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SUSTAINABILITY REPORT 2016

hydro quebec .com

How to use this report

INTERACTIVITY

This report, presented in PDF format, has interactive features made possible by Adobe Reader software.

FEATURES

Additional information on the Web

Additional or more detailed information

Tip for accessing further information

Hyperlink to another page in the report

Exclusive Web content

Access to a map locating a project

Stakeholders concerned

Materiality analysis aspects

Global Reporting Initiative
Hyperlink

Electricity supplied
Term defined

GRI

In this report, the indicators under the different section titles refer to GRI disclosures.

NAVIGATION

Go to previous or next page

Go to Table of contents

Access bookmarks

Cover: Rapides-Farmer generating station on the Rivière Gatineau in the Outaouais region. A heritage gem.

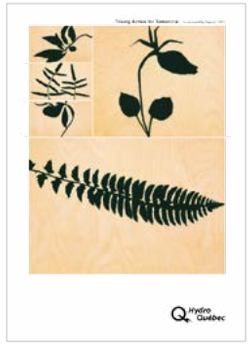
Fifteen years of reports

Sustainability according to Hydro-Québec

Supplying clean, renewable energy helps ensure quality of life. Meeting people's electricity needs in a sustainable way is of prime importance. It is also crucial to use resources wisely and preserve the quality of the environment for future generations. Québec long ago opted for hydroelectricity, a clean, renewable energy source with known, well-controlled environmental impacts. Today, Québec is actively involved in the fight against climate change in North America.

Hydro-Québec has a sustainability vision that goes well beyond the environment. We endeavor to see that stakeholders participate in our decisions. We are also determined to contribute to the province's economic vitality.


2002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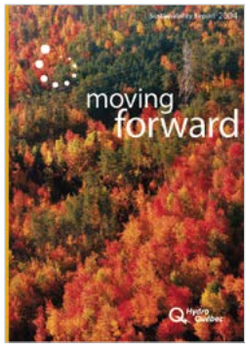
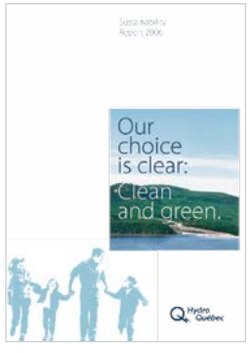
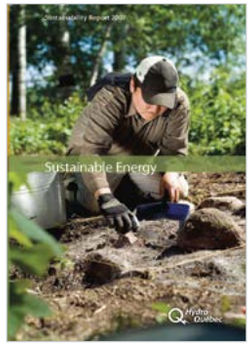


2004

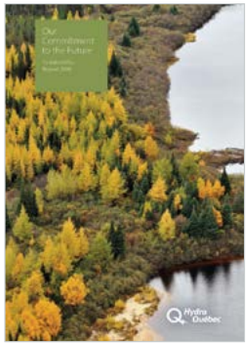
2005

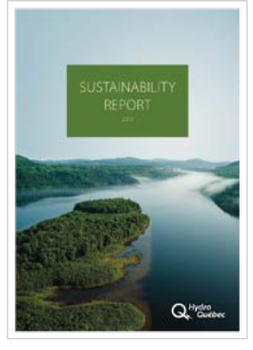


2006



2007

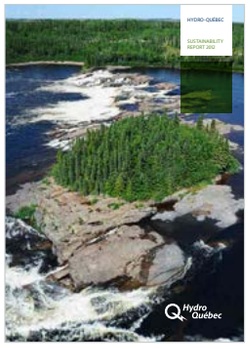

2008



2009

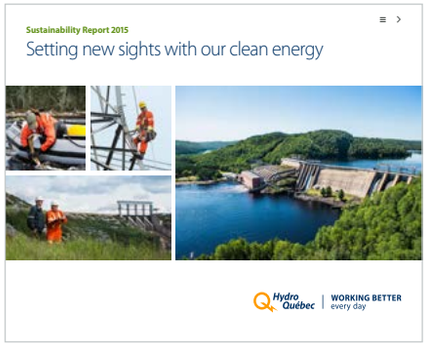
2010


2011

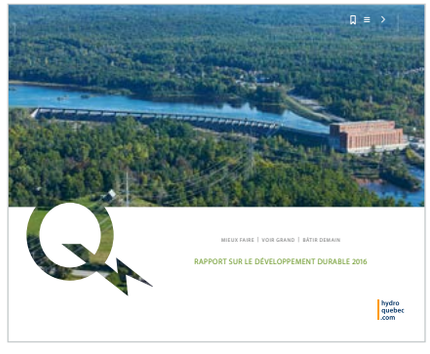

2012

2013

2014



2015



2016

A customer-centred culture focused on results

We supply electricity under the best possible conditions throughout Québec. Every year, we publish a report describing our sustainability governance and performance. Our customers are our first priority. We also manage the energy balance while protecting the environment and remaining mindful of the communities around us. We rely on innovation and we contribute to Québec's social and economic wealth.

Hydro-Québec in 2016

OUR MISSION We deliver reliable electric power and high-quality services. By developing hydraulic resources, we make a strong contribution to collective wealth and play a central role in the emergence of a low-carbon economy. As recognized leaders in hydropower and large transmission systems, we export clean, renewable power and commercialize our expertise and innovations on world markets.

OUR SYSTEM

36,908 MW
Installed capacity of the generating fleet ✓

62
Number of hydroelectric generating stations ✓

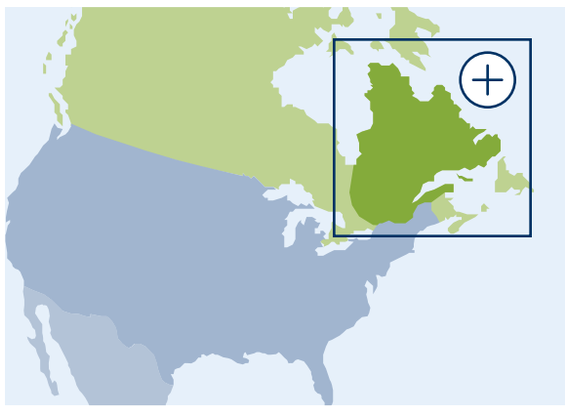
24
Number of thermal generating stations ✓

34,292 km
Length of the transmission system ✓

536
Number of substations ✓

116,794 km
Length of the distribution system ✓

Map of major facilities and generating stations serving off-grid systems



OUR HUMAN RESOURCES

19,552
Number of employees ✓

45.0 years
Average age ✓

28.7%
Proportion of women ✓

772
Retirements ✓

831
New employees ✓

212
Number of internships ✓

OUR APPROACH

Reservoir that supplies Péribonka generating station in the Saguenay–Lac-Saint-Jean region.

Message from the President and Chief Executive Officer

Éric Martel
President and Chief Executive Officer

Over the course of its history, Hydro-Québec has sometimes found itself at a crossroads. This was the case in the early 1970s, when the oil crisis hit. It was also the case in 1997, when wholesale electricity markets opened up to competition in North America. It is the case once again today, with global warming. Tremendous prospects are opening up for us. A worldwide energy revolution is taking shape. The power industry intends to be fully involved by offering profitable, sustainable solutions for reducing greenhouse gas emissions. It has two main avenues to pursue: use of renewable energies and transportation electrification.

We enjoy a strong position in these two strategic sectors and we have further support available in our complementary expertise in energy storage and management of major systems. We have all the assets needed to become a world leader in the energy revolution that is just beginning. In 2016, in response to our customers' expectations, we started introducing a unifying corporate culture focused on customer service and driven by results. Our approach is based on teamwork, agility and openness to new ideas and growth opportunities.

Our enthusiasm for a new, forward-looking project was moderated, however, by the deaths of two workers employed by contractors on our Romaine complex jobsites and by a rise in our work-related accident frequency rate. The question of workplace safety is a matter of great concern to us and clearly takes precedence over all the others. The Board of Directors therefore promptly formed a special committee tasked with examining our workplace health and safety practices and recommending the necessary changes.

Message from the President and Chief Executive Officer

SATISFYING CUSTOMERS

Hydro-Québec is in a unique position: our customers are also, ultimately, our shareholders. The new Strategic Plan we filed in 2016 can be summed up as follows: aim for excellence in order to give back to Quebecers to an even greater extent.

We want to become a benchmark in customer service and are devoting every effort to achieving this goal. Satisfactory service obviously begins with reliable, high-quality power. We are showing solid results in this area, though further progress is always desirable. Our intensified customer focus has also yielded tangible, measurable results: average call wait time for residential customers was reduced by over 50%, the number of complaints and claims decreased by 23% and hook-up lead times improved significantly. No doubt this accounts for much of the 9% increase in public satisfaction with our performance.

To be satisfactory, our service must also be offered at a competitive price. Since 1963, electricity is the only form of energy in Québec whose price has essentially remained in step with the consumer price index. We plan to maintain this approach and keep rate increases lower than or equal to inflation.

MEETING THE SHAREHOLDER'S EXPECTATIONS

One of the objectives of our Strategic Plan is to double our revenue by 2030 so as to increase our profits. In this regard, 2016 was an excellent year, with net income of $2,861 million, which enabled us to pay our shareholder a dividend of $2,146 million. At a time when electricity demand is leveling out in Québec and when we have made a commitment to limit rate increases, we will have to find new growth avenues. Many such avenues are open to us. First, seize new and profitable export opportunities. We did just that in 2016 by signing our largest power supply agreement of the past 15 years, under which we will sell 2 TWh a year to Ontario from

Message from the President and Chief Executive Officer

2017 to 2023. Next, purchase assets or stakes in companies outside Québec. Finally, step up our marketing of our technological innovations. In fields ranging from system simulation to energy storage to transportation electrification, we establish partnerships with other leading enterprises so as to rapidly deploy and make the most of our technological advances.

Since it was first established, Hydro-Québec has been a major engine driving the Québec economy. Our entire team today shares a desire to utilize our expertise and our innovations to help make Québec society a leader in the worldwide energy revolution. We will get there with the contribution made by our unfailingly committed employees. I am very grateful to them all.

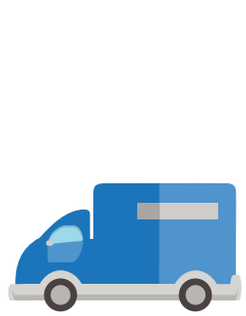
Éric Martel
President and Chief Executive Officer

GRI G4-24, G4-25, G4-26

Mutually beneficial relations

Owing to the nature of our operations, we have a presence throughout the province and we maintain ongoing relations with our numerous stakeholders. Good dialogue enables us to preserve trust, obtain support for important activities and even occasionally reconcile diverging interests. The Sustainability Report is intended to provide honest, transparent information to our stakeholders, with whom we maintain mutually beneficial relations.

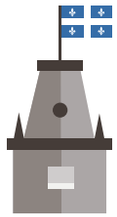
Click on each stakeholder group's illustration for examples of shared sustainability goals.



Suppliers

Customers

Employees



Government authorities

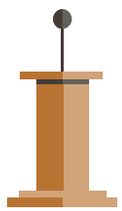
Educational institutions

Investors

Hydro Québec

Unions

Local and Aboriginal communities



Non-governmental organizations

General public

GRI G4-17, G4-23

About this report

The *Sustainability Report 2016* describes Hydro-Québec's performance with respect to its main environmental, social, economic and governance issues. This edition, published in May 2017, is the fifteenth such report produced by Hydro-Québec.

SCOPE

The *Sustainability Report 2016* mainly addresses the issues and impacts of Hydro-Québec's activities in Québec from January to December 2016.

NEW FEATURES

- New way of organizing the information that takes the company's major priorities into account.
- Hydro-Québec's contribution to achieving the 17 Sustainable Development Goals of the United Nations Development Programme. These goals build on the successes of the Millennium Development Goals, while including new areas such as climate change and peace and justice, among other priorities.
- Presentation of the results of a survey of stakeholders who took part in a responsiveness exercise held a year earlier. The survey evaluated their assessment of the *Sustainability Report 2015* in order to measure their satisfaction with the integration of their comments, in particular. (p. 12)
- Reporting on the company's main sustainability challenges. (p. 24)
- Addition of targets for certain indicators in the *Our indicators at a glance* section. (p. 15)
- Improvement of the *Regional presence* section, which outlines Hydro-Québec's activities in the province's different administrative regions, with the addition of new indicators. (p. 14)
- Testimonials of groups of employees in the form of videos titled *Sustainability Is Our Reality*. (pp. 61 and 75)

COMMUNICATION TOOLS

To reach the largest possible number of stakeholders, Hydro-Québec employs various tools for communicating and reporting on its sustainability:

- *Sustainability Report 2016*
- A brochure presenting 2016 sustainability highlights
- Sustainable development Web site
- *Sustainable Development Action Plan 2015–2020*
- *Annual Report 2016*
- *Biodiversity Performance Report*
- Videos
- Presentations at various forums (exhibitions, universities, conferences, symposiums, etc.)

APPLICATION OF RECOGNIZED STANDARDS

Stakeholders expect Hydro-Québec's Sustainability Report to be complete, and that the information presented be accurate, balanced and transparent. Accordingly, this report draws on the Global Reporting Initiative (GRI) G4 guidelines and Electric Utilities Sector Supplement, based on the "core" compliance option. These standards ensure the credibility and quality of sustainability reporting. Readers can consult the partial GRI index on page 80 of this report or the complete index in the Global Reporting Initiative section of Hydro-Québec's Web site.

The information contained in this report has been carefully gathered and validated. In addition, an outside firm conducted an independent evaluation of some quantitative data and verified compliance with the AccountAbility AA1000 APS (2008) principles. Verified data are accompanied by the symbol ✔.

An independent assurance statement is supplied on page 85.

EXCLUSIVE WEB CONTENT

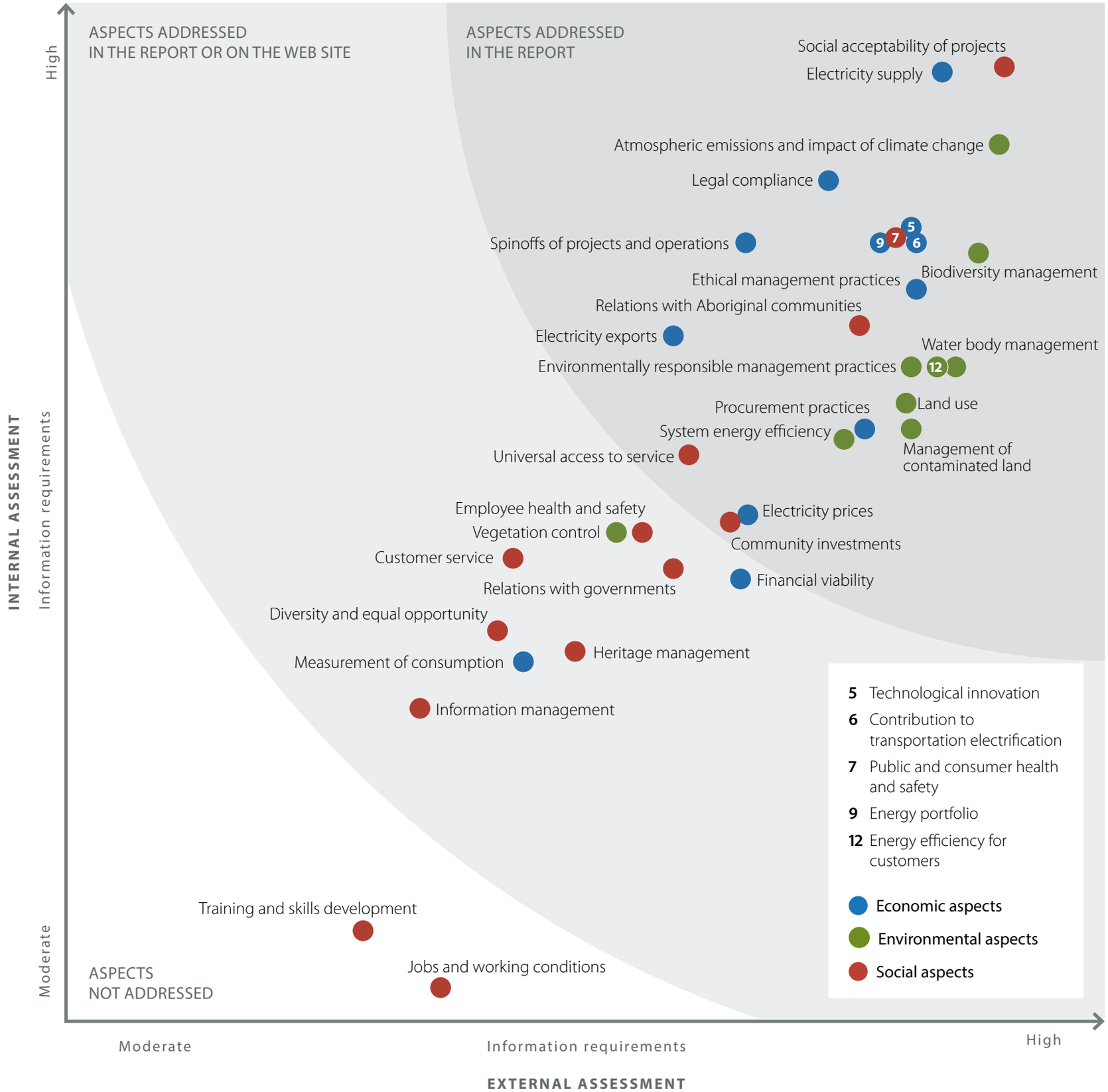
- Hydro-Québec's GRI compliance

GRI G4-18, G4-19, G4-20, G4-21, G4-23, G4-25, G4-26, G4-27

Materiality analysis

The materiality analysis is useful in determining the content of Hydro-Québec's Sustainability Report. This ensures that the report covers the topics that are of the greatest materiality as regards the company's business environment, the nature of its projects and operations, and their economic, environmental and social impacts.

Click on the colored symbol associated with an aspect to find out its scope.



REVIEW OF STAKEHOLDER RESPONSIVENESS EXERCISE

GRI G4-17

Value chain

The value chain includes all activities that create value, from product design to service provision. At Hydro-Québec, we integrate criteria for environmental protection, social progress and economic development into every link in this chain.

CONSTRUCTION

$2.2 billion

Volume of activity

GENERATION

36,908 MW

Installed capacity ✓

TRANSMISSION

34,292 km

Length of transmission lines ✓

DISTRIBUTION AND CUSTOMER SERVICE

4,244,541

Customer accounts ✓

MANAGEMENT AND SUPPORT OF OUR BUSINESS UNITS

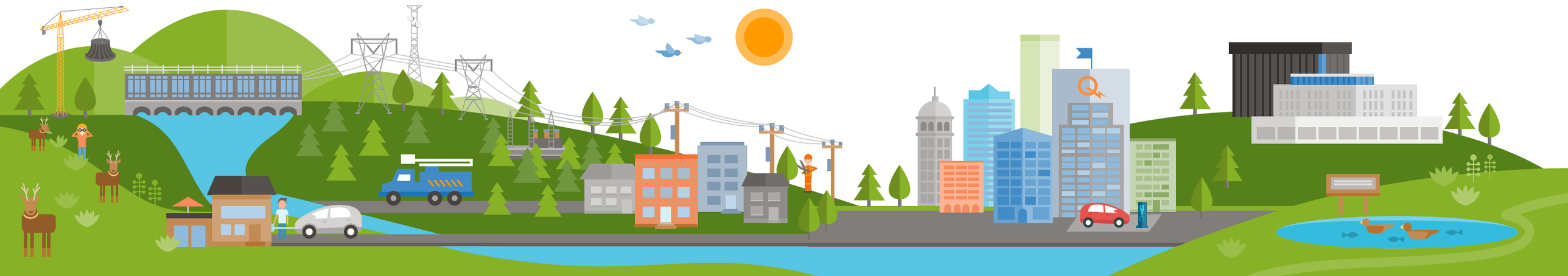
$4 billion

Contribution to the Québec government's revenue

TECHNOLOGICAL INNOVATION

$134 million

R&D budget allocated to IREQ in 2016 ✓



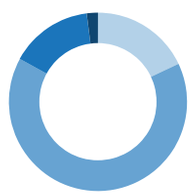
Regional presence

Hydro-Québec has a presence throughout Québec and its activities have an impact in each of the province's 17 administrative regions.

Click on a region's name to consult the summary for that region

QUÉBEC	
Population	8,326,089
Number of generating stations in operation	86 ✓
Installed capacity (MW)[a]	36,908 ✓
Number of transmission substations[b]	536 ✓
Transmission lines (km)[a,c,d]	34,292 ✓
Distribution lines (km)[a, c]	116,794 ✓
Surface area of properties (ha)	11,850 ✓
Number of customer accounts	4,244,541 ✓
Renewable energy purchases (GWh)	13,616 ✓
Procurement of goods and services in the region ($'000)	2,771,557 ✓
System average interruption duration index (minutes/customer)	178 ✓
Number of university chairs	20 ✓
Fondation Hydro-Québec pour l'environnement (number of new projects/ amount granted in $)	18/971,480 ✓
Number of visitors to (Hydro-Québec) facilities	134,733 ✓
Integrated Enhancement Program (number of initiatives/amount granted in $)	25/3,001,163 ✓
Electric Circuit (number of charging stations/ number of service points)	794/542 ✓
Number of employees	19,552 ✓
Donations and sponsorships ($)	$17.5 million ✓

Breakdown of purchases from independent power producers (GWh)



Hydropower	2,439 ✓
Wind	9,019 ✓
Biomass	1,935 ✓
Biogas	223 ✓
TOTAL	**13,616** ✓

These figures include renewable energy certificates for the purchase of wind, hydraulic and biogas energy sold to third parties.

NOTES FOR TABLE

Our indicators at a glance

	RESULTS				TARGETS	
	2013	**2014**	**2015**	**2016**	**2017**	**2020**
ENVIRONMENT						
Net electricity generated by Hydro-Québec (GWh)	178,150	172,981	170,900	172,278 ✔		
Total net electricity generated and purchased (GWh)	220,147	216,703	217,148	217,165 ✔		
Renewable energy/total energy generated and purchased (%)	99	99	99	99 ✔		
GHG emissions from thermal electricity generation (t CO_2 eq.)	220,085	228,339	232,424	227,249 ✔		
SO_2 emissions from thermal electricity generation (t)	1,142	1,091	1,040	979 ✔		
NO_X emissions from thermal electricity generation (t)	4,096	4,243	4,349	4,292 ✔		
GHG emissions from vehicle fleet (t CO_2 eq./total number of vehicles as at December 31)[a]	52,349/ 5,376	51,074/ 5,392	53,000/ 5,390	51,571 ✔/ 5,229 ✔		
GHG emissions from light-vehicle fleet (t CO_2 eq.)	23,389	24,275	25,322	22,852 ✔	24,733	24,302
Number of hybrid or plug-in light vehicles as at December 31.	114	113	105	98 ✔	139	500
Energy efficiency initiatives: energy savings (GWh)	622	504	570	534 ✔	500	500
Spills reported to authorities (number)	1,006	901	910	937 ✔	875	800
Environmental non-compliance notices (number)	38	37	31	43 ✔		
Insulating oil recovered (thousands of litres)/reuse (%)	4,169/ 81.2	4,812/ 92.2	3,607/ 93.3	3,632 ✔/ 87.9 ✔		
Water withdrawn (millions of m^3)[b]	531	300	79	39 ✔		
Area of transmission line rights-of-way treated mechanically (%)	99	99	94	98 ✔		
Area of dikes and dams treated mechanically (%)	58	68	56	51 ✔		
Distribution system length (km)/percentage of lines underground (%)	114,843/ 10.9	115,583/ 11.0	116,258/ 11.4	116,794 ✔/ 11.6 ✔		

a) Data reclassified following Environment Canada's update on global warming potentials and emission factors.

b) According to the *Regulation respecting the declaration of water withdrawals* which applies to thermal generating stations and some workcamps using more than 75 m^3 of water per day (excludes withdrawals for PPG Canada).

Our indicators at a glance

	RESULTS				TARGETS	
	2013	2014	2015	2016	2017	2020
SOCIAL						
Overall public satisfaction – very and somewhat satisfied (%)[c]	91	87	82	91 ✔	≥ 90	≥ 90
Customer satisfaction index – Combined index – All customer categories (scale of 10)[c, d]	s. o.	s. o.	s. o.	8.1 ✔	8.3	8.6
Average call wait time (seconds) – Residential customers	242	174	205	87	90	65
System average interruption duration index (SAIDI) (minutes/customer)	165	143	161	178 ✔		
Special payment arrangements for low-income customers (number)	66,913	99,722	95,437	97,879 ✔		
Customer complaints and claims (number)	9,517	9,797	9,727	7,517 ✔		
Total permanent and temporary workforce as at December 31	20,243	20,043	19,794	19,552 ✔		
Employee engagement index (%)	61	62	67	70 ✔	71	76
Work-related accident frequency (per 200,000 hours worked)	2.62	2.38	2.30	2.56 ✔	2.19	1.30
Percentage of payroll invested in training	2.9	3.2	3.0	2.7 ✔		
Funding and financial commitments – Integrated Enhancement Program (number of initiatives/$M)	26/ 2.8	53/ 4.2	16/ 1.6	25 ✔/ 3.0 ✔		
Fondation Hydro-Québec pour l'environnement (number of projects funded/$'000)	16/ 760	12/ 393	16/ 964	18 ✔/ 971 ✔		
Donations and sponsorships ($M)[e]	18.6	17.8	16.8	17.5 ✔		
ECONOMY						
Electricity sales in Québec (TWh)	173.3	174.2	171.3	169.2 ✔		
Revenue from electricity sales inside and outside Québec ($M)	12,610	13,145	13,362	13,199		
Net result ($M)[f]	2,942	3,325	3,147	2,861	2,600	2,850
Dividend ($M)	2,207	2,535	2,360	2,146		
Water-power royalties ($M)	674	656	660	673		
Total procurement of goods and services ($M)/Québec only (%)	3,533/ 95	3,301/ 94	3,050/ 93	2,952 ✔/ 94 ✔		
Public utilities tax ($M)	245	252	268	284		
Municipal and school taxes ($M)	36	37	37	40		
Funding for educational institutions – contributions, research chair funding and research contracts ($M)[g]	11.1	10.4	7.9	8.4 ✔		

c) Ideal target.

d) New methodology as of 2016.

e) Includes Hydro-Québec's donation to Centraide.

f) Net result excluding growth avenues for 2017 and 2020.

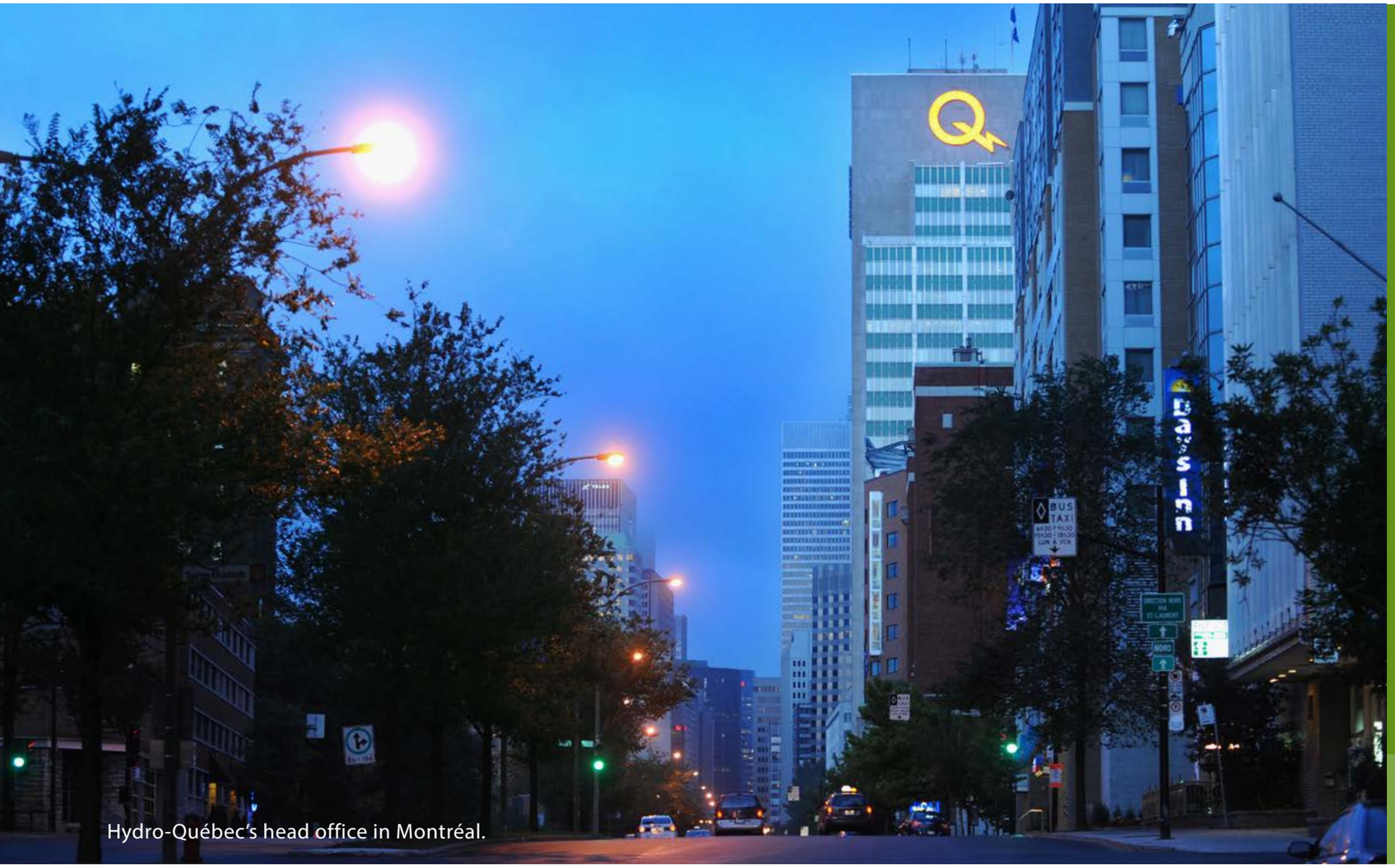
g) 2016 figure includes $2.6 million recorded as donations and sponsorships. ✔

OUR ACTIONS

Power line (735 kV) between Manicouagan and Bergeronnes substations in Côte-Nord.

GRI G4-19, G4-24, G4-27

OUR GOVERNANCE



Hydro-Québec's head office in Montréal.

Our sole shareholder is the Québec government. Our governance therefore reflects our responsibility to all citizens and is based on our shareholder's major priorities. To better serve our customers and contribute to Québec's development, we have implemented substantial changes at the heart of our operations, including a shift in our corporate culture.

IN THIS SECTION

STAKEHOLDERS CONCERNED

MATERIALITY ANALYSIS ASPECTS

413

NUMBER OF REQUESTS FOR ACCESS TO INFORMATION ✔

56%

PROPORTION OF WOMEN ON THE BOARD OF DIRECTORS

OUR CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS

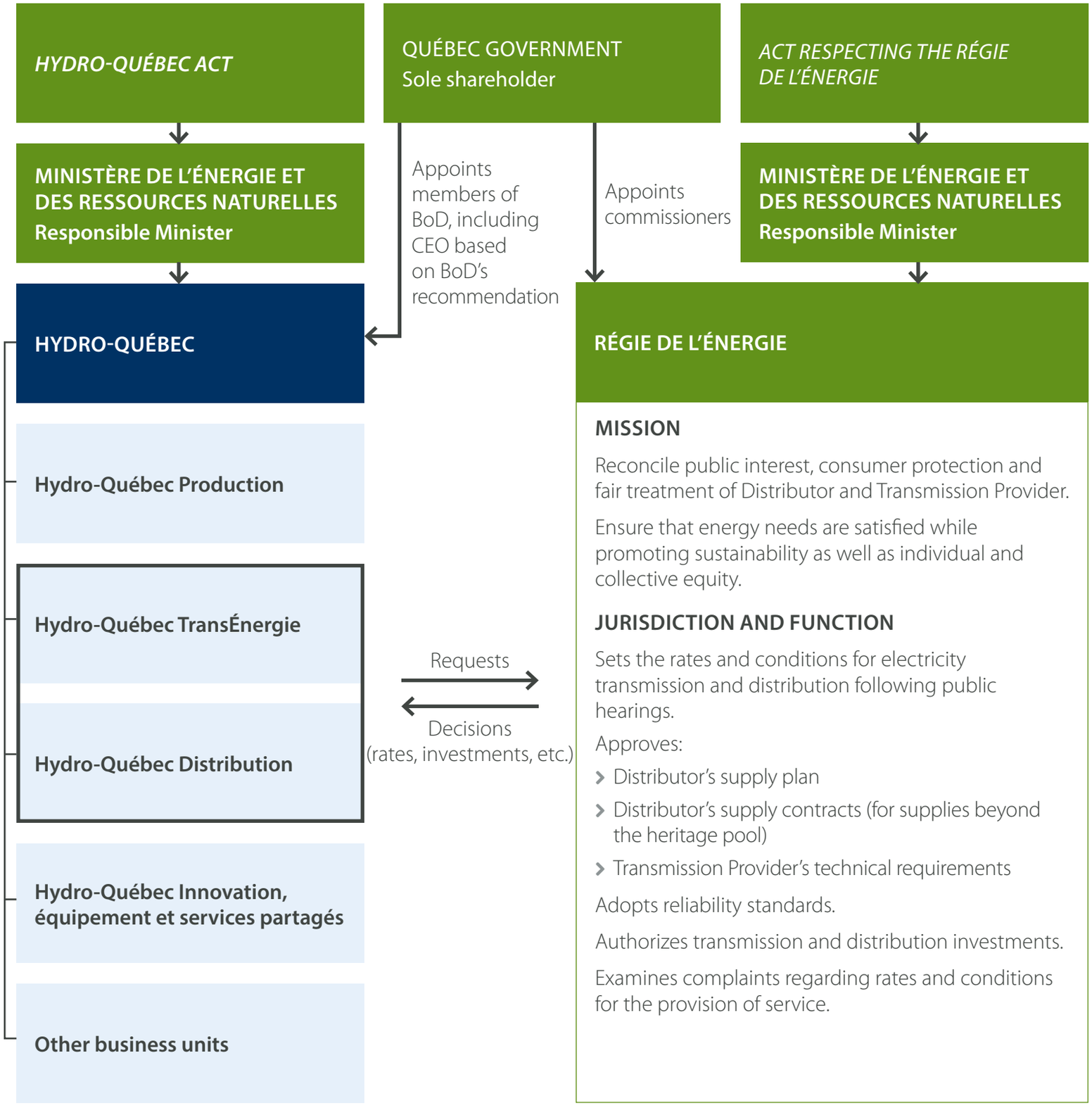
OUR SHAREHOLDER: THE QUÉBEC GOVERNMENT

The major priorities adopted by our shareholder—mainly through its Energy Policy and Sustainable Development Strategy—directly influence the planning of all our activities.

RÉGIE DE L'ÉNERGIE

As the economic regulatory body of Québec's energy sector, the Régie de l'énergie approves the rates and conditions of electricity transmission and distribution, authorizes transmission and distribution investments, and handles complaints about electricity rates and service conditions.

ELECTRICITY REGULATION IN QUÉBEC



QUÉBEC ENERGY POLICY

QUÉBEC SUSTAINABLE DEVELOPMENT STRATEGY

BOARD OF DIRECTORS

Our Board of Directors, which has a female majority, is made up of 16 members from different parts of Québec and with a variety of professional backgrounds. A number of these members also sit on one or more of the nine committees that monitor the governance of specific aspects of our operations, such as the Environment and Public Affairs Committee and the new Special Committee on Workplace Health and Safety. The latter committee was created in 2016, in response to a worrisome increase in the frequency of work-place accidents on our jobsites. The committee's goal is to assess our workplace health and safety practices and ensure that the most stringent standards are applied in this regard.

Our Board of Directors also adopts policies and codes of conduct that guide our operations and the actions of all our employees. In addition, we implemented important changes in 2016, including a shift in our corporate culture, sustained efforts to promote the role of women and workforce diversity, and an increased presence on the international scene.

NATIONAL AND INTERNATIONAL PRESENCE

MAIN SUSTAINABILITY GOVERNANCE ACTIVITIES

Performance reporting — Accountability

BOARD OF DIRECTORS

- **Nine committees, including:** Governance and Ethics, Environment and Public Affairs, Human Resources
- **Approval or review of publications, including:** company policies, code of ethics, Strategic Plan, Business Plan, Annual Report, Sustainability Report

PRESIDENT AND CHIEF EXECUTIVE OFFICER

- **Approval of the following documents:** internal guidelines, Code of Conduct for employees, Sustainable Development Action Plan
- **Annual management reviews pertaining to environment and health and safety**

HYDRO-QUÉBEC ADMINISTRATIVE UNITS

- **Various internal networks discussing issues such as environment and workplace health and safety**
- **Maintenance of certified management systems**
- **Environment and sustainability training**
- **Annual management reviews pertaining to environment**

WHAT ROLE DOES THE ENVIRONMENT AND PUBLIC AFFAIRS COMMITTEE PLAY?

MANDATE

- Provide opinions and advice or make recommendations to the Board of Directors and contribute to deliberations on environmental, sustainability, public affairs and communication issues, specifically with regard to:
  - environmental management and compliance, and the integration of sustainable development principles
  - environmental incident reports, and claims, opinions, investigations and legal proceedings generated by government organizations or third parties
  - public health and safety
  - community relations
  - the company's social responsibility and its contribution to the community, including its Donation and Sponsorship Policy
  - internal and external communications
  - the issues, challenges, risks and opportunities associated with the company's reputation and public perception.

2016 ACTIVITIES

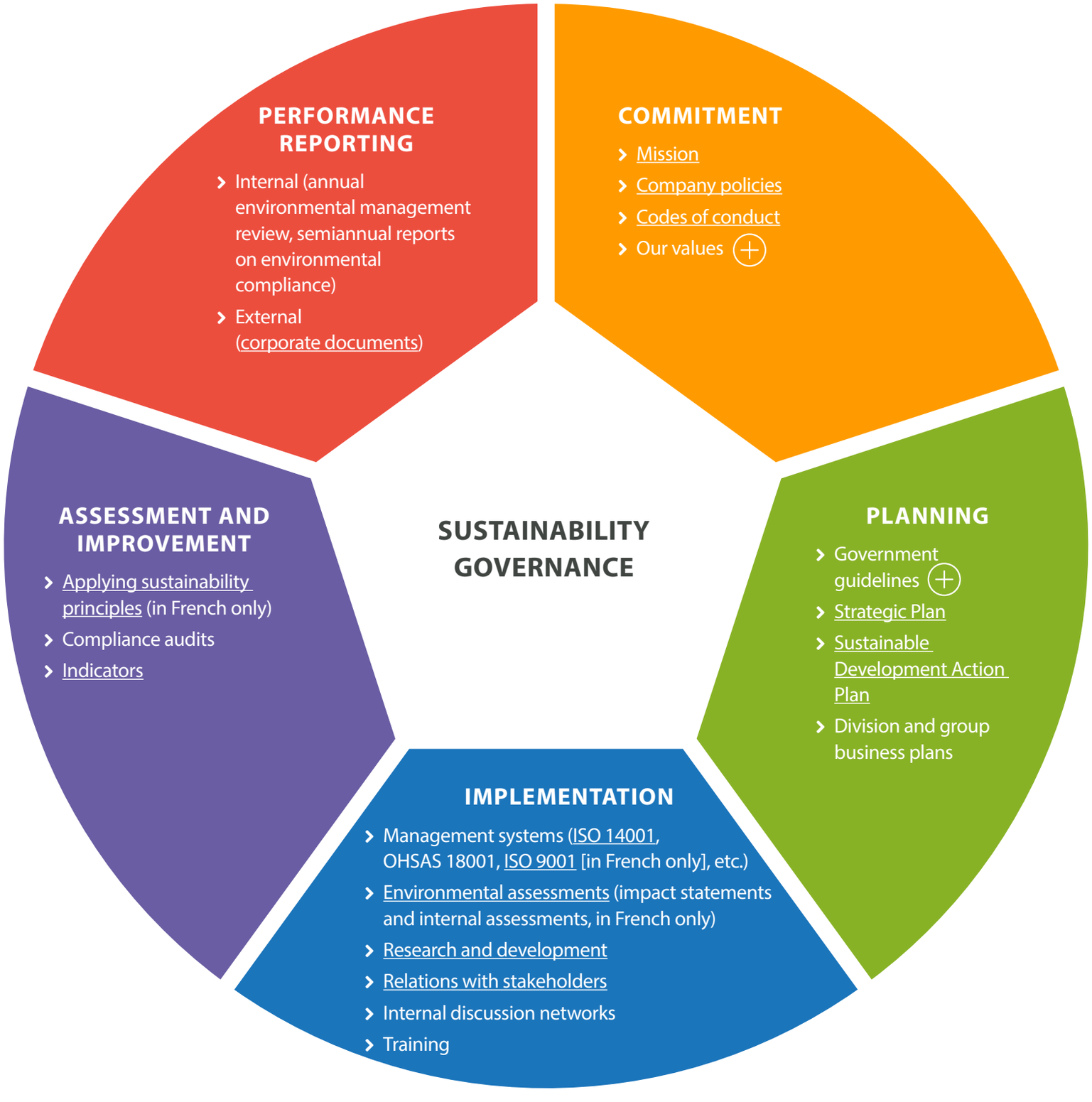
- Reviewed the results of the President and CEO's annual environmental management review as well as semiannual reports on environmental compliance.
- Recommended that the Board approve the corporate program for assessing environmental compliance.
- Reviewed the *Sustainability Report 2015* and met with the person in charge of the report and its auditor.
- Recommended that the Board approve the granting of donations and sponsorships, and update the company policy on the matter.
- Reviewed the annual results and relevant performance indicators pertaining to the company's communication activities and the results of the university research chair program.
- Reviewed the annual activity reports of the Fondation Hydro-Québec pour l'environnement and of the liaison committees established by the company with groups representing Québec agricultural producers and municipalities.
- Monitored the company's communication plan and advertising campaign.

STRATEGIC PLAN AND SUSTAINABLE DEVELOPMENT ACTION PLAN

Our corporate governance is also reinforced by planning documents approved by our Board of Directors and our President and CEO, mainly the Strategic Plan and the Sustainable Development Action Plan.

In 2016, we filed our *Strategic Plan 2016–2020*, which centres on four major objectives:

- Double our revenue over the next 15 years
- Become a benchmark in customer service
- Contribute to Québec's economic development and energy transition
- Keep rate increases lower than or equal to inflation



CHAMPIONING WOMEN AND DIVERSITY

Ariane Benoit, Project Engineer, took part in *Les filles et les sciences, un duo électrisant!*, which invites teenage girls in secondary 2 and 3 to explore career options in science and technology.

Lise Croteau, Executive Vice President and Chief Financial Officer, has been named one of Canada's 100 most powerful women in 2016 by the Women's Executive Network (WXN).

Trudy Alvizuri Lorenzo, Telecommunications Engineer

We implemented measures designed to increase the diversity of our current and future workforce.

At Hydro-Québec, as in many other organizations in Québec and elsewhere, women are under-represented in senior management positions. In 2016, we undertook initiatives to promote the role of women in our company and place them at the heart of our succession planning. For example, 16 of our managers and professionals participated in the Défi 100 jours L'effet A, a leadership program meant for female succession candidates for management positions.

HEALTH AND SAFETY OF HYDRO-QUÉBEC EMPLOYEES AND CONTRACTORS

In 2016, two deaths occurred at the Romaine-4 jobsite. In August, a worker fell from a trailer truck while unloading a heavy part; in December, a shovel operator perished when a rock wall collapsed in his work area.

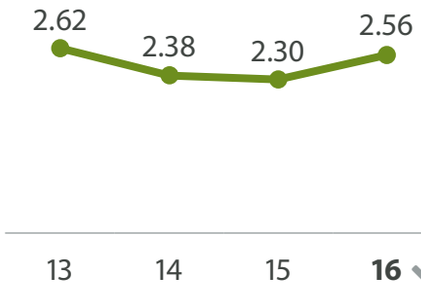
In response, the Board of Directors formed the Special Committee on Workplace Health and Safety to closely monitor workers' health and safety, a company priority. Since then, different pre-existing committees made up of management and union members have discussed new approaches for increasing occupational safety. Already, workers at our jobsites begin every shift with a meeting outlining their tasks, the risks associated with each task and the measures to take to prevent these risks. In addition, on their first day, new workers attend an orientation session covering health and safety rules and the nature of work in a remote area.

As health and safety are central priorities for us, we have undertaken to reduce work-related accident frequency rate to 1.00 within five years. To determine areas for improvement, we initiated an analysis of our organization's health and safety culture.

2016 HIGHLIGHTS

- Three new directors were appointed to the Board, following the departure of three of its members.
- The Board created the Special Committee on Workplace Health and Safety, whose role is to assess Hydro-Québec's practices and recommend an action plan targeting the improvements required to ensure that jobsites apply the most stringent standards in matters of health and safety. The committee has retained the services of an outside firm to assist in this process.
- We published our *Strategic Plan 2016–2020*.
- A monthly meeting was instituted between the President and CEO and all the company's managers.
- We set up two-way internal communications to speed up information sharing at all organizational levels.
- Occupational health and safety training: 14,166 registrations ✔ (27,485 in 2015). The decrease in the number of registrations compared with the previous year is mainly attributable to the end of the refresher training on the *Work Safety Code* (editions five and six).
- Number of participants in health awareness and promotion activities: 2,217 ✔ (2,593 in 2015).

WORK-RELATED ACCIDENT FREQUENCY[a]



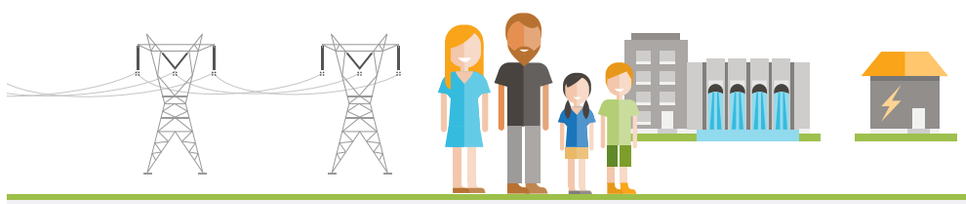
a) Per 200,000 hours worked. This rate covers only Hydro-Québec employees.

The work-related accident frequency for Canadian Electricity Association member companies in 2015 was 1.66.

EXCLUSIVE WEB CONTENT

- Corporate governance
- Access to information and protection of personal information

Our main sustainability challenges



ENSURE THE SOCIAL ACCEPTABILITY OF OUR PROJECTS

CONTEXT

Every year, we carry out over 1,100 construction and refurbishment projects, 100 of which undergo a public participation process. A project's social acceptability may be based on the achievement of a broad consensus rather than a complete lack of opposition.

SOLUTIONS CONSIDERED

- Continue to inform and consult with stakeholders as soon as a project is envisioned.
- Reduce the environmental footprint of our projects, through mitigation measures (landscaping, use of existing corridors, etc.), optimization measures (reduced-footprint towers, quieter transformers, etc.) and other means.

EXAMPLES OF INITIATIVES IN 2016

- Open house events were held to explain projects, gather stakeholder concerns and give tours of new facilities.
- A user committee was formed for the soil rehabilitation project at the Cap-aux-Meules dock to identify ways to minimize the work's impact on economic and tourism activities.

EXAMPLES OF INITIATIVES FOR 2017–2020

- Better inform the public on the rationale behind projects.
- To encourage more proactive communication, use a variety of consultation practices that will allow affected persons to give their opinion in the form and at the time most convenient for them.

IMPROVE CUSTOMER SATISFACTION

CONTEXT

Customer satisfaction is our top priority.

SOLUTIONS CONSIDERED

- Make our services more accessible (outage information, Web services, etc.).
- Reduce call wait times.
- Reduce response times for customers' work requests.
- Ensure reliable, high-quality power.
- Limit rate increases to less than or equal to inflation.

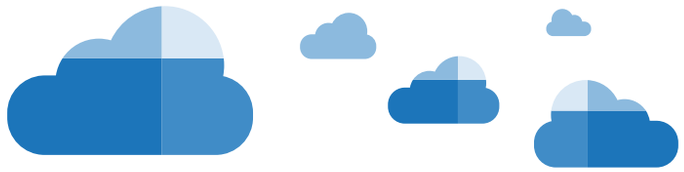
EXAMPLES OF INITIATIVES IN 2016

- Extended our customer service hours and kept customer relations centres open at key periods, such as on July 1, a holiday that is traditionally moving day in Québec.
- Expanded our online service offer.
- Online power outage reporting and tracking was made available and planned service interruptions were added to the online outage map.
- Rolled out the Hydro-Québec mobile app, available on iOS and Android.
- Information on the progress of work requested by customers was made available online.

EXAMPLES OF INITIATIVES FOR 2017–2020

- Increase customer awareness about energy savings.
- Offer more products and services to help customers better understand and manage their consumption and reduce their bills.
- Reduce service connection lead times.
- Respect dates determined with customers for carrying out work.
- Increase our presence on social media.

Our main sustainability challenges



CONTRIBUTE TO REDUCING GHG EMISSIONS IN QUÉBEC, WITH A VIEW TO REACHING THE GOAL OF A 37.5% REDUCTION BY 2030 COMPARED WITH 1990

CONTEXT

By generating 99% of our output from a clean, renewable source, we already contribute to reducing GHG emissions all over the continent. We are also a major player in transportation electrification, through initiatives such as the Electric Circuit.

SOLUTIONS CONSIDERED

- Maintain the vehicle fleet emission reduction target.
- Convert off-grid systems to cleaner, less expensive energy sources
- Continue our efforts toward transportation electrification (personal vehicles and public transit).
- Offer industrial customers programs for replacing electricity generated from fossil fuels.

EXAMPLES OF INITIATIVES IN 2016

- Issued a request for proposals (RFP) for power generated from forest biomass to supply the community of Obedjiwan.
- Reduced GHG emissions from our light-vehicle fleet.
- Offset senior management's travel-related GHG emissions.

EXAMPLES OF INITIATIVES FOR 2017–2020

- Progressively convert off-grid systems to cleaner, less expensive energy sources. Issue RFPs for all off-grid systems by 2020.
- Integrate 500 hybrid or plug-in vehicles to our light-vehicle fleet.

ADAPT OUR PRACTICES AND INFRASTRUCTURE TO CLIMATE CHANGE

CONTEXT

Climate change is already impacting our activities. We must adapt our facilities and business practices to this new reality.

SOLUTIONS CONSIDERED

- Continue our collaboration with Ouranos to stay on the leading edge of developments and prepare for the new reality by adapting our practices accordingly.

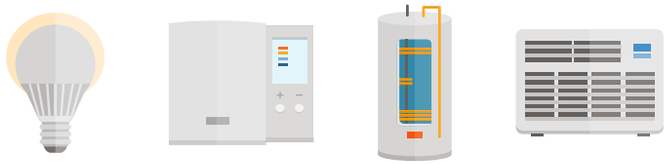
EXAMPLES OF INITIATIVES IN 2016

- Carried out studies, in collaboration with Ouranos, on the effects of climate change, including its impact on salmonid habitat and on biodiversity in Nunavik's tundra.
- Modified our inflow forecasting method.
- Contributed to an initiative by MIT, Ouranos and HEC Montréal to model future use of renewable energy in New England.
- Conducted a study on biosecurity in relation to vegetation control.

EXAMPLES OF INITIATIVES FOR 2017–2020

- Assess the impact of climate change on all our business practices and facilities. Ensure that all components are considered (e.g., permafrost thawing and faster growth of vegetation).

Our main sustainability challenges



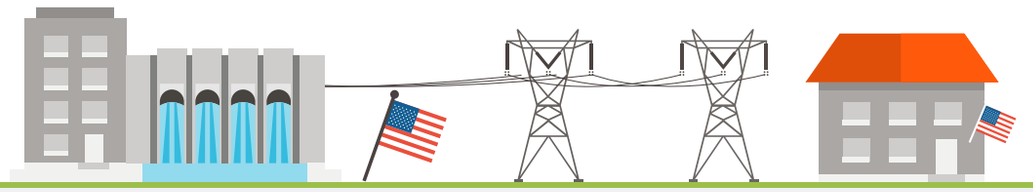
PROMOTE ENERGY EFFICIENCY

CONTEXT
Our energy efficiency initiatives have led to a substantial decrease in electricity use.

SOLUTIONS CONSIDERED
- Manage demand through measures such as interruptible load programs for residential, commercial, institutional and industrial customers.
- Educate customers about the benefits of being energy wise.
- Continue our initiatives with low-income customers.

EXAMPLES OF INITIATIVES IN 2016
- Ran the campaign *When it's very cold, spread out your electricity consumption*.
- Provided customers with the option of checking their daily electricity use online to help them manage their consumption.

EXAMPLES OF INITIATIVES FOR 2017–2020
- Reduce power demand by 300 MW by 2020.
- Offer customers the option of reducing their energy use by having their heating interrupted in exchange for compensation.
- Satisfy a third of increased demand through our energy efficiency initiatives.



IMPROVE OUR PROFITABILITY

CONTEXT
The company's profitability creates wealth for Québec. The dividends we pay the Québec government improve public services.

SOLUTIONS CONSIDERED
- Increase clean energy exports.
- Continue efforts to increase the capacity and output of our hydroelectric generating stations.
- Commercialize our innovations and purchase assets or stakes outside Québec.

EXAMPLES OF INITIATIVES IN 2016
- Net income of $2,861 million.
- Net export volume of 32.6 TWh, a record.
- Agreement signed with the Independent Electricity System Operator (2017–2023), providing for the sale of 2 TWh a year to Ontario.
- Memorandum of understanding signed with RTE, France's Réseau de transport d'électricité, setting up a strategic partnership.
- Campaign to attract data centres—known for their high energy usage—to Québec.

EXAMPLES OF INITIATIVES FOR 2017–2020
- Double our revenue by 2030.
- Step up efforts to commercialize our innovations.
- Sign new long-term contracts for the sale of electricity to neighboring systems.
- Take advantage of business opportunities related to alternative energy sources, such as photovoltaic solar
- Purchase assets or stakes outside Québec.

Sustainable Development Action Plan 2015–2020

In July 2015, in response to the *Government Sustainable Development Strategy 2015–2020* (in French only), we published our third Sustainable Development Action Plan. Through our initiatives, we aim to contribute to implementing this strategy, the strategy to ensure the occupancy and vitality of territories (in French only) and Québec's Agenda 21 for culture. (in French only)

ACTION	INDICATOR	TARGETS					
		2015	2016	2017	2018	2019	2020
OVT **1 | BUILD HYDROPOWER PROJECTS** ⊕	Cumulative capacity made available by the Romaine project	640 MW	2016 Result: **910 MW** ✓ 910 MW	1,305 MW	1,305 MW	1,305 MW	1,550 MW
OVT **2 | INCREASE THE CAPACITY OF EXISTING HYDROELECTRIC GENERATING STATIONS** ⊕	Cumulative gains in additional available peak capacity	36 MW	2016 Result: **42 MW** ✓ 42 MW	54 MW	60 MW	60 MW	60 MW
3 | CONTINUE ENERGY EFFICIENCY INITIATIVES ⊕	New annual energy savings	500 GWh	2016 Result: **534 GWh** ✓ 500 GWh	500 GWh	500 GWh	500 GWh	500 GWh
OVT **4 | CONTINUE EFFORTS IN THE FIELD OF TRANSPORTATION ELECTRIFICATION IN QUÉBEC** ⊕	Number of Electric Circuit charging stations in service and number of regions served		2016 Result: **794 charging stations/ 16 regions** ✓ 800	1,100			2,500
	Partnership agreements for R&D	**5 agreements.** No target has been determined for this indicator.					
	Number of patents held	**572 patents.** ✓ No target has been determined for this indicator.					

OVT Action related to the implementation of the strategy to ensure the occupancy and vitality of territories.

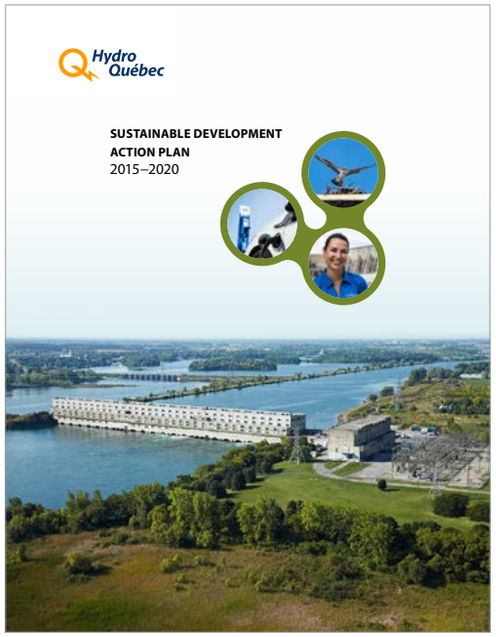
Sustainable Development Action Plan 2015–2020

ACTION	INDICATOR	TARGETS					
		2015	2016	2017	2018	2019	2020
C **5 | PUBLICIZE THE KNOWLEDGE ACQUIRED THROUGH HYDRO-QUÉBEC ENVIRONMENTAL STUDIES** ⊕	Number of documents published on the Web	2	2016 Result: **3** ✓ 2	2	2	2	2
OVT C **6 | CONTINUE TO PROTECT AND ENHANCE THE COMPANY'S BUILT, TECHNOLOGICAL AND INTANGIBLE HERITAGE** ⊕	Number of measures carried out by 2020		2016 Result: **2**				2
OVT **7 | STRENGTHEN ENVIRONMENTALLY RESPONSIBLE MANAGEMENT PRACTICES** ⊕	Annual GHG emissions from the light-vehicle fleet	25,360 t CO_2 eq.	25,360 t CO_2 eq. 2016 Result: **22,852 t CO_2 eq.** ✓	24,733 t CO_2 eq.	24,590 t CO_2 eq.	24,446 t CO_2 eq.	24,302 t CO_2 eq.
	Number of videoconferences held annually	4,360	4,430 2016 Result: **9,266**	4,500	4,580	4,650	4,720
	Percentage of company printers that are print-release enabled		2016 Result: **11.4%** ✓				15%

OVT Action related to the implementation of the strategy to ensure the occupancy and vitality of territories.

C Action related to the implementation of Québec's Agenda 21 for culture.

Sustainable Development Action Plan 2015–2020



ACTION PLAN

ACTION	INDICATOR	TARGETS					
		2015	2016	2017	2018	2019	2020
OVT **8 | CONTINUE MEASURES THAT TAKE INTO ACCOUNT AND PROTECT BIODIVERSITY AND ECOSYSTEM SERVICES**	Number of innovative measures implemented annually to take into account and protect biodiversity and ecosystem services	5	2016 Result: **7** ✓	5	5	5	5
9 | OPTIMIZE THE APPLICATION OF SUSTAINABILITY PRINCIPLES TO PROJECTS AND ACTIVITIES	Number of projects or activities analyzed each year	1	2016 Result: **1** ✓	1	1	1	1
OVT **10 | PROMOTE THE INTEGRATION AND FAVORABLE RECEPTION OF HYDRO-QUÉBEC'S SYSTEM EQUIPMENT**	Percentage of regional county municipalities (MRCs) that have received the information program		2016 Result: **2%** ✓				90%
11 | INTEGRATE THE NOTION OF LIFE CYCLE IN OUR INNOVATION EFFORTS	Number of projects to which sustainability and eco-innovation principles have been applied	1	2016 Result: **1** ✓	1	1	1	1
12 | KEEP UPDATING THE STATE OF KNOWLEDGE ON THE LIFE CYCLE ASSESSMENT OF THE ELECTRICITY DISTRIBUTED IN QUÉBEC	Number of updates of inventory data on the life cycle of Québec's electricity mix per year	1	2016 Result: **1** ✓	1	1	1	1

OVT Action related to the implementation of the strategy to ensure the occupancy and vitality of territories.

GRI G4-19, G4-24, G4-27

OUR CUSTOMERS FIRST

Distribution line near the Robert-Bourassa facility, in Baie-James.

Our customers expect reliable, high-quality electric power, attentive service and competitive rates. To deliver that combination, we rely on careful planning and management of our electricity supplies, robust transmission and distribution systems, a focus on irreproachable customer service and prudent management of our human and financial resources.

IN THIS SECTION

- Reliability and service continuity
- Vegetation control
- Customer service (satisfaction, complaints)
- Energy prices
- Low-income households

STAKEHOLDERS CONCERNED

MATERIALITY ANALYSIS ASPECTS

178
min/customer

SYSTEM AVERAGE INTERRUPTION DURATION INDEX ✔

91%

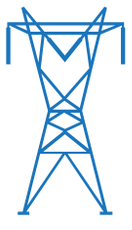
SATISFACTION WITH THE COMPANY ✔

OUR CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS

Reliable electric power

To provide our customers with reliable electric service, we draw on a variety of supply sources. Every three years we submit an electricity supply plan to the Régie de l'énergie, which is reviewed yearly, taking into account changes in capacity and energy needs. In addition to our own power generation, we count on 75 supply contracts, covering 15 to 25 years, to meet long-term needs. We also make one-time purchases of electricity and have bilateral agreements in place for handling very short-term needs, and we implement commercial measures with our customers to meet short-term capacity requirements.

Finally, we depend on the reliability of our transmission and distribution systems, which we ensure through extensive maintenance and expansion work. In 2016, two major transmission projects were under construction: the system in Minganie to connect the Romaine complex, and the Chamouchouane–Bout-de-l'Île line to increase system reliability.



TRANSMISSION SYSTEM

TRANSMISSION PROJECTS UNDER CONSTRUCTION

In the same vein, we implement effective vegetation control programs in our distribution and transmission line rights-of-way and on our dikes and dams.

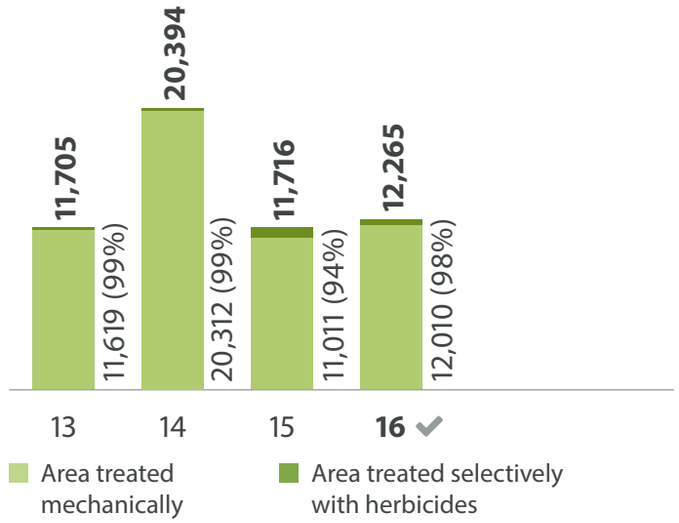
SERVICE CONTINUITY

The quality of electric service is measured by the system average interruption duration index (SAIDI), which reflects the average service interruption time per customer. Service interruptions can be caused by scheduled system maintenance, bad weather, invasive vegetation or defective equipment.

WHY CONTROL VEGETATION NEAR POWER LINES?

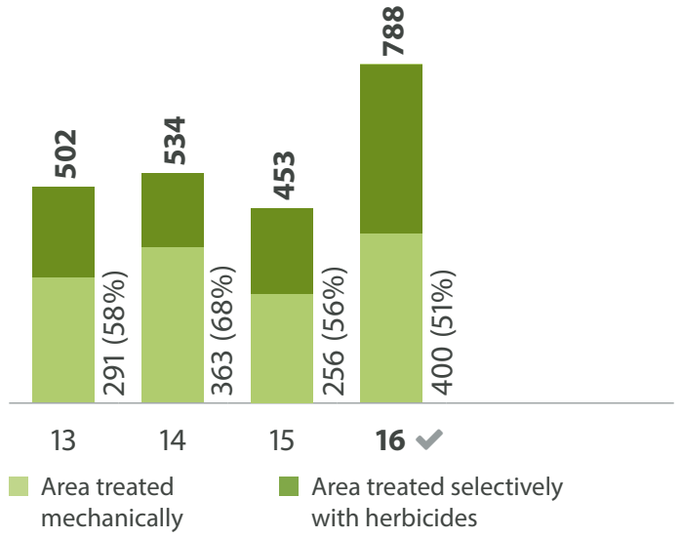
DISTRIBUTION SYSTEM

VEGETATION CONTROL ALONG TRANSMISSION LINE RIGHTS-OF-WAY (ha)



In 2016, the total area of transmission line rights-of-way was 172,961 ha.

VEGETATION CONTROL ON DIKES AND DAMS (ha)



Herbicide use and mechanical treatment vary, depending on the vegetation-control planning cycle. The proportion of herbicides used changes annually.

2016 HIGHLIGHTS

- Investments in the transmission and distribution systems: $1,757 million and $657 million respectively.
- As of late 2016, customers can report an outage online and our outage map has been expanded to include details on planned service interruptions. Outage information can also be obtained through our app, available on iOS and Android.
- We sent over 200 line workers to Long Island in January, and to Long Island and New Jersey in September, to assist the crews in those regions. In October, the North Atlantic Mutual Assistance Group honored Hydro-Québec's major contribution with a prize, naming us the utility that had provided the most support in difficult situations in the previous 12 months. In early 2017, 26 of our line crews went to lend a hand to their colleagues in New Brunswick, where an ice storm had caused a series of outages.
- On April 1, three months before the regulatory requirements came into effect, we finalized the work needed to implement the Critical Infrastructure Protection (CIP) Version 5 standards and to ensure compliance with the standards of the North American Electric Reliability Corporation (NERC). These reliability standards govern the physical and cyber security of critical transmission and generation infrastructure.

OUR TELECOMMUNICATIONS NETWORK: EXTENSIVE AND ROBUST

Given how important telecommunications are for ensuring a secure supply of electricity, we have our own telecommunications network. It's a robust system covering 850,000 km^2—half the area of Québec. Its exceptional size and the extreme weather conditions it's exposed to make it a unique network. It takes care of all communications related to operations and monitors the power system in real time. For example, it ensures:

- the control and monitoring of control centres (system control centre, telecontrol centre, distribution control centre and distribution management centre)
- communications for the operation of protections and control systems
- mobile radiocommunications for workers in the field

Microwave transmission site.

OUR TELECOMMUNICATIONS NETWORK

- **Over 835 telecommunications sites**
- **Over 12,000 km of microwave links**
- **Over 14,000 km of optical links**
- **200 mobile radiocommunication sites/13,000 radios deployed**
- **300 specialized telephone consoles for control, telecontrol and power system operations centres, for the energy trading floor and for customer relations centres**

TELECOMMUNICATIONS NETWORK MAP

Customer service

Meeting the needs of our residential and business customers involves providing them with information, helping them manage their energy use and analyze the quality of the power supply, and responding to their service connection requests. For example, in their Customer Space, which was enhanced this year, customers can monitor their daily consumption in kilowatthours or dollars – a service made possible thanks to next-generation meters. The online tool allows customers to compare their consumption data and find out about the factors that influence their energy use and the measures they can take to manage it.

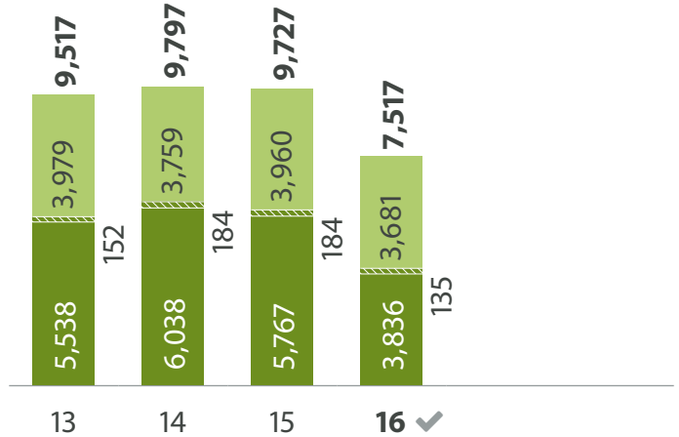
Call wait time is a key factor in the quality of our services. In 2016, the average call wait time for residential customers was 87 seconds—much shorter than in 2015 (205 seconds). This sharp improvement is attributable to the extension of our service hours and the expansion of our online self-service options.

Since 1992, we have been conducting surveys to determine our customer satisfaction index. In compliance with the *Act respecting the Régie de l'énergie,* a complaints mechanism is in place to enable customers who feel they have been wronged to express their dissatisfaction.

2016 HIGHLIGHTS

- Overall customer satisfaction index: 8.1 on a scale of 10 ✔ (target 7.6) ⊕
- The number of complaints received decreased by 33%. ✔ This good result is explained by our customer service improvements and proactive communication approach, and by the milder temperatures of the 2015–2016 winter.
- We extended our customer service hours from 8:00 a.m. to 8:30 p.m. on weekdays, and 9 a.m. to 5 p.m. on weekends.
- For the first time, we kept our customer relations centres open on July 1, from 9 a.m. to 5 p.m. This holiday is traditionally moving day in Québec. Our representatives fielded 3,758 calls that day.
- In 90% of simple service connections, the connection was completed within 10 business days (83% in 2015). We processed 15,753 simple service connection requests.
- In 92% of service connections involving multiple parties, the connection was completed on the scheduled date (55% in 2015). This significant improvement is attributable to the establishment of the customer technical services centre, which helps better assess and coordinate the work.

CUSTOMER COMPLAINTS AND CLAIMS
(number)



- Customers can now go to our Web site to track the status of work requests they have submitted.
- We created a new Web page covering options for customers experiencing payment difficulties.
- 89 employees ✔ attended a workshop on doing business in a context of poverty to learn about collecting from low-income customers who have payment difficulties.
- Three agreements were signed with community organizations to facilitate business relations with Syrian refugee customers who do not speak French or English.
- Agreements were renewed with four non-profit organizations for translation services in 18 languages ⊕ to assist customers experiencing payment difficulties who do not speak French or English.

PORTRAIT OF OUR CUSTOMERS

Residential customers

- Contracts at Rate D, DT or DM
- 3,924,992 customer accounts ✔

Commercial, institutional and small industrial customers

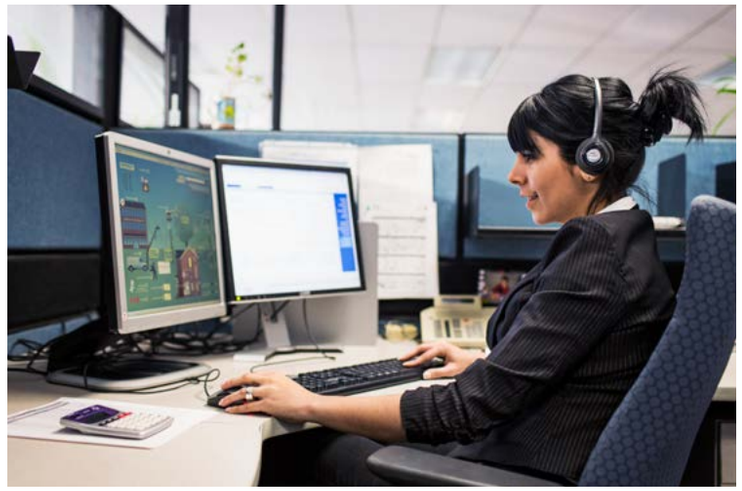
- Contracts at rates for small, medium and large power or at a fixed rate: G, G9, M, H, LG, T1, T2 or T3
- 314,816 customer accounts ✔

Large industrial customers

- Contracts at Rate M or L
- 183 customer accounts ✔

Other

- Contracts at rates for public lighting or Sentinel lighting or Rate LG for municipal distributors
- 4,550 customer accounts ✔



Marylene Asselin, customer service representative.

In Baie-Saint-Paul, the beautiful Saint-Jean-Baptiste shopping street after undergrounding of the power lines.

EXCLUSIVE WEB CONTENT

- Service interruptions
- Rules for vegetation near power lines
- Comparison of electricity prices in major North American cities

Rates and measurement of consumption

We are required to charge the same electricity rates throughout Québec. Our rates are based on the consumption profile of our different customer categories.

Thanks to the investments made by previous generations and the abundance of water resources, Québec has a heritage pool of electricity ⊕ available at a very competitive rate compared with the rest of North America.

Every year, we file a rate case for approval with the Régie de l'énergie. Our application to increase rates is analyzed through a rigorous process that includes public hearings at the end of the year, during which representatives of all stakeholders can express their views.

To support our application, we submit details on the expenses we expect to incur to provide electricity to all Québec customers in the next year, and the revenue we expect to generate.

2016 HIGHLIGHTS

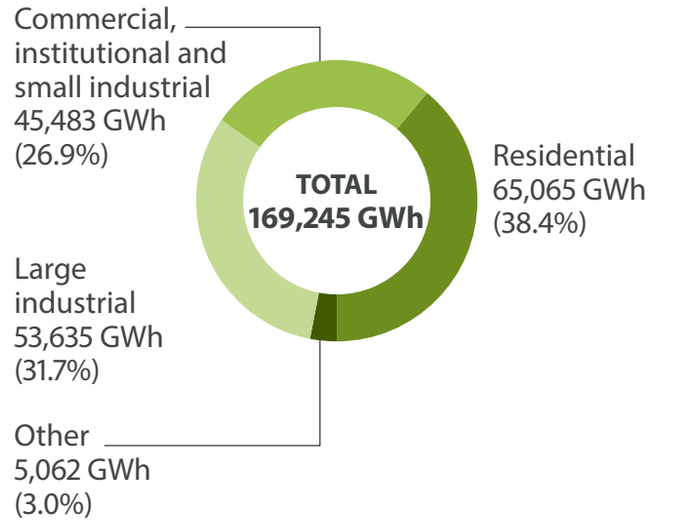
- Rate adjustments of 0.7% took effect on April 1, 2016 and 2017, in line with our commitment to keep rate increases lower than or equal to inflation.
- Payment arrangements were signed with residential customers to facilitate settlements of 340,485 cases representing $644 million gross in arrears. ✔
- 97,879 payment arrangements covering $401 million gross were reached with low-income customers; 46,768 of the agreements, amounting to $55.4 million, provide assistance with payment of arrears and, if necessary, partial payment for current electricity use. ✔
- We launched an aggressive campaign to attract data centres, which are known for their high energy usage, to Québec. Amazon Web Services has chosen to set up its first Canadian data centre in Montréal. The choice was motivated by the low cost of electricity in Québec, and by the fact that our energy is clean and renewable.

$ ⊕ LOWEST RESIDENTIAL RATES IN NORTH AMERICA

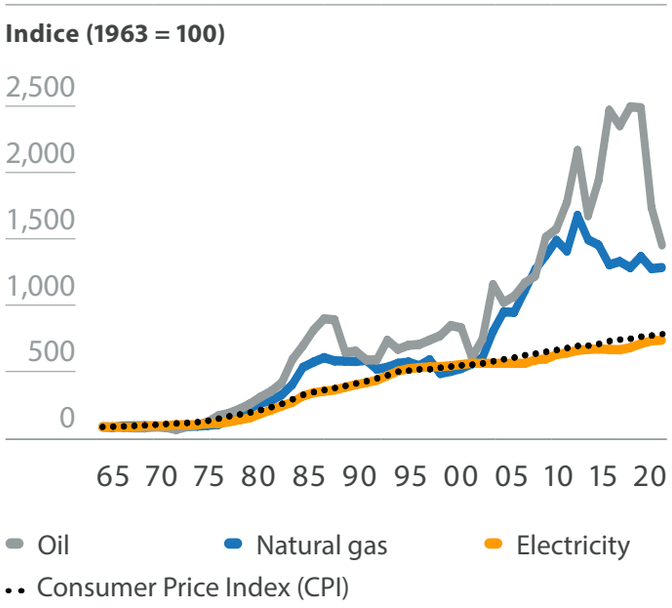
⊕ HOW ELECTRICITY RATES ARE SET

⊕ RATE INCREASE AND IMPACT ON BILL

ELECTRICITY SALES IN QUÉBEC BY SEGMENT – 2016 ✔



INFLATION AND ENERGY PRICES IN QUÉBEC 1963–2016



Electricity prices have stayed in line with inflation. According to the data available, the consumer price index in Canada is 793.8, while it is 747.5 for electricity, 1297.7 for natural gas and 1469.3 for oil.

PROJECT PORTFOLIO 2016

735-kV Line between Romaine-3 and Romaine-4 substations, under construction.

Expansion of the transmission system in Minganie:

Connecting facilities to the transmission grid

STATUS
Under construction

FACILITIES
in operation
- 315/161/13.8-kV Romaine-1 substation
- 315-kV Romaine-1–Romaine-2 line
- 735/315/18-kV Romaine-2 substation
- 735-kV Romaine-2–Arnaud line
- 735-kV Arnaud substation

under construction
- 315/13.8-kV Romaine-3 substation (commissioning in 2017)
- 735-kV Romaine-3–Romaine-4–Montagnais line (commissioning in 2017)
- 735-kV Montagnais substation (commissioning in 2017)

under study
(detailed engineering)
- 315/13.8-kV Romaine-4 substation

COST
$1.3 billion
(not including financing)

REGION
Côte-Nord

CONSTRUCTION
2011–2020

Project fact sheet

LOCATE THE PROJECT

The project to expand the transmission system in Minganie includes the construction of four 315-kV and 735-kV lines totaling 500 km, the construction of four substations and the modification of Arnaud and Montagnais substations. This group of facilities will allow the Romaine complex to be brought onto the main transmission grid.

2016 HIGHLIGHTS

- Jobs created: 87.6 person-years (Côte-Nord workers accounted for 34% of the workforce, of whom 2% were Innu).
- Annual investment (not including financing): $154 million.
- Contracts awarded in the region: $2.07 million.
- One government approval was received, as well as one legal non-compliance notice ✔ for which corrective measures have been implemented.
- Construction of Romaine-3 substation is under way.
- We completed the construction of two sections of the line: Romaine-3–Romaine-4 and Romaine-4–Montagnais.
- Modification work continued at Montagnais substation.
- We began dismantling Belmont workcamp.

EXAMPLES OF ENVIRONMENTAL MANAGEMENT ACTIVITIES IN 2016

Mitigation measures

Northern connection (Romaine-3 and Romaine-4 generating stations)
- Site restoration: jobsite rehabilitation, dismantling of stream crossings and bank rehabilitation, reforestation of borrow pits.
- Soil characterization studies on the site of Belmont workcamp for restoration purposes.

Southern connection (Romaine-1 and Romaine-2 generating stations)
- Site restoration: rehabilitation of the sites of the temporary 161-kV line connecting Arnaud and Havre-Saint-Pierre substations (dismantling of stream crossings and bank rehabilitation).

PROJECT PORTFOLIO 2016

Judith-Jasmin substation, under construction.

735-kV Chamouchouane–Bout-de-l'Île Project

STATUS
Under construction

FACILITIES UNDER CONSTRUCTION
- 735-kV Chamouchouane substation
- 735-kV line section 1 – Chamouchouane–Blanc reservoir
- 735-kV line section 2 – Blanc reservoir–Taureau reservoir (starting in 2017)
- 735-kV line section 3 – Taureau reservoir–Saint-Zénon
- 735-kV line section 5 – Rawdon–Terrebonne (starting in 2017)
- 735-kV line section 6 – Circuit 7017–Bout-de-l'Île
- 735/120/25-kV Judith-Jasmin substation

SITE BEING CLEARED
- 735-kV line section 4 – Saint-Zénon–Rawdon

COST
$1.15 billion
(not including financing)

REGIONS
Saguenay–Lac-Saint-Jean, Mauricie, Lanaudière, Laurentides, Montréal

CONSTRUCTION
2015–2018

Project fact sheet

LOCATE THE PROJECT

The Chamouchouane–Bout-de-l'Île project consists in building a 400-km, 735-kV transmission line, diverting a 19-km section of a 735-kV line, expanding Chamouchouane substation, in Saguenay–Lac-Saint-Jean, and building a new substation, named Judith-Jasmin, in Terrebonne (Lanaudière). The completed project will strengthen the transmission grid between Chamouchouane substation and the metropolitan loop, considerably reducing electricity losses on the grid and increasing operating flexibility.

2016 HIGHLIGHTS

- 40 government approvals were received, as well as nine legal non-compliance notices ✔ for which corrective measures have been implemented.
- We continued geotechnical studies in Mauricie, Lanaudière and Montréal, and in the Rivière des Prairies.
- A dock was built in preparation for the two towers to be erected in the Rivière des Prairies in 2017.
- Three environmental monitoring guides were produced.
- We signed an agreement with the Ministère des Forêts, de la Faune et des Parcs regarding the offsetting of vegetation loss in two experimental forests north of Taureau reservoir.

LISTENING TO THE COMMUNITY

- Work was interrupted during the firearm hunting period on the territory of the De la Lièvre ZEC in Saguenay–Lac-Saint-Jean, the Gros-Brochet and Chapeau-de-Paille ZECs in Mauricie, the Collin and Lavigne ZECs in Lanaudière, as well as on public lands.
- To promote harmonious coexistence between the jobsite and snowmobile clubs, trails were built and other measures were implemented, particularly in Lanaudière and Haute-Mauricie.
- The Lanaudière liaison committee continued to meet and a new liaison committee was set up with the Atikamekw.

SUSTAINABILITY ISSUES

- Work is being carried out in five administrative regions (18 municipalities, towns or parishes; seven unorganized territories; nine MRCs or agglomerations; one metropolitan community), in cooperation with one Innu community and two Atikamekw communities.
- Clearing and construction work is being conducted with respect for our environmental commitments and with measures in place, such as the liaison committee in the Lanaudière region, to keep us connected to the community.
- Special-status species were taken into account while developing the clearing and construction strategy for Lanaudière and Montréal (e.g., American cancerroot, Canada warbler).

EXAMPLES OF ENVIRONMENTAL MANAGEMENT ACTIVITIES IN 2016

Mitigation measures

- We incorporated specific measures for limiting the spread of emerald ash borer in Terrebonne and Montréal.
- Measures were implemented to prevent the spread of invasive alien species (e.g., leaving excavated material onsite and cleaning machinery after use in areas where common water reed is abundant).
- We conducted a complementary study on the populations of Dekay's brown snake and smooth greensnake in Terrebonne and Montréal to develop special measures.
- To protect bird nesting, clearing was done outside of the nesting season in sections 5 and 6 of the line route.
- Clearing was done outside the active period of Dekay's brown snake in the Parc-nature de Pointe-aux-Prairies, in Montréal.
- We implemented the plan for offsetting lost forest areas in the Saint-Laurent (St. Lawrence) lowlands.

Environmental monitoring

- We completed the baseline study that will be used to monitor wetlands.
- A noise level monitoring study was initiated during work to drive the casings of a 315-kV line into the ground in Terrebonne.

^^ Canada warbler, a special-status species.

^ Common water reed, an invasive alien species.

GRI G4-19, G4-24, G4-27

OUR MANAGEMENT OF ENERGY DEMAND

Robert-Bourassa facility, in the Baie-James region.

From now until 2026, electricity consumption will continue to increase, but at an average rate of 0.4% or approximately 0.8 TWh per year, which is faster than the growth observed from 2006 to 2016. To balance supply and demand, we rely primarily on energy efficiency, and on the generation and purchase of clean, renewable energies.

IN THIS SECTION

STAKEHOLDERS CONCERNED

MATERIALITY ANALYSIS ASPECTS

99%

RENEWABLE POWER DELIVERED TO CUSTOMERS ✔

16%

VOLUME OF ELECTRICITY SALES OUTSIDE QUÉBEC

OUR CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS

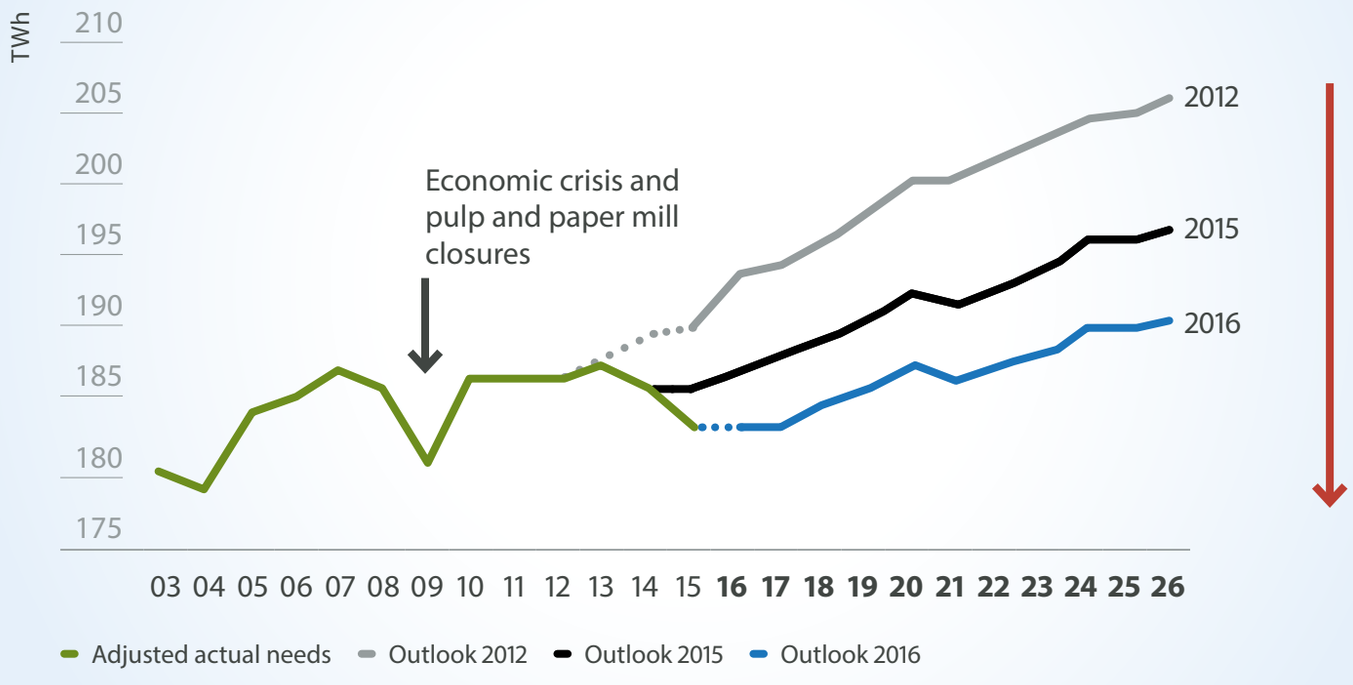
Electricity Supply Plan

After reviewing economic, demographic and weather forecasts, we update our Electricity Supply Plan (in French only) and submit it to the Régie de l'énergie for approval. Based on the anticipated demand, we establish our main priorities and our actions related to power transmission, equipment and supply. The forecast for electricity demand needs to be continually updated to include the latest information on how demand is changing. In the last few years, the demand forecast was revised downward, due to factors such as economic changes that affected our large industrial customers. Anticipated available energy represents excellent business opportunities for attracting energy-intensive investors in promising sectors.

^^ Saint-Sauveur, in the Laurentides region, where energy demand is growing twice as fast as anywhere else in Québec.

^ Les Cèdres generating station, in Montérégie. When it was built in 1914, it was the first facility designed to export part of its output to the United States.

DEMAND FORECAST 2016–2026



Energy efficiency

At Hydro-Québec, we consider energy efficiency the ideal way to balance supply and demand. It is an option that we prioritize over electricity generation or purchases, making the most of its ability to curb growth needs and reduce power demand during peak periods. Energy efficiency also allows customers to reduce their electricity bills without compromising their comfort or quality of life.

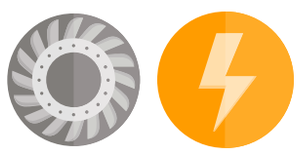
ENERGY SAVINGS – INITIATIVES WITH CUSTOMERS

Since the early 1960s, we have encouraged our customers to use electricity more efficiently. For example, our Energy Efficiency Plan, which ran from 2003 to 2015, covered a large number of fields. Going forward, our actions will focus on the following areas: energy savings, demand response and promoting the use of the energy source most suited to specific needs. This strategy matches our context of having sufficient energy but facing escalations in peak demand. By 2020, our goal is to reduce electricity sales growth by a third through our energy efficiency initiatives.

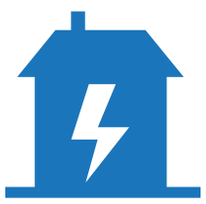
2016 HIGHLIGHTS

RESIDENTIAL CUSTOMERS

- New annual energy savings: 204 GWh ✔ (177 GWh in 2015).
- We revamped the ENERGY WISE Web site, which reflects our efforts to raise awareness and promote new energy-use habits.
- We continued *The Right Moves* campaign, designed to encourage customers to adopt simple daily actions that make a big difference, individually and collectively.
- The Customer Space was enhanced to allow customers to monitor and compare their energy use in kilowatthours or dollars—a service made possible thanks to next-generation meters. This online tool also teaches customers about the factors that influence their consumption and the measures they can take to manage it.
- We intensified our efforts to limit demand growth in all regions covered by off-grid systems. Awareness raising and integrated offers were the focus of our approach.
- An integrated offer was launched on the Îles de la Madeleine, encouraging residents to insulate their home's roof space, install water- and energy-saving products and replace their outdoor lightbulbs with LED bulbs. Result: 364 residential customers insulated their home's roof space and other measures were implemented in 1,417 buildings. ✔



UNDERSTANDING THE CONCEPTS OF POWER AND ENERGY



TYPES OF HOMES AND ENERGY CONSUMPTION

ENERGY CONSUMPTION BY SECTOR AND USE

BUSINESS CUSTOMERS

- New energy savings: 330 GWh ✓ (391 GWh in 2015).
- The Efficient Farming Products Program was launched.
- We added technical resources to the Buildings Program through a Catered Component.
- To date, 17 industrial sites have been analyzed or had electricity management systems installed. These energy performance measures are based on the ISO 50001 standard and supported by the Industrial Systems Program.

NEW ANNUAL ENERGY SAVINGS – ENERGY EFFICIENCY INITIATIVES – 2016

INITIATIVES	ANNUAL SAVINGS[a] (GWh) ✓
Residential market	**202**
Public awareness – ENERGY WISE	88.5
Specific programs – ENERGY WISE	
Lighting[b]	55.1
Water- and energy-saving products	8.2
Efficient pools	43.2
Windows and patio doors	2.4
Energy-efficient windows – Rental properties	0.9
Support for sustainable urban development projects[c]	1.4
Offers for low-income households	2.4
Business market	**330**
Commercial and institutional	145.5
Industrial	184.5
Off-grid systems	**2**
TOTAL NEW SAVINGS	**534**

a) Overall total and sum of subtotals may differ due to rounding.

b) Savings attributable to our efforts toward market transformation—program ended.

c) Includes the results of the Cité Verte pilot project.

^^ ENERGY STAR certified windows installed under the Efficient Homes Programs.

^ Waterville TG, one of our customers involved in the automotive industry, set up an electricity management system in its plant in Estrie. This is a new approach for promoting energy efficiency.

EXCLUSIVE WEB CONTENT

- The Right Moves (energy efficiency)
- ENERGY WISE (residential customers)
- Energy efficiency programs (business customers)

ENERGY SAVINGS – OUR BUILDINGS AND FACILITIES

We carry out work to reduce the energy consumption of our facilities. The energy savings obtained are mainly related to lighting, ventilation and energy recovery.

In addition, we rehabilitate and refit our generating stations to increase their capacity and output, allowing us to generate additional energy at a lower cost. We also take measures to reduce energy losses on the power grid.

2016 HIGHLIGHTS

- Since 1992, we have achieved a 43% reduction in the energy consumption—savings of $121 million ($8.9 million in 2016)—of our administrative buildings in which energy efficiency measures were implemented.
- The systems in 38 buildings ✔ were automated to reduce peak load.
- We started the overhaul of our head office's building envelope, which will be finalized in 2019. This project will improve the building's insulation and airtightness. It includes the replacement of steel panels by aluminum ones and the sealing of some 3,000 windows.
- We continued the rehabilitation or refitting of a number of generating stations, including Rapide-2, Rapide-7 and Rapides-des-Quinze. Energy gains achieved totaled 73 GWh in 2016.
- The CATVAR project led to savings of 244 GWh (246 GWh in 2015).

DEMAND RESPONSE

Peak power demand should reach 39,931 MW in winter 2025–2026, an increase of 2,220 MW (0.6% on average per year) compared with winter 2015–2016. This growth will come primarily from the residential, agricultural, commercial and institutional sectors.

To manage power demand, we focus on reducing electricity consumption and shifting the time of consumption away from peak periods. With our residential customers, we use programs involving interruptible electricity, three-element water heaters and dual energy systems. For business customers, we rely on the new demand response offer, designed to decrease the amount of electricity used by buildings during peak periods.

ENERGY EFFICIENCY RESULTS – ADMINISTRATIVE BUILDINGS (kWh/m² gross)

	OBJECTIVES[a]		RESULTS			
	2016	2020	2013	2014	2015	2016
Average energy consumption	233	216	245	239	231	229

a) The objectives are based on market indicators (BOMA BESt). Since 2012, we have monitored 85 buildings each year, except in 2014, when 84 buildings were monitored.

ENERGY EFFICIENCY INITIATIVES TO REDUCE POWER DEMAND (MW)

2016 HIGHLIGHTS

- Energy efficiency initiatives led to a 2,986-MW (8% of needs) decrease in power demand during the 2015–2016 winter.
- In winter 2016–2017, we achieved a balance between power supply and demand, and did not have to turn to short-term markets to meet peak demand.
- We launched two pilot projects aimed at our employees. The first is for employees with dual-energy heating systems and promotes the use of the non-electric energy source during peak periods. The second is for employees living in Mauricie, who were asked to use smart thermostats for electric baseboard heaters to assess the energy savings and reduction in power demand obtained.
- We launched a commercial offer targeting commercial and institutional buildings and small- and medium-power industrial facilities. It provides financial compensation to customers who curb their power demand during peak periods. Over 280 customers are participating.
- On the Îles de la Madeleine, we continued our efficient energy use program to encourage residential customers who have oil or propane furnaces to use these fuels—which are more efficient and less costly—instead of the electricity generated by our oil-fired plant at Cap-aux-Meules. Since December 2016, this program has also been offered to business customers.

DEMAND RESPONSE OFFER

The demand response offer for our buildings is based on an R&D project carried out at our energy technology laboratory (LTE). We establish the power demand profile of a building and develop a catered strategy for reducing its energy demand. We simulate various scenarios with different temperature settings and ventilation strategies to estimate optimal gains.

Following the success of the demonstration project, tested at a bank, a school, two retail stores and two of our administrative buildings, we applied the program to 38 of our administrative centres and service centres. The automated systems implemented have decreased our buildings' power demand by an average of 35% to 50%.

WINNING STRATEGIES

1 BEFORE PEAK

- For six hours, gradually overheat the building by 2°C[a]

2 DURING PEAK

- Shut down ventilation systems in office spaces
- Lower temperature by 2°C[a]

3 AFTER PEAK

- Gradually return to temperature setpoint
- Gradually restart ventilation

a) Compared with the temperature setpoint, which is 22.5°C.

Generation, purchases and choice of energy sources

The remaining demand growth is met by our electricity generation and purchases. In 2016, 80% of the electricity used to meet demand in Québec was generated and 20% was purchased—we purchase hydro, wind, biomass and waste reclamation power. Overall, 99% of the energy delivered to our customers is from renewable sources.

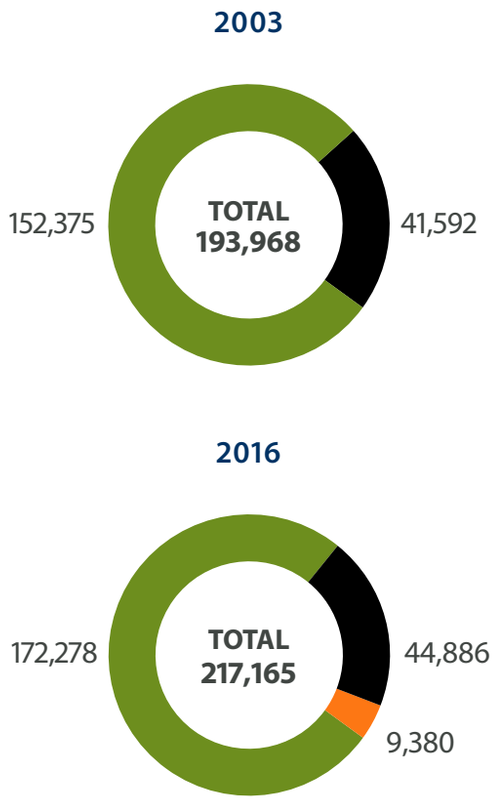
The thermal energy we use is for supplying remote communities located too far from our grid, or for meeting ad hoc power needs. As outlined in our Strategic Plan, we aim to convert off-grid systems to cleaner, less costly energy sources.

LONG-TERM NON-HERITAGE SUPPLY UNDER CONTRACT

ENERGY SOURCE	NUMBER OF CONTRACTS SIGNED ✔	PEAK CAPACITY (MW) ✔	ANNUAL ENERGY GENERATION (TWh) 2017	2026
Biomass	21	338	1.6	2.5
Wind power	38	1,484	10.2	11.3
Cogeneration	1	8	0.1	-
Small hydro	9	122	0.4	0.5
Other sources	3	600	3.1	4.4
Hydro-Québec Production	3	500	0.0	0.2
TOTAL	**75**	**3,053**	**15.3**	**18.8**

⊕ CURRENT AND PLANNED CAPACITY – WIND FARMS AND GENERATING STATIONS COVERED BY SUPPLY CONTRACTS (MW)

MEETING ENERGY NEEDS (GWh)



TOTAL ENERGY GENERATED AND PURCHASED

- Energy generated
- Energy purchased[a]
- Energy savings achieved through energy efficiency initiatives

a) Includes purchases from Churchill Falls (Labrador) Corporation Limited and independent power producers, including McCormick generating station, in which Hydro-Québec holds a 60% interest.

Overall total and sum of subtotals may differ due to rounding.

These figures include renewable energy certificates for the output of Hydro-Québec Production's generating stations (1,071 GWh in 2016) that were sold to third parties. They exclude purchases of wind, hydraulic and biogas energy for which certificates were sold to third parties.

⊕ MEETING ENERGY NEEDS (DETAILS)

HYDROPOWER

We continued work on the Romaine complex, which includes four hydroelectric generating stations. On the site of Romaine-3 generating station, we finished building the dam and concreting the main permanent structures. To date, jobs created by the entire project have reached 1,611 person-years, with workers from Côte-Nord or Innu communities accounting for close to half of the workforce. Yearly investments total $433 million and contracts awarded in the region, $43 million.

Although hydropower makes up the largest share of our energy portfolio, we also rely on other renewables. Through contracts with independent power producers, we not only ensure our supply but support the development of other technologies, such as wind power, biomass and small hydro.

RENEWABLE ENERGY SOURCES

WIND POWER We buy wind power from independent producers and feed it reliably into our grid.

BIOMASS Biomass involves burning residual waste (forest, agrifood and urban biomass) to produce heat and generate electricity. It is a cost-effective option in regions where industrial activities produce a large quantity of organic waste.

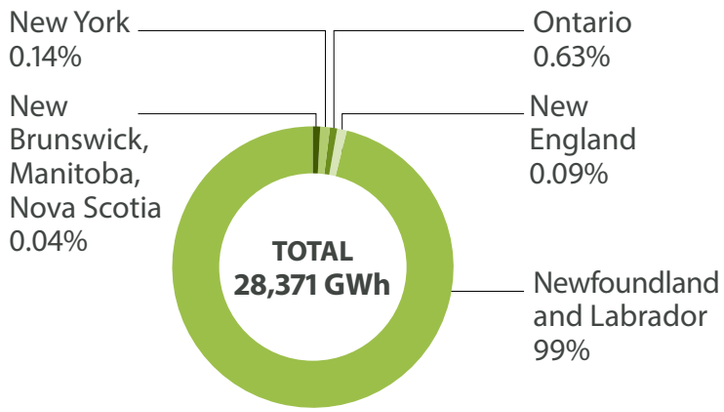
BIOGAS This energy, which we buy from independent producers, is generated from the biogas released during decomposition of organic matter.

SMALL HYDRO We buy power from independent producers operating small hydropower plants.

SELF-GENERATION We buy the surplus power of customers who generate their own electricity using renewable energy sources. Conversely, if they do not generate enough power for their needs, they can draw electricity from the grid and benefit from the reliability of Hydro-Québec's power supply.

GENERATING FLEET (IN OPERATION)

PURCHASES OUTSIDE QUÉBEC – 2016



PURCHASES 2013–2016

HYDROPOWER GENERATION:[a] WORLD LEADERS IN 2015 (TWh)

China	1,126
Brazil	382
Canada, including Hydro-Québec	376 (205/172)
United States	250
Russia	160
Norway	139
India	125
Japan	91
Turkey	67
World	**3,969**

a) Includes electricity generated by pumped storage plants.

Source: *Hydropower Status Report 2016*, International Hydropower Association.

Wind power, a renewable source widely used in Québec.

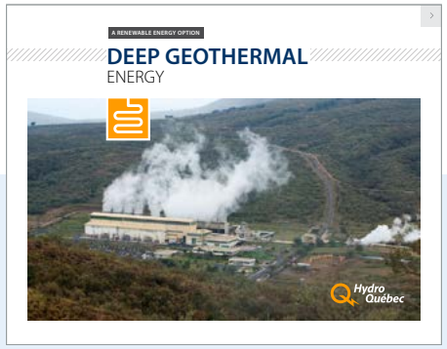
Forest biomass energy, a booming green resource in Québec.

2016 HIGHLIGHTS

- Our supply portfolio contains 75 contracts covering 15 to 25 years and representing over 5,800 MW of power.
- We signed a long-term supply contract to purchase the output of a small hydro plant (16 MW), and we began receiving the output from three wind farms (total of 248.7 MW). ✔
- A first request for proposals (in French only) was issued for power generated from forest biomass to supply the community of Obedjiwan. This is the start of our process to convert off-grid systems to cleaner, less costly energy sources.
- A committee with representatives from the Îles de la Madeleine and Hydro-Québec was formed to establish supply scenarios for the islands and integrate the community's concerns into a request for proposals planned for 2018.

113 TWh
ENERGY AVAILABLE IN 2017–2026

1,650 MW
CAPACITY DEFICIT THROUGH 2026



OTHER RENEWABLES

We published a data sheet on deep geothermal energy, adding to our online series covering osmotic power, hydrokinetic power, photovoltaic solar power, biomass power and small wind power. The sheets discuss the energy source's current status, potential in Canada and Québec, output and costs, main advantages and disadvantages, and sustainability.

EXCLUSIVE WEB CONTENT

- Electricity purchases – Québec market
- Wind power
- Cogeneration plants
- Small hydropower stations
- Self-generation
- Renewable energy sources: current state of knowledge

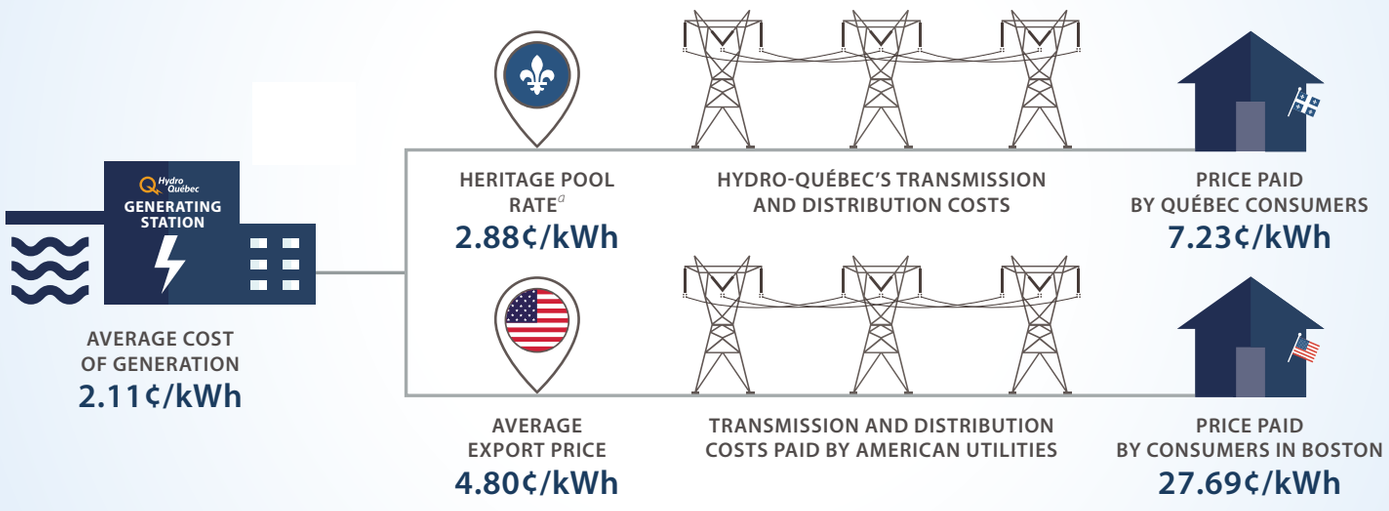
Sales outside Québec

The volume of available electricity anticipated for 2017 to 2026 opens the door to business opportunities and sales to neighboring markets. These transactions are very beneficial, from both environmental and economic standpoints. We intend to make every effort to promote our hydropower to neighboring markets.

2016 HIGHLIGHTS

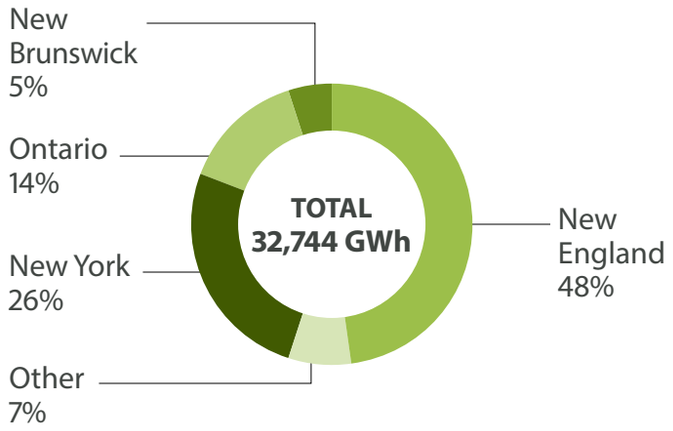
- Electricity sales outside Québec: 32.7 TWh (29.9 TWh in 2015).
- We prepared a response to the request for proposals issued by Massachusetts in 2017 for the purchase of hydropower.
- We are involved in an initiative by the Massachusetts Institute of Technology (MIT), Ouranos and HEC Montréal to model future use of renewables in New England. Our contribution will total $100,000 over two years. ✔

In Québec, residential consumers paid 7.23¢/kWh for electricity in 2016, a rate that includes Hydro-Québec's generation, transmission and distribution costs. In Boston, residential consumers paid 27.69¢/kWh, which includes the electricity purchase price and the transmission and distribution costs paid by American utilities.



a) Average heritage pool rate for all consumer categories.

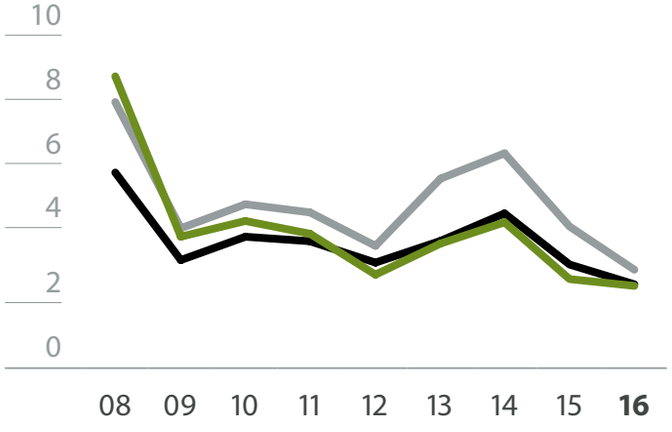
SALES OUTSIDE QUÉBEC – 2016



SALES 2013–2016

TRENDS IN ENERGY PRICES ON HYDRO-QUÉBEC'S EXTERNAL MARKETS

Average price index



- Natural gas: Henry Hub (US$/MMBtu)
- Electricity: New England – ISO-NE, Mass Hub, Day-Ahead Market (US¢/kWh)
- Electricity: New York – NYISO, Zone A, Day-Ahead Market (US¢/kWh)

PROJECT PORTFOLIO 2016

Romaine-3 jobsite.

Romaine Complex

STATUS
Under construction

CONSTRUCTION COST:
$6.5 billion

REGION:
Côte-Nord

CONSTRUCTION:
2009–2020

INSTALLED CAPACITY:
1,550 MW

PLANNED AVERAGE ANNUAL OUTPUT:
8.0 TWh

ECONOMIC SPINOFFS:
$3.5 billion for Québec as a whole, including $1.3 billion for the region

UNIT COST:
6.0¢/kWh
(including transmission system costs)

Project fact sheet
Romaine information bulletin
(in French only)

LOCATE THE PROJECT

PROGRESS IN 2016

Romaine-1 generating station – 270 MW (commissioned: 2015)

- Murailles workcamp closed.
- Contractor work areas and the workcamp site at kilometre 1 were remediated.

Romaine-2 generating station – 640 MW (commissioned: 2014)

- Wood debris was removed from the reservoir.
- Finishing work was completed.

Romaine-3 generating station – 395 MW (commissioning: 2017)

- Dam construction was completed.
- Concreting of the generating station was completed and the intake gates, draft tube, diversion tunnel and spillway were installed.
- Final clearing was completed in the reservoir.
- The rotor was installed on the second generating unit.

Romaine-4 generating station – 245 MW (commissioning: 2020)

- Jobsites were cleared.
- The last section of the access road to the permanent structures was built.
- Excavation got under way for the generating station and diversion tunnel.
- Construction began on the boat ramp downstream from the generating station.

2016 HIGHLIGHTS

- Jobs created: 1,611 person-years (Côte-Nord workers accounted for 48%, Innu workers for 9%). At peak construction, Mista workcamp housed 1,600 workers.
- Annual investments (not including financing): $433 million.
- Contracts awarded in the region: $43 million.
- Funds injected into the region: $143 million in 2015 (most recent data).
- 66 government approvals were received.
- 11 legal non-compliance notices were received. ✔
- Composting at Mista workcamp: over 70 tonnes of organic waste and 30 tonnes of cardboard. The compost will be used for jobsite remediation.
- Over 41 tonnes of recyclables (paper, cardboard, plastic, metal) were sent to the Havre-Saint-Pierre sorting centre.
- Jobsite cleanup and can collection: two tonnes of aluminum were recycled.
- 16,000 m^3 of lumber was recycled as fertilizer (Romaine-1).

PARTNERSHIPS WITH COMMUNITIES

Information about the Romaine project and environmental follow-up results

- The Ekuanitshit technical and environmental committee (CTER) held an open house to inform the Innu community about the environmental follow-up program.
- Three issues of the *Nui uapaten* newsletter, describing construction and operation progress, were distributed to the four Innu communities that signed agreements and to jobsite workers.
- In cooperation with the Ekuanitshit health centre and the CTER, we prepared radio information segments on mercury and fish consumption. They were broadcast on community radio stations in Ekuanitshit, Nutashkuan, Unamen Shipu and Pakuashipi.

EXAMPLES OF ENVIRONMENTAL MANAGEMENT ACTIVITIES IN 2016

Mitigation Measures

Clearing

- The last 650-ha stretch of the Romaine road was cleared, as well as the future Romaine 3 reservoir and the Romaine-4 project site.

Wetlands

- Our plan to offset wetland losses due to project construction was implemented. By 2019, we plan to develop 60 ha of wetlands; about 4.5 ha were created this year.

Lake trout production

- Romaine 1 reservoir was seeded with the first lake trout in spring with nearly 15,000 juvenile lake trout.

Archaeology

- Pollen was collected during archaeological digs at the site of the future Romaine 4 reservoir to document climate changes in the area over the past 7,000 years. Photographs taken by a drone will be used in photogrammetry studies of the environment at the six dig sites.

Medicinal plants

- A report was published on medicinal plants collected in the future Romaine 1 and Romaine 4 reservoirs. Women who work in the Ekuanitshit community pharmacy make and sell remedies. As part of this enhancement measure, they collected 16 species of medicinal plants that were processed and stocked in the pharmacy.

Environmental Follow-up

Atlantic salmon

- A summary was published of lessons learned about salmon in the Romaine area (2009–2014). It provides the main data collected and points to remember when monitoring salmon during operation of the complex.

Social impacts

- We met with the managers of various Ekuanitshit, Nutashkuan, Unamen Shipu and Pakuashipi community services to obtain information about living conditions and social changes in the communities, worker training and the project's social impacts.
- Representatives of various Mingan agencies and businesses (municipalities, health centre, school board, public safety, etc.) were interviewed about the project's social impacts on Mingan residents. We obtained information on various topics and project impacts, such as worker training, employment changes, traffic on highway 138 and commercial, residential and industrial development in Havre-Saint-Pierre and Minganie.

Hunting and fishing

- We monitored the hunting and fishing activities of workers at Murailles and Mista workcamps. Workers caught nearly 1,700 fish and organized 377 fishing trips, mostly on stocked lakes.
- Organization representatives were interviewed on hunting, fishing, trapping, vacationing and boating. The discussions covered land-use problems (presence of other users and workers), access to activity areas and development of vacation activities.

GRI G4-19, G4-24, G4-27

OUR CONTRIBUTION TO CLIMATE STABILIZATION AND ENVIRONMENTAL PROTECTION

Lookout at the Robert-Bourassa hydroelectric development.

Climate instability is a major issue for the global environment. Our exports enable us to avoid more greenhouse gas (GHG) emissions than we generate. We also preserve biodiversity and incorporate environmental management into our business processes.

IN THIS SECTION

STAKEHOLDERS CONCERNED

MATERIALITY ANALYSIS ASPECTS

91%

GHG

REDUCTION OF GHG EMISSIONS SINCE 1990

99%

GENERATION OF CLEAN, RENEWABLE HYDROPOWER

OUR CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS

Climate Change

In 2016, nearly 200 countries ratified the Paris Agreement signed in 2015, signifying their resolve to reduce the global economy's carbon footprint and limit the global average temperature increase to 1.5°C. During the 22nd session of the Conference of Parties to the United Nations Framework Convention on Climate Change (COP22), these nations undertook to develop national plans.

These commitments are significant for the power industry, represented at COP22 by a delegation from the Global Sustainable Electricity Partnership, of which Hydro-Québec is a member. To support the increasingly digital global economy and reduce the cost of certain renewable energy sources, the power industry wants to demonstrate the relevance of using renewable energy to reduce the carbon footprint.

Hydro-Québec, North America's leading producer of clean energy, plans to play a part in this global energy transition by marketing its renewable electricity and technological innovations. The company also wants to promote its technical expertise and know-how in power system operation.

In Québec, the power industry is responsible for less than 1% of GHG emissions. The rate in Canada is 12%. Québec's outstanding performance is partly attributable to the predominance of hydroelectricity in its overall energy balance.

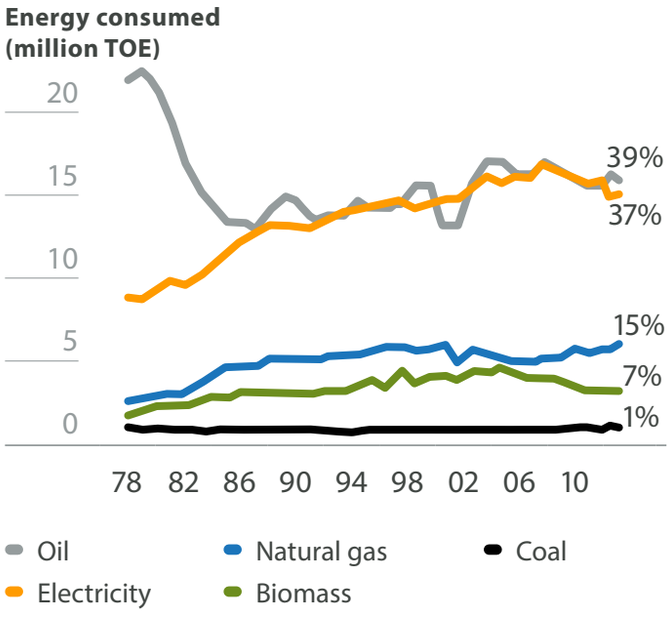
The Québec government's 2030 Energy Policy aims to reduce GHG emissions by 20% by 2020 and by 37.5% by 2030, compared to 1990. This means 10.8 Mt CO_2 eq. less by 2020 and an additional 15.7 Mt CO_2 eq. less between 2020 and 2030. To achieve its objectives, the government plans to improve energy efficiency by 15%, reduce petroleum consumption by 40%, eliminate the use of coal, increase renewable energy generation by 25% and produce 50% more bioenergy.

Under our *Strategic Plan 2016–2020*, we intend to invest $4.3 billion in hydroelectricity generation by adding 1,140 MW of installed capacity, and in transmission to the Plan Nord area. To supply off-grid systems, we want to use cleaner, more cost-effective energy sources.

GLOBAL SUSTAINABLE ELECTRICITY PARTNERSHIP

Hydro-Québec will chair the Global Sustainable Electricity Partnership until May 2017. The theme of the upcoming summit, to be held in Montreal in May 2017, is *Electricity as a Tool for Carbon Footprint Reduction*. During this event, Hydro-Québec will encourage the partnership's members to invest in a CO_2 emissions reduction project in a developing country.

TRENDS IN THE CONSUMPTION OF DIFFERENT FORMS OF ENERGY IN QUÉBEC (1978–2013)

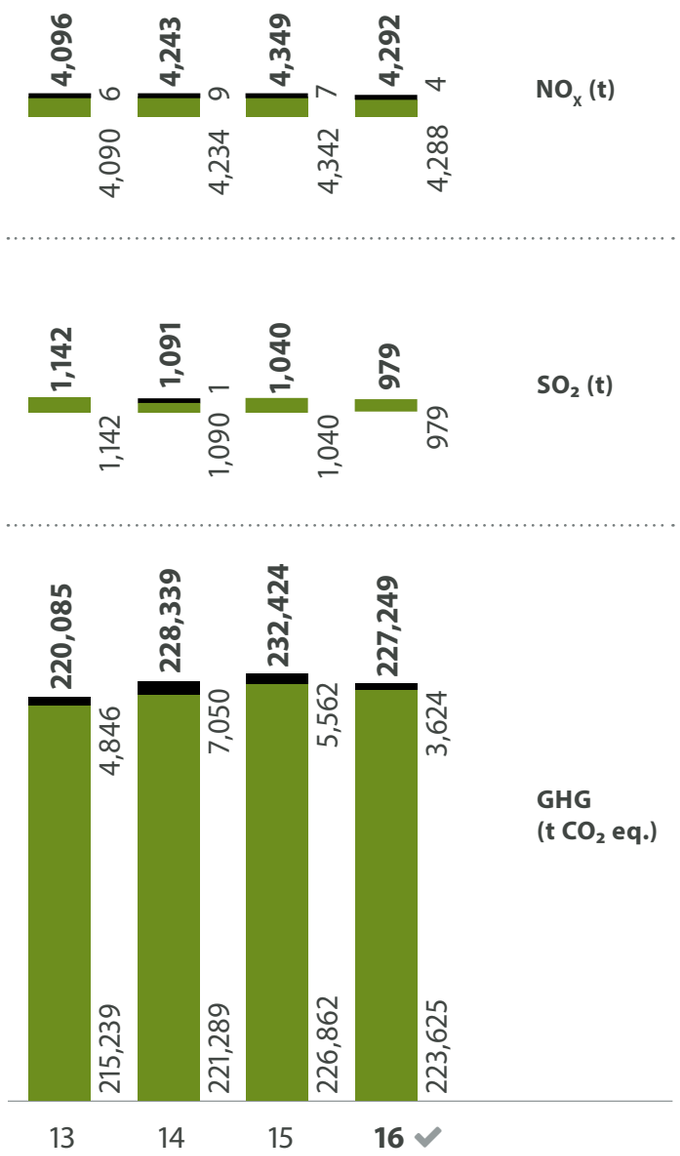


Sources: Ministère de l'Énergie et des Ressources naturelles du Québec and Statistics Canada.

2016 HIGHLIGHTS

- Emissions avoided by net exports of electricity: 7,953,810 t CO_2 eq. (7,373,851 t CO_2 eq. in 2015). ✔
- Atmospheric emissions from electricity generation and purchases in Québec were significantly lower than the average for neighboring Canadian provinces and U.S. states: 360 t CO_2/TWh (569 times less), 3.1 t SO_2/TWh (150 times less) and 7.5 t NO_X/TWh (281 times less). Every year, Hydro-Québec updates a fact sheet, Energy Supplies and Air Emissions, that industrial customers can use to calculate their carbon balance. ✔
- In the fall, an agreement was signed with the Ontario Independent Electricity System Operator (IESO) for 2017–2023. It provides for the sale of 2 TWh per year to Ontario to limit GHG emissions from generating electricity with natural gas.
- In November, a request for proposals was issued in partnership with the local Atikamekw community to supply Obedjiwan with electricity generated from forest biomass. We are seeking an economically viable solution that uses GHG-reduction technology.
- Hydro-Québec's pension plan administrators reviewed all the share portfolios ($9 billion) for their GHG emissions with a view to supporting the fight against global warming. Eventually, the results of this review will be incorporated into the company's responsible investment policy. Most of the plan's external managers have signed the UN Principles for Responsible Investment that were established in 2006.

ATMOSPHERIC EMISSIONS FROM HYDRO-QUÉBEC THERMAL GENERATION OPERATIONS



Most emissions are related to operation of off-grid systems. The main grid is supplied by Bécancour thermal generating station during peak periods only.

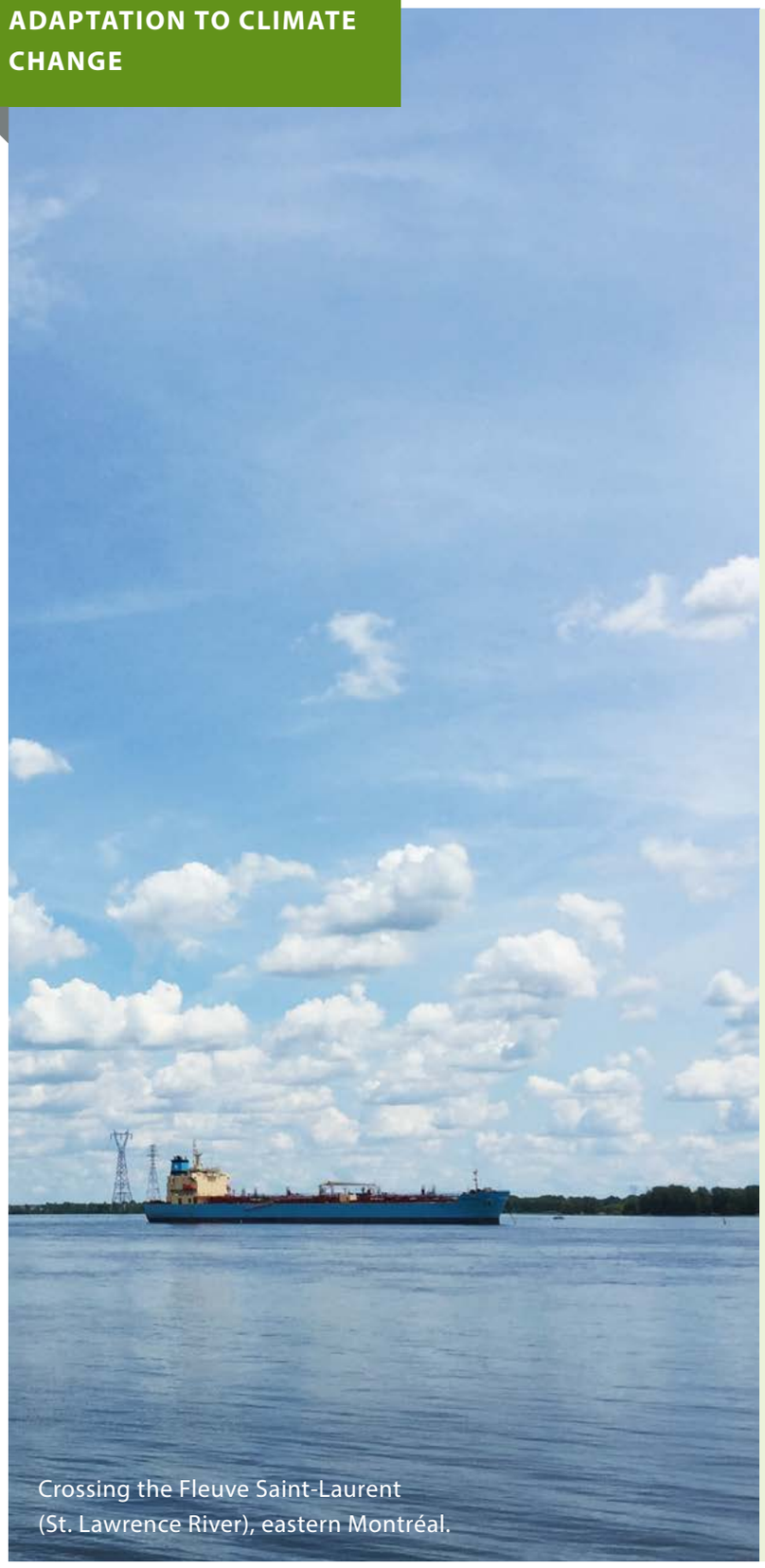
CARBON MARKET

GHG

EMISSIONS AVOIDED BY NET EXPORTS OF ELECTRICITY

MAIN SOURCES OF GHG EMISSIONS IN QUÉBEC, CANADA AND THE WORLD

ADAPTATION TO CLIMATE CHANGE

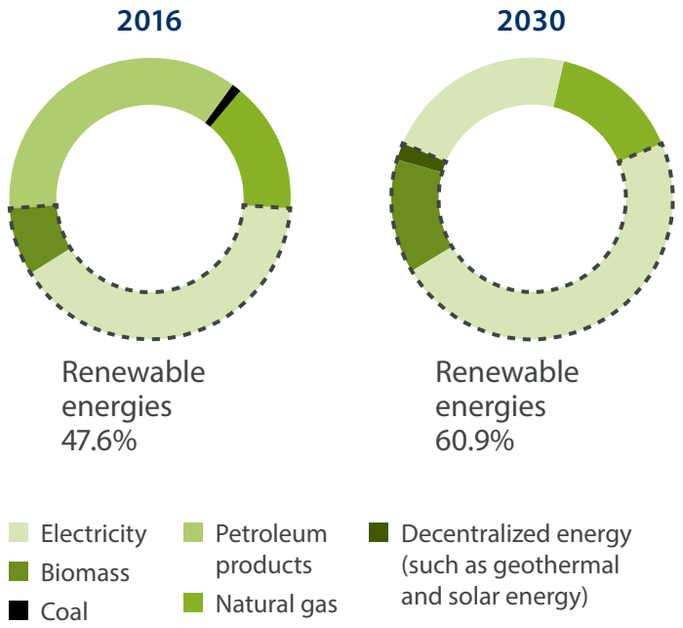


Crossing the Fleuve Saint-Laurent (St. Lawrence River), eastern Montréal.

Launched in 2011 by IREQ, Ouranos, Rio Tinto and the Québec government, the (cQ)2 project is developing hydrological modeling tools and practices for assessing the impacts of climate change on hydraulic regimes. Every two years, IREQ's scientists update the projected hydrological changes in over 200 watersheds. We use the results to adjust water inflow forecasts at our facilities and to manage water-resource systems. Since past observations no longer provide any guarantee of what will happen in the future, we are reviewing the relevance of incorporating this project's climate scenarios into our procedures.

We also contributed to development of a tool to optimize management of the La Grande complex structures. It will be used to assess the long-term impacts of climate change, up to 2100, and to study the effects on management of the complex.

USE OF DIFFERENT FORMS OF ENERGY IN QUÉBEC



Source: 2030 Energy Policy

EXCLUSIVE WEB CONTENT

- GHG emissions and Hydro-Québec electricity
- GHG emissions and reservoirs
- A clean and renewable energy source
- Life cycle assessment
- Effects of climate change on Hydro-Québec operations
- Renewable energy sources: current state of knowledge

GRI G4-22

GHG EMISSIONS FROM HYDRO-QUÉBEC OPERATIONS (t CO_2 eq.)

CATEGORY	OPERATIONS	2016 ✔
Direct sources (scope 1)		
Generating stations	Thermal power plants	227,249
Mobile sources	Vehicle fleet	51,571
	Hydro-Québec aircraft fleet	13,485
	Utility vehicles (e.g., snowmobiles, tractors, snowblowers)	899
	Propane-fueled lift trucks	81
Fuel use	System maintenance generators	4,304
	Emergency and jobsite generators	563
	Building heating	492
Other uses	Equipment containing CF_4 and SF_6	47,200
	Aerosols	468
	Equipment containing HFCs	467
Indirect sources (scope 2)		
Energy losses	Power transmission and distribution system losses	5,113
Indirect sources (scope 3)		
	Electricity purchases	69,167
	Business travel – employee personal vehicles	5,362
	Vehicles leased long-term	907
	Business travel – trains	37
	Business travel – commercial airlines	1,635
	Helicopters	3,288
	Chartered airplanes	5,619
	Life cycle of fuel	54,074
Total emissions		
	Direct sources scope 1	**346,779**
	Indirect sources scope 2	**5,113**
	Indirect sources scope 3	**140,089**
	Direct and indirect sources	**491,981**
EMISSIONS AVOIDED (NET EXPORTS OF ELECTRICITY)		**7,953,810**

GHG emissions from Hydro-Québec operations represent 0.6% of emissions in Québec.

Note: Overall total and sum of subtotals may differ due to rounding.

2013–2016 EMISSIONS

REDUCING GHG EMISSIONS FROM OUR HEAVY-VEHICLE FLEET

A new-generation medium-duty bucket truck.

In 2016, we purchased 21 medium-duty bucket trucks that will gradually become part of our vehicle fleet. These trucks have six wheels instead of the ten on conventional bucket trucks. ✔ Since the new trucks are lighter, they cost 25% less, use 37% less fuel and have lower GHG emissions.

We updated the technical specifications for multipurpose bucket trucks to reduce vehicle weight and purchase cost. Replacing steel with aluminum decreased truck weight by 10% (about 2 tonnes).

Biodiversity

To improve its governance of biodiversity, Hydro-Québec adopted a new corporate strategy and action plan, and committed to public reporting on biodiversity.

Climate change, trade and some of our operations foster the proliferation of invasive animal and plant species and pathogens. Once established, these species can affect biodiversity and damage farms and forests. Our activities related to construction—especially excavation—operations and vegetation control can propagate these harmful species.

2016 HIGHLIGHTS

- We published our second Biodiversity Performance Report.
- We helped to protect 16 endangered wildlife species in Québec, including American shad and forest-dwelling woodland caribou, by participating in the work of six recovery teams coordinated by the Ministère des Forêts, de la Faune et des Parcs.
- We worked with the Ouranos Ecosystems and Biodiversity program committee on seven studies. One study mapped the impacts of climate change on salmonid habitat and another dealt with the changing biodiversity of the Nunavik tundra. (Nord-du-Québec)
- Protected areas in Québec: 155,436 km² (9.33% of the province). Our operations take place on 2,241 km² of protected areas or sensitive environments and on 1,371 km² of adjacent areas (within 500 m of a protected area). On our own initiative or in compliance with current regulations, we adapt our work methods to the constraints in the areas concerned and protect special features of biodiversity.
- We inventoried special-status stream salamanders in most of the streams crossed by the future Québec–New Hampshire interconnection line. We will avoid crossing these waterways by using existing crossings or installing culverts or regulatory temporary bridges. The species in question are the spring salamander (vulnerable) and the northern dusky salamander (likely to be designated threatened or vulnerable).

STUDY OF VEGETATION MANAGEMENT BIOSECURITY

Hydro-Québec has studied the potential impacts of its operations on the propagation of nine harmful species. The bronze birch borer, emerald ash borer, balsam wooly adelgid and crown rot are the most likely to generate economic consequences for us or for other parties. These four species cause 75% of the most significant impacts.

According to the study, the operations most likely to increase the risk of propagation are the processing and transportation of clearing waste, on or away from the sites. We want to conduct a more in-depth analysis of the most hazardous pathogens in certain environments. We also wish to enhance our understanding of the risks and related costs, and develop simple tools that are appropriate for the particular context of our operations.

EXCLUSIVE WEB CONTENT

- Preserving biodiversity in transmission line rights-of-way (in French only)
- *Corporate Strategy on Biodiversity 2015–2020*

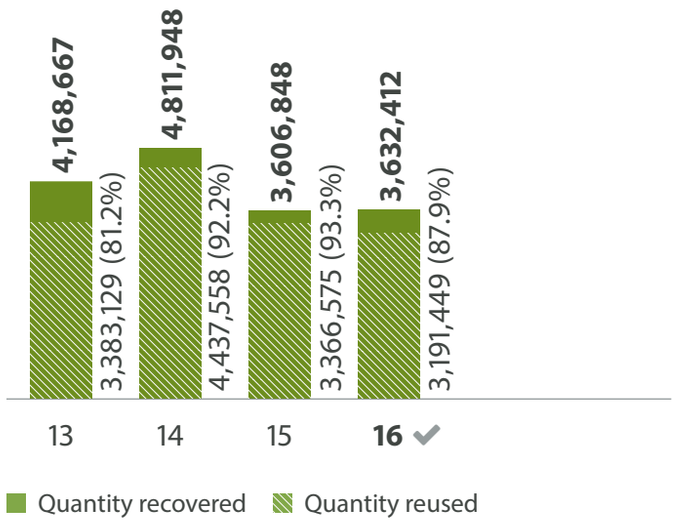
Environmental management and sustainability

Since the late 1990s, ISO 14001–certified environmental management systems have governed all our operations that could have an impact on the environment. In 2016, we worked on adapting our environmental management to ISO 14001:2015. We will soon have one single environmental management system (EMS) that will cover the work done by all employees and replace the current seven systems. The new EMS should be certified by summer 2018.

2016 HIGHLIGHTS

- We saved 18.8 million litres of drinking water under our program for refurbishing administrative buildings: this volume would fill eight Olympic-size swimming pools. Recurring annual savings since 2007 total 277 million litres.
- Gold-level Clé Verte (Green Wrench) environmental certificates were awarded to the vehicle repair shops in Rimouski, Saint-Jérôme and Montréal-Ouest, and the Beauport, Chicoutimi, Granby and Mont-Laurier repair shops earned Platinum-level (the highest level) renewal certificates. ✔

RECOVERY AND REUSE OF INSULATING OIL (litres)



Recovered oil sufficed for all the company's requirements. Oil is decontaminated and regenerated for reuse in equipment. Oil that cannot be regenerated is reclaimed as energy. The reuse percentage dropped in 2016 because fewer transformers were in operation.

EXCLUSIVE WEB CONTENT

- Declarations of ISO 14001 environmental principles
- Contaminated sites and spills
- Waste and hazardous materials management

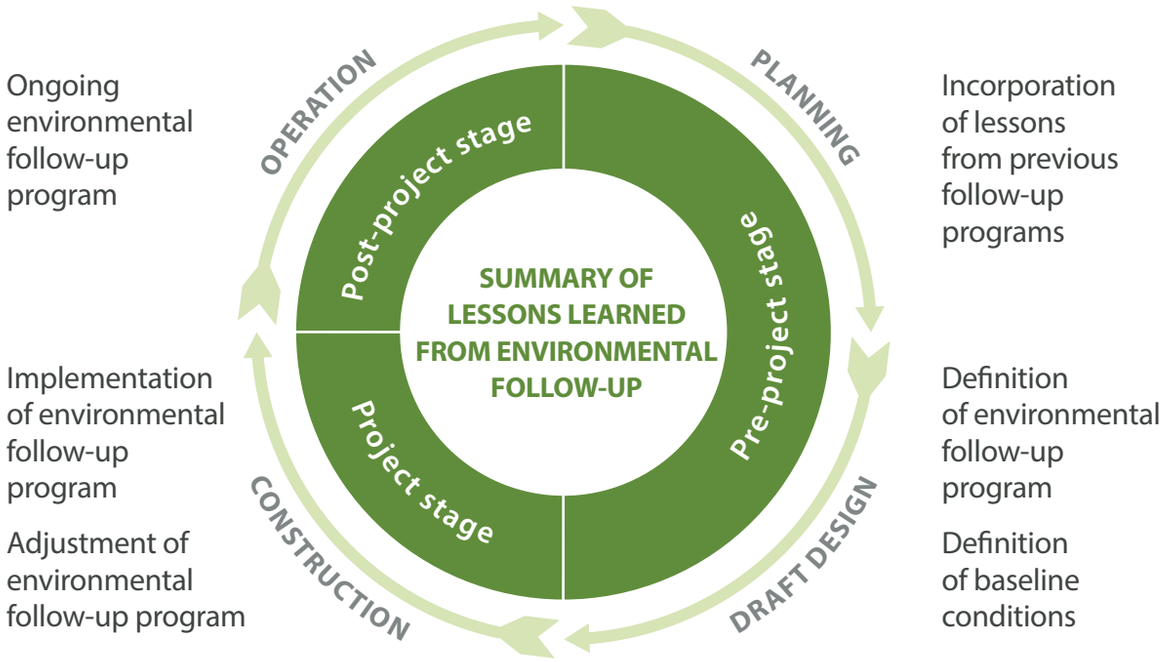
SOIL REHABILITATION AT THE CAP-AUX-MEULES DOCK

Ever since a spill occurred at the Cap-aux-Meules dock in September 2014, Hydro-Québec has been remediating the soil there. The situation has caused some inconvenience and a user committee set up the following year met four times in 2016 to find ways to minimize the impact of the clean-up on business operations and tourism.

We recovered nearly 70% of the hydrocarbons, mainly from the water's surface. The remaining 30% was stuck to the dock structure and required in-situ use of other decontamination techniques. We considered the site configuration, existing infrastructure, operations at the site, proximity to the water and the impact of tides. The chosen methods included a vacuum-extraction technique called bioslurping, vapor extraction, thermal treatment, chemical oxidation and aerobic biodegradation. The work will be completed in December 2017. In all, we bored more than 400 wells in the dock to recover the contaminants in the soil.

VIDEO ON SOIL REMEDIATION (IN FRENCH ONLY)

FOLLOW-UP ON PROJECTS IN OPERATION



DURATION OF ENVIRONMENTAL FOLLOW-UPS

DEVELOPMENT	REGION	COMMISSIONED	END OF FOLLOW-UP	DURATION OF FOLLOW-UP[a] (years)
Romaine-1	Côte-Nord	2015	2040	31
Romaine-2	Côte-Nord	2014	2040	31
Sainte-Marguerite-3	Côte-Nord	2003	2017	19
Partial diversion of the Rivière Manouane	Saguenay–Lac-Saint-Jean	2003	2016	17
Chute-Allard	Mauricie	2008–2009	2019	13
Rapides-des-Cœurs	Mauricie	2008–2009	2019	13
Eastmain-Sarcelle-Rupert	Nord-du-Québec	2011–2012	2023	16

a) Environmental follow-up may begin as soon as the project is launched.

2016 HIGHLIGHTS

› The 10-year environmental follow-up during the Mercier generating station operation phase ended. The results showed that the spawning ground developed for walleye and various whitefish species is fully functional under the planned flow conditions. Even though the water now warms up more slowly in early summer than before construction, generating station operation has no noteworthy effect on walleye spawning or on aquatic wildlife in general. There is also no impact on fall-spawning species like lake whitefish and lake cisco.

SPAWNING GROUND DEVELOPMENT AND FISH PROTECTION

Spawning grounds are breeding sites for fish. Spawning ground development helps preserve the fish species present in construction areas.

ROMAINE COMPLEX (CÔTE-NORD)

› 2015 was the first full year of Atlantic salmon monitoring after hydraulic conditions were modified in the Rivière Romaine. The follow-up showed that the downstream drift of smolts occurred later in the Romaine than in its tributary,

FOLLOW-UP ON PROJECTS IN OPERATION

the Puyjalon. The colder spring water temperature explains this phenomenon, which was anticipated in the impact study. Furthermore, salmon spawning in the Romaine occurred at the end of October, the same as in 2010, despite a slightly higher water temperature than before. The photoperiod may be partly responsible for this. In the Romaine, one-third of the nests counted were in the developed spawning grounds. This was the highest number of nests observed since the annual follow-up began in 2010.

MERCURY

Reservoir creation alters the aquatic environment by converting and circulating the mercury already present in the flooded vegetation and soil. The result is an initial increase in fish mercury levels, which then return to baseline levels in 10 to 35 years.

LAC-ROBERTSON GENERATING STATION (CÔTE-NORD)

› Twenty years after Robertson reservoir was impounded, fish mercury levels are declining, but the return to normal will be later than anticipated.

WILDLIFE ENHANCEMENT AND BIRDS

This follow-up provides information on animal population dynamics and how habitats function. It is used to measure changes in population density and composition.

PÉRIBONKA DEVELOPMENT (SAGUENAY)

› The abundance of breeding pairs at the reservoir has reached the levels recorded prior to impoundment. Some populations, like common goldeneye, are increasing, while others, including the common loon, are declining. Some species apparently no longer use the area, specifically the green-winged teal and ring-necked duck. These species were not abundant in the area before impoundment of the reservoir.

EASTMAIN-SARCELLE-RUPERT COMPLEX (NORD-DU-QUÉBEC)

› A total of 120 beaver colonies were observed in the Rupert diversion bay area. From 2002 to 2014, the number of colonies did not decrease much despite impoundment of the diversion bays and the intensive trapping program, possibly reflecting the beaver's ability to adapt to change. A total of 59 colonies were counted in the reduced-flow stretch of the Rupert, a decrease of 2% since 2002.

HUMAN ENVIRONMENT

Combined with information and consultation activities, studies of the human environment (land use, social impacts, economic spinoffs, navigation, etc.) help Hydro-Québec understand the concerns of host communities, determine how to manage issues, what the impacts will be and the mitigation measures required, and assess the measures' effectiveness.

EASTMAIN-SARCELLE-RUPERT COMPLEX (NORD-DU-QUÉBEC)

› According to the follow-up on navigation conditions, almost the entire reduced-flow stretch of the Rivière Rupert is navigable. Cree users in Mistissini and Nemaska reported that navigation conditions in the Rupert diversion bays appear to be adequate.

GRI G4-19, G4-24, G4-27

AN ACTIVE PRESENCE IN THE COMMUNITY

Transmission line between Verchères and Contrecœur in Montérégie: harmonious coexistence between users.

In addition to our customers, we deal with suppliers, business partners, municipal representatives, property owners and farmers affected by our operations, community organizations and consumer groups, people with whom we share use of land and organizations that want to use our facilities for recreation or tourism.

IN THIS SECTION

- Social acceptability
- Public participation
- Land use
- Aboriginal nations
- Water body management
- Mitigation of risks and nuisances
- Public and consumer health and safety

STAKEHOLDERS CONCERNED

MATERIALITY ANALYSIS ASPECTS

100

NUMBER OF PROJECTS WITH A PUBLIC PARTICIPATION PROCESS

4,400

NUMBER OF REQUESTS FROM COMMUNITY REPRESENTATIVES ✔

OUR CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS

SUSTAINABILITY IS OUR REALITY

JOINT MANAGEMENT WITH THE COMMUNITY

The Rivière Saint-Maurice is where Québec's hydropower industry began. At the end of the 19th century, a first generating station was built in Shawinigan. Today, we operate 11 generating stations in the Saint-Maurice watershed. Experts in various fields occasionally work together to harmonize electricity generation with ecosystem requirements and local communities' expectations.

Rémi Robbe, Engineer – Generation Planning "I am responsible for optimizing power generation at all the Saint-Maurice generating stations. This involves dealing with multiple constraints. First there is the amount of electricity required by the system, then the water inflow that varies seasonally and yearly. Inevitably, maintenance obliges us to shut down some generating units for variable lengths of time. My community relations and environment colleagues tell me about other needs. This information shows me the scope and impact of our operations on riverside communities."

Élizabeth Gladu, Advisor – Community Relation "In addition to driving the local economy, the Saint-Maurice is a place to live. My job is to maintain ongoing, consistent, proactive relations with communities and reconcile multiple, often complex interests. My generation planning and environment colleagues and I determine what the company and the community need, and we find solutions that will satisfy everyone's expectations. While meeting our obligations and dealing with our operating constraints, we were able to respond positively to the community that wanted to promote boating on summer weekends. For this purpose, we tested the instream flow in the Saint-Maurice."

Stéphanie Eveno, Advisor – Environment "Over the years, environmental studies have clearly established the environmental impacts of operating hydropower plants and recommended the adoption of mitigation and compensation measures. I am responsible for continuously monitoring these measures to make sure they are effective. My colleague Rémi informs me of the rules and operating requirements, which helps me understand the site's constraints. Élizabeth's input gives me an integrated vision of this environment."

Interacting with communities

Throughout Québec, from the smallest village to the most densely populated city neighborhood, our Community Relations teams connect with communities to learn about their expectations and concerns. Every region, community and group has its own concerns and expectations. We try to adapt to them by finding win-win solutions to coexistence issues or by developing mutually profitable partnerships.

For example, our power generation operations are often located in areas where Aboriginal nations are located. We have cultivated special relationships with these communities that have given rise to partnerships that benefit all parties.

2016 HIGHLIGHTS

- An information and discussion forum toured the Centre-du-Québec and Mauricie regions to discuss the main local concerns with municipal representatives: emergency measures, hook-up lead times, duplicate poles, undergrounding and customer services.
- An issue table on the future of energy in Îles de la Madeleine was created as off-grid systems convert to cleaner, less expensive energy sources. Community and Hydro-Québec representatives are studying realistic scenarios for the islands based on four criteria: cost, environment, reliability and the community. The upcoming request for proposals in 2018 will take community concerns into account, particularly employment.
- We participated in meetings of the city of Québec's resilience committee, set up to strengthen the ability of the city and its partners to deal with unusual situations.
- Information sessions with Abitibi-Témiscamingue regional county municipalities (MRCs) discussed how to do business with Hydro-Québec, emergency communications, processing of requests to move or extend the system, street lighting, corporate programs, vegetation control, etc.

PARTNERSHIP WITH THE CHARLEVOIX RAILWAY

Initially, we needed to dismantle one of our distribution lines in winter after snow became compacted on the railway track near Sainte-Anne-de-Beaupré. Locals told us that Chemin de fer Charlevoix would agree to help by lending us railway equipment. As a result of this partnership, locomotive engineers and patrols were mobilized earlier in the spring. The use of a locomotive crane and railbound loader made our work much easier and the patrols, traveling on rail trucks, made sure the rail line was safe.

Tower sections from a dismantled distribution line are transported in cooperation with Chemin de fer Charlevoix.

Social acceptability and public participation

Every year, we present about one hundred transmission and generation projects to local communities throughout Québec. We want to build these projects while maintaining the best possible balance between the three aspects of sustainability: respect for the environment, social acceptability and profitability. Social acceptability of our projects and operations is a very important aspect of our daily work. When we consider the host community's concerns and opinions, we can adapt our projects to take them into account.

2016 HIGHLIGHTS

- During construction of the 315-kV Baie-Saint-Paul substation, the jobsite was toured by journalists and municipal and MRC representatives. In October, open house events for the new substation's inauguration were attended by 200 citizens. (Capitale-Nationale)
- Construction of the 230/25 kV Mékinac substation and its tap lines will begin in spring 2018. The solution selected was presented to representatives of Saint-Tite, the MRC of Mékinac and the Mauricie-region UPA, as well as the property owners affected. We also distributed an information bulletin to the interested parties. (Mauricie)
- Neighborhood residents around the new 120/25 kV Saint-Jérôme substation attended open house events. Over 40 people toured the facility, accompanied by Hydro-Québec specialists. (Laurentides)

EXCLUSIVE WEB CONTENT

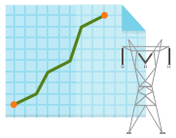
- Public participation in a power transmission project
- Public participation in a major project
- Construction projects – Transmission
- Romaine complex project

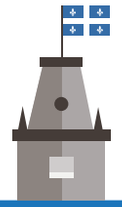
PUBLIC PARTICIPATION: A SUSTAINED COMMITMENT

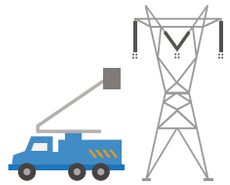
Hydro-Québec was one of the main sponsors of the North American conference of the International Association for Public Participation held in Montréal in September. The conference theme was *Who Cares about Public Participation?*

For over 25 years, our public participation specialists have supported our project teams by conducting necessary activities to optimize our projects' social acceptability. By cultivating community approval, we meet one of the objectives of sustainability.

PUBLIC PARTICIPATION PROCESS

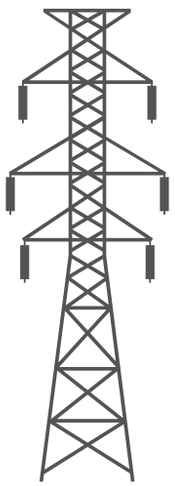






	Planning	Draft design	Government approvals (permitting)	Construction	Operation/Report
Duration	**1 to 2 years**	**2 to 5 years**	**1 to 2 years**	**2 to 12 years – Generation** **1 to 5 years – Transmission**	**Variable – up to 30 years**
Description	Determine requirements and develop scenarios	Define: technical content, variant, route, constraints, permits required, impacts on the environment and communities, etc.	Obtain government approvals	Begin work	Conduct environmental and agreement follow-ups
Public Participation	Determine what the issues are and contact local authorities and organizations	Meet with communities, provide information and consult the various stakeholders	Hold public hearings (if necessary) and continue discussions	Track work progress and maintain good public relations	Respect commitments and follow through on agreements

EXAMPLES OF PUBLIC PARTICIPATION – 2016



120-kV Langlois–Vaudreuil-Soulanges line (Montérégie)

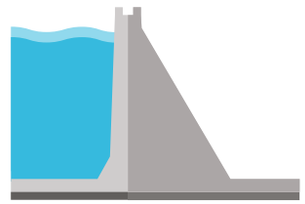
735-kV Micoua-Saguenay line (Saguenay–Lac-Saint-Jean)

Reconstruction of the 120-kV Arthabaska–Bois-Francs lines (Centre-du-Québec)

120-kV Grand-Brûlé–Saint-Sauveur supply line (Laurentides)

Dismantling of a distribution line in the city of Québec (Capitale-Nationale)

Québec–New Hampshire interconnection (Estrie)



Dike repairs at Les Cèdres generating station (Montérégie)

Land Use

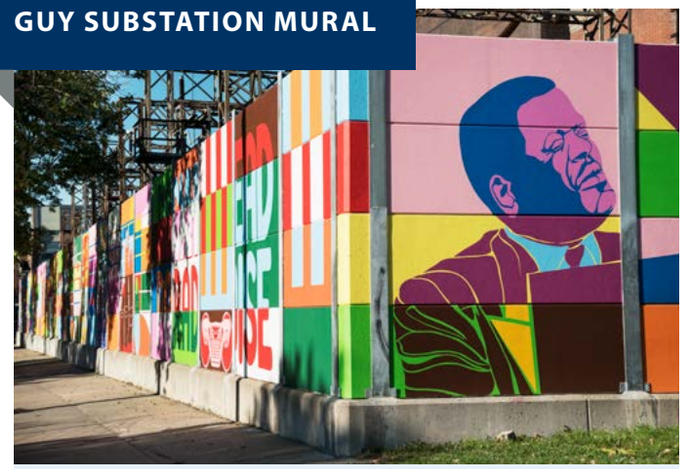
Power grids are an integral part of land use and development. We therefore collaborate in various land-use planning initiatives: urban plans, development plans, master plans for water, public land-use plans. Since we also operate many reservoirs, dams and control structures, we endeavor to preserve water-body quality and share the use of these resources.

Our land-use activities mainly involve refurbishing and demolishing facilities, and site rehabilitation. This work also entails preparing environmental notices related to third-party use of properties, property assignment or property rights. In addition, we are asked to assess MRC development plans to ensure that they comply with government land-use policies.

2016 HIGHLIGHTS

- Land adjacent to Chisasibi village (Baie-James) was remediated and will eventually be classified as Category I land, meaning that it is for the exclusive use of that community. This site was used to receive equipment by boat and as a fuel depot during phase I construction of the La Grande complex. Final redevelopment to meet community needs and those of the tallyman concerned should be completed in 2020. Work is on schedule and 18 Cree workers have participated. (Nord-du-Québec)
- A graffiti-resistant coating was applied to six tubular towers along the Canal de l'Aqueduc in the Montréal borough of Verdun. We plan to sign an agreement with the borough to collaborate on a strategy for dealing with the graffiti problem. (Montréal)
- The *Landscaping and Recreational Facilities in a Hydro-Québec Transmission Line Right-of-Way* guide was published for project proponents (citizens, organizations and municipalities). It explains the limitations and multiuse potential of power line rights-of-way and includes basic information about the transmission system with a list of procedures to follow before starting development projects.

GUY SUBSTATION MURAL



Beautification of an urban industrial site.

For many years, citizens have complained about recurring graffiti on the walls surrounding Guy substation in downtown Montréal. Graffiti has had to be removed on a regular basis. To solve the problem sustainably, we asked MU, a local non-profit organization, to produce a 420-m² mural.

A jury of representatives from Hydro-Québec and Montréal's Sud-Ouest borough chose Roadsworth, an urban art specialist, to produce artwork that highlights key events and pays tribute to the rich diversity of the Little Burgundy neighborhood. The public was invited to a day of participatory painting and over 200 people helped to create the mural. Public participation will continue in 2017 with urban artwork on Hydro-Québec equipment and landscaping at the foot of the mural.

VIDEO

Public and consumer health and safety

We monitor our facilities and manage our operations with a view to reducing risks and nuisances. We are responsible for making sure that the public is safe, especially near our electric and hydraulic facilities. To achieve this, we maintain secure access to our facilities and inform the public about the hazards of electricity use, through awareness campaigns and other means.

We also study the potential human health hazards inherent in our operations and take steps to mitigate them. For example, we know that reservoir impoundment temporarily increases fish mercury levels, but they return to normal after 10 to 35 years, depending on the fish species and the type of reservoir. This phenomenon has been closely monitored for many years and fish consumption recommendations are issued as needed.

We also know that noise emitted by our operations or facilities can be a nuisance and we endeavor to mitigate it, especially in residential areas. Quieter equipment is used during construction or refurbishment of facilities. If at-source reduction is not sufficient, we use noise reduction measures wherever possible.

ELECTRICAL ACCIDENTS – 2016

	INCIDENTS ✓	DEATHS ✓
Public – Hydro-Québec facilities	13	0
Public – use of electricity	1	1
Skilled workers – Hydro-Québec facilities	41	2
Skilled workers – use of electricity	9	0
Hydro-Québec employees	176	0
TOTAL	**240**	**3**

⊕ NOTES FOR TABLE

2016 HIGHLIGHTS

- We intensified our social media presence ⊕ to educate the public about the safe use of electricity.
- Employees and suppliers were made aware of the importance of always using safe behavior and reporting any incident or situation that could be hazardous to personal safety or the company's assets. The dedicated toll-free number for reporting such risks can be accessed 24/7 so that anyone can report an incident quickly. Number of calls received in 2016: 2,875 ✓ (2,951 in 2015).
- Noise studies were conducted at more than 40 substations to determine their acoustic fingerprint. The results will be used to identify noise-related anthropogenic-constraint zones and include them in development plans.
- A noise-barrier cover was installed on one of the two transformers at Beaupré substation. The transformers are the only sources of noise at the facility. A preliminary assessment indicated that noise should decrease by more than 16 dBA. (Capitale-Nationale)

⊕ HYDRO-QUÉBEC OPERATIONS AND HUMAN HEALTH

Aboriginal nations

Eleven Aboriginal nations live in 55 communities throughout Québec, north and south; each has its own culture and lifestyle. Many Indigenous communities are located in areas with high hydroelectric potential. We endeavor to develop mutually beneficial partnerships with these communities and call upon their knowledge of the natural environment when conducting environmental inventories and implementing mitigation measures.

2016 HIGHLIGHTS

- An agreement was signed with Wejuse, a Mi'gmaq company, to dismantle a 3.7-km section of a transmission line crossing through the village of Listuguj. This work was part of a project to dismantle 50 km between Nouvelle and Cascapédia substations. The agreement provided for the hiring of Wejuse, appointed by the Government of the Listuguj Mi'gmaq First Nation, and of Électro Saguenay to train the Mi'gmaq workers. The work was done in March and April 2016. (Gaspésie–Îles-de-la-Madeleine)
- At the Romaine jobsite, many traditional and cultural activities were held in the *shaputuan* at Mista workcamp. Many workers participate in these events on a regular basis.
- 122 employees ✔ participated in a one-day training program about Aboriginal nations and communities, and Hydro-Québec's business relations with them. The training was given twice at Mista workcamp at the Romaine complex.

EXCLUSIVE WEB CONTENT

- Information on electric and magnetic fields
- Brochure *The Power System and Health – Electric and Magnetic Fields*
- Hydro-Québec and the mercury issue
- Safety near power lines
- Safety near hydropower facilities
- Power line undergrounding program (In French only)
- Landscape and versatility of our facilities
- Archaeology and heritage

100TH MEETING OF THE CREE–HYDRO-QUÉBEC MONITORING COMMITTEE

The Cree–Hydro-Québec Monitoring Committee held its 100th meeting on March 23 in Mistissini, Baie-James. Set up in 2007, this committee ensures that Crees participate in the Eastmain-Sarcelle-Rupert Environmental Follow-up Program. It meets about eight times a year to collect land users' concerns and inform the communities affected by construction of the complex: Chisasibi, Eastmain, Mistissini, Nemaska, Waskaganish and Wemindji.

WATCH THE VIDEO
CREE–HYDRO-QUÉBEC MONITORING COMMITTEE: WORKING TOGETHER.

APATISIIWIN AGREEMENT

As of the end of 2016, 88 Cree employees ✔ were part of our workforce, a record since the *Apatisiiwin Agreement* took effect. The agreement will terminate in June 2017.

GRI G4-19, G4-24, G4-27

OUR COMMITMENT TO TECHNOLOGICAL INNOVATION AND TRANSPORTATION ELECTRIFICATION

Drone developed by IREQ to inspect transmission lines.

More than ever, innovation spearheads the company's development and profitability. Whether involving extra-high-voltage power transmission, which we were the first to develop 50 years ago, energy storage and conversion, or transportation electrification, our innovations have earned us a leading role in the world's energy transition.

IN THIS SECTION

- R&D
- Transportation electrification
- Partnerships with companies and research chairs

STAKEHOLDERS CONCERNED

MATERIALITY ANALYSIS ASPECTS

794

NUMBER OF CHARGING STATIONS IN THE ELECTRIC CIRCUIT ✔

1,156

NUMBER OF PATENTS HELD OR PENDING

OUR CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS

Research and development

Globally, the power industry is confirming its ability to find solutions to combat climate change. This energy transition relies heavily on technological innovation, especially in energy efficiency, smart system management, and optimization of energy use. In addition to integrating renewable energy sources, making room for decentralized generation and using large-scale energy storage, the industry must learn to maximize the use of big data to make power system management more reliable and flexible.

According to Re$earch Infosource, Hydro-Québec is the top Canadian power utility for R&D spending. With an annual budget of $134 million, ✔ IREQ—the company's world-class research centre—develops state-of-the-art technology in multiple fields related to power systems and renewable energy. After determining which of its innovation avenues will be essential to the company's performance over the next decade, in 2016 IREQ launched four pilot programs in the following fields of innovation: advanced algorithmics for power system optimization; digital simulation of equipment and facilities; equipment diagnostics and prognostics; and grid-interactive technologies for customer empowerment.

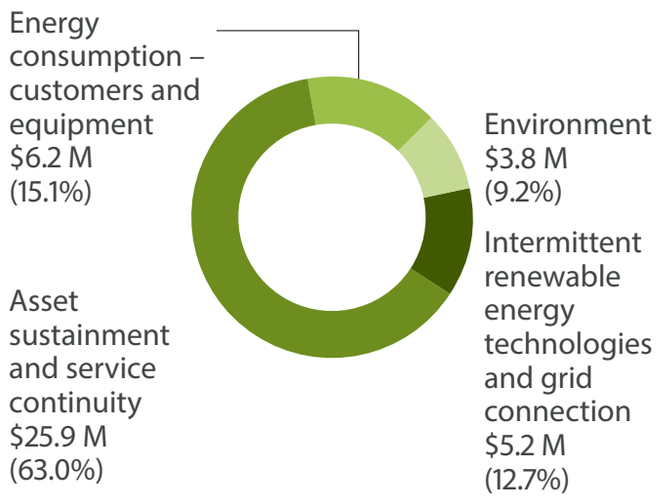
2016 HIGHLIGHTS

- A drone equipped with a sensor was developed to perform detailed inspections of transmission and distribution lines. The probe detects the first signs of conductor corrosion: the condition of the galvanized coating is analyzed to detect gradual zinc loss, which causes premature aging of conductors. In addition to avoiding GHG emissions, this technology saves time and money.
- A grid instability detection system was installed at Copper Mountain substation in Gaspésie. The system detects imminent power grid instability and triggers stabilizing action to maintain service continuity and equipment safety. This innovation was required by the integration of wind power totaling 2,500 MW. (Gaspésie–Îles-de-la-Madeleine)

HIGH-GROWTH INNOVATIONS

- A large-scale energy storage system for power grids is being tested by Esstalion Technologies, a joint venture of Sony and Hydro-Québec.
- Robotic maintenance and inspection of power grids: our subsidiary, MIR Innovation, is marketing our new technologies.
- High-performance tensile steel will be used to build next-generation transformers that are less expensive and more efficient.

BREAKDOWN OF IREQ INNOVATION EFFORTS RELATED TO SUSTAINABILITY[a] – 2016 ✔



a) Excludes investments in energy storage and conversion.

EXAMPLES OF SUSTAINABILITY-RELATED INNOVATION PROJECTS – 2016

CATEGORY	ACHIEVEMENTS OR WORK IN PROGRESS
Environment	› Two ultrasound guidance systems were installed to channel migrating American shad away from Rivière-des-Prairies generating station in an endeavor to reduce fish mortality and limit the impact of the fish's presence on generation management. One system installed on the upstream side of the station diverts the shad toward the spillway to keep them out of the turbines; another, installed much further upstream at Île Bizard, guides them to Lac Saint-Louis or the Rivière des Mille Îles. This technological innovation involved research in biology, acoustics, electronics and other fields. ($509,000) ✔
Asset sustainment and service continuity	› The MILE intelligent power line maintenance project continued to support preventive and condition-based maintenance of distribution lines so repairs can prevent power outages. Aging equipment and extreme weather often lead to outages and increase maintenance requirements. This technology is being used on 28 distribution lines and informs us of the location and cause of brief interruptions or recurring outages of unknown origin. The cause may be invasive vegetation, defective insulators, or conductor gallop. In November 2016, we solved a conductor gallop problem that triggered 31 service interruptions, and many complaints, in one month. We chose CGI and CIMA+ to market the technology, which is also being tested by Newfoundland Power and Fortis Alberta. ($715,000) ✔
Energy consumption – customers and equipment	› A special offer was launched for medium-power industrial customers to secure their help in dealing with growing power demand. After assessing the potential of some customers and auditing others, we determined the best demand response measures. We also checked the relevance of tools developed by the Laboratoire des technologies de l'énergie to help customers understand their usage. ($428,000) ✔

Installation of the MILE intelligent power-line maintenance system on a distribution line in the Laurentides region.

EXCLUSIVE WEB CONTENT

- Technological innovation
- University chair endowments
- List of our patents
- Learn about our innovations

Developing partnerships

We support Québec universities by establishing partnerships with them and awarding them research contracts. In addition, we fund university research chairs, most of which also receive financial support from the National Sciences and Engineering Research Council of Canada. As a founding member of Ouranos, we contribute to the consortium's work in regional climatology and adaptation to climate change.

One of our energy efficiency programs, the Technology and Business Demonstration project, is designed to support initiatives that confirm the technical and commercial applicability of innovative energy-saving or power-demand-optimization measures.

2016 HIGHLIGHTS

- The NSERC/Hydro-Québec Industrial Research Chair in Phytotechnology was established at the Université de Montréal. Objective: develop and optimize phytotechnological approaches in two areas, phytoremediation of soil or contaminated water, and restoration of plant cover to prevent invasion by undesirable plants (trees and shrubs in rights-of-way or invasive alien plant species).
- The mandate of the NSERC/Hydro-Québec Industrial Research Chair on Control of Tree Growth at the Université du Québec à Montréal was renewed. Objective: develop an integrated urban management approach to trees near Hydro-Québec infrastructure to facilitate adaptation to climate change.
- Esstalion Technologies developed a large-scale energy storage system that can store 2.4 MWh, twice as much as the previous generation of batteries. In 2017, IREQ will test a prototype that will then be connected to a feeder line at Hemmingford substation in Montérégie.
- IREQ and ENERCON Canada signed a partnership agreement to study the quality and reliability of wind power integration with the power grid, allying Hydro-Québec's know-how in grid simulation and operation with ENERCON's expertise in energy converters. When completed, this research should enhance the ancillary services, like voltage and frequency regulation, that wind generation can bring to the system.
- A partnership agreement on street lighting was signed with Shawinigan. This technology and business demonstration project will focus on remote control of over 6,000 LED streetlights in the city. We hope to show that this technology is profitable so that other municipalities take advantage of it.
- A partnership agreement with Écohabitation, Sotramont (a home builder) and Gaz Métro will assess the relevance of building new homes with dual energy. Under this agreement, Gaz Métro agreed to modify its customer services agreement conditions. If the results are conclusive, other developers could offer low-energy-cost houses.
- A partnership agreement with ASE Énergie aims to demonstrate the energy-savings and demand-management potential of remote-controlled line-voltage thermostats (baseboard heaters). The market for communicating thermostats is changing and we hope to determine the potential for reducing power demand.

CONTRIBUTIONS, COMMITMENTS, RESEARCH CHAIR FUNDING AND RESEARCH CONTRACTS

Transportation electrification

In Québec, transportation is the principal source of GHG emissions, the main cause of climate change. This sector's share, currently 42%, has risen 21% since 1990, while emissions from other sectors have dropped 24%. Transportation is also responsible for air pollution in cities and emits many types of unhealthy contaminants.

Through our efforts to innovate and to mobilize stakeholders, we play an active role in the fight against climate change, especially by promoting transportation electrification, which is a Québec government priority.

To support our efforts, IREQ is developing new battery materials with three objectives: increase safety, improve performance and reduce costs. Our scientists are also experimenting with vehicle-to-grid and vehicle-to-home energy exchanges. IREQ partners with some of the industry's leading players, including Sony (Japan), Arkema (France), BASF (Germany) and the U.S. Department of Energy. To date, IREQ has granted 30 active licences and acquired 848 patents related to energy storage and conversion.

2016 HIGHLIGHTS

- Research on electrolytes and batteries got under way at a laboratory jointly run by Hydro-Québec subsidiary SCE France and Arkema at Chemstart'up, a business service centre for chemical companies in Lacq, France. The laboratory's work has led to two European patent applications.
- Our TM4 subsidiary enabled us to participate in the booming market for plug-in electric vehicles. Dedicated to industrializing the manufacturing processes for its electric and hybrid powertrains, TM4 commercializes these technologies worldwide. In 2016, TM4 won a contract to supply motors and inverters for the FCveloCity–HD fuel cell module developed by Ballard Power Systems of Canada. Designed for use in hydrogen-powered vehicles, this module requires a high-precision air flow. The TM4 MOTIVE motor series was selected for its quality, high power density and tried-and-tested reliability.
- ISO/TS 16949:2009 certification was awarded to Prestolite E-Propulsion Systems (PEPS), a joint venture of TM4 and Prestolite Electric Beijing (China) for the design and manufacture of electric powertrains. This certification confirms that the company meets the highest quality standards in the automotive industry. Using TM4 technology under licence, PEPS develops, manufactures and markets electric and hybrid motors for the Chinese market. Through PEPS, TM4 sold 900 electric powertrains in 2015 and 5,000 in 2016.
- TEMSA, a Turkish manufacturer of buses, coaches and light trucks, unveiled the new MD9 electriCITY platform for electric buses. This platform uses TM4's SUMO™ motor system.
- 65 charging stations were installed at 32 Hydro-Québec buildings as part of Branché au travail, a program that encourages the installation of electric charging stations at businesses; 17 of these stations are open to the public. ✔
- A survey of users measured their satisfaction with the Electric Circuit: 94% said they were satisfied or very satisfied. ✔

Vehicle charging at a 400-V charging station in Sainte-Julie, Montérégie.

- Funding was contributed to a Société de transport de Laval project to use plug-in hybrid buses.
- A commitment was made to support electric infrastructure development for public transit. We are working on the Réseau électrique métropolitain, a light-rail system proposed by CDPQ Infra, as well as the Cité Mobilité Montréal project which involves the purchase of electric buses and is overseen by the Société de transport de Montréal.

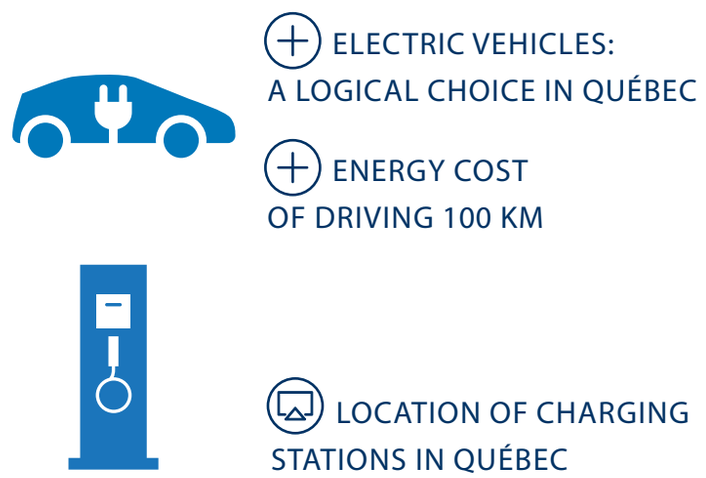
ELECTRIC CIRCUIT

At year end, Hydro-Québec's Electric Circuit had 794 charging stations, including 728 240-V stations and 66 fast-charge (400 V) stations, installed in 16 of Québec's 17 administrative regions. ✔ The fast-charge network has grown quickly, from 29 to 66 stations in one year, ✔ mainly along Highway 20 between Montréal and the Bas-Saint-Laurent region, and on the roads encircling Gaspésie. As of 2016, Electric Circuit partners may offer an hourly charging rate at their regular 240-V stations to meet members' needs.

For the first time, the Electric Circuit will venture outside Québec in 2017, extending the network on four major roads in northeastern Ontario into Ottawa and as far as Cornwall and Prescott.

ELECTRIC VEHICLE NUMBERS

- In Québec: 13,455 vehicles – 55% plug-in hybrids and 45% all-electric (as of December 31, 2016)
- Worldwide: 1,000,000 vehicles as of September 30, 2015
- Québec government target: 100,000 vehicles by 2020
- Hydro-Québec light-vehicle target: 500 vehicles by 2020 (98 as of December 31, 2016)



CHANGES IN QUÉBEC'S ELECTRIC CIRCUIT NETWORK (number)

	2013	2014	2015	2016 ✔
240-V/400-V charging stations installed during the year	102/1	110/7	199/21	183/37
240-V/400-V charging stations available (cumulative)	239/1	349/8	548/29	728/66
Service points (cumulative)	162	235	396	542
Partners (cumulative)	53	92	130	181
Members (cumulative)	1,524	3,637	6,583	11,458
Administrative regions	14	15	16	16

EXCLUSIVE WEB CONTENT

- Transportation electrification
- TM4
- Comparative life-cycle assessment of electric and conventional vehicles

GRI G4-19, G4-24, G4-27

OUR SOCIOECONOMIC CONTRIBUTION

Young visitors at the Rivière-des-Prairies generating station interpretation centre in Montréal.

Our business contributes about 4% to Québec's gross domestic product. We also invest in communities by supporting social and humanitarian action, health and educational institutions, sports and cultural activities, and volunteer commitments by our employees.

IN THIS SECTION

- Financial results
- Spinoffs of projects and operations
- Community investments
- Donations and sponsorships
- Integrated Enhancement Program
- Fondation Hydro-Québec pour l'environnement
- Employee volunteering

STAKEHOLDERS CONCERNED

MATERIALITY ANALYSIS ASPECTS

$28 million

COMMUNITY INVESTMENTS

94%

PROCUREMENT OF GOODS AND SERVICES IN QUÉBEC ✔

OUR CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS

SUSTAINABILITY IS OUR REALITY

COMPENSATION FOR THE RESIDUAL IMPACTS OF OUR PROJECTS

We want our transmission lines and substations to blend harmoniously into their host environments. Nevertheless, facility construction can have residual environmental impacts. The objective of the Integrated Enhancement Program (IEP) is to compensate communities for these impacts. A number of our professionals are involved in making IEP spinoffs a reality in the communities.

Carole Charest, Advisor – Environment "For each of our projects, we assess the environmental impacts, then introduce appropriate mitigation measures. My role is to define these mitigation measures and determine how to implement them. Sometimes, however, our projects have residual environmental impacts. The IEP provides an opportunity to compensate for these residual impacts. Initiatives submitted to Hydro-Québec must meet various criteria and benefit the community. We establish long-term relationships with the communities affected by our projects by supporting initiatives that are important to them."

Stéphane Talbot, Manager – Main Grid Planning and Strategies "My role is to ensure that the main system operates as efficiently as possible to meet current and future demand. Planning is complex, and there are many technical aspects. In addition, application of the IEP depends on the type of project. As soon as the project begins, if the IEP is to be involved, funding equal to 1% of the project's initially authorized value is added to the budget. For example, when the 120-kV Pierre-Le Gardeur–Saint-Sulpice line was built, $95,557 was earmarked for the communities. Once the amount is set, the Community Relations team conveys the information to the communities concerned so they can develop various initiatives. The IEP is totally voluntary on Hydro-Québec's part. Because of the IEP, our projects generate direct spinoffs in host communities, in addition to boosting the power system's reliability and efficiency."

Marie-France Barrette, Advisor – Community Relations "When we present a transmission project to a community, people ask us right away if the IEP will apply. The MRCs and municipalities know this program well: they appreciate it and expect it. It enables us to strengthen our ties with the communities, and is often a great opportunity for a community to build infrastructure that benefits all of its citizens. For example, this year in Repentigny, the IEP, along with other partners, funded an outdoor skating rink and basketball court in a city park. The IEP was also used when the 120-kV Pierre-Le Gardeur–Saint-Sulpice line was built.

Contribution to the Québec economy

FINANCIAL RESULTS

In 2016, we posted net income of $2,861 million, which allowed us to pay the Québec government a dividend of $2,146 million. This result reflects the return to near normal temperatures in Québec after two very cold winters. In addition, we exported a record volume of electricity, which mitigated the impact of lower prices on energy markets. Net exports rose by 3.3 TWh compared to 2015, to a historical peak of 32.6 TWh, and contributed about $803 million to net income.

2016 HIGHLIGHTS

- Revenue from electricity sales in Québec: $11,573 million ($11,662 million in 2015).
- Revenue from electricity sales outside Québec: $1,626 million ($1,700 million in 2015).
- Net exports of electricity: $1,568 million ($1,645 million in 2015).
- Net income: $2,861 million.
- Dividend: $2,146 million.

Subcontracting event in Mauricie for the Chamouchouane–Bout-de-l'Île project.

SPINOFFS OF PROJECTS AND OPERATIONS

Our investments, procurement and the expertise we develop—particularly in consulting engineering, power transmission and transportation electrification—generate billions of dollars in annual spinoffs, as well as thousands of jobs, which contribute to economic vitality in many parts of Québec.

We encourage local subcontracting and issue calls for tenders from local businesses for contracts under $1 million, provided the principles of competition are upheld and current business agreements are adhered to. Regional economic spinoff committees inform local economic associations of our tender calls and the project spinoffs so they can monitor the measures introduced.

HYDRO-QUÉBEC'S CONTRIBUTION TO THE QUÉBEC ECONOMY

	2013	2014	2015	2016
Dividend ($M)	2,207	2,535	2,360	2,146
Public utilities tax ($M)	245	252	268	284
Water-power royalties ($M)	669	651	654	667
Municipal and school taxes ($M)	36	37	37	40
Procurement from Québec-based companies (%)	95	94	93	94 ✔
Community investments ($M)	31	30	27	28

Community investments

INTEGRATED ENHANCEMENT PROGRAM

Inaugurated in 1985, the Integrated Enhancement Program funds enhancement projects in the municipalities affected by the construction of our transmission facilities, with a view to offsetting their residual impacts. An amount equivalent to 1% of the project's value is allocated to communities that host our transmission lines and substations. The funds are used for local community initiatives that enhance the environment or improve municipal, community or recreational infrastructure, for regional or tourism development, or for development in Aboriginal communities. In 2016, we allocated $3 million for 25 initiatives. ✔

2016 HIGHLIGHTS

- Funding of $173,231 ✔ was used to develop walking trails and a community playground as part of the Nipugt project (230-kV line to connect the Mesgi'g Ugju's'n wind farm to the grid). (Gaspésie–Îles-de-la-Madeleine)
- Financial support of $544,790 ✔ enhanced the Lacs Fauvel area. The initiative created walking trails and bicycle paths, restored natural areas and added over 6 km to the bicycle network: one section that links up with the Route verte bicycle route and another that goes to neighboring municipalities (Blainville substation and 315-kV line). (Laurentides)

^^ Rest stop in the Municipality of the Township of Bedford, created with the Hydro-Québec IEP.

^ Inauguration of the new skating rink in Parc Maurice-Richard in Repentigny, a project built with our IEP. The rink can be converted into two basketball courts for the summer. Ghislain Bélanger and Justine Longpré, city of Repentigny, Francine Payer, municipal councillor, Marie-France Barrette, Hydro-Québec, and Sylvain Benoit, municipal councillor.

FUNDING AND FINANCIAL COMMITMENTS – INTEGRATED ENHANCEMENT PROGRAM

	2013	2014	2015	2016
Number of initiatives	26	53	16	25 ✔
Hydro-Québec funding ($'000)	2,798.9	4,176.0	1,584.1	3,001.2 ✔
Community funding ($'000)	4,547.8	22,284.6	4,462.1	9,809.9
Project value ($'000)	7,346.7	26,460.6	6,047.1	12,811.1

FONDATION HYDRO-QUÉBEC POUR L'ENVIRONNEMENT

The Fondation Hydro-Québec pour l'environnement embodies Hydro-Québec's intention, as a responsible corporate citizen, to contribute to the enhancement and long-term protection of the environment. The Foundation funds initiatives throughout Québec that have positive environmental and social impacts, and that serve the interests of local communities. Since its inception, the Foundation has granted $14 million to 256 projects with an estimated total value of about $46 million.

2016 HIGHLIGHTS

› The Foundation contributed to the development and marking of an 8.7-km section of the "Sentier des embruns" (sea-spray trail) in Baie-Comeau. The project aims to control visitor traffic and preserve the wetlands and salt marshes, which are sensitive to trampling. Installation of interpretation panels and wildlife habitat projects will enhance the boreal forest and coastal ecosystems along the Fleuve Saint-Laurent (St. Lawrence River). Financial assistance: $42,400. ✔

› Terra-Cotta Natural Park, a large woodland on the island of Montréal, harbors trees that are over 200 years old. The project is designed to reduce pressure on the forest ecosystem, maintain biodiversity in the park and educate visitors about the park's natural bounty in order to foster more responsible behavior. Financial assistance: $93,000. ✔

EMPLOYEE ENGAGEMENT

Hydro-Québec makes its employees' expertise and know-how available. We also acknowledge our employees' sustainability achievements in the company or the community. Many of our employees and managers devote some of their personal time to volunteering as board members, speaking to elementary school children or participating in community activities.

COMMITMENTS – FONDATION HYDRO-QUÉBEC POUR L'ENVIRONNEMENT

	2013	2014	2015	2016 ✔
Projects supported (number)	16	12	16	18
Regions involved (number)	7	7	9	9
Amount granted ($'000)	760	393	964	971

DONATIONS THAT BENEFIT COMMUNITIES AND SUSTAINABILITY

FROM PÉRIBONKA TO JONQUIÈRE

More than 50 beds from the residences at Péribonka generating station, including mattresses, box springs and bed frames, were given to the Maison de Quartier, a social economy enterprise in Jonquière. This umbrella body supports six non-profit organizations that help people on low incomes. (Saguenay–Lac-Saint-Jean)

FROM MANIC-5 TO BAIE COMEAU

The Tablée des Chefs paired the Manic-5 cafeteria with the Comptoir alimentaire L'Escale, a food bank in Baie-Comeau. Surplus food from the cafeteria, which feeds about 80 employees at every meal, is now frozen and sent to L'Escale, where it is distributed to eight charitable organizations.

EXCLUSIVE WEB CONTENT

- Integrated Enhancement Program
- Fondation Hydro-Québec pour l'environnement

2016 HIGHLIGHTS

- We contributed $5.7 million ✔ to the 40th Centraide (United Way) campaign. This organization supports agencies working to improve the quality of life of people in need. The amount includes contributions by company employees and pensioners.
- Environment Week, held in June, focused on our strong commitment to protecting the environment. Lunchtime presentations are also offered to employees several times a year. For over 25 years, we have organized environmental awareness activities for our employees.
- Employees in Baie-Comeau volunteered with Operation Red Nose in December. Working in teams of three, they used vehicles loaned by the company to drive people home from parties. The 35 participating employees made 114 trips to ensure that people arrived home safely. (Côte-Nord)
- Sixty-two employees helped to fight hunger by volunteering at the Moisson Montréal food bank.

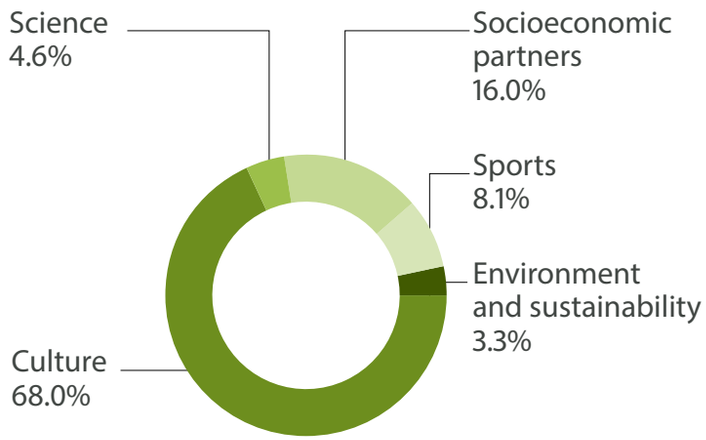
Launch of the 40th Centraide campaign in the lobby of Hydro-Québec's head office.

DONATIONS AND SPONSORSHIPS

We support Québec's cultural, social and economic life with donations and sponsorships from a budget provided for in our Business Plan.

With a view to sustainability, we support projects that foster our corporate citizenship, maintain or improve our community relations, or promote our strategies, programs and services.

BREAKDOWN OF SPONSORSHIPS[a] – 2016 ✔



a) Excludes funding by the Fondation Hydro-Québec pour l'environnement.

BREAKDOWN OF DONATIONS – 2016 ✔

EXCLUSIVE WEB CONTENT

- Donations and sponsorships
- Youth awareness
- Hydro-Québec art collection
- Industrial tourism

GRI content index for 'In Accordance'

Core[a]

GENERAL STANDARD DISCLOSURES

No.	GENERAL STANDARD DISCLOSURES	PAGE[b]	OMISSION
STRATEGY AND ANALYSIS			
G4-1	CEO's statement	7-9	
G4-2	Key impacts, risks and opportunities	13, 15-16, 20, 24-26	
ORGANIZATIONAL PROFILE			
G4-3	Name of the organization	1, 5	
G4-4	Primary brands, products and services	5, 13, 14	
G4-5	Location of the organization's headquarters	Web	
G4-6	Countries where the organization operates	5, 14	
G4-7	Nature of ownership and legal form	Web	
G4-8	Markets served	14	
G4-9	Scale of the organization	5, 13, 14, 15-16, 76	
G4-10	Workforce distribution	5, 14	Workforce numbers based on contract type are not available. Total numbers of outside workers by employment type, employment contract and region are not available.
G4-11	Collective bargaining agreements	5	The percentage of outside workers covered by a collective agreement is not available (sector supplement).
G4-12	Supply chain	10, 74	
G4-13	Significant changes	Web	
G4-14	Precautionary approach	57, 66	
G4-15	Charters, principles and other initiatives	11, 21, 43, 57	
G4-16	Memberships of associations	20, 25, 32, 63, 78, Web	
IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES			
G4-17	Entities included	11, 13	
G4-18	Report content and Aspect Boundaries	12	
G4-19	Material Aspects	12, 18, 30, 39, 51, 60, 68, 74	
G4-20	Internal Aspect materiality	12	

GRI Materiality Disclosures Hydro-Québec Apr 2017 Service

a) More information is provided in the Global Reporting Initiative (GRI) index on the Hydro-Québec Web site.

b) When a general standard disclosure is dealt with only on the Web site, the word Web is listed.

GRI content index for 'In Accordance'

Core[a]

GENERAL STANDARD DISCLOSURES

No.	GENERAL STANDARD DISCLOSURES	PAGE[b]	OMISSION
G4-21	External Aspect materiality	12	
G4-22	Restatements of information	55 (nouveaux facteurs d'émission)	
G4-23	Significant changes	11, 12	
STAKEHOLDER ENGAGEMENT			
G4-24	List of stakeholder groups	10, 18, 30, 39, 51, 60, 68, 74	
G4-25	Identification and selection of stakeholders	10, 12	
G4-26	Stakeholder engagement	10, 12	
G4-27	Key topics and concerns	12, 18, 30, 39, 51, 60, 68, 74	
REPORT PROFILE			
G4-28	Reporting period	11	
G4-29	Date of most recent previous report	Web	
G4-30	Reporting cycle	11	
G4-31	Contact point	87	
G4-32	GRI Content Index	80-84	
G4-33	External assurance for the report	85-86	
GOVERNANCE			
G4-34	Governance structure	18-23	
G4-38	Composition of the highest governance body	18, 20	
G4-39	Chair of the Board of Directors	18	
G4-40	Process for nominating board members	19	
G4-48	Board of Director's roles in reviewing or approving the Sustainability Report	20	
ETHICS AND INTEGRITY			
G4-56	Ethical behavior	20, 21	
ELECTRIC UTILITY SECTOR DISCLOSURES			
EU1	Installed capacity	5, 13, 14	
EU2	Net energy output	15, 39, 45	
EU3	Number of customers	13, 14, 34	

a) More information is provided in the Global Reporting Initiative (GRI) index on the Hydro-Québec Web site.

b) When a general standard disclosure is dealt with only on the Web site, the word Web is listed.

GRI content index for 'In Accordance'

Core[a]

GENERAL STANDARD DISCLOSURES

No.	GENERAL STANDARD DISCLOSURES	PAGE[b]	OMISSION
EU4	Length of transmission and distribution lines	5, 13, 14	
EU5	Allocation of CO_2 emissions allowances	53	
ECONOMIC			
Aspect: Economic Performance			
G4-EC1	Direct economic value generated and distributed	13, 14, 71, 74-79	Salaries and employee benefits are not published and are considered confidential information.
G4-EC2	Climate change	7-9, 25, 51-55, 69, 71-72	
Aspect: Indirect Economic Impacts			
G4-EC7	Infrastructure investments that benefit local communities	36-37, 49, 64, 73, 77-78	
G4-EC8	Indirect economic impacts	16, 35-38, 46, 49, 76	
Aspect: Procurement Practices			
G4-EC9	Local suppliers	36, 46, 49, 76	
Aspect: Availability and Reliability (Electric Utilities Sector Disclosures)			
EU10	Planned capacity for projected electricity demand over the long term	31, 40-41, 43-45, 47	
ENVIRONMENT			
Aspect: Materials			
G4-EN1	Materials used	Web	Hydro-Québec does not measure the weight or volume of raw materials used.
G4-EN2	Recycled materials used	Web	Hydro-Québec does not measure the weight or volume of recycled materials used.
Aspect: Energy			
G4-EN6	Reduction of energy consumption	15, 26-27, 41-44,	
Aspect: Water			
G4-EN8	Total water withdrawal by source	15	
Aspect: Biodiversity			
G4-EN11	Sites near areas of high biodiversity value	56	

a) More information is provided in the Global Reporting Initiative (GRI) index on the Hydro-Québec Web site.

b) When a general standard disclosure is dealt with only on the Web site, the word Web is listed.

GRI content index for 'In Accordance'

Core[a]

GENERAL STANDARD DISCLOSURES

No.	GENERAL STANDARD DISCLOSURES	PAGE[b]	OMISSION
Aspect: Emissions			
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	15, 25, 28, 51, 53, 55	
G4-EN16	Indirect greenhouse gas (GHG) emissions (Scope 2)	51, 55	
G4-EN17	Other indirect greenhouse gas emissions (Scope 3)	51, 55	
G4-EN18	Greenhouse gas (GHG) emissions intensity	39, 53	
G4-EN19	Reduction of greenhouse gas (GHG) emissions	15, 25, 28, 51, 53, 55	
G4-EN21	NO_X, SO_X and other air emissions	15, 53	
Aspect: Effluents and Waste			
G4-EN24	Total number and volume of significant spills	15, 57	
Aspect: Products and services			
G4-EN27	Extent of impact mitigation	27-29, 36-38, 41, 49, 57-59, 66	
Aspect: Transport			
G4-EN30	Environmental impacts related to transportation	15, 27-28, 55	
SOCIAL – LABOR PRACTICES AND DECENT WORK			
Aspect: Occupational Health and Safety			
G4-LA6	Work-related injuries, diseases and absenteeism	16, 23, 66	Hydro-Québec discloses only the work-related accident rate. Other information for this indicator is confidential.
Aspect: Diversity and Equal Opportunity			
G4-LA12	Diversity and equality	5, 18	
SOCIAL – SOCIETY			
Aspect: Local Communities			
G4-SO1	Participation, assessments and development programs	24, 37, 50, 62-64	The percentage is not available.
G4-SO2	Impacts on local communities	36-38, 63-64, 49-50	

a) More information is provided in the Global Reporting Initiative (GRI) index on the Hydro-Québec Web site.

b) When a general standard disclosure is dealt with only on the Web site, the word Web is listed.

GRI content index for 'In Accordance'

Core[a]

GENERAL STANDARD DISCLOSURES

No.	GENERAL STANDARD DISCLOSURES	PAGE[b]	OMISSION
SOCIAL – PRODUCT RESPONSIBILITY			
Aspect: Customer Health and Safety			
EU25	Injuries and fatalities	66	Information about court decisions, out-of-court settlements and ongoing suits related to disease cases is not available.
Aspect: Product and Service Labeling			
G4-PR3	Product and service information	66	
G4-PR5	Surveys measuring customer satisfaction	16, 24, 30, 33	
ASPECT: ACCESS (ELECTRIC UTILITIES SECTOR DISCLOSURES)			
EU29	Average power outage duration	14, 16, 30	

a) More information is provided in the Global Reporting Initiative (GRI) index on the Hydro-Québec Web site.

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Independent Assurance

To Hydro-Québec Management

The Bureau de normalisation du Québec has been engaged to conduct an independent evaluation of Hydro-Québec's *Sustainability Report 2016*, which covers the period from January 1 to December 31, 2016. The Report preparation and content are the responsibility of Hydro-Québec. Our role consists in providing an independent opinion of this Report.

LEVEL OF ASSURANCE AND BASIS FOR OUR OPINION

Our work meets the requirements of Type 2 assurance as provided in the *AccountAbility AA1000 Assurance Standard* (2008). Our evaluation focused on the systems, processes and quantitative data to achieve a moderate level of assurance. It consisted in reviewing the following qualities of the Report:

- Extent of adherence to the Principles for Sustainable Development in the *AA1000 AccountAbility Principles Standard* (2008)
- Concordance of Hydro-Québec's performance information with targeted indicators drawn from the standard disclosures for the Global Reporting Initiative (GRI) G4 core option
- Reliability of the quantitative sustainability performance information (identified in the Report by the ✔ symbol)

ASSURANCE TEAM

The assurance team for the Report was composed of professionals and included specialists in measurement of environmental, social and economic aspects in various sectors. The team members confirm that they are independent.

ASSURANCE APPROACH

The assurance evaluation, conducted between January and March 2017, was based on the information collected and consisted of:

- Review of the sustainability-related strategies, policies, objectives, management systems and measurement and reporting procedures used by Hydro-Québec
- Interviews with managers in order to understand how Hydro-Québec deals with the key challenges of sustainability and how the concept of sustainability is implemented in the company
- Interviews with over 50 staff members to learn, among other things, what measures are implemented to facilitate dialogue with stakeholders and to understand the processes for collecting and presenting information about sustainability performance
- Review of the Report for any anomalies with regard to aspects that were verified
- Verification of over 500 data items selected from the Report by Hydro-Québec and examination of data processing procedures and supporting evidence
- Examination of the company's performance information to confirm that it concords with targeted indicators drawn from the standard disclosures in the GRI G4 guidelines.

Independent Assurance

ADHERENCE TO THE AA1000 PRINCIPLES

Inclusivity: *Does Hydro-Québec have a system that enables dialogue with stakeholders regarding aspects of sustainability?*
Hydro-Québec has a number of processes that show its commitment to dialogue with its stakeholders, regarding both projects and more general issues. As planned, Hydro-Québec conducted a responsiveness workshop with stakeholders in fall 2015 (and updated it in 2016) that confirmed the reliability of the Materiality Analysis conducted in 2014.

Materiality: *Does Hydro-Québec provide material information on the significant issues relating to its stakeholders' interests?*
The process used to determine the aspects to report appears to be consistent with the organization's significant issues and its stakeholders' interests. It is based on the Materiality Analysis conducted in fall 2014. It also considers the recent responsiveness workshop in fall 2015, and its update in 2016.

Responsiveness: *Does Hydro-Québec have a system for responding to its stakeholders' concerns?*
In general, Hydro-Québec considers and responds to its stakeholders' concerns. The Report content has been reviewed to consider the results of the materiality matrix presented in this Report and the conclusion from the responsiveness workshop.

Quantitative information and conclusion

According to our assurance process, the following items were observed:

- The concordance of Hydro-Québec's performance information with targeted indicators drawn from the standard disclosures for the Global Reporting Initiative (GRI) G4 core option.
- The systems and underlying processes used for managing and reporting sustainability information are reliable.
- The data selected for verification were on the whole obtainable and traceable, and the employees responsible at Hydro-Québec were able to demonstrate the origin, control methods and data interpretation in a satisfactory and transparent manner.
- The sustainability performance disclosures in the Report appropriately reflect the environmental, social and economic performance of Hydro-Québec over the period covered by the Report.

In conclusion, the assurance team considers that, based on the approach used, the information contained in the *Sustainability Report 2016* appears fair in all material respects and presents a reliable account of Hydro-Quebec's sustainability performance during the period.

Montreal, March 31, 2017

Isabelle Landry
Operations Manager, System Certification and Laboratory Assessment
Bureau de normalisation du Quebec

SHARE YOUR COMMENTS WITH US

We would like to know what you think of our report. Please submit your questions and comments.

UNITS OF MEASURE

¢/kWh	cent or $0.01 per kilowatthour
$'000	thousands of dollars
$M	millions of dollars
$B	billions of dollars
V	volt (a unit for measuring voltage)
kV	kilovolt (one thousand volts)
W	watt (a unit for measuring power)
kW	kilowatt (one thousand watts)
MW	megawatt (one million watts)
GW	gigawatt (one billion watts)
Wh	watthour (a unit for measuring electric energy)
kWh	kilowatthour (one thousand watthours)
MWh	megawatthour (one million watthours)
GWh	gigawatthour (one billion watthours)
TWh	terawatthour (one trillion watthours)
MMBtu	million British thermal units
t	tonne (metric ton)
g CO_2 eq.	gram of CO_2 equivalent
t CO_2 eq.	tonne of CO_2 equivalent
kt CO_2 eq.	one thousand tonnes of CO_2 equivalent
Mt CO_2 eq.	one million tonnes of CO_2 equivalent
Mtoe	million TOE, million tonnes of oil equivalent

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