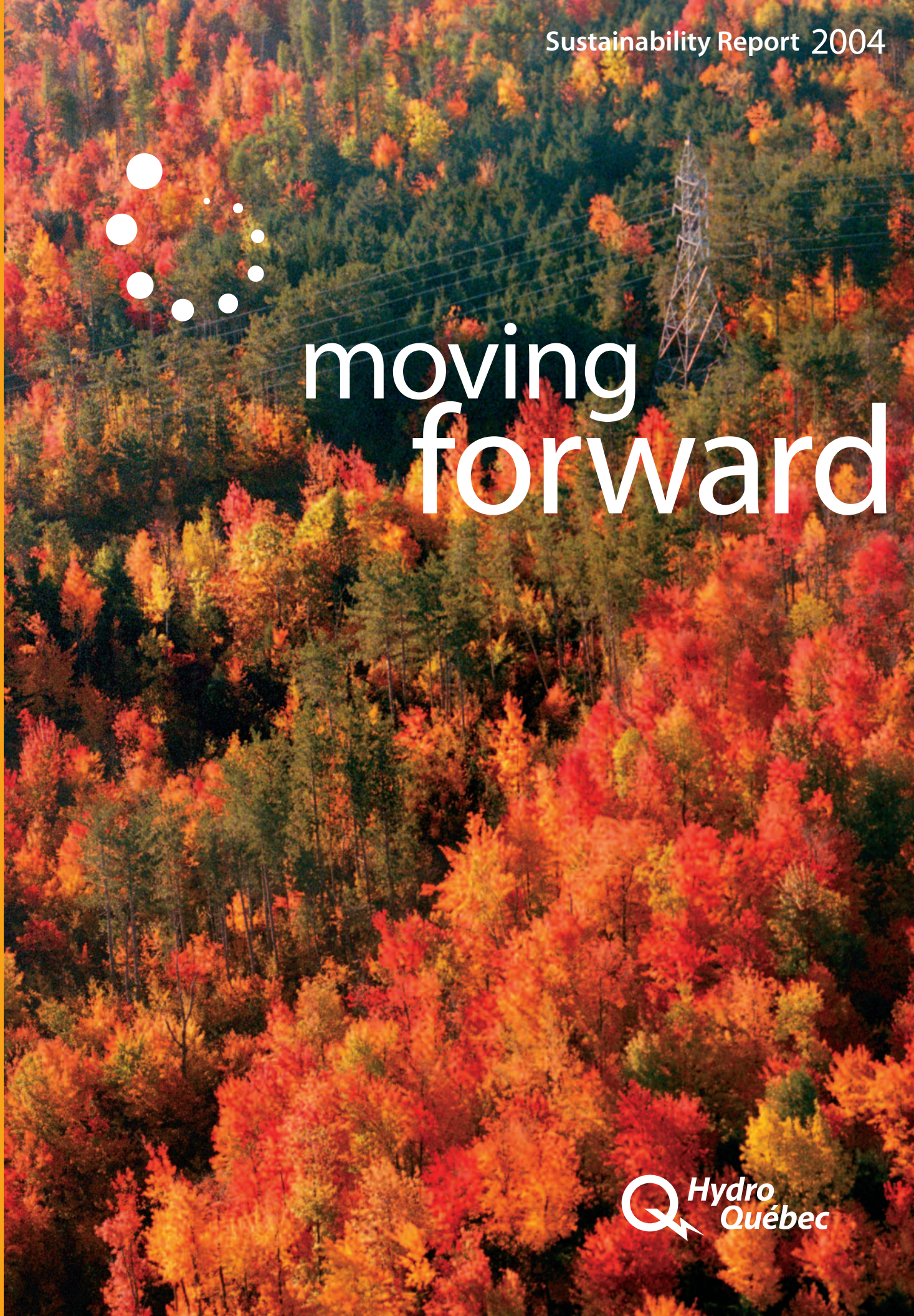
Sustainability Report 2004



moving forward

Hydro Québec

moving forward

Hydro-Québec began its first environmental studies in the early 1970s. The James Bay region provided the fertile ground where our vision of sustainable development took root. With the passing seasons, our commitment has evolved to reflect new environmental, social and economic issues. The world is changing, and we must make cost-effective, responsible and sustainable energy choices. Moving forward to a better future.

Cover photo: 120-kV transmission line linking Iberville and Saint-Césaire substations in the Montérégie region.

Message from the Chairman of the Board and the President and Chief Executive Officer

We are pleased to present Hydro-Québec's *Sustainability Report 2004*. This year's theme, "moving forward," accurately conveys our values as a company committed to Québec society. It also reflects the choice we made several years ago in favor of sustainable development. The current report covers our accomplishments in 2004, as well as areas that call for improvement.

To ensure our customers' energy security, we have continued to develop Québec's hydroelectric potential through investments totaling $5 billion. In a context of climate change, we are convinced that hydropower remains the best option for the province. This clean, renewable energy source helps maintain productive habitats and ecosystems, and contributes to the social and economic development of Québec and its regions. By using hydroelectricity, together with other options such as wind power, we are making sustainable choices to meet energy needs.

One of these choices, and a key business objective, is our new, more ambitious Energy Efficiency Plan. We want to support and encourage responsible behavior by consumers, who can thus play a part in Québec's sustainable energy future. Reliable, robust systems that are well integrated into the environment also contribute to achieving this objective.

By virtue of the scope of its assets and investments, Hydro-Québec plays a major social and economic role. The past year's results are tangible evidence of our desire to safeguard public health and safety, protect the environment and quality of life, and maintain close relations and an ongoing dialogue with our partners, our customers, our employees and our shareholder.

The credit for the performance described in the *Sustainability Report 2004* goes to our employees, to whom we express our sincere gratitude. We rely on their commitment every day in order to achieve continuous improvement.

At a time when the Québec government is charting its path toward sustainable development, we are especially proud to share the progress we have already made along this road. We pledge, more firmly than ever, to continue our efforts toward development that remains viable for years to come and that respects the environment.

André Bourbeau
Chairman of the Board

André Caillé
President and Chief Executive Officer

Hydro-Québec and Sustainable Development

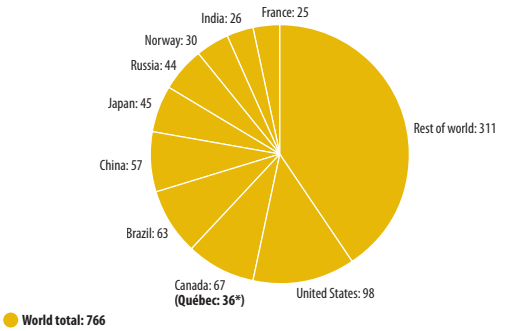
Sustainable Energy Choices

This past year marked the 60th anniversary of the founding of Hydro-Québec, one of the largest electric utilities in North America. The security of Québec's energy supply was a dominant issue throughout 2004 and was even the subject of public debate before the Régie de l'énergie (Québec energy board). The public also expressed particular concern about greenhouse gases, air quality and climate change. In this context, it seems timely to publicize the action taken by Hydro-Québec toward achieving sustainable energy development.

Our strategies

- Give priority to hydroelectricity.
- Diversify sources of supply in order to ensure Québec's energy security.
- Give priority to wind power as a supplementary generating option.
- Implement the comprehensive Energy Efficiency Plan 2005–2010, which includes an ambitious energy conservation target.
- Add other renewable (e.g., biomass) and thermal (conventional, nuclear, gas and cogeneration) energy sources.
- Improve the efficiency of existing facilities in order to limit investment in new infrastructure.
- Maintain reliable systems that blend well with the environment.

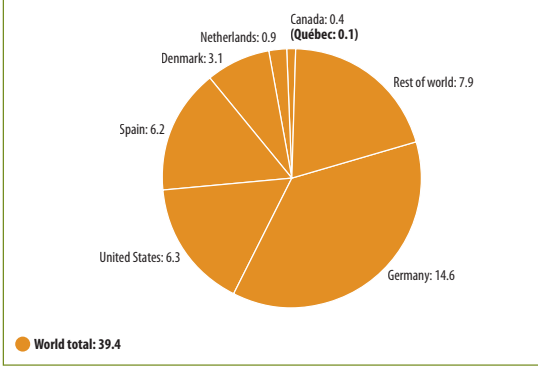
Major producers of hydropower – 2001
Installed capacity (GW)



Sources: International Energy Agency, Key World Energy Statistics 2004 *and Natural Resources Canada.*

** 2003 statistic for Québec.*

Major producers of wind power – 2004
Installed capacity (GW)



Source: Canadian Wind Energy Association.

Québec customers, the focus of Hydro-Québec's operations

Hydro-Québec's core mission is to supply Quebecers with electricity. A business-oriented government corporation, it also pursues endeavors in energy-related research and promotion, energy conversion and conservation, and any field connected with or related to power or energy. Hydro-Québec must, by law, ensure that Quebecers have a secure electric energy supply. It does so by relying mainly on hydropower, a clean, renewable energy source.

Managing sustainable development

- We adhered to the concept of sustainable development in 1989 and have been active in the environment field for more than 30 years.
- We have established policies, values and criteria for selecting construction projects that incorporate environmental, social and economic concerns.
- There is accountability to corporate management and to the Environment and Corporate Social Responsibility Committee of the Board of Directors.
- We have ISO 14001–certified environmental management systems.
- We use various means to work with communities, customers, and business and industrial partners.
- More than 300 employees work in environment or community relations throughout the province.
- Our financial contributions to Québec society include donations and sponsorships, the Fondation Hydro-Québec pour l'environnement, university chairs and the Integrated Enhancement Program.
- Our annual Sustainability Report is based on the internationally recognized guidelines of the Global Reporting Initiative (GRI) and audited by a third party.

A Responsible Company, Every Day

Hydro-Québec is a responsible company from the perspective of sustainable development. It employs a host of means suited to the operating environment of its various units. Its sense of responsibility is apparent in all its activities, from planning and research through to construction and operations. Its employees demonstrate a genuine concern for applying sustainable development criteria in their daily practices.

In 2004, Hydro-Québec joined the United Nations Global Compact, which urges participants to abide by 10 major principles related to human rights, labor standards, environmental protection and anti-corruption initiatives. In addition, the company made a commitment to participate in the GRI international working group in charge of formulating energy utilities sector supplement reporting guidelines.

Mont-Wright old-growth forest (Québec City region)

The Fondation Hydro-Québec pour l'environnement (Hydro-Québec foundation for the environment) provided financial support for a project to preserve and enhance the old-growth forest in Mont-Wright conservation park.

The Nature of Our Electricity

More than a century ago, our predecessors harnessed water power to generate electricity. We are following in their footsteps to meet the growing energy demand in Québec. Wind power and biomass will provide valuable additions to our unique energy heritage. Our kilowatts are becoming greener. Let's use them wisely, with consideration for the generations to come.

Catherine Lake in the Saguenay–Lac-Saint-Jean region.

Meeting the Energy Needs of Québec

Growth in Electricity Demand

Canadians, and Quebecers in particular, are among the world's largest consumers of electricity, mainly owing to the use of electric power for industrial and heating purposes.

In Québec, electricity demand follows demographic and economic growth, and has risen at a moderate but steady pace for many years.

Hydro-Québec has 3.7 million customer accounts. Its electricity sales totaled 180.8 TWh in 2004: 165.9 TWh in Québec and 14.9 TWh outside the province. Domestic sales were down 1.2 TWh, mainly as a result of a reduction in industrial sales due to plant closings and a strike at the Bécancour aluminum smelter.

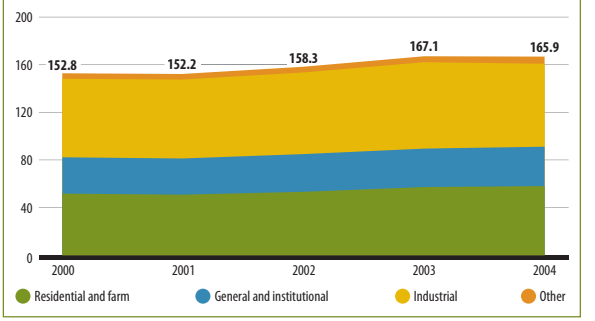
To meet future energy needs, Hydro-Québec filed an Electricity Supply Plan with the Régie de l'énergie in November 2004. It expects sales to increase by 1.2%, or 2 TWh, per year between now and 2014, taking energy conservation into account.

Supply Based Mainly on Renewables

Québec's hydroelectric output has doubled since 1975, while oil use, apart from the transportation sector, is a third of what it was. To meet electricity needs, Hydro-Québec now operates a fleet of 53 hydroelectric generating stations with a total installed capacity of 31,622 MW, representing 96% of its output. The remainder is thermal energy (including nuclear) and wind power, which accounts for a small share but will grow in importance in the coming years.

To ensure the profitability of its fleet and maximize value for the people of Québec, Hydro-Québec exports electricity. In addition to generating revenue, exports contribute to improving air quality in eastern North America, since Québec hydropower helps avoid the substantial greenhouse gas emissions associated with thermal generation.

Domestic electricity sales by customer category – 2000–2004 (TWh)



Source: Hydro-Québec Annual Reports, 2000–2004.

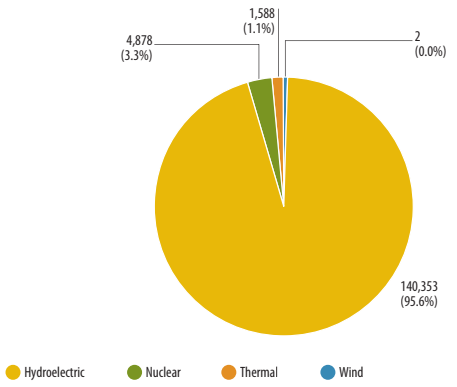
Hydro-Québec generating capacity – 2004 (MW)

Type of facility	Number	Installed capacity
Hydroelectric*	53	31,622
Conventional thermal	1	600
Gas-turbine thermal	3	870
Diesel-fueled thermal**	24	123
Nuclear	1	675
Wind	1	2
Total	**83**	**33,892**

** Hydro-Québec also has access to most of the output from Churchill Falls generating station, in Labrador, which has a rated capacity of 5,428 MW.*

*** Used to supply off-grid systems (not connected to the main power system); most of these systems are located in northern Québec.*

Electricity generated by Hydro-Québec – 2004 (GWh)



Coal-fired generating stations, sources of pollution

Coal-fired generating stations are the main source of atmospheric emissions in the power industry. Although they supply 44% of North America's electricity, they produce 90% of the nitrogen oxide (NO_x) emissions and 86% of the sulphur dioxide (SO_2) emissions. These two air pollutants are harmful to the environment and human health.

Source: North American Power Plant Air Emissions, *report of the Commission for Environmental Cooperation.*

Renewable energy at Hydro-Québec (GWh)			
Generated and purchased	**2002**	**2003**	**2004**
Energy of all types			
Energy generated	150,135	152,375	146,821
Energy purchased	41,356	39,466	41,448
Total	**191,491**	**191,841**	**188,269**
Renewable energy			
Hydropower generated	145,401	146,913	140,353
Wind power generated	3	2	2
Hydropower purchased	36,356	31,995	33,684
Biomass and waste reclamation power purchased	1,376	1,477	1,480
Wind power purchased	169	168	185
Total	**183,305**	**180,555**	**175,704**
Proportion of renewables (%)	**96**	**94**	**93**

Sainte-Marguerite 3 reservoir.

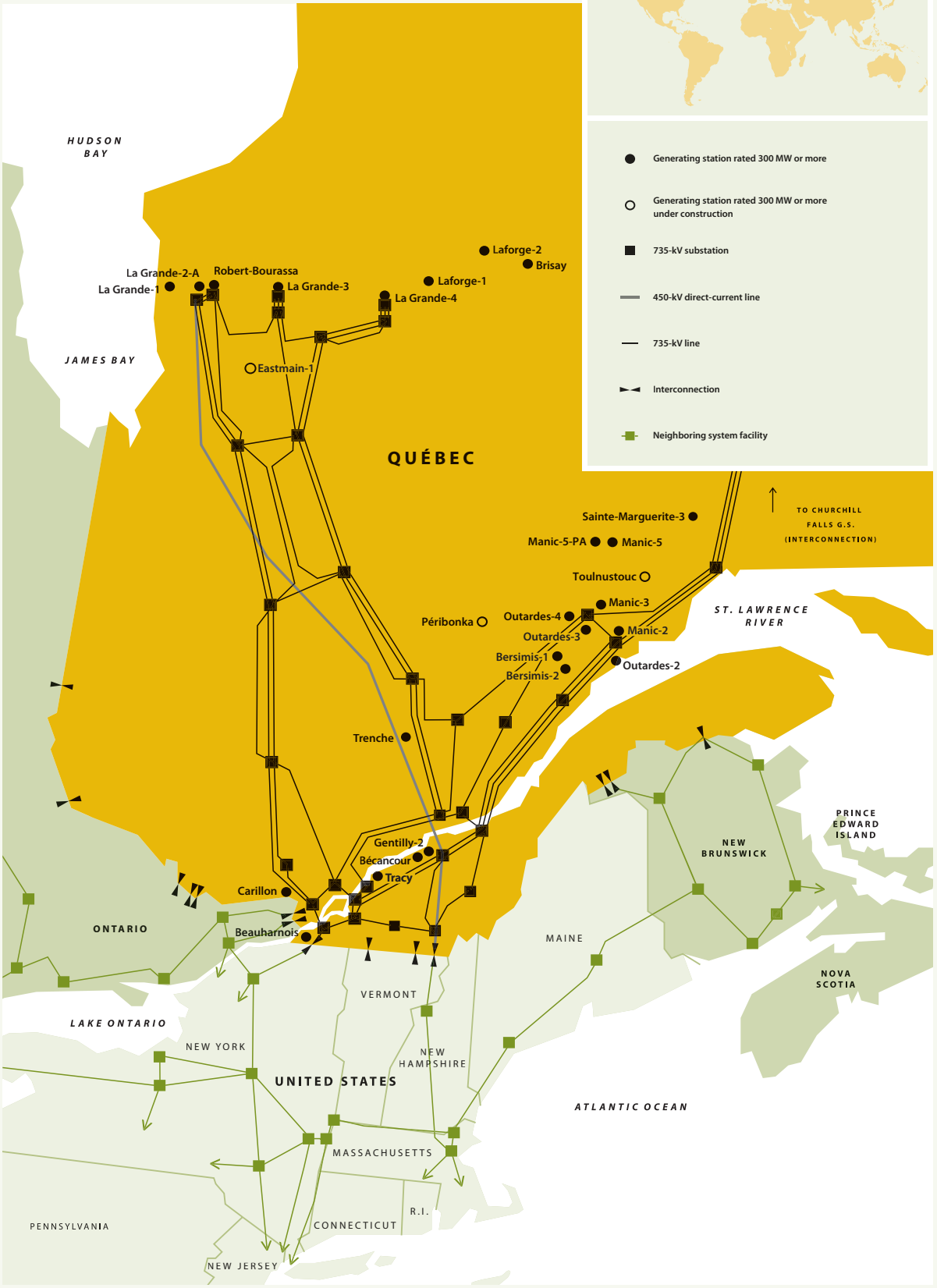
Criteria for future purchases

Five sustainability indicators approved by the Régie de l'énergie in October 2004 serve as a basis for evaluating bids for long-term power supplies. These indicators cover:

- renewability
- greenhouse gas emissions
- nitrogen oxide emissions
- the supplier's adoption of an environmental management system
- the support of local elected representatives

These indicators count for 15% in bid evaluation.

Major Hydro-Québec Facilities



Opting for Hydroelectricity

The Fight Against Climate Change

Climate change is a global issue, as evidenced by the United Nations Framework Convention on Climate Change (1992) and the Kyoto Protocol (1997). The Québec government and Hydro-Québec have expressed their support for this commitment by the world's nations to reduce their greenhouse gas (GHG) emissions.

Canada and Kyoto

- The Kyoto Protocol was ratified by Canada in December 2002.
- The Protocol came into effect in February 2005, following ratification by Russia in December 2004.
- Canada's goal is to reduce GHG emissions by 6% from their 1990 levels between 2008 and 2012.

Because of Québec's extensive use of hydroelectricity to meet its energy needs, the province shows a decidedly more positive record than its neighbors in terms of GHG emissions (according to 2002 statistics):

- Per capita emissions are one-half those of the other Canadian provinces as a whole, and one-sixth of Alberta's.
- For the power industry specifically, per capita emissions are 97 times lower than elsewhere in Canada. This industry accounts for 0.34% of GHG emissions in Québec, versus 17.4% in the rest of Canada.

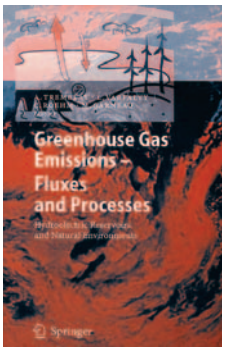
In spite of its outstanding performance from the standpoint of GHG emissions, hydroelectricity is not specifically addressed in the Kyoto Protocol. Hydro-Québec is nevertheless working to have hydropower's contribution recognized in the tradable permit and credit mechanisms proposed by the Canadian government.

The Importance of Water in Québec

Québec enjoys abundant water resources. With its generating facilities and its retaining and diversion structures, Hydro-Québec maintains a presence on 73 of the province's 4,500 rivers. Thirty-nine other rivers are harnessed by private power producers. Overall, rivers used for hydroelectric generation currently make up less than 3% of all rivers in Québec.

Hydro-Québec invests continually in preserving the rivers it uses. In addition, all of its projects must fulfill the following three conditions:

- They must be profitable under market conditions.
- They must be environmentally acceptable.
- They must be well received by local communities.



High marks for hydroelectric reservoirs

Hydro-Québec, the Université du Québec à Montréal and Springer jointly published *Greenhouse Gas Emissions – Fluxes and Processes*, a comprehensive review of current knowledge of the GHGs produced by reservoirs and natural environments in northern, semi-arid and tropical regions.

The researchers concluded that hydroelectricity is a renewable energy which contributes very little to GHG emissions. Emissions from northern reservoirs are 35 to 70 times lower, per terawatthour, than those from thermal generating stations.

This scientific work is the product of a collaborative effort involving 13 universities, 6 agencies and research centres and 6 companies in North America, Europe and South America.

Major Contributions by Hydroelectricity

Hydroelectric facilities are lasting assets. They form a rich legacy for future generations, both in Québec and beyond our borders.

Society as a whole benefits in many ways—environmentally, socially and economically—from hydropower.

Environmental protection

- A clean, renewable energy source
- Cleaner air and lower greenhouse gas emissions
- Replacement of fossil fuels
- Respect for biodiversity and habitats
- Expanded knowledge of ecosystems and archaeological heritage

Social development

- A local source of supply, promoting power system stability and operating flexibility
- Support for communities and Aboriginal peoples
- Flood protection for people and property
- Enhanced recreational potential, e.g., through construction of boat ramps
- Long service life and low maintenance costs

Economic development

- Energy autonomy and price stability
- Stimulation of know-how and industrial development
- Major investments in related infrastructure such as roads
- Job creation and workforce training
- Procurement of goods and services

A recognized renewable resource

Hydro-Québec shares its hydropower expertise and works with various national and international forums and agencies such as the World Energy Council, which is chaired by Hydro-Québec's President and Chief Executive Officer, and the International Energy Agency.

In 2004, Hydro-Québec collaborated with the International Hydropower Association in formulating sustainability guidelines and drafting a protocol for applying these principles to hydroelectric projects and facilities.

At the International Conference for Renewable Energies and the United Nations Symposium on Hydropower and Sustainable Development, Hydro-Québec played an active role in achieving recognition for hydroelectricity as a driving force of sustainable energy development for our planet.

Major Projects In Progress

Wise choices before, during and after hydroelectric development projects

Choose the right site and the most sustainable way of developing it.

- Favor rivers and sites that have already been developed.
- Choose the variants that have the least impact and can meet more than one need.

Acquire the means of carrying out the best project possible.

- Identify, prevent and manage project impacts by conducting rigorous environmental studies.
- Mitigate or compensate for impacts through appropriate action and measures, such as new spawning grounds.
- Ensure compliance with legal requirements and the company's commitments during construction.
- Reach agreements and maintain ongoing relations with local communities.
- Optimize economic spinoffs in the regions affected.

Operate the developments in a sustainable fashion and measure their real impacts.

- Manage facilities carefully, with proper respect for communities.
- Encourage secondary use of facilities.
- Institute emergency and risk management measures.
- Operate the developments in a sustainable fashion.

Ongoing Development

Hydro-Québec has undertaken to expand its generating fleet. Work is progressing on three large developments—Eastmain-1, Toulnustouc and Péribonka—among other projects. Rocher-de-Grand-Mère generating station was commissioned at the end of the year, and environmental impact statements were filed for the Chute-Allard and Rapides-des-Cœurs developments as well as the Eastmain-1-A powerhouse and Rupert diversion project.

Monitoring fish mercury levels at the La Grande complex.

Grand Marais, a marsh near Beauharnois.

Eastmain-1 Project

Construction is proceeding on the Eastmain-1 development in the James Bay region. Like all our projects, this one was subjected to careful examination of the environmental, social and economic aspects involved in all the project stages, before it was accepted for development. Our environmental commitment must translate into concrete action, because building tomorrow's energy also means forging lasting links with local communities.

Preserving the Environment

Environmental assessment

As soon as planning began for Eastmain-1, we conducted an environmental assessment to determine the impacts of the project. In it, we defined measures to mitigate any negative effects and enhance local benefits. These included:

- developing riparian habitats favorable to waterfowl and small land animals
- building spawning beds, a weir and a fish pass, and stocking the Eastmain River with more than 70,000 lake sturgeon fry
- developing a nature trail with scenic lookouts and interpretation panels

Environmental compliance

Hydro-Québec continuously monitors environmental compliance on the jobsite to ensure that contractors adhere to its stipulated environmental practices, in the spirit of the company's ISO 14001 environmental management system. Contractors and workers are made aware of the project impacts and environmental requirements. Compliance assurance covers such aspects as borrow pit operation, wastewater treatment and residual materials management.

Environmental follow-up

Environmental follow-up is conducted before, during and after construction, and tracks changes in the environment compared with the impacts identified at the draft-design stage. It is also used to determine whether the planned mitigation measures are effective. Elements covered by the environmental follow-up include water quality, greenhouse gases produced by the reservoir, bank erosion below the spillway and economic effects on jobs and Cree companies.

Some Statistics

Number of generating units: 3
Installed capacity: 480 MW
Reservoir area: 603 km^2
Number of dikes, plus dam: 33
Construction period: 2002–2007
Type of generating station: surface

Contributing to Social Development

One of the objectives of the *Nadoshtin Agreement*, signed by the Crees and Hydro-Québec in 2002, is to preserve the Aboriginal way of life while facilitating project construction. It provides for the establishment of various companies as well as a technical committee for each of the project's aspects, ranging from respect for Cree culture to management of the region's natural resources. The Crees have been actively involved in the project, in both the study and construction stages.

In 2004

- 12% of the workforce on the site were Crees, for an annual average of 185 employees.
- The project generated an average of 1,824 jobs.
- 12% of the workforce came from the Abitibi-Témiscamingue region.

Promoting the Regional Economy

The Eastmain-1 project will cost $2.1 billion. Hydro-Québec is working with the spinoff optimization committees for the Abitibi-Témiscamingue and Nord-du-Québec regions (ComaxAT and ComaxNORD) to help regional companies secure contracts and assist local workers in finding jobs on the site.

In 2004

- $530 million was spent on construction.
- Since the project began, $155 million has been spent on contracts and purchases in the Abitibi-Témiscamingue and Nord-du-Québec regions.
- Several hundred business contacts were made between regional suppliers and worksite contractors during two business networking events.

Projects Under Construction

Toulnustouc hydroelectric development.
526 MW. North Shore region.
Commissioning: 2005.

- 1,073 jobs were supported in 2004.
- 285 Innu from the Betsiamites band have been hired since 2001.
- Environmental follow-up under way focuses on shore erosion of Lake Sainte-Anne, beaver habitat in the area of the planned reservoir, recreational and tourist use of the area, and other elements.
- Mitigation measures include the enhancement of five hectares of wetlands favorable to waterfowl.
- The spinoff optimization committee's work continues.

Péribonka hydroelectric development.
385 MW. Saguenay–Lac-Saint-Jean region.
Commissioning: 2008.

- Construction started in April 2004.
- 554 jobs were supported in 2004, with 82% of the workers coming from the Saguenay–Lac-Saint-Jean region.
- Innu workers make up 16% of the workforce.
- Nearly half of the contracts ($148 million) were awarded to North Shore and Saguenay–Lac-Saint-Jean businesses, with $76 million going to Innu companies from Mashteuiatsh.
- Regional economic spinoffs totaled $122 million in 2004.
- Environmental follow-up under way focuses on maintaining waterfowl populations, compensating wetland loss and stocking water bodies with brook trout, among other things.

Commissioning of Rocher-de-Grand-Mère generating station

Launched in 2000, the construction of Rocher-de-Grand-Mère generating station ended in December 2004 with the commissioning of its generating units, totaling 230 MW. This facility on the Saint-Maurice River stands next to Grand-Mère generating station, which will now be used selectively, primarily during spring and fall floods.

At the peak of construction, there were more than 700 workers on the site, 71% of them from the Mauricie and Central Québec regions. The approximately $520-million investment generated regional spinoffs in excess of $150 million.

Projects Under Study

Eastmain-1-A powerhouse and Rupert diversion, including Sarcelle powerhouse.
888 MW. Nord-du-Québec region.

- This is one of the decade's largest hydroelectric development projects in Québec.
- The environmental impact statement was filed in December 2004.
- Cree communities were active participants and their traditional knowledge was incorporated into the study.
- Users of the James Bay region were consulted through information and discussion panels.
- A partnership agreement was reached with the Municipality of Baie-James to ensure substantial financial and economic spinoffs for the Nord-du-Québec region.

Chute-Allard and Rapides-des-Cœurs hydroelectric developments.
138 MW. Mauricie region.

- The environmental impact statement was filed in May 2004.
- Public hearings were held in September and October 2004; the project was favorably received by the community.
- Information and discussion panels were organized with stakeholders. Information and consultation meetings and working committee meetings also took place.
- A decision by government authorities is expected in 2005.

Economic spinoffs of major construction projects – 2004

Project	Region	Number of jobs*	Expenditure ($M)	Total value of project ($M)
Péribonka hydroelectric development	Saguenay–Lac-Saint-Jean	554	205	1,200
Toulnustouc hydroelectric development	North Shore	1,073	332	1,000
Eastmain-1 hydroelectric development	Nord-du-Québec	1,824	530	2,100
Beauharnois generating station (rehabilitation)	Montérégie	211	52	1,400
Rapides-des-Quinze generating station (refurbishment)	Abitibi-Témiscamingue	100	31	140
Rocher-de-Grand-Mère generating station	Mauricie	200	170	520
Outardes-3 generating station (refurbishment)	North Shore	140	42	199
Mercier generating station	Outaouais and Laurentians	150	41	145

* *Annual average. Includes jobs associated with worksite, office and laboratory activities carried out by Hydro-Québec and its agents (contractors, engineering firms and others).*

Diversifying Our Generating Options

Moving Forward with Wind Power

Hydro-Québec favors wind-generated electricity as an additional source of energy supply. In October 2004, it accepted bids from two producers able to supply 990 MW of wind power. In accordance with the terms set forth in the calls for tenders, the wind farms and the manufacturing and assembly plants will be located in the Lower St. Lawrence and Gaspé–Magdalen Islands regions.

The regional spinoffs of these projects are estimated at $1.9 billion. As well, 40 to 60% of the expenditure will be made in the regions. The wind turbines will be commissioned in stages between December 2006 and December 2012. Building and operating them should create about 360 direct jobs.

Wind power

Advantages

- Clean, renewable energy
- Low operating costs
- Negligible GHG emissions
- Short lead time
- Support for regional development

Constraints

- Intermittent output; must be combined with sources of continuous output
- Low capacity factor; feed-in must be balanced
- Impact on landscape
- Less efficient under severe weather conditions

Le Nordais wind farm at Cap-Chat (Gaspé–Magdalen Islands region).

Did you know?

New-generation wind turbines have a generating capacity of up to 3 MW. It would take some 175 of these turbines to match the output of Toulnustouc generating station (526 MW), currently under construction on the North Shore.

Thermal Generation for Specific Needs

Hydro-Québec operates 28 thermal power plants that run on fossil fuels. Of this total, 24 are diesel-fired and supply off-grid systems, particularly on the Magdalen Islands, along the Lower North Shore and in Nunavik.

The other four thermal generating stations, three of them gas-turbine, are connected to the main power grid. They are mostly used during peak periods or times of low runoff. For example, Tracy generating station, in the Montérégie region, operated continuously from January to May 2004, then intermittently during the fall.

Abandonment of the Suroît project

In 2001, Hydro-Québec filed for approval to build a combined-cycle gas-fired generating station (approximately 800 MW) on the banks of the Beauharnois canal, southwest of Montréal. Use of this new technology, which performs well from an atmospheric emissions standpoint, was designed to improve the company's operating flexibility from 2006 to 2009.

A number of groups voiced their opposition to the Suroît project, prompting the Québec government to ask the Régie de l'énergie to provide an opinion. Following public hearings held in spring 2004, the Régie concluded that the project was desirable, but not indispensable. Under these conditions, the government decided in November to withdraw its authorization to build the generating station.

Nuclear Power as an Additional Source

Since 1983, Hydro-Québec has operated Gentilly-2 generating station (675 MW), which accounts for about 3% of its annual output. This nuclear facility plays an important role, notably because of its excellent performance and its contribution to power grid stability.

At the time Gentilly-2 was designed, Hydro-Québec planned to operate it until 2013. To extend its useful life until 2035, the company filed an environmental impact statement in January 2004 for a project to modify the radioactive waste storage facilities and refurbish the plant. Public environmental hearings were held in November and December 2004.

According to the studies, refurbishing Gentilly-2 and extending its operating life will not release significant additional quantities of radioelements or chemicals into the environment.

Gentilly-2 generating station:
An economic driver for the region

- About 700 permanent jobs and annual operational spinoffs of approximately $90 million in the Trois-Rivières and Bécancour region
- Estimated regional spinoffs in excess of $300 million from the plant's refurbishment, for a total investment of $1.2 billion

Electricity from Cogeneration and Biomass

In October 2004, Hydro-Québec issued a call for tenders for the supply of 350 MW of electricity from cogeneration. The facilities must be located in Québec and their installed capacity must be 200 MW or less. An energy efficiency of at least 70% and minimization of greenhouse gas emissions are among the criteria for awarding the contracts. Deliveries are scheduled to begin by December 1, 2009, at the latest.

As well, two supply contracts for biomass power totaling 39.4 MW were awarded following a call for tenders for 100 MW and were approved by the Régie de l'énergie. Deliveries will commence in July 2006 and March 2007.

Did you know?

Cogeneration is the simultaneous production of two types of energy from a single source. The most common example is the production of electricity and steam from natural gas. The steam can be used for industrial processes or for water and space heating.

Distributed Generation

The Régie de l'énergie received a proposal from Hydro-Québec designed to encourage small residential and commercial consumers to set up their own generating facilities. Only renewables, such as wind and solar power, hydropower and electricity produced from biogases and forest biomass, will be considered for this distributed-generation initiative.

Similar programs already exist or are being implemented in other Canadian provinces, and nearly 40 American states have passed legislation in this connection.

Using biogas for power generation on farms

Hydro-Québec launched a pilot project for distributed generation using farm biogases. This project could involve 900 farms, representing an installed capacity of 40 MW and an output of 300 GWh.

Reliable Systems Well Integrated into the Environment

Continuous Improvements to the Transmission System

Hydro-Québec has made a number of changes to its transmission system since the major ice storm of 1998 with the aim of improving service reliability. In particular, it built the Montérégie loop, made up of the 735-kV Des Cantons–Hertel line, Montérégie substation and three 120-kV lines. This extensive project, costing over $460 million, was completed in 2004. It generated considerable spinoffs in the region, including 22 initiatives that enhanced the biophysical and human environment.

In response to concerns expressed by farmers, stray voltage likely to affect animal behavior was evaluated under an agreement between Hydro-Québec, the farm producers' union and the provincial Department of Agriculture, Fisheries and Food. This study, conducted in conjunction with the commissioning of the 735-kV Des Cantons–Hertel line, shows that voltage levels remain below the acceptable threshold.

Other major advances in transmission

- A variable-frequency transformer (VFT) went into operation at Langlois substation in the Montérégie region. The world's first converter unit of its kind, the VFT optimizes interchanges across asynchronous system boundaries.
- The 120-kV Lafontaine–Paquin line was inaugurated in the Laurentians. It is built on high-performance-concrete structures—a new type of tower that blends into the landscape better and costs 15% less to produce than tubular steel towers, which are also used in areas of particular visual interest.
- A silicone gel is now used instead of oil to insulate underground lines, thereby reducing the risks of contamination.

Taking Precautions in Distribution

Hydro-Québec performs thousands of environmental assessments related to distribution projects every year, even though only a small percentage are required by law. In 2004, 99% of the Distributor's 12,867 projects underwent an internal environmental assessment. They included projects for supplying new customers and for system maintenance.

Some 60 distribution projects also were monitored to verify compliance with the company's environmental guidelines. Generally speaking, they fulfilled the requirements.

As well, the company's guidelines for planning and designing new facilities now take electric and magnetic fields into account. Three R&D projects were launched in this area.

High-performance-concrete towers on the 120-kV Lafontaine–Paquin line (Laurentians).

Transmission and distribution systems			
	2002	2003	2004
Transmission system			
Length (km)	32,314	32,434	32,487
Number of substations	505	506	506
Distribution system			
Length (km)	105,871	106,568	107,423

Promoting Energy Efficiency to Curb Demand

Hydro-Québec filed its new comprehensive Energy Efficiency Plan 2005–2010 with the Régie de l'énergie in October 2004. This plan targets four times the energy savings of the preceding plan: 3,000 GWh by 2010, or the equivalent of the annual consumption of 180,000 homes.

The company has a number of programs promoting rational energy use in homes, on farms, and by business and industry. Collaborative efforts with the provincial farm producers' union and associations of municipalities led to the formation of discussion panels on the plan's implementation in the municipal and farm sectors. They also yielded concrete measures, such as the publication of a guide on energy-efficient motors for farm operations and a fact sheet on the use of heat pads in hog breeding.

Hydro-Québec remains a leading partner in the development of efficient technologies, such as:

- Thermal storage for commercial buildings, in cooperation with an international partner, which helps reduce greenhouse gas emissions.
- Wood drying using a high-temperature heat pump, in partnership with an industrial customer and a manufacturer. This solution could reduce the volume of fuel oil consumed annually in Québec by approximately 22 million litres.
- Artificial greenhouse lighting, which could yield a 22% improvement in photosynthetic and energy efficiency.

Recognition in geothermal technology

Hydro-Québec received the National GeoExchange Award from the Canadian GeoExchange Coalition in recognition of its commitment and leadership in this field.

Furthermore, every year, Hydro-Québec evaluates the energy performance of its buildings and structures in order to improve their energy efficiency. The measures implemented in 1991 to reduce energy consumption in administrative buildings have generated savings of 100 kWh per square metre. As well, the installation in 2004 of automatic heating and air conditioning systems at Manic-5-PA generating station and thermal improvements at Daniel-Johnson dam, in the North Shore region, should cut annual energy consumption at those facilities by 33%.

ENERGY WISE

A noted presence

The Energy Wise campaign promotes energy efficiency by all our customers. The campaign for residential customers got under way in fall 2004 with television commercials and promotional material distributed by a number of retailers and other partners.

Use of heat pads in hog breeding.

Energy Efficiency Plan 2005–2010

In July 2004, the Québec government asked us to increase our energy efficiency target from 0.75 TWh to 2.4 TWh. We responded with an ambitious plan: we will invest $1 billion to encourage our customers to save 3 TWh by 2010. By promoting responsible consumption, we help to conserve natural resources.

Profitable for the Community as a Whole

We offer our different categories of customers various energy efficiency tools and programs that allow them to reduce their electricity bills. These include:

- The Energy Wise diagnostic program, which provides residential, commercial and business customers with an analysis of their energy consumption, along with valuable advice.
- The Empower Program for Building Optimization, which helps reduce operating costs, giving customers a competitive edge in the real estate market.
- The Empower Program for Industrial Systems, designed to optimize industrial customers' operations.
- The Traffic Light Optimization Program.

We also substantially increased our financial support for three government energy efficiency programs that target residential customers: Novoclimat, EnerGuide for Houses and the Program for Low-Income Households.

A shining example

The Traffic Light Optimization Program is intended for municipalities, regional county municipalities (RCMs), transit authorities, and the federal and provincial governments. The funding is used to replace incandescent traffic lights with light-emitting diode (LED) fixtures. This technology generates energy savings of about 90% and improves safety, particularly in sunny weather. The LED lights last eight to eleven years, 30 times longer than ordinary bulbs. Using them will help reduce the number of incandescent bulbs that end up in landfill sites.

Some Statistics for 2004

312,375 ENERGY WISE Home Diagnostic questionnaires completed

93,088 electronic thermostats installed

25,412 pool filter timers distributed

172 GWh in energy savings, out of a target of 189 GWh

Beneficial for the Environment

Using electricity wisely lessens the need for new generating facilities and avoids the resulting impacts.

In addition, the development of good habits by consumers should help reduce the consumption of other resources, such as water.

Profitable for Québec

Implementation of the Energy Efficiency Plan depends on the cooperation of many partners, including the provincial Agence de l'efficacité énergétique, Natural Resources Canada's Office of Energy Efficiency, the Corporation des maîtres électriciens du Québec, the provincial home builders' association, and manufacturers and retailers of energy-saving products.

The $1.7-billion total investment anticipated under the plan will stimulate the Québec economy by creating jobs in various sectors. It will also promote the emergence of energy efficiency expertise, through:

- support for energy efficiency demonstration and experimentation initiatives, under the Empower Program for Industrial Systems
- technology demonstration projects related to efficient lighting and the use of geothermal systems, in cooperation with the provincial farm producers' union
- publication of three collections of winning energy efficiency practices intended for the municipal, educational, and health and social services sectors

The Color of Our Commitment

Electricity has transformed our society. By forging the links that form Québec's energy network, we have put down roots in every region of the province. The sometimes imposing presence of our facilities must go hand in hand with responsible behavior. Our role in supporting quality of life and protecting the environment is just as important as delivering electricity.

MONTREAL High Lights Festival 2005.

Responsible Action in the Community

Preserving Public Health and Safety

For a number of years, Hydro-Québec has had safety guidelines in place to protect people against criminal acts, fires and emergencies at its facilities.

The company educates people of all ages about the safe use of electricity. Every year, it offers an awareness program for schoolchildren on electric hazards and safety. It has also created an educational tool for kindergarten pupils.

Despite all these precautions, five people died from electrocution in 2004, although only one case involved a Hydro-Québec facility. Forty-two other electricity-related accidents occurred, mostly during pruning or when vehicles came into contact with live equipment.

Other awareness activities in 2004

- We participated in exhibitions organized by Québec's occupational health and safety board (CSST).
- We produced a CD-ROM containing information for delivery equipment operators.
- We published articles in various newspapers and brochures, as well as in the monthly Hydro*Contact* newsletter sent to residential customers.
- We provided interactive activities and games for children on Hydro-Québec's website.
- We promoted safety awareness for users of rights-of-way and reservoirs in several parts of Québec.

Preserving Air Quality

Hydro-Québec is committed to using vehicles that produce less pollution. Among other initiatives, it is working with 10 other companies in the Hybrid Truck Users Forum, a U.S. organization, to develop a hybrid bucket truck. Hydro-Québec will buy one of the 24 hybrid trucks built in 2005 and become the first company in Canada to own such a vehicle.

The company also purchased four other hybrid vehicles during the year. Their environmental performance will be monitored and the results will be used in planning the upcoming replacement of its vehicle fleet.

This website, www.hydroquebec.com/security, offers practical information about the safe use of electricity, presented in an entertaining way.

Managing Water Responsibly

Hydro-Québec partners with government agencies, the organizations concerned and elected officials in the integrated management of certain water bodies. The rules for operating its reservoirs and associated watercourses take into account the constraints and needs related to the various types of water use.

In connection with the federal *Fisheries Act*, Hydro-Québec contributed to the development of two interpretation bulletins and participated in research on fish movement, habitat loss assessment and ecological instream flows.

At its own facilities, Hydro-Québec conducts research and works to preserve and enhance aquatic resources. For example, it built a small wall downstream from Bersimis-2 generating station to prevent erosion of the foundations and protect an egg incubator for Betsiamites River salmon.

With regard to mercury in reservoirs, the company participated in the publication of *The Northern Fish Nutrition Guide* to promote safe consumption of northern fish.

Managing water use

- An agreement was signed with the Comité de protection et de mise en valeur du banc de Portneuf to execute phase II of the Portneuf sandbank protection plan (North Shore region).
- The company is a member of the Société de restauration du saumon de la rivière Betsiamites (North Shore region), the Kénogami Lake/Rivière aux Sables and Chicoutimi River committee (Saguenay–Lac-Saint-Jean and Mauricie) and the Upper Saint Lawrence ZIP committee (Outaouais region).

Salt marsh at the Portneuf sandbank.

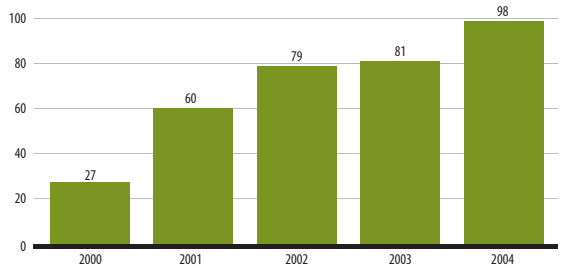
Wastewater and drinking water measures

- An ultraviolet disinfection system was installed at Rivière-des-Prairies generating station and in the L'Annonciation and Sainte-Émélie-de-l'Énergie administrative buildings to reduce the number of fecal coliform bacteria in effluent.
- Potential water contamination by hydrocarbons when vehicles are being washed was assessed and simple cleaning methods were introduced to reduce the risk of contamination.
- Water consumption in company buildings was analyzed and measures to reduce consumption, such as the use of low-flow fixtures, were identified.

Practising Sound Environmental Management

At Hydro-Québec, 98% of the employees whose work has an impact on the environment are governed by an ISO 14001–certified environmental management system. This represents substantial progress over 2003, when the proportion was 81%. A major investment in training was required to support sound environmental management: over 6,600 people acquired new environmental knowledge during the year.

Employees governed by an environmental management system (%)



Ottawa River Watershed

The Ottawa River is over 1,100 km long. Industrialization and hydroelectric development in the region peaked in the 20th century when power stations, dams and reservoirs were built throughout the Ottawa River watershed. Following the nationalization of hydroelectricity in 1963, Hydro-Québec took over several of the generating stations in the Outaouais region.

Preserving the Environment

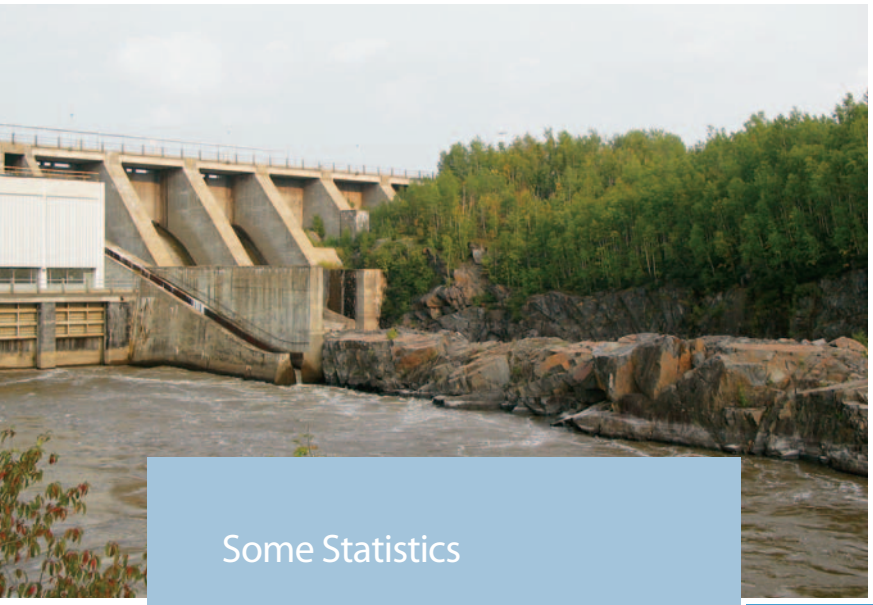
Over the years, Hydro-Québec has introduced various measures to protect wildlife and habitats and to promote joint watershed management:

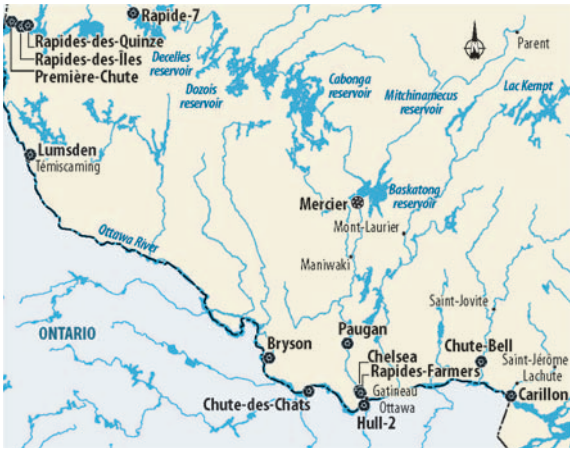
- We stabilized several kilometres of banks along the Ottawa River to control erosion.
- We maintained an instream flow at the Rapides-des-Quinze spillway to offset fish habitat loss caused by spillway reconstruction.
- The Fondation Hydro-Québec pour l'environnement contributed financially to habitat restoration (Pointe-Fortune), protection of freshwater turtles (Bristol, Angers and Plaisance) and protection of vulnerable and threatened species (Aylmer).
- We participate in the work of various organizations, including the board responsible for the Petite Nation River development plan.
- We conducted studies on the heritage value of several generating facilities, including Rapides-Farmers and Bryson.

Water, a valuable resource

The Water Policy adopted by the Québec government in 2002 considers 33 watersheds to be priorities. The Gatineau and Lièvre river subwatersheds in the Outaouais region are among them.

A watershed encompasses all of the land drained by a river and its tributaries. It also includes the biophysical and human activities that take place in the area. Watershed management promotes reconciliation of water use by the various stakeholders, including Hydro-Québec.





Some Statistics

Watershed area: 146,334 km^2, with 92,203 km^2 in Québec

Main rivers in Québec: Gatineau, Lièvre, Kipawa and Rouge

Number of generating stations: 13, with 9 on the Ottawa River

Total installed capacity: 1,858 MW

Contributing to Social Development

We contribute to communities' quality of life, particularly through multipurpose use of our properties and facilities, and support for enhancement initiatives. Among these initiatives were development of a wildlife observation post (Lochaber), Centenaire park (Thurso) and Plaisance Falls on the Petite Nation River.

In 2004

- An agreement was signed with Tembec and the municipality of Témiscaming to develop multipurpose facilities at Lumsden dam by 2009.
- Agreements were signed with the Aboriginal community of Kitcisakik regarding land use around Bourque dam (Dozois reservoir) and water-quality monitoring in swimming areas.

Promoting the Regional Economy

- As part of various refurbishment projects, measures were introduced to promote local subcontracting, in conjunction with the economic spinoff optimization committees in Abitibi-Témiscamingue (ComaxAT) and Témiscamingue (ComaxTem).
- Financial assistance was granted for the construction of recreational facilities proposed by Récré-eau des Quinze corporation at Rapides-des-Quinze, Rapides-des-Îles and Première-Chute generating stations.

In 2004

- Construction of Mercier generating station (50.5 MW): creation of 150 jobs.
- Carillon and Rapides-Farmers generating stations attracted over 5,300 visitors.
- Refurbishment projects: Lumsden hydropower development; Rapide-2, Rapide-7 and Rapides-des-Quinze generating stations.

Reduce, Reuse, Recycle, Reclaim... Dispose

Hydro-Québec follows the 4R-D principle that promotes reduction at source, reuse, recycling and reclamation before disposal of residual materials. The company's Residual Materials Management Plan, in effect since 2003, covers office supplies as well as electrical equipment.

Over the years, Hydro-Québec has reduced its raw materials consumption and waste. Here are the highlights for 2004:

- Over 853,000 annual mailings were avoided with the online billing and payment services.
- Internal-mail envelope purchases were reduced by 69% by optimizing reuse: 85,000 fewer envelopes.
- 680 tonnes of paper and paperboard were recycled, versus 620 tonnes in 2003.
- 234 tonnes of power-line hardware were reclaimed, up from 194 tonnes in 2003.
- Nearly 5.2 million litres of insulating mineral oil were decontaminated and reused. The reuse rate of 97% was an improvement over 2003, when the rate was 95%.
- 10,696 wood poles, or 100% of those removed from the power system, were recovered. However, their reuse rate—6% in 2004—is relatively low.
- 8,340 tonnes of metal were recovered and recycled.
- 9,663 tonnes of residual hazardous materials were reclaimed. This represents 87% of the RHMs treated in 2004.

Meter glass recycled

Since mid-October 2004, a Montréal-area firm has been recycling the glass covers from replaced meters. This recycling prevented the disposal in landfill of some 26 tonnes of glass.

Protecting Biodiversity and the Biophysical Environment

Hydro-Québec devotes substantial resources every year to protecting species and their habitats. It uses a preventive approach when designing and building its projects. For example, a nest of bald eagles—a vulnerable species—was discovered along the route of the 69-kV Mercier–Grand-Remous line. The right-of-way was therefore moved 700 m away from the nest.

Support for conservation

The mission of the Fondation Hydro-Québec pour l'environnement is to contribute to the enhancement and protection of the environment. In 2004, it received 58 grant applications for a total of $5 million. Sixteen new projects were selected and funding of over $900,000 was provided. The projects include:

- restoration of vegetation on lakeshores in the Eastern Townships
- agro-environmental restoration of the Gervais River and enhancement of its aquatic and riparian habitats (Saguenay–Lac-Saint-Jean region)
- preservation and enhancement of the old-growth forest in Mont-Wright conservation park (Québec City region)
- enhancement of the main tributaries of Lake Mistigougèche (Lower St. Lawrence region)

Examples of species protection measures

- Bluebird nesting boxes were installed on distribution poles to encourage the species to return to the area (Québec City region).
- An Alaska trap was installed at Mitis-1 and Mitis-2 generating stations to capture smolt and release them downstream so that they can continue their migration toward the ocean (Lower St. Lawrence region).
- Tests were conducted at Les Cèdres generating station to develop a lighting system to reduce eel mortality in the turbines (Montérégie region).
- 2,000 m^2 of brook-trout spawning grounds were developed in Toulnustouc River tributaries (North Shore region).

Not long ago, the Eastern bluebird was considered an endangered species.

Enhancing Quality of Life and Preserving Heritage

Hydro-Québec allows its properties to be used for other purposes, as long as personal safety is guaranteed and the facilities' operating requirements are met. For example, a cross-country ski trail was created in the Mauricie region on land around La Gabelle generating station.

Through its Integrated Enhancement Program (IEP), Hydro-Québec funds enhancement initiatives for the natural and human environment in communities affected by major transmission projects. In 2004, 23 of the 29 projects were carried out in the Montérégie region and the Eastern Townships.

Financial contributions under the IEP

	2004	1985–2004
Number of initiatives	29	924
Hydro-Québec funding ($M)	1.7	87.3
Host community contributions ($M)	2.8	135.3
Project value ($M)	4.54	222.7

Integrated Enhancement initiatives in 2004: 735-kV Des Cantons–Hertel line

A rest area was created and the church steps replaced in Béthanie, in the RCM of Acton. Hydro-Québec's contribution: $26,600.

New facilities were installed in Lamoureux Park in Cleveland, in the RCM of Val-Saint-François. Hydro-Québec's contribution: $37,900.

Hydro-Québec plays an active role in protecting and enhancing built, historical, archaeological and industrial heritage. In 2004, the windows in its Jarry Street West service centre in Montréal were restored, in keeping with the building's architectural and heritage features. Erected in 1951, this building won the top award in 2001 in Montréal's 11th architectural heritage contest, Opération patrimoine architectural. Other initiatives included:

- construction of the Georges-Dor visitor centre at the Manic-2 facilities on the North Shore; this building houses a permanent historical exhibit about the Manic-Outardes complex
- archaeological supervision of distribution line undergrounding in several cities, including Québec City, Trois-Rivières and Contrecœur
- archaeological inventories and digs conducted for several hydropower projects, including Eastmain-1 and Péribonka

Preserving the Landscape

As part of its program to enhance new neighborhoods, Hydro-Québec made 9,869 underground connections during the year, for 16.8% of all new residential hookups.

The company is the main partner in the government's undergrounding program for heritage, cultural and tourism sites. Four undergrounding projects totaling 3.9 km were approved for Champlain, the Wendake Huron village, Roberval and Saint-Jérôme.

Hydro-Québec participated in the launch of an underground cable guide, the *Guide en matière de distribution souterraine*, for planners and coordinators of undergrounding projects. This guide is a joint publication by the provincial associations of municipalities and various telecommunications companies. Hydro-Québec is also conducting research with its partners to determine the most economical undergrounding solutions that can be incorporated into housing projects right from the design phase.

Whenever possible, Hydro-Québec also buries its transmission lines. For example, a 1.4-km overhead-line segment between Cap-de-la-Madeleine substation and Kruger's Wayagamak paper mill was replaced by an underground line. This project included dismantling about thirty old steel towers in a residential area.

Other landscape protection initiatives

- The type of spillway gate for Rocher-de-Grand-Mère generating station was specially selected to help the station blend in better with the landscape.
- A guide that provides ways to minimize the visibility of meters and service entrance masts was distributed to municipal representatives and home builders.

The architecture of the Georges-Dor visitor centre at Manic-2 generating station matches the spillway's design.

Distribution system undergrounding in Saint-Jérome.

Containing Vegetation

To maintain system reliability and safety for workers and the public, Hydro-Québec controls the vegetation in transmission line rights-of-way and around its facilities. For its transmission system, the company follows the principle of integrated vegetation management. Herbicides are used only where absolutely necessary and where there is little risk for the environment or humans.

For landscape maintenance around its administrative buildings, the company introduced the concept of "ecological green space management" in its contracts.

Vegetation control initiatives

Generation

- A brochure on vegetation control around dikes and dams was distributed to the general public.
- A guide was published for vegetation maintenance operators.

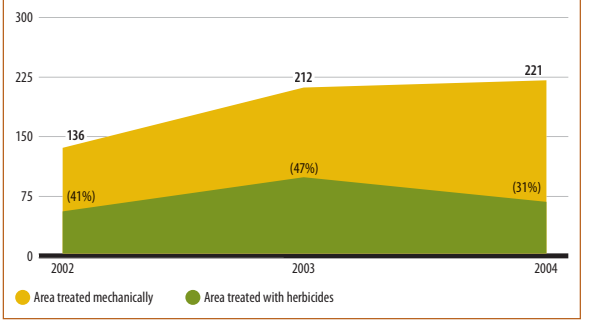
Transmission

- A research and development program, in conjunction with the plant biology research institute at the Université de Montréal, will improve understanding of vegetation dynamics in rights-of-way.

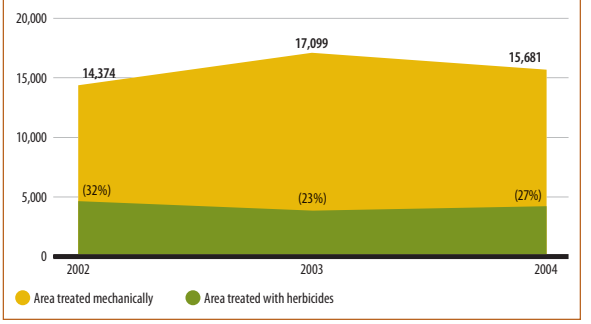
Distribution

- Expenditures for the annual vegetation management program were $50 million.
- 100% of distribution line rights-of-way were treated mechanically.
- 99% of the rights-of-way where vegetation was controlled underwent environmental assessment.
- A guide was compiled on ways to protect the environment during pruning and clearing on the overhead system.

Vegetation control around dikes and dams (ha)



Vegetation control along transmission line rights-of-way (ha)



Taking Action for Youth

Hydro-Québec endeavors to introduce young people to science and help them learn about hydroelectricity. In 2004, it presented a program entitled *Eau bleue = Énergie verte* (Blue Water = Green Energy) to 2,700 elementary and secondary students in Greater Montréal. Other products for young people included:

- *Envirovolt – Quand l'environnement et l'hydroélectricité font la paire*, an environment and hydroelectricity activity kit for children at science day camps
- articles on Hydro-Québec's environmental achievements in *Les Débrouillards* magazine
- *Les filles et les sciences, un duo électrisant !*, an event to stimulate girls' interest in science and technology trades
- development with the Montréal Science Centre of an interactive module for teaching elementary and secondary school students about energy-wise behavior and products

Promoting Ethical Conduct

Hydro-Québec has a code of ethics for directors, executives and controllers and a code of conduct for employees. Application of the rules of ethics is supported by awareness and other training. Ethics performance is reported on every year to the Board of Directors' Ethics and Corporate Governance Committee.

In the fall of 2004, the company updated the *Transmission Provider Standards of Conduct* to reflect changes made by the Federal Energy Regulatory Commission (FERC) to its own rules. In June 2004, the Régie de l'énergie approved the *Transmission Provider Code of Conduct* that was created at its request. The purpose of this code is to prevent any form of preferential treatment and cross-subsidies in the context of market deregulation.

Hydro-Québec uses a code of ethics approved by the Régie to manage the Distributor's calls for tenders. This code guarantees fair bidding procedures for all electricity suppliers. A log of breaches and corrective measures is kept up to date and filed with the Régie once a year.

Blue Water = Green Energy presentation by Hydro-Québec.

Elementary school students release fry into the water (Québec City region).

Providing a Stimulating, Respectful Work Environment

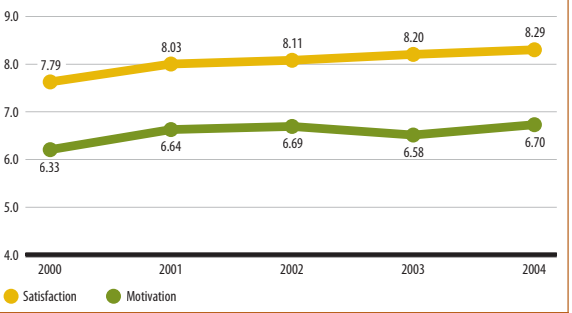
Hydro-Québec endeavors to provide a safe, healthy work environment. Various programs and measures focus on empowerment and consultation. As a result, the work-related accident frequency has been reduced from 3.49 in 2003 to 3.34 per 200,000 hours worked.

The company invests in the protection of mental health by watching for risk situations. It offers professional services to employees who are having difficulties; the usage rate for these services rose from 5.2% in 2003 to 6.2% in 2004. There are also several pilot projects to assess the various psychosocial factors that influence absenteeism, employees' performance and the quality of life at work.

Support for training

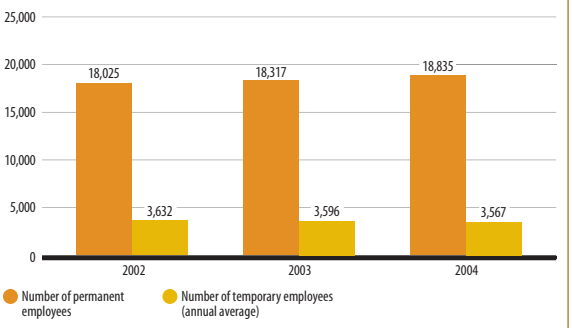
Hydro-Québec considers training a priority. To maintain its expertise and develop employees' skills, the company invested $85 million in 2004, representing 4.5% of the payroll. Over 75% of the employees were able to participate in at least one training activity.

Employee satisfaction and motivation indexes
(scale of 10)



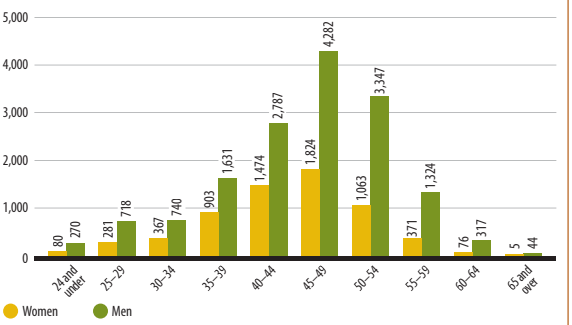
Following a slight dip in 2003, the overall motivation index returned to the 2002 level, while overall satisfaction continued to rise. These are the best results ever posted since the company's employee satisfaction survey began in 1995. Nearly 11,500 employees responded to the survey conducted in 2004.

Workforce as at December 31, 2004



A total of 629 employees retired and 1,150 permanent positions were filled. The proportion of women rose slightly, from 28.9% in 2003 to 29.4% in 2004.

Workforce by age group – 2004



In anticipation of retirements in the coming years, Hydro-Québec hired 507 employees under the age of 30 in 2004. Several programs are under way to assess vulnerable areas, optimize recruitment and accelerate the induction of new arrivals.

Providing the Best Service to All Customers

Meeting the needs and expectations of all its customers is a priority for Hydro-Québec. For the past 12 years, tools such as the inventory of expectations and measurement of satisfaction have enabled the company to act upon the priorities indicated by its customers.

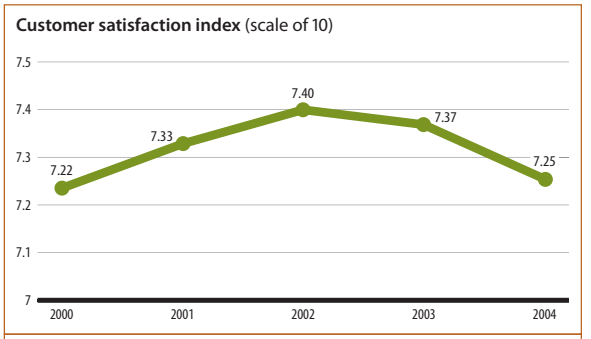
To help economically disadvantaged customers, Hydro-Québec maintains or restores service during the winter for customers who heat with electricity and are in default of payment. In addition, ongoing contacts with the Québec government and various organizations that support low-income families have led to the development of services tailored to these customers' needs. Various measures were implemented in 2004:

- Special payment terms and services were developed to facilitate the settlement of nearly 690,000 cases representing $665 million in overdue accounts.
- Nearly 18,000 low-income customers were benefiting from very flexible payment arrangements worth about $19.7 million.
- Special contact numbers were provided for organizations and elected representatives wishing to intervene in behalf of customers with payment difficulties.
- A study on low-income customers was conducted in cooperation with consumer groups to improve support for these households.

Complaints and claims

- 12,980 complaints and claims were received in 2004, versus 12,241 in 2003. Most (87%) came from residential customers.
- The number of complaints about air contamination increased, due to the proposed Suroît project.
- Main claims: voltage fluctuations (36%), outages (26%) and property damage (13%).
- 141 appeals were made to the Régie de l'énergie, the same number as in 2003.

To serve immigrant communities better, Hydro-Québec offers its employees cultural diversity training. Service agreements are available in various languages through immigrant-aid organizations. The company also sponsors social and cultural events, helps business groups and awards scholarships to students from minority groups.



In 2004, overall customer satisfaction dipped slightly. Customers appear to have reacted to the rate adjustments and debate over energy supply choices.

Working with Communities

Local and regional communities, social and economic organizations, and citizens' groups are among Hydro-Québec's prime partners in the construction of its projects and operation of its facilities. About 40 agreements were signed with such groups in 2004. The company is working with such varied organizations as the Témiscamingue Route des pionniers, now known as Mémoires des chemins d'eau, the Secretariat to the Cree Nation/Abitibi-Témiscamingue Economic Alliance, the Épopée de la Manic theatre company, and the Canadian-Lebanese Chamber of Commerce and Industry in Montréal.

Hydro-Québec sets up committees or discussion panels to study common needs and issues. Among them are the Hydro-Québec/City of Montréal and Hydro-Québec/City of Lévis steering committees, the CRDC Saguenay–Lac-Saint-Jean/Hydro-Québec joint committee, and the Hydro-Québec/Haute-Côte-Nord RCM bipartite committee.

Permanent liaison committees with the provincial farm producers' union and two associations of municipalities, the Fédération québécoise des municipalités (FQM) and the Union des municipalités du Québec (UMQ), play a major role in consensus and adopting common positions. Their work concerns undergrounding, energy conservation and vegetation management. The Hydro-Québec/FQM committee helped develop and provide training for land-use planners in regional county municipalities on issues related to Hydro-Québec's facilities.

Examples of agreements with communities

- Biodiversity will be enhanced in Baie-Comeau, thanks to an agreement with the Amis du boisé de la pointe Saint-Gilles (North Shore region).
- Eastmain's drinking water supply will be monitored until 2032 (Nord-du-Québec region).
- Forest management along parts of rights-of-way will be provided by the Cellule d'aménagement des Coteaux (Abitibi-Témiscamingue region).
- A guide on Algonquin culture was prepared for use in recreation and tourism projects (Abitibi-Témiscamingue region).
- Wind-power engineering students at the Université du Québec à Rimouski (Lower St. Lawrence region) were granted access to the Saint-Ulric wind farm.

Nature trail in the Pointe Saint-Gilles woodland.

Sustainable development in Greater Montréal

Hydro-Québec is collaborating on development of Montréal's first strategic plan for sustainable development, with some 90 other signatories of the *Policy Statement by the Montréal Community Regarding Sustainable Development*.

Working with Aboriginal Communities

Hydro-Québec promotes participation by the members of Aboriginal communities in its studies, projects and operation of facilities.

The company signed the *Agreement Concerning a New Relationship Between Hydro-Québec/SEBJ and the Crees of Eeyou Istchee* with the Québec Grand Council of the Crees. This agreement is founded on mutual respect, good faith and partnership. It ended nearly 20 years of litigation between the Crees and Hydro-Québec and provides for the creation of a permanent discussion forum along with measures designed to compensate for various impacts related to the La Grande complex.

Another agreement made it possible to give the Niskamoon Corporation major responsibilities for the administration and management of the agreements signed by Hydro-Québec and the Crees of Eeyou Istchee in February 2002.

During the draft-design studies for the Eastmain-1-A powerhouse and Rupert diversion project, the Crees' traditional knowledge proved very useful for developing sampling protocols, collecting and interpreting data, and designing certain structures.

In education, Hydro-Québec handed out awards for excellence to five Aboriginal college and university students. The company also gave $125,000 in sponsorships to communities and events.

Support for Aboriginal workers

- *Agreement concerning employment for the Crees*: 49 Cree students were given training in four disciplines, with permanent jobs afterward.
- 28 Innu were hired to participate in field work for the planned Romaine hydroelectric complex.
- Aboriginal organizations, contractors and workers benefited from over $220 million in construction work and purchases in 2004.

Partnering with Suppliers

Hydro-Québec strives to act as a responsible buyer. A new general environmental protection clause is now included in all supplier contracts. On jobsites, the company continuously monitors the work performed by subcontractors and keeps their employees informed about environmental requirements.

Awareness tools developed for suppliers include:

- an operating guide for purchasers, to ensure that specific environmental clauses are incorporated into contracts where applicable
- a checklist for plant rehabilitation and maintenance managers, to remind them of the stages when environmental clauses must be prepared, filed, implemented and monitored
- a suppliers' guide on vegetation control in transmission line rights-of-way

Supporting Education and Research

Hydro-Québec is a major player in training and education in Québec. It provides financial support to several universities, including 15 research chairs.

In 2004, the Université de Sherbrooke created the NSERC–Hydro-Québec TransÉnergie Chair on overhead transmission lines. The chair is funded by the Natural Sciences and Engineering Research Council of Canada (NSERC) and Hydro-Québec TransÉnergie, with each party allocating $1 million over five years.

The main objective is advancement in the technical design of transmission lines. Hydro-Québec also gave $3 million to the Fondation de l'Université du Québec à Trois-Rivières to support hydrogen research.

The company traditionally offers paid internships to university students. This year, 176 students, including 24 in environment, built upon their education and brought new ideas to the company.

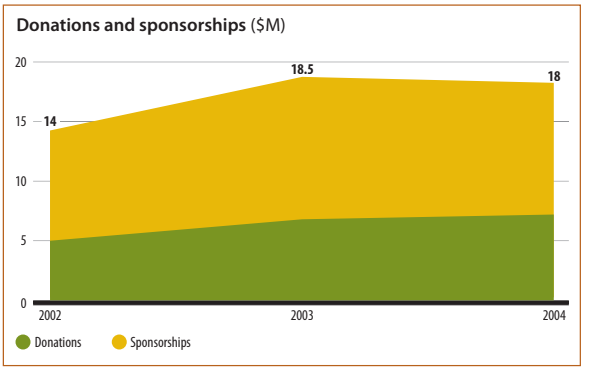
Partnering with Humanitarian, Community and Cultural Organizations

Hydro-Québec supports numerous causes through donations and sponsorships. Donations are earmarked for humanitarian aid, education and health, while sponsorships support science and culture, social and economic programs, the environment and sustainable development, and amateur sports. In 2004, the company distributed $18 million in donations and sponsorships to over 200 organizations, including the Fondation Centre hospitalier de Charlevoix (Québec City region), L'Impromptu theatre company in L'Assomption (Lanaudière region), the Mondial des Cultures in Drummondville (Central Québec region) and Earth Day (Montréal).

Every year, Hydro-Québec employees and pensioners contribute generously to the Centraide/United Way campaign. In 2004, they donated more than $2.5 million and Hydro-Québec matched this amount, as usual, for a total contribution of over $5 million.

Hydro-Québec's contribution to university chairs ($k)

Institution	2002	2003	2004
Université Laval	195	195	225
Université du Québec and components	420	420	420
Université de Montréal and affiliates	1,075	725	750
Université de Sherbrooke	92	50	250
Total	**1,782**	**1,390**	**1,645**



Hydro-Québec also encourages its personnel to volunteer with non-profit organizations. The employee social involvement program enables staff members to apply for up to $1,000 in funding for the organizations they support. In 2004, nearly $200,000 was contributed at the behest of 260 employees.

Maintaining Business Relationships

To share its expertise and encourage the formation of partnerships, Hydro-Québec collaborates in the work of many regional, provincial and national organizations, in addition to participating in various events. In 2004, these included:

- HydroVision 2004 (Montréal), Aboriginal Law Forum (Toronto) and the International Association for Impact Assessment (Vancouver): joint presentations with Cree representatives on implementation of the agreements and on the business partnerships with this First Nation
- Prime Power Diesel Inter-Unit Conference: presentation of achievements in rehabilitation of contaminated northern sites
- 8th International Symposium on Environmental Concerns in Rights-of-Way Management: presentation of five papers
- Electric Power Research Institute (EPRI): participation in the update of Chapter 15 of the *Transmission Lines Reference Book*
- Nunavik Research Centre in Kuujjuaq: transfer of expertise on the use of a hydroacoustic system for fish population research

Participating in International Projects

Hydro-Québec's international activities support its business, enhance its visibility and that of Québec, and provide energy-related technical assistance to developing countries. These activities also promote hydroelectricity as a renewable energy source.

This year, the company was involved in 35 environmental and technical training or knowledge transfer projects in some 15 countries. It worked with institutions in French-speaking countries (Institut de l'énergie et de l'environnement de la Francophonie in Burkina Faso, and Senghor University in Egypt), international institutions (World Bank and specialized agencies of the UN) and Québec universities (École des hautes études commerciales).

Here are some other achievements:

- We signed a cooperation agreement with the Brazilian national electric utility, Eletrobrás, to exchange information in several fields and explore contract possibilities.
- We co-hosted an international conference, *Sustainable Development: a Challenge for Energy and Transportation*, for the 17th annual Centre Jacques Cartier Discussions.
- We participated in e7 activities in several countries, including Ecuador, Nicaragua, Chile, South Africa, Madagascar, Bhutan and China. Hydro-Québec is one of the nine major power companies in G7 countries that constitute the e7 membership.

Protection of threatened species

In conjunction with e7 partners, Hydro-Québec is taking part in the environmental assessment of a planned 2.7-MW wind farm in the Galápagos Islands off Ecuador. The goal is to protect birds, particularly the Galápagos petrel, a threatened species.

Fortuna Hydroelectric Development

In 1999, we became co-owners of Fortuna hydroelectric generating station in Panama, Central America, with El Paso. As operator of the facility, we have been involved in technology transfer. Our team has also designed a social and economic development assistance program for local communities. Our good citizenship has earned us the support of the host community.

Preserving the Environment

Hydro-Québec operates Fortuna generating station in compliance with its own environmental standards:

- An environmental education program has been developed that exceeds both Panamanian and World Bank criteria.
- Hydro-Québec's environmental protection criteria and contract clauses are applied during construction.
- An emergency plan has been created and equipment installed to deal with spills and other incidents.

Hydro-Québec and Fortuna

Some 5,000 people—mostly Aboriginals—live in 23 isolated villages near Fortuna generating station. Since 2000, the station's management and employees have been involved in a community support program to improve their living conditions.

Hydro-Québec has taken various measures to optimize production and management at Fortuna, including training for station employees and introduction of an automated maintenance system.

Some Statistics

Installed capacity: 300 MW

Number of employees: 95

Customer base: supplies nearly 40% of the electricity in Panama

Supporting the Regional Economy

The support program investments have resulted in the creation of small reforestation companies for the areas near the local nature reserve.

Employee training supports the development of local expertise in electricity generation.

Contributing to Social Development

In response to the needs expressed by the departments of health and education, we set up a social and economic development support program for local communities. So far, nearly $1 million has been contributed for various projects:

- An emergency room was built for the Gualaca hospital and medical equipment was supplied.
- A mobile medical clinic was donated to serve isolated communities.
- Medical tours of isolated areas are conducted semi-annually.
- Educational materials were provided to elementary schools.
- A training program was set up for midwives.

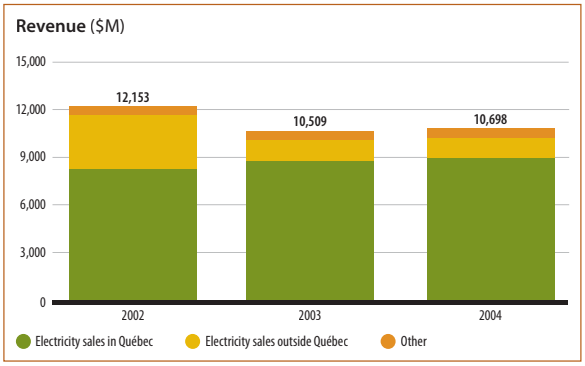
Fortuna generating station has a code of ethics that promotes the principles of sound management. Among the special programs for employees are a pension plan, a customized health program, a nutrition plan, a comprehensive health and accident insurance plan, and parental leave.

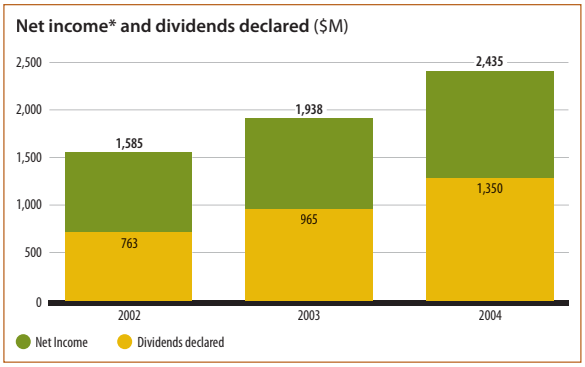
Contribution to Public Wealth

Playing a Major Role in the Québec Economy

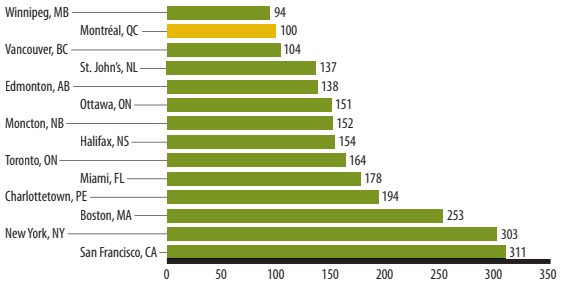
Hydro-Québec posted revenue of $10,698 million in 2004, an increase of $189 million over 2003. Electricity sales in Québec accounted for $8,922 million, up $344 million from 2003. This result is mainly attributable to rate adjustments, following a five-year freeze, that generated an additional $321 million. However, the volume of domestic sales fell 1.2 TWh, primarily because of plant closings and a labor dispute in the smelting and refining industry that led to a 2.9-TWh reduction in industrial consumption and an $80-million decrease in sales. This was offset by a 1.7-TWh growth in demand from other customer categories that generated additional revenue of $103 million.

In markets outside Québec, electricity sales amounted to $1,084 million, or $261 million less than in 2003. Hydro-Québec decided to limit exports in the first half of the year to replenish its energy reserves, which had been affected by low runoff in recent years.





* *Data for 2002 and 2003 have been restated further to the retroactive effect of the accounting standards governing foreign currency translation and asset retirement obligations.*



* *Based on rates in effect on April 1, 2004 (before taxes).*

Despite rate adjustments of 3.0% in January and 1.41% in April 2004, Hydro-Québec's residential rate remains one of the lowest in North America. For a typical consumption of 1,000 kWh per month, Montréal has ranked second among major North American cities since 1999 and was third from 1990 to 1998.

Competitive rates

Access to affordable, reliable energy is a major factor in Québec's dynamic economy and the quality of life of its people:

- From 1963 to 1999, electricity prices kept pace with inflation.
- Since 1999, because of a rate freeze that continued until the end of 2003, electricity price increases have remained below the inflation rate, unlike gas and oil prices which have spiraled.

Investments in fixed and intangible assets rose to $3.2 billion in 2004, up $174 million from 2003.

More than $1.8 billion was invested in projects aimed at developing our generating facilities. Once completed, these projects will add nearly 1,500 MW of installed capacity to our fleet and generate more than 8 TWh of electricity per year. Transmission investments totaled $733 million, while distribution investments amounted to $607 million, devoted mainly to meeting growing residential demand and replacing equipment that had reached the end of its service life.

In 2004, Hydro-Québec's net income was $2,435 million, or $497 more than in 2003. This increase is mainly due to a $395-million reduction in financial expenses and a $265-million gain on the sale of our interest in Noverco.

Dividends declared were $1,350 million, compared to $965 million in 2003. This will be the eighth consecutive payment to our shareholder, the Government of Québec, and the largest in our history, bringing the total amount paid since 1998 to almost $5.3 billion. In addition, Hydro-Québec pays provincial tax on its consolidated capital and tax on gross income; in 2004, this tax amounted to $573 million. It also paid $47 million in municipal, school and other taxes.

All of the company's financial ratios improved in 2004. For example, return on equity rose to 15.5%, versus 13.2% in 2003; return on revenue stood at 22.8% compared to 18.4%; interest coverage went from 1.65 to 1.72; and capitalization was 32.8% compared to 29.9% in 2003.

Supporting Regional Vitality

Through its projects and operations, Hydro-Québec stimulates regional economies by supporting direct and indirect job creation, procuring goods and services and paying taxes to local communities.

Hydro-Québec creates economic spinoff committees for its major projects to encourage local and regional contract allocation and hiring. It ensures that workers and suppliers are recruited from local communities, as demonstrated by the fact that 94% of the more than $2.3 billion it spent on goods and services in 2004 was procured from Québec businesses.

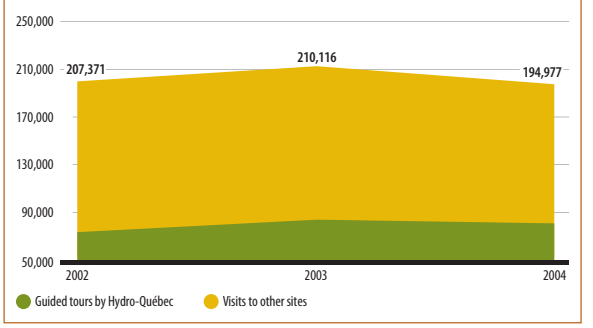
Hydro-Québec's contribution to regional economies

	2002	2003	2004
Average workforce (person-years)	21,393	21,819	22,183
Municipal taxes ($M)	32.6	29.5	30.2
School taxes ($M)	3.3	3.2	3.4
Procurement of goods and services ($M)	1,649	2,127	2,246
Goods and services procured from Québec companies (%)	91	93	94
Direct jobs sustained by procurement activities (person-years)	12,250	15,199	14,918

The company supports socio-economic organizations that are committed to regional growth, such as the Urban Development Institute of Québec, the Association of Consulting Engineers of Québec, and associations involved in economic development, agrifood processing and consumer products, and marine biotechnology research.

Hydro-Québec also plays a role in regional recreation and tourism, either directly, by offering guided tours at 24 of its operating facilities, or indirectly, by welcoming visitors to the Cité de l'énergie or the Sept-Chutes recreational complex. The Mauricie, Québec City and Montérégie regions are the most popular destinations.

Number of visitors to Hydro-Québec and affiliated sites



Supporting Technological Innovation and Business Growth

Hydro-Québec is involved in business partnerships not only in Québec, but internationally. In industry, it promotes the use of electricity to make energy efficiency gains. Here are some of our partners and initiatives:

- Centre de recherche et de développement en agriculture – Transfer of energy-efficient solutions to agricultural operations
- Forintek – The Électrobois program, aimed at improving electrotechnologies in the lumber industry
- Siemens – Signing of an agreement on research projects in electricity generation, transmission and distribution

With regard to international exchanges, Hydro-Québec provided promotional support as well as assistance in recruiting participants for the 2004 Naturallia International Forum, an event that brought together over 200 mining and forestry business leaders in Timmins, Ontario. The company also helped recruit some 50 Québec companies for the Futurallia 2004 international business alliances forum, which was held in Poitiers, France.

Hybrid electric vehicle: A France-Québec project

The Cleanova II, with a hybrid drivetrain system designed, developed and produced by Hydro-Québec subsidiary TM4, was introduced at the 2004 Paris Auto Show by Société de Véhicules Électriques, a joint subsidiary of the Dassault and Heuliez groups.

Technology from Hydro-Québec

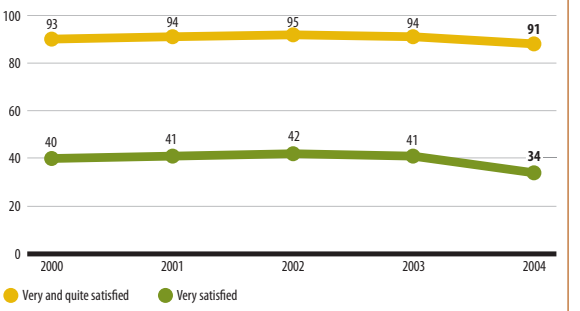
Hydro-Québec subsidiary TM4 designed, developed and produced the drivetrain system for Peugeot's new concept vehicle, the Quark. This all-terrain vehicle is driven by four electric motors, one in each wheel. Powered by a fuel cell, these direct-drive motors are operated independently by a central electronic module.

A Positive Image

Rate increase debates and the controversy surrounding the Suroît project had the greatest impact on public satisfaction and the company's image in 2004. Overall, the public still supports the company's growth and profit objectives, but to a lesser extent than in 2003.

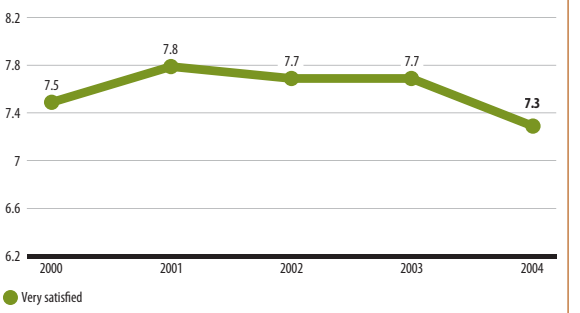
Two rate increases took effect in the past year, which Quebecers no doubt associate with the company's profit objectives. People believe that Hydro-Québec must exercise economic leadership, but not at the expense of the environment. The company's focus on technological research and development remains one of its most valued characteristics.

Public satisfaction (%)



Overall public satisfaction dropped three points in 2004, but remained above 90%.

Perception of Hydro-Québec (scale of 10)



The public's perception of the company fell from 7.7 in 2003 to 7.3 in 2004.

Negative factors

- Past and future rate increases
- Suroît project

Positive factors

- Outcome of the call for tenders for the purchase of wind power
- Inauguration of the Péribonka jobsite
- Energy Efficiency Plan and launch of the ENERGY WISE campaign
- Announcement of record profits

GRI Concordance Table

Hydro-Québec's compliance with the Global Reporting Initiative (GRI) 2002 guidelines		
GRI Reference Numbers		**Pages**
	Vision and Strategy	
1.1	Organization's sustainable development vision and strategy	2, 3
1.2	Statement from the CEO	1
	Profile	
2.1–2.2, 2.3, 2.4, **2.5–2.9**	Organizational profile	2, 33–37, 40, 41
2.10, **2.11–2.13**, 2.14, 2.15, 2.16	Report scope	1, 45
2.17–2.19, **2.20–2.22**	Report profile	3, 45, 46
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3.13, **3.14, 3.15, 3.16, 3.17**, 3.18, **3.19, 3.20**	Overarching policies and management systems	3, 7, 11–15,19–21, 24, 25, 28–31, 33–39, 42
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EC3, EC4	Suppliers	6, 36, 40, 41
EC5	Employees	
EC6, EC7	Providers of capital	40, 41
EC8, EC9, **EC10, EC12**	Public sector	29, 36, 40, 41
EC13	Indirect economic impacts	40–42
	Environmental Performance	
EN1, EN2	Materials	28
EN3, EN4, EN17, EN18, EN19	Energy	2, 6, 7, 9, 16, 17, 19–21, 42
EN5, **EN20**, EN21, EN22	Water	9–11, 25, 28
EN6, EN7, EN23, EN24, **EN25,** EN26, **EN27,** EN28, **EN29**	Biodiversity	10–12, 14, 26, 28, 35
EN8, EN9, **EN10,** EN11, **EN12, EN13**, EN30, **EN31**, EN32	Emissions, effluents and waste	6, 7, 9, 16, 17, 25, 28
EN33	Suppliers	36
EN14, EN15	Products and services	10, 21
EN16	Compliance	
EN34	Transport	24, 42
	Social Performance	
	Labor practices and decent work	
LA1, LA2, LA12	Employment	13–15, 17, 21, 33–36, 39, 41
LA3, **LA4,** LA13	Labor/management relations	33
LA5, LA6, **LA7**, LA8, LA14, LA15	Health and safety	33
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HR6	Child labor	
HR7	Forced and compulsory labor	
HR9, HR10	Disciplinary practices	
HR11	Security practices	
HR12, HR13, **HR14**	Indigenous rights	10, 13–15, 27, 35, 37–39
	Society	
SO1, SO4	Community	10, 11, 18–20, 24, 25, 27, 29, 32, 34–36, 41
SO2	Bribery and corruption	3, 32
SO3, SO5	Political contributions	
SO6, SO7	Competition and pricing	
	Product responsibility	
PR1, PR4, PR5, PR6	Customer health and safety	1, 24, 38, 39
PR2, PR7, **PR8**	Products and services	24, 34, 43
PR9, PR10	Advertising	
PR3, PR11	Respect for privacy	

Reference numbers in bold type: Key GRI indicators in this report and on Hydro-Québec's sustainable development website [http://www.hydroquebec.com/sustainable-development/index.html]

Other reference numbers: GRI indicators dealt with only on Hydro-Québec's sustainable development website

QMI Verification Statement

QMI has been commissioned by Hydro-Québec to undertake an independent verification of the validity of environmental, social and economic information in its *Sustainability Report 2004*. The report and the results of the company's environmental, social and economic performance remain the responsibility of Hydro-Québec. The verification process included assessing the data collection methods and the data itself, interviewing management personnel and employees, and visiting selected units for further data assessment and validation. QMI used a risk-based verification sampling plan defined in QMI's External Verification of Environmental Reports protocol.

As a result of the methodology used and the evidence made available, it is QMI's opinion that the data collected and consolidated in Hydro-Québec's *Sustainability Report 2004* does not include any material errors. QMI also considers that the data collection process and the *Sustainability Report 2004* show significant improvement compared to 2003. Hydro-Québec has also taken steps to act upon the recommendations made by QMI last year.

Wendy Tilford
QMI President

Units of Measure

$k	:	thousands of dollars
$M	:	millions of dollars
kV	:	kilovolt
kWh	:	kilowatthour
MW	:	megawatt (one million watts)
GW	:	gigawatt (one million kilowatts)
GWh	:	gigawatthour (one million kilowatthours)
TWh	:	terawatthour (one billion kilowatthours)

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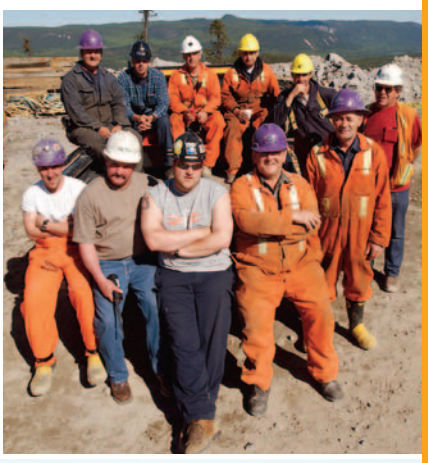



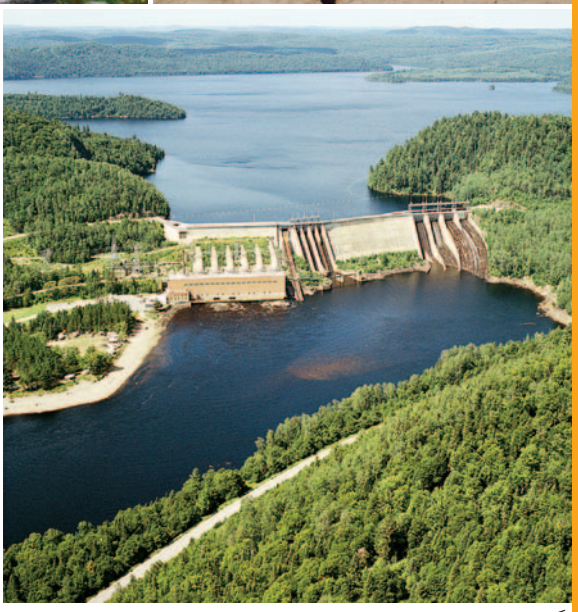

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