

WORK BETTER | AIM HIGH | BUILD THE FUTURE



SUSTAINABILITY REPORT 2017

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*


 *Exclusive Web content*

 *Additional or more detailed information*

 *Access to a map locating a project*

 *Tip for accessing further information*

[Global Reporting Initiative Hyperlink](#)

 *Hyperlink to another page in the report*



[Electricity supplied Term defined](#)

Cover: Transmission line near the municipality of Les Cèdres, where the LineRanger demonstration project took place. The LineRanger is a robot developed by Hydro-Québec's research institute to inspect transmission line conductor bundles.

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*



HYDRO-QUÉBEC SUSTAINABILITY REPORT 2017 // OUR ACTIONS // OUR SOCIOECONOMIC CONTRIBUTION

GRI 102-9, GRI 102-40, GRI 102-44, GRI 102-47, GRI 103-1, GRI 103-2, GRI 201-1

OUR SOCIOECONOMIC CONTRIBUTION

Our business supports thousands of jobs and stimulates the economic vitality of many Québec regions. It accounts for about 4% of Québec's gross domestic product. The dividend we pay to our shareholder alone represents over 2% of the Québec government's total budget.

IN THIS SECTION

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

Visitors on the spillway bridge at Robert-Bourassa complex, Baie-James (James Bay).

 **\$27.6 million**
+ COMMUNITY INVESTMENTS

 **92%**
+ PROCUREMENT OF GOODS AND SERVICES IN QUÉBEC

 + STAKEHOLDERS CONCERNED

 + MATERIALITY ANALYSIS ASPECTS

A customer-centered 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.



Noteworthy in 2017

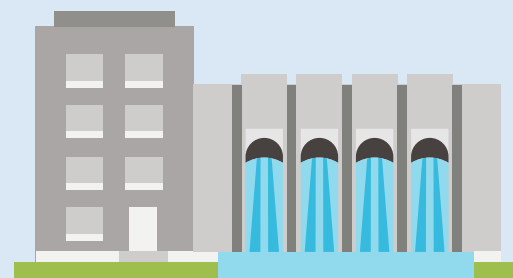


WORKER HEALTH AND SAFETY: OUR PRIORITY

The Special Committee on Workplace Health and Safety, set up by the Board in 2016, hired ERM to assess our health and safety practices. The improvement strategy proposed is based on four areas: vision and leadership, performance, risk management and management approach to occupational health and safety.

PARTNERSHIP WITH BERKELEY LAB

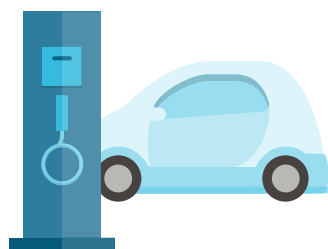
The memorandum of understanding signed in October with the U.S. Department of Energy's Lawrence Berkeley National Laboratory (Berkeley Lab) covers the establishment of a Québec-Berkeley (QUBE) joint research center. The center's mission is to study and develop technologies for next-generation batteries in transportation electrification and energy storage.



RESPONSE TO THE MASSACHUSETTS REQUEST FOR PROPOSALS

Hydro-Québec won the Massachusetts request for proposals, issued in March 2017, for 9.45 TWh of firm clean energy to be delivered for 20 years. The company had presented [six options](#)—three for 100% hydropower and three for a hydro-wind supply blend. By choosing Québec hydropower, Massachusetts has confirmed the importance of this form of energy in New England's ongoing energy transition.

1,000th ELECTRIC CIRCUIT CHARGING STATION



The 1,000th Electric Circuit charging station was opened in October, in collaboration with the Municipalité de Ragueneau in the Côte-Nord region.



INAUGURATION OF ROMAINE-3 GENERATING STATION

On October 19, we inaugurated the third of four generating stations at the Romaine complex—the second-largest hydropower development in Québec, after La Grande. The estimated cost of the Romaine complex is \$6.5 billion.

GRI 102-1, GRI 102-2, GRI 102-4, GRI 102-7, GRI 102-8, GRI 102-41, EU1, EU4

Hydro-Québec in 2017

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



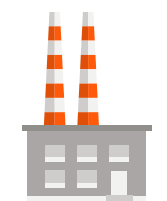
37,309 MW

Installed capacity of the generating fleet ✓



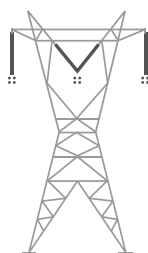
63

Number of hydroelectric generating stations ✓



24

Number of thermal generating stations ✓



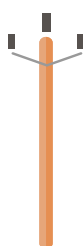
34,479 km

Length of the transmission system ✓



533

Number of substations ✓

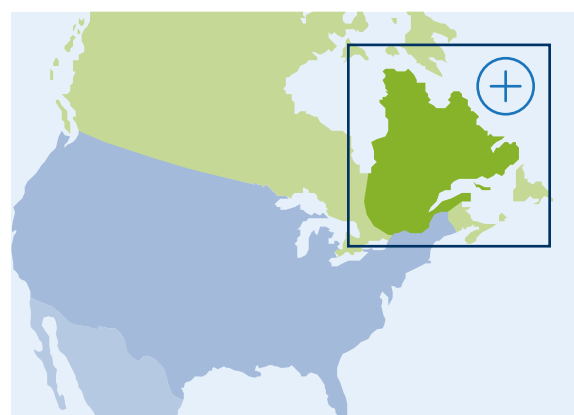


117,747 km

Length of the distribution system ✓



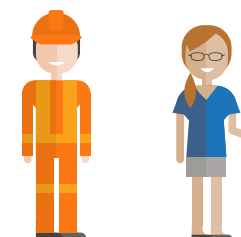
Map of major facilities and generating stations serving off-grid systems



OUR HUMAN RESOURCES

19,786

Number of employees ✓



44.7 years

Average age ✓



28.9%

Proportion of women ✓



1,639

New employees ✓



877

Retirements ✓



269

Number of internships ✓



OUR APPROACH

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.

GRI GRI 102-14, GRI 103-2, GRI 201-2

Message from the President and Chief Executive Officer



Éric Martel,
President and Chief Executive Officer

ENERGY TRANSITION UNDER WAY

The energy world is going through a period of massive change. Developments in the global energy industry were long related primarily to competition between the different energy sources—fossil fuels, hydropower, nuclear, wind and solar power, etc.—and the introduction of significant energy efficiency measures. In recent decades, hydrocarbons have benefited from the relatively lost cost of tapping shale, but the part they play in climate change makes them a decidedly less attractive option in the long term. Conversely, renewable energies are steadily growing in popularity, and they are proving to be more and more cost-effective to use.

Northeastern North America has made a clear commitment to an energy transition in which clean, renewable energies are assuming an increasingly important role. For many years, our electricity exports have been instrumental in substantially reducing greenhouse gas emissions in the Northeast. Today, we have large quantities of clean, flexible and reliable energy to offer and we can contribute even more to the collective effort to achieve a low-carbon economy. We did just that this past year when our hydropower offer enabled us to win the Massachusetts request for proposals for the purchase of renewable energy.

VALUE-ADDED ENERGY SERVICES

The current energy transition, which goes further yet, stems from two entirely new phenomena. First, it seems clear that electricity is on its way to becoming a dominant energy form at the end-use stage: the arrival of electric vehicles is an excellent example of this trend. Second, the rollout of new technologies now makes it possible to integrate multiple energy sources—intermittent, of various intensities and spread over a vast territory—into a large power grid. This was unthinkable a few years ago.

GRI GRI 102-14, GRI 103-2, GRI 201-2

Message from the President and Chief Executive Officer

In this highly technological environment, the role played by humans is more essential than ever. From the very beginning, Hydro-Québec's major accomplishments have rested on technological expertise, and we will continue to attach tremendous value to innovation. However, the energy transition currently under way will utterly transform the perception of the products we offer. Our customers don't only buy electricity; they buy a label of reliability, fairness, social responsibility and respect for the environment. In other words, they buy value-added energy services. This is the business model that is the goal of our management team's efforts.

OUR PRIME FOCUS: EMPLOYEES, CUSTOMERS AND STAKEHOLDERS

To achieve our objectives and become an even better company, we have to make people our prime focus. The safety of our employees and all those who work in our facilities is our priority, and we do our utmost to ensure this safety at all times. At year-end, we published the report by an outside firm that analyzed our occupational health and safety practices and recommended ways to improve them. We are now making sure we implement the necessary changes.

When it comes to our customers, we must adopt a consumer-friendly, understanding attitude. What services do they want to receive? Under what conditions? How can we improve their experience of doing business with Hydro-Québec? We are already deploying extensive resources in this area to improve the reliability of our facilities, enhance our online offer and speed up our response when outages occur.

We must also listen to the people we come into contact with every day all across Québec. Our generating stations, lines, substations and administrative buildings are located in communities—both large and small—where our employees contribute to local vitality. Every year, we carry out

GRI GRI 102-14, GRI 103-2, GRI 201-2

Message from the President and Chief Executive Officer

some 1,100 construction and refurbishment projects: it is crucial that we take the opinions of all our stakeholders into consideration to reconcile social, environmental, heritage and human concerns while meeting essential economic and technical requirements. Our well-defined stakeholder consultation and public participation process for our projects is the product of over 30 years of experience.

OUR EMPLOYEES: A KEY RESOURCE

This approach of openness to the expectations of our customers and fellow citizens cannot take tangible form without our employees' contribution. We must therefore not only recognize the fundamental role our employees play in the company's success, but also provide them with the necessary tools so that they can negotiate the change in direction we are taking.


Our employees are the company's key resource. Whether lending a hand to their American colleagues dealing with emergencies or coming to the aid of Québec victims of spring flooding, they unhesitatingly roll up their sleeves and share their pride in belonging to the Hydro-Québec family. This openness and pride are our chief assets in implementing our new business model. I thank them for their exceptional commitment and their contribution to the company's successes.

Éric Martel
President and Chief Executive Officer

GRI GRI 102-9, GRI 102-40, GRI 102-42, GRI 102-43

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



Government authorities



Investors



Local and Indigenous communities



Customers



Employees



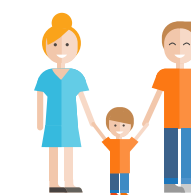
Educational institutions



Unions



Nongovernmental organizations



General public

About this report

The *Sustainability Report 2017* describes Hydro-Québec's performance with respect to its main environmental, social, economic and governance issues. This edition, published in May 2018, is the sixteenth such report produced by Hydro-Québec.

SCOPE

The *Sustainability Report 2017* mainly addresses the issues and impacts of Hydro-Québec's activities in Québec from January to December 2017.

NEW FEATURES

- New way of organizing the information that takes into account the consultation exercise conducted in the fall with the participation of various external and internal stakeholders (pp. 12–13). The changes introduced include the addition of a new section, *Our Water Body Management*.
- Hydro-Québec's contribution to achieving some of the goals and targets laid out in 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 energy efficiency. The goals and targets are presented in the section *Our Main Sustainability*

Challenges, which summarizes our sustainability activities and results. (p. 25)

- Improvement of the section *Our Main Sustainability Challenges*, with the addition of two new challenges: Contribute to the energy transition and Remain an employer of choice. (p. 29)
- Addition of the section *Noteworthy in 2017*. (p. 4)
- Testimonials from two external stakeholders interviewed, under the heading *Story of a Long-Term Relationship*. (p. 78)

COMMUNICATION TOOLS

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

- *Sustainability Report 2017*
- [A leaflet presenting 2017 sustainability highlights](#)
- [Sustainable development Web site](#)
- [Sustainable Development Action Plan 2015–2020](#)
- [Annual Report 2017](#)
- [Biodiversity Performance Report](#)
- [Videos](#)
- Presentations at various events (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. This report has been prepared in accordance with the GRI Standards: Core option. The Electric Utilities Sector Supplement has also been used. These standards ensure the credibility and quality of sustainability reporting. Readers can consult the partial GRI (Global Reporting Initiative) index on page 95 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 100.



EXCLUSIVE WEB CONTENT

- [Hydro-Québec's GRI compliance](#)

GRI GRI 102-42, GRI 102-43, GRI 102-46, GRI 102-49

Materiality analysis

The materiality analysis is useful in determining the content of the Sustainability Report. This ensures that the report covers the topics that are of the greatest materiality as regards our business environment, the nature of our projects and operations, and their economic, environmental and social impacts. This exercise cannot be performed without the participation of both internal and external stakeholders. We conducted this materiality analysis—our third, after those conducted in 2011 and 2014—in three stages:

IDENTIFICATION

As with the previous analysis, the first stage involved updating the list of sustainability issues related to the company's operations, and to their impacts. Various internal and external information sources were used for this, including:

- Results of the last consultation exercise conducted in 2014 for the *Sustainability Report 2014*
- Results of the survey of stakeholder satisfaction carried out following publication of the *Sustainability Report 2016*
- Material topics in the Global Reporting Initiative guidelines and its Electric Utilities Sector Supplement

- Analyses of energy industry aspects, such as those produced by the Electric Power Research Institute, International Hydropower Association and Canadian Electricity Association
- A benchmarking analysis of topics raised by several other companies in the energy industry
- The company's strategic priorities

This stage led to the identification of 34 aspects related to sustainability and yielded a clear definition of each, so as to ensure a shared understanding and outline their Boundaries. Relative to the previous analysis, 33 of the 34 aspects remained the same, while one was removed (Measurement of consumption) and replaced by another aspect (Acquisitions and partnerships outside Québec). Some definitions of aspects were amended slightly to better define their scope.

We also updated the list of stakeholders consulted, based on the following major categories: Industry Associations, Customers, Indigenous Communities, Consultants, Media, Citizens Movements, NGOs, Economic Partners, Public Authorities, Academics.

PRIORITIZATION

We then prioritized our stakeholders, using this new list. The priority stakeholders were determined according to three criteria: influence, impact and partnership. Various consultation methods were employed, depending on the different categories: a survey for all stakeholders and discussion sessions for priority stakeholders. In October 2017, an electronic survey was conducted of the stakeholders determined to assess the relative importance of each aspect, based on their information requirements. This exercise enabled the company to determine the aspects it should elaborate further in the Sustainability Report. Out of 187 invitations sent to external stakeholders, 73 organizations responded to the survey; in addition, 75 Hydro-Québec employees responded (out of 156 invitations sent). The response rates were therefore 39% and 48%, respectively. The survey results are shown in the Materiality Matrix, which illustrates the findings of the internal assessment and of the assessment made by external stakeholders. (p. 13)

GRI GRI 102-42, GRI 102-43, GRI 102-44, GRI 102-46, GRI 102-47, GRI 102-49, GRI 103-1

Materiality analysis

VALIDATION

Based on the stakeholder prioritization, two discussion sessions with external stakeholders were held in fall 2017; 23 organizations took part in one of these sessions. An additional session was held in November with nine representatives of Hydro-Québec business units. At these three sessions, the internal and external stakeholders expressed their views of the survey results. In their opinion, the results accurately reflected the positive and negative impacts of the company's operations. The participants went on to specify the type of information they would like to receive for each of the main aspects. Special attention was paid to the 10 most material aspects, according to the survey results, in order to determine the nature of the information expected by stakeholders. Additional aspects proposed by the survey respondents were also discussed.

 **Click on an aspect**
to find out its scope.

 **REVIEW OF STAKEHOLDER
CONSULTATION EXERCISE**



GRI GRI 102-2, GRI 102-15, GRI 102-45, EU1, EU3, EU4, GRI 103-1, GRI 103-2, GRI 201-1, GRI 203-2


Value chain



GRI GRI 102-2, GRI 102-4, GRI 102-6, GRI 102-7, GRI 102-8, EU1, EU3, EU4, GRI 103-1, GRI 103-3, GRI 201-1, GRI 204-1, GRI 413-2

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 view the summary
for that region



GRI GRI 102-7, GRI 102-15, EU2, GRI 103-2, GRI 103-3, GRI 302-4, GRI 303-1, GRI 305-1, GRI 305-5, GRI 305-7, GRI 306-3, GRI 307-1

Performance metrics

INDICATORS	RESULTS				TARGETS	
	2014	2015	2016	2017	2018	2020
ENVIRONMENT						
Net electricity generated by Hydro-Québec (GWh)	172,981	170,900	172,278	177,091 ✓		
Total net electricity generated and purchased (GWh)	216,703	217,148	216,840	221,097 ✓		
Renewable energy/total energy generated and purchased (%)	99.0	99.3	99.7	99.5 ✓		
GHG emissions from thermal electricity generation (t CO ₂ eq.)	228,339	232,424	227,249	227,936 ✓		
SO ₂ emissions from thermal electricity generation (t)	1,091	1,040	979	1,008 ✓		
NO _x emissions from thermal electricity generation (t)	4,243	4,349	4,292	3,991 ✓		
GHG emissions from vehicle fleet (t CO ₂ eq.)/total number of vehicles as at December 31	51,074/5,392	53,000/5,390	51,571/5,229	51,063/5,174 ✓		
GHG emissions from light-vehicle fleet (t CO ₂ eq.)	24,275	25,322	22,852	21,532 ✓	24,590	24,302
Hybrid and plug-in light vehicles as at December 31 (number)	113	105	98	150 ✓	250	500
Energy efficiency initiatives: energy saved (GWh)	504	570	534	524 ✓		
Spills reported to the authorities (number) ^a	901	910	937	1,143 ✓		
Environmental noncompliance notices (number)	37	31	43	45 ✓		
Insulating oil recovered (thousands of litres)/reused (%)	4,812/92.2	3,607/93.3	3,632/87.9	6,559/97.5 ✓		
Water withdrawn (millions of cubic metres) ^b	300	79	39	45 ✓		
Area of transmission line rights-of-way treated mechanically (%)	99	94	98	95 ✓		
Area of dikes and dams treated mechanically (%)	68	56	51	52 ✓		
Distribution system length (km)/underground lines (%)	115,583/11.0	116,258/11.4	116,794/11.6	117,747/11.8 ✓		

a) An awareness campaign was conducted for employees and outside suppliers in 2017. The increased number of spills is attributable to the fact that this indicator previously did not count certain spills. Over 80% of spills are smaller than 25 litres.

b) According to the *Regulation Respecting the Declaration of Water Withdrawals*, which applies to thermal generating stations and some workcamps using more than 75 m³ of water per day (excludes withdrawals for PPG Canada).

GRI GRI 102-7, GRI 102-15, GRI 103-2, GRI 103-3, GRI 203-2, GRI 403-2, EU29

Performance metrics

INDICATORS	RESULTS				TARGETS	
	2014	2015	2016	2017	2018	2020
SOCIAL						
Overall public satisfaction – very and somewhat satisfied (%)	87	82	91	92 ✓	≥ 90	≥ 90
Customer satisfaction index – Combined index – All customer categories (scale of 10) ^c	s. o.	s. o.	8.1	8.2 ✓		
Average call wait time (seconds) – Residential customers	174	205	87	76	80	65
System average interruption duration index (SAIDI) (minutes/customer)	120	143	143	162 ✓		
Special payment arrangements for low-income customers (number)	99,722	95,437	97,879	106,438 ✓		
Customer complaints and claims (number)	9,797	9,727	7,517	6,211 ✓		
Total permanent and temporary workforce as at December 31	20,043	19,794	19,552	19,786 ✓		
Employee engagement index (%)	62	67	70	76 ✓	73	76
Work-related accident frequency (per 200,000 hours worked)	2.38	2.30	2.56	2.23 ✓		
Percentage of payroll invested in training	3.2	3.0	2.7	3.1 ✓		
Funding and financial commitments – Integrated Enhancement Program (number of initiatives/\$M)	53/4.2	16/1.6	25/3.0	27/4.2 ✓		
Fondation Hydro-Québec pour l'environnement (number of projects funded/\$'000)	12/393	16/964	18/971	16/738 ✓		
Donations and sponsorships (\$M) ^d	17.8	16.8	17.5	19.1 ✓		
ECONOMY						
Electricity sales in Québec (TWh)	174.2	171.3	169.2	170.7 ✓		
Revenue from electricity sales inside and outside Québec (\$M)	13,145	13,362	13,199	13,414		
Rate increases (%) ^e	4.3	2.9	0.7	0.7		
Net income (\$M)	3,325	3,147	2,861	2,846	2,475	2,850
Dividend (\$M)	2,535	2,360	2,146	2,135	1,856	2,138
Water-power royalties (\$M)	656	660	673	701		
Total procurement of goods and services (\$M)/Québec only (%)	3,301/94	3,050/93	2,952/94	3,170 ✓/92		
Public utilities tax (\$M)	252	268	284	284		
Municipal and school taxes (\$M)	37	37	40	38		
Funding for educational institutions – Contributions, commitments, research chair funding and research contracts (\$M) ^f	10.4	7.9	8.4	7.1 ✓		

c) New method applied starting in 2016.

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

e) Except for Rate L.

f) 2017 figure includes \$2.9 million recorded as donations and sponsorships.

OUR ACTIONS

230-kV line from Saint-Césaire substation
to Bedford substation, in Montérégie.

GRI GRI 102-18, GRI 102-22, GRI 102-23, GRI 102-40, GRI 102-44, GRI 102-47, GRI 103-1, GRI 103-2, GRI 405-1

OUR GOVERNANCE



Édifice Jean-Lesage, Hydro-Québec's head office.

Hydro-Québec's governance is based on the major priorities of the Québec government, our sole shareholder, and reflects our responsibility to all Quebecers. The shift in our corporate culture begun in 2016 led to changes in our ways of doing things that took shape in 2017 and have already yielded results. Our objective is as clear as ever: to offer our customers quality service and contribute to the development of Québec.

IN THIS SECTION

- › Governance structure
- › Sustainability governance activities
- › Championing women and diversity
- › National and international cooperation and influence
- › Régie de l'énergie
- › Access to information

GRI GRI 102-13, GRI 102-18, GRI 102-22, GRI 102-24

OUR SOLE SHAREHOLDER: THE QUÉBEC GOVERNMENT

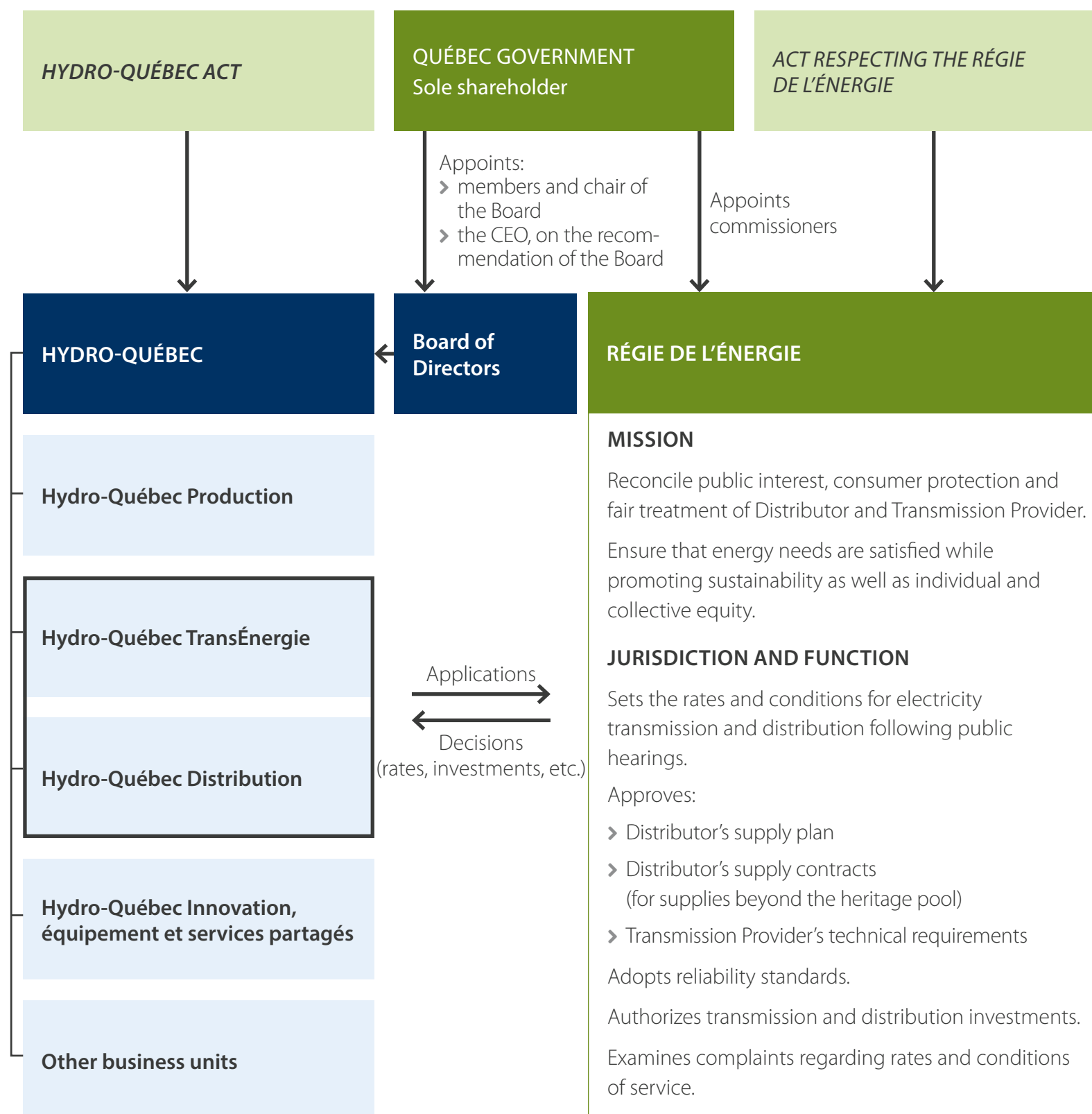
The major priorities adopted by our shareholder—mainly through its Energy Policy and Sustainable Development Strategy—directly influence the planning of all our activities. Hydro-Québec has begun discussions with the government agency Transition énergétique Québec, whose mission is to support, stimulate and promote the energy transition, innovation and efficiency.

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 condition of service.



ELECTRICITY REGULATION IN QUÉBEC



GRI GRI 102-16, GRI 102-18, GRI 102-22, GRI 102-32

BOARD OF DIRECTORS

As at December 31, 2017, our Board of Directors has 16 members with a variety of professional backgrounds and from different parts of Québec. There are equal numbers of women and men on the Board. It consists of 14 independent directors, plus the President and CEO and the Deputy Minister of Energy and Natural Resources. Most members also sit on one or more of the nine committees that monitor the governance of specific aspects of our operations more closely, such as the Environment and Public Affairs Committee.

The Board of Directors also adopts [policies and codes of conduct](#) that guide our operations and the actions of all our employees. In 2017, a two-way communication process was set up in all the business units at all levels of the company hierarchy.

2017 HIGHLIGHTS

- The updated employee Code of Conduct and the company's *Occupational Health and Safety Action Plan 2017–2020* were approved. Over 90% of employees have done self-training on the new Code of Conduct.
- Two new directors were appointed to the Board, following the departure of two of its members. The Board now has at least one member aged 35 or under, at the time of the appointment, in keeping with section 43(3) of the *Act respecting the governance of state-owned enterprises*.

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.

2017 ACTIVITIES

- Reviewed the results of the annual environmental management review, as well as semiannual reports on environmental compliance.
- Reviewed the *Sustainability Report 2016* 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 worked closely on updating the company policy on the subject.
- Reviewed the annual report and relevant performance indicators pertaining to the company's communication activities and the report on 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.

GRI GRI 102-12, GRI 102-16, GRI 102-18, GRI 102-22

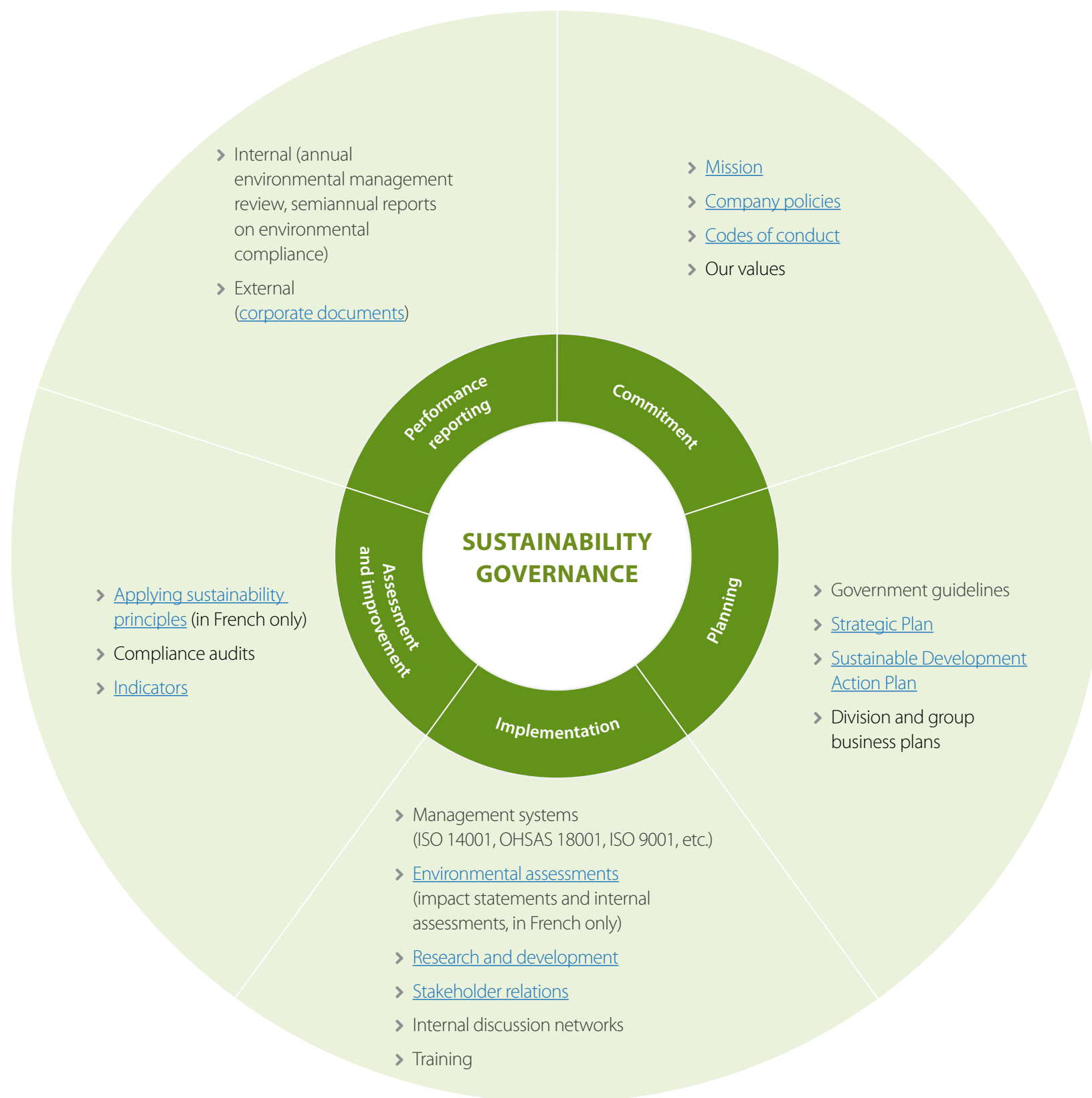
STRATEGIC PLAN AND SUSTAINABLE DEVELOPMENT ACTION PLAN

Our corporate governance is reinforced by planning documents—mainly the Strategic Plan and the [Sustainable Development Action Plan 2015–2020](#)—approved by the Board of Directors or the President and CEO.

In 2016, we filed our [Strategic Plan 2016–2020](#), which sets out four major objectives:

- › Lay the groundwork to double our revenue over the next 15 years so as to increase profits
- › Be a benchmark in customer service
- › Contribute to Québec's economic development and energy transition
- › Keep rate increases lower than or equal to inflation

The Strategic Plan guides the company's actions and major decisions by setting top priorities.



GRI GRI 102-18, GRI 405-1

ACCESS TO INFORMATION AND THE PROTECTION OF PERSONAL INFORMATION

Hydro-Québec does its utmost to maintain the confidentiality of its customers', employees' and suppliers' personal information, in accordance with the *Act respecting Access to documents held by public bodies and the Protection of personal information*, while respecting the public's right to information. To facilitate access to documents whose publication is prescribed by the *Regulation respecting the distribution of information and the protection of personal information*, Hydro-Québec posts them on its [Web site](#). The site also provides information about the right to information and the protection of personal information, including instructions for requesting access to a document. The company's key official publications are also available on the site.

The corporate Web site contains information of interest to the public. In addition, under the [Action Plan for People with Disabilities](#) (in French only), we take all reasonable measures to ensure that people with disabilities can exercise their right to obtain complete, high-quality information.

2017 HIGHLIGHTS

- We processed 428 requests for access to information (413 in 2016). Of these, 147 were granted in full ✓ and 169 were granted in part. Another 50 were turned down, ✓ most of them to protect third-party personal information or out of commercial, strategic or security concerns that prevented disclosure of the document. The remaining 62 could not be fulfilled, ✓ either because the documents requested were unavailable or because the request was withdrawn. In 16 cases, ✓ requesters applied to the Commission d'accès à l'information (CAI) for review of our responses. The average request-processing time was 21 days.
- None of the requests necessitated special accommodation measures for people with disabilities. One complaint against Hydro-Québec was filed with the CAI. In addition, two cases of loss or theft of personal customer information were reported to the unit in charge of protecting personal information. Those cases did not have any serious consequences. In all cases, the company acted diligently to prevent a recurrence, to the extent possible.

CHAMPIONING WOMEN AND DIVERSITY

Hydro-Québec's social commitment reflects a concern for fairness and equal opportunity. In 2017, the company issued a declaration on inclusion and diversity. It was followed by a range of initiatives, including a professional immigrant sponsorship program and internships for university students with disabilities.

2017 HIGHLIGHTS

- We launched a professional sponsorship initiative under the [Projet Intégration-Travail-Formation](#) run jointly by Ville de Montréal, the Québec government and the Chamber of Commerce of Metropolitan Montreal. Our goal is to offer qualified immigrants relevant work experience that will enable them to develop the skills we seek. Three positions ✓ were filled by applicants from the first cohort, and we plan to welcome a second cohort of 10 more applicants in 2018. The program received over 360 applications that met eligibility requirements.
- Over the year, 52 of the company's women managers and professionals took part in the [Défi 100 jours L'effet A](#), a challenge meant to encourage women to get into management or climb the corporate ladder. About 70 women from Hydro-Québec have taken part since it was launched in 2016.

DECLARATION ON CULTURAL DIVERSITY AND INCLUSION

At Hydro-Québec, we aspire to a unifying culture in which skilled resources from all segments of society can make valuable contributions to our work environment and help provide world-class service to our customers.

To make Hydro-Québec even more efficient, innovative, agile and diverse, the President and CEO and the Management Committee, with the support of the entire company, have made the commitment to do the following:

- Encourage initiatives that help build an inclusive workplace
- Create conditions that foster teamwork by all competent employees, however different they may be
- Support the career development of resources from all walks of life on the basis of merit and in accordance with the principle of fairness
- Ensure that our workforce reflects Québec's diversity in order to attract the best talent



- Target groups now account for 34.4% of employees (33.9% in 2016). ✓ Women represent 28.9% ✓ of staff and 33% of company managers.
- Of our 1,420 new employees, 9.8% are from cultural minorities, which include Indigenous people and self-identified visible minorities and ethnic minorities. This group now accounts for 7.5% of our human resources. ✓
- A meeting was held to educate employees about sexual diversity.
- The proportion of women in various job categories rose: managers (5%), engineers (2%) and trades (8%).
- As part of a new program for students with disabilities, 17 students did internships on teams in their fields of study.



^^ Rodelin Geffrard, Chief Electrician – Equipment.

^ Customer service representative Erika Alvarez.

REPRESENTATION OF TARGET GROUPS (%)

	2014	2015	2016	2017 ✓
Women	29.4	29.0	28.7	28.9
Indigenous people	1.0	1.1	1.4	1.5
Ethnic minorities	1.4	1.4	1.5	1.5
Visible minorities	3.5	4.0	4.1	4.5
People with disabilities	0.9	0.9	0.7	0.6

An employee may be in more than one category.

Our main sustainability challenges

The 17 sustainable development goals of the [United Nations Development Programme](#) were adopted by world leaders in the fall of 2015 and took effect January 1, 2016. These goals build on the successes of the Millennium Development Goals, while including new priorities, such as climate change and energy efficiency.

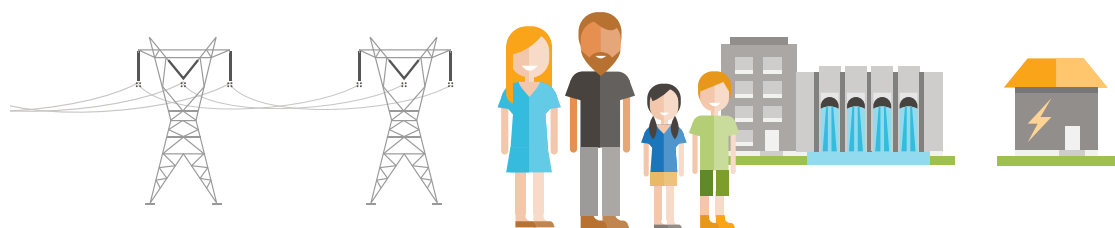
Hydro-Québec intends to do its part by pursuing the objectives most relevant to its industry and its projects. The [17 goals have 169 targets](#) that demonstrate the scope and ambition of the new program. The goals and targets provide guidance for initiatives to be carried out by 2030 in the fields most important to humanity and the planet.

The company has assessed the various goals and its potential contribution to achieving each of them. It has accordingly selected four goals and seven targets which it plans to make its particular focus.

CHALLENGES

- ENSURE THE SOCIAL ACCEPTABILITY OF OUR PROJECTS
- IMPROVE CUSTOMER SATISFACTION
- CONTRIBUTE TO REDUCING GHG EMISSIONS IN QUÉBEC, WITH A VIEW TO REACHING THE GOAL OF A 37.5% REDUCTION BY 2030 COMPARED WITH 1990
- ADAPT OUR PRACTICES AND INFRASTRUCTURE TO CLIMATE CHANGE
- PROMOTE ENERGY EFFICIENCY
- IMPROVE OUR PROFITABILITY
- CONTRIBUTE TO THE ENERGY TRANSITION
- REMAIN AN EMPLOYER OF CHOICE





ENSURE THE SOCIAL ACCEPTABILITY OF OUR PROJECTS

CONTEXT

Every year, we carry out close to 1,100 construction and refurbishment projects. 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 and work with communities to gain a better understanding of their concerns.
- › Reduce the environmental footprint of our projects, through mitigation measures such as landscaping, optimization measures such as reduced-footprint towers and quieter transformers, and other means.

SUSTAINABLE DEVELOPMENT GOAL ASSOCIATED WITH THIS CHALLENGE



Make cities inclusive, safe, resilient and sustainable

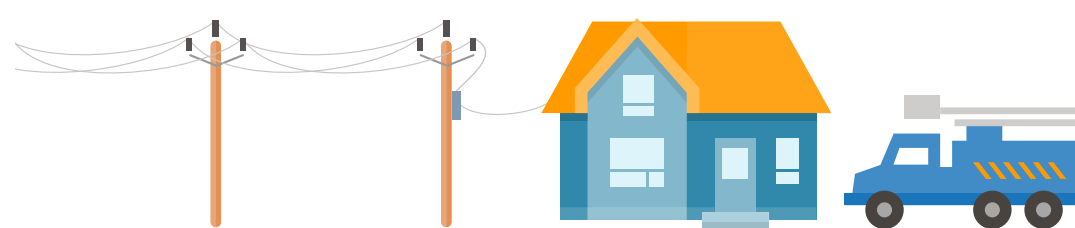
Target 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

EXAMPLES OF INITIATIVES IN 2017

- › Held open house events to explain projects, gather stakeholder concerns and give tours of new facilities.
- › Designed a landscaping concept that visually incorporated the pipeline at Îles-de-la-Madeleine generating station in Cap-aux-Meules. The design, developed with the community, will not only mitigate the visual impact of the pipeline, but improve the safety and fluidity of motor and foot traffic on the dock there.

EXAMPLES OF INITIATIVES FOR 2018–2020

- › Better inform the public about the rationale behind projects.
- › Communicate more proactively by using a variety of consultation practices that will allow more of those affected to give their opinion in the form and at the time most convenient for them.



IMPROVE CUSTOMER SATISFACTION

CONTEXT

Customer satisfaction is one of our top priorities.

SOLUTIONS CONSIDERED

- › Make our services more accessible (outage information, online services, etc.).
- › Reduce call wait times and processing times for customers' work requests.
- › Ensure reliable, high-quality power.
- › Keep rate increases lower than or equal to inflation.

SUSTAINABLE DEVELOPMENT GOAL ASSOCIATED WITH THIS CHALLENGE



Ensure access to affordable, reliable, sustainable and modern energy for all

Target 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services

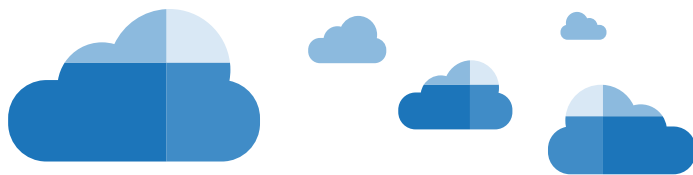
EXAMPLES OF INITIATIVES IN 2017

- › Expanded our online services for both residential customers (Customer Space) and business customers (Consumption Profile).
- › Took part in two public information meetings held in Québec and Montréal on the 2018–2019 rate application.
- › Set up one-stop service for developers and major builders.

EXAMPLES OF INITIATIVES FOR 2018–2020

- › 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.

GRI GRI 102-13, GRI 102-15, GRI 201-2, GRI 305-5



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 99.8% of our output from a clean, renewable source, we already contribute to reducing the continent's GHG emissions. 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 costly energy sources.
- Continue our efforts toward transportation electrification (personal vehicles and public transit).

SUSTAINABLE DEVELOPMENT GOAL ASSOCIATED WITH THIS CHALLENGE



Take urgent action to combat climate change and its impacts

Target 13.2 Integrate climate change measures into national policies, strategies and planning

EXAMPLES OF INITIATIVES IN 2017

- Took part in research on climate change issues.
- Carried out solar power pilot project in Quaqtaq.
- Increased the proportion of hybrid or plug-in electric vehicles in our fleet.
- Reduced GHG emissions from our light-vehicle fleet.
- Offset senior management's travel-related GHG emissions.

EXAMPLES OF INITIATIVES FOR 2018–2020

- Gradually convert off-grid systems to cleaner and less-costly energy sources. Launch initiatives for all off-grid systems by 2020.
- Add hybrid and 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.
- Review all our practices that must be adapted in response to climate change.

SUSTAINABLE DEVELOPMENT GOAL ASSOCIATED WITH THIS CHALLENGE



Take urgent action to combat climate change and its impacts

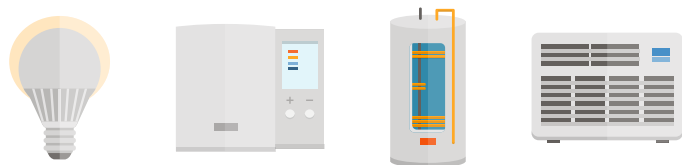
Target 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

EXAMPLES OF INITIATIVES IN 2017

- Shared climate change knowledge in house.
- Developed a decision support tool with a view to incorporating variants of a changing climate when determining the specifications of some equipment.

EXAMPLES OF INITIATIVES FOR 2018–2020

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



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.

SUSTAINABLE DEVELOPMENT GOAL ASSOCIATED WITH THIS CHALLENGE



Ensure access to affordable, reliable, sustainable and modern energy for all

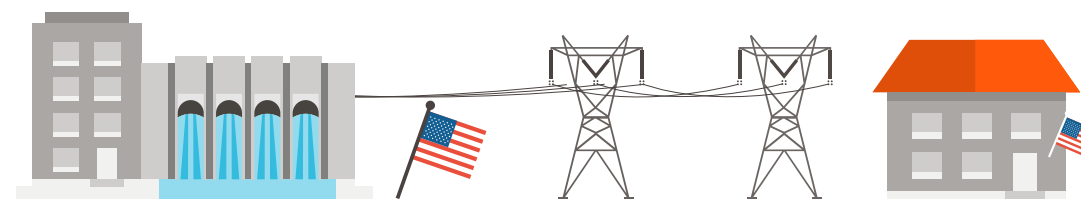
Target 7.3 By 2030, double the global rate of improvement in energy efficiency

EXAMPLES OF INITIATIVES IN 2017

- › Raised awareness of energy efficiency, made sustainable energy choices and supported customer efforts in those areas.
- › Set up a new [Business](#) Web site showcasing online services, offers and energy efficiency programs.
- › Offered hourly tracking of home electricity use in the Customer Space.
- › Implemented energy-saving measures in company facilities, including installing efficient lighting and ventilation systems.

EXAMPLES OF INITIATIVES FOR 2018–2020

- › Reduce power demand by 300 MW.
- › Offer residential customers the option of reducing their energy use by having their heating interrupted in exchange for compensation.
- › Satisfy a portion 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.
- › Acquire assets or stakes outside Québec.
- › Develop the Québec market.
- › Optimize our resources and processes.

SUSTAINABLE DEVELOPMENT GOAL ASSOCIATED WITH THIS CHALLENGE



Promote inclusive and sustainable economic growth, employment and decent work for all

Target 8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value-added and labor-intensive sectors

EXAMPLES OF INITIATIVES IN 2017

- › Exported a record net volume of 34.4 GWh (\$1,575 million).
- › Responded to two RFPs to provide clean power to neighboring states (Massachusetts and New York).
- › Developed new markets in Québec, including data centers.
- › Improved our goods and services procurement practices.

EXAMPLES OF INITIATIVES FOR 2018–2020

- › Sign new long-term contracts for the sale of electricity to neighboring systems.
- › Purchase assets or stakes outside Québec.
- › Continue efforts to commercialize our innovations.
- › Take advantage of business opportunities related to decentralized energy sources, such as photovoltaic solar, storage and electric vehicles.

GRI GRI 102-15, GRI 201-2, GRI 305-5



CONTRIBUTE TO THE ENERGY TRANSITION

CONTEXT

The gradual abandonment of fossil fuels globally as part of the fight against climate change is opening up new business opportunities for the power industry.

SOLUTIONS CONSIDERED

- › Increase the capacity of our generating fleet.
- › Work to further transportation electrification.
- › Continue our exports, which play a key role in the energy transition of our neighbors in the northeastern United States by helping to reduce their GHG emissions.
- › Convert off-grid systems to cleaner, less costly energy sources.
- › Continue research, specifically on energy-positive homes.
- › Purchase assets or stakes in hydropower generation and power transmission in regions outside Québec where the energy transition is in full swing.

SUSTAINABLE DEVELOPMENT GOAL ASSOCIATED WITH THIS CHALLENGE



Ensure access to affordable, reliable, sustainable and modern energy for all

Target 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

EXAMPLES OF INITIATIVES IN 2017

- › Carried out pilot projects and R&D with a view to integrating new technologies and renewable energy sources into our grid.
- › Responded to two RFPs to supply clean power to neighboring states (Massachusetts and New York).
- › Densified the Electric Circuit fast-charging network.

EXAMPLES OF INITIATIVES FOR 2018–2020

- › Develop new customer services (smart grid).
- › Continue to monitor advances in solar power, particularly with respect to investment costs and applications.
- › Simplify the integration of residential wind and solar power into the grid (net metering).
- › Purchase assets or stakes outside Québec.



REMAIN AN EMPLOYER OF CHOICE

CONTEXT

The business world is changing. The company wants to keep an agile, proud and enthusiastic workforce.

SOLUTION CONSIDERED

- › Improve employee commitment, leadership and pride in the company.

SUSTAINABLE DEVELOPMENT GOAL ASSOCIATED WITH THIS CHALLENGE



Promote inclusive and sustainable economic growth, employment and decent work for all

Target 8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment

Target 8.12 By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization

EXAMPLE OF INITIATIVES IN 2017

- › Launched our employee ambassador campaign, introduced new Hydro-Québec promotional items, educational kits for in-school presentations and a social media guide.


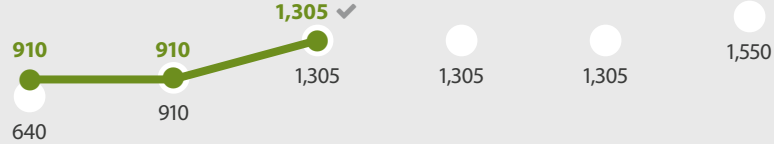

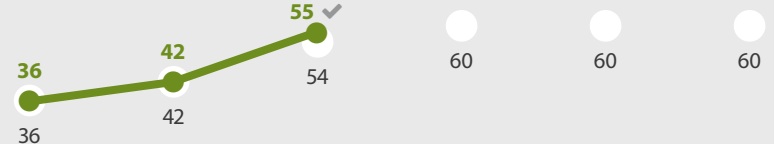

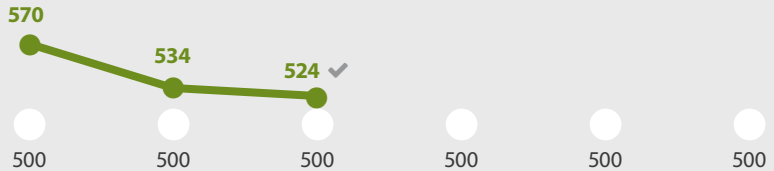

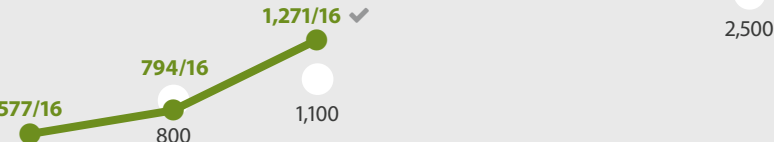
EXAMPLES OF INITIATIVES FOR 2018–2020

- › Set up a field observation program for managers, to improve health and safety performance.
- › Set up a special telephone line for employees to answer questions they are asked.
- › Encourage and acknowledge employees' volunteer work.

Sustainable development action plan 2015–2020


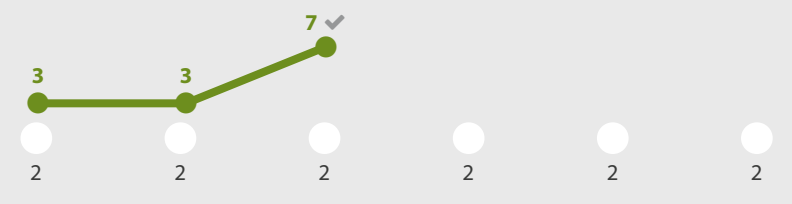



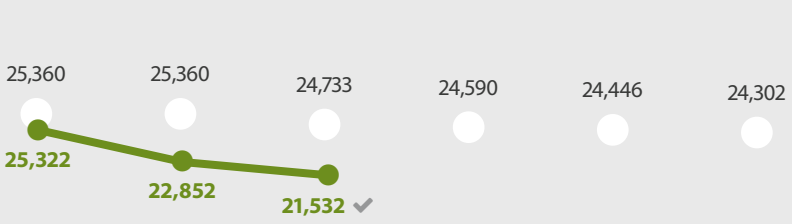
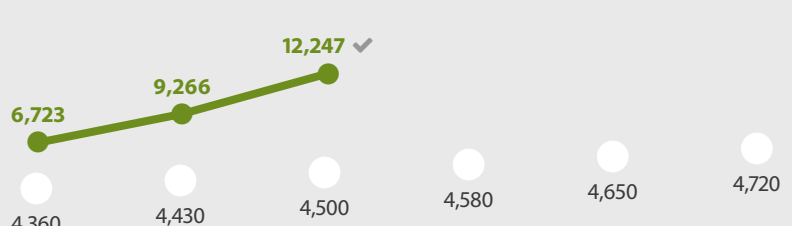

In July 2015, in response to the [government's sustainable development strategy 2015–2020](#) (in French only), we published our third [Sustainable Development Action Plan](#).

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 AND RESULTS																										
			2015	2016	2017	2018	2019	2020																					
OVT	1 BUILD HYDROPOWER PROJECTS 	Cumulative capacity made available by the Romaine project (MW)	 <table border="1"><thead><tr><th>Year</th><th>Value</th><th>Target</th></tr></thead><tbody><tr><td>2015</td><td>910</td><td>640</td></tr><tr><td>2016</td><td>910</td><td>910</td></tr><tr><td>2017</td><td>1,305</td><td>1,305</td></tr><tr><td>2018</td><td>1,305</td><td>1,305</td></tr><tr><td>2019</td><td>1,305</td><td>1,305</td></tr><tr><td>2020</td><td>1,550</td><td>1,550</td></tr></tbody></table>						Year	Value	Target	2015	910	640	2016	910	910	2017	1,305	1,305	2018	1,305	1,305	2019	1,305	1,305	2020	1,550	1,550
Year	Value	Target																											
2015	910	640																											
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2017	1,305	1,305																											
2018	1,305	1,305																											
2019	1,305	1,305																											
2020	1,550	1,550																											
OVT	2 INCREASE THE CAPACITY OF EXISTING HYDROELECTRIC GENERATING STATIONS 	Cumulative gains in additional available peak capacity (MW)	 <table border="1"><thead><tr><th>Year</th><th>Value</th><th>Target</th></tr></thead><tbody><tr><td>2015</td><td>36</td><td>36</td></tr><tr><td>2016</td><td>42</td><td>42</td></tr><tr><td>2017</td><td>55</td><td>54</td></tr><tr><td>2018</td><td>60</td><td>60</td></tr><tr><td>2019</td><td>60</td><td>60</td></tr><tr><td>2020</td><td>60</td><td>60</td></tr></tbody></table>						Year	Value	Target	2015	36	36	2016	42	42	2017	55	54	2018	60	60	2019	60	60	2020	60	60
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2020	60	60																											
	3 CONTINUE ENERGY EFFICIENCY INITIATIVES 	New annual energy savings (GWh)	 <table border="1"><thead><tr><th>Year</th><th>Value</th><th>Target</th></tr></thead><tbody><tr><td>2015</td><td>570</td><td>500</td></tr><tr><td>2016</td><td>534</td><td>500</td></tr><tr><td>2017</td><td>524</td><td>500</td></tr><tr><td>2018</td><td>500</td><td>500</td></tr><tr><td>2019</td><td>500</td><td>500</td></tr><tr><td>2020</td><td>500</td><td>500</td></tr></tbody></table>						Year	Value	Target	2015	570	500	2016	534	500	2017	524	500	2018	500	500	2019	500	500	2020	500	500
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2016	534	500																											
2017	524	500																											
2018	500	500																											
2019	500	500																											
2020	500	500																											
OVT	4 CONTINUE EFFORTS IN THE FIELD OF TRANSPORTATION ELECTRIFICATION IN QUÉBEC 	Number of Electric Circuit charging stations in service/ number of regions served	 <table border="1"><thead><tr><th>Year</th><th>Value</th><th>Target</th></tr></thead><tbody><tr><td>2015</td><td>577/16</td><td>800</td></tr><tr><td>2016</td><td>794/16</td><td>800</td></tr><tr><td>2017</td><td>1,271/16</td><td>1,100</td></tr><tr><td>2020</td><td>2,500</td><td>2,500</td></tr></tbody></table>						Year	Value	Target	2015	577/16	800	2016	794/16	800	2017	1,271/16	1,100	2020	2,500	2,500						
Year	Value	Target																											
2015	577/16	800																											
2016	794/16	800																											
2017	1,271/16	1,100																											
2020	2,500	2,500																											
		R&D partnership agreements	5 agreements. No target has been set for this indicator																										
		Number of patents held	552 patents held. No target has been set for this indicator ✓																										

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


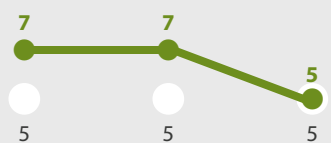








Sustainable development action plan 2015–2020

ACTION	INDICATOR	TARGETS AND RESULTS					
		2015	2016	2017	2018	2019	2020
C 5 PUBLICIZE THE KNOWLEDGE ACQUIRED THROUGH HYDRO-QUÉBEC ENVIRONMENTAL STUDIES 	Number of publications on the Web						
		3	3	7 ✓			
OVT 6 CONTINUE TO PROTECT AND ENHANCE THE COMPANY'S BUILT, TECHNOLOGICAL AND INTANGIBLE HERITAGE C 	Number of measures carried out by 2020						
		1	2	3			2
OVT 7 STRENGTHEN ENVIRONMENTALLY RESPONSIBLE MANAGEMENT PRACTICES 	Annual GHG emissions from the light-vehicle fleet (t CO ₂ eq.)						
		25,322	22,852	21,532 ✓			
	Number of videoconferences held annually						
		6,723	9,266	12,247 ✓			
	Company printers that are print-release enabled (%)						
		7.6	11.4	16.0 ✓			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	INDICATOR	TARGETS AND RESULTS					
		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		7	7	5	5	5
9 OPTIMIZE THE APPLICATION OF SUSTAINABILITY PRINCIPLES TO PROJECTS AND ACTIVITIES 	Number of projects or activities analyzed each year		1	1	1 ✓	1	1
OVT 10 PROMOTE THE INTEGRATION AND FAVORABLE RECEPTION OF HYDRO-QUÉBEC'S SYSTEM EQUIPMENT 	Regional county municipalities (RCMs) that have received the information program (%)		2	18 ✓			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	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	1	1 ✓	1	1

OVT

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

GRI GRI 102-40, GRI 102-44, GRI 102-47, GRI 103-1, GRI 103-2, EU29

OUR PRIORITIES: CUSTOMERS, HEALTH AND SAFETY



Pruning trees in a residential area of Baie-Comeau, in the Côte-Nord region.

Our customers are the focus of everything we do. They want a reliable, high-quality power supply, superior service and competitive rates. As for our employees and suppliers, they expect to work in a safe, healthy work environment.

IN THIS SECTION

- > Reliability and service continuity
- > Vegetation control
- > Customer service (expectations, satisfaction, complaints)
- > Energy prices
- > Low-income households
- > Public health and safety
- > Employee and contractor health and safety

Reliable electric power

Delivering reliable electric service to our customers requires meticulous supply management. We must also make sure that our transmission and distribution systems are reliable and can deliver power efficiently to our various customers in Québec and neighboring markets. For example, we conduct major maintenance and expansion operations. We also control vegetation in our distribution and transmission line rights-of-way and on our dikes and dams.

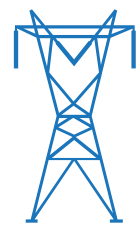
Electric service quality is measured by the system average interruption duration index (SAIDI), which reflects the average interruption time per customer over the course of a year. Some scheduled interruptions are required for system maintenance; unscheduled outages are caused by bad weather, invasive vegetation or equipment failure.

2017 HIGHLIGHTS

- **Transmission system investments: \$2.0 billion.** Major investments will continue in the coming years.
- **Distribution system investments: \$650 million.**
- **Hundreds of line workers, accompanied by mechanics and support staff, were mobilized to lend a hand in New Brunswick, Maine, Georgia and New York State during major outages caused by freezing rain and a hurricane.** These missions were conducted under agreements between utilities, including Hydro-Québec, that are members of the North Atlantic Mutual Assistance Group.



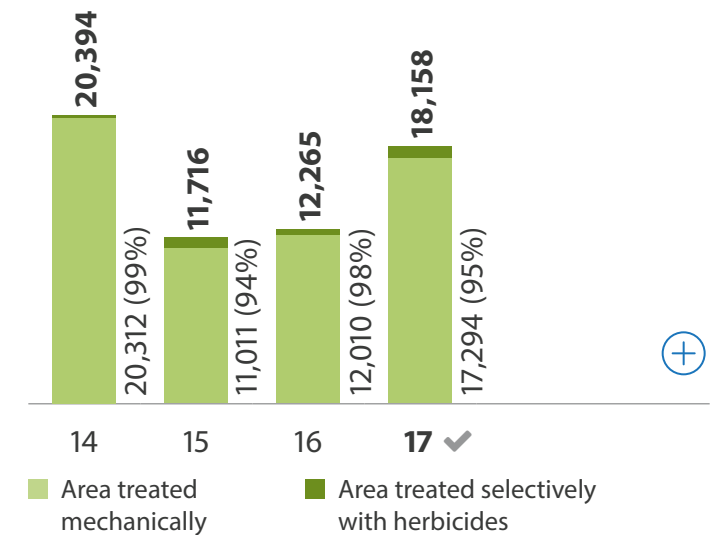
UNDERSTANDING
POWER OUTAGES



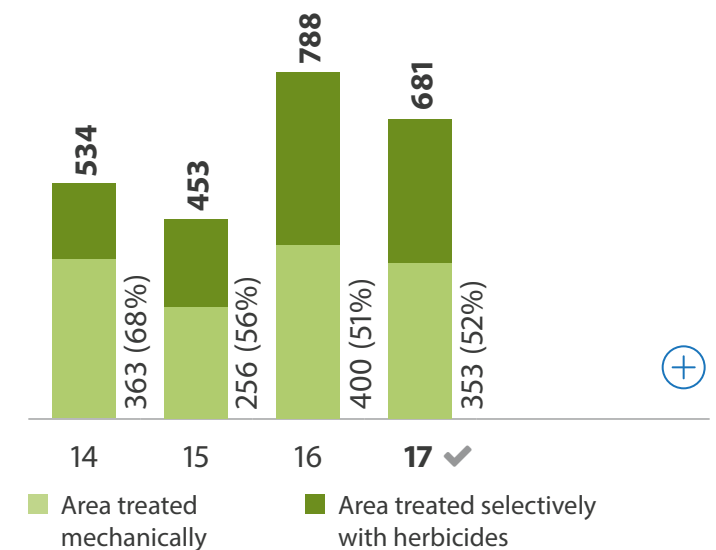
TRANSMISSION
SYSTEM

DISTRIBUTION
SYSTEM

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



VEGETATION CONTROL ON DIKES AND DAMS (ha)



WHY CONTROL
VEGETATION NEAR
POWER LINES?

GRI GRI 102-11

20 YEARS AFTER THE ICE STORM: LESSONS LEARNED

It's been 20 years since Québec was hit by an ice storm of unprecedented ferocity. At its peak, over one million households were without electricity.

Since then, numerous measures have been rolled out to prevent this from happening again. Extensive studies and tests led to the adoption of a new transmission-line design standard. For instance, every tenth tower along a transmission line is now a very robust anti-cascading tower to limit the damage that could result from the collapse of a single tower. During the ice storm, the “domino effect” of collapsing towers caused untold damage. We've also revised our weather loading charts after updating our wind and ice databases.

More generally, the transmission system is being strengthened with projects that diversify supply sources and corridors. System loops mean that high-risk areas can now be supplied by several lines.



The 1998 ice storm hit many parts of Québec hard, especially Montérégie.

In total, 564 km of strategic lines have been reinforced, some with de-icing equipment. Lévis substation, for instance, now has a system that sends direct current through strategic conductors in the area around the city of Québec to melt accumulated ice. Elsewhere, LC spiral rods have been installed on line segments that cross major roads. Made from an alloy that heats up in a magnetic field, the rods maintain conductor temperature around 0°C and thus avoid snow or ice build-up.

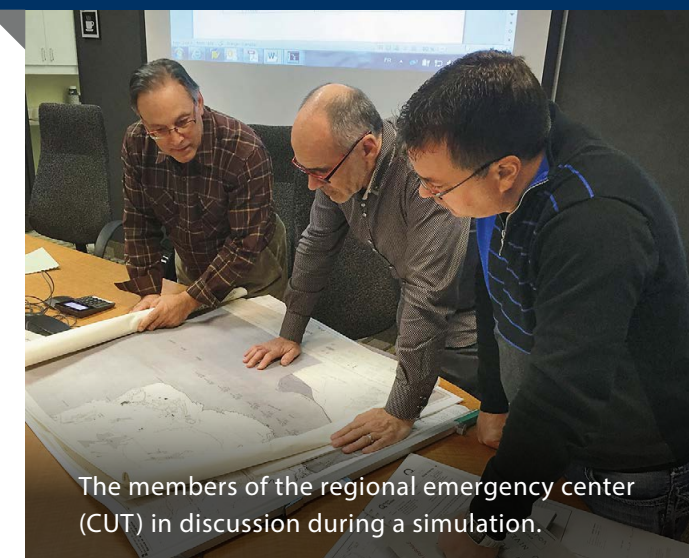
 **Power supply reliability**
EXCLUSIVE WEB CONTENT

- [Service interruptions](#)



 **TIMELINE OF AN UNPRECEDENTED CRISIS**

CYBER/PHYSICAL ATTACK SIMULATION



The members of the regional emergency center (CUT) in discussion during a simulation.

Staff from every Hydro-Québec business unit took part in the [GridEx IV biennial exercise](#) that simulates a cyber/physical attack on electric and other critical infrastructures across North America. Organized by the [North American Electric Reliability Corporation](#) (NERC), the exercise gives key North American power utilities and other stakeholders an opportunity to test their crisis response plan. Participants must coordinate their response with neighboring authorities, including ISO New England, NYISO, NB Power and the Independent Electric System Operator. Hydro-Québec ensured that its emergency measures are adequate and that its chain of command operates as intended.

Customer service

Call wait time is a key indicator of residential and business service quality. In 2017, the average call wait time at our customer relations centers was 84 seconds (99 in 2016).

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

2017 HIGHLIGHTS

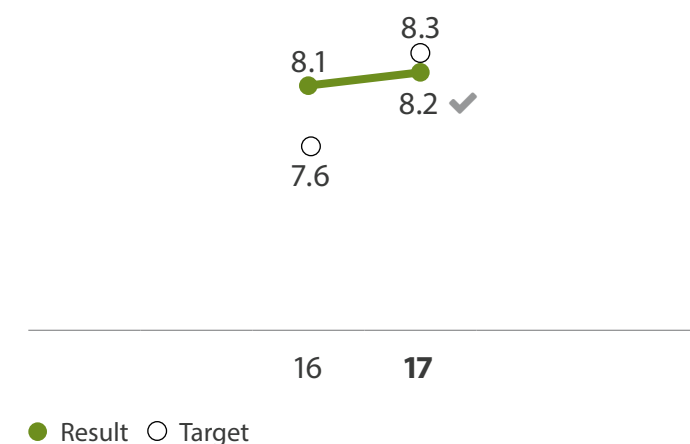
- In 92% of simple service connections, the connection was completed within 10 business days (90% in 2016). We process some 50,000 connection requests each year.
- In 85% of service connections involving multiple parties, the connection was completed on the scheduled date.

- The number of complaints dropped 24% compared to 2016. ✓ The reduction can be attributed to milder temperatures than in the previous year, the availability of online energy-use tracking for all customers, greater stability in billing dates and tighter control of connection times.
- For 91% of the calls received at our customer relations centers, the issue was resolved during the first call (90% in 2016). The 14 customer relations centers are located across Québec and field more than three million calls annually.
- The residential [Customer Space](#) website was revamped.
- The residential customer bill was simplified to highlight key information: a table compares electricity use and average temperatures in the current and previous years and another shows consumption history. For customers who have signed up for the Equalized Payment Plan, the new bill also now projects costs for the 12-month period compared to total payments so they can adjust their monthly installments as needed.

+ PORTRAIT OF OUR CUSTOMERS

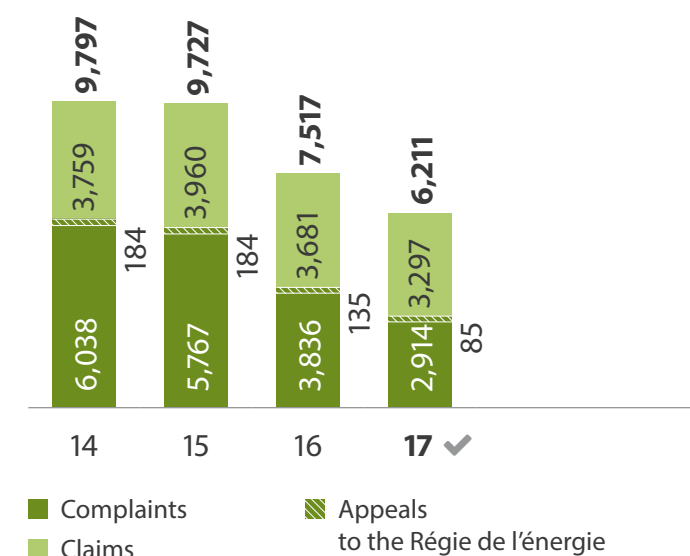


OVERALL CUSTOMER SATISFACTION INDEX (scale of 10)



+ NOTE ABOUT THE GRAPH

CUSTOMER COMPLAINTS AND CLAIMS (number)



The 37% difference relative to 2016 is primarily due to the one-third reduction in appeals at first instance to the Régie de l'énergie (1,820 in 2016 and 1,284 in 2017).

Rates and electricity use

Hydro-Québec is required to charge the same electricity rates throughout Québec. Rates are based on the consumption profile of the different customer categories.

Thanks to the low-cost heritage pool of electricity, Québec has [some of the lowest rates in North America](#). Each year, we file a rate case for approval by the Régie de l'énergie, the economic regulatory body for Québec's energy sector. Our rate application is analyzed in a rigorous process that culminates in December in public hearings where all stakeholder representatives can express their views.



⊕ HOW ELECTRICITY
RATES ARE SET

⊕ NORTH AMERICA'S
LOWEST RATES



Video

2017 HIGHLIGHTS

- The rate adjustments in the last three years, 0.7% on April 1 in 2016 and 2017 and 0.3% on April 1, 2018, reflect our commitment to keep rate increases lower than or equal to inflation. Without the efficiency gains of approximately \$590 million achieved over the past 10 years, rates would be about 5% higher in 2018–2019.
- Payment arrangements were signed with residential customers to facilitate settlement of 366,839 cases ✓ representing \$731 million gross in arrears; the arrangements cover forecast consumption over the duration of the agreements.
- 106,438 payment arrangements ✓ covering \$483 million gross were reached with low-income customers; 46,974 of the agreements, ✓ amounting to \$56 million, provide assistance with payment of arrears and, if necessary, partial payment for current electricity use.
- Pilot projects tested agreements tailored to the payment capacity of low-income customers. These initiatives included more generous agreements and gradual cancellation of the debt.

CROSS-SUBSIDIZATION

Cross-subsidization consists of charging one or more customer categories higher rates than the allocated service cost in order to be able to offer lower rates to one or more other consumer categories. Residential customers benefit from cross-subsidization, paying about 84% of the service cost. The difference in the service cost is covered by the other rate categories.

To ensure that customer categories pay fair electricity rates while benefiting residential customers, the *Act respecting the Régie de l'énergie* limits cross-subsidization. The Act stipulates that the Régie cannot modify a category's rate to reduce cross-subsidization.

CROSS-SUBSIDIZATION INDEX PER CONSUMER CATEGORY – 2017

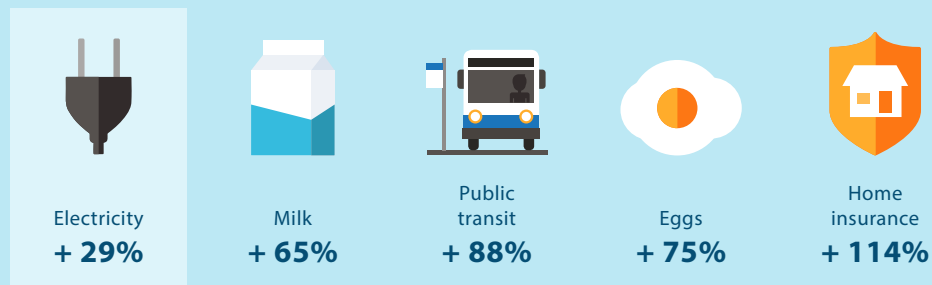
CONSUMER CATEGORY	CROSS-SUBSIDIZATION INDEX
Domestic	85.4
G	120.4
M	130.4
LG	103.4
Large industrial L	107.8

An index value below 100 indicates that the consumer pays less than the cost of service. An index value above 100 means the consumer is charged more than the cost of service and thus helps to offset the shortfall from another category.

EXPLANATION OF THE RATE INCREASE AND ITS IMPACT ON ELECTRICITY BILLS

Over the past 20 years, electricity prices have grown at a slower rate than the prices of many consumer goods.

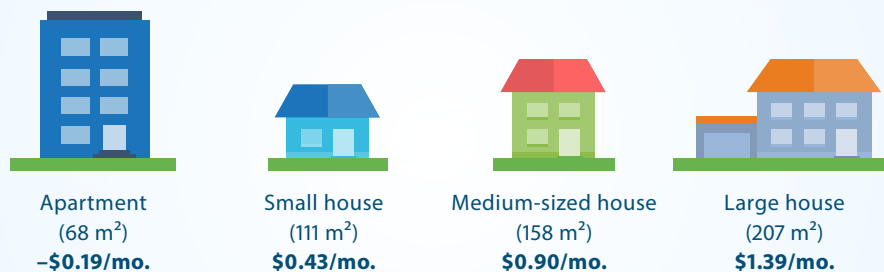
Growth in consumer goods prices in Québec
in the past 20 years



Source: Statistics Canada.

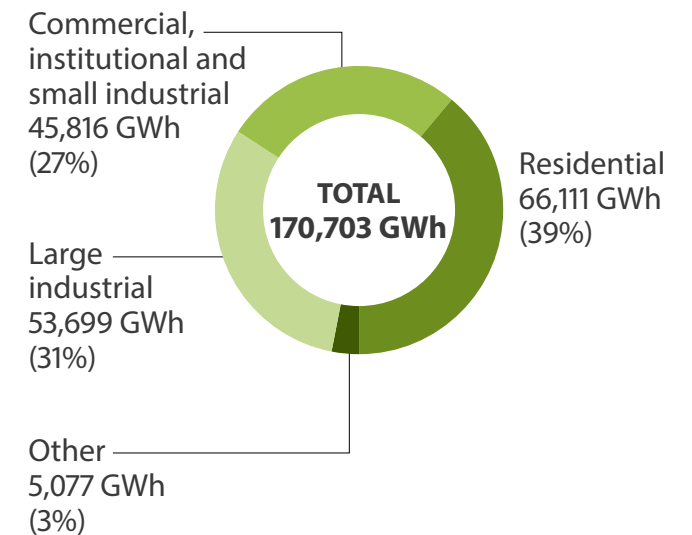
For customers, the monthly impact of the rate adjustment on their electricity bill as of April 1, 2018, is approximately the following:

Impact on the electricity bill of households
with electric heating



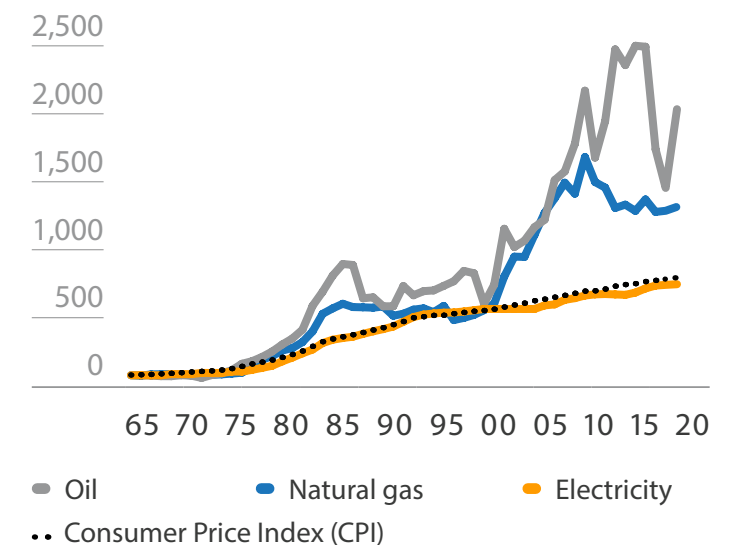
Apartment dwellers can look forward to lower bills, since the extension of the first tier of consumption from 33 to 36 kWh means they can use more electricity at the lowest residential price.

ELECTRICITY SALES IN QUÉBEC BY SEGMENT – 2017 ✓



INFLATION AND ENERGY PRICES IN QUÉBEC – 1963–2017

Index (1963 = 100)



Electricity prices have stayed in line with inflation. According to the available data, the consumer price index in Canada is 807, while it is 753 for electricity, 1,309 for natural gas and 2,036 for oil.

GRI GRI 102-11, GRI 403-2, EU25, GRI 417-1

Public and consumer health and safety

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

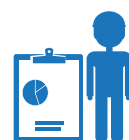
ELECTRICAL ACCIDENTS – 2017


	INCIDENTS ✓	DEATHS ✓
Public – Hydro-Québec facilities	14	2
Public – use of electricity	0	3
Skilled workers – Hydro-Québec facilities	30	0
Skilled workers – use of electricity	5	0
Hydro-Québec employees	163	0
TOTAL	212	5

 NOTE

Hydro-Québec also studies the potential human health hazards inherent in its operations and takes steps to mitigate them. For example, we know that reservoir impoundment temporarily increases fish mercury levels and that they return to normal after 10 to 35 years. This phenomenon has been closely monitored for many years and fish consumption recommendations are issued as needed.

In addition, noise from our facilities can be a nuisance and we endeavor to minimize it, especially in residential areas. For example, quieter power transformers are installed when work is done on transformer substations. Should at-source reduction prove insufficient, we apply noise reduction measures wherever possible.



 HYDRO-QUÉBEC
OPERATIONS AND
HUMAN HEALTH

LAURELS FOR OUR EMPLOYEES

Two Hydro-Québec employees, Mario Ménard and Guy Desgagné, received the Canadian Electricity Association's [Life Saving Award](#) and the Québec National Assembly Medal for saving the lives of three people during a house fire.

2017 HIGHLIGHTS

- Employees and suppliers were reminded of the importance of safe behavior, and of reporting any potentially hazardous incident or situation that could impact personal safety or the company's assets. The dedicated security awareness hotline is available 24/7. Number of calls received in 2017: 2,460 ✓ (2,875 in 2016).
- In cooperation with the Canadian Hydropower Association, a series of FAQs about [methylmercury and hydropower](#) were developed. The texts summarize current industry knowledge about mercury and how to manage the potential health risk.
- An [article](#) was published that summarizes the main lessons learned during more than 35 years of monitoring fish mercury levels in La Grande complex reservoirs.

GRI GRI 102-11, GRI 403-2

Employee and contractor health and safety

Hydro-Québec maintains very high occupational health and safety standards. However, an analysis of its health and safety practices conducted in the wake of unfortunate accidents revealed certain areas for improvement that led the company to review its work methods. The resulting initiatives will lay the foundations for an in-depth culture change in this area.

2017 HIGHLIGHTS

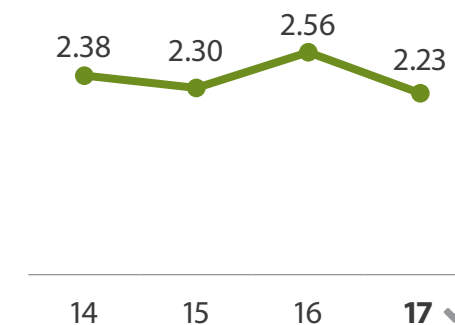
- Occupational health and safety is discussed in two-way internal communication meetings so that information is shared more rapidly at all levels.
- In April, an employee awareness campaign on jobsite safety, *Je m'engage dans le virage de la sécurité* ["I'm on board with workplace safety"], was launched; it attests to our commitment to eliminate risks at source.
- A [summary of the Health and Safety Action Plan](#) and the [report](#) released by ERM (both in French only) were published online. Approved by the Board, the action plan will be monitored by an external auditor.

- 2,471 cases were opened under the Employee Assistance Program. ✓ Free, confidential and always available, the program helps employees resolve personal or professional issues in a timely and effective manner. Over the year, the program was enhanced by individual face-to-face, telephone or videoconferences, telephone support, post-traumatic crisis intervention and outreach services for managers concerned about an employee.
- Scientific research was published on the neurophysiological effects of high-intensity magnetic fields on humans, especially the magnetophosphene perception threshold. The presence of light flashes in the visual fields of a number of subjects was confirmed in the laboratory. The findings will be used to set international exposure limits for workers who are exposed to magnetic fields and to verify compliance with these limits among the longest-exposed workers.



Health and safety advisor Patrick Marchand on the Judith-Jasmin substation jobsite. The field of occupational health and safety is constantly evolving in the company.

WORK-RELATED ACCIDENT FREQUENCY (per 200,000 hours worked)



● Work-related accident frequency

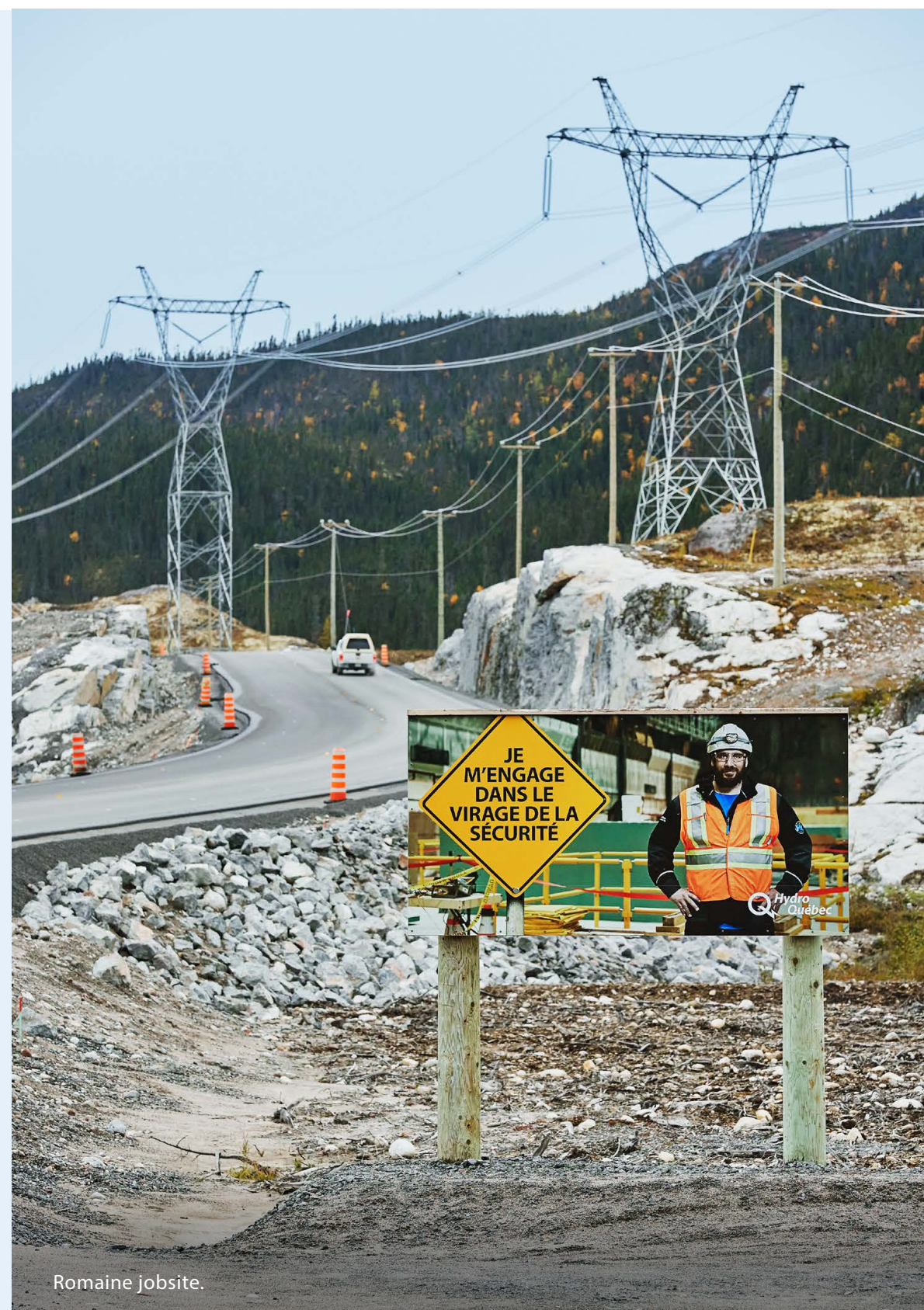
13% reduction in accident frequency relative to 2016.

CHANGING ATTITUDES TO OCCUPATIONAL HEALTH AND SAFETY

Following the death in December 2016 of a contractor's employee on the Romaine jobsite, our Board of Directors set up a Special Committee on Workplace Health and Safety. The committee hired an external consulting firm, ERM, to assess Hydro-Québec's health and safety practices on its jobsites and in its operations. The workplace health and safety strategy developed jointly by ERM and Hydro-Québec focuses on the following four areas:

- › Vision and leadership
- › Performance
- › Risk management
- › Management approach to occupational health and safety

Hydro-Québec does everything it can to protect the lives of its workers. The Health and Safety Action Plan 2017–2020 includes an observation and support program to ensure that managers of all levels are present on the ground. The program will also improve hazard recognition and introduce effective controls that lower the tolerance threshold. The message is clear: Hydro-Québec wants to eliminate serious or fatal accidents in its operations. No effort will be spared to protect the people who work with us, be they employees or contractors.



Romaine jobsite.

GRI GRI 102-40, GRI 102-44, GRI 102-47, GRI 102-48, EU2, GRI 103-1, GRI 103-2

OUR MANAGEMENT OF ENERGY DEMAND

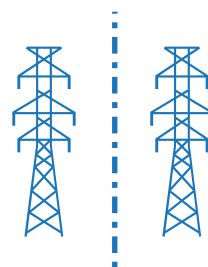


Mercier generating station, in La Vallée-de-la-Gatineau MRC.

Electricity generation worldwide is increasingly green. This transition is supported by the deployment of solar photovoltaic and wind energy, among others, the costs of which are rapidly coming down. Although the energy we produce is almost entirely renewable, we remain on the lookout for business opportunities arising from this change.

IN THIS SECTION

- › Electricity supply
- › Energy efficiency initiatives
- › Energy efficiency of buildings and facilities
- › Off-grid systems
- › Demand response
- › Hydroelectricity
- › Electricity generated and purchased
- › Electricity sales and purchases outside Québec



Electricity supply plan

Hydro-Québec filed the 2017 progress report on its Electricity Supply Plan 2017–2026 with the Régie de l'énergie. The report updated the energy and power demand forecast calculated before the addition of new markets and new customers such as data centers.

DEMAND FORECASTS

Energy requirements are expected to increase by 2026, though not enough to fully deplete the energy surplus. The Demand Response Program will mitigate the effect of the anticipated increase without reducing the capacity deficiency.

Hydro-Québec is moving ahead with its plan to convert off-grid systems to cleaner energy sources to reduce supply costs and its environmental footprint.

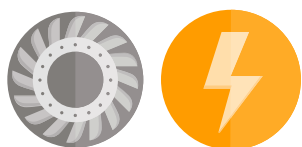


Transmission line near Carillon generating station, in the Laurentides, on the Québec–Ontario border.



Supply sources EXCLUSIVE WEB CONTENT

- [Electric power purchases — Québec market](#)
- [Wind power](#)
- [Cogeneration plants](#)
- [Small hydro](#)
- [Self-generation](#)
- [Renewable energy sources: current state of knowledge](#)



Energy efficiency

In keeping with the approach of recent years, Hydro-Québec strives to maintain an energy efficiency culture and use energy-saving measures to address some of the growth in demand. We adapt measures to each customer group: residential, business, low-income or off-grid. We are also continuing our demand response initiatives.

For residential customers, our efforts focus on raising awareness about energy efficiency and encouraging them to make sustainable energy choices. Business customers receive financial assistance, as well as advice and support for their energy efficiency initiatives. This flexibility lets our customers incorporate innovative technologies and products into their projects.

2017 HIGHLIGHTS

RESIDENTIAL CUSTOMERS

- New energy savings: 203 GWh (204 GWh in 2016). ✓
- Two ENERGY WISE campaigns were run on the radio in other media (spring and fall), promoting ENERGY STAR® certified air conditioners and pool products like two-speed pumps.
- Our Efficient Pools program continued; it encourages the use of energy-efficient equipment and energy-savvy habits. Heat pumps are now among the recommended appliances. More than 500,000 (18%) of our residential customers have a swimming pool.



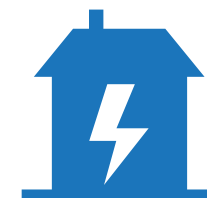
^^ Residential neighborhoods on Montréal's north shore, a great place to live. The Efficient Pools Program was designed to save energy.

^ The efficient lighting products that we promoted provide comfort and atmosphere and generate big energy savings.



Energy efficiency EXCLUSIVE WEB CONTENT

- [The Right Moves Web site](#)
- [ENERGY WISE \(residential customers\)](#)
- [Energy efficiency programs \(business customers\)](#)



⊕ AVERAGE ANNUAL ENERGY
CONSUMPTION BY HOUSEHOLD
TYPE IN QUÉBEC

GRI EU10, GRI 302-4

- The Consumption Profile in the [Customer Space](#) was upgraded. With this tool and next-generation meters, customers can track their energy use and compare their hourly, daily, monthly or yearly consumption with the previous year's.
- In cooperation with Transition énergétique Québec (TEQ), we conducted a pilot project that gave low-income customers access to an integrated energy efficiency program.
- Our contribution to TEQ's Éconologis program promoted ENERGY STAR® certified refrigerators, LED lightbulbs and shower timers, and provided energy efficiency tips. Owing to the program's success, other measures will follow.
- The Efficient Homes program was discontinued as it failed to generate the hoped-for interest among builders and consumers.

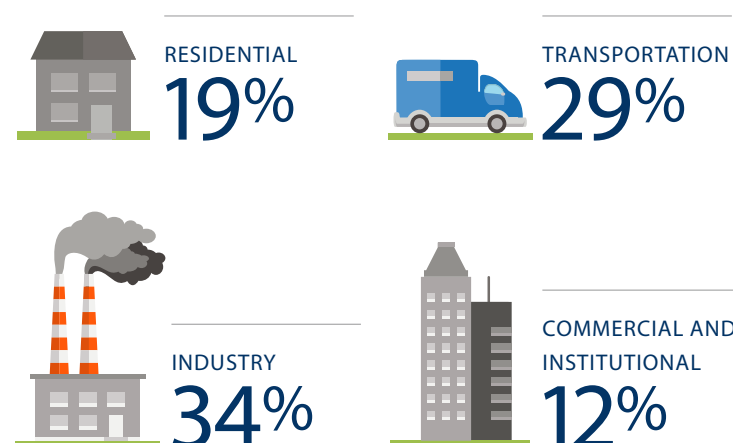
NEW ANNUAL ENERGY SAVINGS – ENERGY EFFICIENCY INITIATIVES (GWh)

	2014	2015	2016	2017 ✓
Residential customers	227	178	204	203
Business customers	277	392	330	321
Energy savings	504	570	534	524

BUSINESS CUSTOMERS

- New energy savings: 321 GWh (330 GWh in 2016). ✓
- The new [Business](#) Web site makes information easier to find and highlights online services, the benefits of hydropower, offers and energy efficiency programs. These features support energy performance in buildings, industry and agriculture.
- Available in the Customer Space, the new [Your Consumption Profile](#) tool enables customers to track their energy use.

ENERGY CONSUMPTION BY SECTOR AND USE IN QUÉBEC



⊕ ENERGY CONSUMPTION
BY SECTOR IN QUÉBEC



FRUIT D'OR JOINS THE INDUSTRIAL SYSTEMS PROGRAM

Operating primarily in Villeroy and Plessisville in the Centre-du-Québec region, Fruit d'Or is a berry processing firm that is endeavoring to reduce its environmental footprint.

To build its new plant, Fruit d'Or joined Hydro-Québec's Industrial Systems program. The company installed energy-efficient electrotechnologies that included pressure-driven membranes, variable-speed drives and advanced control systems for drying cranberries and producing juice. Overall, the measures boosted output, improved energy performance by 45% and reduced production costs.

⊕ LEARN MORE ABOUT
ELECTROTECHNOLOGIES

ENERGY SAVINGS – OUR BUILDINGS AND FACILITIES

We take concrete steps to reduce energy consumption by our facilities. The energy savings achieved mainly relate to lighting, ventilation and automated building systems.

We also rehabilitate and refit our generating stations to increase capacity and output, and implement measures to reduce energy losses on the power grid. Together, these efforts enable us to generate and deliver more energy for less.

2017 HIGHLIGHTS

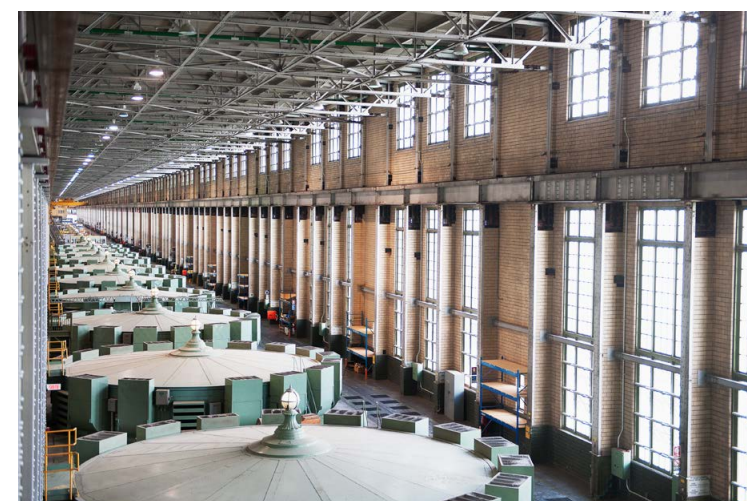
ENERGY SAVINGS

- Since 1992, we've saved 108 GWh/year with the energy efficiency measures implemented in our administrative buildings.
- The Coteau-3 dam was equipped with a system to optimize gate heating, generating an energy gain of 1.78 GWh per year. (Montérégie)
- 26 sodium lamps were replaced by LED lamps at the Sainte-Marguerite-3 facility, resulting in energy savings of 57%. (Côte Nord)

- A heating system triggered by outdoor temperatures was installed at a spillway gate at the Première-Chute facility to reduce heating needs by 33%. (Abitibi-Témiscamingue)
- Refurbishment of the lighting systems to decrease energy consumption began at La Grande-3 and La Grande-4 generating stations. The annual savings are estimated at 6.3 GWh. (Nord-du-Québec)

POWER GAINS

- Replacing the turbine runner of a unit at Beauharnois generating station helped improve its performance and yielded power gains of 12 MW. (Montérégie) ✓
- At Rapides-des-Quinze, replacing the turbine runner in one of its generating units resulted in power gains of 6.6 MW. (Abitibi-Témiscamingue) ✓



^^ Refurbishment of Beauharnois generating station has increased its capacity considerably.

^ Energy-saving measures are being implemented at Sainte-Marguerite-3 generating station.

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

	RESULTS			
	2014	2015	2016	2017
Average energy consumption	239	231	229	230 ✓

The increased consumption in 2017 relative to 2016 is largely due to the extended opening hours of our customer relations centers.

Managing demand

Under our demand response strategy, we have planned various initiatives to reduce or shift peak electricity consumption. Programs available to our residential customers target three-element water heaters and dual-energy systems. For business customers, we rely on our new Demand Response Program.

2017 HIGHLIGHTS

- Power gains of 900 MW during winter 2017–2018 were achieved by large- and medium-power customers who chose interruptible electricity options. Gains of 1,000 MW are targeted for upcoming winters. [SEE THE PROGRAM](#)
- The technical feasibility of remote control for dual-energy heating systems was validated as part of the interruptible dual-energy pilot project for residential customers.
- The demonstration project on residential load curtailment for baseboard heaters continued. Measures like occupancy sensors will be tested to assess energy gains.

DEMAND RESPONSE PROGRAM

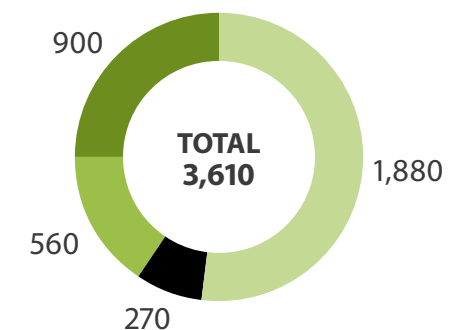
The Demand Response Program is based on an R&D project carried out at our energy technology laboratory (LTE). We establish the power demand profile of a building, then apply a catered strategy for reducing its demand. The anticipated power demand is estimated, based on use and outside temperatures, and compared with the actual power demand obtained by applying demand response measures.

Following the success of the demonstration project tested at a bank, a school, two retail stores and two of our administrative buildings, we implemented the [Demand Response Program](#) in our 41 administrative and service centers. Result: the buildings' power demand dropped by an average of 35% to 50% during the winter peak.

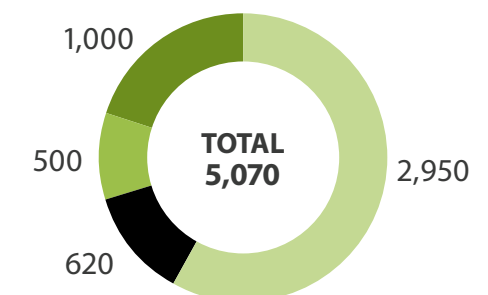
[+](#) WINNING STRATEGIES

ENERGY EFFICIENCY INITIATIVES TO REDUCE POWER DEMAND (MW)

2017-2018



2025-2026



- Power gains resulting from energy efficiency initiatives
- Residential dual energy and three-element water heaters
- New demand response measures taken with customers
- Interruptible electricity

Power demand figures are from the 2017 progress report on the Electricity Supply Plan 2017–2026.

Off-grid systems

We operate off-grid systems in five regions: Îles-de-la-Madeleine, Nunavik, Basse-Côte-Nord, Schefferville and Haute-Mauricie. These vast, sparsely populated territories are home to some 35,000 inhabitants in 30 communities that include Atikamekw, Cree, Innu, Inuit, Naskapi and non-Indigenous populations.

In 2017, these off-grid systems generated 443 GWh of power ✓ to serve some 18,500 customers. They include 23 thermal power plants (131 MW) as well as two hydraulic generating stations, Lac-Robertson (21.6 MW) and Menihek (17 MW). Menihek belongs to a third party. ✓

To reduce both our supply costs and our environmental footprint, we've undertaken an energy transition in our off-grid systems. Achieving our goals will involve using renewable energies, applying energy efficiency measures and requesting proposals from the private sector for power generation projects that meet our cost, reliability and social acceptability criteria.

In terms of both energy and capacity, demand forecasts for off-grid systems are based on analyses of historical data (sales, generating output and customer accounts), anticipated population growth and expected developments in unit consumption.

Of all the territories, Nunavik shows the highest growth, while the Îles-de-la-Madeleine and Basse-Côte-Nord regions show the lowest. These variances are mainly due to differences in population growth. While the current facilities in each off-grid system are sufficient to meet its customers' energy needs, some of the systems are experiencing capacity deficits.

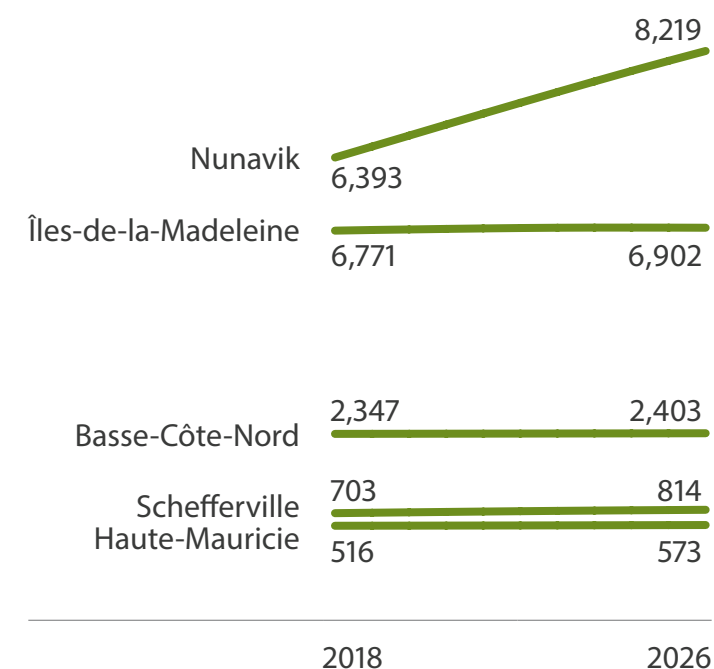
As a rule, we strive to limit demand growth by implementing energy efficiency measures before taking steps to increase power generation capacity. This applies equally to all our customers, including those on off-grid systems.

For the 16 off-grid systems that we operate on Indigenous (Inuit, Atikamekw, Innu and Cree) lands and that are supplied by thermal power plants, we intend to reduce diesel dependency over the coming years by introducing renewable energy sources and deploying energy efficiency measures.



The northern village of Salluit, in Nunavik.

OFF-GRID DEMAND FORECASTS – NUMBER OF CUSTOMER ACCOUNTS PER SYSTEM



The number of residential and agricultural customer accounts for off-grid systems is expected to rise from 16,730 to 18,910 between 2018 and 2026.

Data from the Electricity Supply Plan 2017–2026 – Off-Grid Systems.

GRI EU10



Photovoltaic solar technology is being tried out in Quaqtaq, Nunavik.

In the communities of Salluit, Kangiqsujaq and Umiujaq, discussions on fueling thermal plants with electricity are ongoing with Tarquti Energy, a company dedicated to renewable energies that was founded in 2017 by Makivik Corporation and the Fédération des coopératives du Nouveau-Québec (FCNQ). The outcome of these discussions will affect the development of initiatives to convert other off-grid systems in Nunavik. (Nord-du-Québec)

2017 HIGHLIGHTS

- The request for proposals (RFP) submission deadline for Obedjiwan forest biomass cogeneration was extended to January 2018. (Mauricie)
- Two processes for conversion of the Îles-de-la-Madeleine system got under way: a draft design to connect the islands to the main grid and an



A project to connect the Îles de la Madeleine to the main grid is in the draft-design phase.

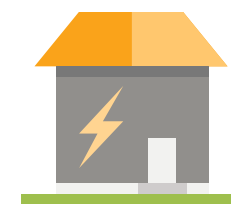
RFP to assess whether another solution would be better. Both processes are currently being evaluated. The RFP is expected to be launched in 2018.

- Three bids were received for the purchase of 6 MW of wind power generated on the Îles de la Madeleine. (Gaspésie–Îles-de-la-Madeleine)
- To prepare for the introduction of renewables into Arctic communities, a pilot project to install 69 solar panels (20 kW) was completed in Quaqtaq. Other equipment may be added in 2018. The aims are to acquire knowledge, identify the main constraints and evaluate installation, maintenance and operating costs. (Nord-du-Québec)
- We completed a project to recover waste heat from the Îles-de-la-Madeleine thermal plant and use it to heat buildings and water at the Centre intégré de santé et de services sociaux des Îles (CISSS). A 1.7-km stretch of piping was installed



Wind power is one of the solutions being considered for switching off-grid systems to other energy sources.

along the main street to connect the CISSS and the plant, while heat exchangers were added to each of the plant's six motors. (Gaspésie–Îles-de-la-Madeleine)



⊕ OFF-GRID GENERATING STATIONS: MAP

GRI EU2, EU10

Generation, purchases and choice of energy sources

Our extensive supply portfolio and the heritage pool of electricity enable us to meet capacity and energy demand. We currently have 75 contracts, ranging from 15 to 25 years, for deliveries of electricity generated by a variety of sources, and we've also signed a number of other agreements to secure our supply.

SYSTEM CONTROL CENTER

Managing power demand is a complex undertaking that calls for meticulous planning. Various teams work together to optimize resource use and ensure reliable service.

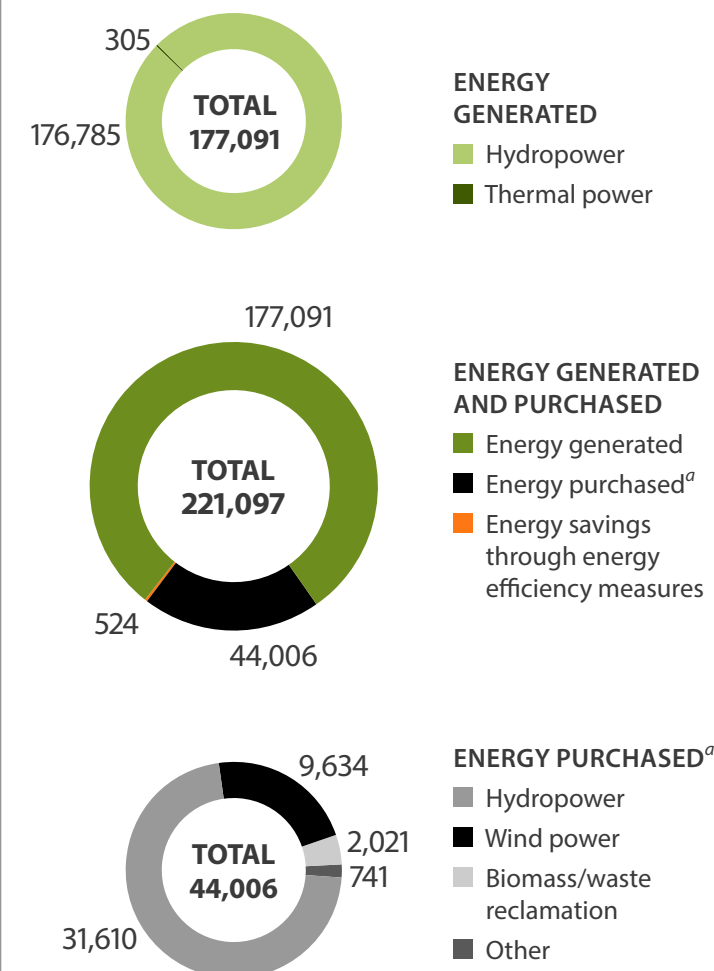
[+ FIND OUT MORE](#)

LONG-TERM NON-HERITAGE SUPPLY UNDER CONTRACT

ENERGY SOURCE	NUMBER OF CONTRACTS SIGNED ✓	PEAK CAPACITY (MW) ✓	ANNUAL ENERGY (TWh)	
			2018	2026
Biomass	21	338	1.8	2.5
Wind power	38	1,484	11.2	11.3
Cogeneration	1	8	0.1	s.o.
Small hydro	9	122	0.5	0.7
Other sources	3	600	3.1	4.5
Hydro-Québec Production	3	500	s.o.	0.2
TOTAL	75	3,053	16.6	19.2

[+ CURRENT AND PLANNED CAPACITY – WIND FARMS AND GENERATING STATIONS COVERED BY SUPPLY CONTRACTS](#)

MEETING ENERGY NEEDS – 2017 (GWh) ✓



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 that were sold to third parties. They exclude purchases of wind, hydraulic and biogas energy for which certificates were sold to third parties.

Hydropower

Hydropower accounts for the lion's share of Québec's electricity mix, alongside other renewables. Besides securing our supply through contracts with independent renewable energy producers, we support the development of other sources like wind, biomass and small hydro.

2017 HIGHLIGHTS

- The two units (395 MW) at Romaine-3 generating station were commissioned and the station was connected to the grid. (Côte-Nord) ✓

87.8 TWh

⊕ ENERGY AVAILABLE
2018–2026

1,900 MW

⊕ CAPACITY DEFICIT
THROUGH 2026

RENEWABLE ENERGIES

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

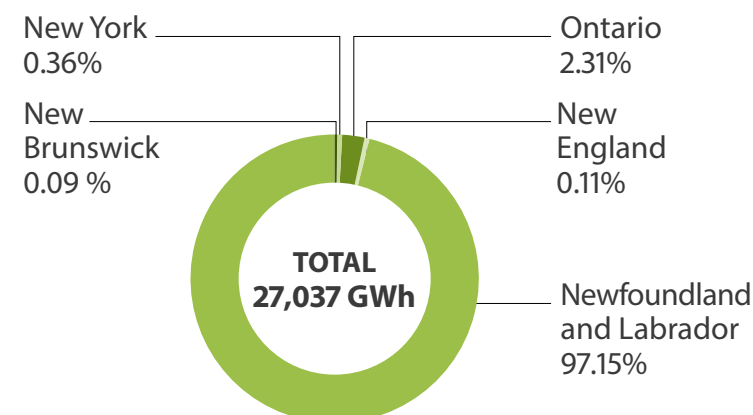
BIOMASS – Biomass energy (forest, agri-food or urban) is derived from organic matter from plant or animal sources that is converted into heat or electricity through various processes. This is a cost-effective option in areas where industries produce a large quantity of organic waste.

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.

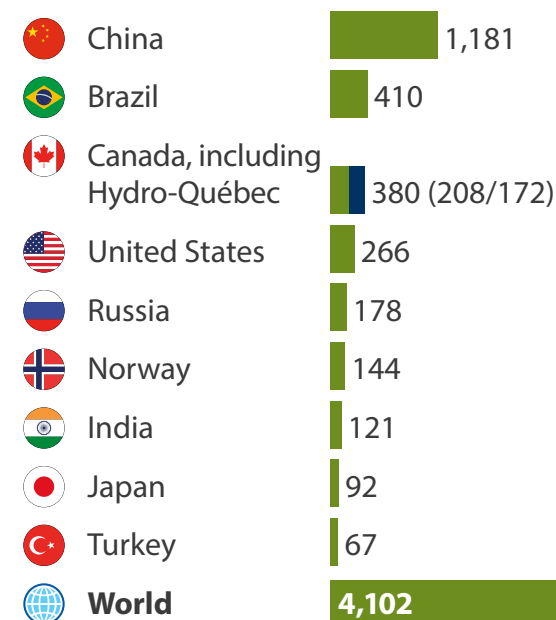
SELF-GENERATION – We buy the surplus power of customers who generate their own electricity from renewable energy sources. When they don't generate enough power for their own needs, they can draw electricity from the grid and benefit from the reliability of our power supply.

PURCHASES OUTSIDE QUÉBEC – 2017 ✓



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

HYDROPOWER GENERATION:^a WORLD LEADERS IN 2016 (TWh)



a) Includes electricity generated by pumped storage plants.

Source: *Hydropower Status Report 2017*, International Hydropower Association.

Solar power

Thanks to falling prices, the market for photovoltaic (PV) solar power is soaring. In fact, solar power will soon cost less to produce than energy generated by fossil fuels, and could even replace them as an energy source.

For the residential sector, the price of solar power could become competitive by the mid-2020s. Customers could then opt for self-generation by installing solar panels.

However, solar power is intermittent and, just like wind power, requires the use of energy storage systems to be sustained. Furthermore, according to a 2014 [CIRAIG study](#) based on life-cycle assessment, photovoltaic solar energy emits five times more GHGs than the hydropower generated by Hydro-Québec. The main environmental impacts relate to the energy and metals required to manufacture PV cells, and the system's relatively low output during its service life.

The evolving PV solar power market could affect our operations on many levels, including decreased energy consumption, rate changes, demand forecasting, the balance of supply and demand, and an increase in light load periods.

Nevertheless, the current energy transition is also an opportunity to offer new services based on new technologies, maximize export revenue, boost power grid flexibility and pursue acquisitions outside Québec. In this context, solar energy could represent business opportunities for Hydro-Québec.



PROJECT FOR A PHOTOVOLTAIC SOLAR FACILITY IN QUÉBEC BY 2020

OBJECTIVES

- › Build Hydro-Québec's expertise in PV solar power to complement its existing power generation know-how
- › Test centralized solar power generation in Québec
- › Seek out business opportunities in Québec or abroad with a view to long-term growth

DRAFT DESIGN

Currently under way, the draft-design phase will confirm facility locations on company land and allow us to:

- › Carry out technical and environmental studies
- › Design systems and decide on technologies
- › Conduct interconnection studies



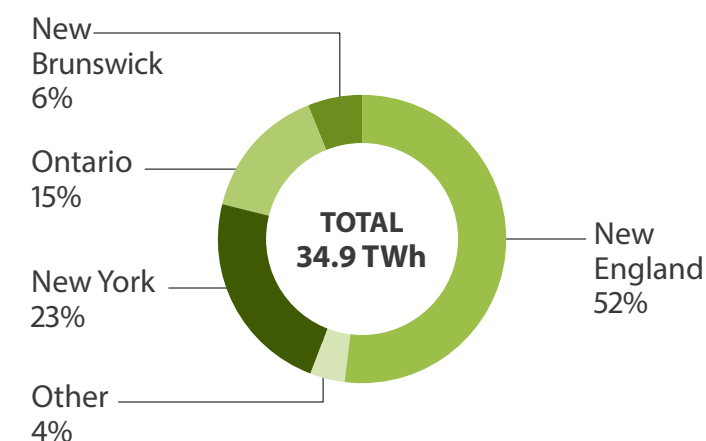
⊕ CHANGING COST OF
SOLAR POWER SYSTEMS –
RESIDENTIAL MARKET

Sales outside Québec and new market development

The volume of available electricity opens the door to sales and business opportunities in neighboring markets, particularly through long-term agreements. These transactions are beneficial from both an environmental and economic standpoint. We intend to make every effort to promote our hydropower in neighboring markets.

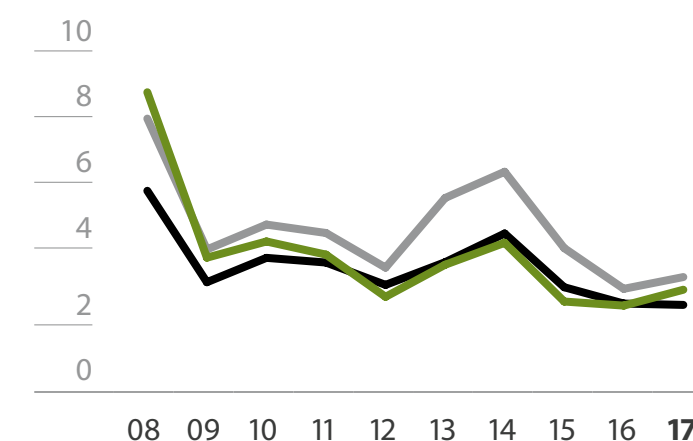
In Québec, residential consumers paid 7.07¢/kWh for electricity in 2017, a rate that includes Hydro-Québec's generation, transmission and distribution costs. In Boston, residential consumers paid 28.45¢/kWh, which includes the electricity purchase price as well as the transmission and distribution costs paid by U.S. utilities. Residential customers in New York City paid 29.67¢/kWh.

ELECTRICITY SALES OUTSIDE QUÉBEC – 2017 ✓



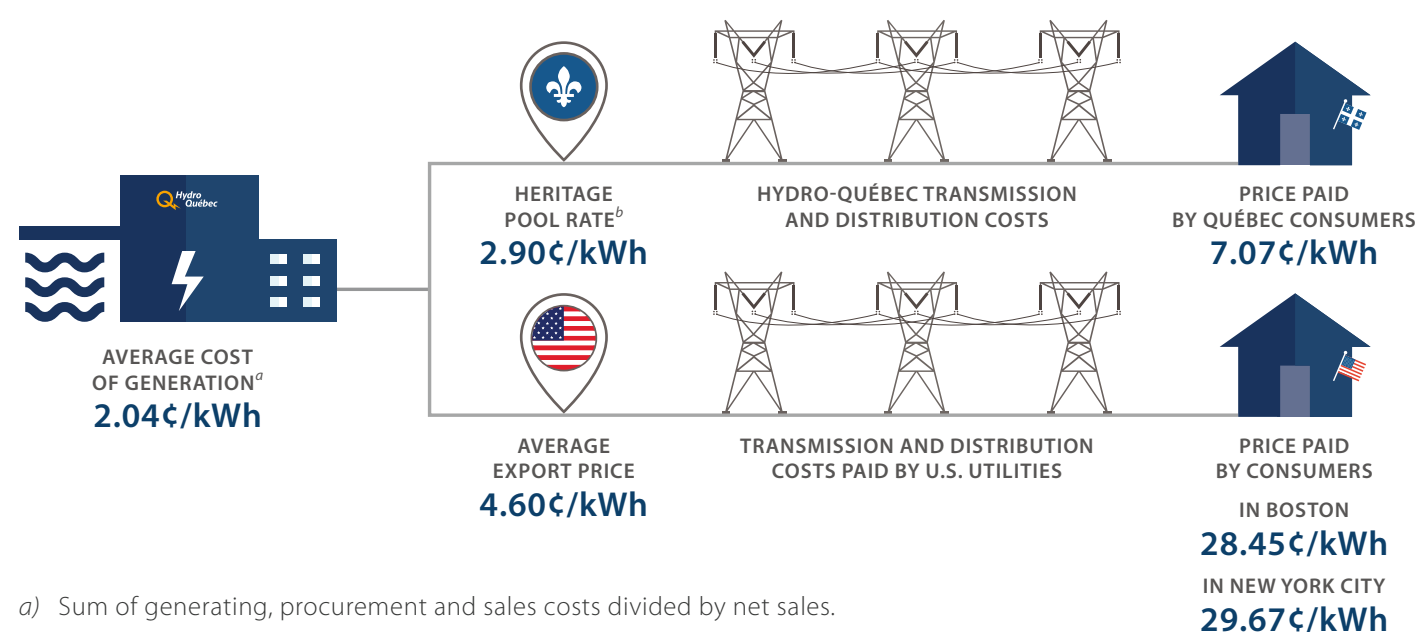
TRENDS IN ENERGY PRICES ON HYDRO-QUÉBEC'S EXTERNAL MARKETS

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)

CONSUMER PRICES



a) Sum of generating, procurement and sales costs divided by net sales.

b) Average heritage pool rate for all consumer categories.

2017 HIGHLIGHTS

- We responded to a request for proposals (RFP) from Massachusetts for the purchase of 9.45 TWh of clean energy.
- We responded to the New York Power Authority's request for proposals for the purchase of 1 TWh or more of renewable energy.
- We took part in various summits on data centers, like RE-Source 2017.
- Google confirmed its selection of Montréal as the site for a new Cloud Region.

REQUEST FOR PROPOSALS – MASSACHUSETTS

Hydro-Québec won the Massachusetts RFP to deliver 9.45 TWh of firm clean energy for 20 years. By selecting Québec hydropower, Massachusetts confirmed the importance of this form of energy in New England's ongoing energy transition.

SETTING UP DATA CENTERS IN QUÉBEC

Data centre.

Data centers are setting up shop all around the world and Québec is fertile ground for putting down roots. Hydro-Québec, looking to develop new growth avenues, can offer many benefits: a reliable, renewable, clean electricity supply, highly competitive rates, outstanding service and a northern climate that minimizes the need for air-conditioning.

Over 40 data centers have already made Québec their home. Major corporations like Microsoft, Ericsson, AWS, OVH, Videotron (4Degres), Amazon Web Services, Google, IBM and Salesforce have chosen to power their facilities with Québec electricity.

ACQUISITION OF ASSETS OR STAKES OUTSIDE QUÉBEC

We plan to participate in the energy transition by purchasing assets or stakes in companies involved in hydroelectric generation and power transmission, two fields at the core of our expertise. For these acquisitions, we're focusing on regions where the energy transition is in full swing, such as North America, Europe and certain Latin American countries.

Because of our excellent reputation, we're highly solicited. However, we rigorously assess every business opportunity that arises, using very specific criteria. Over the past several months, we've conducted analyses and due diligence reviews on numerous projects. We're continuing with this process, taking the time to make choices that are aligned with our investment principles and values and that are sure to benefit Quebecers.

Romaine Complex

STATUS

Under construction

INVESTMENT

\$6.5 billion
(construction costs)

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)



PROGRESS IN 2017

Romaine-3 generating station – 395 MW

(commissioned in 2017)

- End of Phase II of excavation of the tailrace canal
- Reservoir impounded
- Generating units commissioned
- Diversion tunnel closed
- Wood debris recovered from the reservoir
- Finishing work completed

Romaine-4 generating station – 245 MW

(commissioning by 2020)

- End of diversion tunnel excavation
- Boat ramp construction completed downstream
- Access ramps built for generating station excavation in 2018
- Clearing in the area
- Remedial work on the main road between kilometres 117 and 144

2017 HIGHLIGHTS

- Jobs created: 1,058 person-years (Côte-Nord workers accounted for 46%, Innu workers for 7%). At peak construction, Mista workcamp housed 1,280 workers.
- Annual investments (not including financing): \$377 million.
- Contracts awarded in the region: \$95.5 million.
- Funds injected into the region: \$100.1 million.
- 57 government approvals were received.
- Four legal noncompliance notices were received; corrective measures are under way.
- The two Romaine-3 generating units were commissioned and their output brought onto the grid.

EXAMPLES OF ENVIRONMENTAL MANAGEMENT IN 2017

Mitigation measures

Archaeology

➤ Archaeological digs at the future Romaine 4 reservoir site were completed. Many stone artifacts, Amerindian potsherds and bones were recovered along with over 1,000 historical artifacts; various structural elements (fireplaces, pits, dwelling structures) were also uncovered. Human occupation of the area goes back some 6,600 years. The past year marked the end of archaeological digs for the entire Romaine project.

Landlocked salmon

➤ The enhancement program for landlocked salmon in the Romaine-4 area began with the catch of 32 spawners and incubation of 8,841 eggs. The area will be seeded with some 5,000 fry.

Lake trout production

➤ Second seeding of 14,500 one-year-old lake trout in Romaine 1 reservoir; 60 spawners were also caught and moved to a fish farm.

Land animals

➤ Periodic flyovers during impoundment of Romaine 3 reservoir checked whether animal movements (moose, bears, wolves, lynx and beavers) were compromised. No animals were observed to be in danger.

Environmental follow-up

Atlantic salmon

➤ The downstream migration of smolts, the effect of thermal regime modification on the salmon population, embryo and juvenile survival and juvenile washup were all monitored. Also studied were the efficiency of the instream flow in preserving juveniles and their habitat, flow management during spawning and the use of natural and developed spawning sites.

Wetlands

➤ Characterization studies of vegetation in wetlands developed in borrow pits and Romaine 1 reservoir bays were conducted to verify the measure's effectiveness.

Thermal regime

➤ Readings continued to be taken at various Rivière Romaine sites to confirm the effect of Romaine 2 reservoir on water temperature. The temperature in some areas is above freezing during winter.

Lake whitefish

➤ Lake whitefish spawning and the migration of larvae downstream of the spawning grounds were monitored in the river segment of Romaine 1 reservoir. The absence of larvae in driftnet samples does not prove that the species is not reproducing. Environmental DNA analyses showed a sharp increase in lake whitefish DNA in this part of the reservoir between October and November, confirming spawner upstream migration.

Mercury

➤ Monitoring of fish mercury levels began in Romaine 2 reservoir and at the mouth of the Rivière Romaine. The temporary increase in mercury levels following reservoir impoundment has been closely monitored for many years and fish consumption recommendations are issued as needed.

Oceanography

➤ Monitoring conducted at the mouth of the Romaine focused on the area's physical characteristics, eelgrass beds, softshell clam populations and habitats, capelin spawning grounds and plankton production in a marine environment.

Human environment

Innu workers

➤ Over 90% of Innu workers at the Romaine jobsite consulted in 2017 reported a positive work experience. Around 92% of them expressed a desire to continue working at or return to the site.

Land use by Ekuanitshit and Nutashkuan Innus

➤ The Ekuanitshit Innus have experienced a number of disturbances when travelling downstream of the Romaine-1 development (route changes, clogged fishing nets, etc.). Innu members of both communities also have concerns about the potential opening up of the region via the Romaine access road. Nonetheless, for both communities, funds available through impact-and-benefit agreements have fostered land occupation and use through increased forest travel, knowledge transfer and the construction of family camps.

PROJECT PORTFOLIO 2017



Judith-Jasmin substation, under construction.

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

The Chamouchouane-Bout-de-l'Île project has two main components: the construction of more than 400 km of 735-kV lines between Chamouchouane substation in Saguenay–Lac-Saint-Jean and the metropolitan loop, in addition to the relocation of a short existing 735-kV line to Bout-de-l'Île substation in Montréal; and the construction of 735/120/25-kV Judith-Jasmin substation in Terrebonne (Lanaudière). The project will improve reliability of the main transmission system, reinforce supply to the Montréal area and address the growing power demand in the city's north shore suburbs.

The completed project will strengthen the transmission grid between Chamouchouane substation and the metropolitan loop, limit electricity losses on the grid and boost operating flexibility, which will benefit all customers.

STATUS

Under construction

FACILITIES**UNDER CONSTRUCTION**

- 735-kV line section 1 – Chamouchouane–Blanc reservoir
- 735-kV line section 2 – Blanc reservoir–Taureau reservoir

- 735-kV line section 3 – Taureau reservoir–Saint-Zénon

- 735-kV line section 4 – Saint-Zénon–Rawdon

- 735-kV line section 5 – Rawdon–Terrebonne

- 735-kV line section 6 – Circuit 7017–Bout-de-l'Île

- Reconstruction of a 315-kV line between Terrebonne and Bout-de-l'Île substation

- 735/120/25-kV Judith-Jasmin substation

- Expansion of Chamouchouane substation to 735 kV: building completed

SITES BEING CLEARED

- 735-kV line section 4 – Saint-Zénon–Rawdon
- 735-kV line section 6 – Circuit 7017–Bout-de-l'Île

INVESTMENT

\$1.3 billion

REGIONS

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

CONSTRUCTION

2015–2018

ECONOMIC SPINOFFS

Estimated at \$1.1 billion



2017 HIGHLIGHTS

- 13 government approvals to build or modify were received, as were three legal noncompliance notices for which corrective measures have been taken.
- A 315-kV tower and a 735-kV H-frame were erected in the Rivière des Prairies.
- Meetings with the Lanaudière and Atikamekw liaison committees continued.
- Meetings were held in all regions to inform local land users and administrators about project progress.
- Site visits were carried out with various local authorities, administrators, students and media representatives.
- Several [project news bulletins](#) were issued.
- Radio broadcasts reminded local land users of the importance of safety near jobsites.

SUSTAINABILITY ISSUES RELATED TO THE PROJECT

- Work was carried out in five administrative regions (18 municipalities, towns or parishes, seven unorganized territories, nine MRCs or agglomerations and one metropolitan community) in cooperation with one Innu community and two Atikamekw communities.
- Workplace health and safety measures included a review of orientation and pre-shift meetings, the introduction of task safety analysis checklists and greater on-site management presence and involvement.

LISTENING TO THE COMMUNITY

- Work was interrupted for two weeks during the firearm hunting period in the De la Lièvre ZEC in Saguenay–Lac-Saint-Jean, the Gros-Brochet and Chapeau-de-Paille ZECs in Mauricie, and the Collin and Lavigne ZECs in Lanaudière. Work on public land was halted for one week.
- Measures were implemented to promote harmonious coexistence between the jobsite and local snowmobile clubs, particularly in Lanaudière and Haute-Mauricie.
- Environmental commitments were acted upon and community relations activities continued during clearing and construction operations.

EXAMPLES OF ENVIRONMENTAL MANAGEMENT ACTIVITIES IN 2017

Mitigation measures

- Spiral bird flight diverters were installed on the ground wire of a line in Mauricie near two heron colonies to reduce the risk of collisions with the line.
- An agreement was reached with the Ministère des Forêts, de la Faune et des Parcs regarding compensation measures for the loss of fish habitat in the Rivière des Prairies.
- Sites for reforestation were sought as part of the compensation measures for woodlands lost in Communauté métropolitaine de Montréal municipalities.
- An agreement was signed with the city of Terrebonne for a reforestation pilot project on the Urbanova residential development site.

Environmental monitoring

- Noise was monitored during the construction of towers in the Rivière des Prairies.



^^ Community representatives visiting the jobsite of 735-kV line section 1 Chamouchouane–Blanc reservoir, near Lac Doré, accompanied by Hydro-Québec employees.

^ Turbidimeter (between two buoys) downstream from where towers are being built in the Rivière des Prairies. As there are people living nearby, noise levels are monitored.

PROJECT PORTFOLIO 2017

Dismantling Parent dam

RESTORING THE RIVER TO ITS ORIGINAL STATE

Commissioned in 1956 by the Municipalité de Parent to generate hydropower, Parent dam was turned over to Hydro-Québec in 1965 when electricity was nationalized.

Hydro-Québec never used the dam, though, mainly because management and maintenance costs would have exceeded the revenue generated by the facility, which straddled the low-flow Rivière Bazin. From 1966 until its connection to the Hydro-Québec grid in 1984, the village of Parent was supplied with electricity by a thermal power plant.

Inspections of the dam revealed that it did not comply with safety standards. After meeting with community representatives, we decided to dismantle it.

 WORK SCHEDULE

 PROJECT FACT SHEET (in French only)

Decommissioning Gentilly-2


METICULOUS ENVIRONMENTAL MONITORING

On September 20, 2012, the Québec government announced that it would not refurbish Gentilly-2 nuclear generating station and would instead begin the final shutdown of the plant, which had reached the end of its service life after 29 years of operation. In 2013, Hydro-Québec started the decommissioning process by preparing for dormancy. In September of that year, a major first milestone was achieved when the reactor reached the defueled core state.

In June 2016, the Canadian Nuclear Safety Commission (CNSC) delivered a nuclear power plant decommissioning licence, which will remain valid until 2026. All decommissioning activity will continue to be subject to stringent environmental monitoring.

 MEASUREMENT OF RADIOACTIVE EMISSIONS IN 2017

 DECOMMISSIONING TIMELINE

 PROJECT FACT SHEET

GRI GRI 102-40, GRI 102-44, GRI 102-47, GRI 103-1, GRI 103-2, GRI 201-2, GRI 305-1, GRI 305-2, GRI 305-3, GRI 305-4, GRI 305-5

OUR CONTRIBUTION TO CLIMATE STABILIZATION AND ENVIRONMENTAL PROTECTION



315-kV line on the Côte-Nord.

Climate instability is a major issue for the global environment, with the solution lying in part in a worldwide energy transition. In North America, our electricity exports enable us to avoid more greenhouse gas (GHG) emissions than we generate. Hydro-Québec not only shares its expertise in the effort to achieve the overall decarbonization of the power industry, but also preserves biodiversity and incorporates environmental management into its business processes.

IN THIS SECTION

- › GHG emissions from Hydro-Québec operations
- › Emissions avoided by net exports of electricity
- › Adaptation to climate change
- › Biodiversity management
- › Environmental management



GRI EU5, GRI 201-2, GRI 305-5

Climate Change

In November 2017, the journal *BioScience* published a warning from roughly 15,000 scientists from 184 countries about the catastrophic state of global biodiversity and the urgency of implementing “a great change in our stewardship of the Earth” in order to preserve it.

GHG emissions are one of the main causes of the deterioration in the quality of life of living species. The decarbonization of economies is essential to correct this situation.

With over 99.8% of its output generated from water, Hydro-Québec contributes to improving air quality and reducing the impacts of climate change. However, some of its operations

emit atmospheric contaminants and produce greenhouse gas emissions, for which mitigation measures are implemented.

Québec, Ontario and California are partners in the [Western Climate Initiative](#)’s carbon market. The Québec and California markets have been officially linked since January 1, 2014, and a first joint auction with Ontario took place in 2018. Under Québec’s cap-and-trade (C&T) system for GHG emission allowances, organizations, such as Hydro-Québec, that emit more than 25,000 t CO₂ eq. annually must offset their emissions in accordance with set terms and conditions.

USE OF DIFFERENT FORMS OF ENERGY IN QUÉBEC – 2015 (%)

Refined petroleum products	39
Electricity	36
Natural gas	16
Biofuels	8
Natural gas liquids	1
Coal	1

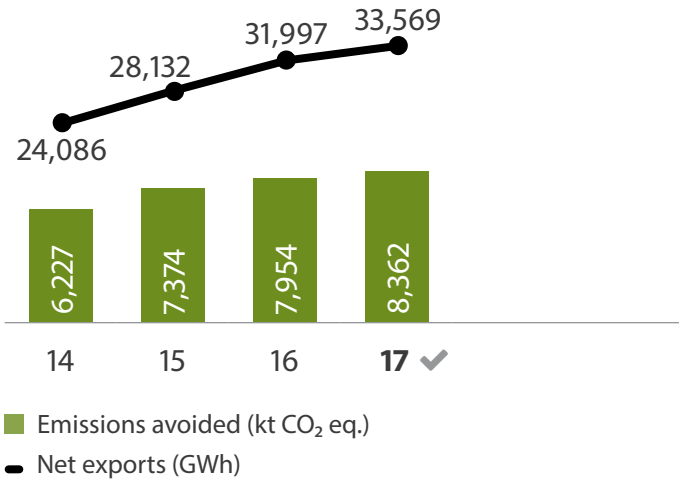
The “Natural gas liquids” category includes propane and butane.
Source: *État de l’énergie au Québec 2018*, HEC Montréal.

ENERGY CONSUMPTION IN QUÉBEC BY SECTOR – 2015 (%)

Industrial	34
Transportation	29
Residential	19
Commercial and institutional	12
Non-energy use	4
Agriculture	2

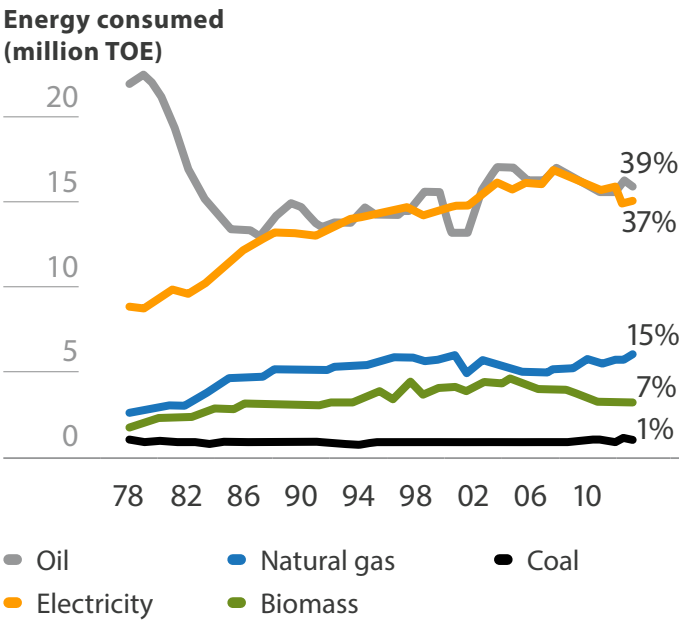
The “Non-energy use” category includes petroleum products used as raw materials in the petrochemical industry, lubricating oils and greases, asphalt, naphtha specialties and other products such as waxes and paraffins.
Source: *État de l’énergie au Québec 2018*, HEC Montréal.

+ EMISSIONS AVOIDED BY NET EXPORTS OF ELECTRICITY



The positive differential is tending to wane as the U.S. Northeast turns to new sources of supply with lower GHG emissions.

+ 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.

GRI EU5, GRI 201-2, GRI 305-1, GRI 305-2, GRI 305-4, GRI 305-5, GRI 305-7

2017 HIGHLIGHTS

- Emissions avoided by net exports of electricity totaled 8,362,305 t CO₂ eq. (7,953,810 t CO₂ eq. in 2016). ✓
- Atmospheric emissions from electricity generation and purchases in Québec were significantly lower than the average for neighboring Canadian provinces and U.S. states: 210,944 t CO₂/TWh (378 times less), 412 t SO₂/TWh (155 times less) and 2,539 t NO_x/TWh (287 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.
- Electric vehicles were acquired for Jean-Lesage generating station as part of an employee transportation pilot project (Manicouagan).
- A [Rate and GHG Calculator](#) was made available to potential data center customers for calculating emissions avoided and indirect water consumption, based on data center consumption and location.



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



⊕ CARBON MARKET

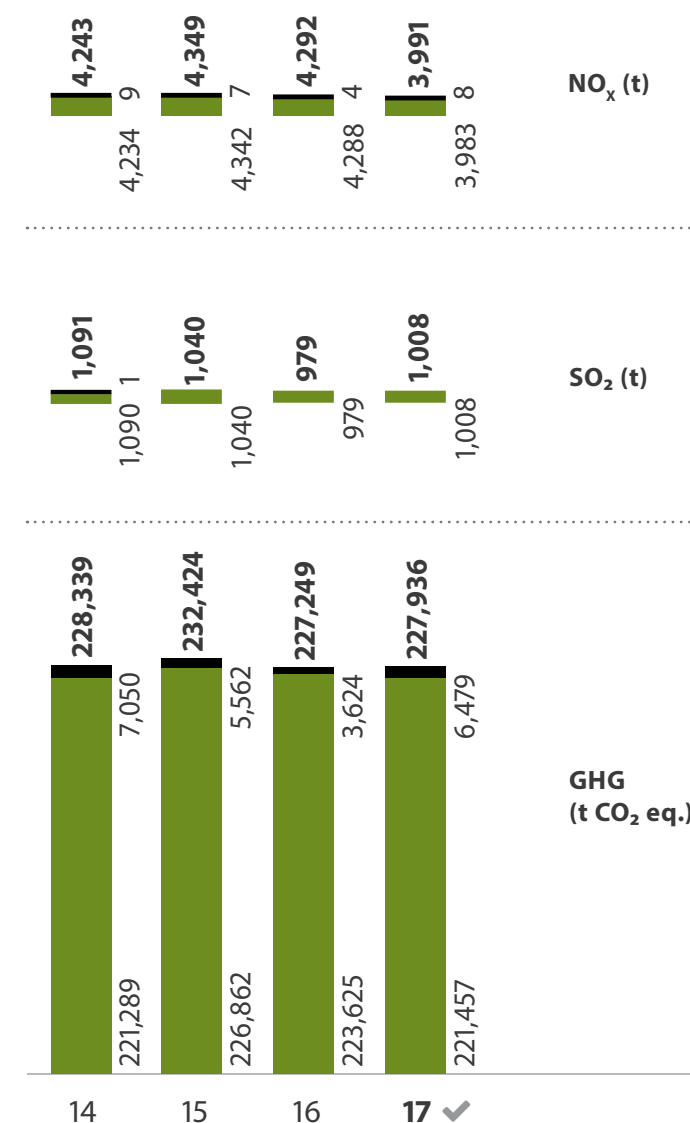
- We responded to requests for proposals from the state of Massachusetts to reduce its GHG emissions and from New York State for the purchase of renewable energy.
- We began updating the policy on managing the exercise of voting rights for the Hydro-Québec pension plan in order to incorporate best practices. This policy is an important tool for ensuring responsible investment by the plan, with a view to supporting the fight against global warming. It demands increased transparency from the companies in which the plan invests, among other things. Almost all the external managers that the pension fund deals with have signed the UN Principles for Responsible Investment established in 2006.



Climate Change 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](#)

ATMOSPHERIC EMISSIONS FROM HYDRO-QUÉBEC THERMAL GENERATION OPERATIONS



Most emissions are produced by thermal generating stations in off-grid systems. Only Bécancour thermal generating station supplies the main grid during peak periods. Variations in GHG, SO₂ and NO_x emissions are attributable to annual variations in the thermal stations' output.

GRI GRI 102-13, GRI 102-48, GRI 201-2, GRI 305-1, GRI 305-2, GRI 305-3, GRI 305-4, GRI 305-5

GHG EMISSIONS FROM HYDRO-QUÉBEC OPERATIONS (t. CO₂ eq.)

CATEGORY	OPERATIONS	2017 ✓
Direct sources (scope 1)		
Generating stations	Thermal power plants	227,936
Mobile sources	Vehicle fleet	51,063
	Hydro-Québec aircraft fleet	13,569
	Utility vehicles (e.g., snowmobiles, tractors, snowblowers)	927
	Propane-fueled lift trucks	89
Fuel use	System maintenance generators	3,869
	Emergency and jobsite generators	525
	Building heating	458
Other uses	Equipment containing CF ₄ and SF ₆	21,832
	Aerosols	412
	Equipment containing HFCs	990
	Synchronous compensators	24
Indirect sources (scope 2)		
Energy losses	Power transmission and distribution system losses	7,890
Indirect sources (scope 3)		
	Electricity purchases	108,400
	Business travel – employee personal vehicles	5,581
	Vehicles leased long-term	1,227
	Business travel – trains	12
	Business travel – commercial airlines	932
	Helicopters	3,982
	Chartered airplanes	4,876
	Life cycle of fuel	50,851
Total emissions		
	Direct sources scope 1	321,694
	Indirect sources scope 2	7,890
	Indirect sources scope 3	175,861
	Direct and indirect sources	505,444
EMISSIONS AVOIDED (NET EXPORTS OF ELECTRICITY)		8,362,305

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

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

 **COMPARE 2014–2017
EMISSIONS**
**GLOBAL SUSTAINABLE
ELECTRICITY PARTNERSHIP**

In 2017, Hydro-Québec hosted the 26th [Global Sustainable Electricity Partnership](#) (GSEP) Summit in Montréal. This event brought together the heads of the world's leading power utilities, who discussed measures for making electricity an important vector of decarbonization.

GSEP members pledged to implement concrete solutions for tackling climate-related issues, including the introduction of low-carbon or carbon-neutral technologies, energy efficiency and the replacement of fossil fuels.

As part of its activities as a GSEP member, Hydro-Québec, in collaboration with the Italian company Enel, completed a feasibility study for a pilot project to integrate two electric buses in the Lima, Peru, public transit system in the summer of 2018.

The summit also provided opportunities for discussions with the heads of energy sector organizations, such as the International Energy Agency (IEA), the World Energy Council (WEC) and Ouranos, the consortium on regional climatology and adaptation to climate change.

GRI GRI 102-13, GRI 201-2

Adaptation to climate change

Since hydropower generation is dependent on weather conditions, climate change has an effect on our operations. For over 15 years, Ouranos, in collaboration with Hydro-Québec, has been examining various scenarios involving the impacts of climate change. To adapt to these changes, we then institute various measures, such as modifications to equipment design.

2017 HIGHLIGHTS

➤ With Ouranos and TechnoCentre éolien, we launched a project to study the impact of climate change on wind generation. The goal is to assess the impact on wind power potential and the occurrence of icing conditions, in order to analyze the effect on power generation and infrastructures in coming years. The project will also examine the technical and socioeconomic solutions required and will ultimately propose adaptation strategies for uprating wind farms based on future wind potential and anticipated energy losses.

➤ As part of global research conducted by Ouranos on global adaptation to climate change, a Hydro-Québec initiative was selected from among 11 case studies examined. The results of the study have meant modifications in the climate normal, based on global warming. This will help prevent the overestimation of demand forecasts.

➤ Our in-house committee on climate change adaptation continued its regular meetings. The objectives are to share knowledge between units, coordinate activities, harmonize baseline data (e.g., modeling) and assess the effects of climate change and current gaps in adaptation. The committee also held a workshop on adaptation to climate change, and on the Hydro-Québec and Ouranos studies, for the company's technical, scientific and management personnel, whose activities are affected by climate change.



^^ A climate change impact study is looking at wind power. Some adaptation strategies are being examined.

^ Nadhem Idoudi, Alexandre Deslauriers and Lamya Souktani, experts in demand forecasting, ran the study that led to a correction of the climate normal.

Biodiversity

Climate change, trade and some of our operations lead to the proliferation of invasive animal and plant species and pathogens. Once established, these species can affect biodiversity and be detrimental to farming and forestry. Our activities related to construction (especially excavation), operations and vegetation control can propagate these harmful species. Consequently, we are implementing various measures to help maintain biodiversity.

Some of Hydro-Québec's activities may promote the spread of invasive plant and animal species and pathogens. These species can have an impact on our properties, as well as on public and private property nearby. A study was carried out to assess the potential economic impacts of the spread of these species as a result of our activities.

2017 HIGHLIGHTS

➤ Research continued on the state of fish populations in La Grande complex reservoirs and changes in these populations. This research, which began in 2105, is being carried out in partnership with McGill University and involves the quantitative synthesis of data (Nord-du-Québec).

- An extensive study begun in 2013 continued its work of identifying species of migratory birds nesting in transmission line rights-of-way. To date, over 200 such species have been identified, with surveys of breeding pairs conducted at 165 point count locations and nest searches carried out in 120 parcels of land across Québec.
- Measures to protect the little brown bat were implemented at Bersimis-2 generating station and observations were made of the population, which is declining owing to [white-nose syndrome](#) (in French only) (Côte-Nord).
- Reforestation work was carried out on 7.4 ha in the Lanaudière region to compensate for the clearing of 14.7 ha for the construction of the Pierre-Le Gardeur–Saint-Sulpice line. In addition, an \$85,000 contribution was made to the Fiducie de conservation des écosystèmes de Lanaudière, a land trust in the region.

⊕ FOLLOW-UP ON THE OURANOS ECOSYSTEMS AND BIODIVERSITY PROGRAM

⊕ STUDY OF VEGETATION MANAGEMENT BIOSECURITY

EMERALD ASH BORER



The emerald ash borer is an insect that attacks all species of ash trees that provide a suitable environment for it to grow and develop. The larvae, which hatch from eggs laid in the bark, dig numerous tunnels in the wood, resulting in the death of infested trees. This pest has few natural enemies and causes considerable economic and ecological damage.

Hydro-Québec is working to combat the spread of the emerald ash borer. It is taking inventories of the ash trees on its properties and, depending on the extent of the infestation, will treat or fell affected trees and in some cases plant other tree species.

CURRENT SITUATION

Roughly 4,000 of the company's properties are located in emerald-ash-borer regulated areas. This land includes large waterfront properties; sites housing transformer substations, telecommunications towers or administrative buildings; and several thousand undeveloped lots.

CHANGES IN RESERVOIR FISH POPULATIONS

In partnership with McGill University, Hydro-Québec performed quantitative syntheses of data on fish population dynamics (variations in abundance) and changes to the structure of fish communities (species dominance) in the reservoirs in the La Grande complex (Baie-James) and the Sainte-Marguerite-3 development (Côte-Nord). We also produced summaries covering reservoirs in boreal (Hydro-Québec reservoirs), temperate and tropical regions, to find out where the company stands in relation to the potential loss of abundance and biodiversity in reservoirs globally.

VARIATIONS IN ABUNDANCE

The flooding of land and release of phosphorus in the water following reservoir creation generally results in a major release of nutrients, or trophic surge, in these watersheds. In Hydro-Québec's reservoirs, this phenomenon has been observed mainly at sampling stations located upstream of dams. Some species (northern pike and lake whitefish) have benefited from these new conditions, while others (longnose sucker and white sucker) have not.

SPECIES DOMINANCE AND BIODIVERSITY

Dam construction and reservoir creation can have an impact on species dominance (biodiversity) by modifying habitats and creating potential obstacles to fish movement. Globally, a considerable loss of species diversity has been noted in tropical regions under these conditions, while the loss has been less pronounced in temperate regions and no loss has been observed in boreal regions.

TROPHIC SURGE

In boreal and temperate climates, fish abundance increases in the four or five years after reservoir creation and returns to normal after 14 years in boreal regions and after 9 years in temperate regions. At the peak of this nutrient explosion, fish abundance may increase by as much as sixteenfold.

WHAT A TROPHIC SURGE LOOKS LIKE

SPECIES DOMINANCE

No losses of species were observed in boreal reservoirs, but a change was noted in species assemblage (species dominance) upstream of the dams in the La Grande complex and Sainte-Marguerite-3 development. Species preferring lentic habitats (lakes) did better in these reservoirs than those preferring lotic habitats (rivers).

WHAT SPECIES DOMINANCE LOOKS LIKE

FISH PASS



Fish pass on the Rivière Eastmain.

A fish pass is a structure enabling migratory fish to swim around obstacles, whether natural (falls) or manmade (dams). These structures are required on many rivers to facilitate the upstream and downstream migration of fish. Depending on the vertical drop present and the migratory species using the structure, designs may vary, and include culverts, fish locks, fish ladders and fish elevators.

GRI GRI 102-11, GRI 102-12

Environmental management and sustainability

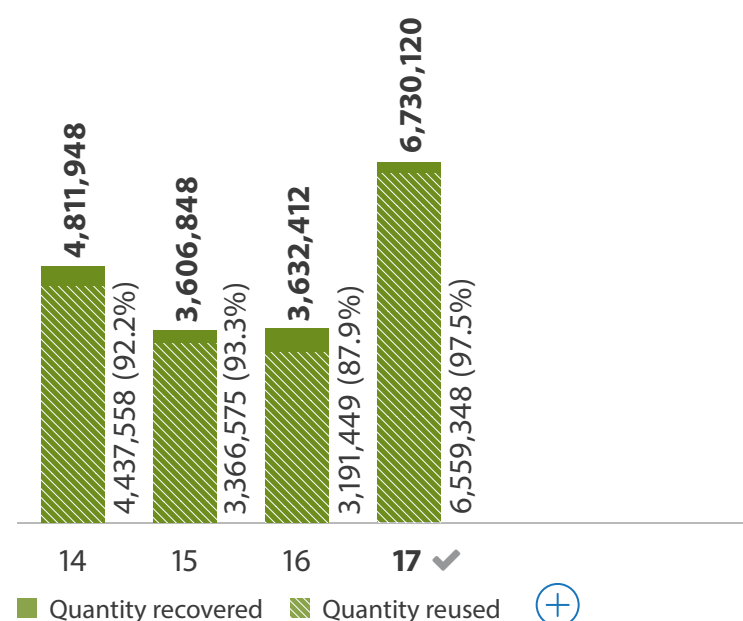
Since the late 1990s, ISO 14001–certified environmental management systems (EMS) have governed all Hydro-Québec operations that could have an effect on the environment. In 2017, we continued to adapt our environmental management to ISO 14001:2015 by instituting a single EMS that will cover the work done by all employees and replace the current seven systems. The new EMS should be certified in 2018.

2017 HIGHLIGHTS

- We saved 7.9 million litres of drinking water under our program for refurbishing administrative buildings. Recurring annual savings since 2007 total 285 million litres.
- We earned BOMA BEST certification for five administrative buildings (total of 24) and Clé Verte (Green Wrench) certificates for nine vehicle repair shops (total of 17).
- Metal shelters were installed in four storage yards to protect treated wood poles from the elements. In addition, wood platforms were replaced with galvanized-steel models in various storage yards. These measures prevent soil and water contamination.

- Remediation work continued on land adjacent to the village of Chisasibi (Baie-James), which will eventually be classified as Category I land, meaning that it is for the exclusive use of that community (Nord-du-Québec).

RECOVERY AND REUSE OF INSULATING OIL (litres)



Environmental management and sustainability EXCLUSIVE WEB CONTENT

- [Waste and hazardous materials management](#)

REHABILITATION AT THE CAP-AUX-MEULES DOCK

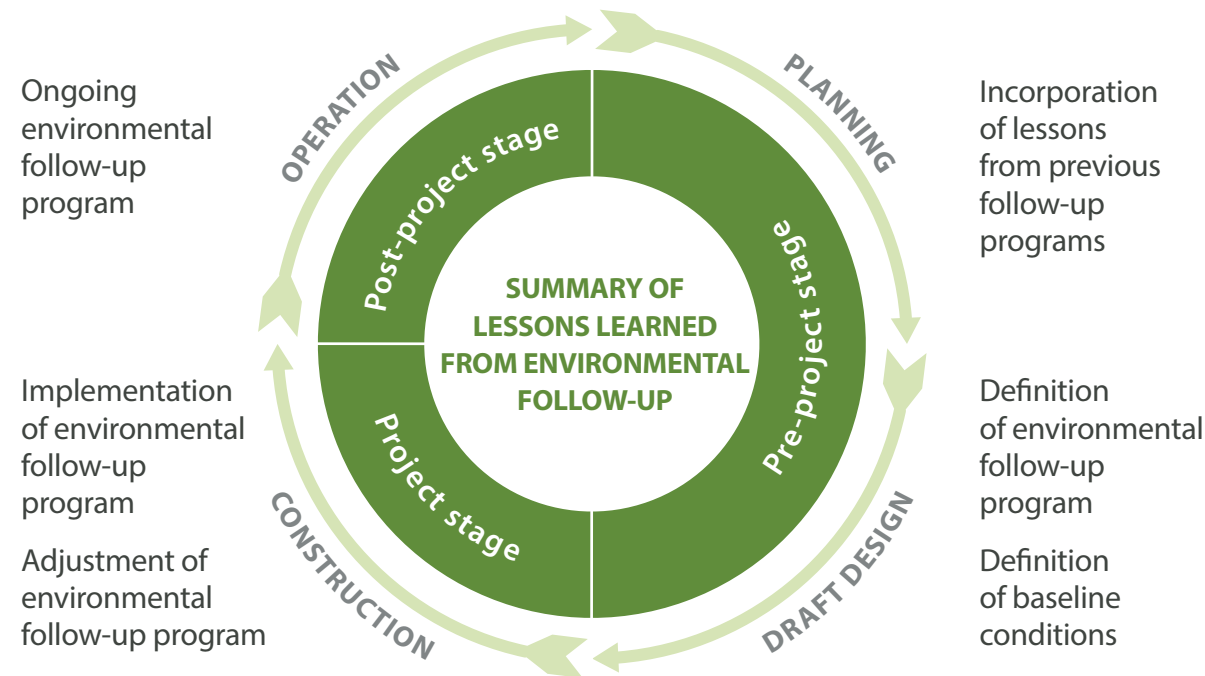
Ever since a spill occurred at the Cap-aux-Meules dock in September 2014, Hydro-Québec has been remediating the soil and groundwater there. In November 2017, the rehabilitation of the dock using in-situ techniques was completed in accordance with our objectives and commitments, and to the satisfaction of the government authorities. In 2018, the company will contribute to restoring the site by carrying out landscaping and other work, designed in cooperation with the community. This project, which aims to visually improve the site, will include:

- The reconfiguration of the intersection of du Parc and du Quai streets
- The development of rest and eating areas
- Improved signage, particularly involving tourist attractions and public services
- The creation of well-defined pedestrian spaces
- The addition of landscaping features.



PROJECT FACT SHEET (in French only)

FOLLOW-UP ON PROJECTS IN OPERATION



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.

CHUTE-ALLARD AND RAPIDES-DES-CŒURS FACILITIES (MAURICIE)

➤ According to a three-year follow-up of fish communities, yellow perch and walleye were more abundant than when the baseline was established in 2002, while the relative abundance of northern pike remained fairly stable. In terms of biological characteristics, walleye and northern pike generally showed greater length and mass; the same trend was found in size and age structures, with specimens caught being larger and older than in the baseline.

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

➤ To determine if declining carbon inputs in the estuary and bay following the partial diversion of the Rupert possibly had an effect on benthic fauna and fish growth, a follow-up was conducted on longnose sucker, a species that feeds on benthic fauna and is abundant in these areas. A sample of nearly 800 specimens was examined,

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
Romaine-3	Côte-Nord	2017	2040	31
Sainte-Marguerite-3	Côte-Nord	2003	2017	19
Partial diversion of the Rivière Manouane	Saguenay–Lac-Saint-Jean	2003	2018	17
Péribonka	Saguenay–Lac-Saint-Jean	2007-2008	2018	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.

FOLLOW-UP ON PROJECTS IN OPERATION

so that the species' growth and diet could be described seven years after the diversion. A comparison of the follow-up results and pre-diversion data reveals very few changes.

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.

CHUTE-ALLARD AND RAPIDES-DES-CŒURS FACILITIES (MAURICIE)

➤ Since the results of the first sampling campaign, in 2013, showed significant increases in fish mercury levels in the forebays and Blanc reservoir, other sectors were examined to gain a clearer understanding of the issue. Although there is some variation between sectors, walleye, northern pike and yellow perch in the sectors farthest upstream have the lowest mercury levels. Fish in sectors farther downstream generally show higher mercury levels than fish anywhere else. Significant increases occurred between the establishment of the baseline and the first follow-up. A significant drop or a downward trend

in levels has now been observed, suggesting that a return to baseline conditions has occurred or, at the very least, is imminent.

WILDLIFE ENHANCEMENT

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

HENRI-BOURASSA SUBSTATION (MONTREAL)

➤ According to a follow-up on the integrity of hibernation shelters and populations of Dekay's brown snakes, this species and the common garter snake are still present at the substation site. Breeding adults frequent the site and populations show some recruitment success. However, Dekay's brown snake was not observed around the shelters, which were built to offset the loss of suitable grassland habitat resulting from substation construction.

BANK EROSION

Erosion is a dynamic process influenced by natural factors such as wind and currents. Various measures are implemented during project construction to protect banks and limit their erosion, with a view to preserving wildlife and plant species that live there.

CHUTE-ALLARD AND RAPIDES-DES-CŒURS FACILITIES (MAURICIE)

➤ According to the bank follow-up, no major changes have occurred in the condition of the natural and developed banks that are potentially detrimental to infrastructures and facilities. Observations made at the six control sites reveal that banks and protective structures (riprap) are in good condition, with no significant changes.

GRI GRI 102-40, GRI 102-44, GRI 102-47, GRI 103-1, GRI 103-2

WATER BODY MANAGEMENT



The Rivière Romaine where it empties into the Golfe du Saint-Laurent, on the Côte-Nord.

Water is a very abundant resource in Québec, covering 22% of the province's territory. Hydro-Québec, which relies primarily on hydropower generation, operates 28 large reservoirs and 671 dams in 12 different watersheds. These facilities allow us to produce electricity at our 63 hydroelectric generating stations, 42 of which are run-of-river facilities. In carrying out our operations, we take care to preserve the quality of water bodies and share their use, taking into account the distinctive features of each watershed.

IN THIS SECTION

- > Managing flows
- > Managing multiple uses
- > Managing exceptional measures

Managing flows and water reserves

The management of river flows and reservoir levels requires careful planning of generating station output. Multiple datasets—hydraulic, meteorological and electrical—must be considered, including such factors as precipitation, generating-unit performance and spillway discharge capacity. Gauging stations throughout the territory measure reservoir levels and flows in certain watercourses in real time.

In optimizing hydropower generation, we must take numerous constraints into account. Consequently, Hydro-Québec monitors changes in meteorological conditions very closely. Short-, medium- and long-term hydrometeorological forecasts are used to plan the management of our reservoirs and the startup of our generating units. Models calibrated with historical data from each watershed are used to simulate snowmelt, evaporation, surface and underground runoff, and water table dynamics.

2017 HIGHLIGHTS

- After 14 years of consultations with experts, scientific studies and public participation, the [International Joint Commission](#) (IJC) adopted a new [plan](#) to regulate water levels and flows in Lake Ontario and the Fleuve Saint-Laurent (St. Lawrence River).
- We participated in the Expert Panel on Integrated Natural Resource Management organized by the Council of Canadian Academies. Integrated resource management refers to ways of managing natural resources that consider a comprehensive range of needs and uses, and their sustainability over the long term.
- Hydro-Québec made a presentation on the management of the Rivière Saint-Maurice to the members of the region's joint-action committee for the public land-use plan (PATP); land-use planners from the regional county municipalities (MRCs); and representatives of the watershed organization Bassin Versant Saint-Maurice and the Ministère de l'Énergie et des Ressources naturelles. The meeting permitted a discussion of issues around the management of power generation facilities on the river and the PATP's priority directions.

SHORT-, MEDIUM- AND LONG-TERM STRATEGIES



Setting up a hydrometeorological station near Outardes 4 reservoir.

Hydro-Québec operates its hydroelectric facilities in such a way as to maintain sufficient energy reserves at all times to offset a potential runoff deficit over four consecutive years. To achieve this, the company develops various strategies, taking account of potential electricity sales, as well as maintenance operations that will mean removing equipment from service.

- The short-term strategy determines hydropower generation priorities based on various constraints (inflows, removal of equipment from service, transmission capacity, domestic requirements, export sales, etc.) to optimize the use of hydroelectric resources.
- The medium-term strategy aims to optimize the management of energy reserves.
- The long-term strategy aims to guarantee supplies in terms of energy and capacity.

Managing exceptional measures

Our dams and control structures are designed and built to international standards, making use of our multiple areas of expertise (geology, geotechnics, hydraulics, seismicity, structures) and our studies on dam safety. In the event of abundant precipitation or massive inflows from snowmelt, Hydro-Québec must sometimes release water. Even if such spills are done carefully, they can cause rapid variations in a river's flow, which are likely to have repercussions on other parties' activities or facilities.

RESERVOIRS REDUCE THE MAGNITUDE OF FLOODS

In the spring of 2017, cold temperatures and large snow accumulations followed by sustained periods of rain resulted in heavy flooding. The floods affected nearly 200 municipalities in five regions of Québec.



GOUIN DAM AND THE RIVIÈRE SAINT-MAURICE

Gouin dam was built in 1913 to regulate the flow on the Saint-Maurice, which historically ranged from 170 m³/s to 5,700 m³/s, depending on the season. Four other dams on the river serve the same purpose: Manouane-A, Manouane-B, Manouane-C and Matawin. In addition, Hydro-Québec operates a series of 11 cascading generating stations^a at nine sites along the Saint-Maurice, between Gouin reservoir and the mouth. These generating stations, which are run-of-river except for Rapide-Blanc, must operate using natural inflows. Consequently, constraints affecting one will have an impact on all the others. During the 2017 spring flood, the gates at Gouin reservoir were closed and the river was fed solely by natural inflows. Large quantities of water were also retained by Mékinac, Rapide-Blanc and Matawin dams.

Without the presence of these dams on the Saint-Maurice, the peak flow in May 2017 at La Gabelle generating station, located near the confluence of the Saint-Maurice and the Saint-Laurent, would have been roughly 6,600 m³/s instead of 4,000 m³/s.

^a) Trenché, La Tuque, Beaumont, Rocher-de-Grand-Mère, Rapide-Blanc, Shawinigan-2, Shawinigan-3, La Gabelle, Grand-Mère, Rapides-des-Cœurs and Chute-Allard generating stations.



**MAP SHOWING
RAINFALL AMOUNTS**



**FLOW IN THE SAINT-MAURICE
WITH AND WITHOUT DAMS**

Some locations experienced an exceptional spring flood. For example, the peak flow at Carillon generating station in the Laurentides region was 8,862 m³/s, the highest since the station was commissioned in 1962. Other regions of Québec were also affected by flooding, particularly Montréal and the Montérégie, Gaspésie and Côte-Nord regions.

Hydro-Québec's reservoirs maintain and regulate the flow in rivers, mainly in spring. For example, the level of Baskatong reservoir on the Rivière Gatineau is lowered by 15 m every spring to store rainwater and snowmelt. Without this reservoir, which is located hundreds of kilometres from Montréal, the water level in Lac des Deux Montagnes would have been 40 cm higher at the peak of the spring flood.

Many other reservoirs across Québec are used to store large quantities of water during the spring flood, allowing river levels to fall and soil to become less saturated. The stored water is then released gradually, enabling appropriate water levels in downstream rivers and reservoirs to be maintained.

2017 HIGHLIGHTS

- Around a hundred employees participated in a volunteer day to help spring flood victims. Cleanups were held in various parts of the province, including Bécancour, Shawinigan, Laval, Gatineau and Vaudreuil-Dorion.
- A series of 29 meetings were held with citizens and representatives of Sécurité publique du Québec, along with 70 meetings with regional public safety organizations. The measures taken by the company under the exceptional emergency circumstances were explained at these meetings.
- A total of 39 press releases were sent out and the company participated in 172 media interviews.
- In spring, historic water levels were recorded in Lake Ontario and the Fleuve Saint-Laurent (St. Lawrence River). However, the water regulation plan allowed levels to be reduced from the Montréal archipelago to Trois-Rivières at the peak of flooding. Without these control measures, waterfront communities along Lac Saint-Louis would have experienced even more severe flooding, and water levels would have been at least 0.7 m higher.
- During the spring flood period, media campaigns were conducted to make the public aware of safety issues around generating facilities, particularly in the Mauricie, Laurentides and Montérégie regions. In the Laurentides, the Sûreté du Québec collaborated in this effort.



^^ Powerful water at the Pagan generating station spillway outlet, on the Rivière Gatineau in the Outaouais, during the spring flood.

^ Jacques A. Chauvette, Regional Manager – Mauricie and Centre-du-Québec, and Production Manager – Des Cascades, talks to the media during the flooding.

Managing multiple uses

Hydro-Québec, which operates facilities across Québec, is the province's second-largest property owner, after the Québec government. We also manage numerous reservoirs, dams and control structures, taking care to preserve the quality of water bodies and to share their use with waterfront communities whenever possible. With input from experts in various fields, we carry out our operations while taking into account ecosystem requirements and local communities' expectations.

2017 HIGHLIGHTS

- The Matawin dam footbridge was rehabilitated to meet the company's needs and to allow pedestrians, all-terrain vehicles and snowmobiles to cross from one bank of the river to the other. (Mauricie and Lanaudière)
- An additional section of the road that links the facilities in the Romaine complex was opened. In addition, the parking lot at KM 1 will be plowed in winter for residents of the Minganie region, as arranged with the local hunting and fishing organization, Association de chasse et pêche de Havre-Saint-Pierre. (Côte-Nord)
- For the third year in a row, a flow of 440 m³/s was maintained at La Tuque generating station between Friday morning and Sunday evening, from July 1 to September 15. The purpose is to maintain suitable water levels for navigation on the Rivière Saint-Maurice. (Mauricie)

MANAGEMENT OF LAKE ONTARIO AND THE FLEUVE SAINT-LAURENT (ST. LAWRENCE RIVER)

Since 1960, the [International Lake Ontario – St. Lawrence River Board](#) (ILO-SLRB) has managed water levels and flows in Lake Ontario and the Saint-Laurent, primarily at the Moses-Saunders development. This facility—near Cornwall, Ontario, and Massena, New York, and roughly 160 km downstream of Lake Ontario—is owned and operated by Ontario Power Generation (OPG) and the New York Power Authority (NYPA). A second structure near Long Sault, Ontario, acts as a spillway when outflows exceed the capacity of Moses-Saunders power dam. A third structure at Iroquois, Ontario, is used mainly to help form a stable ice cover in winter and regulate water levels upstream of the Moses-Saunders powerhouses. The ILO-SLRB is headed by the International Joint Commission (IJC), an agency set up by the U.S. and Canadian governments to deal with all issues involving boundary or transboundary waters between the two countries.

Hydro-Québec is a member of the Operations Advisory Group (technical committee of the ILO-SLRB), along with OPG, NYPA, the Canadian Coast Guard and the St. Lawrence Seaway Management Corporation. These stakeholders work together to promote the regulation of water levels and flows, and balance the constraints of all the parties. Hydro-Québec must therefore respect the flows required by the regulation of the waters of the Saint-Laurent, but may ask for assistance from the ILO-SLRB for certain issues, such as ice control.



MAP OF ILO-SLRB FACILITIES

GRI GRI 102-40, GRI 102-44, GRI 102-47, GRI 103-1, GRI 103-2, GRI 413-2

OUR PRESENCE IN THE COMMUNITY



Transmission line in the Bas-Saint-Laurent, between Mont-Joli and Sainte-Angèle-de-Mérici, successfully incorporated into the landscape.

Hydro-Québec is a responsible corporate citizen that deals with communities openly and respectfully to better understand their expectations and concerns. Wherever the company is present, we make a special effort to respond to the needs of other land users and to ensure that our facilities are well integrated into the local environment. We also strive to optimize the spinoffs of our activities in all of the province's regions.

IN THIS SECTION

- | | |
|--|--|
| <ul style="list-style-type: none"> > Interacting with communities > Social acceptability > Public participation > Land use | <ul style="list-style-type: none"> > Archaeology and heritage > Local procurement > Indigenous communities |
|--|--|



GRI GRI 413-1, GRI 413-2

Interacting with communities

Hydro-Québec maintains an ongoing dialogue with communities through a network created 20 years ago that pairs each local authority with a specific community relations advisor. The advisor not only supports the municipality in its relations with the company but also works to align the interests of the company with those of the community.

Bryson generating station, in Pontiac MRC, in the Outaouais.



2017 HIGHLIGHTS

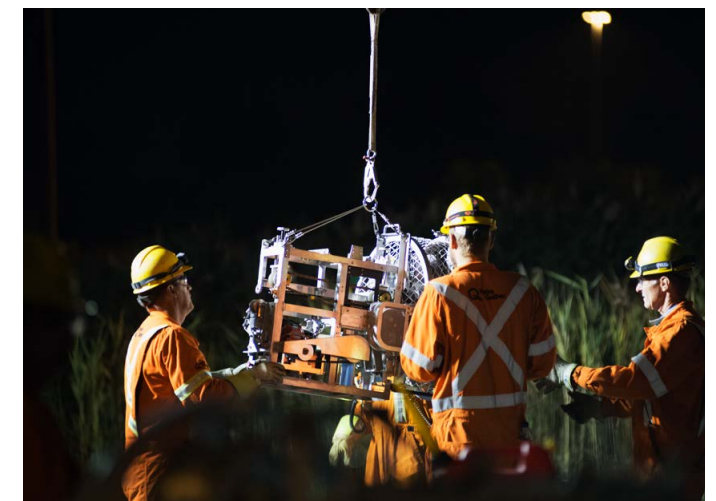
- We worked closely with the cities of Québec and Lévis as well as the Ministère des Transports, de la Mobilité durable et de l'Électrification des transports, in a project to install LC spiral rods on high-voltage lines above roads and highways to prevent chunks of ice from falling off and causing traffic problems. This work was a challenge to coordinate and required the temporary closure of busy boulevards and highways. The collaborative and active listening approach used allowed the objectives of all parties to be met while the work was carried out. (Capitale-Nationale and Chaudière-Appalaches)
- As part of the project to refurbish Bryson generating station, we held an information tour to explain the project to the municipalities, regional county municipalities (MRCs), provincial departments and socioeconomic organizations involved. We also gave a tour of the facility to provide a better understanding of the work planned. The general public was kept informed about the project through radio interviews and a [dedicated Web page](#). (Outaouais)



AN ACTIVE SOCIAL MEDIA PRESENCE

Hydro-Québec is active on social media, including [Facebook](#), [Twitter](#), [LinkedIn](#) and [Instagram](#). In this way, we can respond directly to the service and information needs of our customers, wherever they are. These communications tools allow us to expand the scope of our communications efforts and reach a larger audience.

Installing spiral rods to prevent ice buildup on transmission lines. Work was done at night, when there is less road traffic and the grid is under less pressure.



GRI GRI 413-1, GRI 413-2

Social acceptability and public participation

Hydro-Québec's projects and operations are part and parcel of Québec's communities. Our facilities are closely interwoven with people's daily lives and must be integrated as harmoniously as possible. Consequently, when carrying out a project, we maintain an ongoing dialogue with the host community to ascertain its concerns and expectations, while explaining our implementation constraints. This approach is designed to make our projects and operations socially acceptable.

2017 HIGHLIGHTS

➤ As part of the project to convert the underground Beaumont–Dorchester line to 315 kV, we worked closely with the Montréal boroughs affected in order to properly inform residents and stakeholders, reduce the impacts of the work and integrate the new line as harmoniously as possible in the urban fabric. We used various means to interact with residents, including a [project Web page](#) where residents could submit questions online, a dedicated phone line and open house events. (Montréal)

➤ For the project to connect La Romaine village and Unamen Shipu to the power grid, since the thermal power plant supplying these communities had reached the end of its service life, we held consultations with the two municipalities, two band councils and various provincial departments concerned. To inform these audiences, we held meetings, gave interviews and published documents in French, English and Innu. We ascertained the communities' concerns about the siting of substations, the protection of archaeological sites, the maintenance of hunting and gathering activities, landscape quality and sediment deposition in salmon rivers. (Côte-Nord)



Social acceptability and public participation EXCLUSIVE WEB CONTENT

- [Welcome to the jobsite for the 735-kV Chamouchouane–Bout-de-l'Île project](#)
- [Public participation in a major project](#)
- [Construction projects – Transmission](#)
- [Romaine complex project](#)

THURSO-PAPINEAU SUBSTATION – RESULTS OF CONSULTATIONS

The goal of the public participation process for the [Thurso-Papineau substation project](#) was to solicit the host community's opinions and concerns about the siting of the substation and supply line. Two potential substation locations and three proposed line routes were determined beforehand and the host community chose the final substation location. Regarding the supply line route, after many discussions and technical and environmental studies, Hydro-Québec devised a new route, taking the concerns of the host community into account. (Outaouais)



⊕ PROPOSED ROUTES
AND ROUTE SELECTED

STORY OF A LONG-TERM RELATIONSHIP: Hydro-Québec and Ville de Sainte-Catherine-de-la-Jacques-Cartier



Marcel Grenier, City Manager: “I’ve been the city manager for Ville de Sainte-Catherine-de-la-Jacques-Cartier for 43 years. Customer relations with Hydro-Québec have changed a lot over the years. At the beginning, when we wanted to do business, a customer relations agent would come to city hall. And then, for years after that, it was up to us to approach Hydro-Québec—which was less efficient. Since 1997, a community relations advisor has helped us in our dealings. This arrangement is very productive and allows us to coordinate our projects with Hydro-Québec. One recent example involves the way we are trying to balance demographic and economic growth, and maintain a stimulating quality of life in our city. To meet the region’s growing energy needs, Hydro-Québec has just commissioned the new Duchesnay substation.”

Pierre Dolbec, Mayor: “When Hydro-Québec presented its substation and supply line project to me six years ago, I insisted that residents’ quality of life be a priority. The public consultations that it held allowed all our concerns to be addressed: respect for the environment, maintaining horseback riding trails, the effect of magnetic and electrical fields, etc. Many experts came to meet with citizens. At our suggestion, some transmission towers were moved and the substation was built at a distance from the city’s facilities. Obviously, the construction work meant a few temporary inconveniences, but Hydro-Québec helped us benefit from its Integrated Enhancement Program (IEP), and the municipality now has a new water playground, which attracts large numbers of people in summer.”

POPULATION
GROWTH
SINCE 2011

20%

[+ LEARN MORE](#)

CONSTRUCTION
OF DUCHESNAY
SUBSTATION


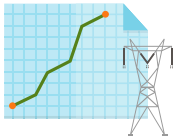
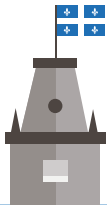
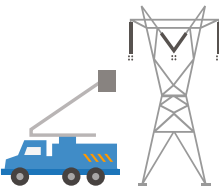

[+ LEARN MORE](#)

IEP,
A SUCCESS
FOR THE CITY

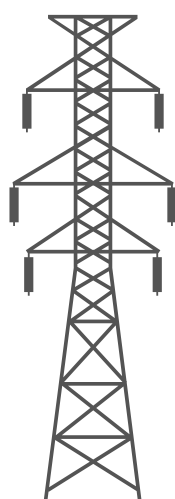
[+ LEARN MORE](#)

GRI GRI 203-1, GRI 413-1

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

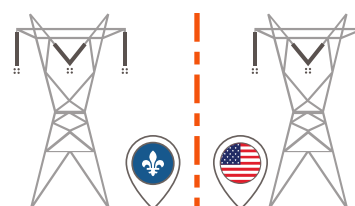


120-kV Grand-Brûlé–Saint-Sauveur supply line (Laurentides)

-  PROJECT FACT SHEET
-  DESCRIPTION AND PROGRESS OF PROJECT

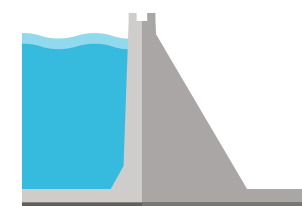
735-kV Micoua–Saguenay line (Saguenay–Lac-Saint-Jean)

-  PROJECT FACT SHEET
-  DESCRIPTION AND PROGRESS OF PROJECT



Québec–New Hampshire interconnection (Estrie)

-  PROJECT FACT SHEET
-  DESCRIPTION AND PROGRESS OF PROJECT



Dike repairs at Les Cèdres generating station (Montréal)

-  PROJECT FACT SHEET
-  DESCRIPTION AND PROGRESS OF PROJECT



315/25-kV Patriotes substation and 315-kV supply line (Laurentides)

-  PROJECT FACT SHEET
-  DESCRIPTION AND PROGRESS OF PROJECT

Land use

Land use and development in Québec requires an integrated multidisciplinary approach, in which Hydro-Québec plays a key role. In managing its operations and carrying out its projects, the company takes account of land-use planning initiatives such as master plans for water and public land-use plans. It continually reviews its practices and processes to ensure that its power grid harmonizes with current and future land uses. From its generating stations, which are often located in remote regions, to its urban distribution system, Hydro-Québec designs its facilities while taking into consideration the distinctive characteristics and constraints of the land where they are built.

2017 HIGHLIGHTS

- We managed 629 commercial and 1,476 residential leases that promote the multipurpose use of Hydro-Québec's properties: public parks, recreational use of rights-of-way, boat ramps, cottage leases, etc.
- In collaboration with the Association des aménagistes régionaux du Québec, we rolled out a training program that helps land-use and

urban planners better understand the specific characteristics of the power grid. The program was offered at 18 MRCs and 12 municipalities (covering six administrative regions), as well as several provincial departments and agencies. A total of 52 people took the course, which will be given until 2020.

- We planted 45 trees and shrubs on three of the company's lots in the Montréal borough of Villeray–Saint-Michel–Parc-Extension. The purpose was to contribute to the efforts of Ville de Montréal and Société de verdissement du Montréal métropolitain (SOVERDI) to increase the area of urban forest and improve the health and safety of residents and our employees. (Montréal)
- We signed 442 use-of-premises agreements and two assignments of easement of the company's property or property rights for public or private use: construction of streets or water and sewer mains, development of public parks and park-and-ride lots for public transit, installation of boat ramps, etc.



WHEN BEAUTIFYING THE PRESENT UNEARTHS THE PAST

Under the program to enhance public thoroughfares, system undergrounding in Lévis unearthed skeletal remains dating from 1753, which are likely those of a man of Basque or Spanish origin. (Chaudière-Appalaches)



The charming Rue Jacques-Cartier in Gatineau, after power lines were undergrounded.



Land use EXCLUSIVE WEB CONTENT

- [Archaeology and heritage](#)

GRI GRI 102-9, GRI 204-1

Local procurement

Hydro-Québec facilities are sometimes located in remote areas that are difficult to access or far from service centers. Although these operations are often controlled remotely, without requiring the daily presence of employees, services such as snow removal are still required. In this case, Hydro-Québec often uses a local procurement approach, which also promotes local spinoffs.

2017 HIGHLIGHTS

- At a telecommunications facility in the Mauricie region, a local contractor provides snow removal services. The use of a local contractor cuts costs and reduces GHG emissions.
- The cafeteria operator at Manic-5 and Hart-Jaune generating stations obtains certain provisions, such as fruit, vegetables, fish, meat, dairy products and bread, from local distributors. This supports the local economy and ensures freshness.

- Housekeeping services are carried out by local companies in many of our administrative centers, including those in Lac-Mégantic, Cabano and Lebel-sur-Quévillon. Bids can be submitted for just one or a few buildings, so regional companies can offer their services

PRESENTATION ON REGIONAL PROCUREMENT

A presentation on regional procurement entitled *Faire affaire avec nous* was held in November as part of the activities of the Chambre de commerce et d'industrie du Haut-Saint-Maurice. The presentation gave Hydro-Québec the chance to explain its business environment, procurement strategies and approaches, as well as business opportunities and tools put in place for suppliers.



^^ Daniel-Johnson dam and Manic-5 generating station, in Manicouagan RCM.

^ Hart-Jaune generating station, in Caniapiscau MRC.

Relations with Indigenous communities

In carrying out its projects and operations, Hydro-Québec maintains strong relationships with the various Indigenous communities present, in keeping with their culture and their traditional use of the land. Since each community is unique, the company strives to adapt its practices and processes to local realities, with a view to developing mutually beneficial partnerships.

Since 1975, we have signed over 30 agreements with Indigenous nations and communities in connection with our generation and transmission projects. For the Romaine project (Côte-Nord), the three agreements signed with the Innu communities affected provide for the creation of funds to finance economic, community and cultural projects, as well as traditional activities and training programs.

2017 HIGHLIGHTS

- For the project to dismantle Parent dam on the Rivière Bazin, we held information meetings with the communities affected, including Indigenous communities along the river that showed interest in participating in the work. The project was split into two contracts, one of which was awarded to a local Indigenous business. (Mauricie)
- As part of the energy transition of off-grid systems, we met with the 14 Inuit communities in Nunavik in order to determine the most appropriate solutions. (Nord-du-Québec)
- In all, 87 of our employees participated in the training program on Hydro-Québec and Indigenous people. ✓
- At the Romaine jobsite, a *shaputuan* was erected at Mista workcamp to enable Indigenous workers to get together and share traditional and cultural activities. (Côte-Nord)



CONVERSION OF NUNAVIK OFF-GRID SYSTEMS TO RENEWABLE ENERGY

Hydro-Québec is emphasizing a partnering approach rather than the usual request for proposals in converting the power supply for off-grid systems in Nunavik. This approach is better suited to the special business environment in Nunavik and the Inuit nation's intention of playing a leading role in developing renewable energies. Discussions are currently under way between Hydro-Québec and Tarquti Energy Corporation, a joint venture established in 2017 by Makivik Corporation and the Fédération des coopératives du Nouveau-Québec to develop renewable energy projects. A business model will be defined in 2018 to facilitate the conversion of off-grid systems. In the spring of 2018, with Tarquti's collaboration and financial participation, Hydro-Québec will commission an external firm to determine the solar and wind potential of each off-grid system in Nunavik.

GRI GRI 102-40, GRI 102-44, GRI 102-47, GRI 103-1, GRI 103-2

OUR COMMITMENT TO INNOVATION AND TRANSPORTATION ELECTRIFICATION



At the center of excellence in transportation electrification and energy storage, there is a dedicated dry room for assembling lithium-ion batteries.

Half a century ago, visitors to Montréal's Expo 67 could watch the construction of Daniel-Johnson (Manic-5) dam, the world's largest multiple-arch dam, live and in real time. When we commissioned the generating stations in the Manicouagan complex, we put into operation the world's first extra-high-voltage line. Today, in promising new fields such as energy transition, we continue to rely on innovation to provide technological and human solutions to the issues of our day.

IN THIS SECTION

- > Research and development
- > Developing partnerships
- > Transportation electrification
- > Energy transition

Research and development

All around the world, the power industry is increasingly proving its ability to provide solutions to the issue of climate change. The energy transition this entails is based largely on technological innovation, particularly in terms of energy efficiency, smart grid management and optimizing energy use. In addition to integrating renewable energy sources, making room for distributed 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.

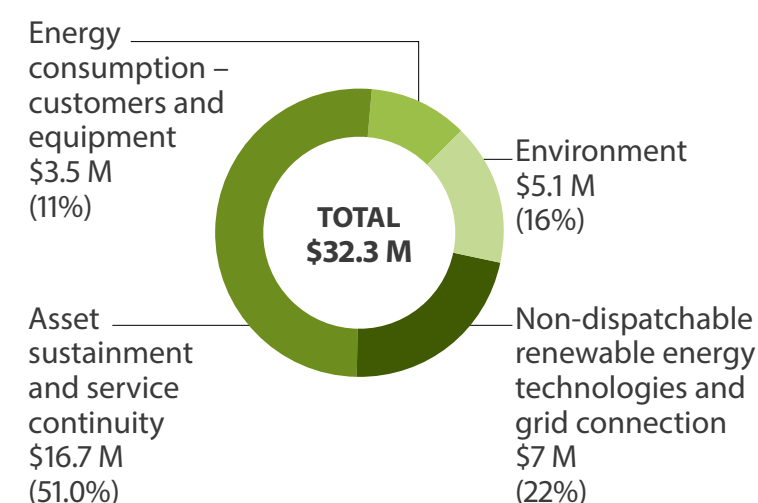
In 2017, according to Re\$earch Infosource, Hydro-Québec was again the top Canadian power utility for R&D spending. With an annual budget of \$127 million, ✓ the company's research institute, IREQ, develops state-of-the-art technology in multiple fields related to power systems and renewable energy.

Income from patents and the commercialization of our innovations totaled \$16.2 million. After defining avenues of innovation essential to our performance in the upcoming decade, the company created the Center of Excellence in Transportation Electrification and Energy Storage (CETEES) in 2017.

HYDRO-QUÉBEC'S TECHNOLOGICAL VISION

THREE MAIN ORIENTATIONS	INNOVATION AREAS
Our customers at the center of our vision for the future	Customer participation, electrification and decarbonization of markets, decentralization and integration of renewable energies in the electrical system
Our assets give us the upper hand in a changing environment	Diagnostics and prognostics of major equipment – maintenance based on actual equipment condition
Looking toward the power system of the future	Digital transformation and digitization of operations – the Internet of things, data science, artificial intelligence, cybersecurity

BREAKDOWN OF IREQ INNOVATION EFFORTS RELATED TO SUSTAINABILITY^a – 2017 ✓




a) Excludes investments in energy storage and conversion.



Research and development EXCLUSIVE WEB CONTENT

- [Technological innovation](#)
- [University chair endowments](#)
- [List of our patents](#)
- [Learn about our innovations](#)
- [Life cycle assessment at Hydro-Québec](#)

2017 HIGHLIGHTS

- A drone equipped with a LineCore sensor was used to inspect power lines. The sensor is a corrosion detector that provides detailed information on the condition of the galvanized coating on transmission and distribution lines. Developed by IREQ, the LineCore is a groundbreaking advance in transmission system maintenance.
- Work continued on the LineDrone pilot project, involving the use of a drone to perform visual inspections of live 735-kV lines. The drone, equipped with a new onboard vision system, can now land semiautonomously, making line inspections safer.  [SEE VIDEO](#)
- We provided \$3.9 million in funding (2017–2021) to Concordia University ✓ for three research chairs to study smart grid cybersecurity (a first in Canada); optimized operation and energy efficiency in buildings; and energy efficiency in small electrical machines.
- We made a donation of \$1.8 million (2017 to 2021) to the Fondation de l'Université du Québec à Trois-Rivières. ✓ As well as financing a scholarship program, these funds will support research on the transactional management of residential demand (energy and capacity) and an R&D project on modeling and optimization of asset management.

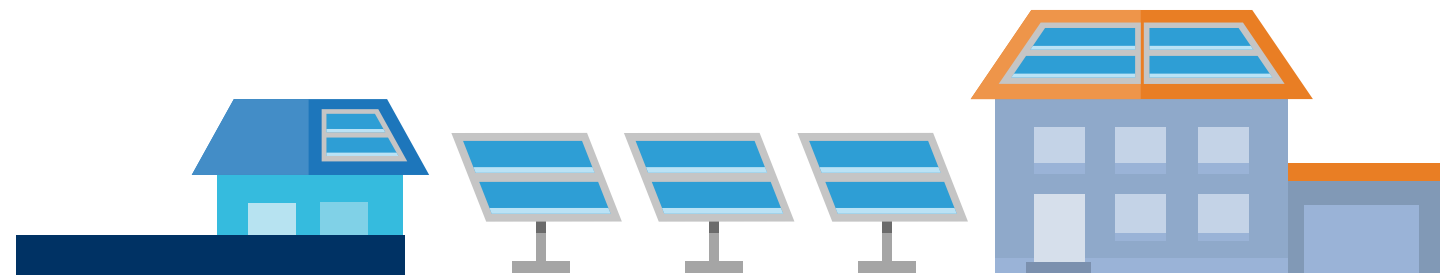
ENERGY TRANSITION

In all markets, energy generation and consumption modes are undergoing a profound shift. For example, in the United States, microgrids are becoming more popular due to the increased frequency and severity of extreme weather events. Hydro-Québec is keenly interested in this transition and, through a series of projects, is preparing to integrate new technologies and adapt the range of services that it offers.

In coming years, distributed solar photovoltaic (PV) technology could become competitive with current generation modes. Hydro-Québec may have to integrate into its grid various self-generation technologies (solar or small wind), as well as storage and energy management technologies such as electric cars that can store energy and feed it into the grid during peak periods. Other types of systems that can function independently or be unplugged from the grid could also emerge in Québec. This decentralization of energy resources also represents an opportunity to innovate and to offer innovative energy services that go beyond mere electricity distribution.

Among Hydro-Québec's solar PV energy projects, the installation of 69 solar panels in the village of Quaqaq in Nunavik will be crucial, guiding future energy transition strategies for off-grid systems. The capacity of the module represents 2% of that of the thermal power plant that supplies the village. This new technology could reduce fuel consumption by 5,000 litres a year.

Another first was the connection of a large-scale energy storage system to a feeder line at Hemmingford substation in the Montérégie region. This demonstration project will help provide solutions in managing power demand during peak periods and the integration of renewables into power grids.



EXAMPLES OF SUSTAINABILITY-RELATED INNOVATION PROJECTS – 2017

CATEGORY	ACHIEVEMENTS OR WORK IN PROGRESS
Environment Energy performance – customers and equipment Investment: \$40,000 ✓	Water electrolysis to produce synthetic fuels from municipal waste This project conducted by IREQ's energy technology laboratory (LTE) involves evaluating the possibility of incorporating water electrolysis into a process to produce synthetic fuels from municipal solid waste. In 2017, LTE performed a methods and cost analysis on integrating water electrolysis with an Enerkem technology in order to manufacture advanced biofuels and green chemicals from waste. The results show that the harmonized integration of the two technologies could double the expected yield while maintaining the cost-effectiveness of the waste recovery.
Sustainability Renewable energy technologies and grid connection Investment: \$280,000 ✓	Managing residential power demand The goal of the project is to elicit the participation of residential customers in reducing power demand in order to limit demand during the winter peak. As part of the project, we targeted demand from electric baseboard heating and installed communicating thermostats for baseboards in the homes of 30 employees. Temperature settings on these thermostats were adjusted based on typical demand response measures taken during cold snaps. This allowed us to observe the effects on power demand and occupants' comfort. In addition, various scenarios were simulated to estimate the potential impact of these devices on the system load profile.
Environment Investment: \$745,000 ✓	Tribology/Environment project The Tribology/Environment project focuses on environmentally friendly lubricating solutions for the mechanical components of generating equipment. In order to make a more informed choice of self-lubricating materials and green lubricants, we're testing their performance under actual operating conditions. Adopting these types of products will allow us to greatly reduce the risks of damage to the environment caused by accidental leaks of lubricants. In 2017, we designed a new test bench to assess materials for self-lubricating bearings, which simulates operating conditions such as harsh winter temperatures, hot and humid summer temperatures and immersion in water.
Asset sustainment and service continuity Investment: \$576,000 ✓	SiGran project The latest version of the National Building Code requires that <u>soil liquefaction</u> potential be analyzed during geotechnical investigations. Soil liquefaction is the phenomenon of instability or loss of strength that occurs as a result of an earthquake, often in saturated granular soils. The occurrence of soil liquefaction is currently evaluated using a simplified process based on generic seismicity and geology conditions that are different from those found in eastern North America. The SiGran project involves the creation of a new method to study the liquefaction potential of soils in the geological and seismic context of eastern North America. The project has a virtual and an experimental component. In the virtual component, we're attempting to understand the liquefaction phenomenon at the particle and pore level, and design effective mitigation measures when a prognosis of liquefaction has been established. In the experimental component, we use the TxSS, a seismic simulator apparatus designed to study liquefaction, to define the dynamic characteristics of soils and examine their relation to soil liquefaction. It can also be applied to examine the effectiveness of the conventional method, its limits and its relevance to seismic conditions in Québec. Using the TxSS, we were able to establish a prognosis of non-liquefaction for the soils underlying the foundations of five transmission substations, contrary to the previously established prognosis of liquefaction. These new results allowed us to abandon work such as the installation of piles to straighten and stabilize foundations, and thus reduce costs and GHG emissions.

GRI GRI 102-13, GRI 201-1

Developing partnerships

We support Québec universities by establishing partnerships with them and awarding them research contracts. In addition, we fund many [university research chairs](#). As a founding member of [Ouranos](#), we contribute to the consortium's work in regional climatology and adaptation to climate change.

2017 HIGHLIGHTS

- The first annual symposium of the [NSERC/Hydro-Québec Industrial Research Chair in Phytotechnology](#) (in French only) was held at the Institut de recherche en biologie végétale. A total of eight research projects, ongoing or in development, were presented to the members of the Chair, Hydro-Québec employees and IREQ researchers. (+)
- Esstalion Technologies, a Hydro-Québec–MuRata joint venture, continued its R&D activities on lithium-ion batteries after Sony sold its stake in the venture.
- The Nova LFSe bus, Québec's first 100% electric bus, was tested in the streets of Montréal. The vehicle is equipped with motors made by TM4, a Hydro-Québec subsidiary.

(+) CONTRIBUTIONS,
COMMITMENTS, RESEARCH
CHAIR FUNDING AND
RESEARCH CONTRACTS



SOLAR DECATHLON CHINA 2018



Prototype house by TeamMTL.

Hydro-Québec is the main partner of [TeamMTL](#), which will participate in the Solar Decathlon 2018, an international green architecture competition to be held in the summer of 2018 in Dezhou, China. The team consists of McGill University and Concordia University professors and graduate students working in various fields, including architecture, design, management, engineering and digital arts.

In 2017, TeamMTL built a prototype dwelling combining several leading-edge concepts. The two-story, 120-m² to 200-m² house has a small environmental footprint and optimizes the use of solar, electrical, natural and material resources. The single-family dwelling must have all the usual household appliances.

Along with providing funding, we are supplying expertise in the areas of energy efficiency and new energy uses.

Transportation electrification

Québec has not only an abundance of clean, affordable energy but also motorization and energy storage solutions, which are key assets in efficient transportation electrification. Montréal's metro, which transports over a million people daily and has been in operation for half a century, is a valuable tool in combating GHG emissions. Several electric transportation projects lie ahead, including the Réseau express métropolitain (REM light-rail system), the Blue line metro extension and the addition of electric city buses.

Since the transportation sector is the main source of GHG emissions in Québec, the adoption of electric vehicles, active transportation and mass transit are an important way to reduce air pollution.

Hydro-Québec is collaborating in the REM project, a driverless light-rail system spearheaded by the Caisse de dépôt et placement du Québec Infra. The company will contribute mainly by integrating its infrastructure and substations to supply electricity for the system.

2017 HIGHLIGHTS

- After launching its first SUMO system five years ago, TM4 began marketing its SUMO HP powertrain in 2017. This model joins the SUMO MD series for medium-duty commercial vehicles and the SUMO HD series for heavy-duty commercial vehicles.
- TM4 and Cummins worked together to develop a plug-in hybrid powertrain intended for use in city buses, which could reduce fuel consumption by at least 50% compared with conventional hybrid technologies. The project aims to offer transit authorities a flexible and more efficient motorization solution that provides electric vehicles with a substantial range.
- We signed an agreement with Lawrence Berkeley National Laboratory (U.S. Department of Energy) to create a joint Québec-Berkeley research center, dubbed QUBE, in the San Francisco Bay area. The center's mission is to speed up the development of next-generation battery materials, processes and technologies, and conduct manufacturing from pilot scale to preproduction levels. The technologies developed will then be transferred to battery

ELECTRIC VEHICLE NUMBERS

Québec: 21,994 vehicles – 54% plug-in hybrids and 46% all-electric (as of the end of 2017)

- Worldwide: 2,000,000 vehicles as of February 1, 2017
- Québec government target: 100,000 vehicles by 2020
- Hydro-Québec light-vehicle target: 500 plug-in or hybrid vehicles by 2020 (150 vehicles in fleet as of December 31, 2017) ✓

Sources: Association des Véhicules Électriques du Québec, Société de l'assurance automobile du Québec and Québec government.

manufacturers, which will create jobs in Québec and California.

- Hydro-Québec was a partner in the Montréal ePrix, a race showcasing all-electric vehicles—built by some of the world's biggest manufacturers—which we supplied with 100% clean fuel. The event provided a unique opportunity to promote transportation electrification and the fight against climate change.
- Total number of charging stations near company buildings: 83. ✓ Of these, 63 are reserved for employees, while the rest can also be used by the general public.

ELECTRIC CIRCUIT

2017 HIGHLIGHTS

➤ This year saw strong growth in the Electric Circuit, which now has 1,271 charging stations in 16 of the province’s 17 administrative regions. ✓ It has also expanded beyond the Québec border with the rollout of 18 charging stations in Ontario. In all, 1,183 regular (240-V) charging stations and 106 fast-charge stations (400-V) ✓ are deployed at 801 service points in 239 cities and towns. The number of fast-charge stations increased from 66 to 106 in a year, primarily along Québec’s main highways.

- Québec’s first fast-charge superstation was launched. This facility, which has a number of fast-charge stations, will serve as a test bench for new charging technologies as well as various complementary services such as dynamic pricing options. Users’ comments will be gathered to improve future superstations. (Montréal)
- A total of 18 new charging stations were installed in the parking lots of our buildings. ✓ The company now has 83 charging stations at 34 sites, 20 of which are Electric Circuit stations and can be used by the general public.
- The Electric Circuit expanded into Ontario, with the installation of 18 charging stations along highways 401, 416 and 417 and Route 17. In Ottawa and the surrounding area, eight 240-V and 10 fast-charging stations were installed. ✓



The Electric Circuit and the Groupe Crevier inaugurate the fast-charge superstation for electric vehicles in Beloeil.



LOCATION OF CHARGING STATIONS

CHANGES IN THE ELECTRIC CIRCUIT NETWORK IN QUÉBEC (number)

	2014	2015	2016	2017 ✓
240-V/400-V charging stations installed during the year	111/7	199/21	182/37	453/30
240-V/400-V charging stations available (cumulative)	349/8	549/29	729/66	1,175/96
Partners (cumulative)	92	130	181	251
Members (cumulative)	3,637	6,583	11,458	19,153
Administrative regions	15	16	16	16

Transportation electrification EXCLUSIVE WEB CONTENT

- [Transportation electrification](#)
- [TM4](#)
- [Comparative life-cycle assessment of electric and conventional vehicles](#)

GRI GRI 102-9, GRI 102-40, GRI 102-44, GRI 102-47, GRI 103-1, GRI 103-2, GRI 201-1

OUR SOCIOECONOMIC CONTRIBUTION

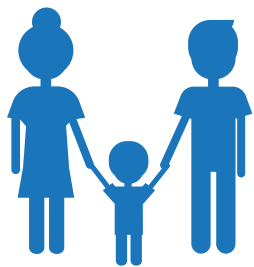


Visitors on the spillway bridge at Robert-Bourassa complex, Baie-James.

Our business supports thousands of jobs and stimulates the economic vitality of many Québec regions. It accounts for about 4% of Québec’s gross domestic product. The dividend we pay to our shareholder alone represents over 2% of the Québec government’s total budget.

IN THIS SECTION

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



GRI GRI 102-7, GRI 201-1, GRI 203-2

Contribution to the Québec economy

FINANCIAL RESULTS

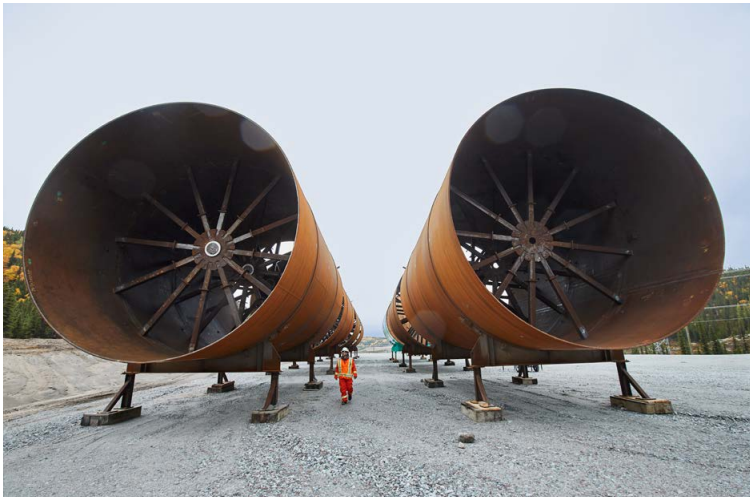
In 2017, we posted net income of \$2,846 million, which allowed us to pay our shareholder, the Québec government, a dividend of \$2,135 million. This result is attributable to the solid performance shown in all our lines of business, both in Québec and in outside markets, and to sound management of our operating expenses.

Our net electricity exports reached a historic volume of 34.4 TWh and contributed \$780 million to net income. As a result of an effective sales strategy, smooth operation of generating and

transmission facilities, and high runoff, net exports increased by 1.8 TWh over the previous record, set in 2016.

SPINOFFS IN THE COMMUNITY

Hydro-Québec’s annual investments of \$4 billion make us the province’s biggest investor, whether public or private. We also invest in communities by supporting social action, health and educational institutions, environmental enhancement, sports and the arts, and employees’ volunteer commitments.



Penstock linings on the site of the future Romaine-4 generating station. Annual investments in building the Romaine complex come to hundreds of millions of dollars.

2017 HIGHLIGHTS

- Revenue from electricity sales in Québec was \$11,763 million (\$11,573 million in 2016).
- That figure includes revenue from electricity sales outside Québec amounting to \$1,651 million (\$1,626 million in 2016).
- Net income totaled \$2,891 million.
- We paid a dividend of \$2,135 million to the Québec government.

HYDRO-QUÉBEC’S CONTRIBUTION TO THE QUÉBEC ECONOMY

	2014	2015	2016	2017
Dividend (\$M)	2,535	2,360	2,146	2,135
Public utilities tax (\$M)	252	268	284	284
Water-power royalties (\$M)	651	654	667	695
Municipal and school taxes (\$M)	37	37	40	38
Procurement from Québec-based companies (%)	94	93	94	92
Community investments (\$M)	30	27	28	28

GRI GRI 201-1, GRI 203-1

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 Indigenous communities.

In 2017, we allocated \$4.2 million for 27 initiatives. ✓ Once agreements have been reached, municipalities have a year to carry out their projects. At the end of the process, the grand opening of the new community facilities is held. The program has granted \$130 million toward 1,294 initiatives since its inception.

2017 HIGHLIGHTS

- We provided \$415,800 ✓ to the municipality of Saint-Michel-des-Saints in Lanaudière to fund recreational and tourism infrastructure, including a skating rink, BMX bike track and water play area, as part of the 735-kV Chamouchouane–Bout-de-l’Île project.
- We gave funding of \$6,100 ✓ to the municipality of Saint-Paul-de-la-Croix in Bas-Saint-Laurent to reroof the parish hall, as part of the project to build a 120-kV line from the Viger-Denonville wind farm.



A rest stop on the TransTerrebonne cycling path, which was extended to Lachenaie. This wonderful enhancement of Lanaudière’s recreation and tourism potential was another initiative under the Integrated Enhancement Plan.

FUNDING AND FINANCIAL COMMITMENTS – INTEGRATED ENHANCEMENT PROGRAM

	2014	2015	2016	2017
Number of initiatives	53	16	25	27 ✓
Hydro-Québec funding (\$'000)	4,176.0	1,584.1	3,001.2	4,231.0 ✓
Community funding (\$'000)	22,284.6	4,462.1	9,809.9	23,641.7
Project value (\$'000)	26,460.6	6,047.1	12,811.1	27,872.7



Contribution to the Québec economy
EXCLUSIVE WEB CONTENT

- [Donations and sponsorships](#)
- [Integrated Enhancement Program](#)
- [Fondation Hydro-Québec pour l’environnement](#)
- [Youth awareness](#)
- [Hydro-Québec art collection](#)
- [Industrial tourism](#)
- [National and International Influence and Cooperation](#)
- [Guest speakers – Invite a guest speaker from Hydro-Québec!](#)

GRI GRI 201-1, GRI 203-1

FONDATION HYDRO-QUÉBEC
POUR L'ENVIRONNEMENT

The Fondation Hydro-Québec pour l'environnement contributes to the enhancement of the environment and long-term protection of Québec's ecological heritage. The Foundation funds initiatives throughout the province that have positive environmental and social impacts, and that serve the interests of local communities. Since its inception, the Foundation has granted close to \$15 million to 272 projects with an estimated total value of about \$48.6 million. Our commitment over more than 16 years demonstrates the company's intention to be socially responsible.

COMMITMENTS – FONDATION HYDRO-QUÉBEC
POUR L'ENVIRONNEMENT

	2014	2015	2016	2017 ✓
Projects supported (number)	12	16	18	16
Regions involved (number)	7	9	9	9
Amount granted (\$'000)	393	964	971	738

2017 HIGHLIGHTS

- We provided \$25,000 ✓ in funding to help the Société de conservation des Îles-de-la-Madeleine acquire a property in Barachois-de-Fatima to create an extremely important conservation corridor. A total of 171 bird species have been observed there, including the rare short-eared owl, horned grebe and Nelson's sharp-tailed sparrow. Several actions have been planned to protect the environment and make it publically accessible: marking a trail and planting, as well as installing an interpretation panel explaining the ecological wealth of the area.
- We granted \$47,200 ✓ to Y'a QuelQu'un l'aut'bord du mur for a project to protect, restore and enhance Thomas-Chapais park in the Montréal borough of Mercier-Hochelaga-Maisonneuve. The project includes installing interpretation panels, designing educational materials, organizing buckthorn eradication activities and planting trees and shrubs.



Launch of the Centraide (United Way) campaign in the lobby of Édifice Jean-Lesage, Hydro-Québec's head office.

EMPLOYEE ENGAGEMENT

Hydro-Québec is all in favor of sharing employees' expertise and know-how. We also acknowledge their sustainability achievements in the company or the community. Many of our employees and managers devote personal time to volunteering as board members, speaking to elementary school children or taking part in community activities.

2017 HIGHLIGHTS

- Employees in Baie-Comeau and Forestville in the Côte-Nord region volunteered with Operation Red Nose in December. The 40 participating employees drove 100 motorists home safely.

GRI GRI 201-1, GRI 203-1

- We contributed \$5.9 million to the 41st Centraide (United Way) campaign. This organization supports agencies working to improve the quality of life of people in need. ✓ The contribution, close to half of it from company employees and pensioners, surpassed the campaign goal by over \$100,000.
- Many employees and managers spent a day helping the Comptoir alimentaire l'Escale de Baie-Comeau in Côte-Nord hand out Christmas baskets. The volunteers took food to drop-off points, gave out baskets and delivered them to people who were housebound or without transportation.
- Managers spent a morning with Pause Famille, a Montréal organization that helps families with young children who are experiencing difficulties. The volunteers sorted and cleaned donated toys and clothing, and repainted a room.

DONATIONS AND SPONSORSHIPS

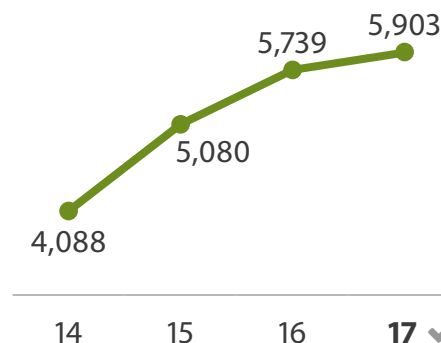
We support Québec's cultural, social and economic life with donations and sponsorships from a budget provided for in our Business Plan.

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.

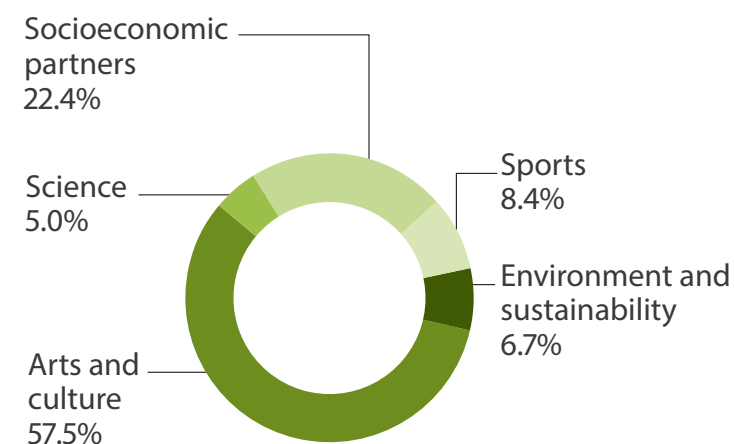
2017 HIGHLIGHTS

- We are donating \$1 million over five years to the Fondation de l'Institut universitaire en santé mentale de Montréal campaign. ✓
- We are making a contribution in kind worth \$150,000 over three years to the Université du Québec en Abitibi-Témiscamingue engineering school for the development of an experimental microhydro generating station. ✓
- We are a partner of the Centre for Sustainable Development in Montréal and the main sponsor of its activities and events. We are committed to making an annual contribution of \$250,000 from 2017 until 2019. ✓
- We supported Québec's 17th annual Indigenous science fair, for students from grades 5 to 11 in First Nations and Inuit schools in Centre-du-Québec. We have been sponsoring the science fair since 2000.

CONTRIBUTION TO CENTRAIDE/ UNITED WAY – EMPLOYEES' AND PENSIONERS' CAMPAIGN (\$'000)

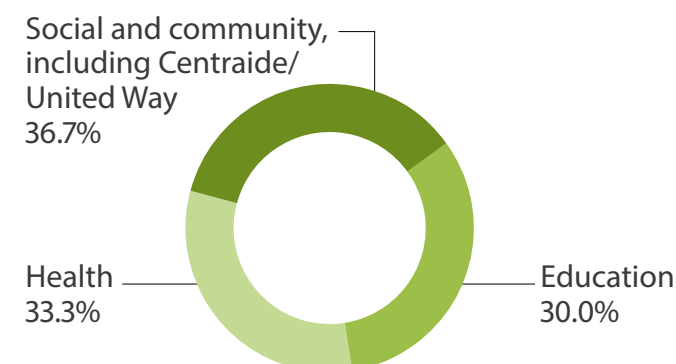


BREAKDOWN OF SPONSORSHIPS^a – 2017 ✓



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

BREAKDOWN OF DONATIONS – 2017 ✓



GRI content index for 'In Accordance' Core^a



- 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.

GENERAL DISCLOSURES

No.	GENERAL DISCLOSURES 2016	PAGE ^b	OMISSION
GRI 101: Foundation 2016			
GRI 101 does not require any particular disclosure			
GRI 102: General Disclosures 2016			
ORGANIZATIONAL PROFILE			
GRI 102-1	Name of the organization	1, 5	
GRI 102-2	Primary brands, products and services	5, 14, 15	
GRI 102-3	Location of headquarters	Web	
GRI 102-4	Location of operations	5, 15	
GRI 102-5	Ownership and legal form	Web	
GRI 102-6	Markets served	15	
GRI 102-7	Scale of the organization	5, 15-17, 91	
GRI 102-8	Information on employees and other workers	5, 15	Workforce numbers based on contract type are not available. Total numbers of outside workers by employment type, employment contract and region are not available.
GRI 102-9	Supply chain	10, 81, 90	
GRI 102-10	Significant changes	Web	
GRI 102-11	Precautionary Principle or approach	35, 39-41, 67	
GRI 102-12	Charters, principles and other external initiatives	11, 22, 67	
GRI 102-13	Memberships of associations	20, 27, 34-35, 63-65, 73, 87, Web	
STRATEGY AND ANALYSIS			
GRI 102-14	CEO's statement	7-9	
GRI 102-15	Key impacts, risks and opportunities	14, 16, 17, 25-29	
ETHICS AND INTEGRITY			
GRI 102-16	Ethical behavior	21, 22	
GOVERNANCE			
GRI 102-18	Governance structure	19-23	
GRI 102-22	Composition of the highest governance body	19-22	

GRI content index for 'In Accordance' Core^a

GENERAL DISCLOSURES

No.	GENERAL DISCLOSURES 2016	PAGE ^b	OMISSION
GRI 102-23	Chair of the Board of Directors	19	
GRI 102-24	Nominating and selecting board members	20	
GRI 102-32	Board of Directors' roles in reviewing or approving the Sustainability Report	21	

STAKEHOLDER ENGAGEMENT

GRI 102-40	List of stakeholder groups	10, 19, 33, 42, 60, 70, 75, 83, 90	
GRI 102-41	Collective bargaining agreements	5	The percentage of outside workers covered by a collective agreement is not available (sector supplement).
GRI 102-42	Identifying and selecting stakeholders	10, 12, 13	
GRI 102-43	Approach to stakeholder engagement	10, 12, 13	
GRI 102-44	Key topics and concerns	13, 19, 33, 42, 60, 70, 75, 83, 90	

REPORTING PRACTICE

GRI 102-45	Entities included	11, 14	
GRI 102-46	Report content and topic Boundaries	12, 13	
GRI 102-47	Material topics	13, 19, 33, 42, 60, 70, 75, 83, 90	
GRI 102-48	Restatements of information	42 (sale of renewable energy certificates) and 63 (addition of a new emission source)	
GRI 102-49	Significant changes	11-13	
GRI 102-50	Reporting period	11	
GRI 102-51	Date of most recent report	Web	
GRI 102-52	Reporting cycle	11	
GRI 102-53	Contact point	102	
GRI 102-54	Claims of reporting in accordance with the GRI Standards	11	
GRI 102-55	GRI Content Index	95	
GRI 102-56	External assurance	100-101	

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 DISCLOSURES

No.	GENERAL DISCLOSURES 2016	PAGE ^b	OMISSION
ELECTRIC UTILITIES SECTOR DISCLOSURES			
EU1	Installed capacity	5, 14, 15	
EU2	Net energy output	16, 42, 50	
EU3	Number of customers	14, 15, 36	
EU4	Length of transmission and distribution lines	5, 14, 15	
EU5	Allocation of CO ₂ e emissions allowances	61, 62	
MANAGEMENT APPROACH			
GRI 103: Management Approach 2016			
⊕ GRI 103-1	Explanation of the material topic and its Boundary	13, 14, 15, 19, 33, 42, 60, 70, 75, 83, 90	
⊕ GRI 103-2	The management approach and its components	7-9, 14, 16, 17, 19, 33, 42, 60, 70, 75, 83, 90	
⊕ GRI 103-3	Evaluation of the management approach	15-17	
ECONOMIC			
GRI 201: Economic Performance 2016			
GRI 201-1	Direct economic value generated and distributed	14, 15, 87, 90-94	Salaries and employee benefits are considered confidential information and are not released.
GRI 201-2	Climate change	7-9, 27, 29, 60-64, 84	
GRI 203: Indirect Economic Impacts 2016			
GRI 203-1	Infrastructure investments that benefit local communities	55-58, 79, 88-89, 92-94	
GRI 203-2	Indirect economic impacts	14, 17, 55-58, 91	
GRI 204: Procurement Practices 2016			
GRI 204-1	Local suppliers	15, 55, 81	
Aspect: Availability and Reliability (Electric Utilities Sector Disclosures)			
EU10	Planned capacity against projected electricity demand over the long term	34, 43-45, 47-51	

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 DISCLOSURES

No.	GENERAL DISCLOSURES 2016	PAGE ^b	OMISSION
ENVIRONMENT			
GRI 301: Materials 2016			
GRI 301-1	Materials used	Web	Hydro-Québec does not measure the weight or volume of recycled materials used.
GRI 301-2	Recycled input materials used	Web	
GRI 302: Energy 2016			
GRI 302-4	Reduction of energy consumption	16, 28, 30, 44-46	
GRI 303: Water 2016			
GRI 303-1	Water withdrawal by source	16	
GRI 304: Biodiversity 2016			
GRI 304-1	Sites near areas of high biodiversity value	65, 66	
GRI 305: Emissions 2016			
GRI 305-1	Direct GHG emissions (Scope 1)	16, 31, 60, 62, 63	
GRI 305-2	Energy indirect GHG emissions (Scope 2)	60, 62, 63	
GRI 305-3	Other indirect GHG emissions (Scope 3)	60, 63	
GRI 305-4	GHG emissions intensity	60, 62, 63	
GRI 305-5	Reduction of GHG emissions	16, 27, 29, 31, 60-63	
GRI 305-7	NO _x , SO _x and other air emissions	16, 62	
GRI 306: Effluents and Waste 2016			
GRI 306-3	Total number and volume of significant spills	16	
GRI 307: Environmental Compliance 2016			
GRI 307-1	Noncompliance with environmental laws and regulations	16, 55	
SOCIAL – LABOR PRACTICES AND DECENT WORK			
GRI 403: Occupational Health and Safety 2016			
GRI 403-2	Work-related injuries, diseases and absenteeism	17, 39, 40	Hydro-Québec discloses only the work-related accident rate. Other information for this indicator is confidential.

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 DISCLOSURES			
No.	GENERAL DISCLOSURES 2016	PAGE ^b	OMISSION
GRI 405: Diversity and Equal Opportunity 2016			
GRI 405-1	Diversity and equality	19, 23-24	
SOCIAL – SOCIETY			
GRI 413: Local Communities 2016			
GRI 413-1	Engagement, assessments and development programs	26, 56, 58, 76-79, 82	The percentage is not available.
GRI 413-2	Impacts on local communities	15, 55-59, 75-78	
SOCIAL – PRODUCT RESPONSIBILITY			
Aspect: Customer Health and Safety			
EU25	Injuries and fatalities	39	Information about court decisions, out-of-court settlements and ongoing suits related to disease cases is not available.
GRI 417: Marketing and Labeling 2016			
GRI 417-1	Product and service information	39	
Aspect: Access (Electric Utilities Sector Disclosures)			
EU29	Average power outage duration	17, 33	

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.

Independent assurance

To Hydro-Québec Management

The Bureau de normalisation du Québec was engaged to conduct an independent evaluation of Hydro-Québec's *Sustainability Report 2017*, which covers the period from January 1 to December 31, 2017. 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 specific indicators drawn from the Global Reporting Initiative (GRI) standards disclosures
- 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 2018, was based on the information collected and consisted of the following:

- 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 specific indicators drawn from the Global Reporting Initiative (GRI) standards disclosures

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 held consultations with stakeholders in fall 2017 to determine how much information they expected to receive about the 34 sustainability issues covered.

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 2017. It also considers the results of the recent responsiveness survey conducted after the *Sustainability Report 2016* was released.

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 conclusions of the surveys and consultations.

Quantitative information and conclusion

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

- Hydro-Québec's performance information matched specific indicators drawn from the Global Reporting Initiative (GRI) standards disclosures.
- 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 data origin, control methods and 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 2017* appears fair in all material respects and presents a reliable account of Hydro-Québec's sustainability performance during the period.

Montréal, March 29, 2018

Isabelle Landry

Operations Manager, System Certification and Laboratory Assessment
Bureau de normalisation du Québec

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	MW	megawatt (one million watts)	TWh	terawatthour (one trillion watthours)	<p>© Hydro-Québec Affaires corporatives et secrétariat général</p> <p>Reproduction authorized with acknowledgment of source</p> <p>Legal deposit – 2nd quarter 2018 Bibliothèque et Archives nationales du Québec ISBN 978-2-550-80975-3 (PDF)</p> <p>2018G040A</p> <p>This is a translation of the original French report.</p> <p><i>Ce document est également publié en français.</i></p>
\$'000	thousands of dollars	GW	gigawatt (one billion watts)	MMBtu	one million Btu (British thermal units)	
\$M	millions of dollars	Wh	watthour (a unit for measuring electric energy)	t	tonne (metric ton)	
\$G	billions of dollars	kWh	kilowatthour (one thousand watthours)	t CO₂ eq.	tonne of CO ₂ equivalent	
V	volt (a unit for measuring voltage)	MWh	megawatthour (one million watthours)	kt CO₂ eq.	thousands of tonnes of CO ₂ equivalent	
kV	kilovolt (one thousand volts)	GWh	gigawatthour (one billion watthours)	Mt CO₂ eq.	millions of tonnes of CO ₂ equivalent	
W	watt (a unit for measuring power)			Mtoe	million toe (a million tonnes of oil equivalent)	
kW	kilowatt (one thousand watts)					

