

Sustainability Report 2015

Setting new sights with our clean energy









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 | Stakeholders concerned |
|  | Additional or more detailed information | Materiality analysis aspects |
|  | Tip for accessing further information | Global Reporting Initiative Hyperlink |
|  | Hyperlink to another page in the report | Electricity supplied Term defined |
|  | Exclusive Web content | |
|  | Access to a map locating a project | |

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



HYDRO-QUÉBEC // SUSTAINABILITY REPORT 2015 // OUR ACTIONS

GRI G4-24

OUR SOCIOECONOMIC CONTRIBUTION

Our contribution to the Québec economy is unique: we invest billions of dollars, and create and maintain thousands of jobs. We also invest in communities by supporting social and humanitarian action, health and educational institutions, sports and cultural activities, and volunteer commitments by our employees.

IN THIS SECTION

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

Expo-sciences Hydro-Québec, an event for budding scientists and technologists.

\$27 M
Community investments 

93%
Procurement of goods and services in Québec 

\$5 M
Amount donated to United Way/Centraide  

Hydro-Québec in 2015

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

OUR SYSTEM



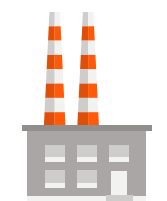
36,912 MW

Installed capacity
of the generating fleet ✓



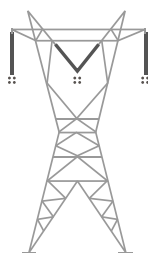
63

Number of hydroelectric
generating stations ✓



24

Number of thermal
generating stations ✓



34,272 km

Length of the transmission
system ✓



533

Number of substations ✓

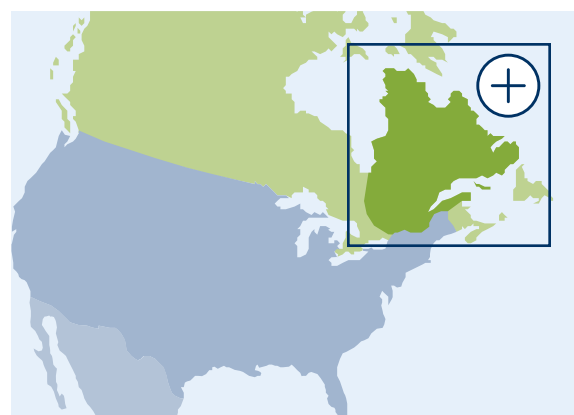


116,258 km

Length of the distribution
system ✓



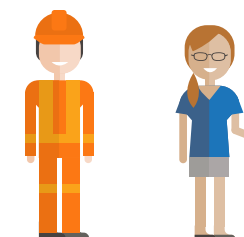
Map of major facilities and generating
stations serving off-grid systems



OUR HUMAN RESOURCES

19,794

Number of employees ✓



45.4 years

Average age ✓



29%

Proportion of women ✓



812

Retirements ✓



853

New employees ✓



243

Number of internships ✓



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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.



Reservoir that supplies Rapide-Blanc generating station in the Mauricie region.

Message from the President and Chief Executive Officer



Éric Martel
President and Chief Executive Officer

You are our customers, and you expect us to offer impeccable service at a competitive price. We are working to make our systems increasingly robust in order to ensure a continuous supply of reliable electric power. Our rates are the lowest in North America, and we are committed to keeping rate increases at or below the rate of inflation. However, we still need to improve some aspects of our customer service, including call wait times and new customer connections. Customer satisfaction is the first of our four main priorities.

You are our neighbors, and you expect us to provide respect, transparency and local spinoffs. We manage our activities' impacts on host communities with efficiency. We tirelessly pursue our efforts to base our projects on the broadest possible social consensus. We must also communicate better to make our achievements known and make Quebecers proud of their largest government corporation. Proactive communication is our second main priority.

You are our shareholders, and you expect us to manage our business with care and produce consistent dividends. In terms of productivity and profitability, our results are impressive. In 2015, our purchases of goods and services totaling \$2.8 billion helped support the province's economy, and we paid the Québec government a dividend of \$2.4 billion. We intend to do better still by banking on exports of our clean energy, strategic acquisitions and innovations that create value. Productivity improvement and sustained growth of our operations are our third and fourth main priorities.

You are all our stakeholders, and you expect us to behave in exemplary fashion with respect to the environment and to act as a North American leader in the fight against climate change. Not only does more than 99% of the power we generate come from a renewable source, the same goes for the power we deliver to your homes. In addition, our exports to neighboring systems in 2015 avoided the emission of 7.4 million tonnes of greenhouse gases—equivalent to Hydro-Québec's total direct emissions over the last 15 years. Our exports also contribute a large share of our revenue, contributing \$902 million in net income.

Message from the President and Chief Executive Officer

The electricity sector represents a very small proportion of greenhouse gas emissions in Québec, and we have reduced our emissions by 88% compared with 1990. This allows us to play an important role in achieving the government objective of a 37.5% reduction by 2030.

Last fall, we met with a number of stakeholders to gather their comments and gain an understanding of their expectations with regard to the Sustainability Report. We have taken these into account and hope that this edition meets your expectations.

In closing, I wish to thank our employees for their engagement. They are central to our actions and our success. Through their efforts, we have accomplished great things in the past, and we will accomplish even greater things in the future.

Éric Martel
President and Chief Executive Officer

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

Mutually beneficial relations

Owing to the nature of our operations, we have a presence throughout the province and we maintain ongoing relations with our numerous stakeholders. Good dialogue enables us to preserve relations of 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.**

About this report

The *Sustainability Report 2015* describes Hydro-Québec's performance with respect to its main environmental, social, economic and governance issues. This edition, published in May 2016, is the fourteenth such report produced by Hydro-Québec.

SCOPE

The *Sustainability Report 2015* mainly addresses the issues and impacts of Hydro-Québec's activities in Québec from January to December 2015.

NEW FEATURES

- New way of organizing the information and more interactive format.
- Review of stakeholder responsiveness exercise related to the materiality analysis conducted in 2014. (p. 10)
- Presentation of the company's main sustainability challenges.
- Enhancement of the *Regional Presence* section, summarizing Hydro-Québec's activities in the province's various administrative regions, through the addition of new indicators. (p. 12)
- In each section, presentation of stakeholders concerned, materiality analysis aspects and three key indicators.
- Disclosure of Scope 3 indirect emissions in the carbon footprint.

- Employee testimonials in the form of capsules titled *Sustainability Every Day*
- Presentation of the results of a comparative analysis of the life cycles of both electric and conventional vehicles. (p. 63)

COMMUNICATION TOOLS

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

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

APPLICATION OF RECOGNIZED STANDARDS

Stakeholders expect Hydro-Québec's Sustainability Report to be complete and that the information presented should be accurate and balanced. Accordingly, this report draws on the Global Reporting Initiative (GRI) G4 guidelines and Electric Utilities Sector Supplement, based on the "core" compliance option. These standards ensure the credibility and quality of sustainability reporting. Readers can consult the partial GRI index on page 69 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 [AA1000 APS AccountAbility Principles](#) (2008). Verified data are accompanied by the symbol ✓. An independent assurance statement is supplied on page 73.




EXCLUSIVE WEB CONTENT

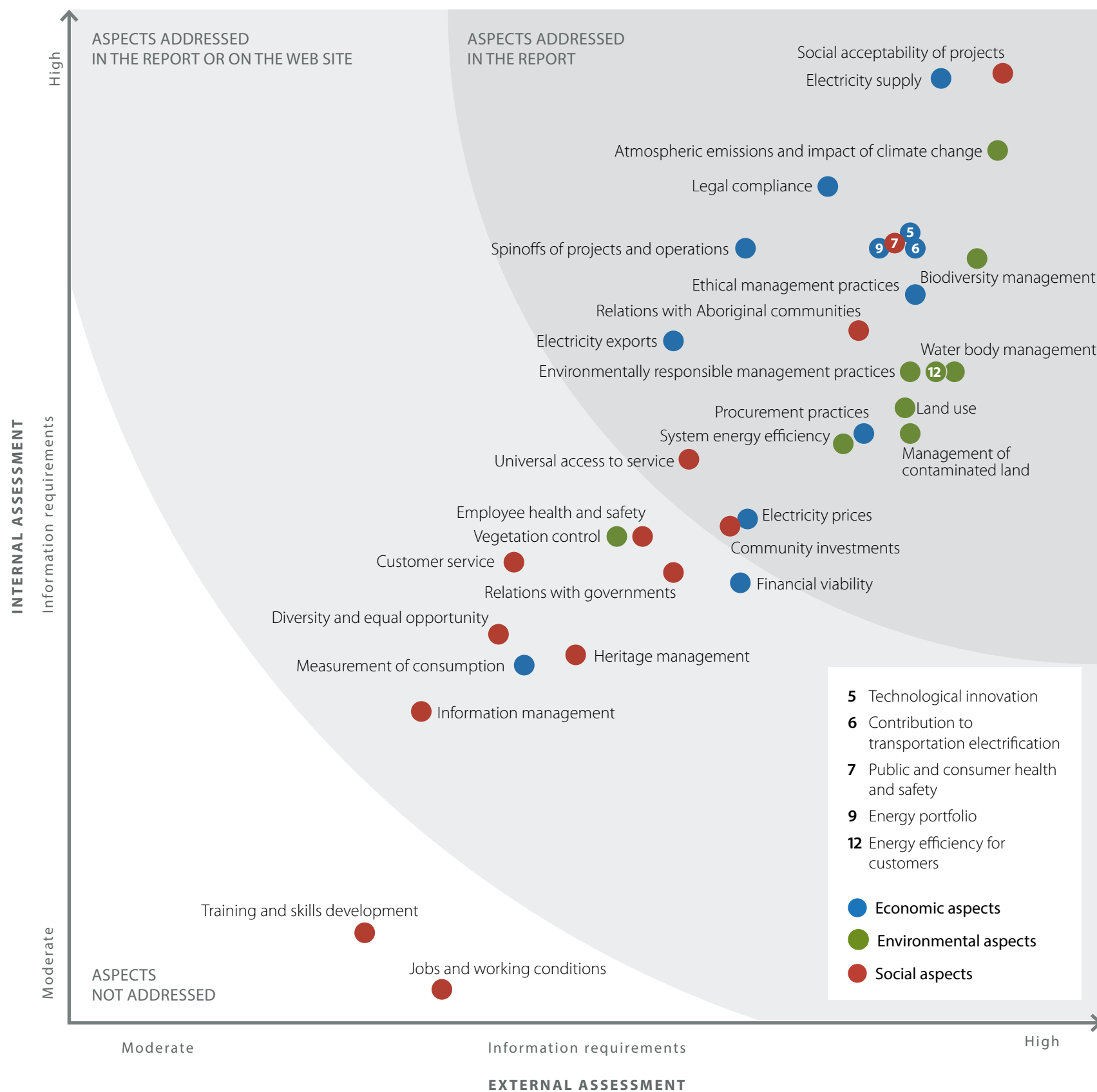
- [Hydro-Québec's GRI compliance](#)

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

Materiality analysis

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

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



GRI G4-17

Value chain

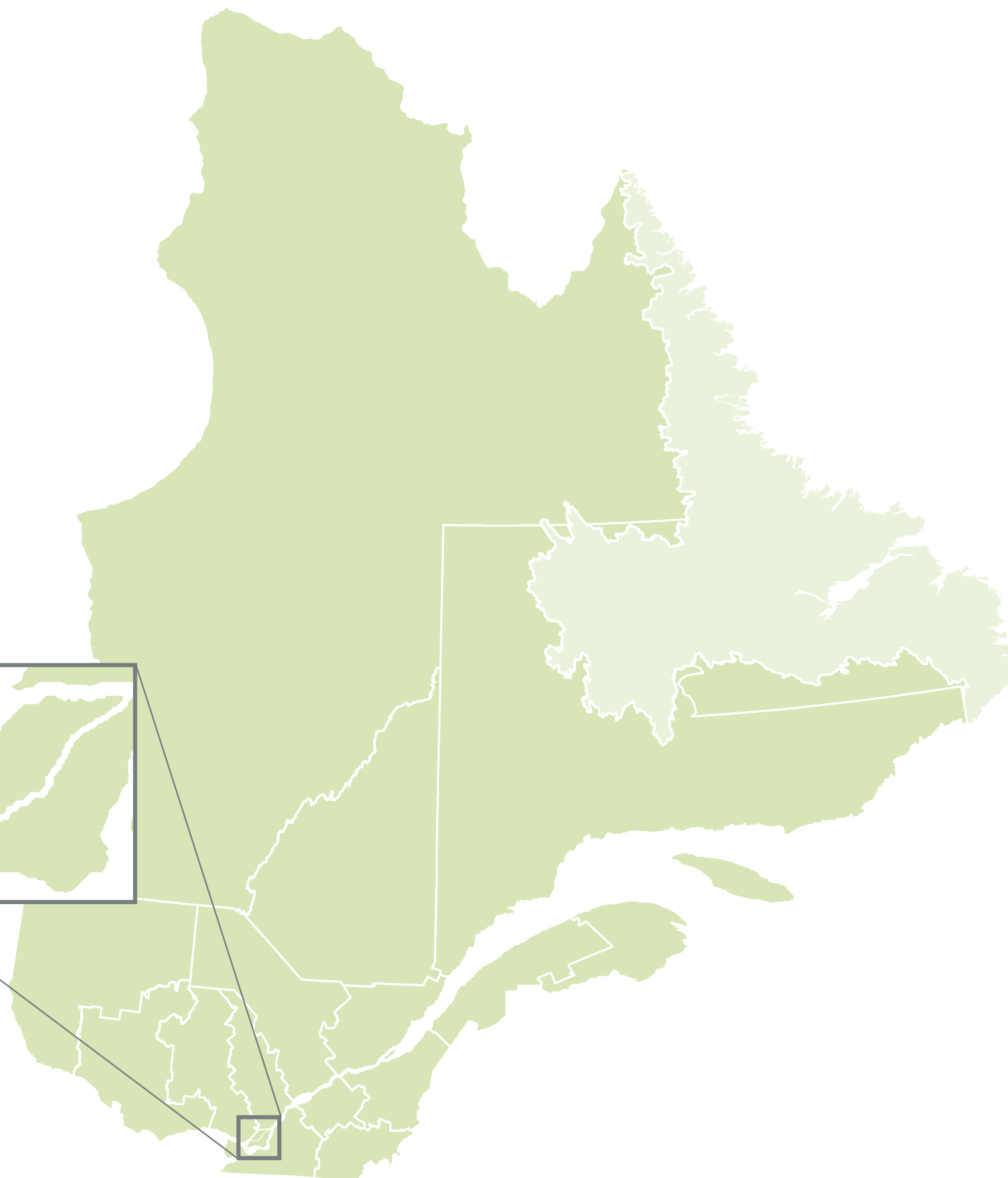
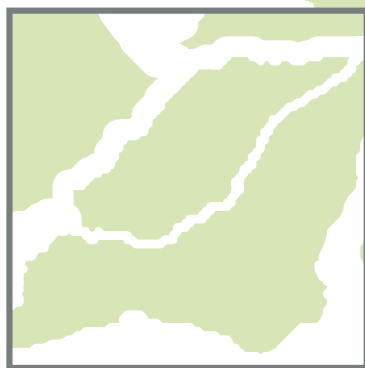


Regional presence

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



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



Our performance at a glance

	2012	2013	2014	2015
ENVIRONMENT				
Net electricity generated by Hydro-Québec (GWh)	171,442	178,150	172,981	170,900 ✓
Total net electricity generated and purchased (GWh)	214,062	220,147	216,703	217,148 ✓
Renewable energy/total energy generated and purchased (%)	98	99	99	99 ✓
GHG emissions from thermal electricity generation (t CO ₂ eq.)	215,311	220,085	228,339	232,424 ✓
SO ₂ emissions from thermal electricity generation (t)	1,240	1,142	1,091	1,040 ✓
NO _x emissions from thermal electricity generation (t)	6,199	4,096	4,243	4,349 ✓
GHG emissions from the vehicle fleet (t CO ₂ eq.)/ total number of vehicles as at December 31 ^a	52,027/5,370	52,349/5,376	51,074/5,392	53,000/5,390 ✓
Energy Efficiency Plan: energy savings (result/target) (GWh) ^b	1,102/693	622/553	504/464	570 ✓/546
Employees governed by an environmental management system (number) ^c	18,414	17,146	17,036	16,517 ✓
Environmental non-compliance notices (number)	31	38	37	31 ✓
Spills reported to the authorities (number) ^d /spills fully recovered (%)	830/72	1,006/74	901/77	907 ✓/83
Insulating oil recovered (thousands of litres)/reuse (%)	3,340/80.1	4,169/81.2	4,812/92.2	3,607/93.0 ✓
Water withdrawn (millions of m ³) ^e	756	531	300	79 ✓
Area of transmission line rights-of-way treated mechanically (%)	97	99	99	94 ✓
Area of dikes and dams treated mechanically (%)	46	58	68	56 ✓
Distribution system length (km)/ percentage of lines underground (%)	114,649/10.9	114,844/10.9	115,583/11.0	116,258/11.4 ✓

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

b) Excludes projects of the Québec government's Bureau de l'efficacité et de l'innovation énergétiques and the CATVAR project. Data may have been reclassified following program evaluation.

c) Decrease is attributable to workforce reduction. The percentage of employees governed by an environmental management system remained stable at 85%.

d) The 2013 increase is mainly attributable to increased monitoring of contractor activities on construction sites.

e) 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).

Our performance at a glance

	2012	2013	2014	2015
SOCIAL				
Public satisfaction (very and somewhat satisfied) (%)	92	91	87	82 ✓
Funding and financial commitments – Integrated Enhancement Program (\$M)/number of initiatives	2.5/36	2.8/26	4.2/53	1.6/16 ✓
Fondation Hydro-Québec pour l'environnement number of projects funded/(\$'000)	17/757	16/760	12/393	16/964 ✓
Donations and sponsorships (\$M) ^f	17.7	18.6	17.8	16.8
Overall customer satisfaction index – other than Large-Power Customers (scale of 10)	7.5	7.5	7.5	7.3 ✓
System average interruption duration index (SAIDI) (minutes/customer)	150	165	143	161 ✓
Special payment arrangements for low-income customers (number)	57,567	66,913	99,722	95,437 ✓
Customer complaints and claims (number)	9,224	9,517	9,797	9,727 ✓
Total permanent and temporary workforce as at December 31	21,596	20,243	20,043	19,794 ✓
Employee engagement index (%)	69	61	62	67 ✓
Work-related accident frequency (per 200,000 hours worked)	2.38	2.62	2.38	2.30 ✓
Percentage of payroll invested in training	3.4	2.9	3.2	3.0 ✓
ECONOMY				
Electricity sales in Québec (TWh)	168.4	173.3	174.2	171.3
Revenue from electricity sales inside and outside Québec (\$M)	11,636	12,610	13,145	13,362
Net result (\$M)	860	2,942	3,325	3,147
Dividend (\$M)	645	2,207	2,535	2,360
Water-power royalties (\$M)	621	674	656	660
Total procurement of goods and services (\$M)/ Québec only (%)	3,011/94	3,533/95	3,301/94	3,050/93
Public utilities tax (\$M)	252	245	252	268
Municipal and school taxes (\$M)	36	36	37	37
Funding for educational institutions – contributions, research chair funding and research contracts (\$M) ^g	10.9	11.1	10.4	7.9 ✓

f) Includes Hydro-Québec's donation to United Way/Centraide.

g) 2015 figure includes \$1.4 million recorded as donations and sponsorships.

OUR ACTIONS



Recreational angler on a stocked lake near Murailles workcamp, close to Romaine-2 generating station in Côte-Nord.

OUR GOVERNANCE



Hydro-Québec's head office
in Montréal.

Our decisions and activities are guided by strict criteria for environmental protection, social acceptability and economic development. Our sustainability governance, which is based on company policies and values, is exemplified through our environmental assessments and monitoring, and the agreements and partnerships we develop with the communities affected by our projects.

IN THIS SECTION

- › Governance structure
- › Sustainability governance activities

SUSTAINABILITY-ORIENTED GOVERNANCE

Hydro-Québec is a government-owned business corporation that supplies Québec with electricity generated almost exclusively from renewables. With hydropower accounting for more than 99% of its output, Hydro-Québec is a North American leader in the fight against climate change. As such, the company plays an important role in supporting its sole shareholder, the Québec government, in achieving the main goals outlined in its [Government Sustainable Development Strategy 2015–2020](#) (in French only). Hydro-Québec's contribution is outlined in its [Sustainable Development Action Plan 2015–2020](#).

Our sustainability objectives for a given period are defined based on thorough planning. They are then implemented by various mechanisms, such as our environmental (ISO 14001), health and safety (OHSAS 18001) and quality (ISO 9001) management systems. Sustainability governance concerns all organizational levels, and its application is closely monitored by the Board of Directors' Environment and Public Affairs Committee.

MAIN SUSTAINABILITY GOVERNANCE ACTIVITIES

Performance reporting Accountability

BOARD OF DIRECTORS

- › **Eight 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.

2015 ACTIVITIES

- › Studied the results of the President and CEO's annual environmental management review as well as semiannual reports on environmental compliance.
- › Reviewed the *Sustainability Report 2014*, met with its auditors and reviewed their management report.
- › Recommended that the Board approve the granting of donations and sponsorships according to the criteria and rules set out in the Donation and Sponsorship Policy.
- › Reviewed the annual results and relevant performance indicators pertaining to the company's communication activities, the results of the university research chair program and the annual activity report of the Fondation Hydro-Québec pour l'environnement.
- › Reviewed the annual activity reports of the liaison committees established by the company with groups representing Québec agricultural producers and municipalities.
- › Contributed to the 2015–2018 communication plan and the advertising campaign launched in early 2016.

2015 HIGHLIGHTS

- › Governance training specific to government-owned corporations was offered to all directors.
- › [Information](#) was added to our Web site regarding employee training and travel costs, conference and congress expenses, work expenses incurred by the CEO, advertising and telecommunications expenses, etc., in accordance with the *Regulation respecting the distribution of information and the protection of personal information*.

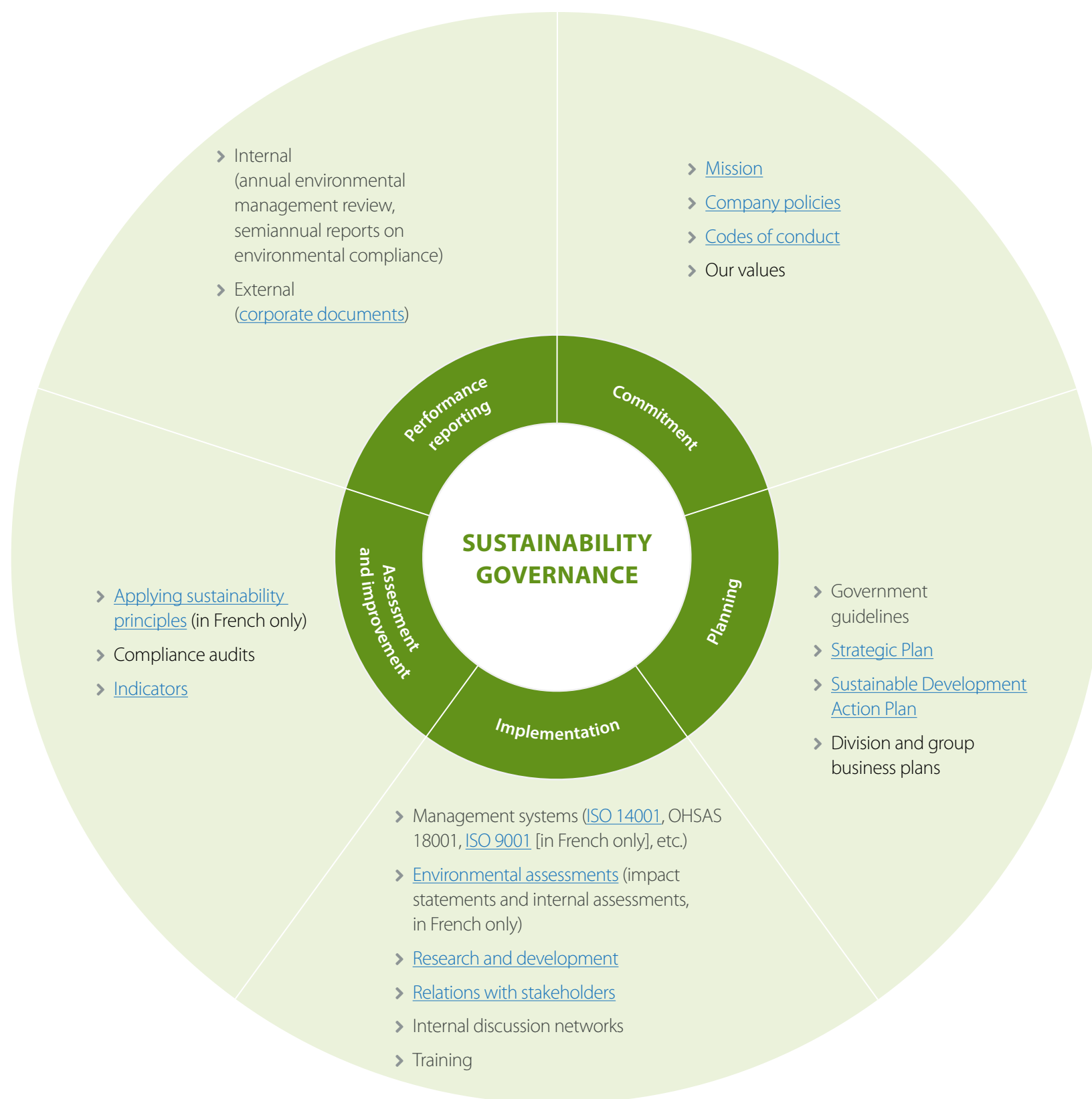
FINANCIAL RESULTS

In 2015, we posted net income of \$3,147 million, which allowed us to pay the Québec government a dividend of \$2,360 million. Exceeding \$3 billion for a second consecutive year, this good result is mainly attributable to a 3.9-TWh increase in net electricity exports compared with the previous year. The total contribution of electricity exports to the company's net income was \$902 million.



EXCLUSIVE WEB CONTENT

- [Corporate governance](#)
- [Access to information and protection of personal information](#)



Our main sustainability challenges

CHALLENGE	CONTEXT	SOLUTIONS CONSIDERED
ENSURE THE SOCIAL ACCEPTABILITY OF OUR PROJECTS	Every year, as many as 100 major projects undergo a public participation process. A project's social acceptability does not necessarily mean that there is no opposition, but rather that the broadest possible consensus has been achieved.	<ul style="list-style-type: none"> › Continue to inform and consult with stakeholders as soon as a project is envisioned. › Apply good practices in terms of proactive communication. › Reduce the <u>environmental footprint</u> of our projects, through compensation measures (landscaping, use of existing corridors, etc.), optimization measures (reduced-footprint towers, quieter transformers, etc.) and other means.
IMPROVE CUSTOMER SATISFACTION	Customer satisfaction is one of our four main priorities.	<ul style="list-style-type: none"> › Provide improved access to our services (outage information, Web services, etc.). › Reduce call wait times. › Reduce response times for customers' work requests. › Ensure reliable, high-quality power. › Limit rate increases to less than or equal to inflation.
CONTRIBUTE TO REDUCING GHG EMISSIONS IN QUÉBEC, WITH A VIEW TO REACHING THE GOVERNMENT'S GOAL OF A 37.5% REDUCTION BY 2030 COMPARED WITH 1990	By generating 99% 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.	<ul style="list-style-type: none"> › Maintain the vehicle fleet emission reduction target. › Combine wind and diesel in off-grid systems. › Continue our efforts toward transportation electrification (personal vehicles and public transit).

Our main sustainability challenges

CHALLENGE	CONTEXT	SOLUTIONS CONSIDERED
ADAPT OUR PRACTICES AND INFRASTRUCTURE TO CLIMATE CHANGE	Climate change is already impacting our activities. We must adapt our facilities and business practices to this new reality.	<ul style="list-style-type: none">› Continue our collaboration with Ouranos to stay on the leading edge of developments and prepare for the new reality by adapting our practices accordingly.
PROMOTE ENERGY EFFICIENCY	Since 2003, our Energy Efficiency Plan has led to energy savings of 8.8 TWh—the consumption equivalent of 500,000 households.	<ul style="list-style-type: none">› Manage demand through measures such as interruptible load programs for residential, commercial, institutional and industrial customers.› Educate customers about the benefits of using energy wisely.› Continue our initiatives with low-income customers.
IMPROVE OUR PROFITABILITY	The company’s profitability creates wealth for Québec. The dividends we pay the Québec government improve public services.	<ul style="list-style-type: none">› Increase clean energy exports as alternatives to non-renewables.› Continue efforts to increase the capacity and output of our hydroelectric generating stations.› Commercialize our innovations.› Acquire foreign assets.

Sustainable Development Action Plan 2015–2020

In July 2015, in response to the [Government Sustainable Development Strategy 2015–2020](#) (in French only), we published our third [Sustainable Development Action Plan](#).





























Through our initiatives, we aim to contribute to implementing this strategy, the [strategy to ensure the occupancy and vitality of territories](#) (in French only) and Québec's [Agenda 21 for culture](#).

ACTION	INDICATOR	TARGETS					
		2015	2016	2017	2018	2019	2020
OVT 1 BUILD HYDROPOWER PROJECTS ⊕	Cumulative capacity made available by the Romaine project	640 MW	Result 2015 910 MW ✓ 910 MW	1,305 MW	1,305 MW	1,305 MW	1,550 MW
OVT 2 INCREASE THE CAPACITY OF EXISTING HYDROELECTRIC GENERATING STATIONS ⊕	Cumulative gains in additional available peak capacity	Result 2015 36 MW ✓ 36 MW	42 MW	54 MW	60 MW	60 MW	60 MW
OVT 3 CONTINUE ENERGY EFFICIENCY INITIATIVES ⊕	New annual energy savings	Result 2015 570 GWh ✓ 500 GWh	500 GWh	500 GWh	500 GWh	500 GWh	500 GWh
	Number of initiatives per market	16 initiatives/3 markets. ✓ No target has been determined for this indicator.					
OVT 4 CONTINUE EFFORTS IN THE FIELD OF TRANSPORTATION ELECTRIFICATION IN QUÉBEC ⊕	Number of Electric Circuit charging stations in service and number of regions served	Result 2015 577 charging stations/16 regions. ✓ 725					
	Partnership agreements for R&D and commercialization of leading-edge technologies	8 agreements. ✓ No target has been determined for this indicator.					
	Number of patents held	511 patents. ✓ No target has been determined for this indicator.					

OVT

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

Sustainable Development Action Plan 2015–2020

ACTION	INDICATOR	TARGETS					
		2015	2016	2017	2018	2019	2020
C 5 PUBLICIZE THE KNOWLEDGE ACQUIRED THROUGH HYDRO-QUÉBEC ENVIRONMENTAL STUDIES 	Number of documents published on the Web	Result 2015 3 ✓ 					
		 2	 2	 2	 2	 2	 2
OVT 6 CONTINUE TO PROTECT AND ENHANCE THE COMPANY'S BUILT, TECHNOLOGICAL AND INTANGIBLE HERITAGE C 	Number of measures carried out by 2020	Result 2015 1 ✓ 					 2
OVT 7 STRENGTHEN ENVIRONMENTALLY RESPONSIBLE MANAGEMENT PRACTICES 	Annual GHG emissions from the light-vehicle fleet	25,360 t CO ₂ eq.   Result 2015 25,322 t CO ₂ eq. ✓	25,360 t CO ₂ eq. 	25,360 t CO ₂ eq. 	25,360 t CO ₂ eq. 	25,360 t CO ₂ eq. 	25,360 t CO ₂ eq. 
	Number of videoconferences held annually	Result 2015 6,723 ✓ 					
		 4,360	 4,430	 4,500	 4,580	 4,650	 4,720
	Percentage of company printers that are print-release enabled	Result 2015 7.6% ✓ 					 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					
		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	Result 2015 7   5	 5	 5	 5	 5	 5
9 OPTIMIZE THE APPLICATION OF SUSTAINABILITY PRINCIPLES TO PROJECTS AND ACTIVITIES 	Number of projects or activities analyzed each year	Result 2015 1 ✓   1	 1	 1	 1	 1	 1
OVT 10 PROMOTE THE INTEGRATION AND FAVORABLE RECEPTION OF HYDRO-QUÉBEC'S SYSTEM EQUIPMENT 	Percentage of regional county municipalities (MRCs) that have received the information program (as of 2017)	Result 2015 n. a.					 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	Result 2015 1 ✓   1	 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	Result 2015 1 ✓   1	 1	 1	 1	 1	 1

OVT

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

OUR CONTRIBUTION TO CLIMATE STABILIZATION AND ENVIRONMENTAL PROTECTION

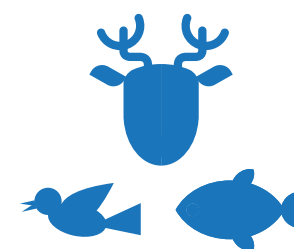


Reservoir that supplies Robert-Bourassa generating station, in the Baie-James region.

Thanks to our use of renewable resources and our electricity sales outside Québec, we avoid more GHG emissions than we generate. Moreover, while preserving biodiversity, we are integrating the management of the environmental effects of our activities into our business processes. We are also preparing for the ways climate change will impact our operations.

IN THIS SECTION

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



Climate change

GHG EMISSIONS FROM HYDRO-QUÉBEC OPERATIONS

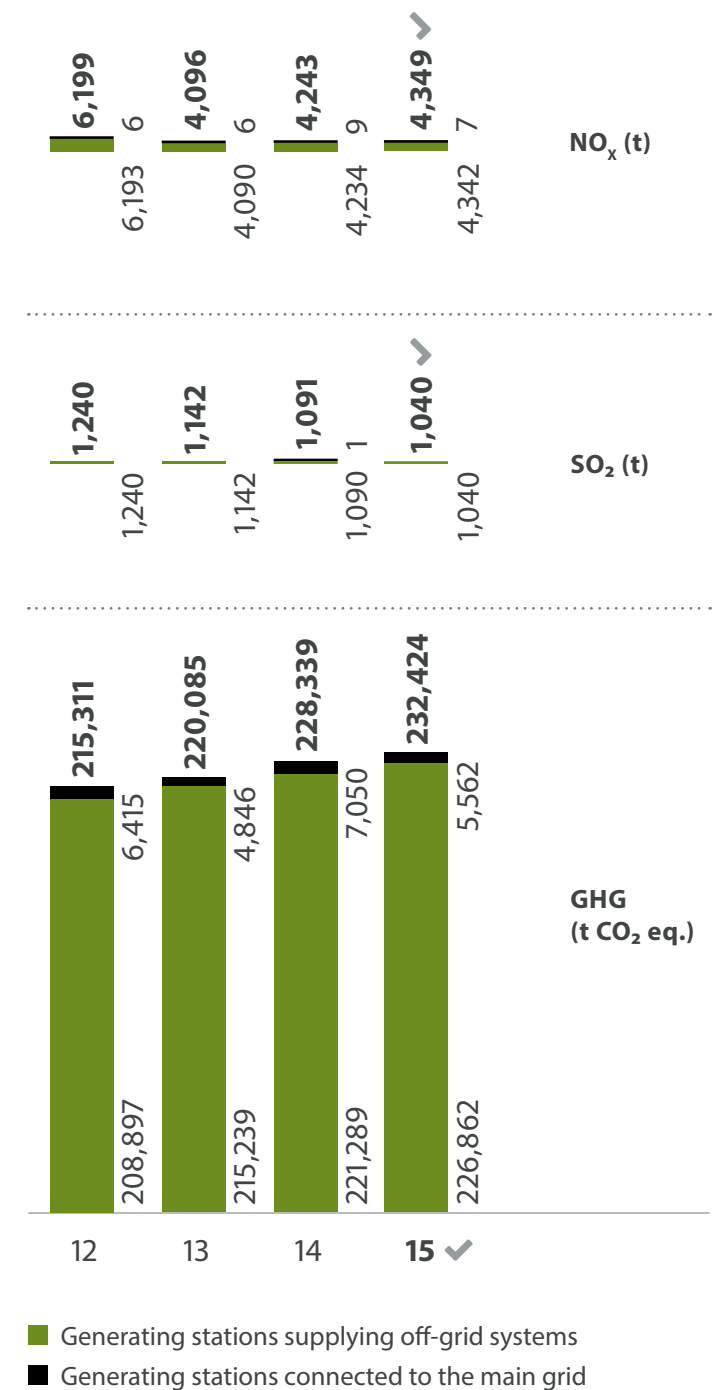
As confirmed by the [agreement adopted in Paris](#) by 195 countries, the fight against climate change is a [major global issue](#). Since greenhouse gases (GHGs) are largely responsible for climate change, we strive to reduce the emissions from our operations.

With 99.8% of its output generated from water, Hydro-Québec's net GHG emission record is among the best in North America. The emissions generated by its operations (381,229 t CO₂ eq.) are largely offset by the emissions avoided (7,373,851 t CO₂ eq.) through its electricity sales outside Québec. Currently, with the transportation sector accounting for 41% of GHG emissions in Québec, the greatest potential for emission reduction lies in transportation electrification, a project Hydro-Québec has been involved in for a number of years.

2015 HIGHLIGHTS

- A cooperation agreement was signed with Sarawak Energy (Malaysia) for commercial and technical exchanges, including the dissemination of a method developed by Hydro-Québec for calculating net GHG emissions from reservoirs.
- 986,923 renewable energy certificates related to the output from Hydro-Québec's generating stations or the purchase of renewable energy (biogas, wind, hydropower) were sold to third parties. ✓
- In Akulivik, we commissioned a new, more fuel-efficient thermal generating station. This power plant was built with the help of a local company, which was awarded the first phase of construction. (Nord-du-Québec)

ATMOSPHERIC EMISSIONS FROM HYDRO-QUÉBEC THERMAL GENERATION OPERATIONS



GRI G4-22

➤ Atmospheric emissions from power generation and purchases in Québec were significantly lower than the average for neighboring provinces and states in Canada and the U.S.: 979 t CO₂/TWh (229 times less than the average), 3.9 t SO₂/TWh (118 times less) and 9.6 t NO_x/TWh (48 times less). ✓ Every year, Hydro-Québec produces a fact sheet titled [Energy Supplies and Air Emissions](#), which can be used by industrial customers to perform carbon footprint calculations.

According a [study published in 2014 by CIRAIG](#) (in French only), electricity supplied in Québec has one of the best environmental performances. Even when compared to other regions with a similarly heavy reliance on hydropower, such as Manitoba and Norway, Québec's electricity mix fared better.

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

CATEGORY	OPERATIONS	2015 ✓
Direct sources (level 1)		
Generating stations	Thermal power plants	232,424
Mobile sources	Vehicle fleet	53,000
	Hydro-Québec aircraft fleet	13,340
	Utility vehicles (e.g., snowmobiles, tractors, snowblowers)	467
	Propane-fueled lift trucks	79
Fuel use	System maintenance generators	4,442
	Emergency and jobsite generators	563
	Building heating	762
Other uses	Equipment containing CF ₄ and SF ₆	75,219
	Aerosols	445
	Equipment containing HFCs	487
Indirect sources (level 2)		
Energy losses	Power transmission and distribution system losses	14,253
Indirect sources (level 3)		
	Electricity purchases	192,413
	Business travel – employee personal vehicles	5,577
	Vehicles leased long-term	876
	Business travel – trains	43
	Business travel – commercial airplanes	1,487
	Helicopters	5,343
	Chartered airplanes	6,428
	Life cycle of fuel	55,673
Total emissions		
	Direct sources (level 1)	381,229
	Indirect sources (level 2)	14,253
	Indirect sources (level 3)	267,839
	Direct and indirect sources	663,322
EMISSIONS AVOIDED (NET EXPORTS OF ELECTRICITY)		7,373,851

GHG emissions from Hydro-Québec operations represent 0.8% of emissions in Québec.

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

ADAPTATION TO CLIMATE CHANGE

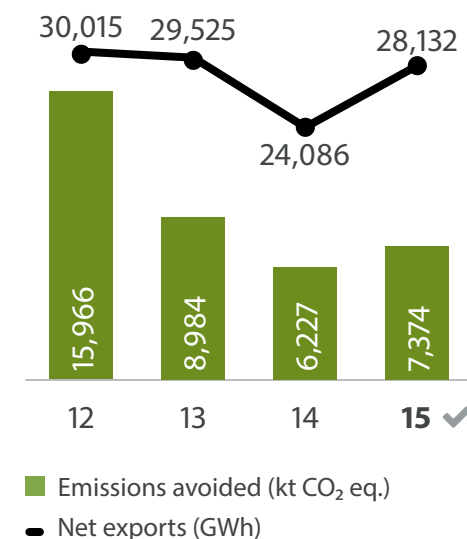
There are many ways climate change can impact Hydro-Québec's activities: changes in the natural inflows of water that supply generating stations, seasonal shifts in power demand or extreme weather conditions that can damage generation, transmission and distribution equipment. A founding member of the [Ouranos consortium](#), Hydro-Québec has long been investigating the measures it needs to implement to adapt to climate change.

According to a [plausible GHG emission scenario studied by Ouranos](#), we could be facing a 2°C to 4°C rise in temperatures by 2050. By the end of the century, this increase could reach 4°C to 7°C in southern Québec and 5°C to 10°C in the north.

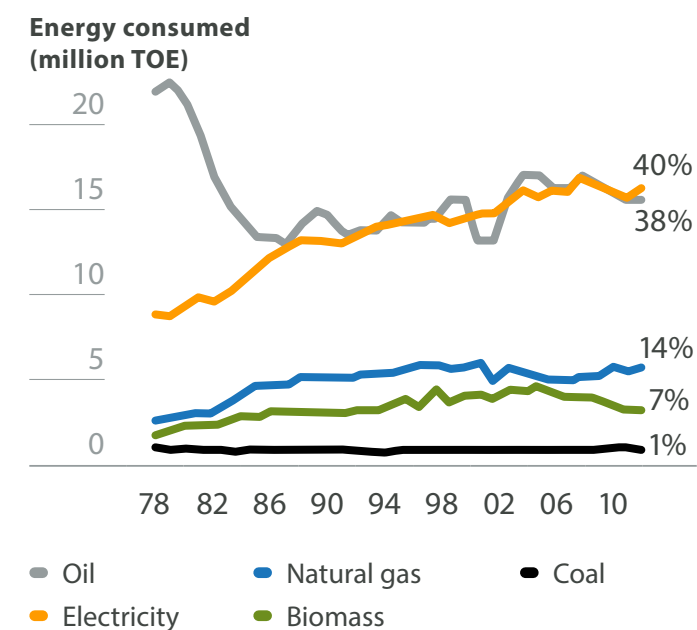
In terms of hydrology, studies suggest an average annual flow increase of about 12% in northern Québec (Baie-James region) and 5% in the south (Outaouais region) by 2050. Hydro-Québec takes these forecasts into account when planning its facilities and the refurbishment of some of its hydraulic structures. By implementing various measures, both structural (addition of turbines or resizing of equipment) and non-structural (revision of management rules), the company will be prepared to leverage the upcoming changes in hydrometeorological conditions.



EMISSIONS AVOIDED BY NET EXPORTS OF ELECTRICITY



TRENDS IN THE CONSUMPTION OF DIFFERENT FORMS OF ENERGY IN QUÉBEC (1978–2011)



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

The increased temperatures will also modify the annual energy demand profile. In winter, demand will drop due to reduced heating needs, and in summer it will increase from rising air-conditioning needs. Overall, energy demand in all sectors (residential, industrial, commercial and institutional) will be 2.7% lower than what it would have been without the effects of climate change, according to the median scenario for 2050.

Furthermore, we are anticipating the effects of extreme weather conditions (wind, ice, wet snow, etc.) on our generation, transmission and distribution facilities. The power industry in Québec and Canada could be among the most directly affected by climate change.

Generating electricity from water produces very low levels of GHGs. In addition, hydropower is a reliable energy source that provides excellent operating flexibility. Like all other forms of energy, it has drawbacks. For instance, when reservoirs are created for the purposes of power generation, part of the land must be flooded, altering the physical environment. These changes can result in species displacement or habitat loss. They can also lead to a significant increase in GHG emissions, followed by

a return to normal after a 10-year period, with emissions equivalent to those in the surrounding natural environments.

Our major hydropower projects undergo [stringent and comprehensive studies](#) (in French only) and consultations designed to determine the optimal solutions and the prevention, mitigation and compensation measures to be implemented, as well as the issues that will require environmental follow-up.

When developed with a sound environmental approach, hydropower offers an ideal means of meeting the major challenges facing North America in reducing GHG emissions and ensuring a secure supply of electricity.

USE OF A DRONE

In 2015, we tested a drone for inspecting rock walls and monitoring beaver activity. Using a drone instead of a helicopter decreases costs, GHG emissions and work safety risks. Every year, our helicopter use accounts for over 2 million litres of fuel consumption, which we could partly reduce by working with drones.



EXCLUSIVE WEB CONTENT

- [GHG emissions and Hydro-Québec electricity](#)
- [GHG emissions and reservoirs](#)
- [A clean and renewable energy source](#)
- [Life cycle assessment](#)
- [Impacts of climate change on Hydro-Québec operations](#)
- [Net reservoir evaporation](#)
- [Renewable energy sources: current state of knowledge](#)

Biodiversity

In addition to conducting our activities in ways that preserve biodiversity, we contribute to protecting at-risk species and enhancing protected ecosystems. We always make sure that the environments we develop are comparable to the surrounding natural environments in matters related to species biodiversity and biological productivity.

2015 HIGHLIGHTS

- We published our first biodiversity performance report.
- Enhancements for plants and animals were carried out over an area of 11.7 ha in line rights-of-way located north of Bout-de-l'Île substation. We improved four hibernation shelters where snakes can build their nests and spend the winter protected from frost and water. (Montréal)
- An ultrasound guidance system was installed at Rivière-des-Prairies generating station to divert American shad, helping many of them continue their migration to the Atlantic. (Laval)

- We purchased three lots totaling 3.2 ha to compensate for the loss of wetlands caused by the construction of Pierre-Le Gardeur substation. The land will be owned and stewarded by Nature-Action Québec. An application will be submitted to the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques to recognize the site as a nature reserve on private land, thereby ensuring the long-term conservation of these lands, which consist of mainly tree marshes. (Lanaudière)



^^ Rivière-des-Prairies generating station in Montréal.

^ An expert on the protection of aquatic species and an angler discuss fish migration, on the shore of the Rivière des Prairies.



EXCLUSIVE WEB CONTENT

- [Preserving biodiversity in transmission line rights-of-way](#) (in French only)
- [Biodiversity performance report 2015](#) (in French only)

Environmental management

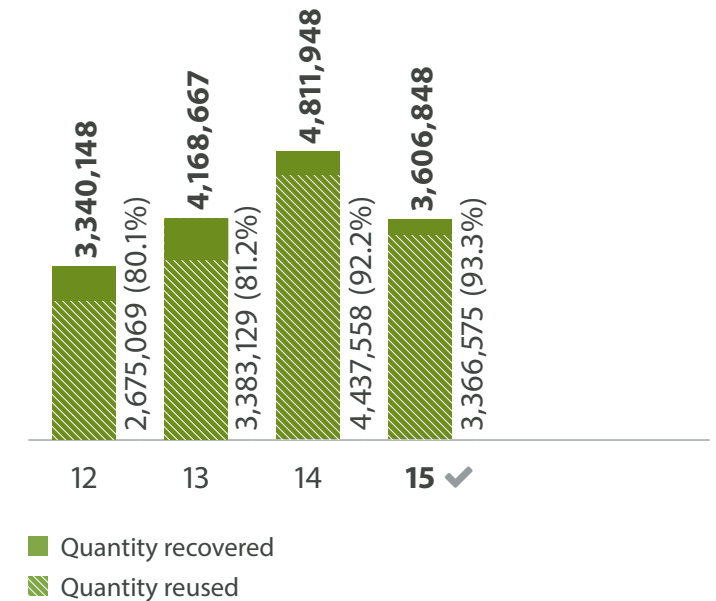
Managing the environmental impacts of our activities is an integral part of our business processes. Since the late 1990s, ISO 14001–certified environmental management systems have governed all Hydro-Québec operations that could have an effect on the environment. Moreover, construction projects and developments in operation are subject to close environmental monitoring and follow-up.

We have incorporated environmental and social criteria into our process for acquiring goods and services. This practice aims to reduce environmental impacts, increase social spinoffs and enhance the economic viability of our suppliers, throughout the life cycle of their products. For the last few years, we have participated in the responsible procurement activities of [ECPAR](#) (Espace québécois de concertation sur les pratiques d'approvisionnement responsable), of which Hydro-Québec is a founding member. We have carried out [life cycle assessments](#) for certain products and services, targeted the product groups with the largest environmental impact and drafted product purchasing guides that include sustainability criteria.

2015 HIGHLIGHTS

- Our administrative centre in Saint-Jérôme received a 2015 Environment Award from BOMA Québec. ✓ The building's achievements include drinking water savings of 85% since 2004, and the reclaiming of over 70% of its residual materials through its recovery programs. (Laurentides)
- We saved 12.2 million litres of drinking water under our program for refurbishing administrative buildings. This program has generated recurring annual savings totaling 258 million litres since 2007.
- We monitored decontamination activities and tested soil-treatment technologies, following the 2014 accidental spill at Cap-aux-Meules port. Hydro-Québec accepted responsibility and will incur a fine of \$375,000 in addition to the amount allocated to soil decontamination. The liaison committee set up with the different users of the wharf met five times in 2015 to follow up on decontamination activities. (Gaspésie–Îles-de-la-Madeleine)

RECOVERY AND REUSE OF INSULATING OIL (litres)



Recovered oil sufficed for all the company's requirements. Oil is decontaminated and regenerated for reuse in equipment. Oil that cannot be regenerated is reclaimed as energy.

In 2015, our rate of internal oil reuse reached 93%, one of the highest rates in the past 10 years.



EXCLUSIVE WEB CONTENT

- [Declarations of ISO 14001 environmental principles](#)
- [Contaminated sites and spills](#)

- We carried out 98 interventions, studies and projects on 57 sites for the purposes of ensuring compliant management of contaminated sites or soil, as well as in cases where operations had permanently ceased or the use of the site was changing.
- A sampling campaign was conducted to measure mercury levels in several matrices (sediment, water, periphyton, small fish) to determine the causes of the increase in fish mercury observed in 2013 at the Chute-Allard and Rapides-des-Cœurs developments. An in-depth analysis of results will be done in early 2016 by the Université de Montréal. (Mauricie)

ENVIRONMENTAL MANAGEMENT ACTIVITIES

Romaine project

MITIGATION MEASURES

WETLANDS

- Over 30 ha of wetlands were developed in borrow pits. We planted native species in four of the bays at Romaine 1 reservoir to promote the creation of rich and diversified riparian ecotones.

CULTURAL VALUE OF BEAVER

- To ensure the integrity of access to jobsites and structures, an Innu company carried out surveys of beaver colonies.

LAND ANIMALS

- Periodic flyovers were conducted during reservoir impoundment to check whether animal relocation (moose, forest-dwelling woodland caribou, bears, wolves, lynx and beavers) was compromised. No animals were observed to be in danger.

LAKE TROUT PRODUCTION

- Lake trout was produced at a fish farm in preparation for the stocking of Romaine 1 reservoir planned for 2016. We started on the development of two lake trout spawning grounds in the area.

LANDLOCKED SALMON

- Studies related to the enhancement program for landlocked salmon got under way in the Romaine-4 sector.

SNOWMOBILES

- Monitoring of snowmobile traffic revealed that the new bridge is appreciated by drivers and allows access to the territory despite changes to the ice cover on the Rivière Romaine. Over 2,300 crossings were recorded in 2015.

ARCHAEOLOGY

- Archaeological digs at the site of the future Romaine 4 reservoir uncovered many traces of occupation at different times, from 6,500 years ago to the early 20th century. Among the findings were two chipped-stone tools dating back 6,300 years.

ENVIRONMENTAL MANAGEMENT ACTIVITIES

ENVIRONMENTAL MANAGEMENT ACTIVITIES

ATLANTIC SALMON

- Stocking was carried out and impassible obstacles were developed in three salmon rivers by the Comité de mise en valeur des habitats du saumon atlantique de la Côte-Nord (Côte-Nord Atlantic salmon habitat enhancement committee), in order to create conditions promoting the growth of salmon populations. Established in connection with the Romaine project, the Committee aims to contribute to the consolidation and expansion of Côte-Nord's Atlantic salmon populations by soliciting the help of local communities, river management organizations and universities.
- Counting of spawners migrating upstream after the commissioning of Romaine-2 generating station got under way.
- We monitored sediment dynamics and the development of the Rivière Romaine's wetlands, downstream of Romaine-1 generating station.

FOREST-DWELLING WOODLAND CARIBOU

- According to our third survey, 116 caribou were observed in the study area. The survey results and indices for survival and recruitment suggest that the population of this vulnerable species in Québec is declining and remains fragile.

GOLDEN EAGLE

- We continued telemetric monitoring of the golden eagle to determine its home range and record changes in this area over the years. We revised the location of a planned tele-communications tower to protect the home range of this raptor.

WATERFOWL

- A survey of waterfowl was carried out in Romaine 1, Romaine 2 and Romaine 3 reservoirs to count breeding pairs and broods.

INTEGRATION OF INNU WORKERS

- We conducted a follow-up on Innu workers' integration into the jobsite, which revealed that participation in the project has a positive impact on the quality of life of workers and their families.

WORKERS' HUNTING AND FISHING ACTIVITIES

- We monitored the hunting and fishing activities of workers at Murailles and Mista workcamps to determine fishing pressure in the different bodies of water. As in previous years, most catches were made in the lakes close to the workcamps.



^^ We monitor and count waterfowl in the area of the Romaine project.

^ Forest-dwelling woodland caribou, a vulnerable species, are also monitored at the Romaine project.



EXCLUSIVE WEB CONTENT

- [Project fact sheet](#)
- [Romaine information bulletins](#)
(in French only)

ENVIRONMENTAL MANAGEMENT ACTIVITIES

Expansion of the transmission system in Minganie: Connecting facilities to the transmission grid

MITIGATION MEASURES

- › We raised awareness among workers about land use by Aboriginal people and the presence of forest-dwelling woodland caribou.
- › The use of adapted clearing and construction methods allowed us to protect wetlands, rivers and streams.
- › Clearing was carried out by Aboriginal companies.
- › We restored the construction areas of the Romaine-1–Romaine-2 line.

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

MITIGATION MEASURES

- › Construction work was put on hold during moose-hunting season.
- › We established a traffic management and construction strategy to protect a heron colony.
- › We established a traffic management strategy to avoid wetlands.
- › Selective clearing was performed along the edges of rivers, streams and wildlife sites of interest.
- › We incorporated specific measures for limiting the spread of the emerald ash borer.
- › Clearing was done outside of nesting periods to protect certain special-status bird species and bats.
- › We implemented measures to promote the harmonious cohabitation of jobsite workers (clearing) and snowmobile and ATV drivers.



^^ Construction of the 315-kV line connecting Romaine-1 and Romaine-2 substations.

^ Cleared right-of-way of the future 735-kV line connecting Chamouchouane substation, in Saguenay–Lac-Saint-Jean, to the metropolitan loop, 400 km further south.



EXCLUSIVE WEB CONTENT

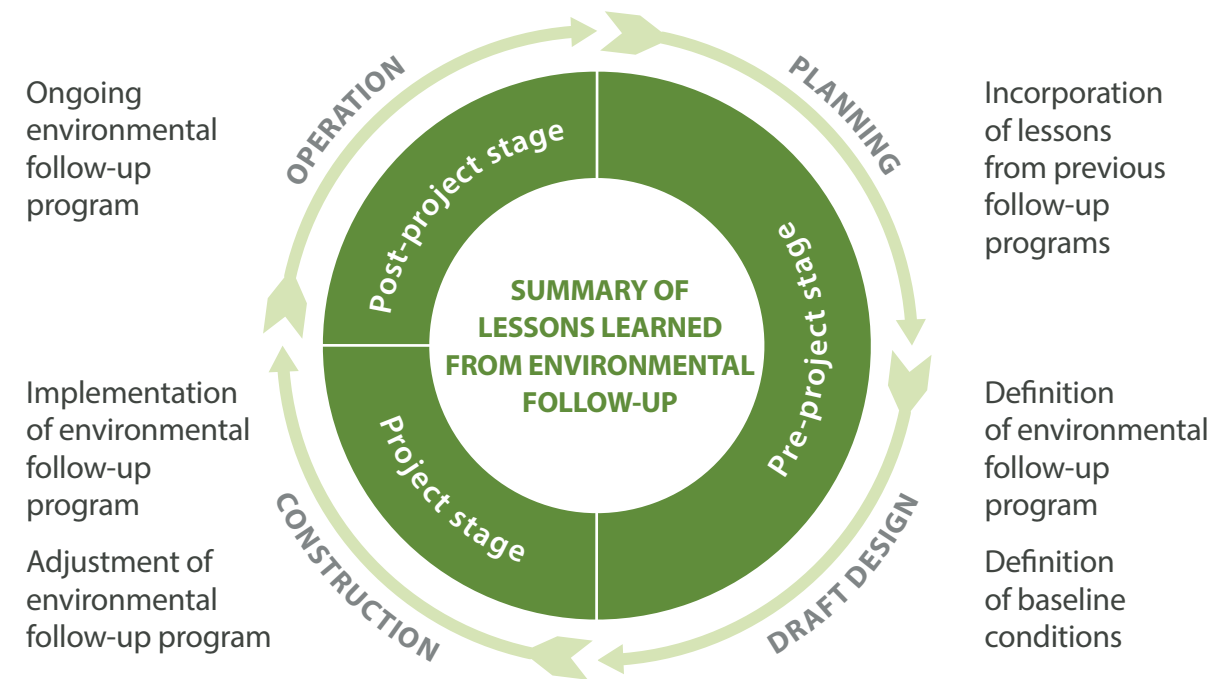
- [Project fact sheet](#)



EXCLUSIVE WEB CONTENT

- Video: [Chamouchouane–Bout-de-l'Île, an essential project for the transmission system](#) (in French only)

FOLLOW-UP ON PROJECTS IN OPERATION



SPAWNING GROUND DEVELOPMENT AND FISH PROTECTION

Spawning grounds are sites where fish reproduce. The development of spawning grounds helps preserve fish species present in construction areas.

MERCIER GENERATING STATION (OUTAOUAIS)

➤ According to the follow-up on natural and developed walleye spawning grounds downstream of this facility, the operation of the generating station has not altered the timing of spawning and the spawning grounds are regularly used, though their location may vary depending on flows from the generating station. Walleye spawning was confirmed in both the developed spawning area and the natural spawning grounds.

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

➤ Five years after impoundment, there have been no significant changes in fish communities in the Rupert diversion bays. Of the species surveyed, walleye catches remain the most abundant. Moreover, recruitment indices for walleye, northern pike and lake whitefish are the same as or higher than they were during the baseline period.

➤ Downstream of the Rupert diversion point, the instream flow provides adequate reproduction conditions for lake sturgeon. Based on observations and egg sampling in the six natural spawning

DURATION OF ENVIRONMENTAL FOLLOW-UPS

DEVELOPMENT	REGION	COMMISSIONING	END OF FOLLOW-UP	DURATION OF FOLLOW-UP ^a (years)
Sainte-Marguerite-3	Côte-Nord	2003	2017	20
Partial diversion of the Rivière Manouane	Saguenay–Lac-Saint-Jean	2003	2016	17
Mercier	Outaouais	2007	2015	10
Chute-Allard	Mauricie	2008–2009	2019	14
Rapides-des-Cœurs	Mauricie	2008–2009	2019	14
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

grounds identified, all of the areas that offered suitable spawning habitat for lake sturgeon continue to do so after the diversion and two new natural spawning grounds have been discovered.

➤ Larval drift is one of the indicators of the degree to which the lake sturgeon population is being maintained downstream of Rupert dam. The 2010–2014 report indicates that the instream flow supports lake sturgeon spawning success along the 314 km of the river downstream of the dam.

PARTIAL DIVERSION OF THE RIVIÈRE MANOUANE (SAGUENAY–LAC-SAINT-JEAN)

➤ In 2014, landlocked salmon spawning was confirmed in four natural spawning grounds in the Rivière Manouane. Despite some variations, the physical conditions of the spawning grounds post diversion have remained adequate for the reproduction of this species.

MERCURY

Reservoir creation alters the aquatic environment by transforming 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 within 10 to 35 years, depending on fish species and reservoir type.

SAINTE-MARGUERITE-3 DEVELOPMENT (CÔTE-NORD)

➤ Mercury monitoring in Sainte-Marguerite 3 reservoir continued in 2014, 16 years after impoundment. The changes observed correspond to the typical evolution of mercury levels in La Grande complex reservoirs for the same fish species. The levels measured in 2014 remain slightly higher than under natural conditions, but have started a gradual decline. The consumption recommendations in the *Guide alimentaire des poissons et fruits de mer de la Côte-Nord* (Côte-Nord region fish and seafood guide, 2013 edition) are appropriate, even though the mercury level has dropped.

WILDLIFE ENHANCEMENTS AND LAND ANIMALS

This type of follow-up provides information on animal population dynamics and the workings of wildlife habitats. It allows us to measure trends in the density of populations and learn about their composition.

CHUTE-ALLARD AND RAPIDE-DES-CŒURS DEVELOPMENTS (MAURICIE)

➤ Hydro-Québec undertook to compensate for the loss of wetlands caused by the construction of its facilities. Compensation measures include the

creation of channels in Wemotaci's floodplain and in the flat at kilometre point 269. The follow-up (2009, 2011 and 2014) revealed abundance gains and a trend toward gradual stabilization for all the animal species studied.

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

➤ A moose follow-up was carried out to assess the impact of this facility on the animal's use of the Rupert diversion bay sector. In total, 100 moose were observed in 2014, compared to 24 during the 2002 impact study. The increase in moose density and in the number of trail networks seems to confirm that diversion bay creation has not had a negative effect on moose presence in the area. Over 260 caribou were also recorded during the follow-up study.



EXCLUSIVE WEB CONTENT

- [Environmental follow-up](#)
- [Summary of environmental knowledge](#)

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OUR MANAGEMENT OF ENERGY DEMAND AND ASSETS

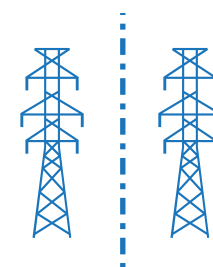
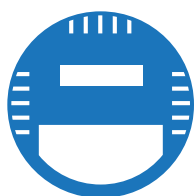


Outardes-4 development in the Côte-Nord region.

Sustainability is at the heart of the strategies we adopt to meet customers' energy needs. We focus first on energy efficiency to eliminate a third of growth needs and reduce power demand during peak periods. For the remaining demand growth, we prioritize the use of clean, renewable energies.

IN THIS SECTION

- > Energy efficiency initiatives
- > Electricity generated and purchased
- > Energy efficiency of buildings and facilities
- > Electricity sales outside Québec
- > Hydropower and other renewables



Energy efficiency

INITIATIVES WITH CUSTOMERS

In 2015, the Energy Efficiency Plan (EEP) yielded 570 GWh in customer energy savings. ✓ Over the next few years, we will focus on continuing our energy efficiency initiatives, modernizing our intervention strategies and implementing new demand response measures.

2015 HIGHLIGHTS

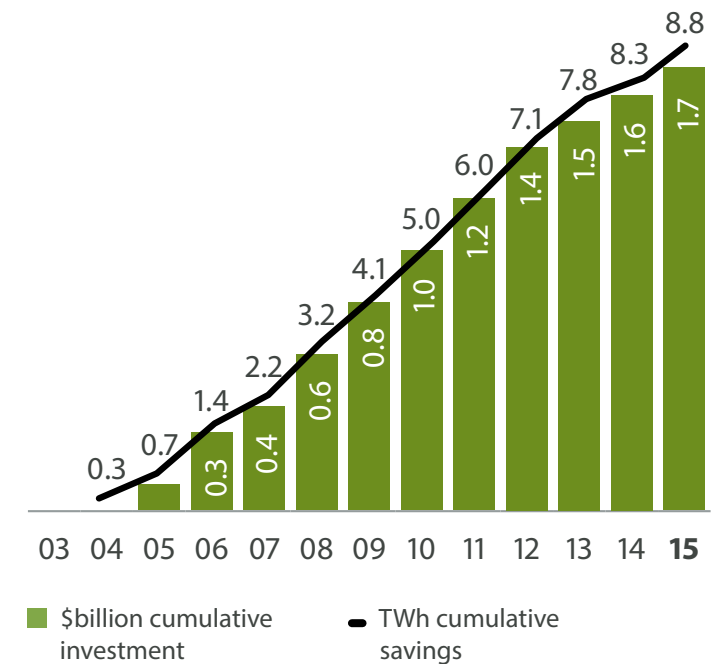
RESIDENTIAL CUSTOMERS

- A pilot project, rolled out to 400 employees, ✓ involved curtailing power to water heaters during winter peak, from 6 to 9 a.m. and from 5 to 8 p.m. Following the project's conclusive results, we want to offer our residential customers the option of signing up for a new voluntary load curtailment program. The objective is to reduce power demand by 300 MW by 2020.
- We continued our initiatives with low-income customers: 9,817 households took part in the Refrigerator Replacement program that ended on December 31, with over 30,400 old energy-guzzling appliances replaced since 2009. ✓

COMMERCIAL, INSTITUTIONAL, INDUSTRIAL AND AGRICULTURAL CUSTOMERS

- We launched a demand response pilot project tested with 50 customers in the commercial and institutional markets, ✓ with a view to reducing power demand by 30 MW during winter 2015–2016.
- The [Integrated Design](#) option (in French only) was added to the [Buildings Program](#). Financial support is granted for the integration of a set of measures that help buildings achieve high energy performance throughout their life cycle.
- Ten member companies of our [Energy Savers' Circle](#) were recognized for their exceptional and tangible commitment to sustainable development. ✓
- We improved the offer in the Electricity Management Systems component of our [Industrial Systems Program](#).

EEP PROGRESS – 2003–2015



GRI G4-22

HYDRO-QUÉBEC'S BUILDINGS AND FACILITIES

We take measures to limit system losses and improve the energy performance of our equipment and facilities.

2015 HIGHLIGHTS

➤ The CATVAR project led to savings of 246 GWh (251 GWh in 2014).

NEW ANNUAL ENERGY SAVINGS – EEP – 2015

PROGRAM NAME	ANNUAL SAVINGS ^a (GWh) ✓
Residential market	177
Public awareness – ENERGY WISE	44
Efficient Pools Program	29
Lighting Program	84
ENERGY STAR® Certified Windows and Patio Doors Program	10
Water- and Energy-Saving Products Program	5
Recovered energy-guzzling refrigerators and freezers	2
Offers for low-income households	4
Business market	391
Commercial and institutional	150
Industrial	242
Off-grid systems	1
TOTAL NEW SAVINGS	570

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

ENERGY EFFICIENCY RESULTS – ADMINISTRATIVE BUILDINGS (kWh/m²)

	OBJECTIVES ^a		RESULTS			
	2013	2020	2012	2013	2014	2015
Average energy consumption	246	216	255	245	239	231

a) The objectives are based on market indicators (BOMA BEST). In 2012 and in 2013, we monitored 85 buildings. In 2014, we monitored 83 buildings and in 2015, 84.



PRIX ENERGY STAR® 2015
POUR LA TRANSFORMATION DU MARCHÉ
Présentation de candidature – Service public de l'année



Hydro Québec

ENERGY STAR® AWARD

Hydro-Québec earned a 2015 ENERGY STAR® Market Transformation Award in the Utility of the Year – Provincial category. ✓
This is the eighth time we have received this prize, under Natural Resources Canada's program recognizing leaders in energy efficiency promotion.



EXCLUSIVE WEB CONTENT

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

Choice of energy sources

Available resources determine the choice of energy sources. In Québec, thanks to the abundance of water resources, hydropower accounts for 99% of our output. For over 50 years, Hydro-Québec has harnessed and developed this collective heritage.

In addition to hydropower, we also rely on other renewables to supply Québec customers. Through purchases from independent power producers, we support the development of other technologies, such as wind power, biomass and small hydro.

➤ **Wind power.** We buy wind power from independent producers and feed it reliably into our grid.

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

➤ **Small hydro.** We buy power from independent producers operating small hydropower plants.

➤ **Self-generation.** Customers who generate their own electricity using renewable energy sources can feed their surplus power into Hydro-Québec's grid in exchange for credits on their electricity bill.

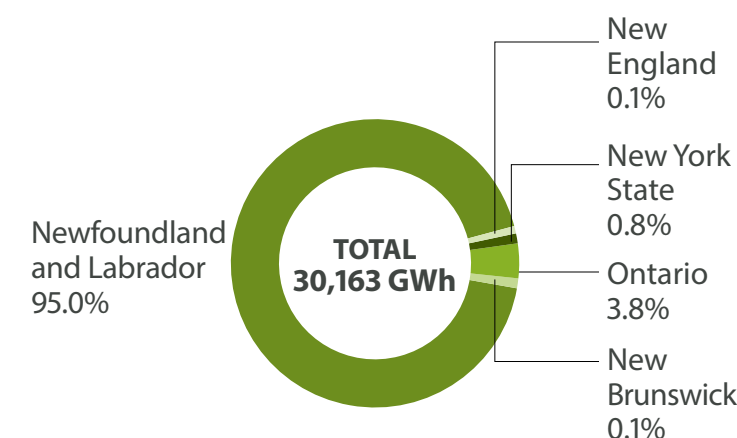


Baie-des-Sables wind farm in Bas-Saint-Laurent.

Conversely, if they do not generate enough power for their needs, they can draw electricity from the grid and benefit from the reliability of Hydro-Québec's power supply.

Our thermal generating stations supply communities in Nunavik, Haute-Mauricie, Basse-Côte-Nord, Île d'Anticosti and Îles de la Madeleine, which are not connected to the main grid due to their remote locations. These regions are home to a total of some

PURCHASES OUTSIDE QUÉBEC – 2015 ✓



EXCLUSIVE WEB CONTENT

- [Hydro-Québec's generating facilities](#)
- [Electricity purchases – Québec market](#)
- [Wind power](#)
- [Cogeneration plants](#)
- [Small hydropower stations](#)
- [Self-generation](#)

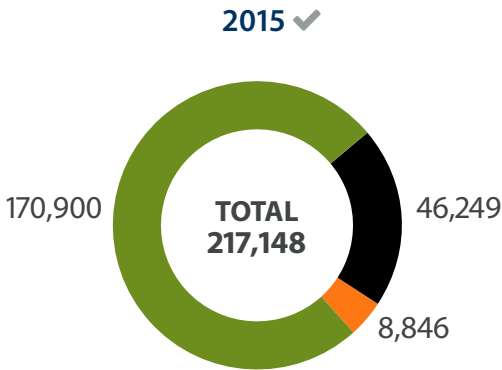
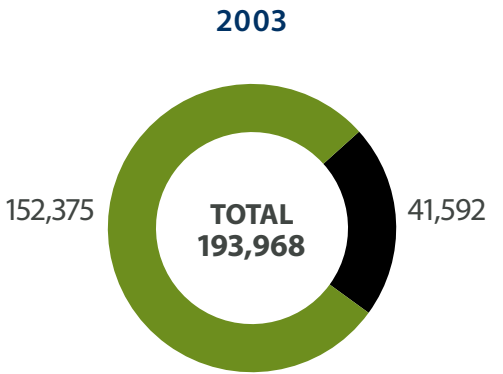


Northern village of Kuujuaq, in Nunavik, supplied by a thermal generating station.

35,000 inhabitants in 30 communities that include Atikamekw, Cree, Innu and Inuit populations. They are supplied by 22 diesel-fired thermal generating stations, one oil-fired thermal plant (Cap-aux-Meules) and one hydropower plant (Lac-Robertson).



MEETING ENERGY NEEDS (GWh)



TOTAL ENERGY
GENERATED AND
PURCHASED

- Generated
- Purchased
- Energy savings
achieved through EEP

OTHER RENEWABLES

Hydro-Québec is also interested in other renewable energies. We have published [data sheets](#) on osmotic power, hydrokinetic power, photovoltaic solar power, biomass power and small wind power. The sheets discuss the energy source’s current status, potential in Canada and Québec, output and costs, main advantages and disadvantages, and sustainability.

Sales outside Québec

For a good 15 years or so, we have been selling our hydropower on wholesale markets. These transactions are very beneficial, from both environmental and economic standpoints.

Markets outside Québec want to use our electricity to reduce their GHG emissions. In fact, three New England states have issued a request for proposals for clean energy and the construction of new transmission lines to carry that energy. New England has the highest electricity prices of all the markets we serve outside Québec, and the region is also seeking more clean energy on the wholesale market.

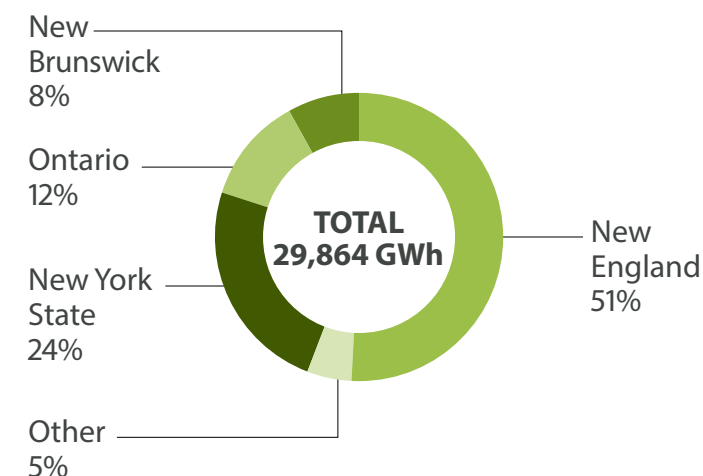
2015 HIGHLIGHTS

- Electricity sales outside Québec: 29.9 TWh ✓ (26.6 TWh in 2014).
- Revenue from sales outside Québec: \$1,700 million (\$1,629 million in 2014).
- Revenue from net electricity exports: \$1,645 million (\$1,527 million in 2014).



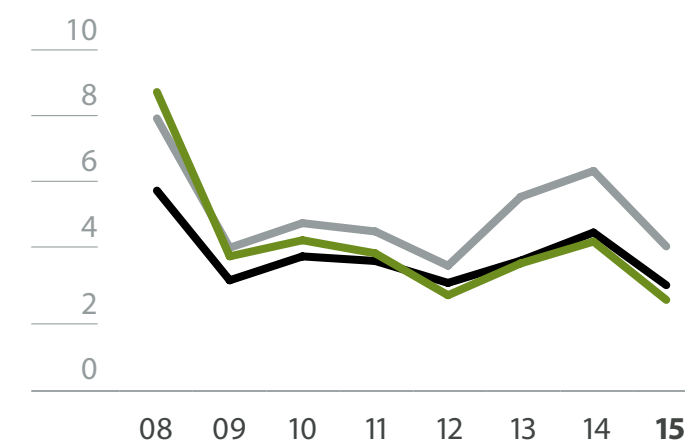
Outaouais substation in L'Ange-Gardien, an integral part of our interconnection with Ontario.

SALES OUTSIDE QUÉBEC – 2015 ✓



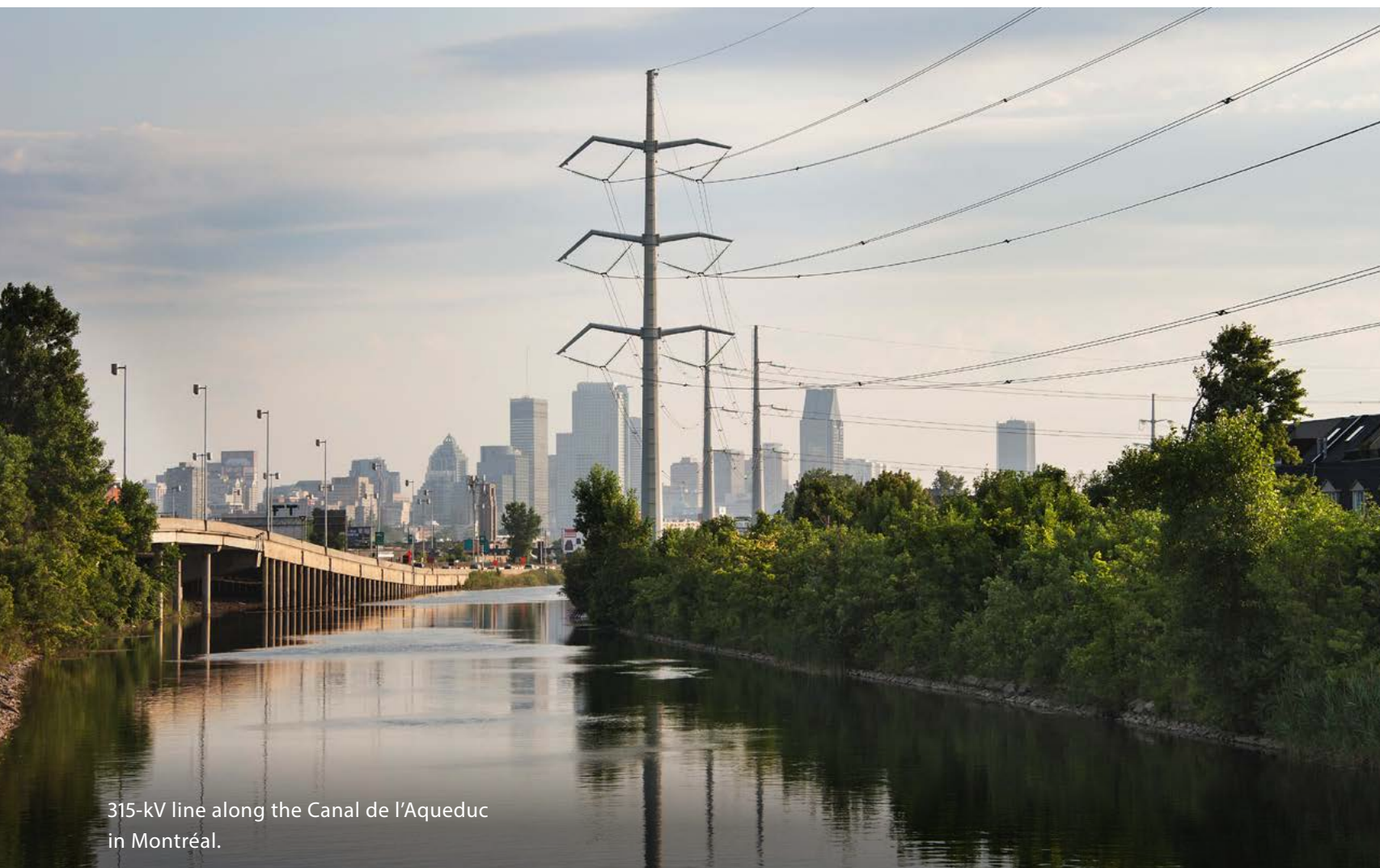
TRENDS IN ENERGY PRICES ON HYDRO-QUÉBEC'S EXTERNAL MARKETS

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)

OUR RESPONSIBILITY TO OUR CUSTOMERS



315-kV line along the Canal de l'Aqueduc
in Montréal.

Our customers expect competitively priced, reliable, attentive service from us. We need to have an adequate supply to meet their capacity and energy needs, as well as a robust system that can distribute electricity even under sometimes difficult conditions.

IN THIS SECTION

- › Electricity supply
- › Capacity and energy requirements
- › Reliability and service continuity
- › Vegetation control
- › Customer service
- › Electric and magnetic fields
- › Radio frequencies
- › Energy prices
- › Low-income households

Electricity supply

MEETING ENERGY NEEDS

After reviewing economic, demographic and weather forecasts, Hydro-Québec updates the Electricity Supply Plan that it submits to the [Régie de l'énergie](#) for approval.

SUPPLY STRATEGY

To supply the Québec market, we draw on various sources, including the 165-TWh heritage pool of electricity. We also call for long-term tenders, make short-term purchases and develop purchasing programs. We choose our suppliers according to the most favorable offer, giving preference to renewable energy sources in keeping with the Québec government's economic development objectives.

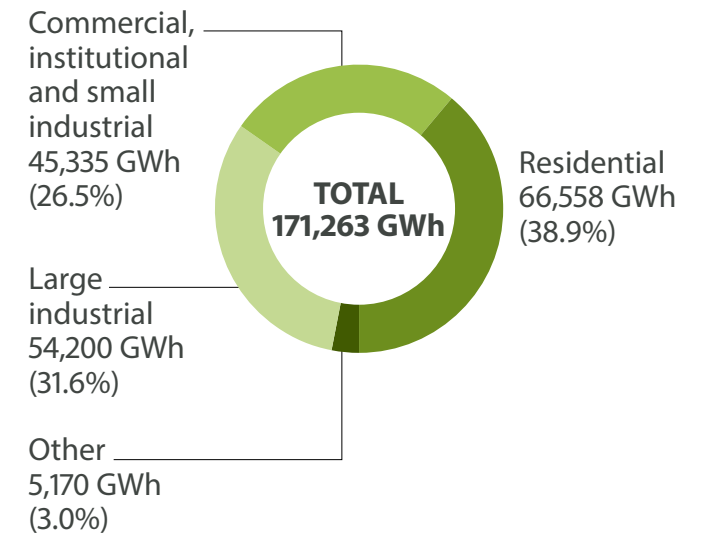
Our supply portfolio contains [75 long-term contracts](#) (in French only) lasting 15 to 25 years. To help reduce demand, we have a broad range of energy-saving and demand-side management measures.

The most recent [Electricity Supply Plan](#) update indicates surpluses of about 75 TWh from 2015 to 2023 and a 1,600 MW deficit around 2023. We expect demand to increase over the next 15 years because of increased residential demand in Québec.

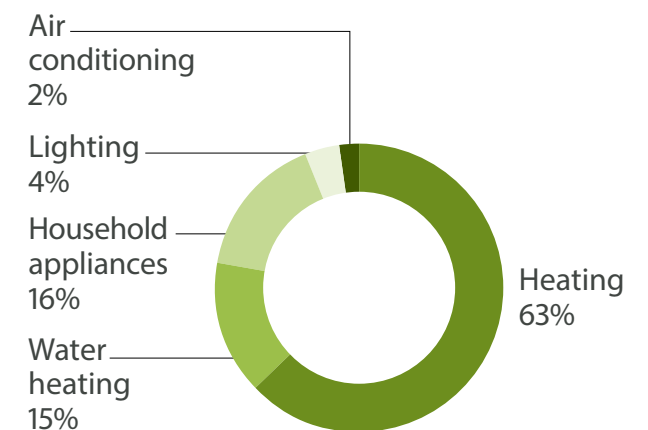
2015 HIGHLIGHTS

➤ In response to demand peaks during the 2015 winter, 3 TWh of energy was purchased; nearly one-quarter involved purchasing emission allowances under the *Regulation respecting a cap-and-trade system for greenhouse gas emission allowances*.

ELECTRICITY SALES IN QUÉBEC BY SEGMENT – 2015



ENERGY CONSUMPTION BY TYPE OF USE – RESIDENTIAL SEGMENT – 2012^a



a) Most up-to-date information at the time of publication of the 2015 Sustainability Report.



- Nine long-term supply contracts were signed for a total of 541.3 MW of electricity generated in Québec: six were for 94.9 MW of biomass energy and three purchased 446.4 MW of wind power. ✓
- Three long-term supply contracts for firm capacity were signed with Hydro-Québec Production. ✓
- Contracts were awarded for the purchase of 150 MW of firm capacity in January and February 2016. ✓
- A request for proposals was issued for the purchase of 6 MW of wind power to be supplied to the Îles-de-la-Madeleine grid to reduce supply costs and the environmental impact of generating electricity.
- The [second status report for the 2014–2023 Electricity Supply Plan](#) (in French only) was filed with the Régie de l'énergie.
- Two generating units were commissioned at Romaine-1 generating station.
- The new Akulivik diesel power plant was commissioned.



Inauguration of the new thermal power plant in the northern village of Akulivik, Nunavik.

Reliable electricity service

Service reliability is measured by the system average interruption duration index (SAIDI), which reflects the average service interruption time per customer. Service interruptions can be caused by scheduled system maintenance, bad weather, invasive vegetation or defective equipment. Rollout of next-generation meters has improved outage detection and service restoration.

We are investing heavily in upgrades to equipment and various facilities to make the system stronger. According to the standards developed by the North American Electric Reliability Corporation, a vegetation control program must also be implemented to prevent outages and accidents.

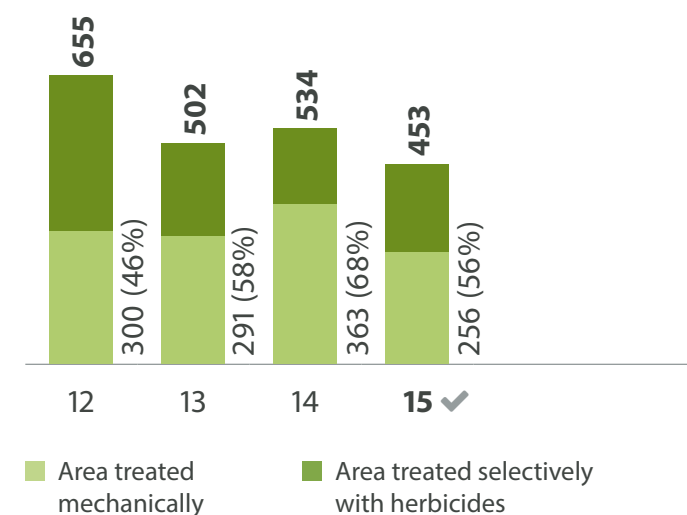
All kinds of emergencies can occur, from equipment breakdown to natural disasters. Emergency measures are managed as an integral part of Hydro-Québec's procedures.

We have signed a mutual support agreement with neighboring systems. Under this agreement, we cooperate with other North American power utilities when natural disasters occur.

2015 HIGHLIGHTS

- Total investment in the transmission system: \$1,587 million.
- Total investment by Hydro-Québec Distribution: \$756 million.
- At Carignan substation, a joint project with MycoLogic is testing two bioherbicides to replace the usual herbicides used for vegetation control. After the 2014 inventory (before treatment) and an efficiency follow-up in 2015, the 2016 inventory will enable us to draw reliable conclusions.
- A demonstration line was built at Lac Danford, in the municipality of Kazabazua (Outaouais region). The line's conductors are covered with a more vegetation-resistant sheath. This is a first for a medium-voltage line. Communication activities were held with the municipality and the customers concerned.

VEGETATION CONTROL ON DIKES AND DAMS (ha)



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



EXCLUSIVE WEB CONTENT

- [Service interruptions](#)
- [Rules for vegetation near power lines](#)

Customer service

We pay close attention to customer satisfaction survey results. We strive to be transparent and provide irrefragable customer service. We are also continuing to ensure that our allophone customers use electricity safely.

Call wait time is a key aspect of service quality for residential and business customers. Our 2016 target is a wait time of 210 seconds or less for 80% of calls. We are going to introduce a way to measure service quality consistency.

Since 1992, Hydro-Québec has surveyed how well expectations are met and has developed its customer satisfaction index. In compliance with the Act respecting the Régie de l'énergie, a complaints mechanism is in place to enable customers who feel they have been wronged to express their dissatisfaction.

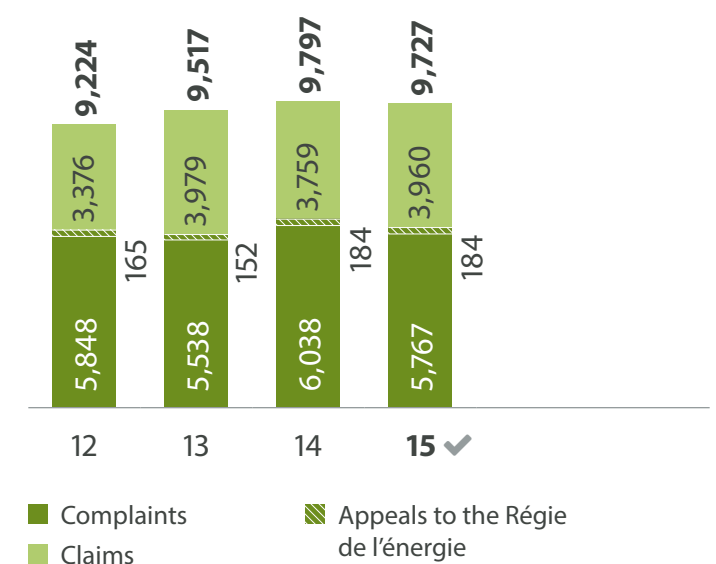
2015 HIGHLIGHTS

- The massive rollout of nearly 3.7 million next-generation meters came to an end. This project, completed three years earlier than expected, will generate annual savings of \$81 million.
- The newly launched [Hydro-Québec app](#) which uses smart phone functions (notifications, geolocation, etc.) to provide information about outages and other topics and redirects users to online services and their [Customer Space](#).
- The average call wait time for residential customers rose to 205 seconds (174 seconds in 2014). The increase is mainly related to the high call volume for information about the rollout of next-generation meters and the higher electricity bills caused by the very cold winter.
- A pilot project allowed customer service representatives to work from home to respond to the many calls at peak morning and evening times. Extending service beyond the usual business hours will make it possible to respond to more customers when they need it.

OVERALL CUSTOMER SATISFACTION INDEX (scale of 10)



CUSTOMER COMPLAINTS AND CLAIMS (number)



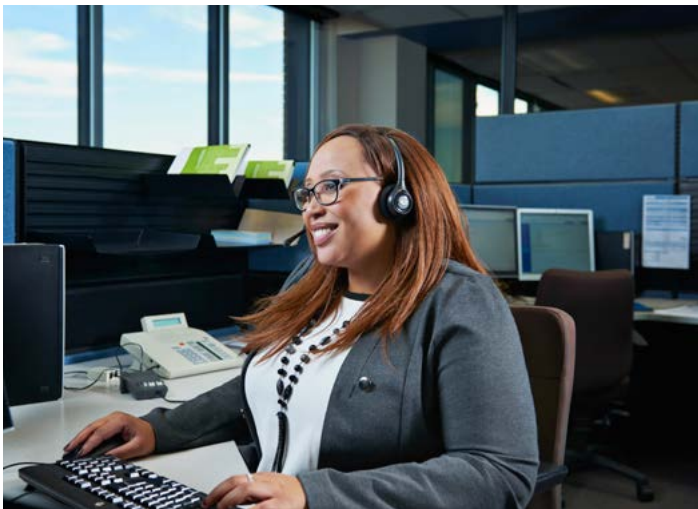
The number of complaints and claims is slightly lower than last year.

- Agreements were renewed with four non-profit organizations for translation services in 18 languages to assist allophone customers in cultural communities.
- The number of billing-related complaints dropped 7% (1,162 complaints in 2015). ✓
- The number of collections-related complaints dropped 19% (904 complaints in 2015). ✓
- The number of outage-related complaints dropped 20% (98 complaints in 2015). ✓
- We managed 1,080 complaints (831 in 2014) related to next-generation meters; almost half involved interference problems. ✓

HYDRO-QUÉBEC OPERATIONS AND HUMAN HEALTH – CURRENT STATUS

Live power lines and equipment produce electric and magnetic fields (EMFs). Their potential effects have been extensively researched for 40 years. Some electrical and electronic devices also emit radio frequencies.

ISSUE	RESEARCH STATUS	CONCLUSION
Health effects of EMFs generated by live conductors and electrical equipment	Over the past 40 years, hundreds of epidemiological studies and tests have been conducted. The opinion of some large organizations is available in the brochure entitled The Power System and Health – Electric and Magnetic Fields .	To date, no harmful EMF-related health effects have been found, but Hydro-Québec is committed to remaining vigilant . Public health authorities in Québec (in French only) and Canada consider it unnecessary to take extra measures to protect oneself from exposure to EMFs generated by power lines beyond the set exposure limits.
Health effects of radio frequencies emitted by the next-generation meters	Recent research and opinions: Royal Society of Canada , Health Canada , Ministère de la Santé et des Services sociaux (in French only).	The radio frequencies emitted by the new meters are not hazardous to health. The average exposure to radio frequencies 1 m away from these meters is 55,000 times less than the limit set by Health Canada and is negligible compared to radio-frequency exposure from other common household devices.



CUSTOMER EXPECTATIONS

- Reliable electrical service
- Rapid restoration after power failure
- Accurate, easy-to-understand bills
- Easy access to customer services
- Rapid, efficient processing of requests
- Products and services to help them understand and manage energy use and reduce their electricity bill



EXCLUSIVE WEB CONTENT

- [Information on electric and magnetic fields](#)

Rates and measurement of consumption

Through the investments made by previous generations, Québec has a heritage pool of electricity available at a substantially lower rate than anywhere else in North America. We are committed to limiting rate increases to the inflation rate or less in the coming years.

UNIFORM RATES

Hydro-Québec is required to charge the same electricity rates throughout Québec. Rates are based on the consumption profile of the different customer groups. In addition to basic rates, options are available to meet special needs. Rates generally have three components: the fixed charge, the price of energy and the price of power demand.

All rate change applications must be approved by Québec's Régie de l'énergie according to a [well-defined process](#).

FAIRNESS FOR CUSTOMERS

Although electricity is not expensive in Québec, for some households it is a significant part of their budget. For this reason, we have worked with the low-income households and local associations working group to develop various solutions to help these customers.

- Offering the Equalized Payments Plan to customers who anticipate payment difficulties
- Promotional campaigns *Before you rent* and *Don't let the situation get worse*
- Intermediaries (consumer associations and others) were encouraged to suggest that customers contact Hydro-Québec quickly and reach a payment arrangement

2015 HIGHLIGHTS

- Payment arrangements were signed with residential customers to facilitate settlement of 330,996 cases representing \$661 million gross in arrears. ✓
- 95,437 long-term payment arrangements covering \$383 million were reached with low-income customers; 44,218 of the agreements, amounting to \$52 million, provide assistance with payment of arrears and, if necessary, partial payment of current electricity use. ✓
- 79 employees attended a workshop on doing business in a context of poverty ✓ to learn about collecting from low-income customers who have payment difficulties.

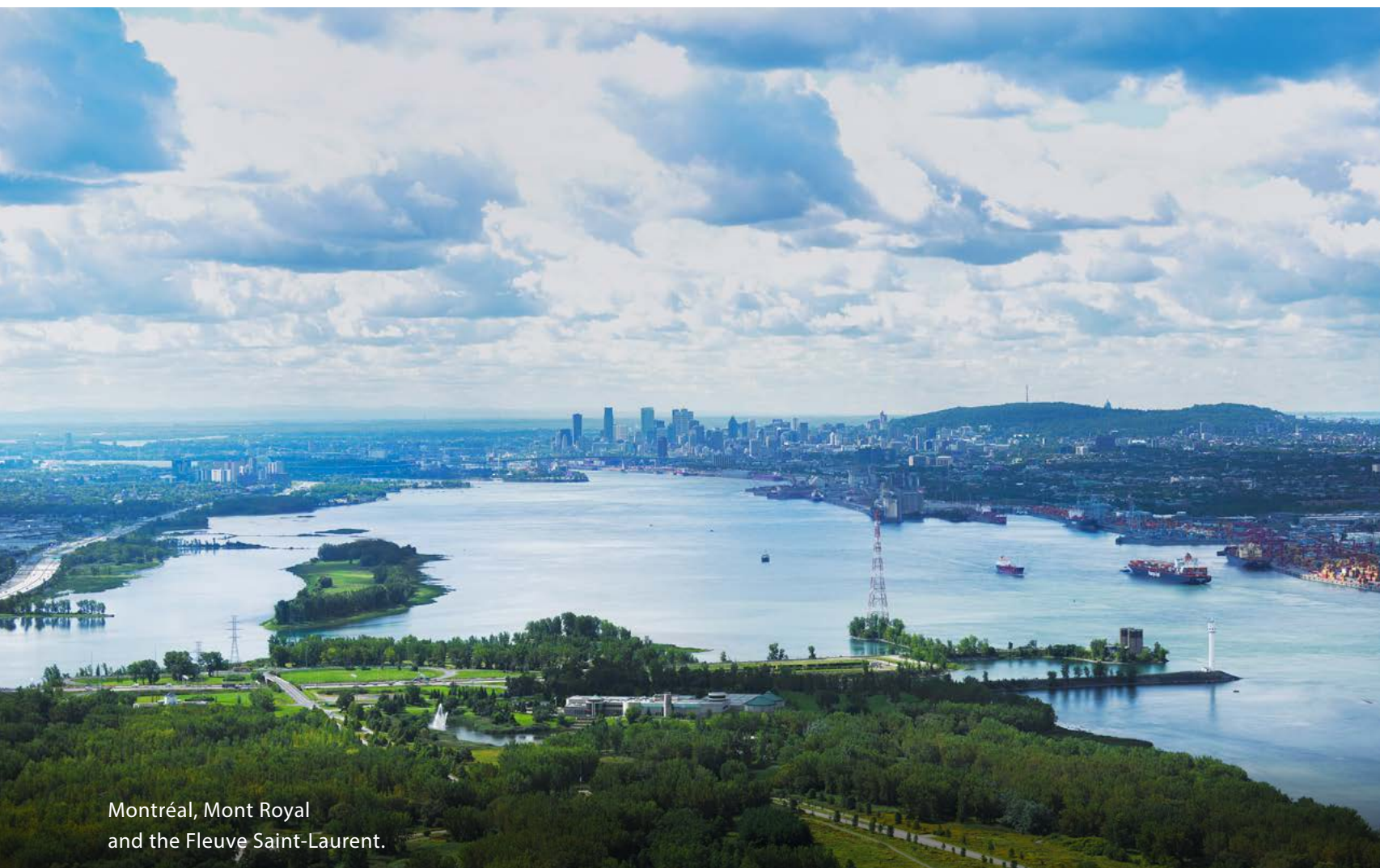


EXCLUSIVE WEB CONTENT

- [Electricity rates – Residential customers](#)
- [Electricity rates – Business customers](#)
- [Comparison of electricity prices](#)



OUR EFFORTS TO MAKE OUR PROJECTS AND OPERATIONS SOCIALLY ACCEPTABLE



Montréal, Mont Royal
and the Fleuve Saint-Laurent.

Our projects and operations give us a presence throughout Québec and we strive to be good neighbors. We limit the inconveniences caused by our presence, seek local consensus in all project stages and enhance the heritage in our host regions.

IN THIS SECTION

- > Mitigation of risks and nuisances
- > Public health and safety
- > Land use
- > Water body management
- > Social acceptability
- > Public participation
- > Aboriginals



Mitigation of risks and nuisances

Hydro-Québec has facilities throughout Québec. We monitor our facilities and manage our operations with a view to reducing the risks and nuisances inherent in our business.

Public safety needs to be protected, especially near electric and hydraulic facilities. With this in mind, we conduct awareness campaigns to promote prudent behavior and safe use of electricity.

Reservoir impoundment temporarily increases fish mercury levels, but these return to normal after 10 to 35 years, depending on the fish species and the type of reservoir. This phenomenon is closely monitored and fish consumption recommendations are issued as needed.

Noise emissions from our facilities are a nuisance that we endeavor to mitigate, particularly in residential areas. We choose quieter equipment when building or updating a facility. If at-source reduction is not sufficient, measures are implemented to lower noise whenever possible.

2015 HIGHLIGHTS

- A newspaper ad campaign promoted public awareness of the hazards of working near power lines.
- An acoustic cover was installed on the transformer at Laurentides substation. Result: noise was reduced by 6 to 9 dBA.
- Noise-barrier walls and sound-absorption panels were built around transformers at Carignan substation. The efficiency of this measure will be assessed in 2016.
- A security awareness campaign that uses a toll-free number for reporting risks to personal safety or company assets received 2,951 calls. ✓
The number of calls received increases every year thanks to the excellent support from our employees and the public for the company's safety and security efforts.

ELECTRICAL ACCIDENTS – 2015

	INCIDENTS ✓	DEATHS ✓
Public – Hydro-Québec facilities	7	0
Public – use of electricity	1	0
Skilled workers – Hydro-Québec facilities	35	3
Skilled workers – use of electricity	4	1
Hydro-Québec employees	177	0
TOTAL	224	4



EXCLUSIVE WEB CONTENT

- [Information on electric and magnetic fields](#)
- [The Power System and Health – Electric and Magnetic Fields brochure](#)
- [Hydro-Québec and the mercury issue](#)
- [Safety near power lines](#)
- [Safety near hydropower facilities](#)
- [Employee health and safety](#)

Land use and water body management

Changes in the expanding power grid have an impact on land use and development. We therefore collaborate in land-use planning initiatives. Since we operate many reservoirs, dams and control structures, we endeavor to preserve water bodies' quality and share their use.

Our activities that affect land use include facility refurbishment and dismantling, and site rehabilitation. This work also involves preparing environmental notices related to third-party use of properties, property assignment or property rights.

2015 HIGHLIGHTS

- A shorter tower was designed for Blainville substation's 315-kV tie line. Eight of these towers have been installed based on the clearance required for Bell Helicopter operations near the right-of-way. The new towers are 38 m high and allow the helicopters to fly safely. (Laurentides)
- The flow volume at La Tuque generating station is moderated in the summer so conditions will be favorable for pleasure boating. (Mauricie)
- A vegetation screen was planted where the Saint-Césaire–Bedford line crosses the highway to improve the view of the landscape. (Montréal)



^^ New 230-kV Saint-Césaire–Bedford line in Montréal.

^ Grandes-Piles marina on the Saint-Maurice. A number of hydroelectric facilities on the river are operated in such a way that boating conditions are maintained.



EXCLUSIVE WEB CONTENT

- [Power line undergrounding Program \(in French only\)](#)
- [Landscape and versatility of facilities](#)
- [Archaeology and heritage](#)
- [History of electricity in Québec](#)

Social acceptability and public participation

Before beginning a project, Hydro-Québec makes sure that it is socially acceptable. This condition is as important as profitability and environmental acceptability.

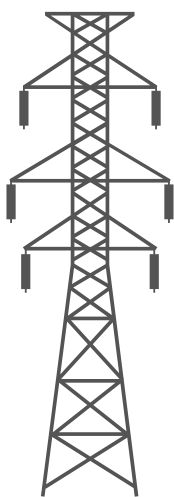
Every project is unique, so the measures required to make projects acceptable vary depending on the host community's expectations. Public participation and partnerships formed with stakeholders encourage communities to be involved in project planning and in creating the conditions that will

make the projects acceptable and mutually beneficial. This is how we optimize our projects' social acceptability.

Thirty years ago, in the wake of our major Baie-James projects, we introduced mechanisms for communicating with stakeholders with a view to harmonizing generating and transmission facilities with their host environment. Our approach must fit our objectives, respect our resources and enable us to choose the variant with the least social,

environmental, technical and economic impact. It must also support projects that best meet the host communities' needs and expectations. For a major generation project, the public participation process often begins when partnering agreements are signed with the communities concerned.

EXAMPLES OF PUBLIC PARTICIPATION – 2015



[120-kV Langlois–Vaudreuil-Soulanges line](#)
(Montérégie)

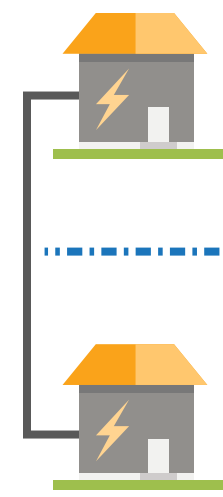
[120-kV Grand-Brûlé–Saint-Sauveur supply line](#)
(Laurentides)



[315/25-kV Baie-Saint-Paul substation and 315-kV tap line](#)
(Capitale-Nationale)

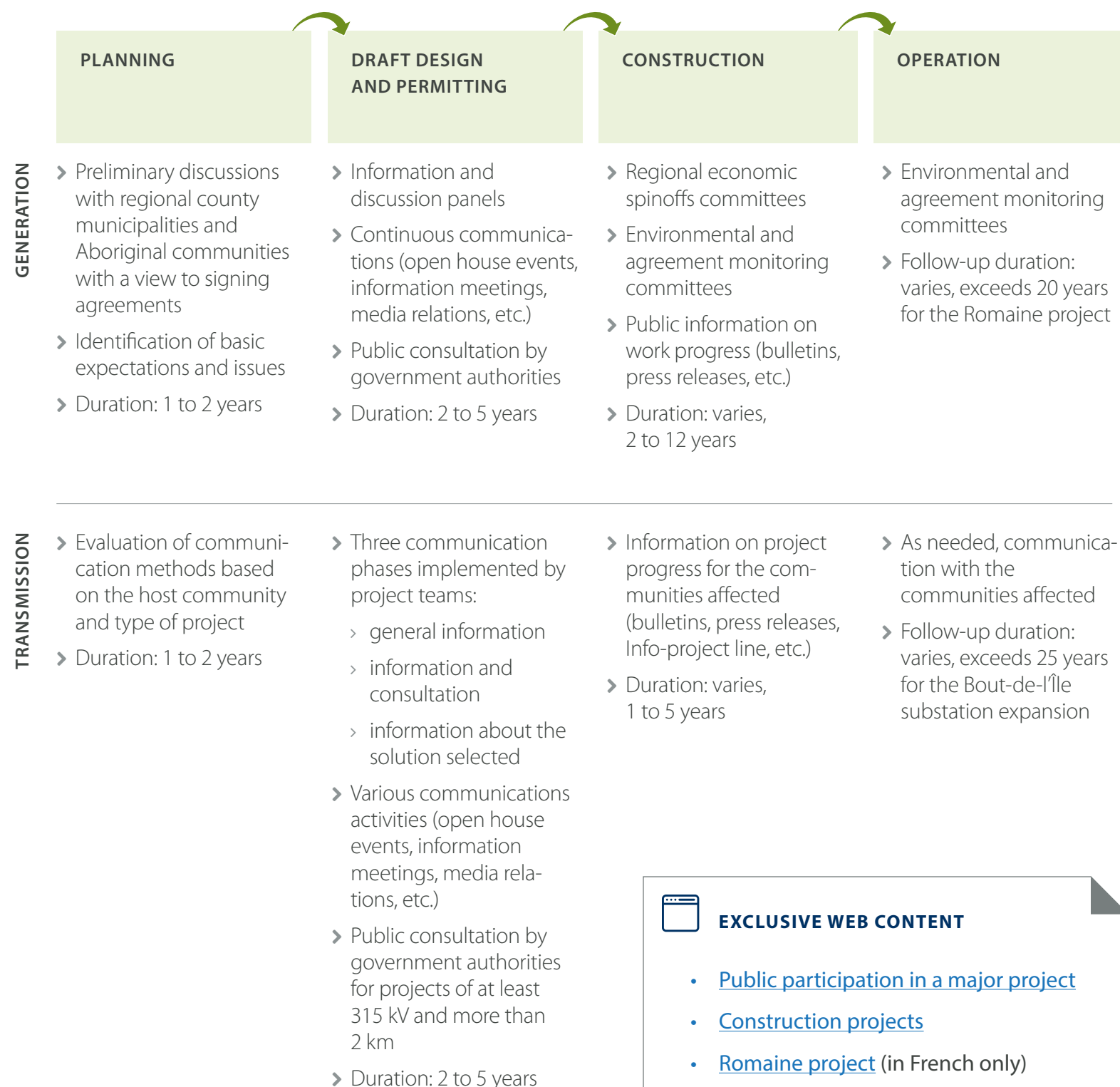
[230/25-kV Mékinac substation and 230-kV tap line](#)
(Mauricie)

[315/25-kV Duchesnay substation and 315-kV tap line](#)
(Capitale-Nationale)



[Québec–New Hampshire interconnection](#)
(Estrie)

PUBLIC PARTICIPATION IN A MAJOR PROJECT

**EXCLUSIVE WEB CONTENT**

- [Public participation in a major project](#)
- [Construction projects](#)
- [Romaine project](#) (in French only)

Aboriginal communities

Many Aboriginal communities live in areas with high hydroelectric potential. We endeavor to develop mutually beneficial partnerships with these communities and call upon their knowledge of the natural environment when conducting environmental inventories and implementing mitigation measures.

Québec's 11 Aboriginal nations, in 55 communities, each have different cultures and lifestyles. Over the years, we have developed a number of communication approaches (radio broadcasts, Web microsite, environmental follow-up calendars, newsletters, etc.) that have helped consolidate our relationships with these communities.

2015 HIGHLIGHTS

- Two agreements were signed, one with the Atikamekw nation and the other with the Innu community of Mashteuiatsh, regarding the Chamouchouane–Bout-de-l'Île project.
- Niskamoon Corporation, created and owned by Crees, has three Hydro-Québec directors on its board. Niskamoon is responsible for implementing the various agreements between the Crees and Hydro-Québec.

- Most of the construction for Waswanipi substation was carried out by the firm Washwa Nu, thereby fostering local hiring, economic spinoffs and project acceptability. (Nord-du-Québec)
- In Baie-James, 186 workers ✓ from the Cree villages of Eastmain, Wemindji, Waskaganish, Nemaska and Mistissini were hired for various environmental follow-up studies. In addition, two Crees are part of the local team that hires workers for the environmental and health and safety follow-ups. (Nord-du-Québec)
- Development of the Rupert riverbank in the Cree village of Waskaganish included construction of a rock spur dike, with a crest length of 110 m and width of over 12 m, to protect boats from the strong winds off the bay. This project also includes three boat ramps, a mobile floating dock and a walking trail along the river. The project is governed by the Agreement concerning the users' resumed use of the territory and overseen by the Waterfront Committee. (Nord-du-Québec)

APATISIIWIN AGREEMENT

Hydro-Québec had 82 Cree employees at the end of 2015 ✓, a record since the agreement took effect. Two more groups will arrive before the agreement ends in June 2017. Integrating all these candidates requires a solid induction process.

Romaine project

STATUS

Under construction

COST

\$6.5 billion

REGION

Côte-Nord

CONSTRUCTION

2009–2020

INSTALLED CAPACITY

1,550 MW

PLANNED AVERAGE ANNUAL OUTPUT

8.0 TWh

ECONOMIC SPINOFFS

\$3.5 billion for Québec as a whole, including \$1.3 billion for the region

UNIT COST

6.0¢/kWh

(including transmission system costs)



[Project fact sheet](#)
(in French only)

[Romaine information bulletin](#)
(in French only)

The Romaine project includes the construction of four hydroelectric generating stations. It has been favorably received by Minganie's elected officials and socio-economic authorities, as well as Innu communities. Four partnering agreements were signed to promote the long-term development of the communities.

Environmental monitoring began with construction in 2009. In addition to the mitigation measures implemented during the work, we will conduct studies until 2040 to examine wildlife, vegetation, the physical characteristics of the river and the project's economic and social impacts on local communities and their land use. The environmental follow-up will assess the effectiveness of the measures implemented, increase our knowledge, track changes in the environment and monitor the effects of the project.

LISTENING TO THE COMMUNITY

- The three agreements signed with the communities of Ekuanitshit, Nutashkuan, and Unamen Shipu and Pakua Shipi were monitored by Innu–Hydro-Québec joint ventures, which manage the funds provided by the agreements and act as permanent forums for exchanges and coordination.
- The regional economic spinoffs committee meetings made progress in a number of areas:
 - › Decisions on work to be done by the region as part of major contracts
 - › Supply Plan for Romaine-4 generating station and submission of the main upcoming contracts in 2016–2017
- Société Tshitassinu, composed of Innu representatives from Ekuanitshit, MRC of Minganie representatives and Hydro-Québec, collaborated with the Ministère des Forêts, de la Faune et des Parcs on sustainability of wildlife resources and management of fishing by users of the land affected by the Romaine project.

PROGRESS IN 2015

Romaine-1 generating station 270 MW (commissioning: 2015)

- › Two generating units began operation.

Romaine-2 generating station 640 MW (commissioning: 2014)

- › Storage, waste and contractor work areas were rehabilitated.
- › The diversion tunnel was closed and the access road was restored.

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

- › Concreting of the spillway and excavation of the headrace tunnel were completed.
- › Construction continued on the generating station, dam and water intake.

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

- › Geotechnical surveys were conducted.
- › Clearing began for the access road to the permanent structures.

2015 HIGHLIGHTS

- › Jobs created: 1,444 person-years (Côte-Nord workers accounted for 43% of the workforce and Innu workers, for 10%).
- › Annual investments (not including financing): \$512 million. ✓
- › Contracts awarded in the region: \$39 million.
- › Economic spinoffs for the region: \$156 million in 2014 (most recent data).
- › 49 government approvals ✓ were received, and no legal non-compliance notices.
- › Composting at Murailles and Mista workcamps: 106,000 kg of organic waste and 46,000 kg of cardboard were recovered. The compost will be used for jobsite remediation.
- › Over 40,000 m³ of lumber was stored temporarily for future recovery.
- › More than 6,000 m³ of topsoil was recovered from waste areas before impoundment of Romaine 1 reservoir in preparation for reforestation with commercial tree species.
- › We recovered 334 ha of merchantable timber when clearing Romaine 3 reservoir.

SUSTAINABILITY ISSUES

- › Maintaining an ecological instream flow downstream from Romaine-1 generating station to protect Atlantic salmon habitat.
- › Maintaining biodiversity by implementing mitigation and compensation measures for animals and plants.
- › Maximizing the project's economic spinoffs: participation by Côte-Nord businesses and workers.

PARTNERSHIPS WITH COMMUNITIES

- › Three issues of the *Nui uapaten* newsletter were distributed to the four communities that signed agreements and to jobsite workers. This publication for the Innus provides information about construction progress and the results of follow-up studies conducted at the Romaine jobsites.
- › Construction of the *shaputuan* at Mista workcamp was completed and many activities were organized, such as National Aboriginal Day, celebrated on June 21. The Innu gathering place was inaugurated during a jobsite visit by band council members from the communities that signed agreements and various company administrators. The *shaputuan* at Murailles workcamp is a busy activity centre.
- › Adult salmon were counted and smolts were caught in the Rivière Puyjalon by the Société Saumon de la rivière Romaine to be reared to adult stage at a fish farm. Some specimens were kept for artificial insemination in the fall. Some of the eggs were deposited in the Romaine's developed spawning grounds and the rest were placed in incubators.

Expansion of the transmission system in Minganie:

Connecting facilities to the transmission grid

STATUS

Under construction

FACILITIES in operation

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

under construction

- 735-kV Romaine-3–Romaine-4 line
- 735-kV Romaine-4–Montagnais line
- 735-kV Montagnais substation

under study

- (detailed engineering)
- 315/13.8-kV Romaine-3 substation
- 315/13.8-kV Romaine-4 substation

COST

\$1.3 billion

REGION

Côte-Nord

CONSTRUCTION

2011–2020



**Project fact
sheet (in French
only)**

The project to expand the transmission system in Minganie includes the construction of four 315-kV and 735-kV lines (500 km) and four substations, and will entail modifications at two existing substations, Arnaud and Montagnais. These facilities will be used to bring the electricity generated at the Romaine complex onto the main transmission grid.

2015 HIGHLIGHTS

- Jobs created: 213 person-years (Côte-Nord workers accounted for 31% of the workforce of which 7% were Innu).
- Annual investment (not including financing): \$230 million.
- Contracts awarded in the region: \$5 million.
- 19 government approvals were received, and no legal non-compliance notices. ✓
- Clearing was completed for the Romaine-4–Montagnais line.
- Construction began on the Romaine-3–Romaine-4 line and the eastern part of the Romaine-4–Montagnais line.
- Construction continued on the western part of the Romaine-4–Montagnais line.
- The Romaine-1–Romaine-2 line was commissioned.
- Romaine-1 substation was partially commissioned.

LISTENING TO THE COMMUNITY

- Construction progress was reviewed with the Ekuanitshit technical and environmental committee.
- Measures were introduced to promote harmonious relations between jobsite workers and users of the area.
- Workers were informed about Innu land use.
- Periodic follow-ups were conducted with area cottagers.

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

STATUS

Under construction

FACILITIES

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

COST

\$1.15 billion

REGIONS

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

CONSTRUCTION

2015–2019



Chamouchouane–Bout-de-l'Île project

The Chamouchouane–Bout-de-l'Île project calls for construction of a 735-kV transmission line (400 km), diversion of a section of a 735-kV line (19 km), expansion of Chamouchouane substation and construction of the new Judith-Jasmin substation in a Montréal suburb. It will strengthen the grid between Chamouchouane substation in Saguenay–Lac-Saint-Jean and the Montréal metropolitan loop, reduce electricity losses on the grid and increase operating flexibility.

2015 HIGHLIGHTS

- 129 approvals were received, as well as three ✓ legal non-compliance notices for which corrective measures have been implemented.
- Clearing began in Saguenay–Lac-Saint-Jean, Mauricie, Lanaudière and Laurentides (sections 1, 3 and 5).
- Archaeological inventories were conducted along the entire route.

SUSTAINABILITY ISSUES

- Work is being carried out in five administrative regions (18 municipalities, towns or parishes; seven unorganized territories; nine MRCs or agglomerations; one metropolitan community), in cooperation with one Innu community and two Atikamekw communities.
- Economic spinoffs are estimated at over \$1 billion.
- Knowledge acquisition from five years of environmental studies will optimize the project, particularly with regard to special-status species, wetlands and archaeological heritage.

LISTENING TO THE COMMUNITY

- More than 300 meetings and discussions were held with communities and local elected officials, and 15 open house events.
- A liaison committee was set up in Lanaudière.
- A number of changes were made to the route in Saguenay–Lac-Saint-Jean, Mauricie and Lanaudière, including a section that was nearly 40-km long.
- The optimal location for Judith-Jasmin substation was found in Terrebonne, to avoid major impacts on the human environment and valued wetlands.

OUR COMMITMENT TO TECHNOLOGICAL INNOVATION AND TRANSPORTATION ELECTRIFICATION



Fast-charge station for electric cars
in Sainte-Julie, Montérégie.

Innovation is key to our operations. Fifty years ago, we inaugurated 735-kV transmission, a world first. Today, we are in the forefront of transportation electrification in Québec and a world leader in energy storage and conversion.

IN THIS SECTION

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

Research and development

Through our research institute, IREQ, we invested \$130 million in R&D in 2015. IREQ is partnering with the company's business units, industry partners and other research centres on nearly 130 projects in the following priority fields:

- Smart power grid
- Aging equipment and asset sustainment
- Efficient electricity use
- Renewable energies
- Battery materials and transportation electrification

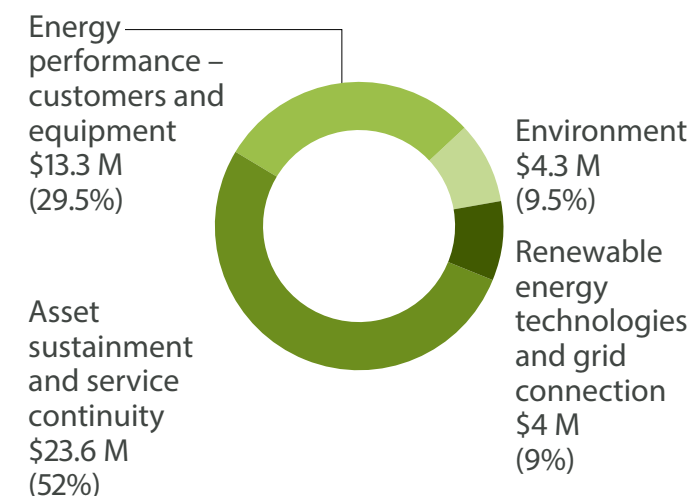
Our work has led to technological breakthroughs, commercial agreements and partnering arrangements. Since IREQ was created, its specialists have obtained over 1,000 patents and published thousands of articles.

2015 HIGHLIGHTS

- The CATHY (hydraulic turbine characteristics) project mathematically models hydraulic turbine performance according to the head (drop height) to determine the maximum performance of each generating unit. Based on the data obtained, the operating models for 26 generating stations were adjusted and the total energy gain was estimated to be 2.5 GWh.

- A prototype for a large-scale energy storage system was developed by Esstalion Technologies, a joint venture of Hydro-Québec and Sony (Japan). The prototype has a 1.2-MW capacity and can store the equivalent of the average hourly energy consumption of 550 Québec homes. Tests are currently under way to assess how the storage system performs on the grid. Esstalion Technologies is the only company in the world that is jointly operated by a power utility and a battery manufacturer.
- High-definition, 360-degree video was used to film the sites of future projects and for virtual site visits. Use of this tool at La Grande-3 generating station reduced proposal preparation costs and alleviated bidders' uncertainty about the building's reroofing project.
- We celebrated the 50th anniversary of 735-kV transmission. This technology carries large amounts of electricity over very long distances and reduces energy losses on the power grid.

BREAKDOWN OF IREQ INNOVATION EFFORTS RELATED TO SUSTAINABILITY^a – 2015 ✓



a) Excludes investments in energy storage and conversion.



EXCLUSIVE WEB CONTENT

- [Technological innovation](#)
- [University chair endowments](#)
- [Lists of our patents](#)
- [Learn about our innovations](#)

EXAMPLES OF SUSTAINABILITY-RELATED INNOVATION PROJECTS – 2015

CATEGORY	ACHIEVEMENT OR WORK IN PROGRESS	INVESTMENT (\$'000) ✓
Environment	<p>➤ In conjunction with the Université de Sherbrooke, we developed a 3D seismic simulator to test new approaches formulated during soil liquefaction studies required by the <i>National Building Code</i>. This tool analyzes soil phenomena at the particle (movement) and pore (pressure) levels. Because it is more precise than the current methods, this approach sometimes confirms that planned soil consolidation work, often covering large areas, is not necessary. The results include significant cost savings and avoidance of substantial greenhouse gas emissions, as the equipment involved uses a great deal of energy.</p>	774
Asset sustainment and service continuity	<p>➤ A new version of the LineScout robot was developed for inspecting, maintaining and operating transmission substation equipment. Robotics enables employees to perform switching operations and take measurements on transformer substation equipment and devices safely. This new version was tested on an energized grid.</p>	71
Energy performance – customers and equipment	<p>➤ Software was developed to perform diagnostics and optimize energy management in large buildings. We have used this tool in five of our own buildings and one other building. It revealed defects in heating, ventilation and air-conditioning (HVAC) systems that, once remedied, could reduce the electricity bill and improve air quality. The use of this tool will optimize energy management in commercial and institutional buildings.</p>	1,152
Renewable energy technologies and grid connection	<p>➤ A precision wood drying technology was developed that uses continuous high-frequency (HF) waves to dry wood, an energy-intensive process. This technology runs on electricity instead of fossil fuel. It targets and routes pieces of wood with a high moisture content to an HF dryer. Less energy is consumed and drying time is shorter. In addition to using clean energy, this technology can help improve the competitiveness of the wood processing industry.</p>	234

Transportation electrification

In Québec, transportation accounts for 41% of GHG emissions, the main cause of climate change. This [sector's](#) share has increased 25% since 1990, while emissions from other sectors have dropped 23%. Transportation is also responsible for air pollution in cities, and emits many types of unhealthy contaminants.

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

2015 HIGHLIGHTS

- Technical support was provided for the purchase and installation of curbside charging stations in Montréal.
- Hydro-Québec contributed technical and financial support for the launch of Téo Taxi, Canada's first electric taxi service.
- [TM4](#) supplied the SUMO MD electric motor, with a range of 120 km, for the Autobus Lion electric school bus. In 2015, seven of these buses began operation in Québec.

- The partnership between TM4 and Nova Bus continued development and marketing of an electric city bus. The first public transit bus, equipped with a SUMO HD powertrain, is being road tested.

ELECTRIC CIRCUIT

The [Electric Circuit](#), a Hydro-Québec initiative, is Canada's first public charging network and the largest in Québec. It has 577 charging stations, including 548 240-V stations and 29 fast-charge (400-V) stations, in 16 of Québec's 17 administrative regions. It consists of 130 participating companies, institutions and municipalities that have purchased and installed charging stations. ✓

Hydro-Québec is already capable of supplying the power needed to charge a million electric vehicles. This would be the equivalent of the annual electricity output of a midsize generating station.



PARTNERSHIP WITH PSA PEUGEOT CITROËN

[TM4](#) is partnering with two French companies, PSA Peugeot Citroën and Exagon Motors, and the Québec government to develop a new, high-performance, high-efficiency electric powertrain system for electric cars. The new powertrain will be designed and manufactured at TM4's facilities in Boucherville.

2015 HIGHLIGHTS

- Over 8,300 electric vehicles were registered in Québec by the end of the year.
- Twenty-one new charging stations for electric vehicles were installed at 10 of the company’s administrative buildings. A total of 49 charging stations in the parking lots of 23 administrative buildings enable employees to charge their vehicles at no cost. Of these charging stations, 10 are located in the parking lots at nine Hydro-Québec sites that can be used by the public. ✓
- The Electric Circuit recorded a total of 46,465 charges. ✓ In one year, the number of monthly charges for the entire network more than doubled.
- 1,522 users were surveyed about their satisfaction with the Electric Circuit’s service: 93% of respondents said they were satisfied or very satisfied—up 12% from 2014. ✓



Fast charge station in the city of Québec.

THE ELECTRIC-VEHICLE ADVANTAGE

At Hydro-Québec’s request, CIRAIG has produced a comparative analysis of electric-vehicle and conventional-vehicle life cycles under Québec driving conditions. Result: the electric vehicle is preferable to the conventional vehicle, except for the Mineral Resources indicator, which favors the conventional vehicle.

Most of the electric vehicle’s environmental impacts occur in the manufacturing stage, while for the conventional vehicle they are in the driving stage. Conclusions also differ depending on driving conditions and the distance traveled by the vehicles. The farther the electric vehicle travels, the more advantageous it is.

CHANGES IN QUÉBEC’S ELECTRIC CIRCUIT NETWORK (number)

	2012	2013	2014	2015 ✓
240-V/400-V charging stations installed during the year	137/0	102/1	110/7	199/21
240-V/400-V charging stations available (cumulative)	137/0	239/1	349/8	548/29
Service points (cumulative)	92	162	235	396
Partners (cumulative)	23	53	92	130
Members (cumulative)	658	1,524	3,637	6,583
Administrative regions	10	14	15	16



EXCLUSIVE WEB CONTENT

- [Transportation electrification](#)
- [Comparative analysis of electric-vehicle and conventional-vehicle life cycles](#)

OUR SOCIOECONOMIC CONTRIBUTION

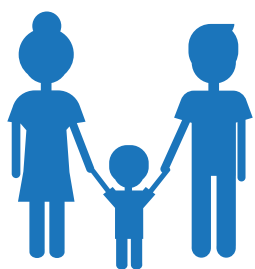


Expo-sciences Hydro-Québec, an event for budding scientists and technologists.

Our contribution to the Québec economy is unique: we invest billions of dollars, and create and maintain thousands of jobs. We also invest in communities by supporting social and humanitarian action, health and educational institutions, sports and cultural activities, and volunteer commitments by our employees.

IN THIS SECTION

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



Spinoffs of projects and operations

In Québec, the value added by generating, transmitting and distributing electricity was estimated to be about \$12 billion in 2015. Since Hydro-Québec accounts for over 90% of that industry, its share of the Québec economy is about 4% of the GDP.

While upholding the principles of competition, we encourage regional subcontracting and issue calls for tenders from local companies for contracts under \$1 million. Regional economic spinoffs committees inform local economic associations of our tender calls so they can monitor the measures implemented with a view to maximizing project spinoffs.

2015 HIGHLIGHTS

- Procurement of goods and services inside and outside Québec (excluding procurement by Société d'énergie de la Baie James) totaled \$3,050 million in 2015, compared to \$3,301 million in 2014:
 - \$1,270 million for the purchase of goods
 - \$28 million for rentals and leasing
 - \$1,410 million for specialized services and other work
 - \$342 million for professional services

HYDRO-QUÉBEC'S CONTRIBUTION TO THE QUÉBEC ECONOMY

	2012	2013	2014	2015
Dividend (\$M)	645	2,207	2,535	2,360
Public utilities tax (\$M)	252	245	252	268
Water-power royalties (\$M)	617	669	651	654
Municipal and school taxes (\$M)	36	36	37	37
Procurement from Québec-based companies (%)	94	95	94	93
Community investments (\$M)	29	31	30	27



^^ Penstock linings at the Romaine-3 site. The Romaine complex is one of the largest construction sites in Canada.

^ Community garden in the Laurentides-Levis line right-of-way, city of Québec.

Community investments

INTEGRATED ENHANCEMENT PROGRAM

The [Integrated Enhancement Program](#) (IEP) is intended to offset the residual impacts of transmission projects. An amount equal to 1% of the initially authorized value of our projects is allocated to communities where lines or substations are located. The funds are used for local community initiatives that enhance the environment or improve municipal, community or recreational infrastructure, for regional or tourism development, or for development in Aboriginal communities. Since the program was created in 1985, we have contributed \$123 million for 1,242 initiatives.

2015 HIGHLIGHTS

- Funding of \$382,470 helped build a double gymnasium and a multipurpose room at Petit-Prince school in L'Ange-Gardien (Lefrançois substation and 315-kV line). (Capitale-Nationale) ✓
- Financial support of \$249,721 was used to develop a green space on the ruins of a historic sawmill and consolidate riverside structures in the city of Joliette. The park overlooks the Rivière L'Assomption (Mauricie-Lanaudière 315-kV line). (Lanaudière) ✓



Funding from the Hydro-Québec IEP was used to build breakwaters at the mouth of the Rivière Rimouski (Bas-Saint-Laurent) to make a city recreation area.

FUNDING AND FINANCIAL COMMITMENTS – INTEGRATED ENHANCEMENT PROGRAM

	2012	2013	2014	2015
Number of initiatives	41	26	53	16 ✓
Hydro-Québec funding (\$'000)	3,492.4	2,798.9	4,176.0	1,584.1 ✓
Community funding (\$'000)	6,396.5	4,547.8	22,284.6	4,462.1
Project value (\$'000)	9,888.9	7,346.7	26,460.6	6,047.1



EXCLUSIVE WEB CONTENT

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

**FONDATION HYDRO-QUÉBEC
POUR L'ENVIRONNEMENT**

As it celebrates its 15th anniversary, the [Fondation Hydro-Québec pour l'environnement](#) helps to improve the environment and preserve Québec's natural heritage. It supports the protection and enhancement of natural environments by nonprofit organizations, municipalities, regional county municipalities and band councils. Since its inception, it has contributed \$13 million to 238 projects worth a total of \$42 million.

2015 HIGHLIGHTS

➤ Funding of \$40,860 was granted to the Saint-Lawrence Valley Natural History Society to protect Dekay's brown snake. The project involved restoring fallow lands and building winter hibernation shelters in the Cap-Saint-Jacques, Bois-de-Liesse and Pointe-aux-Prairies nature parks owned by the city of Montréal. ✓

➤ Funding of \$133,260 was provided to develop 1,271 m of trails in order to control traffic in the Du Tremblay woodland in Montérégie. This woodland hosts a wide variety of plant and animal species, including the western chorus frog, which is considered at risk in Québec. ✓

**EMPLOYEES' COMMITMENT,
COOPERATION AND
KNOWLEDGE SHARING**

Hydro-Québec makes its employees' expertise and know-how available. For many years it has been involved with major international organizations. It also acknowledges its employees' commitment to sustainability through their achievements in the company or the community.

**COMMITMENTS – FONDATION HYDRO-QUÉBEC
POUR L'ENVIRONNEMENT**

	2012	2013	2014	2015 ✓
Projects supported (number)	17	16	12	16
Regions involved (number)	12	7	7	9
Amount granted (\$'000)	757	760	393	964



SUSTAINABILITY MERIT AWARD

The *Mérite du développement durable* contest recognizes employees or groups of employees that have contributed to sustainability within the company or in the community. Employees nominated 34 candidates for the internal achievement and external achievement categories. A total of 1,132 employees voted to choose the two winners.

In 2015, the Vice-présidence – Clientèle administrative support team won the internal achievement award. Their project involved virtual management of the workload of some 70 clerks and secretaries in about 30 locations all across Québec.

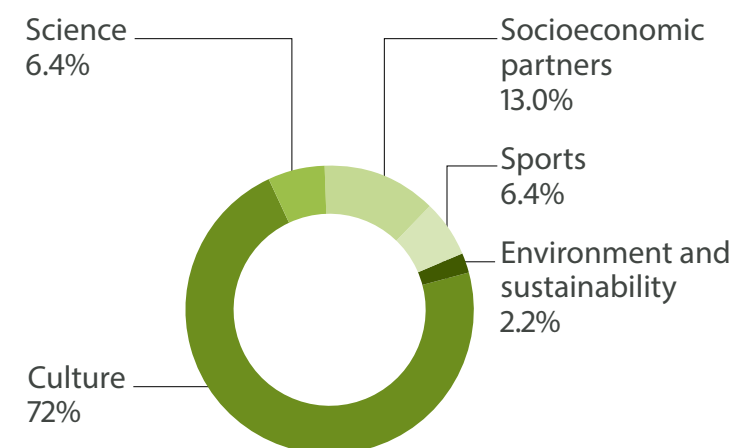
2015 HIGHLIGHTS

- Hydro-Québec participated in the work of the Environment subcommittee of the International Council on Large Electric Systems.
- 236 college and university students were awarded internships in various fields. ✓
- We gave 32 presentations on sustainability to a thousand college and university students.
- Employees who volunteered with the Operation Red Nose driving service received support: in Manicouagan, about 50 employees used vehicles loaned by the company for this activity.

DONATIONS AND SPONSORSHIPS

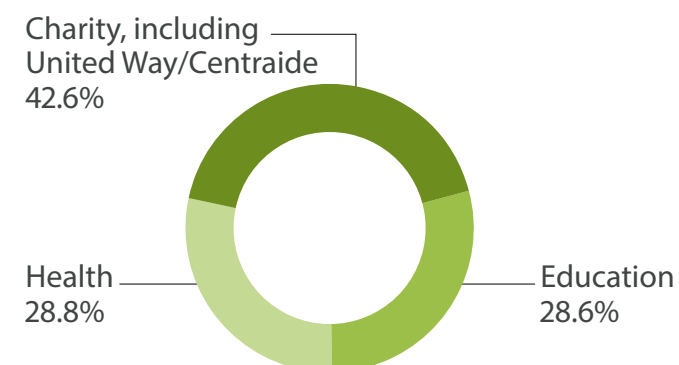
Every year, Hydro-Québec devotes part of its net income to donations and sponsorships selected on the basis of fair criteria that reflect its values. With sustainability in mind, it encourages projects that support its role as a corporate citizen, maintain or improve community relations, or promote its strategic objectives, programs and services. In 2015, donations and sponsorships totaled \$16.8 million.

BREAKDOWN OF SPONSORSHIPS^a – 2015



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

BREAKDOWN OF DONATIONS – 2015



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 STANDARD DISCLOSURES

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G4-4	Primary brands, products and services	3, 11, 12	
G4-5	Location of the organization's headquarters	Web	
G4-6	Countries where the organization operates	3, 12	
G4-7	Nature of ownership and legal form	Web	
G4-8	Markets served	3, 12	
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G4-10	Workforce distribution	3, 12	Workforce numbers based on contract type, gender, region are not available. The total number of outside workers according to employment type, contract type and region is not available.
G4-11	Collective bargaining agreements	3	The percentage of outside workers covered by a collective agreement is not available (sector supplement).
G4-12	Supply chain	30	
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GRI content index for 'In Accordance' – Core^a

GENERAL STANDARD DISCLOSURES

N°	GENERAL STANDARD DISCLOSURES	PAGE ^b	OMISSION
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Aspect: Economic Performance			
G4-EC1	Direct economic value generated and distributed	12, 14, 59, 64-68	Salaries and employee benefits are not published and are considered confidential information.
G4-EC2	Climate change	7, 19-20, 24-28, 62-63	
Aspect: Indirect Economic Impacts			
G4-EC7	Infrastructure investments for local communities	54, 56, 65-66	
G4-EC8	Indirect economic impacts	14, 48, 54-58, 65	
Aspect: Procurement Practices			
G4-EC9	Local suppliers	54-58, 65	

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

- 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 STANDARD DISCLOSURES

N°	GENERAL STANDARD DISCLOSURES	PAGE ^b	OMISSION
Aspect: Availability and Reliability (Electric Utilities Sector Disclosures)			
EU10	Planned capacity against projected electricity demand	43, 44	
ENVIRONNEMENT			
Aspect: Materials			
G4-EN1	Materials used	Web	Hydro-Québec does not measure the weight and volume of raw materials used.
Aspect: Energy			
G4-EN6	Reduction of energy consumption	13, 20, 21, 36-38, 60	
Aspect: Water			
G4-EN8	Total water withdrawal by source	13	
Aspect: Biodiversity			
G4-EN11	Sites near areas of high biodiversity value	29, 31-35	
Aspect: Emissions			
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	13, 24-26	
G4-EN16	Indirect greenhouse gas (GHG) emissions (Scope 2)	24, 26	
G4-EN17	Other indirect greenhouse gas emissions (Scope 3)	24, 26	
G4-EN18	Greenhouse gas (GHG) emissions intensity	24, 26	
G4-EN19	Reduction of greenhouse gas (GHG) emissions	7, 19, 22, 24, 26	
G4-EN21	NO _x , SO _x and other air emissions	13, 25, 26	
Aspect: Effluents and Waste			
G4-EN24	Total number and volume of significant spills	13, 30	
Aspect: Products and Services			
G4-EN27	Extent of impact mitigation	21-28, 30-35	
Aspect: Transport			
G4-EN30	Environmental impacts related to transportation	21-22, 26, 28	
SOCIAL – LABOR PRACTICES AND DECENT WORK			
Aspect: Occupational Health and Safety			
G4-LA6	Work-related accidents, diseases and absenteeism	14, 50	Hydro-Québec discloses only the work-related accident rate. Other information for this indicator is confidential.

GRI content index for
'In Accordance' – Core^a

GENERAL STANDARD DISCLOSURES			
N°	GENERAL STANDARD DISCLOSURES	PAGE ^b	OMISSION
Aspect: Diversity and Equal Opportunity			
G4-LA12	Diversity and equality	3	
SOCIAL – SOCIETY			
Aspect: Local Communities			
G4-SO1	Participation, assessments and development programs	49, 52-58	The percentage is not available.
G4-SO2	Impacts on local communities	52, 55-58	
SOCIAL – PRODUCT RESPONSIBILITY			
Aspect: Customer Health and Safety			
EU25	Injuries and fatalities	50	Information about court decisions, out-of-court settlements and ongoing suits related to disease cases is not available.
Aspect: Product and Service Labeling			
G4-PR3	Product and service information	47, 50	
G4-PR5	Surveys measuring customer satisfaction	14, 19, 42, 46	
ASPECT: ACCESS (ELECTRIC UTILITIES SECTOR DISCLOSURES)			
EU29	Average power outage duration	14, 42	

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 has been engaged to conduct an independent evaluation of Hydro-Québec's *Sustainability Report 2015*, which covers the period from January 1 to December 31, 2015. The Report preparation and content are the responsibility of Hydro-Québec. Our role consists in providing an independent opinion of this Report.

LEVEL OF ASSURANCE AND BASIS FOR OUR OPINION

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

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

ASSURANCE TEAM

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

ASSURANCE APPROACH

The assurance evaluation, conducted between January and March 2016, was based on the information collected and consisted of:

- Review of the sustainability-related strategies, policies, objectives, management systems and measurement and reporting procedures used by Hydro-Québec
- Interviews with managers in order to understand how Hydro-Québec deals with the key challenges of sustainability and how the concept of sustainability is implemented in the company
- Interviews with over 50 staff members to learn, among other things, what measures are implemented to facilitate dialogue with stakeholders and to understand the processes for collecting and presenting information about sustainability performance
- Review of the Report for any anomalies with regard to aspects that were verified
- Verification of over 400 data items selected from the Report by Hydro-Québec and examination of data processing procedures and supporting evidence
- Examination of the company's performance information to confirm that it concords with targeted indicators drawn from the standard disclosures in the GRI G4 guidelines.

Independent assurance

ADHERENCE TO THE AA1000 PRINCIPLES

Inclusivity: *Does Hydro-Québec have a system that enables dialogue with stakeholders regarding aspects of sustainability?*

Hydro-Québec has a number of processes that show its commitment to dialogue with its stakeholders, regarding both projects and more general issues. As planned, Hydro-Québec conducted a responsiveness workshop with stakeholders in fall 2015 that confirmed the reliability of the Materiality Analysis conducted in 2014.

Materiality: *Does Hydro-Québec provide material information on the significant issues relating to its stakeholders' interests?*

The process used to determine the aspects to report appears to be consistent with the organization's significant issues and its stakeholders' interests. It is based on the Materiality Analysis conducted in fall 2014. It also considers the recent responsiveness workshop in fall 2015.

Responsiveness: *Does Hydro-Québec have a system for responding to its stakeholders' concerns?*

In general, Hydro-Québec considers and responds to its stakeholders' concerns. The Report content has been reviewed to consider the results of the materiality matrix presented in this Report and the conclusion from the responsiveness workshop.

Quantitative information and conclusion

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

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

In conclusion, the assurance team considers that, based on the approach used, the information contained in the *Sustainability Report 2015* appears fair in all material respects and presents a reliable account of Hydro-Québec's sustainability performance during the period.

Montreal, March 23, 2016

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 reference to source</p> <p>Legal deposit – 2nd quarter 2016 Bibliothèque et Archives nationales du Québec ISBN 978-2-550-75329-2 (PDF)</p> <p>2015G425A</p> <p><i>Ce document est également publié en français.</i></p> <p>This is a translation of the original French text.</p>
\$'000	thousands of dollars	GW	gigawatt (one billion watts)	MMBtu	million British thermal units	
\$M	millions of dollars	Wh	watthour (a unit for measuring electric energy)	t	tonne (metric ton)	
\$B	billions of dollars	kWh	kilowatthour (one thousand watthours)	g CO₂ eq.	gram of CO ₂ equivalent	
V	volt (a unit for measuring voltage)	MWh	megawatthour (one million watthours)	t CO₂ eq.	tonne of CO ₂ equivalent	
kV	kilovolt (one thousand volts)	GWh	gigawatthour (one billion watthours)	kt CO₂ eq.	one thousand tonnes of CO ₂ equivalent	
W	watt (a unit for measuring power)			Mt CO₂ eq.	one million tonnes of CO ₂ equivalent	
kW	kilowatt (one thousand watts)			Mtoe	million TOE, million tonnes of oil equivalent	

