Our Commitment to the Future

Sustainability Report 2008

Hydro Québec

Hydro-Québec

Hydro-Québec generates, transmits and distributes electricity. Its sole shareholder is the Québec government. It uses mainly renewable generating options, in particular hydropower, and supports the development of wind energy through purchases from independent power producers. It also conducts research in energy-related fields such as energy efficiency. The company has four divisions:

Hydro-Québec Production generates power for the Québec market and sells its surpluses on wholesale markets. It is also active in arbitraging and purchase/resale transactions.

Hydro-Québec TransÉnergie operates the most extensive transmission system in North America for the benefit of customers inside and outside Québec.

Hydro-Québec Distribution provides Quebecers with a reliable supply of electricity. To meet needs beyond the annual heritage pool which Hydro-Québec Production is obligated to supply at a fixed price, it mainly uses a tendering process. It also encourages its customers to make efficient use of electricity.

Hydro-Québec Équipement and Société d'énergie de la Baie James, a subsidiary of Hydro-Québec, design, build and refurbish generation and transmission facilities, mainly for Hydro-Québec Production and Hydro-Québec TransÉnergie.

CONTENTS

On the cover: Tamaracks in the fall on the bank of the Eastmain, below Eastmain-1 spillway.

Opposite: 315-kV Chénier–Vignan line (Laurentides region).

Our Commitment to the Future

"The future of human prosperity depends on how successfully we tackle the two central energy challenges facing us today." This statement made by the International Energy Agency in its *World Energy Outlook 2008* urges industrialized countries to initiate nothing short of an "energy revolution" by adopting an approach focused on energy efficiency and renewable energies.

Hydro-Québec's vision of sustainability responds perfectly to this call to action. With our emphasis on energy efficiency, renewable energies and technological innovation, we have always been at the forefront of the global energy challenge. And now, as we work to fulfill our commitment to the future, the principles of sustainability remain an integral part of our management approach.

Message from the President and Chief Executive Officer

Sustainable development doesn't just happen. It calls for long-term commitment, painstaking effort and true dialogue with all stakeholders. That is why we strive to improve our performance every year, taking pride in the progress we have made but realizing how far we have yet to go. The *Sustainability Report 2008* takes stock of our record in this regard.

In 2008, we continued to develop our main source of renewable energy, hydroelectricity. The Romaine complex is a leading initiative in this direction. Designed to provide a lasting response to growing needs, it will have substantial spinoffs during a period that is expected to present tough economic challenges. To promote local development, we have therefore forged partnerships with the communities affected. This project stands as a model of sustainability, one that promises a bright future for the regions concerned and for the Québec economy as a whole.

At the same time, we broke new ground in harnessing wind power. Following a major tender call, Hydro-Québec selected 15 projects that will increase the province's wind capacity to 3,500 MW by 2015.

In addition, after comprehensive economic and safety studies, we decided to extend the service life of Gentilly-2 nuclear generating station. This facility has the advantage of contributing to the stability of Québec's power system without producing greenhouse gas emissions. The planned refurbishment will involve economic spinoffs of $600 million, one-third of which will be in the Mauricie and Centre-du-Québec regions.

Our energy efficiency programs generated savings of 1.1 TWh in 2008. This success is chiefly attributable to innovative initiatives tailored to our different categories of customers, such as the Go with the Flow campaign and the RECYC-FRIGO Environnement™ program. As a result, we surpassed our objectives for the fifth year in a row and are well positioned to reach our target of 11 TWh for 2015. There can be no denying that this is the way of the future, as energy efficiency will inevitably be part of the solution to the problem of global warming.

We are relying on our research institute and partnerships with university chairs to upgrade the performance of our facilities and enhance the potential of other renewables. We are especially proud of the research that has been conducted on wind forecasting and bringing wind farm output onto the grid.

Hydro-Québec is continuing to build tools to foster employee motivation, skills and loyalty. Our main challenge for the short and medium term remains the same, namely to prepare for an increasing number of retirements by developing a competent next generation of workers that reflects our modern, diverse society.

On the issue of global warming, the world community has finally moved beyond merely admitting that there is a problem. The energy debate now reflects the urgency of this planet-wide challenge. At the annual e8 summit, held in La Malbaie in 2008, the leading electricity companies in the G8 countries acknowledged that their industry must stabilize its CO_2 emissions. This admission means stepping up efforts in the areas of renewable energies, energy efficiency and technological innovation—three priorities that we share, as evidenced by the strategic objectives we are pursuing.

Hydro-Québec plans to uphold its contribution to preserving the natural heritage while ensuring that it can meet the energy needs of the present and of generations to come. That is our commitment to the future.

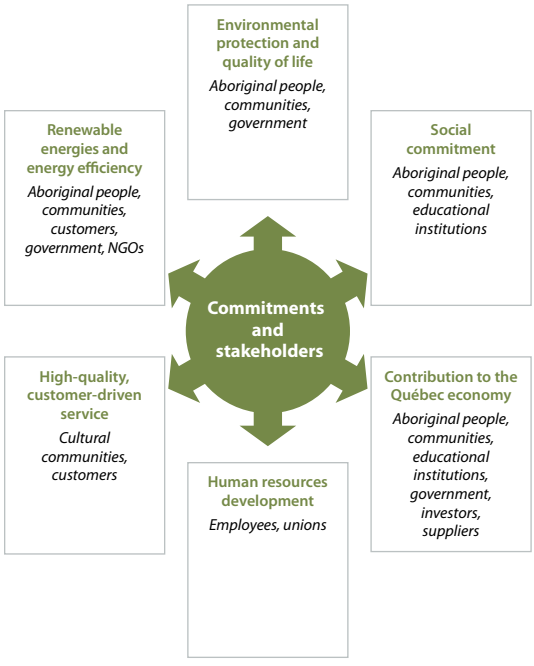
Thierry Vandal
President and Chief Executive Officer

About This Report

Objective

This is the seventh consecutive year that Hydro-Québec has published a detailed report of its environmental, economic and social performance, demonstrating the company's commitment to sustainability.

Our commitment to the future focuses on six main themes.



Scope

This report presents the main issues and impacts of Hydro-Québec's activities in Québec.

Communication tools

This publication is the company's main vehicle for reporting on its performance in terms of sustainability. However, readers can also consult other sources of information:

- A summary sheet briefly outlining Hydro-Québec's sustainability performance is available.
- A new version of the company's Web site on sustainable development provides further details (online as of May 2009):

W **www.hydroquebec.com/sustainable-development/index.html**

- The *Annual Report 2008* includes a section on sustainability and Hydro-Québec's achievements in this field.

Sound practices recognized by Canadian Business for Social Responsibility (CBSR)

In a study called *CSR TRENDS 2008, our 2nd comprehensive survey of sustainability report trends, benchmarks and best practices,* the non-governmental organization CBSR points out several sound practices implemented in Hydro-Québec's *Sustainability Report 2007:*

- Presentation of highlights by main areas of activity
- Map of the major Hydro-Québec facilities
- Grid presenting relations with stakeholders
- Use of the V symbol to indicate facts and figures verified by an independent firm

New features

To ensure that the Sustainability Report continues to improve, Hydro-Québec has introduced a few new features in this year's edition, most notably:

- The perspective of a senior Hydro-Québec manager on the company's implementation of a sustainable development approach
- A table presenting our *Sustainable Development Action Plan 2009–2013*
- New subsections and new performance indicators accompanied by multiyear objectives
- Hyperlinks, designated by the W symbol, leading to Web sites that provide additional information
- An invitation to comment on this report online (effective May 2009)

Collection, validation and verification

The Sustainability Report is published through the collaborative efforts of many people. The Groupe des Affaires corporatives et du secrétariat général is responsible for producing the report, including compiling and verifying information. The information contained in this report was provided by various Hydro-Québec associates, whom we wish to thank. The independent verification was performed by Intertek. Verified facts and figures are indicated by the symbol V.

GRI guidelines

This report draws on the Global Reporting Initiative (GRI) guidelines, which ensure the credibility and quality of the information disclosed. The GRI has checked that the report complies with application level B of its six-level guidelines. To learn more, readers can consult the partial GRI index on page 38 of this report or the complete index on Hydro-Québec's Web site:

W **www.hydroquebec.com/sustainable-development/gri/index.html**

Sustainability and Our Main Areas of Activity

GENERATION

Facts and figures

3,744 employees

64 generating facilities connected to the grid, including 58 hydropower stations (38 run-of-river)

26 large reservoirs

Revenue: $7.0 billion

Net income: $2.1 billion

2008 highlights

- Study of greenhouse gas emissions from Eastmain 1 reservoir: three years after reservoir impoundment, CO_2 and methane emissions have dropped to 214,000 tonnes of CO_2 equivalent and are now comparable to those emitted by natural aquatic environments.
- Romaine project: we signed three partnering agreements, one with the regional county municipality of Minganie, another with the Innu community of Nutashkuan, and a third with the Unamen Shipu and Pakua Shipi communities. We also reached an understanding in principle with the community of Ekuanitshit in October.
- Péribonka generating station: the last generating units were commissioned and the station was connected to the grid.
- Gentilly-2 nuclear generating station: we announced a refurbishment project that will extend the facility's service life until 2040 and we began preliminary work (engineering and procurement) for this project.

TRANSMISSION

Facts and figures

3,444 employees

33,058 km of lines

510 substations

163,063 ha of line rights-of-way to be maintained V

Numerous interconnections with our neighbors in Canada and the United States

Revenue: $2.8 billion

Net income: $481 million

2008 highlights

- Lévis substation: we invested close to $2 million to soundproof a synchronous condenser—a first for this type of equipment.
- Electric and magnetic fields: we published a report on the findings of a wide-ranging study (1990–2005) which concluded that electric and magnetic fields created by high-voltage 60-Hz lines do not have any harmful effects on the health or productivity of dairy cows.
- Montérégie loop: summary of the lessons learned from the 11 environmental follow-up studies on a major line loop project (735-kV Des-Cantons–Hertel line and 735/120-kV Montérégie substation). These studies were carried out between 1999 and 2008 to fulfill the commitments made by the company as part of the permitting process.

DISTRIBUTION AND CUSTOMER SERVICE

Facts and figures

8,385 employees

110,127 km of lines

3.3 million customers

Revenue: $10.6 billion

Net income: $421 million

2008 highlights

- 14,000 new residential hookups were completed underground (30% of the total).
- Energy Efficiency Plan: we surpassed our objectives for the fifth year in a row, with savings of 1.1 TWh, bringing total savings since 2003 to 3.4 TWh.
- Wind power: we awarded 15 contracts resulting from the 2005 tender call for 2,000 MW of wind power.
- Compact fluorescent lightbulbs: we published the results of a life cycle analysis which concludes that, in Québec, compact fluorescents have much less environmental impact than incandescent lightbulbs.
- Customer Information System: we rolled out the last phase of an integrated platform for our customer service operations.
- Low-income customers: 21,909 payment arrangements were reached, totaling $149.5 million V.

CONSTRUCTION

Facts and figures

1,566 employees

2 major projects currently under construction, totaling $6.0 billion and 1,056 MW

Hydropower projects: 4,217 construction jobs for contractors in 2008

Volume of activity: $2.4 billion in 2008

2008 highlights

- Romaine complex: the environmental impact statement was filed and public hearings were held.
- Eastmain-1-A/Sarcelle/Rupert: we continued an archæological dig program that has uncovered remains dating back 4,650 years.
- Chute-Allard and Rapides-des-Cœurs developments: the first four generating units were commissioned; the remaining eight will follow in 2009.
- Outardes-4 generating station: we completed a $194-million upgrade that increased the station's installed capacity to 763 MW.
- Interconnection with Ontario: we finished the 230-kV line to Ontario; construction of Outaouais substation is 80% complete.

TECHNOLOGICAL INNOVATION

Facts and figures

2,452 employees

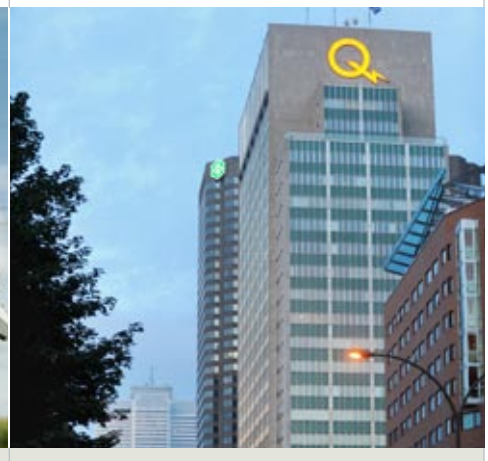
Activities: R&D, telecommunications and information technology

Annual budget of $100 million allocated to our research institute

2008 highlights

- In cooperation with Environment Canada, we conducted studies to characterize and forecast wind power generation in order to maximize output from this form of energy without adversely affecting the reliability of the transmission grid.
- We continued to develop management tools for balancing hydro and wind power, as well as models for simulating the behavior of wind turbines and wind farms connected to the Hydro-Québec grid.
- An agreement was reached between Hydro-Québec subsidiary TM4 and a subsidiary of the Indian automaker Tata Motors for the supply of 100 latest-generation electric motors.
- CATVAR project: we began the rollout of this technology designed to improve system performance through more precise voltage regulation. The target: 2 TWh in energy savings by 2015.
- We developed materials for manufacturing a lithium-ion battery for electric bicycles, scooters and wheelchairs, as well as plug-in hybrid cars and all-electric vehicles.

MANAGEMENT AND SUPPORT OF OUR BUSINESS UNITS



Facts and figures

3,325 employees

Activities: governance, accounting and control, procurement, building services, transportation services, human resources, community relations and communications, etc.

2008 highlights

- We have cut CO_2 emissions from our vehicle fleet by 2,423 tonnes since 2005, although the number of vehicles has increased.
- Pilot project: we installed an impervious catch area at our treated-wood storage facility in Trois-Rivières (Mauricie).
- We cut our consumption of photocopy and printer paper by 87 tonnes, saving the equivalent of 13,000 trees and 18 million litres of water.
- Donations and sponsorships totaled $25.9 million, including $3.5 million donated to United Way/Centraide (plus a $3.2-million contribution from employees, pensioners and directors).
- Seven collective agreements, covering 91% of our unionized employees, were renewed before their expiry date.

Message from the Executive Vice President, Corporate Affairs and Secretary General

Hydro-Québec opted for sustainability a long time ago. In fact, we have been integrating environmental concerns into our practices for 35 years and applying the principles associated with the three pillars of sustainable development to every stage in the planning and construction of our hydropower projects for over 10 years. Moreover, Hydro-Québec is one of the first Québec companies to publish a sustainability report based on the Global Reporting Initiative guidelines.

Today, our activities and infrastructure projects are imbued with a culture of sustainability founded on a solid system of governance. This system attaches particular importance to employee ethics, which are expressed in values such as respect for people and the environment. In tangible terms, this means that our employees must demonstrate exemplary judgment and behavior in performing their duties, including those related to the environment. For that reason, we are expending considerable efforts to increase their awareness of sustainability issues and provide them with the necessary training to apply the principles involved. We also encourage them to take more and more environmentally responsible steps in their daily activities, both individually and as a group.

In line with Québec's *Government Sustainable Development Strategy,* we have drawn up an initial Sustainable Development Action Plan for 2009 to 2013. Our plan details the actions we consider priorities, along with targets and indicators, to complement the government's approach. This report briefly outlines its content and presents its priorities as described in managers' own words.

We remain steadfast in our commitment to sustainability and are counting on our motivated workforce to build a better future.

Marie-José Nadeau
Executive Vice President, Corporate Affairs and Secretary General

Opposite: Mathieu Pronovost measures water levels at Baskatong reservoir.

Our Approach

Sustainability, a Corporate Culture

Hydro-Québec's choices, values, policies and guidelines reflect its culture of sustainability. Our hydroelectric development projects stand as a prime example of this. In order to go ahead, they must fulfill three criteria: they must be profitable, environmentally acceptable and favorably received by the host communities. We are also investing substantial resources in other renewable energies, energy efficiency and innovation, which are certain to play a key role in the fight against global warming. This responsible approach allows us to assure our customers of both a reliable supply of electricity and a better future at the same time.

Sustainable Development Action Plan

Alongside our management systems and internal coordination mechanisms, the *Sustainable Development Action Plan 2009–2013* is a new tool for achieving sustainability. It expresses our commitment to Québec's *Government Sustainable Development Strategy 2008–2013,* which came into effect on January 1, 2008.

W **www.hydroquebec.com/sustainable-development**

SUSTAINABLE DEVELOPMENT ACTION PLAN 2009–2013

Action	Target
Action 1: Implement hydropower projects and contribute to the development of wind power.	■ Increase generating capability by close to 10 TWh and capacity by 1,056 MW by completing projects already in progress. ■ Carry out the Romaine project.
Action 2: Increase the capacity of existing hydroelectric generating stations.	■ Optimize three existing stations to increase peak capacity by 54 MW.
Action 3: Step up energy efficiency initiatives.	■ Achieve savings of 11 TWh by 2015.
Action 4: Continue to help low-income customers.	■ Increase the number of payment arrangements with low-income customers.
Action 5: Reduce transport-related GHG emissions.	■ Raise the vehicle fleet GHG emission reduction target from 5% to 10% (compared to 2005).
Action 6: Promote reduction at source, reuse and recycling.	■ Improve the performance of administrative centres, substations and generating stations in terms of reduction at source and reclaiming of 10 types of residual materials, excess goods and residual hazardous materials by 2013.
Action 7: Establish specifications for sustainable procurement.	■ Implement sustainable specifications for five more commonly used products by 2013.
Action 8: Inform and educate employees regarding sustainability and the company's approach. Help employees learn to apply sustainability principles to their daily activities.	■ Educate 80% of employees by 2011, ensuring that 50% of that number have enough knowledge to incorporate these principles into their daily activities.
Action 9: Improve vegetation control methods on the distribution system to better protect biodiversity.	■ By the end of 2013, incorporate specific biodiversity reinforcement guidelines into 90% of planned vegetation control operations.
Action 10: Organize sustainable events and promote responsible management of events sponsored by Hydro-Québec.	■ Integrate, on average, 75% of the measures defined as sustainable when managing events organized by Hydro-Québec, by 2013.[a]

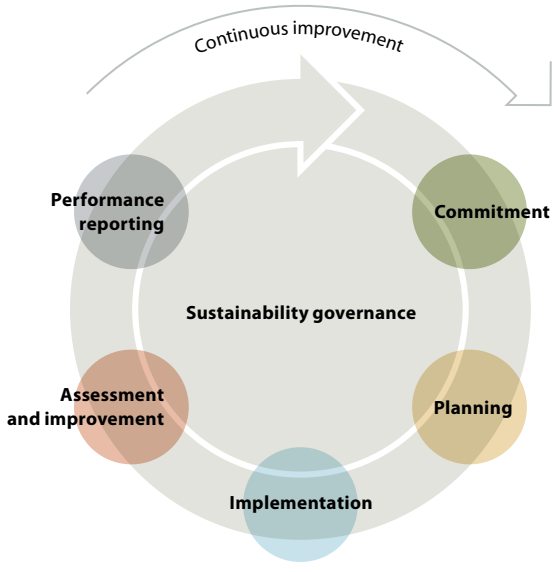
a) Twenty-five measures have been defined, covering all aspects of managing sustainable events.

Solidly established governance on all organizational levels

Hydro-Québec has reviewed its policies to take into account the changes in the industry and the challenges it is facing. Each of these policies expresses the company's commitments with regard to the main aspects of its operations: customers, employees, business partners, environment, finance, management, social role, assets, acquisitions and security. In addition, we have adopted a new financial disclosure policy to comply with the *Act respecting the governance of State-owned enterprises*. All our policies are available on our Web site.

www.hydroquebec.com/publications/en/policies/index.html

Hydro-Québec's policies establish the general principles related to its mission, vision and values. They lay out the commitments that are implemented in the company's guidelines, codes of conduct and other such tools. Various mechanisms, including our environmental management systems (ISO 14001) and quality management systems (ISO 9001), ensure that our policies are strictly applied. Sustainability governance affects all organizational levels.



COMMITMENT

Professional ethics

- Code of ethics for directors
- Code of conduct for employees

Corporate policies

- Our Acquisitions of Goods and Services
- Our Assets
- Our Customers
- Our Environment
- Our Finances
- Our Business Partners
- Our Management
- Our Human Resources
- Our Social Role
- Our Security
- Financial Disclosure

Guidelines

- Conditions involved in applying the Integrated Enhancement Program
- Environmental management systems
- Acquisition of goods and services, management of contracts
- Environmental acceptability and favorable reception of new projects
- Heritage and multiple uses of land
- Management of the company's art collection
- Community relations
- Etc.

PLANNING

Strategic Plan

Sustainable Development Action Plan

Division and group business plans

Corporate succession plan

IMPLEMENTATION

Management systems

- ISO 14001
- ISO 9001
- Etc.

Research

- Environment
- Renewable energies
- Energy efficiency

Internal coordination mechanisms

- Environment
- Health, safety and security
- Community relations
- Human resources
- Union leadership

Relations with external organizations

- Universities
- Municipal associations
- Union des producteurs agricoles (farm producers' union)
- Consumer associations
- Etc.

ASSESSMENT AND IMPROVEMENT

Environmental assessments

- Impact studies
- Internal assessment

Compliance auditing

- Health and safety audits
- Facility security audits
- Environmental audits
- Internal audits

Indicators

- Internal indicators
- Global Reporting Initiative

PERFORMANCE REPORTING

Internal

- Management reviews
- Report to the Board of Directors

External

- Sustainability Report
- Web site
- Annual Report
- Regional profile of Hydro-Québec's activities
- Financial Profile

Hydro-Québec and Stakeholders

A credible sustainable development approach must include ongoing relations with primary stakeholders.

Over the years, Hydro-Québec has developed a variety of effective collaborative mechanisms for gaining insight into its stakeholders' needs and concerns. The company's objective is to reconcile sometimes conflicting expectations, while remaining consistent in its activities and projects.

The following table presents a summary of these mechanisms and of the results achieved in 2008.

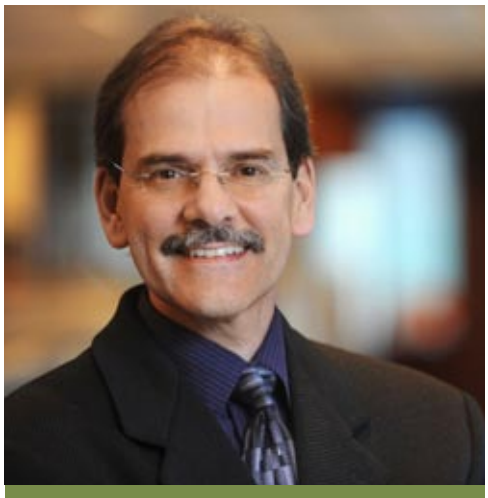
	Main collaborative mechanisms									
Stakeholders	Hydro-Québec and stakeholder committees	Agreements and partnerships	Specialized teams	Dispute settlement	External communications	Surveys and compilations of expectations	Financial support and expertise	Internal communications	Examples	2008 objectives and results
Communities, including Aboriginal	■	■	■	■	■	■	■		Liaison committees with municipal associations and the farm producers' union (Union des producteurs agricoles) Teams in charge of community and Aboriginal relations Support for local initiatives in connection with projects and other activities	Agreement with municipal associations (Fédération Québécoise des Municipalités and Québec Union of Municipalities) (p. 28) Fondation Hydro-Québec pour l'environnement (p. 29) Integrated enhancement initiatives (p. 28) Go with the Flow campaign (p. 15)
Customers	■	■	■	■	■	■			Table of customer expectations Survey of customer satisfaction Mechanism for handling complaints and claims Partnerships for the Energy Efficiency Plan	Customer concerns, expectations and priorities (p. 32) Customer satisfaction index (p. 33) Details of complaints, claims and appeals (p. 33) Large-power customer projects (p. 16) IDEAS and AVENUES projects (p. 16)
Educational institutions	■	■			■		■		Support for universities Conferences and educational resource kits Technological partnerships	Research on GHGs (p. 20) Funding of chairs and universities (p. 31) Studies with the CIRAIG (p. 25) Tools for increasing youth awareness (p. 30)
Employees	■	■		■		■		■	Employee satisfaction survey Corporate succession plan Workplace health and safety	Satisfaction index (p. 35) Number of new hires and retirements (p. 34) Work-related accident frequency (p. 35)
General public	■				■	■	■		Satisfaction and perception survey Web site and toll-free line (1 800 363-7443)	Satisfaction levels (p. 31) Call for comments (p. 41)
Governments	■	■	■		■		■		Partnerships and committees with various departments	Involvement in setting up the Québec network of protected areas (p. 23) Sustainable Development Action Plan (p. 8)
Investors	■		■		■		■		Periodic meetings with investors on results and risk management	Financial performance (p. 37)
Non-governmental organizations	■	■			■		■		Cooperation with consumer associations Donations and sponsorships	Low-income households working group (p. 33) Payment arrangements and other measures for low-income customers (p. 33) Breakdown of donations and sponsorships (p. 30)
Suppliers	■	■	■	■	■		■		Sustainable procurement Web site for suppliers Partnerships for the Energy Efficiency Plan	ECPAR partnership (p. 25) RECYC-FRIGO Environnement™ program (p. 15)
Unions	■	■		■				■	Collective agreements Joint training activities Joint committees on workplace health and safety	Early renewal of collective agreements (p. 35) Training on harassment prevention (p. 35)

Our Achievements

Our commitment to the future

- Ensure an energy future focused on renewables
- Contribute to the fight against global warming
- Be an agent of change in energy efficiency

Renewable Energies and Energy Efficiency



"At Hydro-Québec Distribution, we're conducting a number of projects to improve the performance of our grid and contribute to reaching the company's energy efficiency objectives. For example, the CATVAR system for voltage regulation and reactive power control will give us a better handle on the voltage supplied to our customers.

"For the CATVAR project, we'll be installing telemetric instruments and capacitors on the grid. These devices will help regulate the voltage at satellite substations according to customers' consumption profiles, thereby decreasing their consumption. For the past few years, in collaboration with our research institute, we have been testing this system at Pierre-Boucher substation, near Montréal. The results obtained thus far are promising.

"In the fall of 2009, we will be submitting a comprehensive project to the Régie de l'énergie for approval. Once we roll out the new system on a large scale, the energy savings could reach 2 TWh by 2015. That's how we are doing our part to fulfill Hydro-Québec's Energy Efficiency Plan and Sustainable Development Action Plan."

Denis Chartrand, Manager – System Strategies, Hydro-Québec Distribution

Given the urgent need to deal with global warming and the volatility of hydrocarbon prices, the whole world is turning to renewable energy solutions. Québec has long been a leader in this field, since water is used to generate 98% of the province's output.

Hydro-Québec's renewable-based energy strategy focuses on three main approaches: developing Québec's hydroelectric potential, integrating wind power and conducting research into new renewables.

On the energy efficiency front, Hydro-Québec is working with the Agence de l'efficacité énergétique to encourage customers to use energy more wisely. We are also increasing our efforts to improve our own energy performance.

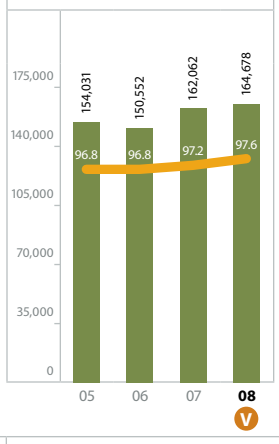
Meeting electricity needs

In 2008, there was a decline in demand which led us to revise our procurement strategies. However, according to the Distributor's 2008–2017 Electricity Supply Plan, the long-term energy needs of Quebecers remain at a high level. To slow the growth of electricity consumption, Hydro-Québec is turning to measures such as the Energy Efficiency Plan, which targets savings of 11 TWh by 2015. In 2009, Hydro-Québec Distribution will file an updated Electricity Supply Plan, which will take the current energy context into account.

Moreover, to handle short-term energy needs, Hydro-Québec uses various methods including bilateral agreements for the purchase of electricity (721 GWh in 2008 V). The company may also ask customers that have signed up for the interruptible electricity option to reduce their power demand during peak periods.

Previous page: Josée Cloutier and Sylvain Lacombe, power system electricians, at Delson substation in Montérégie

Hydroelectricity and total energy generated by Hydro-Québec



■ *Total net energy generated (GWh)*
● *Hydroelectricity/total net energy generated (%)*

Refitting at Outardes-4 generating station (Côte-Nord).

Water, a source of clean energy

Hydroelectricity accounts for 60% of Canada's power generation.[1] With 12% of the world's hydroelectric output, Canada ranks second, after China.[2] Hydro-Québec, North America's largest hydropower producer, is taking every possible step to ensure the energy security of Quebecers, while maintaining an enviable record in terms of atmospheric emissions. The company thus plays a key role in implementing Québec's energy strategy for 2006–2015.

2008 highlights

In addition to studying and carrying out numerous generating facility construction projects (Romaine complex, Eastmain-1-A/Sarcelle/Rupert project, Chute-Allard and Rapides-des-Cœurs developments[3]), Hydro-Québec has allotted $491 million to the refurbishment of generating stations including:

■ Outardes-4 (Côte-Nord): this project was designed to ensure the facility's long-term operability for the next 30 years and increase its capacity by 5% per generating unit, to a total of 763 MW. Spread over four years (2005–2008), the work cost $194 million.

■ La Tuque (Mauricie): phase II of this refurbishment and refitting project continued, with the commissioning of a second generating unit. The work will add 60 MW to peak capacity.

1. Statistics Canada – survey 2151.
2. *Key World Energy Statistics 2008*, International Energy Agency.
3. See projects and highlights, pages 18 and 19.

NET ELECTRICITY GENERATED AND PURCHASED BY HYDRO-QUÉBEC (GWH)

	2005	2006	2007	2008 V
Hydropower generated	149,119	145,730	157,477	160,792
Wind power generated	3.1	2.0	1.3	0.4
Hydropower purchased[a]	34,636	36,923	34,542	37,068
Biomass and waste reclamation power purchased	1,400	1,303	1,468	1,439
Wind power purchased[b]	413	421	666	810
Total renewables	**185,571**	**184,379**	**194,154**	**200,109**
Total energy generated	154,031	150,552	162,062	164,678
Total energy purchased	41,004	45,684	46,094	41,925
Total energy generated and purchased	**195,035**	**196,236**	**208,156**	**206,603**
Renewables/total energy generated and purchased (%)	**95**	**94**	**93**	**97**

a) Includes purchases from Churchill Falls (Labrador) Corporation and independent power producers, including McCormick.
b) Does not include wind energy purchases for which renewable energy certificates were sold to third parties.

OVERVIEW OF WIND POWER IN CANADA

- Ontario (781 MW)
- Québec (531 MW)
- Alberta (524 MW)
- Saskatchewan (171 MW)
- Manitoba (103 MW)
- Prince Edward Island (72 MW)
- Nova Scotia (61 MW)

Source: Canadian Wind Energy Association (CanWEA)

One of the 73 wind turbines at Carleton wind farm.

Hydro-Québec is counting on programs such as RECYC-FRIGO Environnement™ to cut residential consumption.

Wind power, a rapidly developing option

Canada is one of the 12 countries with over 2,000 MW in installed wind power capacity. In fact, wind power meets 1% of the nation's electricity needs. Ontario leads the way with 781 MW, followed by Québec with 531 MW. Under the contracts already awarded and upcoming tenders, Hydro-Québec will boost its wind power capacity to over 3,500 MW by 2015.

2008 highlights

- The Régie de l'énergie approved 15 contracts signed by Hydro-Québec following the 2005 call for 2,000 MW of wind power generated in Québec. The wind farms will come on stream between 2011 and 2015.
- Deliveries began (66 GWh of energy V) from Carleton wind farm (109.5 MW), the third of eight wind farms that will be commissioned in Gaspésie by the end of 2012 as a result of our first call for 1,000 MW. In 2008, contracts awarded under this tender call generated economic spinoffs of $128 million for the Gaspésie–Îles-de-la-Madeleine region.
- The first installments of a $31-million ecoENERGY grant for Baie-des-Sables wind farm were paid. Hydro-Québec will receive $23 million of this total. This federal government support is intended to make wind power more competitive.
- At its 24th annual conference and trade show, the Canadian Wind Energy Association (CanWEA) presented its Group Leadership Award to Hydro-Québec. As CanWEA noted during the awards ceremony, "the government-owned business corporation demonstrated exemplary integrity, rigor and transparency in its contract awarding process" for 2,005 MW of wind power.
- In cooperation with Environment Canada, we conducted studies to characterize and forecast wind power generation in order to maximize output from this energy source without adversely affecting the reliability of the transmission grid.
- We continued to develop management tools for balancing hydro and wind power, as well as models for simulating the behavior of wind turbines and wind farms connected to the Hydro-Québec grid.

ENERGY EFFICIENCY PLAN (GWH)

	Target				Actual[a]			
	2005	2006	2007	2008 V	2005	2006	2007	2008 V
Energy Savings[b]	321	523	661	745	447	710	915	1,081
Residential customers	138	257	301	352	244	366	372	419
Business customers	104	126	191	222	57	157	197	232
Large-power customers	79	140	170	171	146	187	346	430

a) May be adjusted following program evaluation.
b) Overall total and sum of subtotals may differ due to rounding.

New renewable energies

Hydro-Québec takes an active interest in other renewables such as biomass, geothermal and solar energy. We are also contributing to research on new generating options such as hydrokinetic power, salinity gradient power and deep geothermal energy.

2008 highlights

- We purchased 271 GWh of output from the Kruger (19 MW) and Bowater Canadian Forest Products (20 MW) biomass cogeneration plants V.
- Deliveries began (3 GWh V) from the 8-MW Tembec forest biomass cogeneration plant.
- A polysilicon plant is planned for Bécancour (Centre-du-Québec). Polysilicon is the primary material used in solar panel construction. The active involvement of Hydro-Québec and its partners helped convince the Norwegian company Renewable Energy Corporation to choose Bécancour out of approximately one hundred locations in 16 different countries.
- We evaluated the performance of solar water heaters under real conditions to determine best practices for installation and operation, and analyze specific features and potential problems.
- Our research institute acquired three different geothermal systems in order to analyze their performance in the Québec context. The three designs are a standing column well system, a closed loop system and a direct expansion system.

Energy efficiency, first and foremost

In 2003, Hydro-Québec launched an ambitious Energy Efficiency Plan designed to slow the growth of electricity consumption. In 2008, for the fifth year in a row, we surpassed our objectives with savings of 1.1 TWh, bringing total savings to 76% of the 2009 target of 4.5 TWh. The 2010 and 2015 targets are 5.8 TWh and 11.0 TWh, respectively.

W **www.hydroquebec.com/energywise/index.html**

Residential customers

- We introduced the RECYC-FRIGO Environnement™ program, under which close to 66,500 old refrigerators and freezers V were collected to be recycled in an environmentally responsible way. This program was established in partnership with Recyclage ÉcoSolutions, which operates the only plant of its kind in North America. Our objective: savings of 180 GWh V over three years, equivalent to the consumption of 10,500 households that heat with electricity.
- Go with the Flow campaign: 230 communities have participated in this program since its launch in 2007. Hydro-Québec provides financial support for community projects proposed by municipalities (improving sports and recreation facilities, creating bicycle paths, renovating community halls, etc.). In exchange, the municipalities help promote the ENERGY WISE Home Diagnostic. The Go with the Flow campaign will reach all 17 of Québec's administrative regions by 2010. Targeted regions in 2008: Mauricie, Laval, Centre-du-Québec and Montréal.

ENERGY EFFICIENCY PROGRAMS – CUSTOMER CATEGORIES[a]

	2005	2006	2007	2008
Residential customers (ENERGY STAR® qualified products)				
Electronic thermostats (number)	843,780	1,055,503	1,036,115	824,391
Pool filter timers (number)	84,170	165,685	181,774	209,546
Household appliances – Washers and refrigerators (number)	–	46,409	152,737	183,787
Lighting – Compact fluorescent lightbulbs (number)	10,263	1,696,130	3,375,387	1,618,071
Residential customers (other)				
Home Diagnostic questionnaires (number)	263,978	227,119	39,450[b]	93,438
Recovered refrigerators and freezers (number)	–	–	–	66,493
Business customers				
Empower programs (number of projects submitted)	525	636	795	752
Large-power customers				
Industrial Analysis and Demonstration Program (number of projects accepted)	42	53	22	23
Industrial Initiatives Program (number of projects accepted)	152	157	109	82
Building Initiatives Program (number of projects accepted)	33	65	51	40

a) May be adjusted following program evaluation.
b) Drop due to program overhaul.
® ENERGY STAR is an official trademark, used under licence.

Installing equipment for the CATVAR project.

Ferme Carmel, a member of Groupe Dynaco, earned an ENERGY WISE citation of excellence when it replaced the infrared lamps in its hog farm with energy-efficient heat pads.

AN ACKNOWLEDGED LEADER IN ENERGY EFFICIENCY

For the second year in a row, the Canadian government presented Hydro-Québec with two ENERGY STAR® Market Transformation Awards: Utility of the Year (provincial level), for the overall excellence of the ENERGY WISE Program, and Promotional Campaign of the Year, to recognize the quality of the company's promotional initiatives for ENERGY STAR® qualified household appliances and efficient lighting.

■ Hydro-Québec supported the creation of the Fonds RecycFluo, which helps municipalities and RCMs (regional county municipalities) take advantage of the separate collection of compact fluorescents, a service set up by the Fédération Québécoise des Municipalités and Peintures Récupérées du Québec.

Business and large-power customers

■ Some 144 efficiency projects were implemented, generating total savings of 430 GWh. To date, 81% of customers in this category have participated in at least one of our efficiency programs V.

■ We awarded grants for 634 projects under the Empower programs for Building Optimization and for Industrial Systems. These projects yielded savings of 191 GWh, out of the 232-GWh total for business customers V.

■ We added a new section to our Industrial Analysis and Demonstration Program and our Building Initiatives Program (pending approval from the Régie de l'énergie). This section is designed to support the purchase and installation of instruments for continuous measurement of power consumption. Our objective: encourage the development of an energy efficiency culture.

■ The Energy Savers' Circle welcomed 12 new members. These large-power customers took steps to cut their electricity consumption by at least 5%, or to save at least 50 GWh per year, through energy efficiency programs.

■ The ENERGY WISE Awards of Excellence were given out at a ceremony that took place in Montréal in September. Hydro-Québec established these awards to recognize the efforts of customers and business partners that post outstanding achievements in energy efficiency.

■ Hydro-Québec paid out $1.3 million to IBM Canada (Bromont plant) and $825,000 to SGL Canada (Lachute plant) for efficiency projects that generated savings of 20 GWh, representing the annual consumption of 1,200 households.

Technological and industrial innovations

■ As part of the CATVAR project, we tested two technologies: remotely controlled capacitor banks and a reactive power control system that automatically adjusts the output voltage at satellite substations. Hydro-Québec plans to use these technologies on some of the lines in its grid starting in 2010, leading to energy savings of 2 TWh by 2015.

■ To develop new energy efficiency markets, we established many partnerships through our IDEAS and AVENUES programs. Example of an AVENUE project: promotion of the Power Pipe System—which recovers heat from grey water—to real estate developers and new-home builders.

Major Hydro-Québec Facilities

GENERATING FACILITIES – 2008

Facilities	Number	MW	Net output (GWh) V
Hydroelectric generating stations[a]	59	34,118	160,792 (97.6%)
Nuclear generating station	1	675	3,624 (2.2%)
Thermal generating stations[a]	27	1,634	261 (0.2%)
Wind farm	1	2	0.4 (0.0%)
Total	**88**	**36,429**	**164,678 (100%)**

a) One hydroelectric generating station and 23 of the 27 thermal generating stations are not connected to the main grid.
Note: Hydro-Québec also has access to almost all the output from Churchill Falls (5,428 MW).

Development Projects

ROMAINE COMPLEX

Project description

Status: under approval

Cost: $6.5 billion

Region: Côte-Nord

Construction: 2009–2020

Installed capacity: 1,550 MW

Annual output: 8.0 TWh

Economic spinoffs: $3.5 billion for Québec as a whole, including $1.3 billion for Côte-Nord

Jobs created: 33,410 person-years

Complete project fact sheet:
W **www.hydroquebec.com/romaine/index.html** (Available in French only)

2008 highlights

- The environmental impact statement and related studies were filed. Cost of studies: $145 million.
- A joint federal-provincial review panel and a fact-finding committee of the Bureau d'audiences publiques sur l'environnement held a hearing on the project (October and December).
- Partnering agreements signed:
  - RCM of Minganie (January)
  - Innu community of Nutashkuan (July)
  - Innu communities of Pakua Shipi and Unamen Shipu (October)
- We reached an understanding in principle with the Innu community of Ekuanitshit (October).

EASTMAIN-1-A/SARCELLE/ RUPERT PROJECT

Project description

Status: under construction

Cost: $5.0 billion

Region: Nord-du-Québec

Construction: 2007–2012

Installed capacity: 918 MW

Annual output: 8.7 TWh

Economic spinoffs: $2.9 billion for Québec as a whole, including $640 million for Nord-du-Québec

Complete project fact sheet:
W **www.hydroquebec.com/rupert/en/index.html**

2008 highlights

- Jobs created: 4,023 person-years; 12% of the workforce is Cree.
- Total expenditure: $963 million.
- Regional expenditure: $335 million.
- We continued the archæological inventories begun in 2002:
  - Digs went on at 45 locations, making this the largest archæological site in Québec; we uncovered remains dating back 4,650 years.
- Mitigation measures:
  - Rivière Rupert: 200,000 lake sturgeon eggs were fertilized, and 9,700 larvae and 9,100 fry were released.
- Environmental follow-up and monitoring:
  - Caribou tracking: 6,632 caribou are being monitored in a 9,842-km^2 zone. This high density confirms that migratory caribou are present.
  - Traditional fishing is being maintained: we monitored the upstream migration of lake cisco and recorded 20,000 catches through voluntary reporting.

CHUTE-ALLARD AND RAPIDE-DES-CŒURS DEVELOPMENTS

Project description

Status: partly commissioned

Cost: $1.0 billion

Region: Mauricie

Construction: 2005–2009

Installed capacity: 138 MW

Annual output: 0.9 TWh

Complete project fact sheet:
W **www.hydroquebec.com/cardc/index.html** (Available in French only)

2008 highlights

- Jobs created: 493 person-years; Aboriginals accounted for 10% of the workforce.
- Total expenditure: $213 million.
- Regional expenditure: $39 million.
- The first generating units were commissioned.
- The jobsite committee met with Wemotaci village representatives to maximize the number of contracts and jobs awarded to Attikameks.
- Wemotaci was connected to the Hydro-Québec grid. Before this, the village was supplied by a diesel generating station.
- Environmental follow-up studies:
  - Components of the human environment: hunting and fishing by jobsite workers, sport fishing, outfitters' activities, controlled harvesting zones and cottagers.
  - Components of the biophysical environment: spawning grounds developed for brook trout, vegetation and water quality at Wemotaci's old in-trench disposal site.
- Environmental follow-up study for 230-kV line project:
  - Verification of the presence of walleye and pike in four streams during spring spawning.

PÉRIBONKA DEVELOPMENT

Project description

Status: in operation

Cost: $1.4 billion

Region: Saguenay–Lac-Saint-Jean

Construction: 2004–2008

Installed capacity: 385 MW

Annual output: 2.2 TWh

Jobs created: 3,077 person-years

Complete project fact sheet:
www.hydroquebec.com/peribonka/index.html (Available in French only)

2008 highlights

- Upward revision of estimated regional economic spinoffs: $557 million (initial estimate: $345 million).
- Total expenditure: $61.0 million.
- Regional expenditure: $29.6 million.
- January 31: the second generating unit was commissioned.
- March 9: commissioning was completed and the station was connected to the grid.
- Mitigation measures:
  - A borrow pit was turned into 40 hectares of wetlands with the creation of small bays, installation of 60 nest boxes for tree-nesting ducks, transplanting and seeding of aquatic and land plants, and planting of shrubs and spruce.
  - Improvement of a lake trout enhancement program: juveniles and spawners are being introduced, and two spawning grounds are to be stocked with a minimum of 100,000 eggs per year. Telemetric monitoring is in progress.
- Environmental follow-up studies: waterfowl and raptors, reservoir and wetland riparian habitats, spawning grounds (brook trout, walleye, whitefish and lake trout).

GENTILLY-2 NUCLEAR GENERATING STATION

Project description

Status:

- Part I – Construction of solid radioactive waste management facilities (SRWMF): phase I completed
- Part II – Refurbishment of generating station: engineering and procurement in progress

Cost: $1.9 billion

Region: Centre-du-Québec

Refurbishment: 2011–2012

Installed capacity: 675 MW

Annual output: 5 TWh

Economic spinoffs: $600 million for Québec as a whole, one-third of it for Mauricie and Centre-du-Québec

Jobs created for part I (SRWMF), phase I of the project: 58 in 2007 and 2008

Complete project fact sheet:
www.hydroquebec.com/gentilly-2/index.html (Available in French only)

2008 highlights

PART I

- Phase I of the construction of the solid radioactive waste management facilities was completed.
- The 17 storage bays were finished.
- Equipment was installed for sampling and environmental monitoring in the storage area.

PART II

- The decision to proceed with the refurbishment of the generating station in order to extend its service life to 2040 was announced in August.
- Engineering and procurement for the project began.

INTERCONNECTION WITH ONTARIO

Project description

Status:

- Part I – Outaouais substation: 80% complete
  – 230-kV line to Ontario: finished
- Part II – 315-kV Chénier–Outaouais line (approximately 115 km): land clearing began in February 2009

Cost: $684 million

Region: Outaouais

Construction:

- Part I: 2007–2009
- Part II: 2009–2010

Interchange capacity: 1,250 MW

Complete project fact sheet:
www.hydroquebec.com/interconnexion/index.html (Available in French only)

2008 highlights

PART I:

- 105,354 tonnes of rock was stored on-site and reused for grading and for building the embankment, thereby avoiding 7,000 heavy-vehicle trips. As a result,
  - GHG emissions and noise were lessened, and
  - the visual impact of the facilities was reduced.

PART II:

- Public hearings were held (June and July).
- A supplement to the environmental impact statement was filed (plant species and wetlands).

Our commitment to the future

- Reduce the environmental footprint of our projects and activities
- Integrate our facilities with the environment
- Improve our sustainable practices

Environmental Protection and Quality of Life

"We know that ground transportation accounts for 40% of greenhouse gas emissions in Québec. That's why we introduced an environmental program for our vehicle fleet several years ago.

"Our environmental program uses various measures to reduce transportation-related GHG emissions. For example, we have an ongoing employee education program that shows people how to drive their vehicles in an environmentally responsible manner. We also purchase vehicles that consume less fuel and, when possible, we replace certain conventional vehicles with electric or hybrid models. Recently, we upped our GHG reduction objective to 10% from the 5% originally set in the program.

"In this way, we are contributing to the goals of the Québec Energy Strategy, the Québec government Climate Change Action Plan and the Hydro-Québec Sustainable Development Action Plan 2009–2013."

Daniel Lemay, Manager – Rolling Stock, Groupe des ressources humaines et des services partagés

As a responsible corporate citizen, Hydro-Québec strives to control the environmental impact of its activities. Reduction of atmospheric emissions (especially greenhouse gases), soil and water conservation, biodiversity protection, integration of facilities with their surroundings, reduction at source, reuse, recycling: the effort extends to all aspects of our environmental footprint.

In addition, impact studies are conducted for construction projects that are likely to affect the biophysical and human environments; mitigation, compensation and follow-up measures are also developed. To ensure that its actions are effective, Hydro-Québec counts on ISO 14001–certified environmental management systems.

Global warming, a planet-wide challenge

Greenhouse gas and power generation

Greenhouse gas (GHG) emissions rose 1.6% in Québec between 1990 and 2006, while they shot up 63% in Saskatchewan, 36% in Alberta and 27.4% in British Columbia.[1]

During the same period, GHG emissions in the Québec electricity industry fell 70.6% to 0.43 million tonnes of carbon dioxide equivalent (Mt CO_2 eq.). Because of the predominance of hydropower, the electricity industry accounted for only 0.5% of Québec's GHG emissions in 2006.

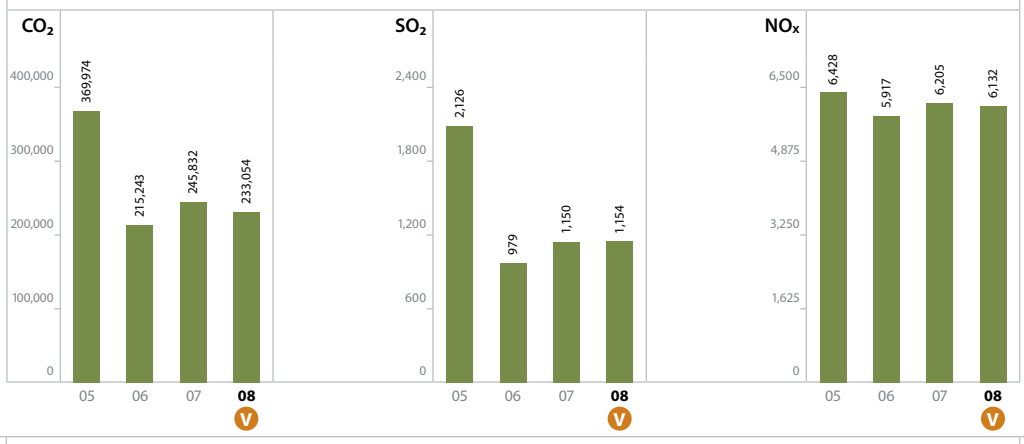
Hydro-Québec is involved in various GHG and global-warming research projects. For example, the company participates in the Ouranos consortium's regional climatology research and is collaborating in a wide-ranging study of GHG emissions from Eastmain 1 reservoir. Conducted by McGill University, the Université du Québec à Montréal, Environment Canada and Environnement Illimité, this study will continue until 2012.

2008 Highlights

- Atmospheric emissions from Hydro-Québec's generating operations produced 43 times less CO_2, 38 times less SO_2 and 20 times less NO_x than the average for the neighboring provinces and states in Canada and the U.S.
- CO_2 and NO_x emissions were reduced because the Tracy thermal power plant (Montérégie) was used less than in 2007, generating 39% less output.

1. *Inventaire québécois des émissions de gaz à effet de serre en 2006 et leur évolution depuis 1990,* Ministère du Développement durable, de l'Environnement et des Parcs, 2008.

Atmospheric emissions from Hydro-Québec thermal generation operations (tonnes)[a]



a) Most of our emissions are from thermal generating stations supplying off-grid systems.

REFURBISHMENT OF GENTILLY-2 NUCLEAR GENERATING STATION

Located on the St. Lawrence River, Gentilly-2 generating station was commissioned in 1983. The only nuclear power plant in Québec, Gentilly-2 adds to the diversity and security of the province's power supply. In August 2008, Hydro-Québec announced its decision to refurbish this generating station and extend its service life until 2040. Nuclear power generation does not cause any greenhouse gas emissions.

ANNUAL *DÉFI CLIMAT* CAMPAIGN

As part of the annual *Défi Climat* campaign, about 900 employees pledged to reduce CO_2 emissions by taking such steps as planting trees, buying ENERGY STAR® qualified appliances and shopping for locally grown food.

■ SO_2 emissions rose owing to the use of a fuel with a higher sulphur content than in 2007, though still below the legal limit, at Cap-aux-Meules thermal generating station (Gaspésie–Îles-de-la-Madeleine).

■ Eastmain 1 reservoir (Nord-du-Québec): an ongoing major research project is compiling data on net GHG emissions in order to determine the difference between emissions from natural environments (lakes, forests, peatlands, and so on) and those from a reservoir over a 100-year period. This project, a continuation of research that Hydro-Québec began in 1993 on gross GHG emissions from its reservoirs, is seeking to understand the mechanisms involved in this phenomenon and characterize changes, based on rigorous scientific methodology. Funded jointly with the Canadian Foundation for Climate and Atmosphere Sciences and conducted in conjunction with UQAM, McGill University, Environment Canada and Environnement Illimité, the study will continue until 2012. The results will be known in 2010–2011. In 2008, gross emissions from the reservoir fell for the second consecutive year to 214,000 t CO_2 eq., a decline of 44% from 2007 and 76% from 2006. Three years after reservoir impoundment, gross CO_2 emissions are comparable to those from natural aquatic environments. This indicates that the "reservoir effect" lasts less than 10 years. The preliminary findings of all the studies to date show that GHG emissions from Québec reservoirs are 35 to 300 times lower than those from thermal power plants of equivalent capacity. For more information, visit the project Web site:
W **www.eastmain1.org/en**

Greenhouse gas and ground transportation

Hydro-Québec has implemented various measures to reduce GHG emissions from employees' business-related overland travel.

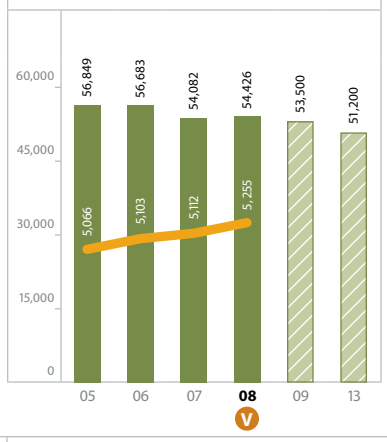
2008 highlights

■ We have cut CO_2 emissions from our vehicle fleet by 2,423 tonnes since 2005, despite the increase in the number of vehicles.

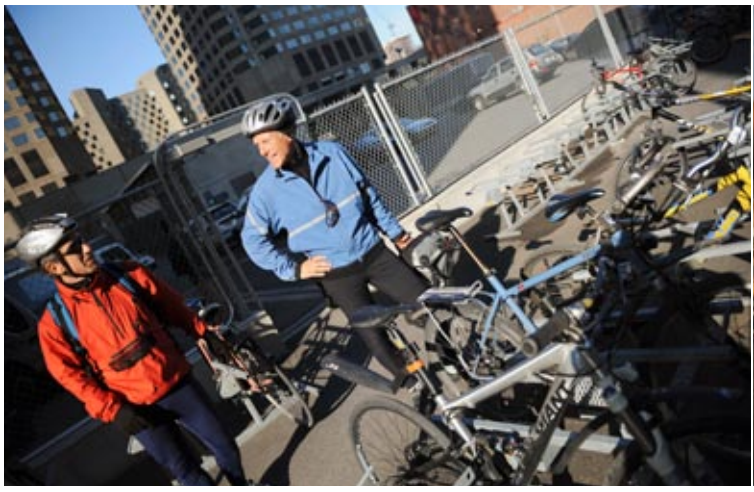
■ We replaced 151 light-duty vehicles, or 40% of light-duty vehicles replaced during the year, with more energy-efficient models. The result is a 111,500-litre reduction in fuel consumption and a 263-tonne reduction in CO_2 emissions.

■ All workers on Hydro-Québec construction sites received awareness training on the environmental impact of vehicle idling.

CO_2 emissions from Hydro-Québec's vehicle fleet



- *Total CO_2 emissions from the vehicle fleet (tonnes)*
- *Total number of vehicles*
- *Target*



Every year for the last three years, as part of the *allégo* initiative, a growing number of Hydro-Québec employees have taken advantage of incentives that encourage them to use public transit, carpooling and active modes of transportation to get to work.

■ A survey of transportation habits showed that only 37% of our employees usually commute to work in single-occupant cars.

■ Our research institute has developed materials for the manufacture of a lithium-ion battery for electric scooters, plug-in hybrid cars, all-electric cars and other vehicles.

Environmental compliance: A priority

In 1997, Hydro-Québec made a commitment to implement an environmental management system (EMS) in units whose operations have a significant impact on the environment. In 2008, the work of 18,228 employees V was governed by eight EMS programs. The company ensures compliance with environmental legislation in various ways.

2008 highlights

■ The number of noncompliance notices fell to 24 in 2008 from 32 in 2007, despite intensive construction. No serious violations were reported. Only five notices involved noncompliance with the conditions in authorization certificates issued by the Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP). To put this figure in perspective, the MDDEP issued 1,200 authorization certificates for the Eastmain-1-A/Sarcelle/Rupert project.

■ The action plan to reduce the use of ozone-depleting substances (ODS) continued; this plan was implemented even before provincial legislation was introduced. The total reduction since 2002 is 46%.

Soil and groundwater management

Hydro-Québec owns many properties throughout the province. Some of them are contaminated, particularly sites inherited from power utilities in operation before electricity was nationalized in 1963. In compliance with the principle of due diligence, Hydro-Québec adopted a management strategy to reduce the possible impact of its facilities on the environment and human health, and conducted an inventory of potentially contaminated sites. To date, rehabilitation is planned for 130 sites and 60 others are being studied. A number of rehabilitation projects are being carried out by the company's divisions and groups. In 2008, investigations, rehabilitation and follow-up were performed at various sites: treated-pole storage yards, fueling stations, and generating stations and substations.

2008 highlights

■ In a pilot project, we installed an impervious catch area at our treated-wood storage facility in Trois-Rivières (Mauricie) to test technologies that will support compliance with MDDEP requirements.

■ Groundwater quality monitoring continued at a vacant property on Verdun Street in the city of Québec (2000–2010, Capitale-Nationale), at Cap-aux-Meules thermal generating station (2007–2010, Gaspésie–Îles-de-la-Madeleine) and at Clova thermal power plant (2007–2012, Mauricie), among other sites.

■ Follow-up for the Tréfart telecommunications site rehabilitation project (Nord-du-Québec) included two sampling surveys in July and November that revealed a decrease in hydrocarbon concentrations in soil that had undergone a passive biological treatment in 2002.

New facility for storing treated wood in Trois-Rivières, in which a catch area collects runoff potentially contaminated with wood preservatives.

Aboriginal worker releasing juvenile lake sturgeon into the Rivière Rupert.

Great horned owls in an artificial nest erected near Hydro-Québec's telecommunications system.

Managing water, a shared resource

Protecting water means preserving its quality and uses. It also involves preserving the natural conditions, banks and watersheds of the rivers used in the company's operations.

2008 highlights

■ The environmental follow-up program on the Portneuf and Sault aux Cochons partial diversions and the Sainte-Marguerite-3 and Toulnustouc hydroelectric developments (Côte-Nord) continued. Studies were conducted on access to the territory (Toulnustouc) and navigation conditions on the Portneuf and Sault aux Cochons rivers.

■ We mapped the components of the biophysical and human environments in the upper St. Lawrence basin (Montréal), including boat ramps, spawning grounds and cottages. The map will enable Hydro-Québec to improve its response to the concerns of the area's users in connection with facility management.

■ Implementation of flow and level management in Gouin reservoir will reduce erosion and facilitate recreational and commercial activities.

Protecting ecosystems and biodiversity

Generation, transmission and distribution facilities can have an impact on wildlife, vegetation and their diversity. Sometimes, however, the rights-of-way of Hydro-Québec facilities actually protect or restore biodiversity. The western chorus frog, for example, finds refuge in transmission line rights-of-way.

2008 highlights

■ A report was published on the findings of a wide-ranging study conducted from 1990 to 2005 on the impact of electric and magnetic fields (EMFs) on dairy cows. This study by McGill University, the Conseil des recherches en pêche et en agroalimentaire du Québec and the Medical Research Council of Canada concluded that exposure to EMFs from high-voltage 60-Hz lines does not affect the cows' productivity or health.

www.hydroquebec.com/learning/champs/index.html

■ Mercury: a new method for assessing the risk of mercury exposure from consumption of fish caught in hydroelectric reservoirs was developed in cooperation with Health Canada and the North Shore Health and Social Services Agency. When applied to the Romaine project, this method showed that the increase in fish mercury levels will not add to the health risk for local residents.

www.hydroquebec.com/sustainable-development/documentation/mercure.html

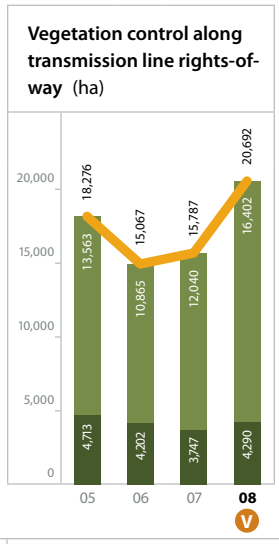
Protected areas and species

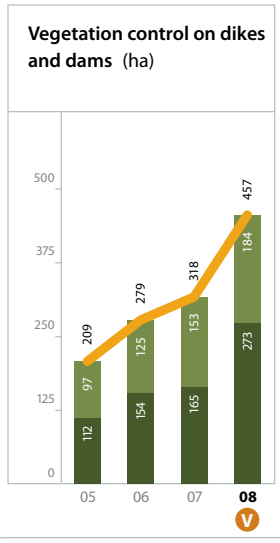
Hydro-Québec is playing an active role in the restoration of a number of species designated as threatened or vulnerable in Québec, in keeping with a biodiversity strategy adopted in 2006. The company is also helping to create a network of protected areas in Québec and participating in an analysis of areas likely to obtain this status.

2008 highlights

■ Through our membership in various committees, we are involved in restoring the western chorus frog, Blanding's turtle, common musk turtle, minnows and small perch, raptors, American shad and American eel.

■ A great horned owl nest was moved during work on the telecommunications system (Abitibi-Témiscamingue): two owls were hatched in the artificial nest.





- *Area treated mechanically*
- *Area treated selectively with herbicides*
- *Total area treated*

- *Area treated mechanically*
- *Area treated selectively with herbicides*
- *Total area treated*

Protecting heritage: distribution line undergrounding (0.7 km) in St-Denis-sur-Richelieu.

■ Ongoing monitoring of fish passes at Beauharnois generating station and Chambly dam showed that 87,942 eels migrated through the fish pass on the western side of the generating station, the best result since monitoring began in 1994. An additional 811 eels used the fish pass on the eastern side. At Chambly dam, 3,333 eels used the pass in 2008, the fourth-best result since 1998.

■ Plant cover at the Shawinigan complex is to be rehabilitated following completion of a refurbishment project (Mauricie): the plantings designed by renowned landscape architect Frederick Law Olmsted will be restored to their original state.

■ A pilot project to bolster biodiversity in distribution line rights-of-way made on-site use of waste materials from land clearing to create microhabitats for several species, which will benefit from the preservation of some dead trees (snags) as they break down. Objective: 90% of vegetation control operations will incorporate biodiversity protection measures by 2013.

Vegetation control

To optimize operations and safety, Hydro-Québec controls vegetation around its facilities. The company promotes the use of the best possible method for each site, which sometimes involves the rational application of herbicides. Studies have shown that this approach encourages the growth and maintenance of vegetation that is compatible with transmission system operation. Hydro-Québec nevertheless is continuing to look at alternatives to herbicides. No herbicides are used in distribution system maintenance.

www.hydroquebec.com/vegetation/en/index.html

2008 highlights

■ A research project, begun in 2006 and now complete, showed that dolomitic limestone is not effective in preventing switchyards from being overrun by incompatible vegetation.

■ A study undertaken in 2005 to test the performance of a biological herbicide developed by the University of Victoria concluded that this product, as currently formulated, is not effective against incompatible vegetation in Hydro-Québec transmission line rights-of-way.

■ A Web site on vegetation control contains information on Hydro-Québec pruning operations, as well as tips and standards *(The Right Tree in the Right Place)* and frequently asked questions.

www.hydroquebec.com/trees/index.html

Land use and respect for the environment and communities

Electricity generation, transmission and distribution involve the construction and maintenance of large-scale facilities: transmission lines, substations, dikes and dams, and more. To prevent land-use conflicts, Hydro-Québec consults the people living near its facilities and encourages secondary uses of some of its properties.

The company endeavors to integrate its facilities with their surroundings and preserve the quality of life for nearby residents.

2008 highlights

■ Montérégie loop: we published a summary of the lessons learned from the 11 environmental follow-up studies on a major line loop project (735-kV Des-Cantons–Hertel line and 735/120-kV Montérégie substation); these studies were carried out between 1999 and 2008 to fulfill the commitments made as part of the permitting process.

■ A synchronous condenser was soundproofed to reduce noise from Lévis substation. This project, costing nearly $2 million, was a technological first and a major challenge because it involved building an acoustic housing with a roof over hydrogen-cooled equipment. The condenser noise level was lowered by 16 dBA; with minor adjustments, the reduction should reach 20 dBA in 2009. The project was an important step in an action plan to improve the quality of life in this neighborhood.

■ We signed 25 agreements allowing our rights-of-way to be used for other purposes, such as road building, creation of public parks and gardens, and construction of park-and-ride facilities to encourage public transit.

■ Over 9 km of lines were undergrounded as part of the government program for overhead distribution systems in heritage, cultural and tourist sites.

Sustainability, an important value

As a major purchaser of goods and services, and a promoter of technology, Hydro-Québec has incorporated sustainability into its practices. Its partnership with the International Chair in Life Cycle Assessment, established by the Interuniversity Research Centre for the Life Cycle of Products, Processes and Services (CIRAIG), is an example.

2008 highlights

■ We published the results of a life cycle assessment of compact fluorescent lightbulbs: according to this analysis, compact fluorescents are a better environmental choice for the Québec energy context than incandescent bulbs.

W **www.hydroquebec.com/residential/eclairage/analyse.html**

■ Studies were launched on topics related to Hydro-Québec operating activities, including an assessment of the electricity life cycle. GHGs were among the many indicators analyzed. The results will be useful in life cycle analyses for the manufacturing industry.

COMPACT FLUORESCENT LIGHTBULBS

Compact fluorescent lightbulbs consume up to 75% less energy and last 10 times longer than incandescent lightbulbs. Only 5% of the electricity used by an incandescent bulb is turned into light; the rest is dissipated as heat. In addition, a compact fluorescent contains only one-fifth the mercury of a watch battery, for example.

Responsible consumption

Hydro-Québec promotes energy efficiency among its employees and encourages them to reduce the environmental footprint of their activities. With other companies and organizations, it discusses ways of working together to define environmentally responsible procurement criteria that complement contract provisions already applied under environmental management systems.

2008 highlights

■ The company participated in ECPAR, an association of around 20 companies and public organizations dedicated to standardizing sustainable procurement practices.

■ Annual savings of 8.1 GWh were realized by updating the lighting fixtures and heating, ventilation and air-conditioning systems in several Hydro-Québec buildings. A pilot project generated savings of 1.2 GWh by adjusting the temperature settings in five administrative buildings. This measure will be extended to all such buildings in 2009. Total savings in 2008 were 9.3 GWh, representing the consumption of 544 households that heat with electricity.

■ Implementing energy efficiency measures at Îles-de-la-Madeleine thermal generating station saved 1 GWh, or 17.2% of the 5.8 GWh targeted for the whole region by 2011. These measures will also mean savings of 200,000 litres of heating oil.

SOME STATISTICS ON THE RECOVERY, REUSE AND RECYCLING OF RESIDUAL MATERIALS

	Recovery				Notes
	2005	2006	2007	2008	
Printer cartridges (units)	15,635	13,297	15,823	18,040	
Cell phones and accessories (kg)	–	–	–	3,737	New program started in 2008
Insulating oil (litres) Internal reuse (%)	4,508,438 89.9	4,748,375 94.5	4,367,048 91.4	2,989,876 V 92.7 V	Degassing was the priority in 2008
Metal (tonnes)	8,740	7,801	8,309	13,123 V	Resale to recovery operators Does not include 404 t of power-line hardware sent to Normand-Maurice CFER V
Wooden pallets (units)	not available	4,100	11,647	13,015 V	For reuse or recycling
Paper and paperboard (tonnes)	668	871	1,002	1,474 V	60% paper and 40% paperboard
Ring binders (units)	12,161	12,869	12,907	16,660 V	For reuse within the company

Interpretation centre at Rivière-des-Prairies generating station.

Chipped driftwood was used to restore vegetation in a borrow pit at the Péribonka jobsite.

Archæological digs in the future Rupert diversion bay, on the Eastmain-1-A/Sarcelle/Rupert jobsite (summer 2008).

■ Measures to reduce the consumption of drinking water in Hydro-Québec buildings were extended: 22.4 million litres were saved in 2008, and savings since 2007 total 145.3 million litres.

■ We cut our consumption of fine paper for copying and printing by 87 tonnes (using 505 tonnes in 2008 V versus 592 tonnes in 2007), thereby saving the equivalent of 13,000 trees and 18 million litres of water. The fine paper used by Hydro-Québec is made of 100% postconsumer fibre, FSC-certified and not bleached with chlorine.

Reuse and recycling

In addition to reduction at source, a focus on reuse and recycling helps Hydro-Québec decrease its resource consumption.

2008 highlights

■ We recovered 10,856 tonnes (9,729 in 2007) of liquid and solid residual hazardous materials (RHMs) and diverted 95.3% (89.1% in 2007) of this total from landfill. The main RHMs recovered were electrical equipment removed from the system, lead-acid batteries and soiled absorbent materials.

■ We awarded a contract to the Normand-Maurice CFER (business and recycling training centre) to recondition used cell phones.

■ Alternatives to burning wood were implemented at the Péribonka generating station construction site: some of the driftwood was chipped and used to restore vegetation in a borrow pit; other wood was used to create favorable habitats for small wildlife.

■ Residual materials were reused on refurbishment and construction jobsites: 7,100 tonnes of concrete and 1,400 tonnes of asphalt were diverted from landfill sites.

Preserving our heritage, a collective treasure

We care about protecting Québec's built, technological, natural and archæological heritage. With this in mind, we have put together a historical collection in order to preserve, study and promote our own technological history.

2008 highlights

■ In an exciting discovery, digs conducted by an Inuit company near the site of the future Kuujjuaq generating station in Nunavik revealed traces of the Saqqaq culture that may date back nearly 4,000 years; very little has been documented about this culture.

■ Archæological digs in connection with a distribution grid undergrounding project (Montérégie) uncovered many artifacts, including an arrowhead that is at least 4,500 years old and the remains of stakes used in 1687 to build a stockade near La Prairie.

■ The outer envelope and windows at Rivière-des-Prairies generating station (Laval) were refurbished: the mullions and ornamentation were preserved, and the masonry was restored in keeping with the original features to retain the heritage value of the building.

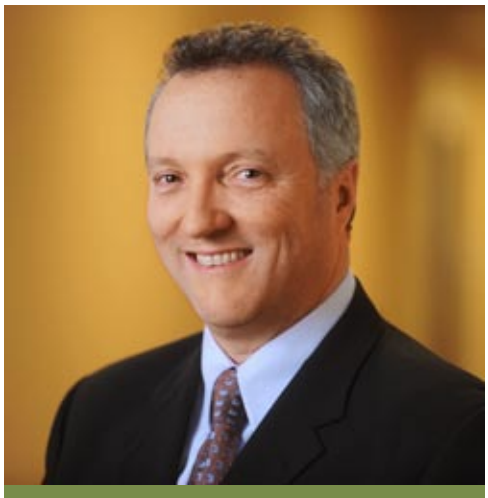
■ The interpretation centre at Rivière-des-Prairies generating station presented an exhibit on the subject of electricity from the power station to the home, as it was in 1929; some 20 artifacts from the Hydro-Québec historical collection were displayed.

■ A documentary on lead-joint splicing and cable workers' know-how illustrates skills that were used on the underground grid in the past but are now disappearing.

Our commitment to the future

- Invest in communities
- Promote consensus for our projects
- Develop a safety and security culture

Social Commitment



"Development of Québec's hydropower potential is continuing with the construction of four generating stations, in the Mauricie and Baie-James regions, that will boost our capacity by 1,056 MW. With the addition of the Romaine complex in Minganie, we will have another 1,550 MW by 2020.

"Host community acceptance of our projects is essential. By consulting these communities and having them participate in our studies, we make them true partners. We also want our projects to help improve their quality of life and make a positive contribution to their use of the land.

"The spinoffs from the Romaine project are estimated at $3.5 billion for Québec as a whole, with $1.3 billion in the Côte-Nord region. To enable the host communities to benefit from this undertaking, we have signed agreements with them that include funding they can use for economic, social, community or cultural projects, and to promote employment and entrepreneurship among the people concerned."

Robert Landry, General Manager – Development Projects and Nuclear Power Generation, Hydro-Québec Production

Hydro-Québec has a strong sense of social responsibility and concern for public health and safety. The company works with Aboriginal and other communities under agreements and partnerships that maximize the local spinoffs of its projects with a view to ensuring that they are socially acceptable. We also help to preserve Québec's natural heritage through such initiatives as the Integrated Enhancement Program and the Fondation Hydro-Québec pour l'environnement. The company supports university research and conducts educational and awareness activities for youth. In addition, it supports many community organizations.

Public health and safety, an ongoing concern

Safe use of electricity

Hydro-Québec has an electricity safety information program for the general public, young people, trades workers and first responders. Unfortunately, despite the company's efforts, every year there are electricity-related accidents among members of the public. Tree-pruning and the use of ladders and lift-truck masts near power lines are the main causes of electrocution. A comprehensive Web site on electrical safety can be viewed at the following URL:

W **www.hydroquebec.com/security/index.html**

Facility security

Since 2006, Hydro-Québec has invested $154 million to improve security at its facilities. Numerous employee awareness campaigns have promoted a security culture within the company.

2008 highlight

- A security awareness campaign resulted in 1,741 calls (1,768 in 2007) to the toll-free number 1 877 816-1212 to report suspicious activities or security threats.

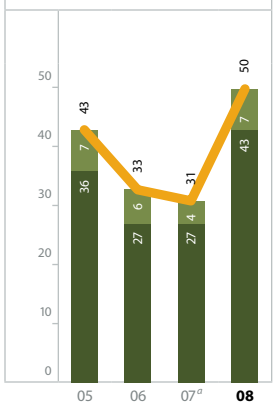
Teams that listen to communities

In all the regions in which it operates, Hydro-Québec has set up community relations teams. These teams inform local leaders about our projects and note their expectations and concerns. The company has also established liaison committees with the Union des producteurs agricoles (UPA), Québec Union of Municipalities (UMQ) and Fédération Québécoise des Municipalités (FQM). These committees foster agreement, circulate information, and develop joint projects and positions.

2008 highlights

- We signed 18 agreements to harmonize Hydro-Québec operations with community activities.
  - Romaine complex (Côte-Nord): a partnering agreement with the RCM of Minganie created various funds to support economic, recreational, tourism, social and cultural projects. Funding will continue until 2070.
  - Rapide-2 and Rapide-7 generating stations (Abitibi-Témiscamingue): an agreement was signed with the city of Rouyn-Noranda on management of residual materials.
- In collaboration with the FQM and UMQ, a guide was published to facilitate municipal tax assessment of Hydro-Québec properties in accordance with section 68 of the *Act respecting municipal taxation*. It is available for consultation (in French) at: **www.hydroquebec.com/municipal/pop/role_biens_immeubles.html**
- Construction of the Hydro-Québec lookout (Laurentides): in a partnership with the RCM of Argenteuil, Hydro-Québec agreed to allow access to a strip of land on the site of Carillon generating station for development of a bicycle path.
- Participation in an open-air museum (Montérégie): in cooperation with Tourisme Suroît, the RCM of Beauharnois-Salaberry developed theme rest stops on bicycle paths. Hydro-Québec provided information for a rest stop devoted to hydroelectricity and granted access to the generating station site.

Electricity-related accidents among the public



- *Deaths – source: Bureau du Coroner*
- *Electrical accidents – source: external data compiled by Hydro-Québec*
- *Total*

a) A coroner's report was published in September 2008 on the death in 2007 of a trades worker.

Integrated Enhancement Program

Through the Integrated Enhancement Program, Hydro-Québec contributes to development in areas where its transmission projects (lines and substations) are located. The communities affected are offered assistance equal to 1% of the initial authorized cost of the planned facilities, for initiatives to enhance the biophysical and human environments. In 2008, grants were provided in connection with three transmission projects. At $178,800, the disbursements were lower than in previous years because several agreements were being negotiated for new transmission projects. Since this program was introduced in 1985, Hydro-Québec has invested $100 million in 1,002 initiatives.

Some projects supported in 2008

- 120-kV Montérégie–Saint-Dominique line (Saint-Valérien-de-Milton, Montérégie): $34,435 funded improvements to the community centre and recreation building, and installation of weirs to curb bank erosion on the Ruisseau des Aulnages V.
- 735-kV Bergeronnes substation (Les Escoumins, Côte-Nord): $43,733 was contributed to refurbish the outside of the Charles-Édouard-Boucher sports centre V.
- Micmac–Percé line, phase II (Gaspésie–Îles-de-la-Madeleine): $80,000 was used to purchase street furniture for a downtown beautification project V.

FUNDING AND FINANCIAL COMMITMENTS UNDER THE INTEGRATED ENHANCEMENT PROGRAM

	2005	2006	2007[a]	2008
Number of initiatives	37	11	24 V	7 V
Hydro-Québec funding and commitment ($'000)	7,843.3	1,143.6	4,533.8 V	178.8 V
Community funding and commitment ($'000)	459.6	549.4	2,866.9	92.1
Project value ($'000)	8,302.9	1,693.0	7,400.7	270.9

a) The 2007 figures were adjusted to include a $4,086,000 agreement involving 11 initiatives that was signed in 2007, but recorded in 2008.

Respectful relations with Aboriginal communities

Over the years, Hydro-Québec has forged partnerships with Aboriginal communities in regions with high hydropower potential. Determined to respect their values and culture, the company has a team of specialists who maintain an ongoing dialogue with these communities and oversee harmonious implementation of the agreements signed with them.

2008 highlights

■ Romaine complex (Côte-Nord): the Nanemessu-Nutashkuan and Unamen-Pakua agreements provide for the establishment of funds for numerous economic, environmental, social and cultural projects that will benefit the Innu communities of Nutashkuan, Unamen Shipu and Pakua Shipi. As well, an understanding in principle was reached with the community of Ekuanitshit.

■ Eastmain-1-A/Sarcelle/Rupert: information on the project was distributed to the Cree communities concerned. The Environmental Monitoring Committee toured the communities to meet with the tallymen and other Cree land users. Created under a partnership between Hydro-Québec and Niskamoon Corporation, which oversees implementation of the agreements between the Crees and Hydro-Québec, this committee acts as a discussion forum and enables the Crees to play an active role in the environmental follow-up program for the project. In addition, Hydro-Québec and SEBJ published newsletters and participated in radio broadcasts to keep the Crees informed.

■ Spinoffs generated by contracts or procurement of goods and services: Hydro-Québec paid $99 million to Aboriginal organizations, companies and independent workers; work for SEBJ was valued at $209 million V.

■ Baie James (Nord-du-Québec): five Cree permanent employees were hired, for a total of 34 under the *Cree Employment Agreement*, which calls for the recruitment of 150 Cree employees by 2017.

■ Environmental internships for Crees, arranged by Niskamoon Corporation: SEBJ welcomed six interns. The purpose of this initiative is to stimulate the Crees' interest in higher education in the environment field.

■ Training: 155 employees received training on Hydro-Québec's Aboriginal relations V.

Fondation Hydro-Québec pour l'environnement

Since 2001, the Fondation Hydro-Québec pour l'environnement has helped communities protect, restore and enhance their natural heritage. Its support enables nonprofit organizations to carry out environmental and social initiatives that serve the interests of communities throughout the province. Independent of Hydro-Québec's business operations, the Foundation's activities are in line with the company's sustainability commitments.

W **www.hydroquebec.com/fondation-environnement/en**

Some projects supported in 2008

■ A sustainable tourism project encouraged tourism operators to incorporate environmental protection objectives into their initiatives. Project by Attention FragÎles (Gaspésie–Îles-de-la-Madeleine): $47,000 in funding.

■ Protection of the Prévost cliffs: a 12.4-hectare property was acquired and trails that preserve the ecological features of the site were laid out. Project by the Nature Conservancy of Canada, in partnership with the town of Prévost (Laurentides): $105,550 contribution.

■ Protection of the Manicouagan tidal flats and shellfish beds: project by Parc Nature de Pointe-aux-Outardes (Côte-Nord): $49,900 grant.

Funding for organizations and the arts

Through its donations and sponsorships, Hydro-Québec supports projects of social, cultural, environmental and economic interest. In 2008, the company provided $25.9 million in donations and sponsorships.

Hydro-Québec has a collection of 900 works of art, 80% of which are by Québec artists. Encompassing masters and young talent in various fields—drawing, printmaking, painting, photography—this collection helps to promote Québec art.

2008 highlights

■ $6.7 million was donated to United Way/Centraide, including $3.2 million from Hydro-Québec employees, pensioners and directors. Our commitment has lasted over 30 years.

■ Program for employees involved in the community: $190,850 was donated to organizations where Hydro-Québec employees volunteer.

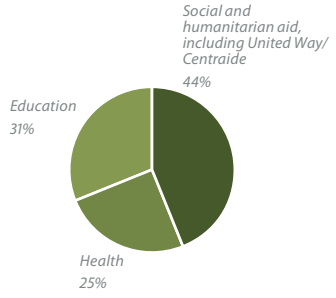
■ *Poussière*[3], an exhibition of photographs by Jocelyne Alloucherie, was mounted on a wall at Adélard-Godbout substation in Montréal's Cité du Multimédia. This initiative was part of an event held by Quartier Éphémère, an organization that supports the work of up-and-coming artists.

FONDATION HYDRO-QUÉBEC POUR L'ENVIRONNEMENT

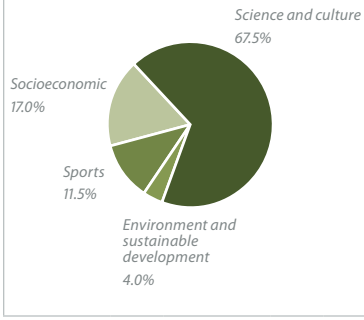
	2005	2006	2007	2008 V
Number of projects supported	20	22	15	20
Number of regions involved	13	12	8	12
Total amount of commitments ($'000)	860	1,009	1,493	1,302

School visit to the Électrium, Hydro-Québec's electricity interpretation centre (Montérégie).

Breakdown of donations[a]



Breakdown of sponsorships[a]



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

EXAMPLES OF ORGANIZATIONS AND EVENTS SUPPORTED IN 2008

- **Les Grands Ballets Canadiens de Montréal**
- **Opéra de Montréal**
- **The Image Mill**
- **Petite-Vallée song festival**
- **Fondation Centre de cancérologie Charles-Bruneau**
- **Abitibi-Témiscamingue international film festival**
- **Théatre de la Bordée**
- **Quebec Foundation for Athletic Excellence**
- **Défi sportif challenge for athletes with disabilities**
- **National Environmental Exhibition**

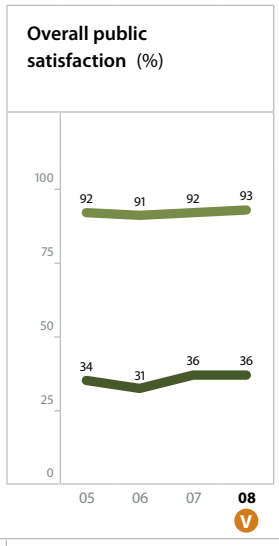
Youth awareness: An investment in the future

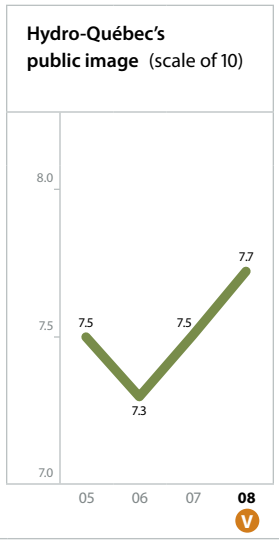
For nearly 20 years, Hydro-Québec has developed education and awareness programs on electricity-related topics, including the environment, sustainability, jobs of the future and electrical safety. In 2008, the company distributed 74,136 classroom guides to preschool and elementary-school teachers. The materials comply with the Ministère de l'Éducation curriculum.

www.hydroquebec.com/teachers/index.html

MAIN YOUTH-ORIENTED ACTIVITIES IN 2008

Activity	Objective	Target group
Educational kit launched: *Les Zénergétics - À la découverte de l'énergie et de l'environnement*	Introduce children to the various power generation options	9,000 children age 10 to 12
Envirovolt game kit	Teach children about the environmental aspects of Hydro-Québec generation and transmission projects	1,500 children age 9 to 12
00Watt Classroom Toolkit	Explore the process of generating hydroelectricity and encourage youngsters to save energy	1,804 pupils age 10 to 12 (elementary school, grades 5 and 6)
Safety classroom kits	Educate youngsters about safe behavior when using electricity	43,396 pupils age 5 to 12
Blue Water = Green Energy workshop	Promote renewable energies and teach pupils about Hydro-Québec's endeavors to protect biodiversity in its development projects	100 pupils (elementary school, grade 3)
Three articles published in *Les débrouillards* magazine	Teach young readers about energy and sustainability	35,000 readers age 9 to 14





● Very and somewhat satisfied
● Very satisfied

Quai-des-Brumes, a garden on Samuel-De Champlain promenade in the city of Québec, was created with the support of sponsors like Hydro-Québec.

Public satisfaction

Since 1996, Hydro-Québec has surveyed the public's expectations in various ways and adjusted its actions accordingly. The surveys in recent years show growing public satisfaction with Hydro-Québec.

- Overall satisfaction: 93% (92% in 2007) V.
- Image perception: 7.7 (7.5 in 2007) V.
- Perception of sustainability performance: 7.3 (7.2 in 2007).

Supporting excellence by funding universities

Hydro-Québec supports Québec universities in various ways: scholarships, funding for research projects or chairs, research and development contracts, and so on. This funding helps the universities recruit promising students, and develop and enhance their expertise in emerging fields.

CONTRIBUTIONS, COMMITMENTS, CHAIR ENDOWMENTS AND RESEARCH CONTRACTS ($'000)

Educational institution or research group	2005	2006	2007 V	2008 V
Université de Montréal	502.2	631.5	536.3	564.9
HEC Montréal	142.5	248.1	306.9	77.5
École Polytechnique de Montréal	2,196.4	1,144.6	1,005.8	912.0
Université du Québec en Abitibi-Témiscamingue[a]	19.0	20.1	22.5	10.5
Université du Québec à Chicoutimi	611.2	499.0	237.5	400.0
Université du Québec à Montréal	908.8	793.6	691.9	906.8
Université du Québec en Outaouais	–	125.0	125.0	164.3
Université du Québec à Rimouski	27.5	148.0	174.0	100.0
Université du Québec à Trois-Rivières	340.8	326.6	395.8	356.4
École de technologie supérieure	503.0	307.3	375.9	348.9
Institut national de recherche scientifique	145.0	150.0	120.0	71.8
Fondation de l'Université du Québec	120.0	120.0	50.0	–
McGill University	–	15.0	348.0	596.0
Concordia University	15.0	35.0	345.5	320.0
Université Laval	1,141.0	1,781.1	1,389.5	1,382.8
Université de Sherbrooke	430.2	738.5	923.0	700.0
Ouranos, Cirano and Institute of Electrical Power Engineering	1,820.3	1,476.2	1,179.9	1,572.1
Institutions outside Québec	51.6	367.9	152.8	408.6
Total	**8,974.0**	**8,927.5**	**8,380.3**	**8,892.5**

a) A new commitment is planned for 2009–2013.

Our commitment to the future

- Tailor our programs to satisfy all our customers
- Support customers who are having difficulties

High-Quality, Customer-Driven Service

"Some of Hydro-Québec's customers have low incomes and experience difficulty paying their bills. Our Credit and Collection team employs various means to help these customers meet their financial responsibilities and maintain their electricity service. For example, we offer them payment arrangements, often long-term, that are personalized to suit their situations.

"Since 2000, we have worked with consumer associations to develop practical solutions for these customers. The ongoing efforts of our joint working group help us understand these customers better and formulate solutions so we can provide efficient, customized services. Furthermore, to make our services truly appropriate, our collection employees receive awareness training about the issue of poverty.

"Improving our services for low-income customers is a constant challenge. We need to understand the customer's situation properly and maintain fairness for all customers. With our various partners in this effort, we endeavor to find the right response for these concerns."

Daniel Simoneau, Director – Credit and Collection, Hydro-Québec Distribution

Customer care is one of Hydro-Québec's core values. To know and understand the needs of its customers, the company regularly measures their satisfaction, so that it can improve the services it provides, and adjust its practices and programs.

Hydro-Québec offers assistance measures for some of its more vulnerable customers, often working with other organizations to maintain access to electricity. Orientation and integration services are also available for cultural communities.

Knowing that electricity is not simply a collective asset, but an essential service that must be accessible to everyone, Hydro-Québec does whatever it can to provide quality service at rates that are among the most competitive in North America.

Listening to customers

The annual satisfaction survey of the various customer categories is the culmination of a careful planning process. Hydro-Québec employs tools like the table of customer expectations to give customers a chance to voice their concerns. The results of this listening strategy enable the company to plan and evaluate its business processes, set improvement objectives and determine how to achieve them. Among customers' top-priority expectations are facility security and reliable electrical service.

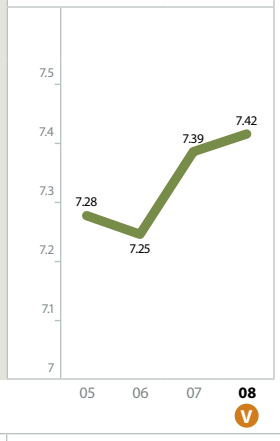
2008 highlights

- Rollout of the third phase of the Customer Information System (2.8 million residential customers) caused longer waiting times at first, but the situation improved and the average response time dropped to two minutes in November. The increase in the number of complaints and claims (12,826 V compared to 10,884 in 2007) can be partly explained by the difficulties experienced during this phase.
- A pilot project for the Time It Right rate option was launched in Trois-Rivières, Saint-Jean-sur-Richelieu, Sept-Îles and Val-d'Or. The goal is to see whether a rate option based on time and season of use encourages residential customers to shift part of their consumption to low-demand periods. If the results are conclusive, this rate option could be offered to all residential customers.
- Promotion of online services: over 85,000 customers signed up for online billing, bringing the total number of residential customers not receiving printed bills to roughly 275,000.

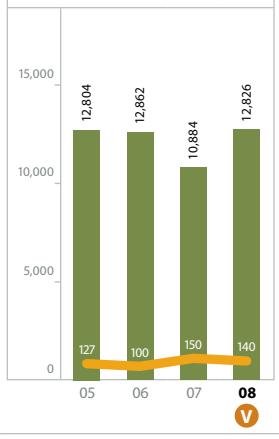
SATISFACTION INDEXES (SCALE OF 10)

- **Residential customers: 7.49 (7.45 in 2007) V.**
- **Commercial and agricultural customers: 7.56 (7.60 in 2007) V.**
- **Business customers: 7.24 (7.21 in 2007) V.**
- **Large-power customers: 9.20 (9.15 in 2007) V.**

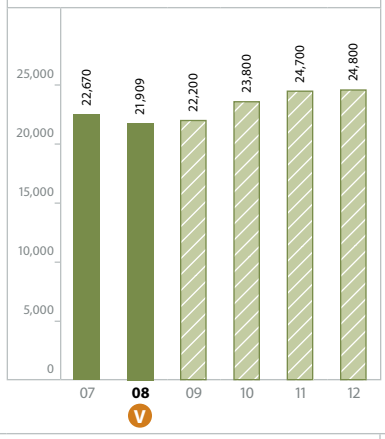
Combined customer satisfaction index (scale of 10)



Customer complaints and claims (number)



Agreements for low-income customers (number)



- Combined satisfaction index for categories other than large-power customers
- Number of complaints and claims
- Appeals to the Régie de l'énergie
- Target

Support for low-income customers and those with payment difficulties

To support customers in precarious situations, Hydro-Québec has set up communication channels with elected representatives' offices and community organizations. The company has also signed service agreements with organizations that help new immigrants with payment difficulties, in their own language. In addition, the efforts of a joint Hydro-Québec/consumer associations working group led to the introduction of payment arrangements for low-income customers, and even more flexible personalized payment arrangements are gradually being implemented. Most collection employees have received training on poverty and the prejudices it engenders, in a workshop that has been offered since 2003.

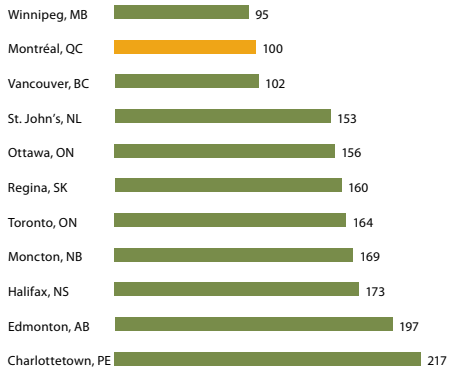
2008 highlights

- 207,086 payment arrangements were signed to facilitate settlement of $423.8 million in various overdue accounts V.
- 21,909 payment arrangements were reached with low-income customers for a total of $149.5 million. These agreements last a maximum of 48 months and incur no administration fees. Under some arrangements, the cost of energy consumption is reduced V.

WORKING GROUP – LOW-INCOME HOUSEHOLDS

Composed of community representatives and Hydro-Québec employees (energy efficiency specialists and collection agents), this group has developed close to twenty possible solutions: implementation began in 2006 and will continue until 2011.

Comparative index of electricity prices as at April 1, 2008 – Residential customers[a]



In 2008, the average cost per kWh for residential customers was 6.81¢. For monthly consumption of 1,000 kWh, Montréal ranked second, behind Winnipeg.

a) Monthly bill (before taxes) for consumption of 1,000 kWh.

Our commitment to the future

- Develop our employees' skills
- Prepare a reliable, competent succession
- Be a modern, diversified company

Human Resources Development

"Hydro-Québec adopted the sustainability principle 20 years ago. Since then, the company has worked tirelessly to promote buy-in and awareness among its employees, with information, training, acknowledgment of praiseworthy initiatives, and so on.

"Today, this commitment is rooted in the corporate culture. Over 75% of employees claim to have a good or excellent understanding of the concept of sustainability. Most of them have adopted sustainable behaviors like saving energy and not wasting paper, mainly out of a concern for environmental protection.

"In the short term, we hope to raise this proportion to 80%. We will focus on communication with employees, in accordance with the orientations in the government strategy. The goal is also to improve their understanding of sustainability beyond environmental protection—in other words, the social and economic aspects—to encourage them to diversify their initiatives. We plan to continue using such effective tools as the sustainable development intranet portal and organization of recognition activities. We will also mine the new possibilities in information and communication technologies to achieve this objective."

Claudine Bouchard, Manager – Internal Communication and Corporate Reception, Groupe des Affaires corporatives et du secrétariat général

Hydro-Québec pays particular attention to employees' professional and personal development. To encourage employees to commit to sustainability, the company uses training, awareness and guidance tools. A constructive dialogue is also maintained with all employee representatives; one result is the early renewal of several collective agreements in 2008.

To preserve its expertise assets, Hydro-Québec strives to attract and keep the skills necessary for its business. It offers stimulating working conditions and maintains a harmonious working atmosphere.

Hydro-Québec also considers employee health and safety to be of primary importance, and therefore stresses training and accident prevention. In 2008, unfortunately, one employee died in a work-related traffic accident.

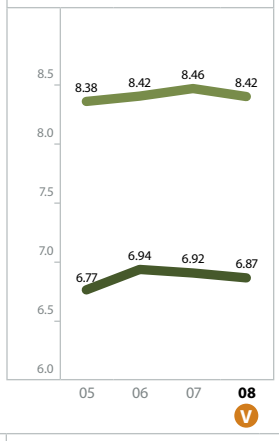
Workforce and skills management

Hydro-Québec is a major employer in Québec, with a workforce of 22,916 people, 59.4% of whom work outside the Montréal area. Since the average age is 45.6, the number of retirements should exceed 1,000 per year from 2010 to 2012. This situation heightens the importance of the corporate succession plan, which describes a number of measures for renewing expertise V.

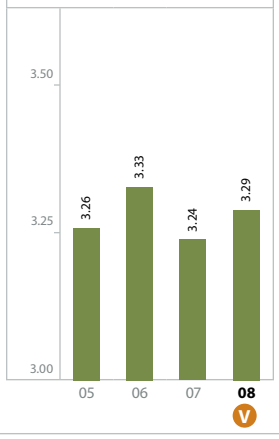
2008 highlights

- Retirements: of 2,835 eligible permanent employees, 31.6% left the company (26.5% in 2007) V.
- New hires: of the 1,252 employees recruited in 2008, 66% were under age 35 (67% in 2007) V.
- Female employees: 30.9% of the workforce (31.3% in 2007) V.
- Diversity: an employment equity program will be instituted in 2009. Aboriginals: 0.7%; ethnic minorities: 1.0%; people with disabilities: 1.4%; visible minorities: 2.0% V.
- The support program for knowledge acquisition and preservation funded 23 early staffings and 10 group knowledge-transfer strategy projects V.
- Institute of Electrical Power Engineering (IEPE): 20 IEPE graduates were recruited, for a total of 107 since 2002 V.
- Student internships at Hydro-Québec: 170 university students, including 7 IEPE students, and 35 college students V.

Employee motivation and satisfaction (scale of 10)



Work-related accident frequency[a]



■ Satisfaction index
■ Employee motivation and satisfaction

a. $\frac{\text{(Lost time + Medical assistance) X 200,000}}{\text{Hours worked}}$

A company support program encouraged Hydro-Québec employees to participate in dragon boat races for the fifth consecutive year.

MÉRITE DE L'ENVIRONNEMENT ET DU DÉVELOPPEMENT DURABLE

Since 2003, the *Mérite* award has recognized employees for their outstanding contribution to sustainability. In 2008, Hydro-Québec TransÉnergie's underground lines unit was recognized for its initiative to recycle the structural steel supports from cable ends in transmission substations. When Guy substation was dismantled, 18 steel structures were recovered and sent to Normand-Maurice CFER for reconditioning.

Awareness and skills

In 2008, Hydro-Québec allocated 4.0% of the payroll to training programs and 16,329 employees participated in at least one training activity, including sustainability courses V.

2008 highlights

■ Occupational health and safety training and awareness, and health promotion: 12,676 registrants (WHMIS, first aid, cardiopulmonary resuscitation, etc.).

■ Environmental training: 4,771 registrations by 3,075 employees (spills, recovery of residual hazardous materials, environmental legislation, etc.) V.

■ Training for employees who coordinate, guide or implement sustainable development activities: 111 registrants. Objective: train 40% of the workforce by 2011.

■ Annual internal survey: 75% of employees said they had an excellent or good understanding of the concept of sustainability, a 17% increase over 2006.

Good working conditions, for a winning partnership

Hydro-Québec maintains working conditions that foster employee commitment to achieving its objectives. The company works with the unions to introduce continuous improvement mechanisms: joint health and safety committees are an example. Unionized employees account for nearly 85% of the workforce.

Employees can also contact the President and Chief Executive Officer directly on the *Au bureau du pdg* intranet site or participate in chat sessions with him on specific topics. Examples of topics discussed in 2008 are the Romaine project and the refurbishment project for Gentilly-2 generating station.

■ Early renewal of collective agreements: owing to the good relations with employees and their union representatives, seven collective agreements still in effect were the subject of agreements in principle that were ratified by a strong majority. As a result, contracts were extended for five years for 91% of the unionized employees.

■ Prevention of discrimination and harassment: as part of an awareness action plan, 500 employees participated in harassment prevention training offered jointly by Hydro-Québec and the trades employees' union.

■ The Employee Assistance Program for personal or work-related problems was used by 7.88% of employees in 2008 (6.68% in 2007).

■ A survey of new employees rated their satisfaction with induction and integration at 8.4 out of 10 (8.3 in 2007) V.

Our commitment to the future

- Drive regional development
- Develop business partnerships
- Maintain our technological leadership

Contribution to the Québec Economy

"To enhance our expertise in electricity, especially in order to improve equipment management and performance, our scientists work with university researchers. These cooperative efforts expand our basic scientific know-how and enable us to find solutions suited to Hydro-Québec's needs. In 2008 alone, 16 university chairs received $1.5 million in funding from our company.

"Our work with these chairs deals with various topics. For example, with the École Polytechnique, we are studying new ways of managing our large water-resource systems to maximize the potential of every cubic metre of water used. With the Université de Sherbrooke, we are exploring better techniques for monitoring our large dams and new materials for equipment design. With Université Laval and the École Polytechnique, we are endeavoring to maximize hydraulic-turbine performance. With the Université du Québec à Chicoutimi, we are examining phenomena related to ice on transmission lines.

"By funding research chairs, we are supporting the development of our expertise and contributing to the advancement of science and a dynamic Québec economy."

Denis Faubert, General Manager – Hydro-Québec research institute, Groupe de la technologie

Hydro-Québec is a driving force in the creation of wealth for Québec and all of its regions.

Considering innovation to be of paramount importance, Hydro-Québec continues to consolidate its expertise and technological leadership in the power industry. In research, the company makes good use of the know-how and skills of many partners inside and outside the province.

Activities and projects that benefit the Québec economy

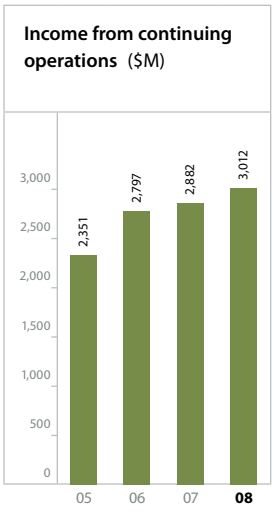
Its presence throughout the province and the scale of its operations and infrastructure projects mean that Hydro-Québec contributes to economic prosperity in Québec. For example, between 2004 and 2020, the main generation projects now under way or being studied represent capital spending of $15.8 billion, including regional economic spinoffs of $2.7 billion.

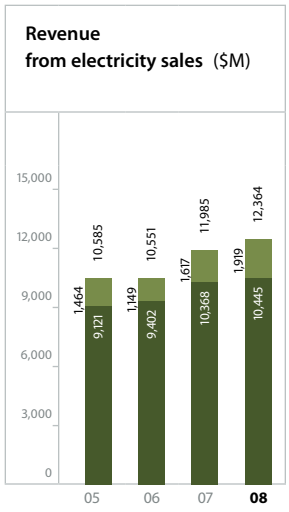
2008 highlights

- Procurement of goods and services: we spent $2,660 million[1] in 2008, with 89% going to Québec businesses ($2,586 million and 94% in 2007).
- Contracts to purchase 2,005 MW of wind power represent a total of $5.5 billion, including a $1.1-billion investment by Hydro-Québec to integrate wind farm output into the transmission grid. The proponents of the projects selected must incur at least 60% of their overall expenditures in Québec and at least 30% of the cost of wind turbines in the RCM of Matane and the administrative region of Gaspésie–Îles-de-la-Madeleine.
- Industrial tourism: tours of Hydro-Québec's facilities and various sites operated in partnership with other organizations stimulate regional tourism. Our facilities received 133,800 visitors in 2008, compared to 147,500 in 2007. This drop is attributable to the city of Québec's 400th anniversary celebrations, which attracted many tourists. Among the facilities most frequently visited are the Électrium (Montérégie): 18,377 visitors; Manic-5 generating station and Daniel-Johnson dam (Côte-Nord): 6,700 visitors; and Robert-Bourassa hydroelectric development (Nord-du-Québec): 4,500 visitors.

www.hydroquebec.com/visit/index.html

1. Excluding procurement by Société d'énergie de la Baie James.





Revenue from electricity sales in Québec

Revenue from electricity sales outside Québec

Maintaining financial health to ensure sustainability

Hydro-Québec's financial performance has improved for several years. Financial results in 2008:

- Net income totaled $3,141 million. Income from continuing operations was $3,012 million, an increase of $129 million.
- Electricity sales totaled $12,364 million, up 3%: sales were $10,445 million in Québec and $1,919 million outside Québec.
- Net exports accounted for 8% of sales volume but generated 32% of income from continuing operations.
- Investments totaled $4 billion.
- Dividends declared to our shareholder were $2,252 million. Dividends for 2005 to 2008 totaled $7.8 billion.
- Water-power royalties of $546 million were paid to the Québec government.

Technological innovation and partnership

For more than 30 years, research and development have been an integral part of Hydro-Québec's strategy. With a portfolio of projects valued in excess of $550 million, the company invests $100 million per year in innovation and is increasing its collaboration with outside partners.

2008 highlights

- An agreement was signed by Hydro-Québec subsidiary TM4 and a subsidiary of Tata Motors: TM4 will provide state-of-the-art electric motors, inverters and electronic vehicle controllers to equip around a hundred cars that will be tested in Norway in 2009–2010.
- Plasma-assisted sludge oxidation (PASO): patented by Hydro-Québec, this organic sludge treatment process is being successfully used by the city of Salaberry-de-Valleyfield. The PASO technology is both less expensive and more environmentally friendly than landfill, and will reduce the city's GHG emissions by 2,400 tonnes per year.

Sharing our unique expertise

Hydro-Québec has built up a world reputation in the power industry. The company participates in the activities of many organizations with a view to contributing to knowledge development and forming business partnerships.

- 42nd session of the International Council on Large Electric Systems (CIGRE) in Paris: delegates attended presentations and discussed current technical problems and recent progress in the area of transmission systems.
- Funding for training seminars by the Fonds Hydro-Québec pour la Francophonie: 130 hydropower specialists from 32 countries participated in training given by Hydro-Québec experts.
- 13th international conference of the Secrétariat international francophone pour l'évaluation environnementale (SIFÉE): 400 delegates participated in this event. Hydro-Québec was awarded a plaque recognizing its involvement in the organization's activities.
- Annual e8 Summit, held in La Malbaie, with the theme "Climate Change and Technology": chaired by Thierry Vandal, this event was attended by the heads of the 10 leading electricity companies in the G8 member countries.

HYDRO-QUÉBEC'S CONTRIBUTION TO THE QUÉBEC ECONOMY

	2005	2006	2007	2008
Permanent workforce as at December 31	19,009	19,116	19,459	19,297
Temporary workforce (annual average)	3,577	3,799	3,910	4,048
Capital tax ($M)	330	261	278	202
Tax on public services ($M)	229	230	240	302
Water-power royalties ($M)	–	–	263	546
Municipal, school and other taxes ($M)	36	36	35	37
Procurement of goods and services inside and outside Québec ($M)[a]	2,367	2,673	2,586	2,660
Proportion procured from Québec businesses (%)	92	92	94	89
Direct jobs sustained by all procurement, including purchases outside Québec (person-years)	12,654	14,000	13,000	11,462

a) Excludes procurement by Société d'énergie de la Baie James.

Global Reporting Initiative (GRI) Index

All GRI performance indicators are dealt with fully on the Hydro-Québec Web site at:
www.hydroquebec.com/sustainable-development/gri/index.html.
The following list shows the indicators that are also covered in the *Sustainability Report 2008*.

Reference[a]	G3 Indicator	Source
ECONOMIC PERFORMANCE INDICATORS		
EC1	Economic value generated and distributed	SR, p. 4-5, 37, 39
EC2	Climate change	SR, p. 2, 12, 20-21
EC3	Pension plan obligations	Web
EC4	Financial assistance received from governments	Web
EC5	Wages	Web
EC6	Procurement from local suppliers	SR, p. 36-37, 39
EC7	Local hiring	SR, p. 29, 37
EC8	Infrastructure investments that benefit local communities	SR, p. 28, 39
EC9	Indirect economic impacts	SR, p. 18-19, 28-29, 36-37
ENVIRONMENTAL PERFORMANCE INDICATORS		
EN1	Materials used by weight or volume	SR, p. 5, 25-26
EN2	Use of recycled materials	SR, p. 25-26
EN3	Direct energy consumption	Web
EN4	Indirect energy consumption	SR, p. 13
EN5	Internal energy efficiency	SR, p. 25
EN6	Energy efficiency of products and services	Web
EN7	Reduction of indirect energy consumption	SR, p. 15-16
EN8	Total water withdrawal	Web
EN9	Water sources affected by withdrawal	Web
EN10	Water recycled and reused	SR, p. 26
EN11	Land near biodiversity areas	SR, p. 18-19, 23-24
EN12	Description of impacts on biodiversity	SR, p. 18-19, 23-24
EN13	Habitats protected or restored	SR, p. 18-19
EN14	Management of impacts on biodiversity	SR, p. 18-19, 23-24
EN15	IUCN Red List species	Web
EN16	Greenhouse gas (GHG) emissions	SR, p. 20-22, 39
EN17	Other relevant GHG emissions	Web
EN18	Initiatives to reduce GHG emissions	SR, p. 2, 5, 20-22
EN19	Emissions of ozone-depleting substances (ODS)	SR, p. 22
EN20	Emissions of NO_x, SO_2 and other air emissions	SR, p. 21, 39
EN21	Water discharge by quality and destination	Web
EN22	Total weight of waste	Web
EN23	Number and volume of spills	SR, p. 39
EN24	Hazardous waste (Basel Convention)	Web
EN25	Water bodies and habitats affected by discharges	Web
EN26	Environmental impact management	SR, p. 18-19, 20-26
EN27	Disposal of products after their useful life	Web
EN28	Non-compliance with environmental legislation	SR, p. 22, 39
EN29	Environmental impacts of transportation	SR, p. 5, 21-22
EN30	Environmental expenditures	Web
SOCIAL PERFORMANCE INDICATORS		
Human Rights		
HR1	Investment agreements	Web
HR2	Subcontracting	Web
HR3	Training	Web
HR4	Discrimination	Web
HR5	Freedom of association and collective bargaining	SR, p. 10, 35
HR6	Child labor	Web
HR7	Forced labor	Web
HR8	Security practices	Web
HR9	Indigenous rights	Web
Labor Practices and Decent Work		
LA1	Total workforce	SR, p. 37, 39
LA2	Rate of employee turnover	Web
LA3	Employee benefits	Web
LA4	Collective bargaining agreements	SR, p. 10, 35
LA5	Minimum notice period(s)	Web
LA6	Joint health and safety committees	Web
LA7	Work-related injuries, diseases and absenteeism	SR, p. 35
LA8	Assistance regarding serious diseases	SR, p. 35
LA9	Health and safety and collective agreements	Web
LA10	Employee training	SR, p. 35
LA11	Skills development and training	SR, p. 34-35
LA12	Career development	SR, p. 34
LA13	Diversity and equal opportunity	SR, p. 34
LA14	Pay equity	Web
Society		
SO1	Management of impacts on communities	SR, p. 10, 28-29
SO2	Risks related to corruption	Web
SO3	Employee training	Web
SO4	Corruption response action	Web
SO5	Lobbying	Web
SO6	Contributions to political parties	Web
SO7	Antitrust and monopoly regulations	Web
SO8	Non-compliance with legislation	Web
Product / Service Responsibility		
PR1	Life-cycle analysis for health and safety of products/services	SR, p. 25
PR2	Non-compliance concerning product/service health and safety	Web
PR3	Product/service information	Web
PR4	Non-compliance concerning product/service information	Web
PR5	Measurement of customer satisfaction	SR, p. 32-33
PR6	Adherence to advertising standards and codes	Web
PR7	Non-compliance with advertising standards and codes	Web
PR8	Consumer privacy	Web
PR9	Non-compliance with product/service use	Web

a) Bold face: core indicators. Regular type: additional indicators.

Our Performance at a Glance

	2005	2006	2007	2008
ENVIRONMENT				
Net electricity generated by Hydro-Québec (GWh)	154,031	150,552	162,062	164,678
Total net electricity generated and purchased (GWh)	195,035	196,236	208,156	206,603
Renewable energy as % of total electricity generated and purchased	95	94	93	97
Atmospheric emissions of CO_2 from thermal electricity generation (tonnes)	369,974	215,243	245,832	233,054
Atmospheric emissions of SO_2 from thermal electricity generation (tonnes)	2,126	979	1,150	1,154
Atmospheric emissions of NO_x from thermal electricity generation (tonnes)	6,428	5,917	6,205	6,132
Atmospheric emissions of CO_2 from the vehicle fleet (tonnes)	56,849	56,683	54,082	54,426
Energy Efficiency Plan: energy savings (result/target) (GWh)	447 / 321	710 / 523	915 / 661	1,081 / 745
Employees governed by an environmental management system (number)[a]	20,513	18,292	18,469	18,228
Spills reported to the authorities (number)	567	574	624	583
Insulating oil recovered (thousands of litres)/Internal reuse (%)	4,508 / 89.9	4,748 / 94.5	4,367 / 91.4	2,989 / 92.7
Environmental noncompliance notices (number)	35	17	32	24
Area of transmission-line rights-of-way treated mechanically (%)	74.2	72.1	76.3	79.3
Area of dikes and dams treated mechanically (%)	46.7	44.7	48.0	40.3
New underground hookups (%)	21	25	28	30
Production of low- and medium-activity radioactive waste (m^3/reactor)	30	40	16	39
SOCIAL				
Permanent workforce as at December 31	19,009	19,116	19,459	19,297
Temporary workforce (annual average)	3,577	3,799	3,910	4,048
Work-related accident frequency[b]	3.26	3.33	3.24	3.29
Employee motivation and satisfaction (scale of 10)	6.77	6.94	6.92	6.87
Percentage of payroll invested in training	3.9	3.9	4.2	4.0
Public satisfaction rate (very and somewhat satisfied) (%)	92	91	92	93
Combined customer satisfaction index – categories other than large-power customers (scale of 10)	7.28	7.25	7.39	7.42
Special payment arrangements for low-income customers (number)	20,964	22,475	22,670	21,909
Complaints and claims from customers (number)	12,804	12,862	10,884	12,826
Donations and sponsorships ($M)[c]	18.5	23.0	24.7	25.9
Funding and financial commitments under the Integrated Enhancement Program ($M)	7.8	1.1	4.5	0.2
Fondation Hydro-Québec pour l'environnement ($'000)/ Projects funded (number)	860 / 20	1,009 / 22	1,493 / 15	1,302 / 20
Funding for universities – contributions, chair endowments and research contracts ($M)	8.9	8.9	8.4	8.9
Contracts and procurement – spinoffs for Aboriginals ($M)	235	156	237	310
ECONOMY				
Electricity sales in Québec (TWh)	169.2	167.3	173.2	170.4
Revenue from electricity sales inside and outside Québec ($M)	10,585	10,551	11,985	12,364
Income from continuing operations ($M)	2,351	2,797	2,882	3,012
Net income ($M)	2,252	3,741	2,907	3,141
Dividends declared ($M)	1,126	2,342	2,095	2,252
Direct jobs supported by all procurement, including purchases outside Québec (person-years)[d]	12,654	14,000	13,000	11,462
Total procurement of goods and services ($M)/Québec only (%)	2,367 / 92	2,673 / 92	2,586 / 94	2,660 / 89
Capital tax ($M)	330	261	278	202
Municipal, school and other taxes ($M)	36	36	35	37
Public service tax ($M)	229	230	240	302

a) Organizational adjustments in 2006 and 2007 resulted in new environmental management systems that were not yet certified as at December 31, 2008.

b) (Lost time + medical assistance) x 200,000 / Hours worked.

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

d) Excludes procurement by Société d'énergie de la Baie James.

Glossary

biomass organic matter composed of live plant matter, farm, forest or urban waste, or organic waste from water treatment or purification plants; biomass is a usable energy source like water, sun and wind

borrow pit excavation, generally outside the right-of-way of a structure, from which material necessary for building that structure is extracted

CO_2 (carbon dioxide) the main greenhouse gas, mostly generated by fossil fuel combustion

cogeneration method of simultaneously producing electricity and useful thermal energy (steam, hot water) from a fuel (coal, natural gas, biogas, biomass)

deep geothermal energy heat extracted from very deep rock formations (up to a dozen kilometres below ground) to be converted into electric and usable thermal energy

diversion bay stretch of a river where the level has been raised by a dam to supply a hydroelectric generating station

due diligence degree of care, reaction and attention that prudent corporate managers can reasonably and usually be expected to exercise in a given situation

electric and magnetic fields (EMF) physical phenomena linked to electrical charges (such as electrons) present in the biophysical environment (during a storm, within earth's magnetic field, etc.) and to artificially produced electrical charges (such as those generated by power lines and equipment): the electric field is created by the presence of these charges, and the magnetic field depends on the movement of the charges caused by power consumption. The electric field is measured in volts per metre and the magnetic field, in microteslas

environmental impact assessment study that predicts, describes, organizes and evaluates the physical, chemical, biological, æsthetic, social and cultural effects of a construction project, and proposes measures to mitigate these effects

herbicide chemical or biological product that destroys vegetation or inhibits its growth

hydrokinetic power power generated by a turbine that uses the energy from underwater currents, as a wind turbine uses kinetic wind energy, to generate electricity

life cycle analysis (LCA) analysis to determine and quantify the potential environmental impacts of the full life cycle of a product, process or project

lithium-ion battery rechargeable battery that generates direct current to supply electric and electronic home appliances, as well as electric bicycles and cars: it is low maintenance with no memory effect, and can be manufactured from non-polluting materials

NO_x (nitrogen oxides) chemical compounds that contribute to the formation of smog and acidic deposits

ozone-depleting substance (ODS) substance likely to deplete the stratospheric ozone layer, such as CFCs, halogens and HCFCs: these substances are mainly used in refrigeration and air-conditioning systems and in fire-protection equipment

plasma-assisted sludge oxidation (PASO) sludge treatment process that uses incineration under atmospheric pressure in a rotary kiln equipped with a plasma torch

rehabilitation set of operations performed on a contaminated site to make it fit for future use

residual hazardous material (RHM) any hazardous material that is discarded, worn out, used, not reusable or outdated and that is potentially hazardous for humans and for the environment

right-of-way strip of land used for installation, operation, maintenance and protection of one or more power lines

salinity gradient power energy that becomes available when freshwater is absorbed into seawater through a semipermeable membrane: the difference in salinity allows freshwater to pass through the membrane, increasing the pressure on the saltwater side. This pressure increase can be used to turn a turbine

SO_2 (sulphur dioxide) chemical compound that contributes to the formation of acid rain

stakeholder group or individual that has a more or less direct interest in the life of an organization or is likely to be affected by decisions made by that organization

Workplace Hazardous Materials Information System (WHMIS) pan-Canadian system that protects workers' health and safety by providing access to information about hazardous materials used in the workplace

Verification Statement

To Hydro-Québec Management,

Intertek has been commissioned to carry out an independent verification of the validity of certain information in Hydro-Québec's *2008 Sustainable Development Report,* which covers the period starting January 1st to December 31st, 2008.

Mandate

Our responsibility consists in expressing an opinion on the accuracy of selected quantitative data, which are identified with a check sign ✓. In that regard, we have substantiated the origin, the collection process and the exactitude of these data. The report as well as the results of environmental, social and economical performance, remains the sole responsibility of Hydro-Québec.

Methodology

We carried out our verification exercise all in accordance with the ISAE 3000 standard. We used a risk analysis and sampling method in order to obtain a reasonable assurance that the verified data did not present any major inaccuracies. Our process included interviews with the staff responsible for the collection and in-house validation of the selected information, as well as the review of supporting documents and other procedures deemed necessary.

Opinion

In our opinion, the selected quantitative data, which are identified with a check sign ✓ in the *2008 Sustainable Development Report,* give a true representation of the items covered as of December 31, 2008.

Calin Moldovean
President, System Certification
Intertek
March 11th, 2009

Units of Measure

$M	millions of dollars
$B	billions of dollars
kV	kilovolt (one thousand volts)
W	watt (unit of power)
kW	kilowatt (one thousand watts)
kWh	kilowatthour (one thousand watthours)
MW	megawatt (one million watts)
MWh	megawatthour (one million watthours)
GW	gigawatt (one million kilowatts)
GWh	gigawatthour (one million kilowatthours)
TWh	terawatthour (one billion kilowatthours)
dBA	decibel A
Hz	hertz
t CO_2 eq	tonne of CO_2 equivalent
Mt CO_2 eq	million tonnes of CO_2 equivalent

The following documents may be obtained from our Web site **www.hydroquebec.com** or by calling 1 800 ÉNERGIE (363-7443):

Sustainability Report 2008 (this document)

Sustainable Development Action Plan 2009–2013

Annual Report 2008

Profil régional des activités d'Hydro-Québec – 2008

Financial Profile 2008–2009

Legal deposit – 1st quarter 2009
Library and Archives Canada
Bibliothèque et Archives nationales du Québec
ISBN 978-2-550-55050-1
ISBN 978-2-550-55051-8 (PDF)

2009G018A

Ce document est également publié en français.

To comment on this report:
www.hydroquebec.com/reach_us/general.html

www.hydroquebec.com/
sustainable-development

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