

POWER WITH PURPOSE

2015 SUSTAINABILITY REPORT



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Darlington Nuclear turbine hall.



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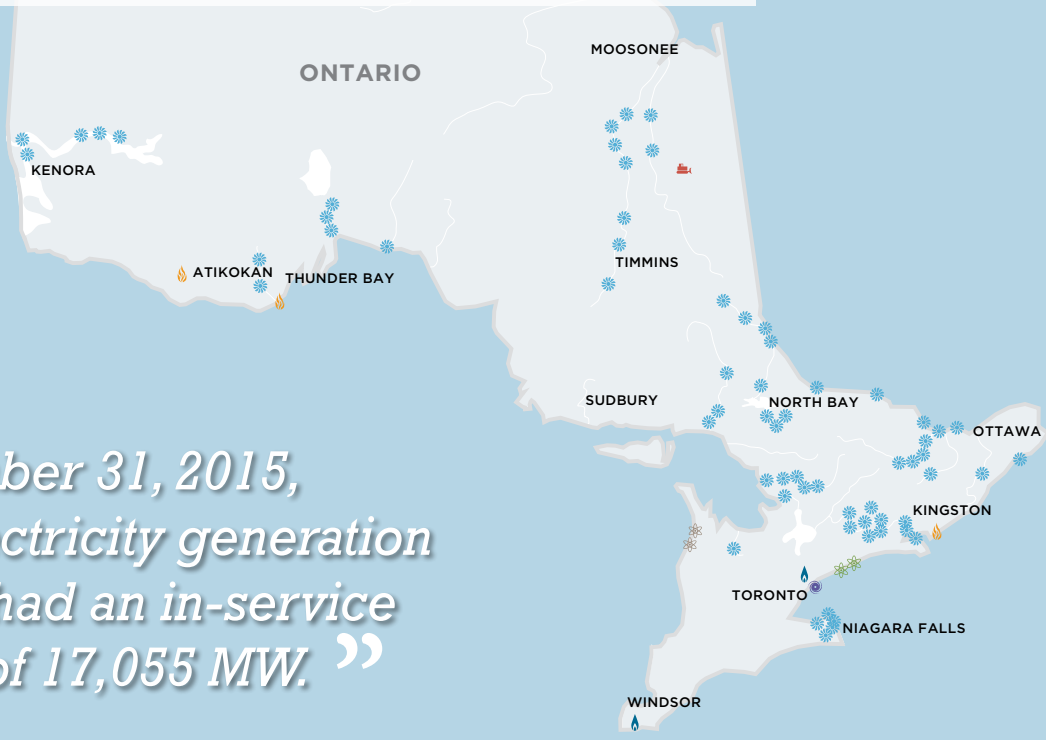
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“ At December 31, 2015, OPG’s electricity generation portfolio had an in-service capacity of 17,055 MW. ”

Ontario Power Generation (OPG) is Ontario’s largest clean energy generator. OPG’s focus is on the generation and sale of electricity from its generating assets in a safe, reliable and sustainable manner. OPG was established under the *Business Corporations Act* (Ontario) and is wholly owned by the Province of Ontario. At December 31, 2015, OPG’s electricity generation portfolio had an in-service capacity of 17,055 megawatts (MW).

OPG owns and operates two nuclear generating stations, two biomass-fuelled thermal generating stations, one oil/gas-fuelled thermal station, 65

hydroelectric generating stations, and one wind power turbine.

OPG and TransCanada Energy Ltd. co-own the Portlands Energy Centre gas-fired combined cycle generating station (GS). OPG and ATCO Power Canada Ltd. co-own the Brighton Beach gas-fired combined cycle GS. OPG’s 50 per cent share of the in-service capacity and generation volume of these co-owned facilities is included in the generation portfolio statistics set out in this report.

OPG also owns two other nuclear generating stations, the Bruce A GS and the Bruce B GS, which are

leased on a long-term basis to Bruce Power Limited Partnership (LP). The leased stations are not included in the generation portfolio statistics set out in this report.

OPG does not operate Portlands Energy Centre, Brighton Beach, Bruce A GS and Bruce B GS.

Information about OPG’s role in the Ontario electricity system, and the province’s long-term energy plan, is available on the Ontario Ministry of Energy’s website at:

www.energy.gov.on.ca.

MESSAGE FROM THE PRESIDENT AND CEO AND THE VICE PRESIDENT OF ENVIRONMENT

“There’s a greater purpose that underpins everything OPG does. OPG strives to deliver value beyond the bottom line. We strive to make a difference in the communities where we operate, we strive to make a difference for customers, and we strive to make a difference for the province. We call this generating power with purpose.”

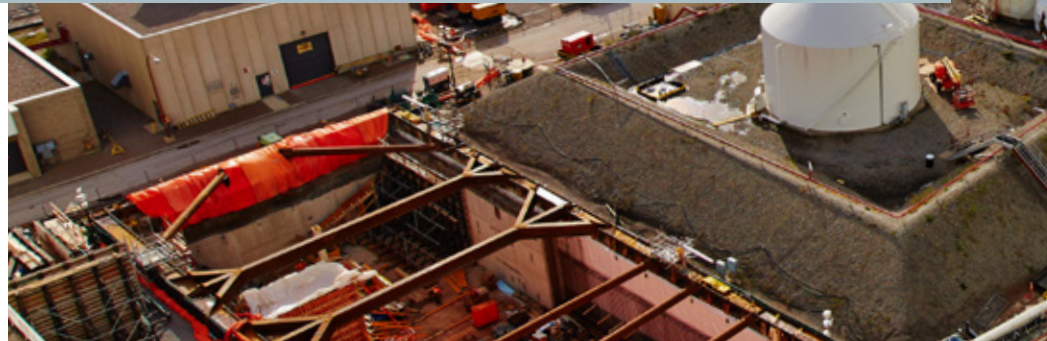
JEFF LYASH, PRESIDENT AND CEO



Jeff Lyash
President and CEO



Heather Ferguson
Vice President, Environment



New infrastructure at Darlington will support nuclear refurbishment and ongoing operations.

OPG’s commitment to environmental protection, social responsibility and economic development is central to our business objectives and values. We produce half the power Ontario relies on every day and we’re committed to ensuring our energy production is clean, safe, reliable and low-cost.

At the Paris United Nations Climate Change Conference in 2015, countries adopted a global climate agreement. Reductions in greenhouse gas emissions will be a major focus in the coming months and years. At OPG, we believe a low-carbon electricity system is not just an environmental achievement; it’s the foundation for competitiveness and innovation – particularly on the cusp of carbon pricing in Ontario.

Ontario’s Clean Power Generator

The electricity OPG produces is 99 per cent free of smog and greenhouse gas emissions. We are very proud of our clean power and hard work to decarbonize OPG’s electricity fleet. The elimination of our coal-fired electricity generation still stands as the single largest climate change initiative in North America. Two of our former coal stations produce power using renewable biomass as fuel.

Our hydroelectric and nuclear generating stations produce a steady supply of clean power. Newly redeveloped hydroelectric units along the Mattagami River have been supplying additional renewable energy for more than a year. As the Province moves forward with its climate change strategy, OPG’s electricity is

well-positioned to support carbon reductions in the transportation sector. In particular, OPG’s continuous supply of base load power is ideal for charging electric vehicles overnight during non-peak hours.

Ensuring a Future of Clean, Reliable, Low-Cost Power

OPG is now ready for its next clean power projects. We have undertaken extensive preparations to refurbish the Darlington Nuclear Generating Station, and now with the Province’s approval to proceed, the refurbishment of the first reactor unit is set to begin in October 2016. This \$12.8 billion project is expected to generate \$14.9 billion in economic benefits to Ontario over the life of the project, including thousands of construction jobs, with some 60 companies across the province supplying components. A refurbished Darlington Nuclear will also preserve



up to 2,800 jobs in the region and provide for 30 more years of clean, reliable, base load power. The price of power from the refurbished station will be set at a regulated rate that will moderate Ontario's electricity prices.

The decision to continue to operate Pickering Nuclear to 2024 — pending necessary approvals — will help provide a reliable supply of electricity while the units at Darlington undergo refurbishment. It will also save electricity customers up to \$600 million, avoid eight million tonnes of greenhouse gas emissions and protect 4,500 jobs across the region.

Another important project for OPG is the construction of the 28 MW Peter Sutherland Sr. hydroelectric station near Smooth Rock Falls in northeastern Ontario. This \$300 million project is a partnership with Coral Rapids

Power — a wholly owned company of the Taykwa Tagamou Nation. This is not OPG's first hydroelectric project partnership. Past successful partnerships include those with the Moose Cree First Nation for the Lower Mattagami River redevelopment project and the Lac Seul First Nation for the Lac Seul Generating Station.

OPG's Top Priority

Finally, and most importantly, the safety of our employees, neighbours and the environment takes priority over everything we do. Last year, we were again recognized for our top quartile safety performance by the Canadian Electricity Association among comparable utilities. Our drive to achieve zero injuries will remain at the forefront of our business as we work to ensure our projects are delivered on time and on budget.

Thank you for taking the time to read about OPG's sustainability performance, and our work to ensure we continue to play a role in Ontario's growth, success and environmental stewardship. We hope you find this report to be an informative and balanced representation of our activities and impacts. As always, we welcome your feedback.

JEFF LYASH
President and CEO

HEATHER FERGUSON
Vice President, Environment

ABOUT THIS REPORT



DeCew Falls II GS.

Purpose

This report is OPG's main platform for communicating the company's commitment to sustainable operations; the approach to managing its environmental, social and economic impacts; and sustainability performance trends. The reporting period is from Jan. 1, 2015 to Dec. 31, 2015. This report presents information for sites operated by OPG unless otherwise noted. This is OPG's 17th annual sustainability report.

In conjunction with this report, OPG provides information about its sustainability programs and

performance in annual reports, management's discussion and analysis, consolidated financial statements, news articles, and station performance reports, all available on www.opg.com.

Performance Data

The graphs in this report provide a visual presentation of performance against target for key sustainability parameters. Where applicable, information is included alongside the graphs to summarize overall performance trends and ratings. Forward looking targets are not included in this report in accordance

with OPG's disclosure policy. Detailed generation and performance data from the past five years are provided in Appendix A and B.

Performance Rating

- Better than target by 5 per cent or more
- Within 5 per cent of target
- Worse than target by more than 5 per cent but less than or equal to 10 per cent
- Worse than target by more than 10 per cent

Reviews and Feedback

The following reviews are conducted to ensure OPG's sustainability reporting is accurate and credible:

- Operational and performance data are validated by both line management and independent reviewers, and prescribed data are subject to assessments and audits as part of OPG's assurance program.
- An audit of OPG's 2015 consolidated financial statements by independent external auditors concluded the statements present fairly the financial position of OPG.
- OPG's sustainability data and practices are verified by an independent auditor every five years as part of the Canadian Electricity Association's Sustainable Electricity Program.
- The Global Reporting Initiative (GRI) Sustainability Reporting Guidelines were used as a reference to identify the essential elements of sustainability reporting. Refer to Appendix C for a table mapping GRI criteria to this report's content.
- OPG's 2014 Sustainable Development Report was evaluated by the EXCEL Partnership against criteria for best

practices in sustainability reporting and was ranked as having better than average achievement. The content and design of the 2014 report was also audited by a communications company to identify potential areas for improvement. Recommendations from these evaluations were taken into account for this 2015 report.

Comments and suggestions about this report are encouraged and may be provided to:

Vice President, Environment
Telephone: 416-592-8195
Email: webmaster@opg.com

OUR APPROACH TO SUSTAINABILITY



Chemistry Laboratory.

Business Drivers

OPG believes in the business case for sustainability and the benefits of sustainability reporting. A focus on sustainability is a vital component of OPG's social licence to operate, it demands the management of risks to the company, and it supports the production of safe, clean and reliable energy. For these reasons, sustainability requirements are integrated into the company's policy requirements and long-term strategic goals and initiatives, and OPG is committed to ensuring its progress towards meeting these requirements is disclosed to its stakeholders and partners.

Scope

OPG's sustainability priorities are focused on the company's core business of generating and selling electricity. This includes activities and impacts associated with the construction, operation and

decommissioning of electricity generating facilities.

Identification of Priorities

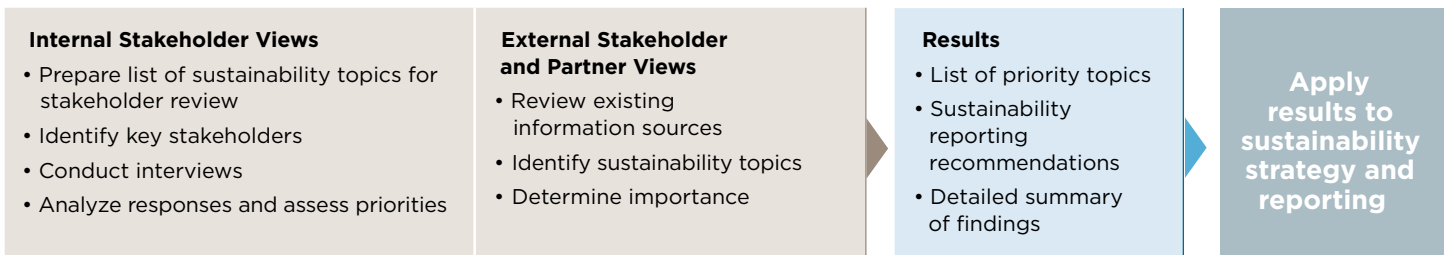
OPG's priorities are shaped by the many people and organizations that have an interest in OPG's operations. OPG's stakeholders and partners include: local communities, Indigenous communities and partners, employees, suppliers and contractors, industry groups, government agencies at the federal, provincial and municipal levels, non-government organizations, media, electricity ratepayers and the general public. OPG's role in providing clean energy to Ontarians is also subject to Ontario's energy policies and long-term plans.

The sustainability topics most important to OPG were formally identified through an assessment undertaken in 2015, which reviewed and prioritized the environmental, social and economic aspects of OPG's activities.

Internal stakeholder input was obtained through interviews with senior OPG leaders. The interviewees were asked to review a list of topics and identify and discuss the topics they consider to be the most important to OPG's present and future operations.

The topics of highest priority for OPG's external stakeholders and partners were assessed by reviewing a range of existing information sources such as public opinion survey and research results, topics identified by intervenors at Canadian Nuclear Safety Commission public licence renewal hearings, subjects discussed at community meetings hosted by OPG, and requests for information submitted to OPG under Ontario's *Freedom of Information and Protection of Privacy Act*.

Process to Identify Priority Topics



Twenty-two priority topics were identified, with the cost of electricity, nuclear emissions, public health and safety, emergency preparedness, and radioactive waste being the highest priority. OPG’s priority topics were used

to define the structure and contents of this report.

The following table provides a complete list of OPG’s priority topics as well as context on where the topics were

most applicable to OPG’s operations in 2015. Applicability of the topics was determined based on the extent of management’s approach to the topic (i.e. company-wide vs. business unit), use of performance indicators, and scale of activities in 2015.

PRIORITY TOPICS AND APPLICABILITY TO OPERATIONS

What We Do: OPG’s generating stations transform kinetic energy into electricity. OPG’s nuclear reactors and thermal stations produce heat to convert water into a flow of steam; hydroelectric stations use falling water; and wind stations use the force of moving air to spin a turbine which in turn spins a generator to make electricity. The electricity is sold into the markets administered by the Independent Electricity System Operator.

✓ indicates where the topic was most applicable in 2015.



	Nuclear Stations	Thermal Stations	Hydroelectric Stations	Wind Turbine
ENVIRONMENT				
Environmental compliance and spills	✓	✓	✓	✓
Protection of species of concern (i.e. fish)	✓		✓	
Biodiversity, habitat stewardship	✓	✓	✓	✓
Greenhouse gas emissions and climate change	✓	✓	✓	✓
Generation of renewable energy	✓	✓	✓	✓
Nuclear emissions	✓			
Radioactive waste	✓			
Water management and flows			✓	
SOCIAL				
Transparency, access to information, trust	✓	✓	✓	✓
Indigenous relations	✓	✓	✓	✓
Employee engagement	✓	✓	✓	✓
Employee health and safety	✓	✓	✓	✓
Public health and safety, emergency preparedness	✓	✓	✓	✓
Security, terrorism, cyber security	✓	✓	✓	✓
Corporate citizenship, community development	✓	✓	✓	✓
ECONOMIC				
Electricity market, long-term energy plan	✓	✓	✓	
Long-term financial strength	✓	✓	✓	
Cost of electricity	✓	✓	✓	
Reliability and efficiency of generating assets	✓	✓	✓	
Development of new generating assets			✓	
Modernization and renewal of generating assets and sites	✓	✓	✓	
Local economic impact	✓	✓	✓	



OPG and its partners are working to develop a solar generating station at a former coal generation site.

Governance

OPG’s policy statements outline the parameters for the management of the company, address statutory obligations, and give high level direction to the operation of the company. OPG has policies pertaining to the environment, nuclear safety, safe operations, employee health and safety, Indigenous relations, code of business conduct, risk management, cyber security, disclosure, and the company’s business model.

OPG’s ability to meet its objectives relies on the following four strategic imperatives:

- **Operational Excellence:** OPG is committed to excellence in the areas of generation, safety and the environment, and optimizing the management of assets.
- **Project Excellence:** OPG is committed to delivering projects on time and on budget. OPG is pursuing several projects including the refurbishment of the Darlington Nuclear station, new hydroelectric and solar generation, and a repository for low and intermediate level radioactive waste.

OPG Business Model

Mission

Power with Purpose: Providing low-cost power in a safe, clean, reliable and sustainable manner for the benefit of our customers and shareholder

Values

Safety; Integrity; Excellence; People and Citizenship

Behaviours

Say It, Do It; Simplify It; Think Top and Bottom Line; Integrate and Collaborate; Tell It As It Is

- **Financial Strength:** OPG’s financial priority is to achieve a consistent level of strong financial performance that delivers an appropriate level of return on equity and positions the company for future growth.
- **Social Licence:** OPG’s social licence to operate is established by earning the trust and approval of host communities, stakeholders, partners and employees. This is achieved through engagement, brand management strategies, a strong safety culture, and environmental stewardship.

Under OPG’s business model, OPG has planning processes to set business priorities and targets in the areas of

environmental performance, health and safety, financial performance, operations, and project execution. Annual priorities and targets are included in a corporate scorecard which is used to assess the company’s overall performance. Individual operating units and functions are required to establish annual performance objectives and to report monthly on key performance results. Performance targets are reinforced with management employees through an annual incentive plan that links compensation to performance.

Refer to the following table for a summary of OPG’s sustainability strategy requirements in relation to its key business opportunities and risks.

SUSTAINABILITY STRATEGY: REQUIREMENTS, GOALS, INITIATIVES AND RISKS

	POLICY REQUIREMENTS	LONG-TERM GOALS	INITIATIVES	RISKS
ENVIRONMENT	<ul style="list-style-type: none"> • Meet all legal requirements and environmental commitments that the company makes, with the objective of exceeding these legal requirements where it makes business sense • Maintain and continually improve an environmental management system 	<ul style="list-style-type: none"> • Operate a clean generation portfolio 	<ul style="list-style-type: none"> • Achieve extended operation of Pickering Nuclear and safe shutdown and storage plan • Invest in Darlington Nuclear for the future 	<ul style="list-style-type: none"> • OPG may be subject to orders or charges if it is not in compliance with applicable environmental laws • Changes in environmental requirements can result in existing operations being non-compliant, and a potential inability to comply
SOCIAL	<ul style="list-style-type: none"> • Prevent workplace injuries and ill health, and continuously improve employee health and safety performance • Operate facilities in a safe, secure and reliable manner that minimizes risks to equipment, to employees, contractors and the public • Ensure public communications are informative, timely and accurate 	<ul style="list-style-type: none"> • Build a diverse, healthy, engaged workforce and the culture to succeed • Operate safely 	<ul style="list-style-type: none"> • Develop and execute flexible resourcing strategy • Develop and execute key stakeholder engagement and brand management strategies • Drive a safety culture that aims to achieve zero injuries and ensures public and nuclear safety 	<ul style="list-style-type: none"> • OPG could be affected if skilled human resources are not available or aligned with its operations • OPG's operations involve inherent occupational safety risks and hazards • Natural, technological, or human-caused hazards may impact OPG's business continuity • OPG is exposed to reputational risk associated with changes in the opinion of various stakeholders
ECONOMIC	<ul style="list-style-type: none"> • Achieve a consistent level of financial performance that will ensure long-term financial sustainability and maintain the value of assets • Operate and maintain nuclear facilities to optimize equipment, performance, availability, and electricity generation • Evaluate and implement plans to increase capacity, maintain performance, and extend the operating life of hydroelectric generating assets 	<ul style="list-style-type: none"> • Provide value to shareholder and customers • Deliver strong and consistent financial performance • Operate a reliable, cost effective and growing generation portfolio 	<ul style="list-style-type: none"> • Drive and optimize efficiency and performance improvements • Deliver best in class performance over the life of Darlington Nuclear • Develop project management centre of excellence • Improve return on investment • Support successful rate outcomes • Plan and execute growth strategy 	<ul style="list-style-type: none"> • Variable output from stations could adversely impact financial performance • Risks associated with major development projects could adversely impact financial performance • Ontario electricity market conditions could impact revenue and operations • Uncertainties remain regarding the outcome of proceedings for OPG's rate regulated operations

Fuel handling shop maintainer.



Accountabilities

Board of Directors

The OPG Board of Directors explicitly assumes responsibility for the stewardship of OPG and its business. The Board is made up of individuals with substantial expertise in managing and restructuring large businesses, managing and operating nuclear stations, managing capital intensive companies, and overseeing regulatory, government and public relations. The following committees of the Board focus on areas critical to the company:

- Audit and Risk Committee
- Compensation, Leadership and Governance Committee
- Darlington Refurbishment Committee
- Generation Oversight Committee

Additional information about OPG's Board of Directors and Board responsibilities is available at www.opg.com/about.

Executive Responsibilities

The following OPG executives have primary responsibility for developing and maintaining standards and services related to sustainability. Additional information about OPG's executive team is available at www.opg.com/about.



CHRIS GINTER

Senior Vice President, Legal, Ethics and Compliance

Areas of responsibility:

Legal services, code of business conduct, environment, regulatory affairs

Key Performance Indicators: Environmental infractions, spills, radioactive emissions, radioactive waste produced, radiation dose to the public



KEN HARTWICK

Senior Vice President, Finance, Strategy, Risk and Chief Financial Officer

Areas of responsibility:

Financial strategies and stewardship, corporate business development and growth strategy, risk management

Key Performance Indicators:

Revenue, expenses, net income



GLENN JAGER

Nuclear President and Chief Nuclear Officer

Areas of responsibility:

Nuclear plant operation, nuclear waste and used fuel, security and emergency services

Key Performance Indicators:

Electricity production, reliability, project status



BARB KEENAN

Senior Vice President, People, Culture and Communications

Areas of responsibility:

Labour relations, health and safety standards, compensation and benefits, training, talent management, succession planning, communications

Key Performance Indicators: Employee safety, safety compliance, staff levels



MIKE MARTELLI

President, Renewable Generation and Power Marketing

Areas of responsibility:

Commercial contracts, power marketing, Indigenous relations, hydro and thermal generating station operation, dam and public safety, construction of new generation projects

Key Performance Indicators: Electricity production, availability, project status

KEY ACHIEVEMENTS IN 2015

Thunder Bay GS.












Performance Results

Here is an overview of OPG's 2015 key performance results against the company's sustainability objectives.

More information about these results can be found in the relevant sections of this report.

Legend

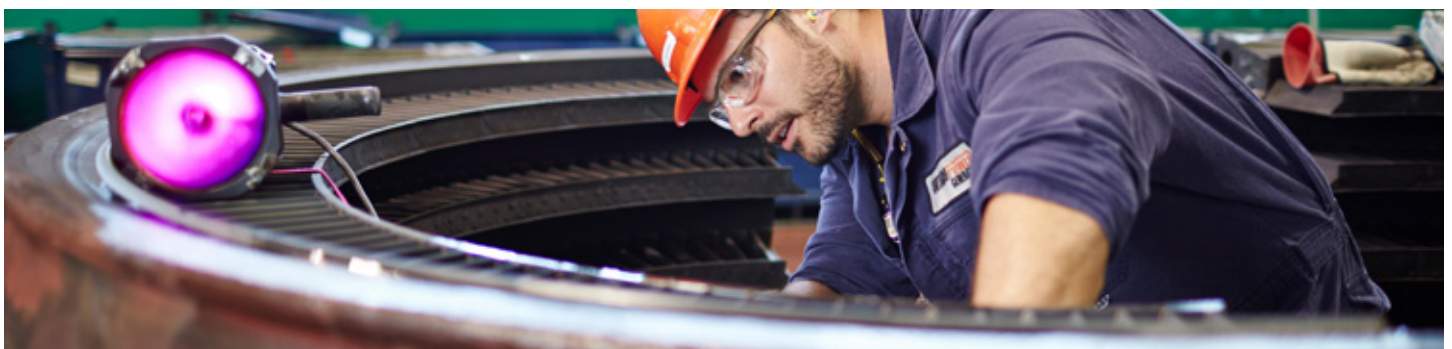
-  Achieved
-  Ongoing

PRIORITY TOPIC	RESULTS
ENVIRONMENT Objectives are to meet legal requirements and commitments; exceed legal requirements where it makes business sense; maintain an environmental management system	
Environmental compliance and spills	Met target of zero significant environmental events. 
	Met targets for environmental infractions and spills. 
Protection of species of concern (i.e. fish)	Continued to implement measures to facilitate fish migration and mitigate fish impingement and entrainment. 
Biodiversity, habitat stewardship	OPG, through its many conservation partners, has planted more than 6.3 million native trees and shrubs on approximately 3,000 hectares of land since 2000. 
	Continued to advance biodiversity conservation by supporting various programs and partnerships. 
Greenhouse gas emissions and climate change	Ninety-nine per cent of OPG's electricity production was from sources that are free of greenhouse gas emissions. 
Generation of renewable energy	Thunder Bay GS was converted to use advanced biomass as fuel. 
Nuclear emissions	Annual public radiation doses resulting from the operation of each of OPG's nuclear stations remained approximately 0.1 per cent of the annual legal limit. 
Radioactive waste	Met target for low and intermediate level radioactive waste produced. 
	The Joint Review Panel overseeing the federal review process for OPG's proposed deep geologic repository for low and intermediate level radioactive waste recommended the approval of the project. 
Water management and flows	Continued to balance energy production requirements with environmental, commercial and recreational needs within watersheds. 

PRIORITY TOPIC	RESULTS
SOCIAL Objectives are to improve employee health and safety; operate safely; build a diverse and engaged workforce; execute stakeholder engagement strategies	
Transparency, access to information, trust	Continued to build and maintain the company's reputation through various best practices, including appropriate and transparent governance practices, effective and transparent communication with stakeholders, community support, and various media campaigns. →
Indigenous relations	Construction began on the Peter Sutherland Sr. hydroelectric generating station in partnership with Taykwa Tagamou Nation. ✓
	Resolved the last historic grievance. Since 1992, OPG reached 23 past grievance settlements with 21 First Nations communities. ✓
Employee engagement	Continued to provide updates on current company activities and to offer programs and activities to allow interaction and team building. →
Employee health and safety	Met target for occupational injury rate. OPG's workplace safety performance was one of the best among its comparator Canadian electrical utilities. ✓
Public health and safety, emergency preparedness	Continued outreach program to ensure public safety around OPG's dams and hydroelectric stations. →
	OPG - along with the City of Toronto and Durham Region - completed the distribution of 200,000 packages of potassium iodide (KI) pills to all homes and businesses within 10 kilometres of the Pickering and Darlington Nuclear generating stations. ✓
Security, terrorism, cyber security	Issued a cyber security policy to establish the company's expectations for cyber security. ✓
Corporate citizenship, community development	Community investment support was provided to over 900 initiatives. ✓

PRIORITY TOPIC	RESULTS
ECONOMIC Objectives are to provide value to customers and shareholder; deliver strong and consistent financial performance; operate efficiently and reliably	
Electricity market, long-term energy plan	Continued to support Ontario's Long-Term Energy Plan. →
Long-term financial strength	Net income was \$402 million. ✓
Cost of electricity	OPG produced power at a price which was approximately 40 per cent lower than other generators in Ontario. ✓
Reliability and efficiency of generating assets	Pickering Nuclear achieved its best ever reliability performance in the station's history. ✓
Development of new generating assets	Construction began on the Peter Sutherland Sr. hydroelectric station. ✓
	OPG was authorized to participate in energy-related procurement processes in Ontario. ✓
Modernization and renewal of generating assets and sites	Completed definition phase of the Darlington Nuclear refurbishment project. ✓
	Continued execution of projects to rehabilitate and upgrade hydroelectric assets. →
Local economic impact	Analysis by the Conference Board of Canada showed that the investment in refurbishing Darlington Nuclear will boost Ontario's GDP by a total of \$14.9 billion from 2010 to 2026, creating 8,800 jobs during that period. ✓
	Eighty-seven per cent of spending on goods and services was to suppliers in Ontario. ✓

Magnetic particle inspection during an outage at Pickering Nuclear.



Awards and Recognition

OPG is proud to have received the following awards, certifications, and recognition in 2015. These awards are a tribute to the hard work and dedication of OPG's employees.

- 1 OPG was named – for the third time in a row – as one of the **Best 50 Corporate Citizens** in Canada by Corporate Knights. This distinction reflects OPG's commitment to resource, employee and financial management.
- 2 OPG maintained the **ISO 14001 certification** of its environmental management system to the International Organization for Standardization's standard. OPG's major production facilities have had formal environmental management systems in place since 1999.
- 3 The Canadian Electricity Association recognized OPG with its **2015 Sustainable Electricity Award for Environmental Commitment** for the conversion of the Atikokan and Thunder Bay generating stations from coal to biomass. The conversions demonstrate OPG's achievement in mitigating its environmental impacts, and in contributing to the socio-economic prosperity of northern Ontario communities.
- 4 OPG was named **Groundbreaker of the Year for 2015** by Biomass Magazine at the International Biomass Conference and Expo. OPG received this recognition for its work on biomass conversions at the Atikokan and Thunder Bay generating stations.
- 5 OPG was presented with the Canadian Electricity Association's **Silver President's Award of Excellence for Employee Safety**. This recognition places OPG at the top of the electricity industry in terms of employee safety, and is a testament to the company's commitment to occupational health and safety.
- 6 OPG, Hatch, and the Ontario Ministry of Natural Resources and Forestry received the 2015 Consulting Engineers of Ontario **Award of Merit for Technical Excellence and Innovation** for development of the Dam Safety Risk Assessment Tool. This tool was developed to provide dam owners and regulators with a consistent means to assess risk and evaluate options for safety improvements.



Andy Zielinski, Tareq Salloum and Brent Craig represented OPG at the Consulting Engineers of Ontario Awards.

- 7 OPG was recognized as a **Progressive Aboriginal Relations Silver** company by the Canadian Council for Aboriginal Business for its commitment to building and growing long-term, mutually beneficial working relationships with Indigenous communities near its current and future operations in Ontario.
- 8 OPG and partner Moose Cree First Nation were recognized by the Timmins Chamber of Commerce with the **Aboriginal Partnership Award** for working together on the Lower Mattagami River hydroelectric project.
- 9 OPG was awarded Festivals and Events Ontario's prestigious **Sponsor of the Year Award**. The award recognizes the outstanding support that OPG has provided to the Winter Festival of Lights in Niagara Falls.



OPG has supported the Winter Festival of Lights in Niagara Falls since 1982.

- 10 Four of OPG's hydroelectric stations were recognized by Navigant Consulting for their performance. Alexander GS was awarded the **Overall Best Performer for 2015** and the Caribou Falls, Des Joachims and Sir Adam Beck No. 2 stations were recognized as being among the best performers in their class.



OPG Northwest Operations staff.

Alexander GS - Overall Best Performer for 2015

"This international award recognizes hydro plants for excellence in operations and maintenance cost, plus availability and reliability performance. This is a significant achievement and I want to congratulate OPG."

DALE PROBASCO, MANAGING DIRECTOR, NAVIGANT

- 11 Hatch Mott MacDonald and OPG were co-recipients of the American Council of Engineering Companies' **Grand Award** for the Niagara Tunnel project. The Council's annual engineering excellence awards honour outstanding engineering accomplishments.

ENVIRONMENT

In this section:

- Environmental compliance and spill management
- Protection of fish
- Biodiversity and habitat stewardship
- Greenhouse gas emissions and climate change
- Nuclear emissions and radiation dose to the public
- Waste management
- Water management and energy efficiency



Native bumble bee at Nanticoke site.

OPG has an ISO 14001-certified environmental management system (EMS) to manage its environmental responsibilities. The EMS takes into account legal requirements, commitments the company has made, and impacts on the environment.

Within the EMS, OPG sets environmental targets and maintains planning, operational control, and monitoring programs to manage the significant environmental aspects of its

operations. Managed aspects include: spills, emissions to air and water, fish, biodiversity and wildlife habitat, radioactive waste, and waterway flows and levels.

ENVIRONMENTAL COMPLIANCE



OPG completed a wetland restoration initiative in the Bay of Quinte to offset operational impacts. Photo courtesy of Christine Jennings.

Regulatory Infractions

OPG must comply with a large number of environmental requirements contained in statutes, regulations, bylaws, licences, permits and approvals. OPG considers regulatory compliance to be a minimum, non-negotiable standard and strives to exceed legal requirements and improve performance year over year where it makes business sense.

OPG classifies its non-compliances with environmental regulatory requirements based on the potential for regulatory action (i.e. charges, orders, penalties) and the level of impact to the environment or human health. Non-compliances that have a high potential for regulatory action or cause severe environmental or health

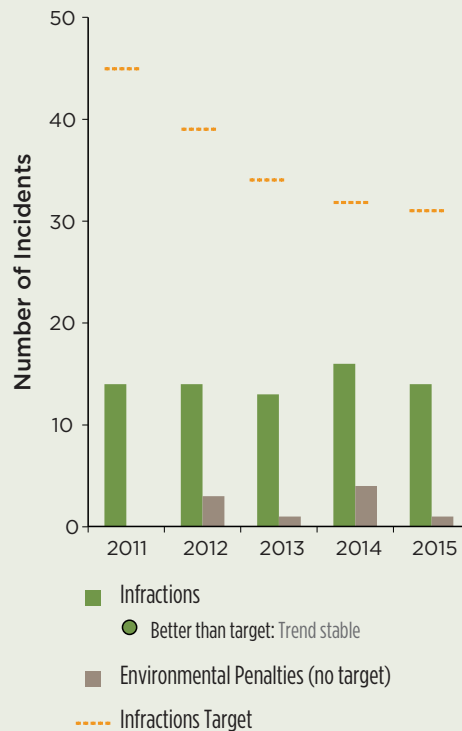
impacts, and are determined to be significant by the President and CEO, are recorded as a significant event in OPG's annual corporate scorecard. OPG had no significant environmental events in 2015. Non-compliances that have a moderate potential for regulatory action or impacts are recorded under OPG's Environmental Infractions performance measure. Fourteen environmental infractions were identified in 2015. The majority of these infractions were non-compliances with facility environmental compliance approval requirements administered by the Ontario Ministry of the Environment and Climate Change (MOECC). All infractions were reported by OPG to the appropriate federal, provincial or municipal authorities as required and actions were taken to prevent recurrence.

OPG received one administrative monetary penalty in 2015 for an environmental infraction that occurred the previous year. The Ontario MOECC served Pickering Nuclear an Environmental Penalty Order to pay \$1,625 for an exceedance of an effluent temperature limit. The contravention occurred when a raccoon damaged equipment in a station cooling water intake screenhouse which resulted in a reduction in cooling water flow and caused an increase in the cooling water effluent temperature. Corrective actions were taken to repair the equipment and to prevent wildlife from entering station screenhouses.

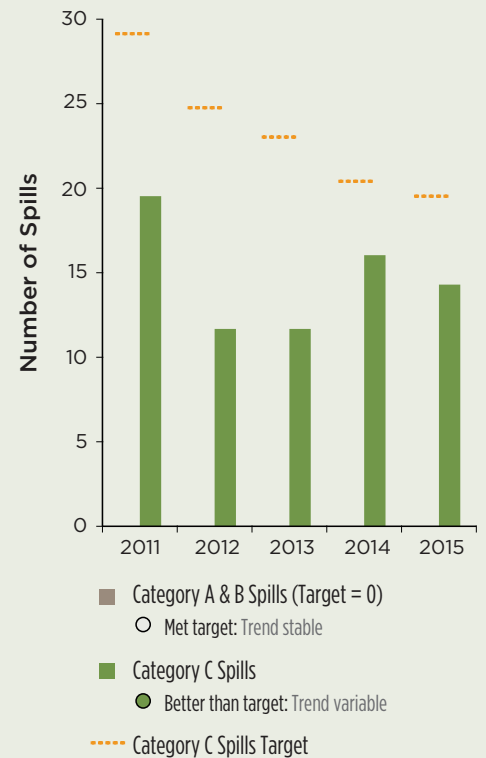
In 2015, OPG continued to implement a program to assess and remediate historical land contamination at its



ENVIRONMENTAL INFRACTIONS AND PENALTIES



SPILLS TO THE ENVIRONMENT



properties. This program is the voluntary continuation of a program that was initially established by Ontario Hydro in 1997 in response to a Director's Order from the Ontario MOECC. At the end of 2015, remediation at 46 sites was complete, remediation was ongoing at four sites, and remediation was still required at one site. Completion of the program is targeted for the end of 2017.

Spill Management

The focus of OPG's spill management program is prevention. OPG has extensive programs to assess the risk of spills and to minimize the potential consequences of spills. Programs include material handling and management practices to prevent releases, use of less hazardous

materials where possible, and evaluations of past spill events for trends. Engineered controls such as spill containment structures are used to reduce the likelihood of spills. When a spill does occur, emergency response processes minimize any adverse impacts on the environment and reporting procedures ensure regulatory authorities are notified as required.

OPG classifies its spills that are reportable to a regulatory authority as Category A, B or C spills based on the actual or potential impacts. Category A spills are considered very serious due to the scale of injury or damage, health effects, or safety impairment. Category B spills are considered serious due to localized injury or impacts to

property. Category C spills are all other reportable spills that are less serious than Category A and B spills. OPG's spill categories align with Ontario MOECC regulatory requirements for the classification of contraventions.

OPG had no Category A or B spills in 2015 and the associated annual targets remain at zero. Category C spill performance was better than target and the most frequent type of spill was oil from equipment to water. Corrective actions were taken to increase the maintenance and surveillance of equipment, and to replace and upgrade equipment.

PROTECTION OF FISH



Looking for evidence of lake sturgeon eggs at Alexander GS.

Electricity generating facilities located on waterways can impact fish in a number of ways. At nuclear and thermal stations, the intake of water for equipment cooling purposes can result in fish being impinged on station equipment and fish larvae and eggs can be entrained in the water as it passes through the station. The warmer water returned to the water body also has the potential to impact aquatic organisms and habitat near the station. At hydroelectric stations, the flow of water through the station turbines can result in fish impingement and entrainment. Physical barriers such as dams can prevent the migration of fish.

OPG utilizes measures such as a fish ladder, trap and transport programs, stocking programs, barriers and deterring structures, water flow alterations, habitat protection and creation, and station effluent temperature limits to manage and mitigate impacts to fish. OPG also works cooperatively with its regulators, the scientific community, and partner utilities on matters related to fish and fish habitat.

In 2015:

- The construction of a spawning shoal downstream of Smoky Falls GS was completed. The spawning shoal is intended to support walleye and lake sturgeon spawning, among other species, and serves as an offsetting measure for habitat disturbances incurred as part of OPG's Lower Mattagami River hydroelectric project.
- OPG continued the partnership with the University of Waterloo and Manitoba Hydro to investigate technologies focused on minimizing entrainment risks and safe downstream guidance of lake sturgeon at hydroelectric stations.
- OPG continued the implementation of 11 mitigation plans for lake sturgeon and American eel for hydroelectric stations where these species may be impacted. OPG conducted extensive lake sturgeon spawning and assessment studies and implemented enhanced flow mitigation at a number of stations in northwestern and eastern Ontario.
- The eel ladder at RH Saunders GS passed 12,380 eels upstream to the upper St. Lawrence River and Lake Ontario. OPG's American eel trap and transport program relocated 1,899 large yellow eels downstream of hydroelectric stations on the St. Lawrence River.
- OPG participated in an Electric Power Research Institute (EPRI) project to investigate technologies for the safe downstream passage of eels at hydroelectric stations, such as behavioral guidance field trials to guide and concentrate migrating American eels. This work forms part of the five-year action plan (2013-2017) for offsetting turbine mortality of American eels at RH Saunders GS.
- Studies to better understand the potential impacts of Pickering Nuclear's thermal effluent on fish species in Lake Ontario were completed and the results indicated the effluent may not be significantly impacting fish habitat. Additional studies will be conducted over the next few years.
- The fish barrier net installed at Pickering Nuclear's water intake continued to be an effective fish diversion system and has significantly reduced fish impingement compared to impingement levels before the net was installed in 2009. There were two days in 2015 when fish, primarily alewife, were able to pass through a split seam in the net and fish were impinged at the station. Immediate action was taken to repair the net.

BIODIVERSITY AND HABITAT STEWARDSHIP



Blanding's turtle. Warning signs at Chats Falls GS notify traffic of the turtle crossing area.

Biodiversity Strategy

OPG demonstrates leadership and innovation in advancing biodiversity by implementing biodiversity programs at its sites and by supporting biodiversity programs and partnerships across Ontario. These initiatives are designed to implement the “4 Rs” of biodiversity:

- **Retain** what is ecologically significant.
- **Restore** habitats that have been degraded.
- **Replace** habitats that have been lost, where ecologically and economically feasible.
- **Recover** species that are at risk.

OPG is a member of the Ontario Biodiversity Council and supports Ontario's Biodiversity Strategy. The Strategy outlines the framework for the conservation of Ontario's biodiversity by reducing threats, enhancing resilience, engaging people, and improving knowledge.

In 2015, OPG contributed to the development and implementation of the Ontario Biodiversity Council's

first ever Ontario Biodiversity Summit. The summit presented a unique forum to explore the state of Ontario's biodiversity and promote the call for action. It brought together more than 300 participants, including a Young Leaders for Biodiversity delegation.

Additional information about the Ontario Biodiversity Council and Ontario's Biodiversity Strategy is available at www.ontariobiodiversitycouncil.ca.

Site Programs

The goal of OPG's site biodiversity programs is to prevent or mitigate adverse effects to biodiversity. OPG is also committed to managing its sites in a manner that strives to maintain — or enhance where it makes business sense — significant natural areas and associated species of concern.

Site biodiversity initiatives in 2015 included: treatment of the invasive European buckthorn on Niagara Operations lands, preparation of a naturalization plan for the riverfront area at Lambton GS, native tree

planting in the riparian zone of the tailrace area at Eugenia GS, and the completion and compilation of data from 10 consecutive years of marsh monitoring at Atikokan GS and Thunder Bay GS.

Boreal chorus frog at Thunder Bay GS.



OPG continues to receive certification and recognition from the Wildlife Habitat Council (WHC) for the biodiversity programs at its sites. The WHC is an international non-profit, non-lobbying group of corporations, conservation organizations and individuals dedicated to restoring and enhancing wildlife habitat. The Council's certification process helps ensure OPG's biodiversity programs remain dynamic and demonstrate continual improvement.

As of 2015, OPG had 12 "Wildlife at Work" certifications. Wildlife at Work programs emphasize community involvement in projects that create, conserve and restore wildlife habitats on corporate lands. Additionally, five OPG sites were "Corporate Lands for Learning" certified for their educational and outreach programs.

In 2016, OPG will start to align its site biodiversity programs with WHC's newly released Conservation Certification which sets the standard for corporate conservation actions and produces quantitative benefits to corporations, communities and the environment. Additional information regarding the WHC is available at www.wildlifehc.org.

Regional Biodiversity Program

OPG's Regional Biodiversity Program is strategically focused on funding and promoting efforts that contribute to the protection and restoration of habitat cores and corridors across Ontario.

Through the program, woodland restoration projects are implemented in strategic locations, including the Carolinian forest which is one of the

most biologically imperiled regions in Canada. These projects are targeted to expand key core forested areas and connect woodland patches to promote the recovery of wildlife at risk in the heavily fragmented landscapes of southern Ontario. Sites are identified using regional scale systems to achieve the greatest ecological and social value for the investment dollar.

In 2015, program partners planted almost 260,000 native trees and shrubs on approximately 150 hectares of land, bringing total plantings to more than 6.3 million native trees and shrubs on approximately 3,000 hectares of land. This cumulative effort also addresses climate change adaptation and mitigation by enhancing the resiliency of woodland ecosystems to withstand the effects of climate change while naturally sequestering carbon dioxide.

Peregrine Falcons at Pickering Nuclear

Peregrine falcons are one of the world's most impressive predators and can reach speeds over 300 kilometres per hour in their trademark dive. Peregrines are also one of Canada's most well-known species at risk after more than 50 years of recovery efforts and public attention to prevent their extinction. Today, they remain a species of special concern in Ontario and continue to be threatened by habitat loss, disturbances by people, and environmental contaminants.

OPG is therefore thrilled that a pair of peregrines nested at Pickering Nuclear in 2014 and 2015. In collaboration with the Canadian Peregrine Foundation (CPF), a nesting box was installed and the birds were monitored to ensure their well-being. In 2014, CPF volunteers and Pickering Nuclear employees rescued Flash, the station's only successful chick, from a violent storm. In 2015, two new chicks were named Curie and Sievert after units of radioactivity to commemorate their birthplace.

Hosting the peregrine falcons reinforces OPG's commitment to protecting biodiversity. Ontario is home to some of the most interesting

species on the planet and OPG's role as an environmental steward is to take reasonable steps to preserve them for future generations.

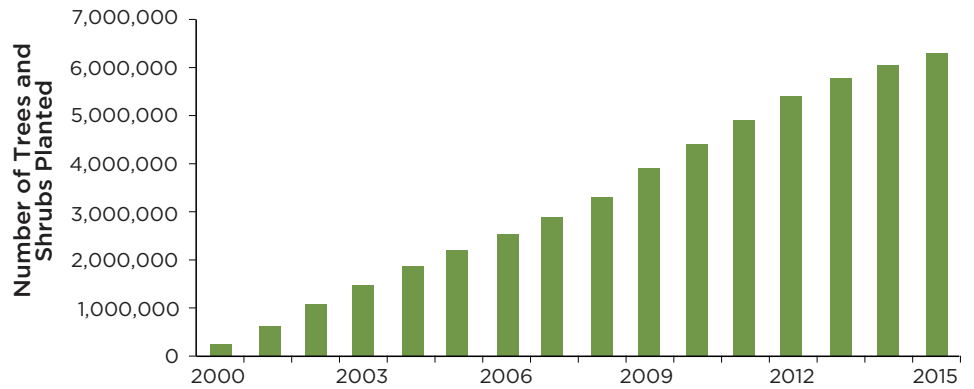


Peregrine falcon with eggs at Pickering.



Tree planting event hosted by Pickering Nuclear.

CUMULATIVE TREE PLANTING



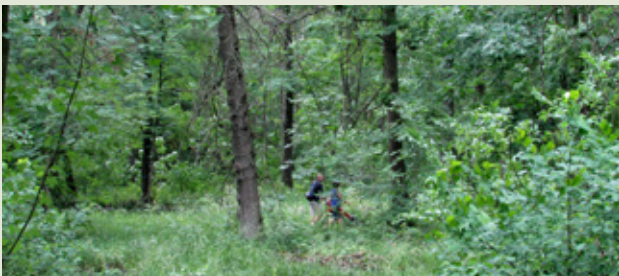
OPG's Regional Biodiversity Program also funds a variety of initiatives beyond tree planting. In 2015, OPG's partners completed initiatives that included over 60 acres of grassland restoration, over four kilometres of stream bank restoration, wetland restoration, installation of wood duck boxes, enhancement of turtle nesting habitats, native seed collection, invasive species control, monitoring programs, and outreach and educational activities.

To be considered for funding under OPG's Regional Biodiversity Program, potential vendors must be pre-qualified and added to OPG's Regional Biodiversity Program Vendors List. Qualified vendors are then notified by OPG of potential project opportunities. Additional information about OPG's Regional Biodiversity Program is available at www.opg.com/communities-and-partners.

REGIONAL PROGRAM PROJECT PROFILES

Heartland Forest Biodiversity Restoration Project

Heartland Forest has one of the largest privately owned, publicly accessed stands of Carolinian forest in the Niagara Region. Heartland Forest is dedicated to enriching the lives of all people through the enjoyment of nature. With support from OPG in 2015, Heartland Forest was able to strategically plant native trees and shrubs, document and report change in species composition within a long-term forest biodiversity monitoring program, and create habitat for species of conservation concern through vernal pool site restoration, including a new snapping turtle nesting area with accompanying interpretive signage and nature exhibits. These projects contributed to stewardship of wildlife habitat as well as providing excellent opportunities for environmental education to the over 20,000 people that visit Heartland Forest annually.



Heartland Forest has over 90 acres of Carolinian forest.

Catfish Creek Conservation Authority Lakes and Rivers Project

The Catfish Creek Conservation Authority has been planning and implementing environmental projects for over 60 years. With OPG support, as well as the support of other funding grants, the Catfish Creek Conservation Authority undertook a project to restore sections of the Catfish Creek in the Archie Coulter Conservation Area (ACCA). This work included stabilizing eroded stream banks to reduce sediment inputs and enhancing spawning areas. The ACCA is one of the only publicly owned natural areas remaining in the lower Catfish Creek Valley and contains a wide cross-section of Carolinian wildlife and habitat, which can be enjoyed by the public year round for hiking, cross-country skiing, birding, fishing and environmental education. The project also partnered with the Environmental Leadership Program at Aylmer's East Elgin Secondary School, thus providing students with hands-on restoration experience.



Students working to prevent stream bank erosion along Catfish Creek.

Biodiversity Partnerships

OPG contributes to biodiversity education, awareness and scientific knowledge across Ontario through the support of partnerships and outreach programs.

OPG is the lead sponsor in the Lake Ontario Atlantic Salmon Restoration Program. This program, also known as Bring Back the Salmon, is working to help restore a self-sustaining Atlantic salmon population to Lake Ontario and its streams. The main components of the program include: fish production and stocking, water quality and habitat enhancement, outreach and education, and research and monitoring. A scientific review released in 2014 showed the Bring Back the Salmon program exceeded benchmarks for in-stream survival and growth of juvenile Atlantic salmon through their first summer. These are extremely important indicators of stream health and restoration progress. The review also noted other positive signs such as the presence of Atlantic salmon nests, wild juveniles and wild adults in the rivers.

OPG partners with groups like Bruce Trail Conservancy, Earth Rangers, LEAF (Local Enhancement and Appreciation of Forests), Ontario Nature, Rouge Park, and Toronto Wildlife Centre to facilitate conservation activities and raise awareness regarding the many benefits of biodiversity.

More information about OPG's biodiversity partnerships is available at www.opgbiodiversity.com.

Atlantic salmon hatchery educational program at Pickering Nuclear.



The Johnson Nature Preserve on Bruce Peninsula. Photo courtesy of Dennis Barnes.

Fast Facts: Biodiversity Partners

OPG supports province-wide, conservation focused, family-friendly actions and education initiatives that get people involved in protecting and conserving biodiversity, such as:

- **Bruce Trail Conservancy:** The Bruce Trail spans more than 885 kilometres from Niagara to Tobermory and is the longest continuous footpath in Canada.
- **Earth Rangers:** During the 2014-2015 school year, Earth Rangers visited over 800 elementary schools across the country, directly reaching over 236,000 students who fundraise to save animals and species at risk.
- **LEAF:** LEAF planted over 1,400 native trees and shrubs in backyards across Ajax, Toronto and York Region in 2015.
- **Ontario Nature:** Ontario Nature's work is supported by volunteers who spend more than 10,000 hours each year planting trees, collecting data and supporting events.
- **Rouge Park:** Canada's first urban national park, Rouge Park is in close proximity to 20 per cent of Canada's population.
- **Toronto Wildlife Centre:** TWC is a leader in wildlife rescue, rehabilitation and education, providing a vital and unique service in southern Ontario. Over 5,000 sick, injured and orphaned wild animals are admitted each year to the TWC.

LOW CARBON FUTURE



Refurbishing Darlington will provide 3,500 megawatts of clean, cost-efficient base load electricity for Ontario for the next 25-30 years.

Taking the Lead on Climate Change Mitigation

The momentum to combat climate change is increasing and there is an emerging consensus it will be more cost effective to mitigate climate change rather than adapt to its effects. OPG is proud of its contribution towards the fight against climate change and the reduction in carbon dioxide (CO₂) emissions from the electricity sector. In 2003, the Province of Ontario committed to eliminate all coal-fired generation in Ontario. The subsequent phase-out of coal at OPG's generating stations resulted in coal being reduced from one-quarter of the province's energy supply mix in 2003 to zero in 2014. OPG's electricity production is now 99 per cent free of smog and greenhouse gas emissions.

More information about the elimination of coal-fired energy in Ontario is available on the Ontario Ministry of Energy's website at www.energy.gov.on.ca.

"Jurisdictions around the world are struggling to address climate change and greenhouse gas emissions while we have almost entirely de-carbonized our generation portfolio."

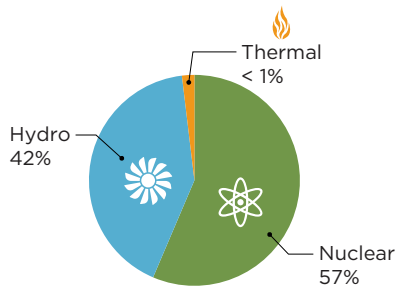
JEFF LYASH, PRESIDENT AND CEO

Fast Facts: End of Coal

- Ontario is the first jurisdiction with a significant reliance on coal in North America to eliminate all coal-fired electricity.
- The elimination of coal-fired electricity was primarily responsible for Ontario achieving its 2014 emissions reduction target of six per cent below 1990 levels.
- OPG phased out coal at all five generating stations: Atikokan, Lakeview, Lambton, Nanticoke and Thunder Bay.
- Since its creation in 1999, OPG has reduced its greenhouse gas emissions from a peak of 39 million tonnes carbon dioxide equivalent in 2000 to 0.5 million tonnes carbon dioxide equivalent in 2015.
- In addition to reducing greenhouse gas emissions, the phase-out of coal has helped to decrease emissions of nitrogen oxides, sulphur dioxide and mercury.

2015 ELECTRICITY PRODUCTION

Total electricity generated = 78,037 gigawatt hours*



* Includes OPG's share of production from co-owned gas-fired facilities and three gigawatt hours produced from wind.

OPG supports climate change policy and regulations that promote further reductions in greenhouse gas emissions. Specifically, OPG believes its low-emissions generating fleet can support carbon reductions in the transportation sector. Electric vehicles help improve air quality and reduce greenhouse gas emissions by displacing gasoline and diesel vehicles. Additionally, electric vehicles can be charged overnight when the demand and cost for electricity is lowest, which reduces fuel costs for owners.

OPG is a lead sponsor of Plug'n Drive - a non-profit organization committed to accelerating the adoption of electric vehicles. Plug'n Drive's programming focuses on education and outreach, electric vehicle charging infrastructure, electric vehicle research, and the implementation of policies and programs that make switching to an electric vehicle easier. Details about Plug'n Drive's programs and the benefits of driving an electric vehicle are available at www.plugndrive.ca.

Climate Change Adaptation

OPG has identified climate change adaptation and extreme weather as a strategic risk for the company. Changes in precipitation patterns, water temperatures, and ambient air temperatures can impact the availability of water resources, which could potentially affect power production at hydroelectric stations and cooling water efficiency at nuclear and thermal stations. Unusual or unpredictable weather has the potential to damage electricity generation and transmission infrastructure.

To date, OPG has not experienced impacts attributable to climate change, but it is recognized that efforts are required to assess the

short and long-term risks and to monitor for developments in climate science, adaptation activities, and potential changes to policy and regulatory requirements.

During 2015, OPG continued its participation in climate change adaptation initiatives with municipal and regional governments, the Ontario Ministry of the Environment and Climate Change, the Ontario Ministry of Energy, and Natural Resources Canada. OPG is a member of the Canadian Electricity Association (CEA) Adaptation Working Group as well as the Durham Region Roundtable on Climate Change.

OPG also continues to work with the CEA member companies, non-government organizations, and government to better define adaptation requirements through analysis and understanding of climate change impacts on watersheds and electricity supply and demand.

The frequency and intensity of extreme weather, as opposed to the changing climate, is the greater concern for the electricity sector. Further, transmission and distribution infrastructure is more exposed to the elements and therefore at greater risk than generation infrastructure in Ontario.

OPG'S LOW-CARBON FOOTPRINT

2015 EMISSIONS BY GENERATION TECHNOLOGY

Technology	Source	CO ₂ Equivalent Emissions (tonnes)
Thermal 	Combustion of fossil fuels and biomass to generate electricity, including OPG's share of emissions from co-owned gas-fired facilities.	485,082
	Facilities that emit the equivalent of 50,000 tonnes or more of greenhouse gases in CO ₂ equivalent units per year are required to report under Environment Canada's Greenhouse Gas Emissions Reporting Program.	
	Emissions from auxiliary boilers at thermal stations. Includes emissions from operating and retired stations.	35,048
Nuclear 	Nuclear power plants do not emit CO ₂ as part of the power generation process. However, OPG's nuclear sites have standby generators to provide backup electrical power to the stations if required. These generators are routinely tested to ensure their availability.	17,607
Hydro, Wind 	Hydroelectric stations and wind power turbines do not emit CO ₂ as part of the power generation process.	0

NUCLEAR EMISSIONS



Setting up an emissions monitoring system test.

Radiation Protection

Very low levels of radioactivity are released to air and water as a result of operating OPG's nuclear generating stations. These releases are all derived from the fissioning of uranium in the reactor core. OPG has a radiation protection program to keep emissions and radiological doses to the public and the environment as low as reasonably achievable taking social and economic factors into account.

Multiple systems are in place to minimize and control radioactive emissions, including dryers to remove tritiated water vapour, ion exchange resins to remove carbon-14, and air filters to remove particulate radioactive material and radioiodine. Additionally, releases are monitored and controlled through station maintenance and operating procedures.

Stringent internal station targets for tritium and carbon-14 emissions are set based on past performance and external benchmarking to promote continual improvement. In 2015, the annual targets for tritium emissions to

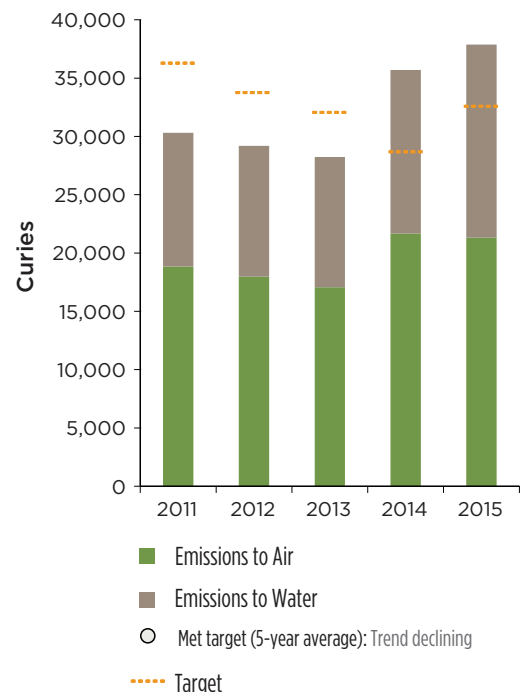
air and water were not achieved due to extensive outage work activities at Darlington Nuclear, dryer performance issues, and because OPG's tritium removal facility was out of service for maintenance. Despite these challenges, emissions remained less than one per cent of station legal regulatory operating limits. Performance for carbon-14 emissions was better than target in 2015.

To ensure OPG's nuclear operations have no adverse impacts on human health and the environment, Darlington Nuclear and Pickering Nuclear have well-established environmental monitoring programs in the vicinity of the stations. These programs are designed to assess impacts, demonstrate compliance with regulatory limits, validate the effectiveness of containment and effluent controls, and verify predictions made by environmental risk assessments.

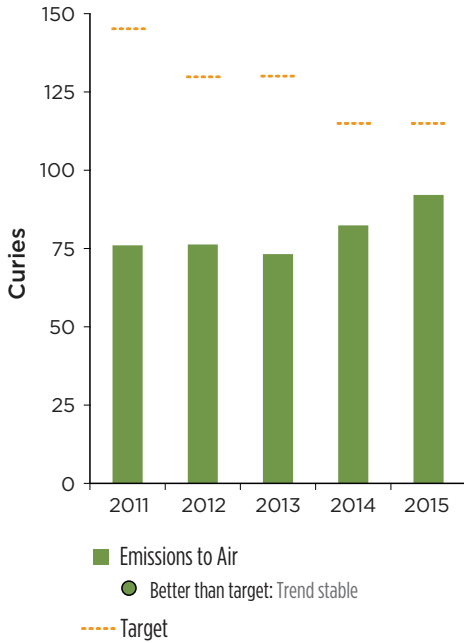
In 2015, the results from the monitoring programs confirmed that radioactive releases were small fractions of the regulatory release limits, and annual

average tritium concentrations in drinking water at nearby water supply plants were well below both the Ontario Drinking Water Quality Standard and the level committed to by OPG.

TRITIUM EMISSIONS



CARBON-14 EMISSIONS



Independent Environmental Monitoring

In 2015, the Canadian Nuclear Safety Commission (CNSC) — the federal government agency that regulates the use of nuclear energy and materials in Canada — launched an independent environmental monitoring program to complement its existing compliance verification program. The goal of the monitoring program is to independently verify that nuclear facilities' environmental protection programs are working. Under the monitoring program, samples are taken by CNSC staff from public areas around nuclear facilities and the samples are analyzed at the CNSC's laboratory. Data and conclusions are then published on the CNSC website. Sampling was conducted in the vicinity of OPG's Darlington Nuclear and Pickering Nuclear stations and the monitoring results confirmed that the public and the environment around the facilities are safe and there are no health impacts resulting from the operation of these facilities.

Additional information about the CNSC's environmental monitoring program is available at www.nuclearsafety.gc.ca. Numerous publications, educational resources, and scientific and technical information about nuclear power plants and radiation are also available on the CNSC website.

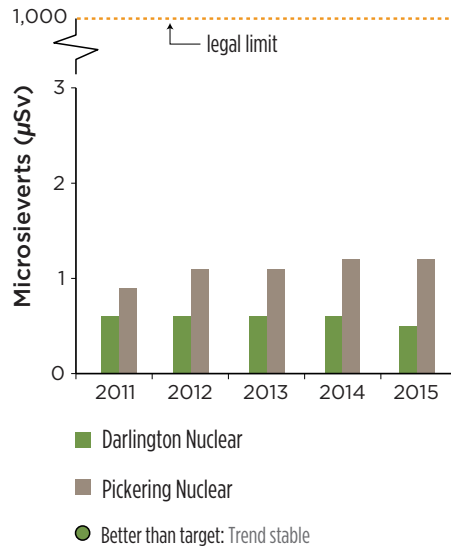
Radiation Dose to the Public

Radiation exposure to members of the public from OPG's nuclear generating stations is estimated on an annual basis by assessing the impacts on "critical groups" of people who live or work near the stations. Dose calculations consider the actual eating, drinking and living habits of these groups. This information is obtained through surveys and analysis of environmental samples taken from a variety of sources including air, water, milk, soil, sediments, vegetation, animal feed, eggs, poultry, and fish. The group and age class with the highest dose is reported as the site public dose for the given year. Critical Group Dose is expressed in microsieverts (μSv) which is an international unit of radiation dose measurement.

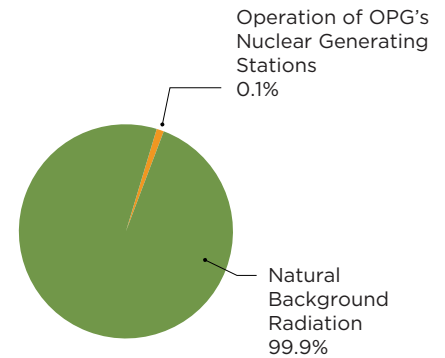
In 2015, the Critical Group Doses calculated for Darlington Nuclear and Pickering Nuclear were 0.5 and 1.2 μSv respectively. These doses continue to be 0.1 per cent or less of both the legal limit of 1,000 μSv per year, and the estimated average background radiation dose around Darlington Nuclear and Pickering Nuclear of 1,400 μSv per year.

OPG is committed to ensuring its radiological emissions data is accessible to the public. Detailed environmental monitoring program results and environmental emissions data reports are available at www.opg.com/news-and-media.

CRITICAL GROUP DOSE



DOSE SOURCE COMPARISON



Environmental monitoring station.

WASTE MANAGEMENT



Used nuclear fuel storage containers.

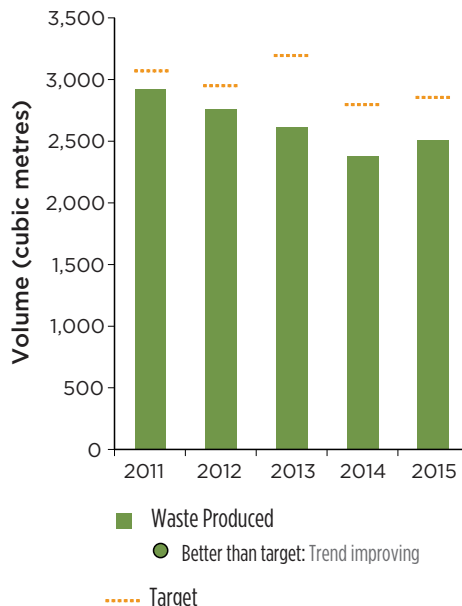
Low and Intermediate Level Radioactive Waste

Low and intermediate level radioactive waste (LILRW) is produced during routine operations at nuclear facilities. LILRW includes products and components used in the reactor building that may have collected some radiation. Low level waste consists of materials such as protective clothing, floor sweepings, mops and rags. Intermediate level waste includes materials such as resins, filters and used reactor components. LILRW from OPG owned nuclear stations is safely stored at OPG's waste management facility located at the Bruce nuclear site in the Municipality of Kincardine.

Minimizing the generation of waste not only reduces OPG's environmental footprint, it is also an effective means of lowering costs associated with the in-station processing, transportation, storage, and long-term management of waste. Key strategies to reduce the generation of low level waste include segregation of radioactive and non-radioactive waste, decontaminating

and/or reusing items, and only taking what is necessary into radioactive work areas to prevent contamination. As a means to further reduce waste storage requirements, low level waste is incinerated or compacted where possible to reduce the volume of waste.

LOW AND INTERMEDIATE LEVEL RADIOACTIVE WASTE PRODUCED



OPG is working to develop a permanent solution to safely store its LILRW. OPG has proposed to build and operate a deep geologic repository (DGR) that would safely isolate about 200,000 cubic metres of LILRW at a depth of 680 metres at the secure Bruce nuclear site. High level used nuclear fuel will not be stored or managed in the DGR.

The Joint Review Panel (JRP) overseeing the federal review process for the DGR project held public hearings in 2013 and 2014 to give participants the opportunity to hear about the project and its potential environmental effects. Members of the public and Indigenous communities also had the opportunity to provide their views about the project to the JRP.

In 2015, the JRP issued a report to present their conclusions, rationale and recommendations regarding the project. It was concluded that the DGR is the preferred solution for the long-term management of LILRW and the proposed site is appropriate.

In February 2016, the federal Minister of Environment and Climate Change requested that OPG conduct three further studies into the DGR before a decision statement is issued on whether the project may proceed. These studies are:

1. OPG will assess the environmental effects of two technically and economically feasible locations in Ontario for a new nuclear waste disposal facility. One assessment will consider a similar DGR in a sedimentary rock formation located in southern Ontario. The second will consider a similar DGR in a granite rock formation located in central to northern Ontario. Specific locations will not be identified.
2. An updated analysis of the cumulative environmental effects of the project considering the results from preliminary assessments undertaken by the Nuclear Waste Management Organization for used fuel. OPG will further study the cumulative effects assuming a used fuel repository is sited within the DGR study area.

3. OPG will undertake a review of its mitigation commitments and all mitigating actions. Any outdated or redundant commitments previously brought forward to the JRP will be identified.

OPG expects to submit the requested information by the end of 2016. OPG maintains that a deep geologic repository is the right answer for Ontario's low and intermediate level waste, and that the Bruce site is the right location. More information about LILRW and the DGR project is available at www.opg.com/generating-power and www.opgdgr.com.

High Level Radioactive Waste

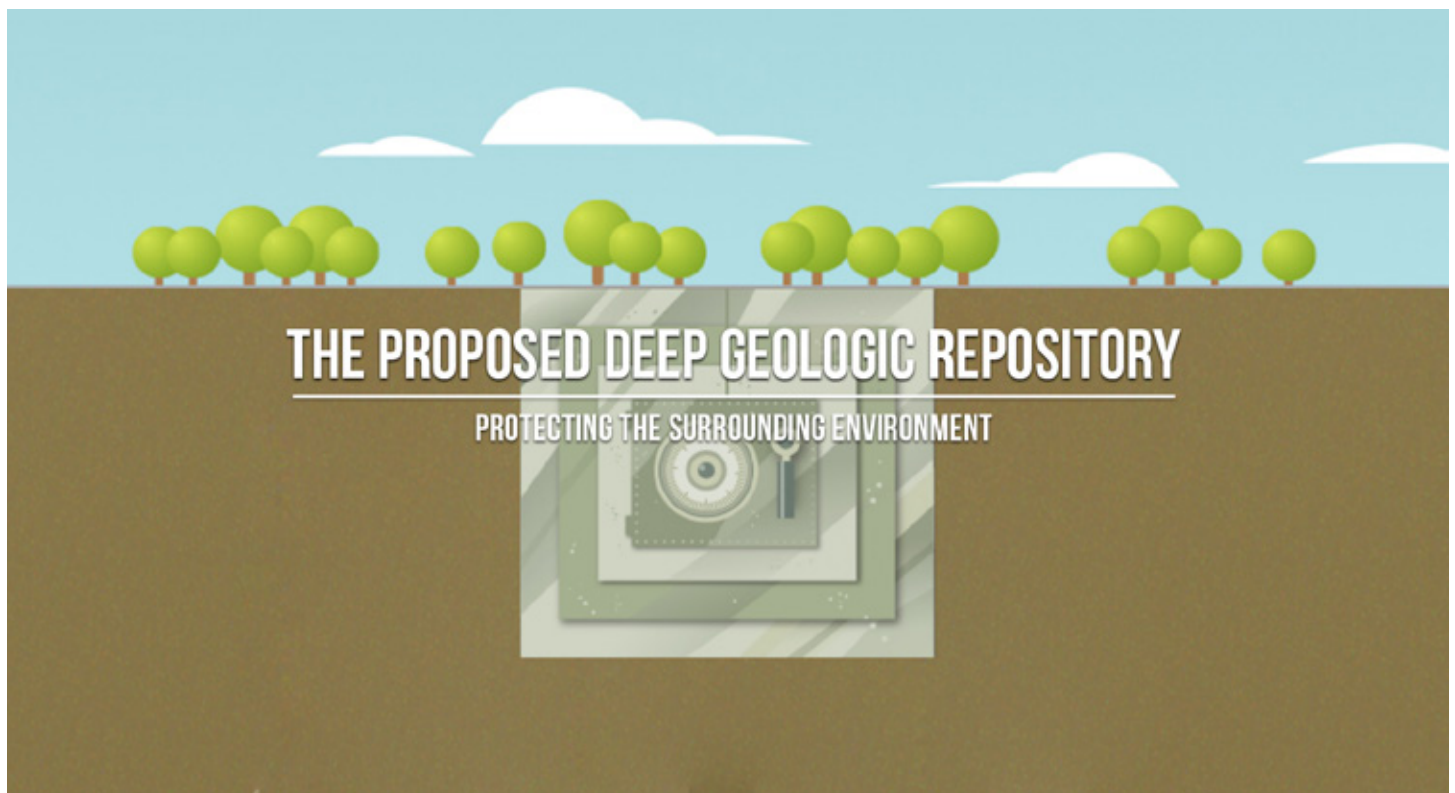
High level radioactive waste is used nuclear fuel that no longer contains enough fissionable uranium to heat water efficiently. Once a used fuel bundle is replaced by a new bundle, the used bundle is removed from the reactor and placed in a water-filled "bay" at the nuclear generating station. Fuel bays look like a swimming pool, but are built of reinforced concrete, lined to prevent leaks, and designed to withstand earthquakes. The used

fuel bundles are stored underwater for at least ten years while their heat and radioactivity decline. Afterwards, the fuel bundles are transferred to dry above-ground storage containers at the site. Currently, used nuclear fuel is stored at the Pickering, Darlington, and Bruce nuclear generating station sites.

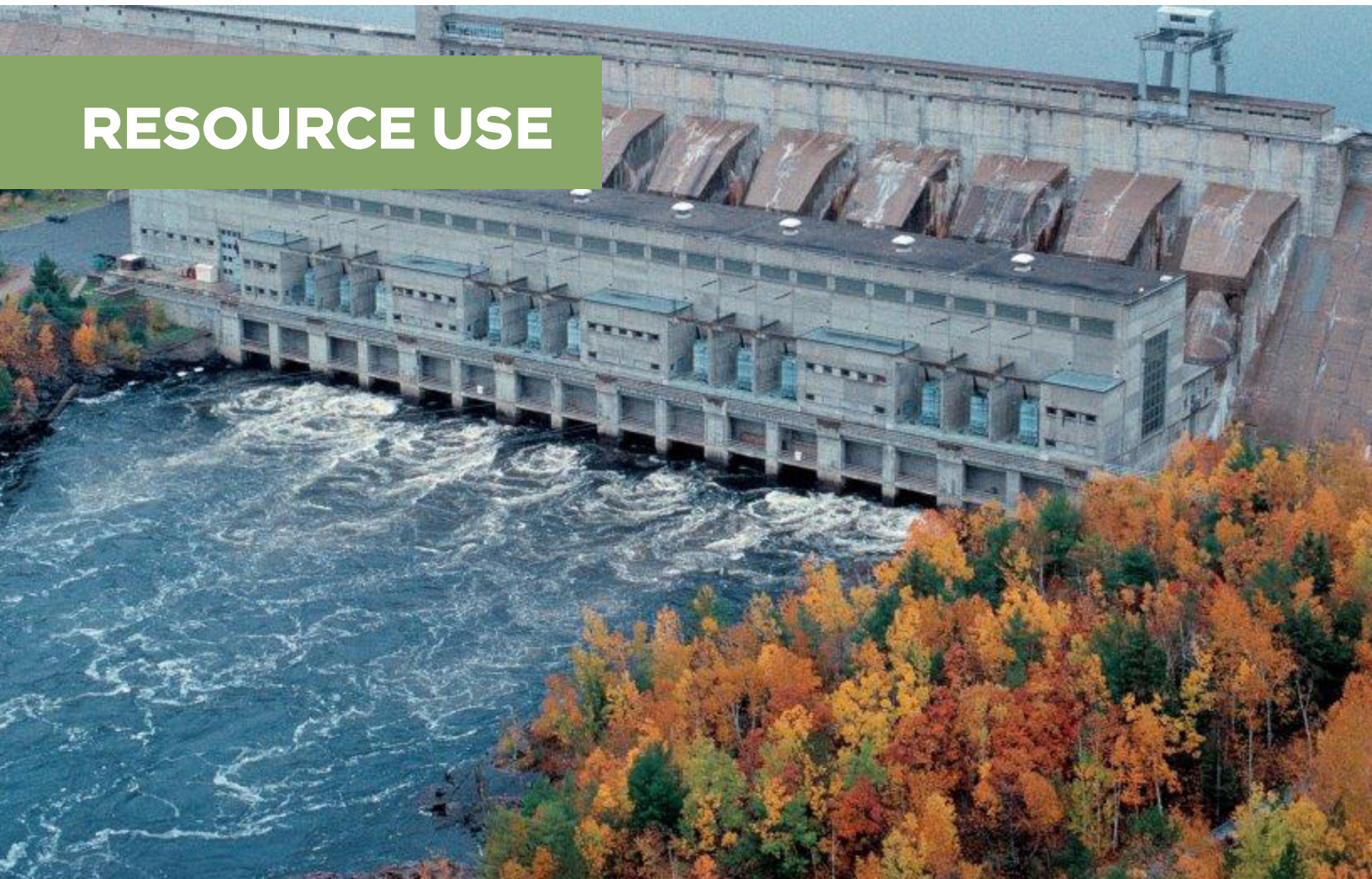
The Nuclear Waste Management Organization (NWMO) was established by Canada's nuclear power plant owners, including OPG, to develop and implement a management approach for the long-term care of Canada's used nuclear fuel. The NWMO is implementing an Adaptive Phased Management plan to contain and isolate used nuclear fuel in a deep repository constructed in a suitable rock formation in an informed and willing community. The plan will be implemented over many years through a process of phased and adaptive decision-making. In the interim, OPG will continue to store its used fuel at its nuclear generating station sites.

Details regarding the NWMO's strategic plan for implementing Adaptive Phased Management are available at www.nwmo.ca.

For information on OPG's proposed DGR please visit: www.opgdgr.com.



RESOURCE USE



Des Joachims GS.

Water Management

Water Levels and Flows

OPG operates 65 hydroelectric plants and 240 dams on 24 river systems. Many of these structures are used to control or adjust water levels and flows in accordance with requirements that range from international treaty to voluntary watershed management commitments. OPG uses hydrological and meteorological data to manage water levels, flows, and water storage. OPG strives to schedule water use for optimum utilization.

Regulating water levels and flows helps maintain water levels for recreational, commercial or other water-based activities; prevents shoreline erosion and damage to infrastructure; reduces impacts to fish; and prevents damage to aquatic and terrestrial habitats. OPG also plays a

significant role in flood mitigation and prevention in many watersheds.

Water Use and Conservation

To ensure water is used wisely, OPG undertakes regular assessments of its hydroelectric dams, powerhouses and associated facilities to detect and repair any water leaks and to identify opportunities to update equipment and fixtures to reduce water usage.

Almost all of the water used by nuclear and thermal stations is used for cooling purposes. It passes through the station only once and is returned to its source.

Tips and ideas on developing water conservation initiatives for communities, homes and businesses are available from Environment and Climate Change Canada at www.canada.ca/en/environment-climate-change.html.

Mattagami River.



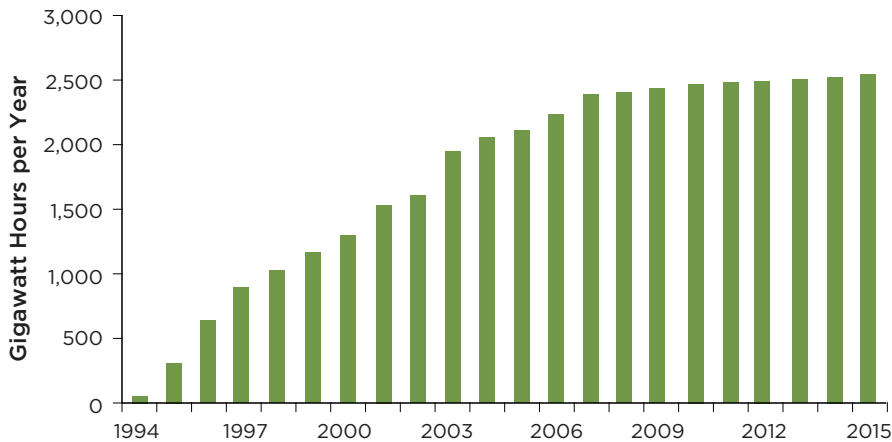
Energy Efficiency

OPG, and previously Ontario Hydro, has pursued an energy efficiency improvement program for more than 20 years to conserve energy and increase generation capacity. The cumulative energy improvement since 1994 has been 2,542 gigawatt hours per year, which is the result of various initiatives to reduce electricity consumption and increase energy output through station upgrades.

In 2015, OPG achieved new internal energy efficiency savings of 17 gigawatt hours per year primarily due to the shutdown of Lambton GS. In addition to this program, OPG also considers energy efficiency and sustainability when renovating and constructing buildings. The new Smoky Falls GS hydroelectric station on the Mattagami River is LEED (Leadership in Energy and Environmental Design) Gold certified.

To learn more about the value of energy conservation and ways to save electricity, refer to the Ontario Ministry of Energy website at www.energy.gov.on.ca.

CUMULATIVE ENERGY EFFICIENCY IMPROVEMENTS



Smoky Falls GS.



SOCIAL

In this section:

- Stakeholder and community engagement
- Indigenous engagement
- Employee health and safety
- Public health and safety
- Emergency preparedness and security
- Employee engagement, development and diversity
- Corporate citizenship



OPG hosts special events to celebrate National Aboriginal Day.

OPG holds itself accountable to its core values of **Safety, Integrity, Excellence, and People and Citizenship** as outlined in its Code of Business Conduct. OPG is committed to maintaining high standards for stakeholder engagement, health and safety, emergency preparedness and community investment because it is an essential part of being a good corporate citizen and neighbour.

STAKEHOLDER AND COMMUNITY ENGAGEMENT



Visitors at the St. Lawrence Power Development Visitor Centre in Cornwall.

Building Trust and Relationships

OPG's licence to operate depends on meeting the environmental, social and economic expectations of stakeholders and local Indigenous communities. Accordingly, OPG has an engagement framework for openly sharing information about the company's activities and operations and for receiving feedback. This framework allows OPG to build trust, adapt to evolving stakeholder expectations and regulatory requirements, and make better business decisions.

The table on the next page summarizes OPG's outreach to stakeholders and partners, as well as key engagement activities in 2015.

Educational Outreach

OPG continues to seek out opportunities to promote skilled trades and engineering in order to build the workforce of the future. Specifically, OPG engages in a number of initiatives to encourage youth to pursue studies in math and sciences which include:

- **Participating in events** to encourage youth to pursue skilled trades through hands-on demonstrations and by meeting OPG staff engaged in large construction projects.
- **Offering awards and scholarships** at the post secondary and secondary levels.
- **Partnering with various colleges and universities** through participation in curriculum advisory committees.

- **Participating in various conferences, speakers' panels and networking events** targeted to promote learning about the electricity industry among both students and experienced professionals.
- **Offering free resource kits** to Ontario teachers to help teach electrical energy and electricity generation to students in Grades 6 and 9. Refer to www.opg.com/communities-and-partners for more details.

OPG also seeks opportunities to provide internship and temporary placements to members of designated groups. For information about work opportunities at OPG refer to www.mypowercareer.com.

STAKEHOLDER AND PARTNER ENGAGEMENT

Group	Methods of Engagement and Feedback Systems	Engagement Examples 2015
Local communities	Website, social media, visitor centres, community advisory councils, open houses, facility tours, direct mail, TV (select communities), print, radio and online advertising, hearings, consultations, participation in community events, Corporate Citizenship Program, community research	<ul style="list-style-type: none"> • Distributed potassium iodine (KI) pill emergency preparedness kits with a campaign featuring education, advertising, and information sessions • Hosted Darlington Energy Complex two-day open house • Hosted community open houses on select river systems to inform residents of safety and water management • Use of Twitter to highlight community news and events • Nuclear facility performance reports published quarterly on opg.com • Provided community investment support (charitable, non-profit, in-kind support) in host communities • Conducted community research in Durham Region, Niagara and Ottawa/Cornwall
Indigenous partners and communities	Community relations and outreach, capacity-building support including employment and business opportunities, Corporate Citizenship Program	<ul style="list-style-type: none"> • Construction of the new Peter Sutherland Sr. GS began in partnership with the Taykwa Tagamou Nation • Meetings with Indigenous communities regarding traditional territories in Durham, Bruce, Northumberland and Haldimand • Provided community investment support to Indigenous initiatives near OPG operations
Employees	Intranet, newsletters, regular face-to-face meetings, email, videos, posters, ad hoc surveys, information sessions	<ul style="list-style-type: none"> • PowerNet intranet site • PowerNews company newsletter • Senior manager blogs and video messages • Regular safety and department meetings
Suppliers and contractors	Internet webpage on opg.com, supplier pre-qualification process, labour requirements, face-to-face meetings	<ul style="list-style-type: none"> • Suppliers are required to register with Ariba and ISNetworld and comply with OPG's Supplier Code of Conduct • Interface to promote improvement in supplier performance and quality of parts and service
Industry groups	Working groups, organizations, meetings, conferences	<ul style="list-style-type: none"> • Sponsorships or memberships in a variety of organizations such as: Ontario Energy Network, CANDU Owners Group, Ontario Waterpower Association, and Canadian Manufacturers and Exporters
Government and agencies at federal, provincial and municipal levels	Meetings, hearings, consultations, correspondence	<ul style="list-style-type: none"> • Participated in Association of Municipalities of Ontario • Meetings with Durham Region and its municipalities and City of Toronto on the distribution of KI pills • Attendance at municipal meetings to provide operational updates
Non-government organizations	Meetings, hearings, consultations, open houses	<ul style="list-style-type: none"> • Member or supporter of organizations such as Ontario Community Newspaper Association, Lake Ontario Waterkeepers, Ontario Chamber of Commerce, community boards of trade and chambers of commerce • Regular update meetings with Pickering and Darlington community advisory councils
Media	News releases, Twitter, 24/7 media desk coverage, media tours of stations, outreach to media stakeholders	<ul style="list-style-type: none"> • Issued numerous news releases including water safety announcements and project updates • Conducted a variety of media tours
Electricity ratepayers, general public	Public hearings, earned and paid media including TV water safety public service announcements, extensive digital and social media presence, open houses, visitor centres	<ul style="list-style-type: none"> • Daily updates to opg.com • Launched <i>Powering the Future</i> advertising campaign • Launched <i>The Power of Water</i> public safety campaign • Advertised in major newspapers and industry magazines • Distributed 410 education kits to Ontario schools • Daily tweets and retweets on Twitter; @opg has more than 6,500 followers

INDIGENOUS ENGAGEMENT



This monument symbolizes the Gull Bay First Nation community's acceptance of hydro development on Lake Nipigon and the settlement of past grievances.

Indigenous Relations

OPG is committed to building and growing mutually beneficial working relationships with Indigenous communities near its current and future operations. These relationships are built on a foundation of respect for the culture and customs of Indigenous peoples, and are established and maintained through ongoing dialogue aimed at preserving openness, transparency and trust.

OPG's First Nations and Métis Relations Policy guides the company in its work with more than 50 Indigenous communities on numerous projects and partnerships. This policy outlines the company's commitment to engage in community relations and outreach and to provide capacity-building support, including employment and business contracting opportunities.

When OPG was established, a formal framework was adopted to assess and resolve, where appropriate, historical past grievances that are proximate to OPG facilities with respect to past

construction and operation. These settlements have helped to improve OPG's relationships with Indigenous communities near its facilities and enabled partnerships that enjoy mutual benefits. During 2015, OPG resolved its past grievance with Animbiigoo Zaagiigan Anishinaabek (also known as Lake Nipigon Ojibway First Nation). In reaching this settlement, OPG marked the last of 23 active past grievance settlements with 21 First Nations since 1992.

OPG regularly meets with community leaders and members to share knowledge, discuss development initiatives and review planned project activities. In 2015, outreach activities included:

- Numerous information sharing events and presentations were held across the province with First Nations and Métis communities that have an interest in OPG's operations.
- Information sharing sessions with First Nations and Métis on nuclear operations and projects, including

a full day workshop about the Darlington Nuclear operating licence renewal application.

- Ongoing discussions with Saugeen Ojibway Nation, the Métis Nation of Ontario and the Historic Saugeen Métis on existing waste operations and the proposed deep geologic repository for low and intermediate level radioactive waste.
- Regular meetings with the Williams Treaties First Nations (Mississaugas of: Alderville, Curve Lake, Hiawatha and Scugog Island; Chippewas of: Beausoleil, Georgina Island and Rama) to share information about nuclear generation and updates on the Darlington Nuclear refurbishment project. OPG also hosted station and waste facility tours.
- OPG hosted an event sponsored by the Aboriginal Apprenticeship Board of Ontario, where representatives from various building trades and vendors encouraged employment in the building and construction trades.

OPG provides employment opportunities to Indigenous communities through the direct hiring of individuals to support seasonal or project work and by awarding contracts to Indigenous-owned businesses. Recent examples include the employment of Wabaseemoong Independent Nation members to support overhaul work at Whitedog Falls GS and a partnership with Whitesand First Nation to restore traditional land along the shores of Lake Nipigon.

In 2015, the Canadian Council for Aboriginal Business (CCAB) awarded OPG a silver Progressive Aboriginal Relations (PAR) designation. The CCAB is a national non-profit organization that offers knowledge, resources and programs to both mainstream and Aboriginal-owned companies that foster economic opportunities for Aboriginal people and businesses across Canada. The PAR assessment will help OPG take steps over the next three years toward a gold rating.



The Canadian Council for Aboriginal Business awarded OPG its second highest certification.



Growing Economic Partnerships

OPG continues to pursue economic partnerships that provide for long-term commercial arrangements, while respecting the evolving relationship between Indigenous peoples and broader society. Underscoring this work is OPG's acknowledgement of the inherent Aboriginal and Treaty rights of First Nations and Métis communities. This remains an important aspect of the company's generation development program.

OPG's partnership ventures are regarded by many as a best practice. Work continued in 2015 on existing commercial partnerships involving Lac Seul First Nation, Moose Cree First Nation and Taykwa Tagamou Nation.

A significant achievement occurred in early 2015 when the Lower Mattagami hydroelectric redevelopment project was declared fully in-service thanks to the successful partnership between OPG and Moose Cree First Nation. This project increased the generating capacity of four stations on the Mattagami River and provided valuable training, employment and business opportunities for the Moose Cree community. Under the Amisk-oskwo Agreement, the Moose Cree will have a 25 per cent equity interest in the project.

Peter Sutherland Sr. GS Project

"We are excited to partner with OPG on this project. OPG has a proven track record partnering with First Nation communities. We wanted to work with them on this project which will provide lasting economic opportunities for the people of Taykwa Tagamou Nation, for this generation and many to follow."

DWIGHT SUTHERLAND, TAYKWA TAGAMOU NATION CHIEF

A few months later, another major milestone was reached when OPG and the Taykwa Tagamou Nation began construction of the 28 MW Peter Sutherland Sr. hydroelectric station. Taykwa Tagamou Nation people and businesses are helping to construct the facility. As OPG's partner, the Taykwa Tagamou Nation through their wholly owned company Coral Rapids Power will have a one-third equity interest in the project. The station is under construction approximately 90 kilometres north of the Town of Smooth Rock Falls. The \$300 million project is to be completed in 2018.

OPG's Tom Mitchell (retired) and Jeff Lyash, President and CEO, congratulate John Wesley Beaver Memorial Student Award recipients Brittnee Sheridan and Jamie Monague. The award is administered by OPG's Native Circle.



HEALTH AND SAFETY



OPG has a long-standing commitment to employee health and safety with an ultimate goal of zero injuries.

Employee Safety

The safety of OPG employees and contractor employees is the company's number one priority and responsibility. OPG continues to be committed to safety excellence by sustaining a strong safety culture and continual improvement in its mature health and safety management system. This system ensures everyone is protected from workplace hazards through the development and implementation of health and safety plans, procedures, monitoring processes, and continuous improvement activities.

Overall, OPG's safety performance continues to be among the best when benchmarked against Canadian electrical utilities of similar size. The 2015 All Injury Rate was 0.39 injuries per 200,000 hours which was 43 per cent better than the OPG target and is the second best ever since OPG's inception in 1999. (OPG's best All Injury Rate performance of 0.36 was achieved in 2014.) OPG's Accident Severity Rate of 0.5 days lost per 200,000 hours was the best ever since OPG's inception.

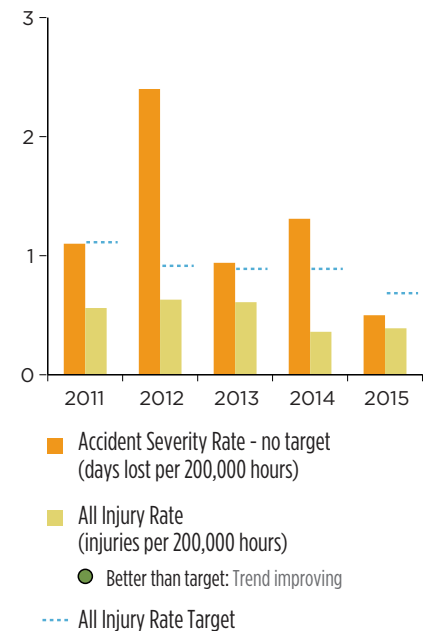
In 2015, OPG was recognized by the Canadian Electricity Association (CEA) for the third year in a row for achieving top quartile performance among comparable utilities for its 2014 All Injury Rate and Accident Severity Rate performance.

Bernard Lord, OPG Board Chair, accepted the CEA's President's Silver Award of Excellence for Employee Safety from former Ontario Energy Minister Bob Chiarelli.



OPG's construction contractor 2015 All Injury Rate performance of 0.50 injuries per 200,000 hours worked was better than the 2014 performance of 0.53, and was significantly better than the Infrastructure Health and Safety Association (IHSA) 2015 All Injury Rate of 4.48.

OCCUPATIONAL INJURY RATES



Although 2015 incident statistics were among OPG's best, OPG needs to continue to improve. OPG, the Power Workers' Union, the Society of Energy Professionals, and the Building Trades are committed to working together to achieve zero injuries and incidents. This is especially important as OPG embarks on many significant projects such as the refurbishment of Darlington Nuclear and construction of the Peter Sutherland Sr. GS hydroelectric station. In 2015, OPG and its contractors experienced 19 high Maximum Reasonable Potential for Harm (MRPH) incidents. Of the high MRPH incidents, 12 were with OPG employees and seven were with contractors, each one having the potential to result in very serious consequences. More than half of these incidents involved falling objects or the potential for a worker to fall. Recognizing that 19 high MRPH incidents is a slight improvement over past years, there is a collective challenge to continue to improve.

Employee Health

A Total Health initiative was launched in the fall of 2014 with the primary goal of building a health culture across OPG that will foster and engage employees in the pursuit of their optimal health outcomes. The initiative is built on three main pillars: education, empowerment and resources. Much of 2015 was spent educating employees on the many resources available to them and their families in the management of personal and financial health. Face-to-face sessions were conducted across the province. This initiative has had a positive impact on the company's Employee and Family Assistance Program usage.

Depression and other mental health issues are emerging as the top health issue in Canada. In 2015, OPG conducted pilot training programs to develop a comprehensive training program incorporating the Mental Health Commission of Canada's Mental Health First Aid training and existing OPG programs. This training will improve participants' knowledge about mental health, build skills in recognizing and responding to mental health issues, and increase helping and supportive

behaviours to those trained. OPG will launch this new training program in 2016.

Public Safety on Waterways

OPG staff work closely with partners in site communities to help ensure public safety around OPG's dams and hydroelectric stations. In 2015, OPG continued its water safety outreach program to inform the public about the potential for rapid and dangerous changes in water levels and flows. OPG's message remains Stay Clear Stay Safe.

Safety messages are broadly

communicated to the public on television, radio, online, and in newspaper and magazine advertisements, as well as through brochures and regular news releases prior to holiday weekends. "The Power of Water" public service television ad illustrates how fast moving water can create turbulence and strong undercurrents, while producing clean, renewable power.

Visit www.opg.com/watersafety to view OPG's most recent public service announcements.

Fast Facts: Employee Health Programs

- **Attendance Support:**
Provides assistance to supervisors in managing employee absences and supports employees who may be struggling with attendance.
- **Employee and Family Assistance:**
Provides employees and their immediate family members with confidential help for any work, health or life concern.
- **Disability Management:**
Supports employees who are sick or injured off the job in their safe and timely return to work. The disability management process offers a skilled and experienced network of health professionals and infrastructure to provide objective and consistent case management services.
- **20/20 Health Insights:**
Launched in 2015, this program is a health risk assessment tool for employees to measure their mental, physical, workplace resiliency and financial health. Employees receive a score in each area and an action plan to improve their health.

Stay clear of dams and hydroelectric stations and stay safe.



EMERGENCY PREPAREDNESS AND SECURITY



OPG's nuclear stations maintain multi-faceted emergency response programs that include advanced firefighting capability.

OPG believes the most enduring way to earn public trust and confidence, and the right to continue to generate power, is through safe, reliable and responsible plant operations. In 2015, OPG continued to implement programs to prepare for potential incidents that could pose a risk to the public, OPG's employees and contractors, and OPG's assets. Highlights from 2015 include:

- The Toronto 2015 Pan Am / Parapan Am Games brought with them the potential to affect six OPG generating stations as a result of increased risks of activism, demonstrations, and medical and health issues. To prepare and plan for the event, OPG became a member of a joint intelligence and security operations working group. This group, which was composed of law enforcement, government agencies and American agencies, exchanged information and analyzed potential threats. As a result, OPG was able to scale its mitigation activities so it was adequately prepared without a significant diversion of resources or funding.
- Approximately 60 OPG employees participated in the North American Electric Reliability Corporation's (NERC) GridEx III exercise. This two-day exercise involved over 3,000 participants across North America from over 300 agencies. GridEx III was designed to simulate a sophisticated and coordinated cyber security and physical security attack scenario on the

North American electric grid. The aim of the exercise was to further the resilience of the electricity industry amid evolving hazards and increasingly complex risks. This was OPG's second time participating in a NERC GridEx exercise.

- OPG, the City of Toronto, and Durham Region completed the distribution of potassium iodide (KI) pills to all homes and businesses within 10 kilometres of the Pickering and Darlington nuclear generating stations. The distribution of KI pills came as a result of increased safety standards set by the Canadian Nuclear Safety Commission (CNSC). Up until this point, the pills were available at local pharmacies. OPG, in conjunction with the CNSC, wants to reassure individuals the distribution of KI pills is not due to any elevated risk of a

nuclear incident. OPG believes that staying safe means being prepared, even for the most unlikely of incidents. More information about the KI pill distribution program is available at www.preparetobesafe.ca.

- OPG issued a Cyber Security Policy to establish company-wide expectations for cyber security. OPG is committed to operating its information technology and industrial control systems in a secure, vigilant, and resilient manner that minimizes cyber risks to its information assets and generation facilities.
- Darlington Nuclear updated its evacuation time release estimate using latest census data (2011). The study provides information for the Province when making emergency response decisions.

Community Support

OPG is committed to assisting emergency response efforts within its host communities.

In 2015, OPG was called upon to provide specialized support for a fire at a century-old heritage building in Whitby. Darlington Emergency Response staff responded to the scene and supported Whitby's suppression crews with Darlington equipment for sustained on-scene operations. The OPG fire truck

operated for several hours, filling the air cylinders that entry crews were depleting and providing power and lighting capacity for the fire control efforts.

OPG also donated two rehabilitation trailers to the Clarington and Pickering Fire Service Departments. The trailers play a crucial role during emergency situations by providing a place for firefighters to revitalize without leaving the site.

OUR PEOPLE AND CULTURE



Employees at Darlington Nuclear.

Employee Engagement

OPG has multiple approaches to employee engagement. Ensuring that employees are kept current on business and operational activities is considered an essential element of engagement and is accomplished by leveraging several avenues and tools to communicate with employees. The company's intranet site, newsletters, face-to-face rollouts, and emails from executives provide employees with ongoing performance updates and highlight accomplishments by teams and individuals. OPG also has employee programs, events and activities to create a sense of pride in being an OPG employee and to allow interaction and team-building. Programs include: Power of You employee awards, Charity Campaign, employee service recognition, employee discounts, Take Our Kids to Work Day, and internal cultural events that celebrate the diversity of OPG's workplace.

Leadership Development

OPG has an active and robust talent and succession planning process. The development of new leaders and retention of staff in critical roles across OPG are key factors to the company's success, particularly in recognition that a significant portion of OPG's management team is projected to retire over the next five years.

In support of building leadership talent, OPG runs an "Accelerate" development program which provides high potential employees with the opportunity to learn, grow and build their career, while at the same time helping to ensure OPG has the right skills, leaders and culture needed to achieve its business goals now and in the future. Throughout 2015, OPG ran three cohorts of Accelerate to develop more than 100 high potential employees at various levels and functions across the organization.

Diversity and Equity

OPG is proud of the following accomplishments in 2015:

- OPG expanded its Aboriginal Awareness Training to assist managers and others involved in working with Indigenous peoples and communities to form long-term, mutually beneficial working relationships.
- Through its Corporate Citizenship Program, OPG provided support to non-profit groups that assist people with disabilities. These include: Abilities Centre, Community Living, WindReach Farm, Easter Seals Ontario, Willow Springs Creative Centre, Friends of the Disabled, Grandview Children's Centre, Special Olympics, Niagara Children's Centre, Pathways Health Centre, and ParaSport Ontario.

**Fast Facts:
Employment in 2015**

- Approximately 9,200 full-time regular employees and 1,300 seasonal, part-time, casual construction, contract and non-regular staff.
- Approximately 5,300 OPG employees were represented by the Power Workers’ Union.
- Approximately 2,950 OPG employees were represented by the Society of Energy Professionals.
- 7.4 per cent annual staff turnover due to attrition (6.0 per cent due to retirement).
- 291 external hires.
- 20 per cent of employees are eligible to retire in the next five years.
- 36 per cent of employees are eligible to retire in the next 10 years.



Ragged Rapids GS.

- As part of its commitment to expanding opportunities for women in the workplace, OPG is a signatory of the Catalyst Accord which pledges to increase the proportion of board seats held by women to 25 per cent by 2017.
- OPG mentors from the National Society of Black Engineers supported students in the international FIRST Robotics competition at the University of Ontario Institute of Technology.
- OPG continued its partnership with Toronto Region Immigrant Employment Council (TRIEC) to deliver The Mentoring Partnership program to bring together skilled immigrants and established professionals in occupation-specific mentoring relationships.
- OPG increased hiring through its partnership with Career Edge, a not-for-profit career organization that offers paid internship programs for new graduates with disabilities and internationally qualified professionals.

REPRESENTATION OF DESIGNATED GROUPS BY EMPLOYMENT EQUITY OCCUPATIONAL GROUP

Employment Equity Occupational Group	Designated Groups	Representation as of Dec. 31, 2014		Representation as of Dec. 31, 2015	
		Number	Per Cent	Number	Per Cent
Senior Managers e.g., Board Chair, President and CEO, Presidents, Senior Vice Presidents	Women	3	15.8	2	14.3
	Visible Minorities	0	0	0	0
	Indigenous Peoples	0	0	0	0
	Persons with Disabilities	0	0	0	0
Middle and Other Managers e.g., Vice Presidents, Directors, Senior Managers, Managers, Section Managers, Project Leaders, etc.	Women	231	22.5	241	23.2
	Visible Minorities	185	18.0	200	19.3
	Indigenous Peoples	8	0.8	6	0.6
	Persons with Disabilities	13	1.3	10	1.0

- Several internal cultural events celebrating and recognizing OPG’s diversity took place, including special events for National Aboriginal Day, Diwali, Eid al-Fitr and Black History Month.

CORPORATE CITIZENSHIP



March Break Madness Seeing Stars Event.

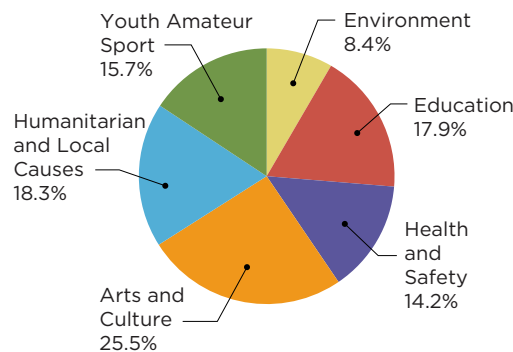
OPG has generating stations in communities across Ontario from Kenora to Cornwall. As a publicly owned generator with a history of service that goes back for more than 100 years, OPG strives to be an engaged and productive community member, helping to contribute to host community well-being. OPG believes this is an essential part of being a good corporate citizen and neighbour.

Through the Corporate Citizenship Program (CCP), OPG demonstrates its commitment to social responsibility by providing community investment support (charitable, non-profit, and in-kind support) to grassroots host community initiatives. CCP operates on the premise that grassroots partnerships help to build stronger, safer and healthier communities.

In 2015, through the CCP, OPG provided community investment support to over 900 initiatives in the program focus areas of education, environment, and community (health and safety, arts

and culture, humanitarian and local causes, youth amateur sport), including support of Indigenous initiatives. With average annual program community investment totalling \$2.45 million, and 80 per cent of OPG's annual contributions between \$100 and \$2,500, OPG ensures funds reach a broad spectrum of community needs and leverage good value.

2015 CORPORATE CITIZENSHIP PROGRAM COMMUNITY INVESTMENT BY FOCUS AREA



Pictured above are junior astronomers and student volunteers at OPG's March Break Madness Seeing Stars event held at the Pickering Nuclear Information Centre. Thanks to the collaborative efforts of Astronomy in Action, the Durham Region Astronomical Association, the Let's Talk Science Outreach Program at the University of Ontario Institute of Technology and volunteers, the program enabled young people to participate in fun, hands-on activities about astronomy. The Seeing Stars program helps to encourage young people's interest in science and technology at an early age. It was one of the many activities offered to Durham families as part of OPG's 2015 March Break Madness program. For more information, visit www.opg.com.

Featured here and in the following pages are examples of the beneficial work done in 2015 by OPG's dedicated partners.

Corporate Citizenship Partnership Profiles

Education

OPG invests in the energy sector leaders of tomorrow by supporting educational partnerships, programs, and student awards that foster an interest in STEM (science, technology, engineering and mathematics), the energy sector, and the environment.

University-based members of Actua operate engineering and science outreach programs to encourage students' interest in STEM at an early age. OPG directly supports these programs at Ontario universities including: Waterloo, McMaster, Queen's, Western and Guelph. Programs target students from Kindergarten to Grade 9 and may include: travelling educational workshops for schools, camps, clubs, community events, and customized programs for Indigenous youth, girls, and youth facing socio-economic

challenges. These hands-on, minds-on, inquiry-based learning programs, like the University of Guelph's Creative Encounters with Science, develop interest in and aptitude for STEM and related career fields. Investing in future scientists and engineers benefits OPG and our society.

To learn more about Creative Encounters visit www.creativeencounters.info. For information on Actua please go to www.actua.ca.



Summer engineering camp. Photo courtesy of Creative Encounters.

Environment

OPG invests in partnerships that help support healthier communities and a healthier environment for current and future generations. Focus areas include environmental education, wildlife and habitat restoration, biodiversity, and recycling.

OPG's Niagara Operations is proud to support the world-renowned research and rehabilitation efforts of The Owl Foundation (TOF). Established by Kay and Larry McKeever in the 1970s, TOF operates an owl rehabilitation centre in Niagara and helps owls that are injured, diseased or orphaned so they can be released and survive on their own. TOF receives over 100 feathered friends in distress each year. Injuries are often the result of collisions with motor vehicles, as owls hunt for rodents eating garbage along the roadways – proper disposal of garbage and biodegradables can help prevent these injuries.

TOF has experience with all 16 Canadian owl species including a TOF resident named "Rodeo," a short-eared owl. Short-eared owls are listed as a species of special concern under the Canadian *Species at Risk Act*. While they are present in all provinces, their numbers are diminishing and nearing threatened status due to habitat loss.

To learn more, please visit www.theowlfoundation.ca.



Short-eared owl named Rodeo. Photo courtesy of The Owl Foundation.

Community

OPG invests in health and safety, arts and culture, youth amateur sports, humanitarian and local causes to help enhance quality of life for host community residents.

Arts and Culture

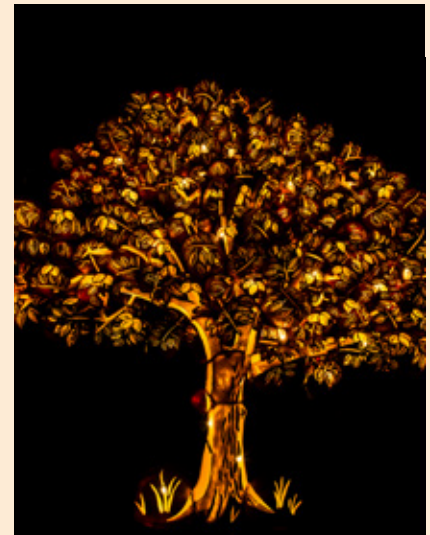
Each fall, the St. Lawrence Parks Commission's *Pumpkinferno* outdoor display features 7,000 artfully handcrafted glowing pumpkins at historic Upper Canada Village in Morrisburg. Awarded "Best New Event" by Festival and Events Ontario, *Pumpkinferno* is an important community arts and tourism initiative that attracted 38,000 attendees in 2015.

The event features scenes from exotic places and historic ages, animals, storybook heroes and more... all handcrafted by artists from eastern Ontario. In keeping with OPG's focus on biodiversity, Eastern Operations proudly

sponsored the Butternut Tree display. OPG also supported a species at risk study of this important tree species which is native to the area.

For full event details please visit www.uppercanadavillage.com/events/pumpkinferno.

Pumpkinferno is just one of several host community events and festivals supported by OPG in recognition of their important contribution to community pride and well-being. For information on Ontario's Top 100 Festivals and Events please visit www.festivalsandeventsontario.ca.



St. Lawrence Parks Commission's Pumpkinferno Event - Butternut Tree Display. Photo courtesy of Neil Robertson Photography.

Humanitarian & Local Community Causes

WindReach Farm, founded by Sandy Mitchell, is a barrier-free farm situated on 105 acres in Ashburn with programs and services specially designed for individuals of all ages and abilities. The farm has fully wheelchair accessible pathways, trails, barns, stables, a visitor centre and accommodation

suites. WindReach Farm offers core programs and facilities including the Learning 4-Life Adult Day Program and the School Therapeutic Riding Program for Durham Region students. Recognizing the importance of accessibility and inclusivity, OPG's Pickering and Darlington stations are proud to partner with WindReach Farm. In 2015, over 20,000 users accessed

the farm's programs which included OPG's March Break Madness Family Fun Day giving local families an opportunity to experience the sights, sounds and smells of a fully working farm as well as interact with friendly farm animals.

For more information, please visit www.windreachfarm.org.



Family Fun Day at WindReach Farm.

Indigenous Communities

OPG is committed to building mutually beneficial working relationships with Indigenous communities near its operations. OPG's relationship with Ontario's Indigenous communities is founded on respect for their languages, customs and cultural institutions.

In 2015, OPG supported 81 Indigenous initiatives in the focus areas of education, environment and community. Partner organizations included: First Nations, Métis Nation of Ontario, Friendship Centres, Frontier College, Indspire, Landscape of Nations, Let's Talk Science, Little Native Hockey League, Native North American Travelling College, Nishnawbe Aski Development Fund, and The Anishnabek Nation 7th Generation Charity.

Let's Talk Science, founded by Dr. Bonnie Schmidt in 1993, is a national, charitable organization focused on education and outreach to support youth development. Let's Talk Science programs and services motivate, prepare and support educators and engage children and youth in quality learning experiences that develop their interest in STEM (science, technology, engineering and mathematics). Let's Talk Science helps empower youth to fulfill their potential and prepare for future careers and roles as citizens within a world increasingly shaped by science and technology.

Let's Talk Science has been collaborating with First Nations, Métis and Inuit communities since 1994, offering programs that build youth confidence, interest

in learning, and skill development. The Let's Talk Science outreach program at Confederation College in Thunder Bay hosts an annual science fair for about 200 Aboriginal students in Grades 8 to 12 from across the region. OPG's Northwest Operations proudly supports the fair, which showcases projects with direct Aboriginal content, enabling students to reflect on their traditions while developing an interest in STEM.

Thunder Bay student Alyssa from Pope John Paul II Senior Elementary School did both traditional and oral research for her award winning First Nations Technological Innovation Project "A Journey with Wiigwas Ciiman (Birch Bark Canoe)" at the Let's Talk Science Confederation College Aboriginal Science Fair. Her project looked at canoe design and how it relates to the birch bark canoe building process. Alyssa, who has family roots in the Eabametoong/Fort Hope First Nation, also touched on the importance of the birch tree to the Anishnawbe people of the area. She is currently making a 10-foot bark canoe.

To learn more, please visit www.letstalkscience.ca.



Thunder Bay student at the Let's Talk Science Confederation College Aboriginal Science Fair.

ECONOMIC

In this section:

- Financial performance, cost of electricity and nuclear funds
- Electricity generation and reliability
- Investments in infrastructure and new generation capacity
- Economic impact and supply chain requirements



Darlington Nuclear GS.

OPG focuses on providing maximum value to the people of Ontario by generating reliable electricity at a price that moderates overall rates for Ontario electricity customers. OPG also provides economic value to Ontarians through employment, the purchase of goods and services, and contributions to government revenues.

FINANCIAL STRENGTH



Darlington Nuclear during the Vacuum Building Outage.

As a commercial enterprise, OPG's financial priority is to achieve a consistent level of strong financial performance that delivers an appropriate level of return on the Shareholder's investment and positions the company for future growth. Inherent in this priority are three objectives:

- Increase revenue, reduce costs and achieve appropriate return.
- Ensure availability of cost-effective funding for operational needs, generation development projects and long-term obligations.
- Pursue opportunities to expand the existing core business and capitalize on new growth paths.

Financial Performance

OPG's net income attributable to the Shareholder was \$402 million for 2015, down from \$561 million excluding extraordinary gain in 2014. The decreased earnings were mainly a result of the planned four-unit Vacuum Building Outage at Darlington Nuclear which reduced nuclear generation and increased operations, maintenance and administration expenses. The decrease was partially offset by the new base regulated prices effective November 1, 2014, and newly in-service hydroelectric units along the Mattagami River.

OPG manages an array of internal and external risks to mitigate potentially unfavourable impacts on the company's financial results. This includes risks associated with variable electricity production, major projects, market and interest rate fluctuations, changes in regulatory requirements, and Ontario electricity market conditions. Detailed information about the company's key financial risks is available in OPG's **2015 Annual Report**.

Ontario's Low-Cost Generator

OPG's mission is to provide low-cost power for the benefit of its Shareholder and its customers. OPG is focused on achieving an appropriate rate of return on the Shareholder's investment, while delivering value to Ontario electricity customers.

The Ontario Energy Board (OEB) sets the prices for electricity generated from OPG's regulated nuclear and hydroelectric facilities. The average sales price for the regulated nuclear generation segment during 2015 was 6.5 cents per kilowatt hour (¢/kWh), compared to 5.6 ¢/kWh during 2014. The average sales price for the regulated hydroelectric segment was 4.7 ¢/kWh, compared to 4.0 ¢/kWh during 2014. Approximately 90 per cent

of OPG's revenue comes via regulated rates. Electricity generated from most of OPG's unregulated assets is subject to energy supply agreements with the Independent Electricity System Operator (IESO). Regulated rates and energy supply agreements provide stable and predictable revenue streams, compared to potential fluctuations in revenue caused by increases or decreases in energy market prices.

Dedicated Nuclear Funds

OPG is responsible for the long-term management of used nuclear fuel and low and intermediate level radioactive waste, and the eventual decommissioning of its nuclear stations and waste management facilities, including the stations leased to Bruce Power.

Pursuant to the Ontario Nuclear Funds Agreement between OPG and the Province, OPG established a Used Fuel Segregated Fund and a Decommissioning Segregated Fund to fund future costs. OPG maintains these funds in third-party custodial and trust accounts that are segregated from the rest of OPG's assets.

GENERATION AND RELIABILITY

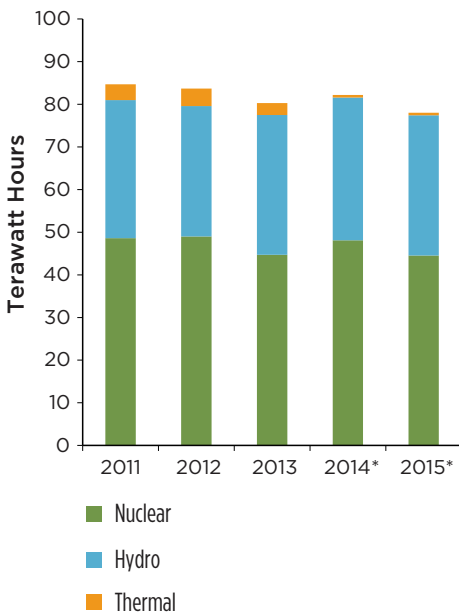


Darlington Nuclear turbine hall.

Electricity Generation

Total electricity generated in 2015 was 78.0 terawatt hours, which was lower than the 82.2 terawatt hours generated in 2014. The decrease was primarily due to the planned Vacuum Building Outage at Darlington Nuclear which required the shutdown of all four units for several weeks, and lower water flows in eastern Ontario.

ELECTRICITY PRODUCTION



* Includes OPG's share of production from co-owned gas-fired facilities

Reliability

OPG strives to operate and maintain its facilities to optimize the reliability of its generating assets. OPG manages reliability risks by performing inspections and maintenance on critical components and by conducting engineering reviews and station condition assessments.

OPG reports Nuclear Unit Capability Factor as the reliability measure for its nuclear stations and Hydroelectric Availability for the reliability of its hydroelectric generating units. Effective in 2014, the Thermal Equivalent Forced Outage Rate is the key reliability measure for thermal station performance.

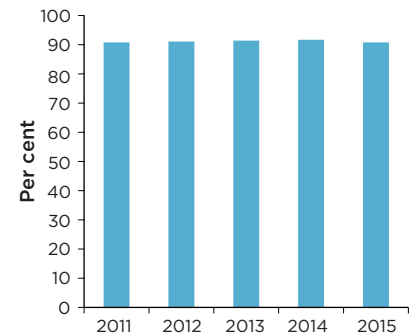
The Unit Capability Factor at Darlington Nuclear decreased in 2015 compared to 2014 due to the four-unit Vacuum Building Outage and an increase in other outage days. Pickering Nuclear achieved its best ever reliability performance in the station's history in 2015. Hydroelectric Availability for 2015 was comparable to previous years, and the Equivalent Forced Outage Rate for OPG's thermal stations increased in 2015 compared to 2014 mainly due to an outage to perform repair work at Lennox GS.

NUCLEAR UNIT CAPABILITY FACTOR



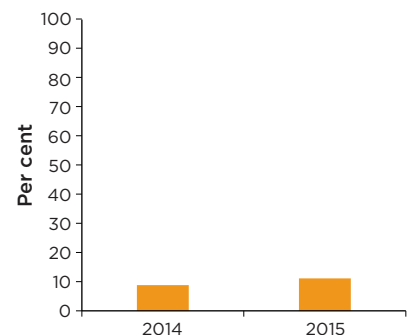
Capability Factor represents energy generated, adjusted for external constraints such as transmission or demand limitations, as a percentage of potential maximum generation over a specified period. (Good = ⬆)

HYDROELECTRIC AVAILABILITY



Availability represents the amount of time generating units are capable of providing service as a percentage of the total time for a respective period. (Good = ⬆)

THERMAL EQUIVALENT FORCED OUTAGE RATE*



Equivalent Forced Outage Rate represents the amount of time that generating units are forced out of service as a percentage of the amount of time available to operate. (Good = ⬇)

* Key indicator as of 2014.

INFRASTRUCTURE INVESTMENTS



Infrastructure upgrades to support the Darlington Nuclear refurbishment project.

OPG produces electricity from a diversified portfolio of generating assets. In 2015, OPG continued to invest in infrastructure renewal and modernization and to pursue projects to increase generation capacity.

Nuclear

Darlington Refurbishment Project

OPG's Darlington Nuclear station is one of Ontario's most important assets. In operation since the early 1990s, it currently produces about 20 per cent of the province's electricity. A mid-life refurbishment of the station will ensure the continuation of the station's role as a key supplier of clean,

safe and affordable power for another 30 years. The scope of the project includes infrastructure upgrades at the Darlington site and the replacement, repair and maintenance of station components. The refurbishment of Darlington is a multi-phase project that was initiated in 2007, and is scheduled to be completed by 2026. The total project budget is \$12.8 billion, including capitalized interest and escalation.

OPG is well-positioned to deliver the Darlington refurbishment project on time and on budget. OPG has built a strong foundation for success based on years of detailed planning, extensive inspections, and industry

benchmarking. The project also has an experienced management team and a robust risk management strategy. A key preparation strategy was the construction of a training centre with a state-of-the-art full-size reactor mock-up to test specialized tools and train workers.

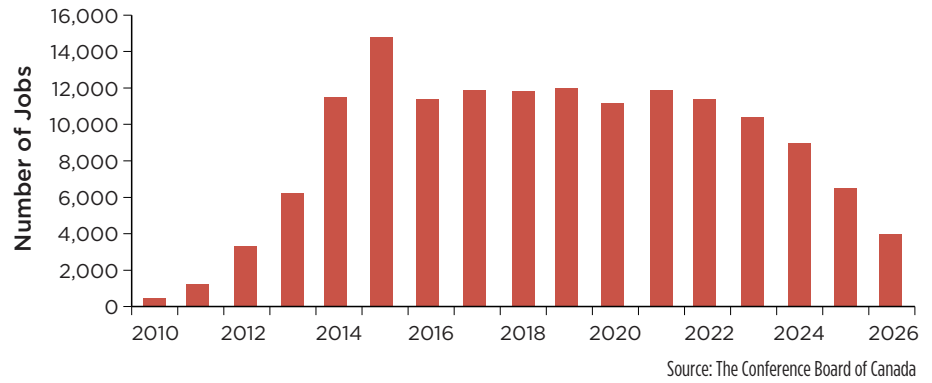
In 2015, OPG's Board of Directors approved the project budget and schedule. In January 2016, the Province announced Ontario is moving forward with the project and approved the execution of refurbishment for the first unit, which is scheduled to commence in October 2016.

**Fast Facts:
Investing in Ontario**

Analysis of the Darlington Nuclear refurbishment project by the Conference Board of Canada shows:

- The refurbishment investment will boost Ontario’s nominal GDP by a total of \$14.9 billion from 2010 to 2026.
- The boost to economic activity will increase employment by 149,100 person-years over the life of the project.
- Household income in Ontario will increase by an average of \$502 million per year from 2010 to 2026.
- Approximately 96 per cent of the project’s direct expenditures will take place in Ontario.
- Federal, provincial and local municipal governments will collect an additional \$5.4 billion in revenue over the refurbishment period.

**DARLINGTON REFRUBISHMENT
IMPACT ON EMPLOYMENT IN ONTARIO**



Pickering Continued Operations

Pickering Nuclear provides 14 per cent of the province’s electricity and has been safely producing electricity since the early 1970s. In January 2016, OPG and the Province announced plans to pursue continued operation of the Pickering station to 2024. Under OPG’s plan, six units would operate to 2022, at which point two units would be shut down and the remaining four units would continue to operate to 2024. Extending Pickering’s operation will ensure a reliable, clean source of base load electricity during the Darlington Nuclear and initial Bruce Power refurbishments.

Extending Pickering’s operating life will require approval from the Canadian Nuclear Safety Commission (CNSC). OPG has started work on a

licence application for CNSC approval in 2018. OPG will work closely with its community partners to ensure the station is operated reliably and to the highest standards of safety, security and environmental stewardship.

OPG is also planning for the eventual shutdown of Pickering Nuclear. This includes assessing opportunities for repurposing the site in a way that benefits surrounding communities and is consistent with OPG’s decommissioning plans. A cornerstone of this work has been to seek input from the public and a wide range of stakeholders. In 2015, hundreds of ideas were provided to OPG and a preliminary assessment report was issued that provides a short list of preferred options for further investigation.

The electricity output from Pickering Nuclear can serve a city of one and a half million people.



Hydroelectric

Lower Mattagami River Project

OPG is now producing more renewable electricity from six new hydroelectric units on the Mattagami River in northeastern Ontario. One additional generating unit was added at each of the existing Little Long, Harmon and Kipling generating stations, and the existing station at the Smoky Falls site was replaced with a new three-unit station. This project added a total of 438 MW of generating capacity and was completed in partnership with the Moose Cree First Nation. The new units were placed in-service in 2014 ahead of the project's target completion date of June 2015 and under the approved budget of \$2.6 billion. The Lower Mattagami River project was declared fully in-service in January 2015.

Peter Sutherland Sr. Generating Station

OPG and Coral Rapids LP, a company wholly owned by Taykwa Tagamou Nation, are building a new 28 MW hydroelectric generating station on the Abitibi River approximately 90 kilometres north of the Town of Smooth Rock Falls. The new station has been named in honour of a respected community elder, Peter Sutherland Sr. Under the partnership agreement, Coral Rapids LP may acquire up to a 33 per cent interest in the partnership. The \$300 million project is expected to be completed in 2018.

Employment on the project is distributed across a wide variety of professions and trades typically associated with a remote heavy construction project. Project milestones completed in 2015 included the construction of the main access road, establishment of the project camp, installation of temporary steel support walls, and the construction of spillway upstream and downstream cofferdams. Employment peaked at 220 workers in mid-2016.

Lower Mattagami River Project

"The project has helped rejuvenate the Moose Cree community and given our economy a much-needed boost. Many of our members will be able to use the training and new skills they developed to work on other infrastructure projects."

NORM HARDISTY JR., FORMER MOOSE CREE FIRST NATION CHIEF



Little Long GS.



Construction of the Peter Sutherland Sr. GS.

Overhauls and Improvements

OPG's hydroelectric stations are the oldest and most established component of OPG's energy portfolio and have formed the basis of Ontario's power supply for more than a century. During 2015, OPG continued to execute a number of projects to invest in its hydroelectric generating fleet, including:

- Completion of major equipment overhauls and rehabilitation work on Unit 1 of Lower Notch GS, Unit 3 of Des Joachims GS, Manitou Falls GS, and Otto Holden GS.
- Completion of the runner replacement and upgrade for Unit 2 of Aguasabon GS.
- Continued work on the rehabilitation of Unit 5 of Sir Adam Beck Pump GS, Unit 10 of Sir Adam Beck 1 GS, Unit 2 of Harmon GS, and concrete rehabilitation of the main dam at Chats Falls GS.

Biomass

OPG is leading the way in generating electricity from biomass. Two of OPG's thermal generating stations in northern Ontario have been converted from burning coal to biomass – a cleaner, renewable, plant-based fuel. Refuelling stations with biomass not only provides Ontario with more renewable energy, it also makes effective use of existing assets.

Atikokan GS was the first station to convert to biomass and it has a capacity of 205 MW. The \$170 million project was completed in 2014 ahead of schedule and on budget. Thunder Bay GS, with a capacity of 153 MW, was then converted to advanced biomass in 2015 less than a year after burning its last piece of coal. Advanced biomass is thermally treated to allow it to be stored outdoors and withstand exposure to the weather, and has handling and storage properties similar to coal. The project was completed ahead of schedule and under the approved budget of \$7 million. Bringing the Thunder Bay plant into service was the beginning of advanced biomass-fuelled electricity in Ontario and North America.

OPG's Role in Ontario's Long-Term Energy Plan

Released in December 2013, Ontario's updated long-term energy plan (LTEP) is the blueprint for the province's energy future. The plan includes the following elements related to OPG:

- Ontario has adopted a policy of Conservation First and will continue to encourage energy conservation initiatives.
- Ontario will be coal free by the end of 2014.
- Ontario will continue to invest in new renewable generation. Ontario will add to the hydroelectricity portfolio and include opportunities to procure additional bioenergy.
- Nuclear refurbishment is planned to begin at the Darlington station in 2016. Ontario will defer the construction of new nuclear reactors at the site given the current supply and demand requirements.

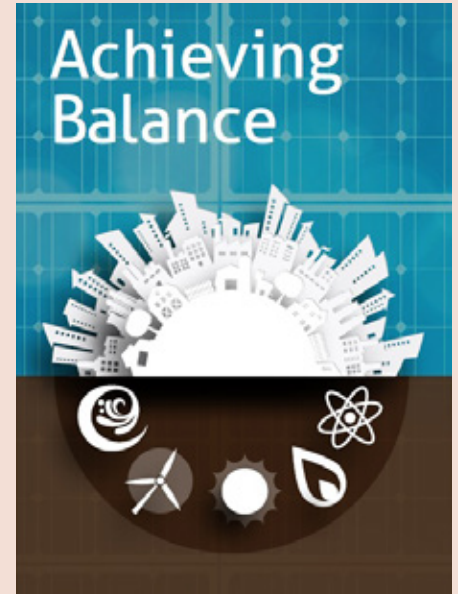
OPG is also supporting biomass research through its sponsorship of the OPG Bioenergy Learning Research Centre at Confederation College in Thunder Bay.

Growth Opportunities

OPG seeks to expand beyond its core generation business through emerging opportunities, including selective solar generation, energy storage and micro-grid development, and is considering longer-term growth paths that include broader electricity sector opportunities, within and outside Ontario. Growth opportunities may be pursued in partnership with other commercial entities where appropriate synergies exist and are aligned with OPG's business objectives.

OPG has placed retired Lambton GS coal generating units in a reserve status and is currently preserving the option of converting the units to natural gas in the future, should they be required. Continued preservation

- The government will encourage OPG to explore new business lines and opportunities inside and outside Ontario.
- The government will continue to work with OPG to develop business plans and efficiency targets that will reduce costs and result in ratepayer savings.



Ontario's LTEP is available at www.energy.gov.on.ca.

would provide Ontario with an option for approximately 900 MW of additional peaking capacity should repowering to natural gas be pursued.

In 2015, the Province authorized OPG to participate in energy-related procurement processes in Ontario. In March 2016, OPG and its partners, Sun Edison Canadian Construction LP and Six Nations Development Corporation, were selected by the Independent Electricity System Operator (IESO) to develop a 44 MW solar facility at OPG's Nanticoke GS site and adjacent lands. OPG is working with its partners to obtain the required approvals and permits to enable the start of construction planned for late 2017 or early 2018. The decommissioning plan for the retired Nanticoke GS will be designed to accommodate the construction and operation of the new solar facility, and the station will be decommissioned in a safe, secure, and environmentally responsible manner.

PROCUREMENT AND PAYMENTS



The \$2.6 billion Lower Mattagami River project had a positive impact on the northeastern Ontario economy.

Economic Impact

Electricity generation is a capital-intensive business. It requires continued investment in plants and technologies to improve operating performance, increase generation capacity, and to maintain and improve safety and environmental performance. When making these investments, OPG provides support to the economy through the purchase of goods and services. During 2015, OPG purchased \$2.2 billion in goods and services.

In 2015, compensation to employees totalled approximately \$1.4 billion. The majority of employees live in Ontario and purchase their goods and services locally, thereby transferring wealth back into the economy.

Payments made by OPG to its shareholder, the Province, also benefit the economy and the people of Ontario. Payments to the Province include payments in lieu of taxes, gross revenue charges, and current income tax payments. These payments totalled \$383 million in 2015.

Supply Chain

OPG's supply chain organization supports the company's mission to provide low-cost power. This is achieved by maximizing the value contribution to the company's bottom line through the cost effective acquisition and timely availability of materials and services, while upholding OPG's values and behaviours. OPG's supply chain processes are consistent

with approved financial management and control standards, and all applicable legal requirements.

OPG requires suppliers and contractors who wish to do business with OPG to be pre-qualified based on a demonstration of their ability to manage quality, health and safety, and environmental aspects, in addition to satisfying technical and commercial requirements.

In 2015, OPG introduced a new Supplier Code of Conduct to establish a standard of business behaviour expected of OPG suppliers, including their owners, employees, agents, partners and subcontractors who provide goods and/or services to OPG. The Supplier Code outlines OPG's expectations regarding code

compliance, reporting, declaration of conflicts of interest, anti-bribery and corruption, and rules around gifts and entertainment. The Supplier Code became effective January 1, 2016.

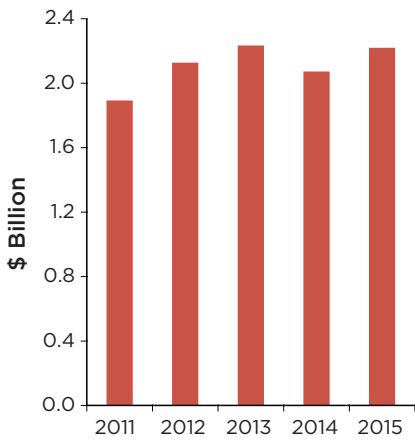
OPG contracts are awarded following OPG's established procedures for competitive bidding, evaluation and negotiation. A supplier's quality capability may also be subject to OPG audits or assessments, which are commensurate with the scope of work and specified quality requirements.

Additional information about OPG's supply chain and how to become a supplier is available at www.opg.com/working-with-opg.

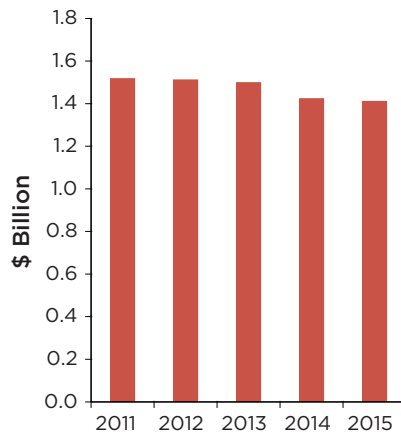
**Fast Facts:
Supply Chain**

- 2,112 suppliers engaged by OPG.
- 92 per cent of spending on goods and services to Canadian suppliers.
- 87 per cent of spending on goods and services to suppliers in Ontario.

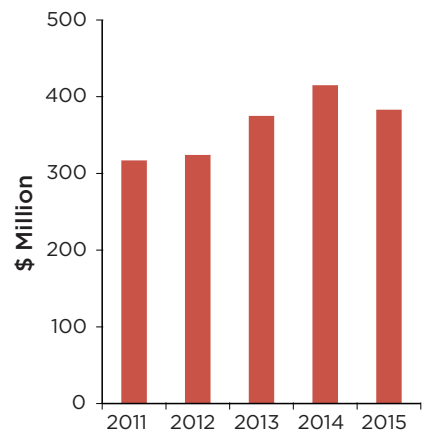
**SPENDING ON
GOODS AND SERVICES**



EMPLOYEE COMPENSATION



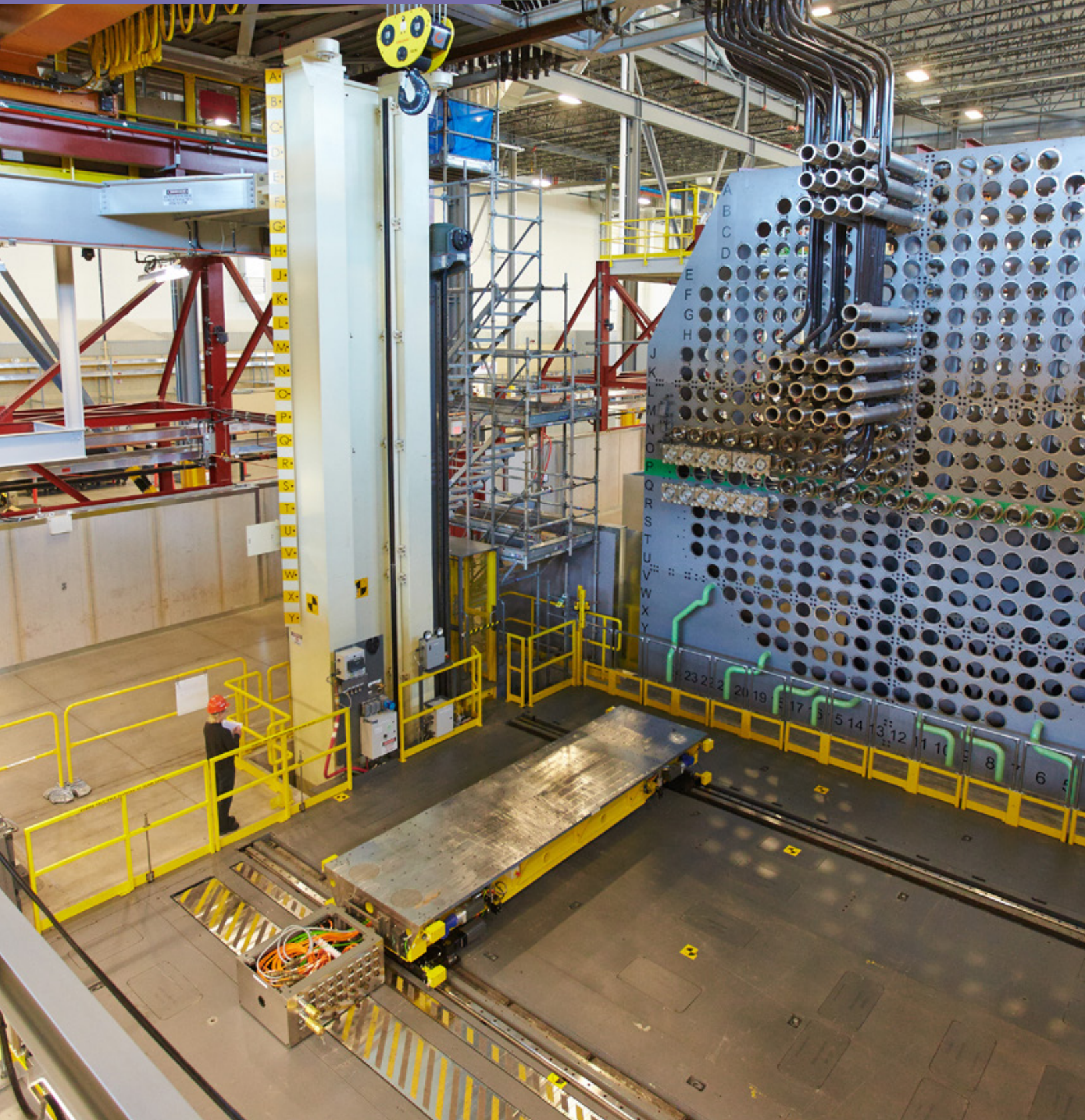
**PAYMENTS TO
THE PROVINCE OF ONTARIO**



More than 60 companies across Ontario are supplying components for OPG's Darlington refurbishment project.



APPENDICES



Reactor mock-up at the Darlington Energy Complex training facility.

APPENDIX A GENERATION CAPACITY AND PRODUCTION

HYDROELECTRIC	Net Generation Capacity (MW)	Net Generation (GWh)				
		2015	2014	2013	2012	2011
Central Operations Includes 26 stations, headquarters in North Bay	124	564	692	645	519	609
Eastern Operations Includes 10 stations, headquarters in Renfrew	2,571	12,241	13,281	12,774	11,632	12,535
Niagara Operations Includes 5 stations, headquarters in Niagara area	2,277	12,547	12,267	12,372	11,953	12,614
Northeast Operations Includes 13 stations, headquarters in Timmins	1,777	4,057	3,802	3,359	2,982	3,128
Northwest Operations Includes 11 stations, headquarters in Thunder Bay	687	3,497	3,448	3,583	3,528	3,442
NUCLEAR	Net Generation Capacity (MW)	Net Generation (GWh)				
		2015	2014	2013	2012	2011
Darlington Nuclear Located on Lake Ontario in the municipality of Clarington east of Toronto. The station has four units.	3,512	23,293	27,960	25,051	28,308	28,951
Pickering Nuclear Located on Lake Ontario in Pickering. The station has six operating units and two units in a safe shutdown state.	3,094	21,231	20,045	19,642	20,735	19,675
THERMAL	Net Generation Capacity (MW)	Net Generation (GWh) ⁽¹⁾				
		2015	2014	2013	2012	2011
Atikokan Generating Station Located near the town of Atikokan in northwestern Ontario. The station has one biomass unit. The station stopped using coal in 2012.	205	109	10	-18	13	39
Brighton Beach ⁽²⁾ Located in Windsor. The station is a combined cycle generating station fuelled by natural gas.	280	115	100	Not reported	Not reported	Not reported
Lambton Generating Station Located on the St. Clair River south of Sarnia. The station was retired from service in 2013.	0	-26	-42	1,552	2,218	1,129
Lennox Generating Station Located on Lake Ontario in the town of Greater Napanee. The station has four oil and/or natural gas-fired units.	2,100	-38	73	-29	104	9
Nanticoke Generating Station Located on Lake Erie in Haldimand County. The station was retired from service in 2013.	0	-36	-55	1,361	1,731	2,465
Portlands Energy Centre ⁽²⁾ Located in Toronto. The station is a combined cycle generating station fuelled by natural gas.	275	513	500	Not reported	Not reported	Not reported
Thunder Bay Generating Station Located in Thunder Bay. The station has one advanced biomass unit. The station stopped using coal in 2014.	153	-34	43	-16	16	74
WIND	Net Generation Capacity (MW)	Net Generation (GWh)				
		2015	2014	2013	2012	2011
Includes one turbine located in Pickering.	1.8	3.0	3.4	3.5	3.7	2.9

(1) Negative net generation indicates the station consumed more electricity from the grid than it produced.

(2) Represents OPG's 50 per cent share of capacity and generation. Reported by OPG as of 2014.

APPENDIX B

SUSTAINABILITY PERFORMANCE

INDICATOR	2015	2014	2013	2012	2011
REGULATORY COMPLIANCE					
Significant Environmental Events	0	0	0	0	0
Environmental Infractions	14	16	13	14	14
Environmental Penalties	1	4	1	3	0
REPORTABLE SPILLS TO THE ENVIRONMENT					
Category A Spills - Very Serious	0	0	0	0	0
Category B Spills - Serious	0	0	0	0	0
Category C Spills - Less Serious	12	14	9	9	18
ATMOSPHERIC EMISSIONS					
Changes as of 2014: Added OPG's 50 per cent share of emissions from co-owned facilities; added emissions from thermal non-generation sources (i.e. auxiliary boilers); began reporting carbon dioxide equivalent (CO ₂ eq) emissions in place of carbon dioxide emissions.					
ATMOSPHERIC EMISSIONS - OPG					
Carbon Dioxide (tonnes, CO ₂ eq as of 2014)	537,737	561,656*	3,195,649	4,528,023	4,370,375
Sulphur Dioxide (tonnes)	109	552	9,812	9,705	11,264
Nitrogen Oxides (tonnes, as NO ₂)	476	703*	5,018	6,556	5,835
ATMOSPHERIC EMISSIONS - THERMAL					
Carbon Dioxide (tonnes, CO ₂ eq as of 2014)	520,130	552,499*	3,190,396	4,517,690	4,361,150
Atikokan Generating Station	194,298	41,757*	0	44,830	75,280
Brighton Beach	47,359	48,542*	Not reported	Not reported	Not reported
Lambton Generating Station	3,253	7,845*	1,592,290	2,237,250	1,253,200
Lennox Generating Station	55,661	161,062*	33,386	155,550	77,200
Nanticoke Generating Station	5,817	13,968*	1,528,800	2,008,720	2,816,530
Portlands Energy Centre	207,101	185,685*	Not reported	Not reported	Not reported
Thunder Bay Generating Station	6,641	93,640*	35,920	71,340	138,940
Sulphur Dioxide (tonnes)	104	550	9,812	9,705	11,264
Atikokan Generating Station	0	0	0	207	358
Brighton Beach	0	0	Not reported	Not reported	Not reported
Lambton Generating Station	0	0	1,288	2,474	1,340
Lennox Generating Station	104	327	35	39	43
Nanticoke Generating Station	0	0	8,409	6,843	9,205
Portlands Energy Centre	0	0	Not reported	Not reported	Not reported
Thunder Bay Generating Station	0.15	223	80	142	317
Nitrogen Oxides (tonnes, as NO ₂)	383	654*	4,989	6,515	5,794
Atikokan Generating Station	152	43*	0	100	148
Brighton Beach	22	25*	Not reported	Not reported	Not reported
Lambton Generating Station	3	6*	2,118	3,019	1,627
Lennox Generating Station	64	219*	35	144	89
Nanticoke Generating Station	5	11*	2,761	3,021	3,544
Portlands Energy Centre	132	138*	Not reported	Not reported	Not reported
Thunder Bay Generating Station	5	212	75	232	386
Mercury (kilograms)	0	2.3	28	25	43

* Value restated from the 2014 Sustainable Development Report.

INDICATOR	2015	2014	2013	2012	2011
ATMOSPHERIC EMISSIONS - NUCLEAR					
Carbon Dioxide (tonnes, CO ₂ eq as of 2014)	17,607	9,157*	5,253	10,333	9,225
Sulphur Dioxide (tonnes)	4.4	2.3	0	0.1	0.1
Nitrogen Oxides (tonnes, as NO ₂)	93	48	29	40	41
Waste Incinerator Dioxins and Furans Toxicity Equivalent Emissions Test Result (pg TEQ/Rm ³)	4.82	Exempt from testing	<1.80	<3.03	1.79
ATMOSPHERIC EMISSION RATES					
ATMOSPHERIC EMISSION RATES - OPG					
Changes as of 2014: Added OPG's 50 per cent share of emissions from co-owned facilities; added emissions from thermal non-generation sources (i.e. auxiliary boilers); began reporting carbon dioxide equivalent (CO ₂ eq) emissions in place of carbon dioxide emissions.					
Carbon Dioxide (tonnes/GWh-net, CO ₂ eq as of 2014)	6.9	6.8*	40	54	52
Sulphur Dioxide (tonnes/GWh-net)	0.001	0.01	0.12	0.12	0.13
Nitrogen Oxides (tonnes/GWh-net, as NO ₂)	0.006	0.01	0.06	0.08	0.07
ATMOSPHERIC EMISSION RATES - THERMAL					
Thermal generation sources only. Changes as of 2014: Added OPG's 50 per cent share of emissions from co-owned facilities; began reporting carbon dioxide equivalent (CO ₂ eq) emissions in place of carbon dioxide emissions.					
Carbon Dioxide (tonnes/GWh-net, CO ₂ eq as of 2014)	727	694*	1,119	1,107	1,180*
Sulphur Dioxide (tonnes/GWh-net)	0.16	0.76	3.44	2.38	3.03
Nitrogen Oxides (tonnes/GWh-net, as NO ₂)	0.52	0.84*	1.75	1.60	1.56
ECOLOGO^M - CERTIFIED GREEN POWER					
Net Generation (GWh) (26 small hydroelectric stations and 1 wind turbine)	558	674	625	507	592
RADIOACTIVE EMISSIONS					
Tritium to Air (curies)	21,321	23,280	17,072	17,976	18,837
Tritium to Water (curies)	16,566	14,007	11,164	11,211	11,479
Carbon-14 to Air (curies)	92	84	73	76	76
PUBLIC RADIATION DOSE					
Pickering Nuclear Critical Group Dose (microsieverts)	1.2	1.2	1.1	1.1	0.9
Darlington Nuclear Critical Group Dose (microsieverts)	0.5	0.6	0.6	0.6	0.6
RADIOACTIVE WASTE MANAGEMENT					
Annual Production of Used Fuel (tonnes of uranium)	1,525	1,561	1,392	1,439	1,610
Used Fuel in Storage (tonnes of uranium)	45,243	43,714	42,152	40,647	39,319
Used Fuel Bundles in Storage at Pickering Nuclear	710,877	693,049	676,059	662,437	642,089
Used Fuel Bundles in Storage at Darlington Nuclear	497,491	478,026	455,301	435,266	411,747
Low and Intermediate Radioactive Waste Produced (m ³)	2,510	2,384	2,616	2,762	2,924
Low and Intermediate Radioactive Waste Stored (m ³) (includes waste stored by OPG on behalf of Bruce Power)	3,247	2,515	2,455	2,639	3,913
UTILIZATION OF SOLID COMBUSTION BY-PRODUCTS					
Ash and Gypsum Produced (tonnes)	821	2,366	189,125	283,366	241,207
Ash and Gypsum Recycled (tonnes)	51,000	2,255	164,778	296,208	209,744
Diversion Rate (per cent)	6,210	95	87	105	87

* Value restated from the 2014 Sustainable Development Report.

INDICATOR	2015	2014	2013	2012	2011
HAZARDOUS WASTE GENERATION					
Solids (tonnes)	99	1,283	113	1,125	339
Liquids (kilolitres)	1,174	3,544	1,175	1,615	1,458
PCB MANAGEMENT					
High Level PCB Material in Storage at Year-End ⁽¹⁾ (tonnes)	0.2	0	0.4	0.1	7
High Level PCB Material Sent for Destruction ⁽¹⁾ (tonnes)	3.9	9.7	27.6	60.9	21
Low Level PCB Material in Storage at Year-End ⁽²⁾ (tonnes)	0.4	1.7	0.8	0.4	0
Low Level PCB Material Sent for Destruction ⁽²⁾ (tonnes)	23.5	2.4	6.1	184.5	140
Estimated Inventory of Low Level PCB Material in Service ⁽²⁾ (tonnes)	0.3	9.4	14.0	63	18
(1) High level: ≥500 mg/kg PCB (2) Low level: ≥50 to <500 mg/kg PCB					
WATER USE					
Hydroelectric Turbine Flows (million m ³)	443,100	463,110	443,998	404,229	483,200
Nuclear and Thermal Non-Consumptive Cooling and Service Water Use (million m ³)	8,850	8,677	9,785	10,722	10,829
ENERGY CONVERSION EFFICIENCY - THERMAL					
Energy Input (GWh equivalent)	646	988	10,400	14,345	13,490
Net Energy Output (GWh)	194	251	2,998	4,082	3,678
Fuel Conversion Efficiency (per cent)	30.1	25.4	28.8	28.5	27.3
INTERNAL ENERGY EFFICIENCY					
Internal Energy Saving - Cumulative since 1994 (GWh/year)	2,542	2,525	2,507	2,493	2,481
Cumulative Value of Energy Savings at Market Clearing Rate (millions of dollars) (2015 = 6.6¢/kWh; 2014 = 5.6¢/kWh; 2013 = 5.7¢/kWh; 2012 = 5.1¢/kWh; 2011 = 5.3¢/kWh)	167.8	141.4	142.9	127.1	131.5
Annual Incremental Energy Saving (per cent of internal energy use)	0.5	0.5	0.4	0.3	0.3
Annual Incremental Energy Saving (GWh/year)	17.0	17.9	13.9	12.3	12.1
OCCUPATIONAL SAFETY					
Accident Severity Rate (days lost per 200,000 hours)	0.50	1.31	0.94	2.4	1.10
All Injury Rate (injuries per 200,000 hours)	0.39	0.36	0.61	0.63	0.56
Fatalities	0	0	0	0	0
GROSS ENERGY GENERATION Includes OPG's 50 per cent share of generation from co-owned facilities as of 2014. Excludes power purchases.					
Total Energy Generated (GWh)	81,561	85,814	84,136	87,925	88,703
Thermal (GWh)	823	851	3,354	4,737	4,381
Hydroelectric (GWh)	33,313	33,793	33,068	31,015	32,674
Nuclear (GWh)	47,422	51,166	47,711	52,169	51,644
Wind (GWh)	3.0	3.4	3.5	3.7	2.9
NET ENERGY GENERATION Includes OPG's 50 per cent share of generation from co-owned facilities as of 2014. Excludes power purchases.					
Total Energy Output (GWh)	78,037	82,177	80,280	83,745	84,674
Thermal (GWh) (net of laid-up station consumption)	605	629	2,851	4,082	3,717
Hydroelectric (GWh)	32,905	33,489	32,733	30,616	32,328
Nuclear (GWh)	44,524	48,055	44,693	49,043	48,626
Wind (GWh)	3.0	3.4	3.5	3.7	2.9
Generation Energy Efficiency (per cent)	95.68	95.70*	95.42	95.25	95.46

* Value restated from the 2014 Sustainable Development Report.

INDICATOR	2015	2014	2013	2012	2011
GENERATION PERFORMANCE					
Nuclear Unit Capability Factor (per cent)	78.0	84.3	78.6	86.1	85.1
Hydroelectric Availability (per cent)	90.9	91.7*	91.5	91.2	90.9
Thermal Equivalent Forced Outage Rate (per cent)	11.2	9.2*	Not reported	Not reported	Not reported
ECONOMIC CONTRIBUTIONS					
Spending on Goods and Services (billions of dollars)	2.2	2.1	2.2	2.1	1.9
Employee Compensation (billions of dollars)	1.41	1.43	1.50	1.51	1.52
Payments to the Province of Ontario (millions of dollars)	383	415	375	324	317
Data Reported to Environment Canada's National Pollutant Release Inventory (NPRI)					
	2014	2013	2012	2011	2010
Emissions to air, water and land (tonnes unless otherwise specified)					
Aluminum	0.509	35.6	40.5	68.1	218.6
Ammonia	Not reported	22.68	33.48	35.62	43.42
Arsenic	Not reported	0.233	1.128	0.873	3.314
Cadmium (kilograms)	Not reported	5.1	21.8	37	215
Chromium	Not reported	Not reported	3.198	2.928	21.418
Cobalt	Not reported	Not reported	Not reported	Not reported	5.886
Copper	0.042	0.042	0.042	6.042	25.342
Dioxins and Furans (grams Toxic Equivalent)	0.043	0.087	0.107	0.495	0.661
Hexachlorobenzene (grams)	0.017	0.017	0.404	1.026	5.662
Hydrazine	0.504	0.55	0.525	0.31	0.82
Hydrochloric Acid	Not reported	185	194	Not reported	1,112
Hydrogen Fluoride	Not reported	31	34	50	133.0
Lead	0.000	70.3	0.884	1.64	10.24
Manganese	Not reported	0.096	4.237	5.48	33.34
Mercury (kilograms)	0.048	29.13	30.36	63	186
Nickel	Not reported	Not reported	Not reported	Not reported	19.547
Phosphorus	Not reported	4.150	26.773	99	489
Selenium	Not reported	0.857	1.079	2	Not reported
Sulphuric Acid	0.048	214.005	294.006	188.006	452.319
Vanadium	Not reported	0.374	4.105	5.9	38.7
Zinc	0.000	0.000	3.320	4.4	27.3
Criteria Air Contaminants (tonnes)					
Carbon Monoxide	69	846	1,345	955	5,693
Nitrogen Oxides (as NO ₂) (includes small generation sources)	524	5,037	6,572	5,855	16,016
PM - Total Particulate Matter	5.77	416	385	468	1,555*
PM10 - Particulate Matter ≤ 10 microns	5.77	253	273	324	1,432*
PM2.5 - Particulate Matter ≤ 2.5 microns	4.16	143	180	169	531
Sulphur Dioxide	550	9,752	9,706	11,264	37,662
Volatile Organic Compounds	Not reported	21	27	24	38

* Value restated from the 2014 Sustainable Development Report.

For detailed information about OPG's emissions to air, water and land, please visit the NPRI website at: www.ec.gc.ca/inrp-npri. NPRI data for 2015 was not available at the time of publishing.

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2015 SUSTAINABILITY REPORT



This report is also available on our website: www.opg.com

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