

ONTARIO POWER GENERATION

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Agenda

- Overview of OPG
- Hydroelectric improvement
- Hydroelectric development
- Benefits of development
- Overview of **Lac Seul partnership**
- Our franchise to operate
- The key to future development



OPG's Corporate Profile

- Owned by the Province of Ontario
- 21,760 MW in-service generating capacity
 - 65 hydroelectric, 3 nuclear, 5 fossil stations
- Generated 107.8 TWh in 2008
- Produces about two-thirds of Ontario's electricity
- Approx. 12,000 employees



Nuclear



10 nuclear units – 6,606 MW

- Pickering A
- Pickering B
- Darlington

• In 2008, five of OPG's nuclear units achieved unit capability factors above 90%.

Nuclear - New and Refurbishment



Darlington Nuclear

Pickering B Refurbishment:

- Environmental assessment and other reviews complete; business case to decide underway

Darlington Refurbishment

- Excellent candidate for refurbishment; preliminary work to assess feasibility now underway.

Darlington New Build

- Province has suspended RFP process; licensing activities still underway

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Fossil



5 fossil-fueled stations -
8,177 MW

- 2 co-owned natural-gas stations
- Flexible, reliable power
- Excellent forced outage rate in 2008



Biomass

Why?

- Renewable, on demand, no net greenhouse gases
- Makes use of existing generating stations
- Made in Ontario industry

What?

- Wood or agricultural-based fuel from sustainable sources
- No food crops
- No garbage
- Minimal impact on consumers & existing resource users

When?

- Testing at four coal plants
- Targeting Atikokan first

What's next?

- Complete technical studies
- Develop power purchase agreements
- Contract plant modifications and establish supply contracts



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Hydroelectric



65 stations - 6,943 MW

- 231 dams
- 24 river systems
- *Hydroelectric production in 2008 was the best since 1979!*



Performance Improvement

Runner Upgrades

- Increased hydro capacity by 450 MW (since 1992) or enough electricity to power more than 80,000 homes
- Extends life of equipment
- Displaces more than 850,000 tonnes of CO₂



Generator Replacement at Beck

- Increases efficiency and output by 14 MW
- Replaces old 25 Hz with 60 Hz





Hydroelectric Development



Healey Falls



Niagara Tunnel



Upper Mattagami

Pumped Storage



Sir Adam Beck at Niagara Falls is currently OPG's only pumped storage site.

- Ontario Power Authority says it could need up to 1,000 MW of pumped storage capacity
- Fills the need for peaking power with dispatch flexibility to meet Ontario's wind and solar plans, and phase-out of coal
- Extensive review of historical and international installations completed
- Feasibility studies are underway



What does it all mean?

Development of new facilities, runner upgrades, equipment replacements and refurbishments, civil works and dam safety, and rehabilitations at more than --- hydroelectric stations mean:

- Job opportunities at local, regional and provincial level
- Significant investment in manufacturing, equipment
- Investment in communities
- **Opportunities for partnerships**



The Opportunity

- Existing Facility at Ear Falls was not utilizing available water (i.e. spilling)
- New generating station adjacent to existing facility to use water is economical
- The economics required a revenue agreement
- No additional damming, inundation, and only minor adjustments to the water management plan





“Before you can form a partnership, you have to take care of the past, and where there are grievances, you have to openly resolve (them). You can’t change the effect or the historical fact but you can change the go-forward platform on which you want to have a mutual relationship.”

OPG Chair Jake Epp to Standing Committee on government agencies; Sept. 8, 2009

2006 Settlement



Prior to restarting construction, the past needed to be resolved.

- Agreement reached including monetary, studies, scholarships and apology, and
- Opportunity to acquire a 25% equity interest in the new generating facility
- This potential equity interest was a **first for OPG** with a First Nation.



Objectives

- Create a long-term cooperative arrangement between OPG and LSFN relating to the project
- Maximize the revenue/profits
- Share in the risks and rewards
- Limit the liabilities to the parties as much as possible and ensure risks are appropriately managed
- Structure the arrangement to facilitate financing

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The Partnership

- Is limited:
 - LSFN has 25%
 - OPG – 75% general partner
- Expected to continue in perpetuity
- Returns tied to the Hydroelectric Energy Supply Agreement



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“Making History”



Our Franchise to Operate



In 2008 OPG:

- Contributed **\$3.9 billion** in payroll, purchases and payments (in lieu of taxes) to Ontario's economy and communities
 - Helped support **1,000** small, grass-roots community, environmental and educational initiatives
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- Employees and pensioners volunteered time and contributed more than **\$2 million** to Ontario charities and other causes
 - Hosted more than **15,000** community residents at station anniversaries

Sustaining Ontario's Electricity Supply

- The **historic agreement** with Lac Seul First Nation is the **cornerstone** for future hydroelectric development and is key to achieving the Province's mandate for more hydroelectric development
- OPG's **baseload nuclear and hydroelectric**, and proposed refurbishment and new development will help enable Ontario's development of a **sustainable society**

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