitchuan	Silver Falls	Healey Falls	Trethewey Falls
	Sandy Falls	Whitedog Falls	High Falls	
	Smoky Falls	Lac Seul	Lakefield	

Source: OPG, *Correspondence to Committee, April 2010*

Table 4 provides a list of OPG's "peaking" and "run-of-river" hydroelectric generating stations. OPG explains the difference between these stations as follows:

> A run-of-river generating station typically has *minimal* forebay[36] storage and passes some or all of the inflow through one or more turbines on a continuous basis, with the remainder (if any) going over an existing falls or spillway. Some of these facilities operate as baseload and intermediate facilities during both peak and off-peak hours. [emphasis in original]
>
> A peaking facility is a generating station that operates for specific periods of high energy demand, typically during the daytime on weekdays (mostly during peak hours). These facilities have the ability to store water during off-peak hours in their forebays and/or in an upstream reservoir.
>
> *Correspondence to Committee April 2010.*

Surplus baseload generation spills occur at run-of-river stations.

The Committee wished to know the impact of factors such as temperature and rainfall on SBG spill. In correspondence to the Committee, OPG indicated as follows:

> OPG does not track the impact of factors such as temperature and precipitation on SBG, since there is no direct cause and effect relationship, and it is not practical to measure or determine

[36] A "forebay" is the impoundment area immediately before the power plant intake.

> their impact. These are considered to be "contributors," not major factors. . . . Last year's levels of SBG were mainly due to a combination of low electricity demand and an outage of the Ontario-New York interties in March and April, which reduced Ontario's capability to export electricity to neighbouring markets, new non-OPG generation, and commissioning tests on new gas-fired generation.
>
> *Correspondence to Committee, April 2010*

New Hydroelectric Development

During 2009, OPG completed one project to expand its hydroelectric output; at year-end, several other projects were in various stages of progress.

Niagara Falls Tunnel. In the summer of 2006, construction began on a 10.4 kilometre tunnel under the City of Niagara Falls to supply more water to the Sir Adam Beck Complex for the eventual additional annual production of 1.6 TWh hours. When construction began, completion was scheduled for the end of 2009, with a total project cost of $985 million. The tunnelling contract was initially for $600 million and included the design and build of a tunnel boring machine (TBM, nicknamed "Big Becky") unique to the project. Unstable rock formations encountered in the drilling have led to considerable delays and a change in the tunnel route.

Mr. Epp explained to the Committee various geo-technical work done prior to beginning the project, but noted that the rock conditions actually encountered were different than those identified by the geotechnical assessment(s). As Mr. Mitchell summed up matters for the Committee: "The rock has not behaved as expected."[37] According to OPG's *2009 Mid-Year Performance Report,* the tunnel is now scheduled to be 10.2 kilometres long, at a cost of $1.6 billion, with a completion date of December 2013.[38] According to a December 21, 2009 update, the TBM was idle between September 11, 2009 and December 9, 2009, in part because of a planned outage for maintenance, and in part because a section of temporary tunnel liner had collapsed on September 11. At year-end, the TBM had progressed 54% of the tunnel length.

Upper Mattagami and Hound Chute. Construction of a redevelopment project on the Upper Mattagami and Montreal Rivers began in the summer of 2008. The replacement of four existing generating stations at these sites will increase generating capacity from 23 MW to 44 MW, expected to be in service by April 2011.

Lac Seul. A 12.5 MW generating station at Lac Seul was completed in February 2009, and incorporates a partnership with the Lac Seul First Nation, which own 25% of the facility.

At the beginning of 2010, two additional projects are in different stages of development. OPG is engaged in what it calls definition phase activities for the

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[37] Committee *Hansard*, September 9, 2009, p. A-584.
[38] Ontario Power Generation, 2009 Mid-Year Performance Report, p. 8 (pdf document at http://www.opg.com/pdf/Performance%20Reports/009%20Performance%20Report%20Mid-Year%202009.pdf, accessed March 2, 2010).

Lower Mattagami development; these activities include "finalizing cost estimates, negotiating a design-build contract, obtaining regulatory approvals, and negotiating a Hydroelectric Energy Supply agreement with the Ontario Power Authority."[39] Replacement of one generating station and the addition of one new turbine at each of three other stations will add about 450 MW to the system.

In addition, a development—described by Mr. Mitchell as 70-80 MW—is planned on the **Little Jackfish** River, which flows from Ogoki Reservoir into Lake Nipigon. Mr. Mitchell told the Committee that the additional 500-550 MW from the Lower Mattagami and Little Jackfish projects is a realistic estimate of new hydroelectric generating capacity within the time frame of the next ten years.

The Committee was told that two factors are critical in the development of new hydroelectric facilities in the North: partnership with Ontario's First Nations (discussed further below), and adequate transmission capacity to move the power produced. The SEP suggested that OPG be provided with a standard HESA (Hydroelectric Supply Agreement) to build new hydroelectric generating stations.

Fossil-Fuelled

Ontario Power Generation operates five fossil-fuelled generating stations—Atikokan, Lambton, Lennox, Nanticoke, and Thunder Bay—with a combined capacity of 8,177 MW. Four of these stations are fuelled by coal. Lennox GS is dual-fuelled by oil and natural gas.

OPG's fossil-fuelled plants generated 9.5 TWh of electricity in 2009, compared with 23.2 TWh in 2008 and 29.0 TWh in 2007.[40] This, in turn, amounted to 10.3% of OPG's total output in 2009, compared with 21.5% in 2008 and 27.6% in 2007.

Coal-fired thermal generation has been a major component of Ontario's power generation mix, at times providing nearly one-fifth of the province's energy supply. Coal-fired generation has also been identified as a major source of air pollutants, with serious consequences for the health of persons living within the "air shed" of these plants, and of greenhouse gases. Table 5 details the greenhouse gas emissions at OPG's fossil-fuelled generating stations in 2008.

[39] OPG, "2009 Third Quarter Financial Results", p. 4.
[40] OPG does not include in its fossil-fuelled business segment results the output from either of the natural gas-fired plants that it co-owns (Brighton Beach and the Portlands Energy Centre).

TABLE 5: OPG'S GREENHOUSE GAS EMISSIONS, 2008

		Greenhouse Gas Emissions (tonnes CO_2e)[41]			
GS	**Output (GWh)***	**CO_2**	**CH_4**	**N_2O**	**Total**
Atikokan	313	412,389	102	1,147	413,638
Lambton	6,544	6,375,227	989	29,140	6,405,361
Lennox	278	287,278	84	930	288,674
Nanticoke	15,329	15,413,591	3,410	10,912	15,427,913
Thunder Bay	702	827,094	100	5,673	832,867
Total:	23,166	23,315,579	4,685	47,802	23,368,453

Source: Environment Canada, "Canada's Greenhouse Gas Emissions Reporting Program."

* Output data supplied by OPG on request. (1,000 GWh = 1 TWh)

In 2008, the latest year for which data are available, Nanticoke GS was the largest single source of greenhouse gas emissions in the country, with Lambton GS seventh on the Environment Canada list.[42] OPG's coal-fired generating stations contributed 34.9% of Ontario's total greenhouse gas emissions in 2008 (compared with 37.7% in 2007).[43]

Concern about long-term health and environmental impacts informed the government's plans to eliminate coal-fired generation from Ontario's supply mix. Although a closing date of 2007 was initially proposed, the government subsequently accepted the IESO's recommendation to extend the target until adequate replacement generation can be commissioned. The existing commitment, embodied in Ontario Regulation 496/07 (made under the *Environmental Protection Act*), is to eliminate the use of coal as a fuel source for electricity generation by December 31, 2014.

During its appearance before the Committee in February 2007, OPG indicated that SCRs (Selective Catalytic Reduction systems) were installed on two of the eight coal-fired units at Nanticoke GS and that SCRs and scrubbers were installed on two of the four coal-fired units at Lambton GS. OPG's then CEO, Jim Hankinson, indicated that it would not make commercial sense for OPG to install pollution control equipment on the remaining units. OPG would install such

[41] CO_2 is carbon dioxide, CH_4 is methane, and N_2O is nitrous oxide. Each greenhouse gas has a unique average atmospheric lifetime over which it is an effective "climate-forcing" agent. The concept of global warming potential (GWP) has been introduced to equate this climate forcing for different GHGs to that of CO_2 (CO_2e).

[42] Environment Canada, Greenhouse Gas (GHG) Division, 2007 Emissions Data, "Table 3: Summary of GHG Emissions by Facility," Internet site at http://www.ec.gc.ca/pdb/ghg/onlinedata/results_e.cfm?year=2008&gasorcas=gas&gas=all&cas=all&fac_name=&npri_id=&rep_comp=&location=province&prov=all&city=G10280&postal=&naics=all&submit=Submit, accessed February 23, 2010.

[43] These values were calculated with data from Environment Canada's Greenhouse Gas Emissions Reporting Program—see preceding note.

equipment if directed to do so by the stakeholder, but would expect compensation:

> If we were asked to install more pollution equipment, I would hope it would be accompanied by a means or a revenue stream that would pay us for doing the work. So there are those two conditions from OPG's point of view.[44]

The shareholder directive of May 15, 2008 requires OPG to limit its CO_2 emissions to 19.6 million metric tonnes in 2009 and 15.6 million metric tonnes in 2010. The expectation was for these targets to be met by reductions in coal-fired generation, which would also reduce the noxious particulates (i.e., nitrous oxides and sulphur dioxide) associated with coal-fired generation, but less so than might be achieved with additional scrubbers and SCRs.

The limit of 19.6 million metric tonnes of CO_2 was estimated to be the equivalent of 20 TWh of fossil fuel-fired generation; as noted, actual generation of this type totalled only 9.5 TWh in 2009. Production data for the fossil fuel-fired plants is contained in Table 6.

TABLE 6: OPG'S FOSSIL FUEL-FIRED GENERATION, BY PLANT 2007 - 2009

	Output (GWh)*		
Station	2007	2008	2009
Atikokan	641	313	133
Lambton	8,856	6,544	3,596
Lennox	790	278	122
Nanticoke	18,083	15,329	5,563
Thunder Bay	590	702	123
Total:	28,960	23,166	9,538

*(1,000 GWh = 1 TWh)

Source: *Correspondence to Committee, April 2010*

When the shareholder directive was issued to OPG to limit its CO2 emissions to targeted levels in 2009 and 2010, a directive was also issued to the Ontario Electricity Financial Corporation (OEFC) to establish a "contingency support agreement . . . to provide for the continued reliability and availability of OPG's Lambton and Nanticoke generating stations."[45] According to OPG:

> The agreement was put in place in accordance with a Shareholder Resolution that an appropriate recovery mechanism be established to enable OPG to recover the costs of its coal-fired stations following implementation of OPG's carbon dioxide ("CO_2") emissions reduction strategy.[46]

[44] Committee *Hansard*, February 26, 2007, p. A-438.
[45] Ontario Power Generation, "2009 Third Quarter Financial Results", p. 6.
[46] Ibid.

In 2009, OPG's fossil-fuelled segment operated at a loss of $99 million, a calculation which includes $412 million received from the OEFC under the cost recovery mechanism.

While the economic downturn and conservation efforts have been reducing the demand for Ontario's electricity, new sources of generation have been brought on line and other projects are in development. In February 2009, the Ontario Clear Air Alliance noted that the IESO's own calculations showed that Ontario's installed generation capacity excluding coal-fired plants exceeded the anticipated peak demand for the summer of 2009 by 7%, and that the IESO had forecast that another 3,913 MW of coal-free generation capacity would be added before June 2010. On this basis, the Alliance argued the Province could phase out coal generation altogether by January 1, 2010.

The IESO's *Reliability Outlook* noted three challenges that must be met in order to proceed with the total phase-out of coal.

1) Careful management of transmission operations

Generating stations not only supply power to consumers but play a role in ensuring the viability of the transmission grid. The IESO has noted that the Nanticoke GS performs a critical function in providing voltage support to the transmission system. According to the IESO,

> the loss of the Nanticoke generation coupled with the increase in production from Bruce A and new renewable generation in the area will require the installation of shunt capacitor banks and interim reactive power support from the Nanticoke site.[47]

2) An adequate and secure natural gas supply infrastructure

Ontario's electricity sector has become increasingly dependent on natural gas as a primary fuel. Ontario's gas-fired generating capacity now exceeds its coal-fired generating capacity, and continues to grow. While it is a cleaner fuel than coal, natural gas is a fossil fuel and as such also generates greenhouse gas emissions.

3) Refurbish and/or replace aging nuclear units

The IESO has noted that meeting the government's goal (contained in its directive to the Ontario Power Authority in the development of its IPSP – see above) of maintaining Ontario's nuclear capacity at 14,000 MW over the next 20 years will require the majority of nuclear units to be refurbished, as well as likely investment in "new-build projects." (See discussion above.)

Biomass (maximizing asset value)

An issue that falls outside the mandate of the IESO is the human and social costs of closing the coal-fired generating stations. OPG also has a mandate to obtain the maximum value from its assets on behalf of its shareholder. Accordingly, OPG is conducting research into the use of biomass—such as wood pellets, grains, and other crops—as a fuel source for Ontario's coal-fired power

[47] IESO, *Ontario Reliability Outlook – December 2008*.

plants. (The Atikokan GS was shut down between December 1, 2008 and January 31, 2009 because of an explosion related to the use of biomass fuel.[48])

On January 20, 2009, OPG issued a Request For Expressions of Interest (RFEI) for the supply of biomass fuel and transportation services as a part of OPG's "developmental program to determine the commercial viability of replacing coal with biomass at existing coal-fuelled generating stations."[49] The press release notes that the call applied to both "sustainable forest-based and non-food agricultural products and by-products."

Various sources have been suggested for biomass, including pellets made from wood waste or switchgrass, biofibre (unused wood from tree tops and limbs), wheat husks, and poplar. Questions yet to be answered include the amount of biomass necessary to make production economical. One report suggests that biomass generates only 10% of the energy that coal produces.[50] Another source suggests that switchgrass (which can be grown on otherwise marginal agricultural land) produces 95% of the energy of wood pellets, one-third less than coal.[51] According to an OPG official, it would require 300,000 tonnes of pellets to fuel one unit at Nanticoke for a year.[52]

According to OPG's *2009 Third Quarter Report*, engineering work on converting the Atikokan GS to biomass is ongoing. The report also notes that

> OPG is in discussion with the Ministry of Energy and Infrastructure to determine the appropriate mechanism for cost recovery associated with electricity generation using biomass. A cost recovery mechanism is needed prior to OPG issuing a request for proposal for fuel procurement and seeking Board approval to proceed with plant conversions.

Mr. Mitchell told the Committee that OPG has set an aggressive target of 2012 for converting the Atikokan plant to wood-based biomass, and is investigating options for biomass in other plants. He indicated that OPG's coal-fired plants have traditionally provided ramp support for the system because, unlike hydro-electric or nuclear or combined-cycle gas plants,

> we can operate these plants at extremely low power levels and ramp them through the entire power range.[53]

Finding a successful biomass fuel solution would allow OPG to continue to offer this flexible generation into the market.

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[48] Bryan Meadows, "Generating station back in action," *Thunder Bay Chronicle*, February 10, 2009.
[49] OPG, "OPG calls for interest in supplying biomass fuel for coal-fired power stations," *Press Release*, January 20, 2009, accessed at http://www.opg.com/news/releases/NewsJan20_09.pdf, March 2, 2010.
[50] Peter Gorrie, "The good and so-so of Ontario's biomass plan," *Toronto Star*, January 24, 2009, p. ID06.
[51] Paul Schliesmann, "Switching gears; biofuel," *Kingston Whig-Standard*, April 11, 2009.
[52] Ibid.
[53] Hansard p. A-575.

Mr. Mitchell outlined three questions that must be answered before OPG can make a serious commitment to biomass:

> (1) Can we do it safely? (2) Is there an adequate supply of fuel? (3) Can it be done in a way that makes economic sense?[54]

Asked about the OPG's ability to use waste wood as a fuel source in the North, given the large number of mills that are not operating, Mr. Sheffield suggested that by providing an alternative revenue source, OPG's interest in waste product might make some of the mills more economically viable.

Asked about the OPG's position relative to those pulp mills that wish to use biomass for their own generation or cogeneration purposes, Mr. Sheffield indicated that OPG has always taken the position that it will not compete with the forestry industry for biomass. Asked about whether OPG envisions chipping raw logs, as opposed to waste product, to provide fuel for biomass generation, Mr. Mitchell responded as follows:

> We have not gotten into the details of the specific methodologies that would be used to produce the fuel. What we've asked for is: What fuel is available, in what quantities, at what price?[55]

Describing OPG as providing the lead in outstanding corporate citizenship, the Mayor of Atikokan, Dennis Brown, appeared before the Committee to urge the government and OPG to proceed with converting Atikokan GS into Ontario's first biomass electricity producer. In response to questions, Mr. Brown admitted that under current conditions, relying on waste wood to fuel the plant would be problematic, but he also indicated that ongoing consultations about how wood is utilized in the province might be part of a solution to this problem.

On March 18, 2010, OPG issued a Request for Indicative Prices (RFIP) for wood-based biomass material – estimated to be 90,000 tonnes annually – to fuel the Atikokan Generating Station. The Committee asked OPG whether the release of the RFIP indicates that OPG is closer to making a business case for the use of biomass fuels in its fossil fuel-fired plants, and if conversations have taken place with the government about a cost recovery method for the conversion of these plants to biofuel firing or co-firing. OPG's written response was as follows:

> OPG's issuance of the Request for Indicative Pricing (RFIP) for biomass fuel for Atikokan GS on March 18 represents a step in exploring the viability of biomass fuel for thermal plants.
>
> The results of the RFIP, combined with detailed design engineering work on the conversion of Atikokan and concept plan engineering for possible conversion of other coal-fired stations, which are in progress, are necessary for OPG to develop high quality estimates of biomass generation costs. Our target for completing these estimates is late 2010.

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[54] Ibid,, p. A-582.
[55] Ibid., p. A-586.

> OPG requires cost recovery agreements with the OPA for conversion of the units and the electricity generated post-conversion, before seeking Board of Directors approval to proceed with unit conversions. OPG is in discussion with the Ministry of Energy and Infrastructure to issue a directive to the OPA to negotiate a cost recovery agreement with OPG.
>
> *Correspondence with Committee, April 2010.*

The SEP recommended that the government direct OPG to continue with its biomass work.

OPG and Ontario's First Nations

With the exception of the new Niagara tunnel, opportunities for significant hydroelectric development are almost all located in northern Ontario and, typically, in the lands where Ontario's First Nations have lived since long before electricity was known in the province. While hydroelectric generation is typically regarded as "green energy" because it produces no greenhouse gas emissions or toxic air pollutants, it is not environmentally benign. Hydroelectric stations change the course and flow of waterways, flood lands upstream in the creation of reservoirs or new lakes, and, in doing so, change habitats upstream and downstream for wildlife and for peoples whose traditional ways of living involve responsible stewardship of natural resources.

In the past, First Nations were generally not consulted about development on the watercourses where they hunted, fished and trapped, nor did they receive a share of the revenue produced by these generation projects. In his opening remarks to the Committee, OPG CEO Tom Mitchell stated as follows:

> In support of our hydroelectric development activities, we are working with First Nations communities to build strong relationships based on openness, respect and mutual interest.[56]

Asked for more details on how OPG is changing its relationship with Ontario First Nations, Chair Jake Epp replied that "we have formed partnerships." He also noted that

> before you can form a partnership, you have to take care of the past, and where there are grievances, you have to openly resolve the grievances. . . . So, in a number of cases we have resolved differences. I want to put this forward as a minimum point: There have been financial contributions, but I believe it is the relationship that's more important than the financial.[57]

As noted earlier, in February 2009, the Lac Seul GS opened in a partnership, with the Lac Seul First Nation holding a 25% interest.

[56] Ibid., p. A-571.
[57] Ibid., p. A-574.

In its *2009 Second Quarter Financial Results* (reported August 14, 2009), OPG reported with respect to the Lower Mattagami project that

> a comprehensive agreement has been negotiated with a local First Nation that resolves grievances attributed to the construction and subsequent operation and maintenance of OPG facilities in the area. The new agreement will also provide the First Nation with an ability to purchase up to a 25% equity interest in the project.[58]

Asked about the future potential for partnerships with First Nations, Mr. Mitchell referred to the Mattagami project as well as the development at Little Jackfish. He also observed that

> we would certainly be interested and are interested in evaluating other projects where we could again partner with First Nations. I think probably the only limit is to our imagination and to sites.[59]

The Committee also heard from two representatives of the Lac Seul First Nation (LSFN): Chief Clifford Bull, and Chris Angeconeb, who was an LSFN negotiating team member.

Chief Bull spoke about the LSFN's pride in partnering with OPG on the Lac Seul GS, and its excitement to see "economic benefits finally beginning to flow to the First Nation."[60] He also thanked the government for reversing the negative relationship that had existed between the LSFN and OPG (and before that, Ontario Hydro). He indicated that the LSFN is keen to engage in the development of other sites with OPG.

At the same time, both Chief Bull and Mr. Angeconeb noted that it took a court injunction, sought by the LSFN, to bring OPG to the negotiating table. Initially, the negotiations sought to address grievances from previous development on sites in the LSFN's territories. The settlement agreement eventually reached between the parties included a scholarship fund, an apology from OPG to the LSFN, the opportunity for LSFN to acquire a 25% interest in the new GS, and a financial settlement of $11 million (a portion of which was used to acquire the 25% interest in the Lake Seul GS—Obishikokaang Waasiganikewigamig).[61]

Both representatives of the LSFN spoke to the fact that OPG was only willing to surrender 25% of the equity in the project, arguing that a 50-50 split would be a "true partnership." Chief Bull added that

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[58] OPG, "2009 Second Quarter Financial Results," *Press Release*, August 14, 2009, p. 4.
[59] Committee Hansard, p. A-575.
[60] Ibid., p. A-608.
[61] According to information received from OPG: "The asset value for Lac Seul GS consists of various asset classes/components with useful service lives ranging from 15 to 100 years. The average amortization period, for the Lac Seul GS is 50 years." (*Correspondence to Committee April 2010*)

> OPG was reluctant to consider a limited partnership structure, a well-understood, commonly used legal structure in the industry. They were in favour of a royalty-type structure.[62]

He also suggested that the agreement came with restrictions, "given a desire not to set a precedent for other negotiations with First Nations."[63]

According to Mr. Angeconeb, negotiations were expected to last six to eight months but took two years to complete. He suggested that First Nations very often do not have the in-house legal and engineering expertise required in order to negotiate on a level playing field, and to obtain such expertise must incur significant expense. Chief Bull had told the Committee that the "overall complexity of the agreement is somewhat staggering," involved a dozen separate agreements and side letters.[64] Mr. Angeconeb recommended that the government provide assistance in this regard for other First Nations that may wish to follow the lead of the LSFN.[65]

The Committee has been informed of funding now available under the New Relationship Fund Core Consultation Capacity Program of the Ministry of Aboriginal Affairs that is "designed to help First Nations and Métis communities build fundamental consultation and engagement capacity to better engage with government and the private sector on lands and resources issues."[66]

Future Directions for OPG

Three of the stakeholders appearing before the Committee spoke about the strategic directions OPG might take over the medium to long term. Much of this advice concerned the changing supply mix in Ontario and how that might influence or be influenced by decisions yet to be made by OPG.

The Society of Energy Professionals which represents professionals in the electricity sector, including all of the successor companies to Ontario Hydro and the Ontario Energy Board, brought the most broadly-based set of recommendations. Among them was the request to provide OPG with the ability to meet its demographic challenges and better engage employees. The Canadian Gas Association and the Organization of CANDU Industries made presentations with advice more specific to their respective sectors.

Natural Gas

The displacement of coal by natural gas as the principal fossil fuel source for Ontario's electricity supply has been noted, as well as OPG's co-ownership of the Brighton Beach and Portlands Energy Centre gas-fired stations. The Canadian Gas Association appeared before the Committee to argue that "natural gas is an important and necessary contributor to OPG fulfilling its mandate," i.e., to

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[62] Ibid., p. A-607.
[63] Ibid.
[64] Ibid.
[65] Ibid., p. A-609.
[66] Ontario Ministry of Aboriginal Affairs, "New Relationship Fund" web page at http://www.aboriginalaffairs.gov.on.ca/english/policy/nrf/nrf.asp, accessed April 8, 2010.

produce electricity that is “safe, clean, sustainable and environmentally responsible”—all attributes of natural gas.[67]

Providing the Committee with details of investments made to serve natural gas-fired power generation by major gas distribution companies, and describing technological improvements that have vastly increased the estimated reserves of natural gas available for combustion, the Association concluded that “OPG should continue to expand their gas fleet with confidence.”[68]

When OPG was asked to comment on the effect of the growth in natural gas supplies, Mr. Epp urged caution, noting that increased reserves do not lead automatically to increased development (i.e., supply), especially if, as has been the case, the price of the commodity is low. Mr. Mitchell suggested that gas co-firing could supplement biomass in the re-firing of thermal units formerly burning coal.[69]

Noting that natural gas produces heat at a much greater efficiency than when it is burned to produce electricity, another stakeholder (from the Organization of CANDU Industries) argued that using natural gas as an alternative to other sources is a very short term approach to dealing with long term supply issues.[70]

The Society of Energy Professionals also took note of what it described as “a very uncompromising commitment to new-build gas-fired generation.” Raising this point in the context of uncertainty about the new-build nuclear project (i.e., Darlington B) and about the potential use of biomass in OPG’s southern coal plant assets, the Society posed the following questions:

> Are we committed to emission-free nuclear power to provide most of our baseload energy, or are we not? Are we committed to a future without fossil fuel generation, or are we not? Where does OPG sit in any of these scenarios?[71]

In response to questions from the Committee, Society representatives added that natural-gas fired generation “is not a good backup to being baseload,” and expressed concern that gas-fired generation will drive up natural gas prices for home heating.[72]

Nuclear New-build

The Society of Energy Professionals told the Committee that a nuclear plan in which OPG plays a central role is essential

> if we are serious about the issue of climate change here in Ontario. . . . if we ever hope to de-carbonize ground transportation with the deployment of electric and plug-in hybrid

[67] Ibid., p. A-602.
[68] Ibid., p. A-605.
[69] Ibid., p. A-587.
[70] Ibid., p. A-597.
[71] Ibid., p. A-589.
[72] Ibid., pp. A-592-93.

> technologies. . . . [and] if we ever hope to recover a manufacturing base here in Ontario.[73]

Similarly, the Organization of CANDU Industries reminded the Committee of the importance of constant, inexpensive electricity, relatively emissions-free, produced by Ontario's nuclear fleet. The stability of nuclear generation also allows "our grid to take on environmentally popular but less reliable . . . technologies such as wind and solar." However, the Organization also noted that by virtue of their design, nuclear power plants are most effective operating at full power, and cautioned against "manoeuvring [i.e., stepping down nuclear units, or taking them off or on line] the nuclear fleet largely . . . to massage the economics of more political popular power generation techniques."[74]

The Organization also underlined the benefit that is provided by the labour-intensive nature of nuclear power generation: "jobs are actually created in the community that runs the nuclear power plant." According to the Organization,

> The nuclear industry demands relatively small quantities of high quality and very high quality-assured components. . . . given that Ontario is home to many CANDU component manufacturers, it's easy for OPG to satisfy most of its requirements and outages with the existing suppliers.[75]

The organization used this observation to support the argument that nuclear technology creates local intellectual capital and technical manufacturing capacity, and to highlight what it believes would be lost by importing "foreign technology into the mix."[76]

The Organization summed up its position on OPG as follows:

> The major points that we wanted to get across are that . . . OPG's nuclear stations are making a valuable and sustainable contribution to the health of the Ontario economy. . . . that OPG are managing their plants effectively . . . . [and] that OPG makes a valuable contribution to the health of Ontario's nuclear industries and their contribution could be further enhanced by the construction of a Canadian plant at Darlington.[77]

The Organization offered its opinion (and in response to questions from the Committee reaffirmed) that the delay in proceeding with a nuclear new-build at the Darlington site requires the provincial and federal governments to recognize the significance of this project for Ontario manufacturers and work together to find a resolution.

Renewable Energy

The Society of Energy Professionals suggested lifting the restriction that prevents OPG from engaging in the development of renewable generation other than

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[73] Ibid., p. A-589.
[74] Ibid., p. A-597.
[75] Ibid., p. A-598.
[76] Ibid.
[77] Ibid. p. A-599.

hydroelectric (currently found in the memorandum of understanding between OPG and the Ministry). In particular, the Society recommended using OPG as an instrument to develop a significant wind industry that would work in concert with its hydroelectric assets in two ways: (1) by using wind power to supply pumped storage at night time, and (2) by curtailing wind generation at times of excess generation to reduce the spilling of water.[78] The pumped storage would enhance hydroelectric generation capacity during daytime hours when demand is greatest.

[78] Ibid., p. A-589.

APPENDIX A

DISSENTING OPINION OF THE PROGRESSIVE CONSERVATIVE MEMBERS OF THE COMMITTEE

STANDING COMMITTEE ON GOVERNMENT AGENCIES

DISSENTING OPINION

The McGuinty Liberal government has no long-term energy plan to ensure reliable, affordable, and sustainable electricity to Ontario families and businesses.

They have broken their commitment to reduce Ontario's reliance on fossil fuels, invest in our nuclear sector's future, develop a smart grid, pursue renewable energy sources and release the Integrated Power Systems Plan in a transparent and fair process.

They promised to 'take the politics out of energy,' but then created the Ontario Power Authority (OPA) which only serves to cement politics in the sector as we have seen with the recent political appointments to these Agencies, Boards and Commissions with Liberal insiders. The McGuinty Liberal government has demonstrated that ministerial directives and ad hoc decision-making are the norm.

As a result of the McGuinty Liberals mismanagement, crown corporations like Ontario Power Generation (OPG) are left with little indication of where time, effort, and scarce resources are to be allocated.

Ontario Power Generation (OPG) was established in April 1999 under the Ontario Progressive Conservative Government of Premier Mik e Harris. When the McGuinty Liberals assumed governance over OP G the debt was $53 million in March, 2003. Since that time, OPG's debt has ballooned to an astonishing $4.1bmion as of December 31, 2009.

The only consistency the McGuinty government has demonstrated is consistently breaking key targets and promises when it comes to energy policy and is seriously lacking a vision and long-term plan for the energy sector in Ontario.

The fact remains, the only coal-fired plant to be closed in the last decade was under the mandate of a Progressive Conservative government. On March 26, 2001, the Ontario Progressive Conservative government announced a comprehensive strategy to improve air quality in the province of Ontario. This plan for cleaner air and healthier communities was announced after a meticulous review of the coalfired plants. The plan imposed strict emission limits and required the Lakeview generating station to cease burning coal by April 2005.

As part of their 2003 and 2007 election campaign, the McGuinty Liberals promised to shut down all coal-fired plants. To date, there has not been a single coal-fired plant that has closed as a result of this government's policies. In the last seven years, the Liberal government has backed off their proposed timelines for coal-fired plant closures from 2007 to 2009 and now to 2014.

One of the key recommendations outlined by the Environmental Commissioner of Ontario's report entitled: Rethinking Energy Conservation in Ontario: Annual Energy Conservation Progress Report - 2009 was to develop a comprehensive energy conservation strategy. As stated by Commissioner Gord Miller, "The government's approach to energy conservation appears uncoordinated and improvised, with no clear plan." The EC O has recommended the Ministry of Energy and Infrastructure move to clarify the role of the Integrated Power System Plan.

These examples demonstrate the lack of direction under this government for the future of energy in Ontario.

As a result of the skyrocketing energy rates and lack of long-term planning in the last 7 years, Ontario families are suffering. With the implementation of Smart Metres, Green Energy Act and now the Harmonized Sales Tax (HST) it is getting more and more expensive to live in Dalton McGuinty's Ontario. The HST will increase rates by 8 per cent, and time-of-use rates, which charge users higher prices during periods of peak usage, and will also mean higher energy bills for consumers.

The Ontario Progressive Conservative Caucus believes that in order to ensure a sufficient and sustainable energy sector in Ontario, a clear and detailed long-term plan is crucial. One that is non-existent under this current government. OPG, not by their own accord, has become the epitome of politics controlling a crown corporation that is responsible for providing an essential service to the residents of Ontario.