

USING ENERGY

To Build the Québec of Tomorrow

Québec Energy Strategy 2006-2015

SUMMARY





Message from the Premier

Improving the present and preparing for the future

Québec is a world leader in the energy field. Hydro-Québec is one of the planet's largest electricity utility. Thanks to James Bay's development, Québec is home to the world's largest hydroelectric complex.

The development of our hydroelectric resources is a source of collective pride, and has also proved to be a profitable investment. The revenues generated help fund our public services, and contribute to the well-being of the entire population.

We have made the right energy choices. This source of wealth must be used, as never before, to improve the present, but also to prepare for the future. This is the aim of the new Québec energy strategy, **Using energy to build the Québec of tomorrow.**

The strategy is ambitious. It expresses our firm belief that by developing our full potential and using energy more efficiently, we can increase our prosperity, better protect the environment and better prepare to face the challenges of the future.

The new energy strategy sets out the path that Québec will follow over the next ten years. It expresses our Government's vision concerning our resources development and use. It calls for immediate actions that will help prepare our children's future.

A new step forward

The energy strategy released by our Government opens up a new era in a long history of achievements and success. The creation of Hydro-Québec, the nationalization of electricity and the James Bay project prepared the way for achievements that are now the envy of the world.

We are taking a new step forward in this impressive journey which is making us so proud, one that will prove as stimulating and inspirational as the ones before.

The strategy's purpose is to empower the Québec' society to maximize the economic, social and environmental benefits associated with the development of its energy resources.

We will resume and speed up the development of our hydroelectric potential. This will strengthen our energy supply security, and our hydroelectric potential will, more than ever before, become a lever for regional and economic development, including the expansion and introduction of industries that create wealth and jobs. Québec's hydroelectric resources will be developed at a pace unequalled since James Bay's second phase.

We are committed to sustainable development, and we will become a leader in this field by developing our own potential for renewable energy, by investing in energy efficiency and by increasing the pace of development and implementation of new energy technologies. Thanks to our resources and the way we use them, we will ensure an environmentally friendly form of economic development.

We are mobilizing all the resources needed to make a significant contribution to the prevention of climate change. At the same time, our government will go further than any of its predecessors in the area of energy efficiency. And by exporting more energy, we will help improve the greenhouse gas performance of the entire continent.

A further goal of our strategy is to prepare the Québec of tomorrow – a more prosperous Québec that is more concerned about the environment, and less burdened by debt. Hydroelectric development, through the Generations Fund, will fully contribute to reducing the weight of debt on the shoulders of present and future generations.

This is the path that our government is proposing to the citizens of Québec. I firmly believe that it will rally support throughout Québec.

This new energy strategy is entirely consistent with the objectives we set in April 2003 for all Government actions. It illustrates Québec's ability to build on the heritage we have received as we prepare resolutely for the future.

Our goal is to foster a more responsible use of energy.



Jean Charest

Premier of Québec



Message from the Minister of Natural Resources and Wildlife

A STRATEGY FOR ALL QUEBECERS

The energy strategy released by the Government is the strategy of all Quebecers. To draft it, the Government has indeed applied an open and transparent approach based on receptivity and accessibility, generating public interest.

Discussions with experts, a parliamentary committee hearing and the on-line consultation reached out to a record number of citizens. The Web-based consultation alone attracted over 10,000 participants, and 2,000 briefs and comments were forwarded by individuals and organizations.

Strong messages

Citizens, businesses and stakeholders in the energy field all stated their point of view forcefully. The Government listened.

Many of the comments concerned hydroelectricity.

Our hydroelectric resources give us a lever for development whose value continues to increase in a world in which other resources are becoming ever scarcer. Hydroelectricity is our first response to the difficult question of energy security. Few industrialized countries can count on such abundant potential for renewable energy, and we must take full advantage of this situation.

The development of wind energy is set on a firm footing. It will become the perfect complement to our unique hydroelectric potential, as many participants in the consultation process pointed out.

Other comments concerned energy savings.

There is an urgent need to use energy more efficiently, to match specific types of energy to specific uses, to change some of our behaviour patterns and to improve our equipment. The goal is to save energy, and also to act responsibly with respect to the challenges that must be met worldwide, since greenhouse gas emissions can only be reduced by controlling our energy consumption. Our privileged position as a producer of clean energy does not exempt us from the responsibility we all share to protect the future.

To draw up the new energy strategy, the government was able to count on a wealth of suggestions and proposals, which it used to define objectives and the measures needed to achieve them.

An innovative strategy

The objectives and measures presented here by the Government are daring and visionary, and open up new avenues. The strategy proposed will make Québec a leader in the development of renewable energy in North America. For many of our neighbours and partners, energy is a problematic issue. In Québec, it is a source of opportunities and challenges.

The energy strategy innovates in many different ways. It proposes a new approach to hydroelectric development, based on a “portfolio” of projects, in response to the increasing constraints affecting hydroelectric development projects.

It also involves local and regional communities, as well as the First Nations, in future developments. In this way, the Government intends to maximize the local and regional benefits of future investments, while ensuring that the new developments are environmentally friendly and are supported by the communities directly affected.

The Government innovates by providing sustained funding for energy efficiency and innovations in the energy field, defined under a comprehensive plan for all forms of energy. The mission of the Agence de l'efficacité énergétique will be broadened, and the Régie de l'énergie will be given increased powers.

Thanks to the new rules defined by the Government, the energy efficiency plan will be subject to strict accountability requirements, to ensure that the resources invested produce the desired results and that the money directed to energy efficiency is properly managed.

Focusing on new energy technologies

The Government also innovates in the area of new energy technologies.

A new institutional and financial framework is set up to accelerate the use of promising technologies in Québec. Priority will be given to the development of bio-fuels, and to the promotion of geothermal and solar energy.

Geothermal energy offers a particularly attractive way to save energy, while solar energy technologies offer new potential. Both of these energies will be developed.

The Government also innovates by updating the regulatory framework to encourage the initiatives taken by individuals and businesses.

An achievable vision for the future

The objectives of the new energy strategy are ambitious and achievable.

The initiatives it announces are stimulating. They are consistent with an overall view of Québec's energy sector, its future development and the benefits it generates.

With **Using energy to build the Québec of tomorrow**, the Government shows that it is possible to reconcile wealth creation with environmental protection and social development. In short, the Government has established one of the fundamental foundations for its vision of sustainable development, which it hopes will rally public opinion generally.



Pierre Corbeil

Minister of Natural Resources and Wildlife

SUMMARY

Following a broadly-based consultation process that began in November 2004, this document sets out the Government's energy strategy, **Using Energy to Build the Québec of Tomorrow**.

OBJECTIVES

The energy strategy has six objectives:

- 1) Québec must strengthen **its energy supply security**.
- 2) We must make better use of **energy as a lever for economic development**. Priority is given to hydroelectricity, wind energy potential, hydrocarbon reserves and the diversification of our natural gas supplies.
- 3) **Local and regional communities and First Nations** must be given more say.
- 4) We must use energy **more efficiently**.
- 5) Québec must become a leader in the **sustainable development field**.
- 6) **Electricity rates** must be set at a level that promotes our interests and ensures proper management of resources, thus improving price signals while protecting consumers and Québec's industrial structure.

To meet these six objectives, the energy strategy is expressed in terms of orientations and priority actions determined for hydroelectricity, wind energy, energy efficiency, new energy technologies and hydrocarbons.

ORIENTATIONS AND PRIORITY ACTIONS

1) RESUME AND ACCELERATE THE PACE OF DEVELOPMENT OF OUR HYDROELECTRIC POTENTIAL

- In recent years, **hydroelectric development has experienced a slowdown** and, to **correct the situation**, the government has decided to resume and accelerate the development of our hydroelectric potential with the implementation of new projects totalling **4,500 MW** within the next five years.
 - The new projects will represent a pace of development **equal to James Bay's second phase**, and add more capacity than the total of the past 15 years. This translates into investments of \$25 billion and 70,000 jobs over ten years – in addition to the \$4 billion in investments and 888 MW produced by the Eastmain 1A/Rupert Diversion/ La Sarcelle project that is currently going through an environmental assessment.
 - The 4,500 MW added capacity will be sufficient to meet Québec's long-term demand, promote wealth-creating industrial development, and support exports.
- **The projects** will be developed using an **innovative approach** involving the constitution of a **"portfolio" of projects**.
 - Work to complete a major hydroelectric project normally takes ten years and comprises two main phases:
 - negotiations, studies and environmental assessments (five years);
 - engineering and construction (five years).

- The “portfolio” approach consists in launching the first phase of several projects at the same time, ensuring that all necessary agreements and environmental permits are obtained by 2010. The main advantages are:
 - the possibility of adjusting each project’s construction schedule to address unexpected situations that arise during implementation;
 - flexibility for better risk management, and competition between projects;
 - greater efficiency, allowing for an overall gain of at least five years.

The Government does not intend to promote the development of small, privately-owned generating stations. These projects of 50 MW and less are not essential to our energy security and no block of electricity from this type of generating station has been included in the Strategy.

Some local and Aboriginal communities see this as an interesting opportunity for social and economic development in their regions. The Government feels that the best approach is to leave interested communities free to develop such projects provided they have the support of the local population, generate benefits for the region, and are under the control of the community.

In other words, the development of small generating projects (50 MW and less) will be pursued by and for local communities.

Each project will be subject to an environmental assessment by the BAPE, and an agreement concerning the purchase price of the electricity produced must be signed with Hydro-Québec before the project is presented to the Government.

- The Government also intends to ensure that Québec is able to **increase its electricity exports**, once its own needs have been met. It has therefore mandated Hydro-Québec to begin discussions with potential partners in view of signing electricity export agreements. The crown corporation will also report on interconnections with neighbouring grids. One of its short-term priorities will be to strengthen interconnections with Ontario.
- The strategy confirms the Government’s desire to **preserve Québec’s advantage in the way of electricity rates** by maintaining:
 - **the heritage block**: most supplies (95% of the current supply) will continue to be priced at the fixed rate of 2.79 ¢/kWh;
 - **competitive rates** to promote economic development: a comparative advantage for industries that create wealth and jobs.

2) DEVELOP WIND POWER, AN ENERGY SOURCE FOR THE FUTURE

- It is estimated that Québec has a potential of **4,000 MW of wind power that can be economically connected** to the Hydro-Québec grid by 2015, based on current technology. This represents approximately 10% of the peak electricity demand.
 - The Government intends to develop this potential.
- The Government’s priority for wind power is to **complete the process launched by the two requests for proposals** issued in 2003 and 2005 by Hydro Québec **totalling 3,000 MW of supply**.
- The requests for proposals generate investments of \$4.9 billion. They include requirements concerning Québec content (60%), with a special focus on the Gaspésie-Îles-de-la-Madeleine region and the Matane MRC.
 - Three plants are already established in Matane and Gaspé.

- The Government further intends to issue other requests for proposals for **wind power**, when **conditions are more favourable**. This will depend on:
 - the pace at which the additional **4,500 MW of hydroelectric projects** can be implemented: 100 MW of wind power will be added for every 1 000 MW of new hydroelectricity;
 - **new technological developments** and the cost of connecting to the Hydro-Québec grid. To this effect, Hydro-Québec has been mandated to improve conditions for connecting wind power to the grid.
 - **An additional request for proposals of 500 MW will be issued for the supply of two separate blocks of 250 MW each, one earmarked for the regions (MRC), and the other for the First Nations.**
 - Individual projects will be limited to 25 MW in order to encourage direct involvement by small communities.
 - The requests for proposals will generate investments of \$700 to \$750 million.
 - **Combined wind/diesel power** generation pilot projects will be carried out for off-grid supply networks, aimed at reducing the use of costly and polluting diesel power generation. The first of these projects, in the Îles-de-la-Madeleine, should be in operation by the summer of 2007. The second, in Nunavik, will be implemented in consultation with the Inuit. Based on these pilot projects, Hydro-Québec could generalize this approach in the off-grid supply networks.
- 3) USE ENERGY MORE EFFICIENTLY**
- Energy efficiency will be a core element of the energy strategy. The actions proposed by the Government will, **between now and 2015, increase the overall energy efficiency target by a factor of eight compared to the current targets.**
 - This will allow for \$2.5 billion in annual savings by consumers;
 - These actions will bring a significant contribution to the prevention of climate change, by eventually avoiding 9.4 million tonnes of greenhouse gas emissions each year. This will be a first step in a more general climate change strategy to be released later by the Government.
 - For the first time, the Government will propose a **comprehensive plan for all markets and all forms of energy**, with concrete implementation means. To this effect, the Agence de l'efficacité énergétique will have a mandate to:
 - Identify cost-effective savings based on third party involvement, without replacing the Hydro Québec and Gaz Métro programs.
 - **A new element of this plan will be to establish an energy savings target in the petroleum products sector:** 2 million tonnes oil equivalent (TOE) by 2015 (equal to just over 10% of Québec's current annual consumption).
 - The funding mechanisms for this comprehensive plan will ensure stability and ongoing action. The funding authorized by the Régie will be used exclusively to implement and administer programs under the plan, and may be increased by amounts paid by the federal government for energy efficiency initiatives.
 - **The Government intends to promote renewable fuels** such as fuel ethanol and biodiesel. Its goal is to achieve an **average of 5% of ethanol in all gasoline sold by 2012.**
 - Ethanol replaces an equivalent quantity of gasoline.
 - **The use of forest and agricultural biomass** and urban waste will be given priority over **grain corn**. Although it is technologically more difficult, it is also environmentally and economically more beneficial for Québec.

- For passenger transportation, the Government will **promote improvements to the passenger car fleet** by:
 - reimbursing the QST (maximum \$1 000) for new hybrid vehicles (2006-2007 Budget);
 - examining the possibility of creating more financial incentives towards the purchase of fuel-efficient vehicles;
 - changing the standards governing vehicles sold in Québec to make them more stringent in respect to energy consumption (California standards).
- **Public transit** will be supported to make it more attractive to new users.
- **Energy efficiency in the freight transportation sector** will be improved.
- **Petroleum products consumption** will be reduced in several sectors through various programs:
 - Use of better performing equipment in heating and industrial processes;
 - improved thermal efficiency for existing building envelopes.
- The Agence de l'efficacité énergétique will propose amendments to the regulations governing energy savings in new buildings in Québec, and their inclusion in the Construction Code.
- The Government will promote **more efficient use of electricity**. Accordingly, Hydro-Québec's energy efficiency target is increased from 4.1 TWh in 2010, to 8.0 TWh by 2015. This represents twice the total electrical consumption of the greater Québec City area households.
- In addition to its energy efficiency programs, the Government has instructed Hydro-Québec to include energy efficiency projects in future requests for proposals.
- Hydro-Québec has also been mandated to file a new **pricing structure** with the Régie de l'énergie, which must include:
 - a wider gap between the two rate levels currently paid by residential consumers, or the introduction of a third rate level (without changing the total bill for consumers);
 - rates that vary by season and time of use, thus allowing consumers to manage their electricity consumption more effectively.
- In regard to natural gas, targets have more than tripled: the 96.9 million cubic metres target by 2008 has been increased to 350 million cubic metres by 2015.
- The Government will apply a plan to improve energy performance for public buildings and for its vehicle fleet. Among other things, the plan will be designed to:
 - reduce unit energy consumption in buildings by 10% to 14% between now and 2010, depending on the sector;
 - reduce fuel consumption by government departments and agencies by 20% between now and 2010.
- Innovative energy consumption actions in the education and health and social services sectors will be recognized, and special financial support will be provided from a \$20 million annual budget.
- The Agence will provide assistance for municipalities requesting help in drafting and implementing energy efficiency plans.
- Energy efficiency assistance programs for low-income households will be improved.

4) INNOVATE IN THE ENERGY FIELD

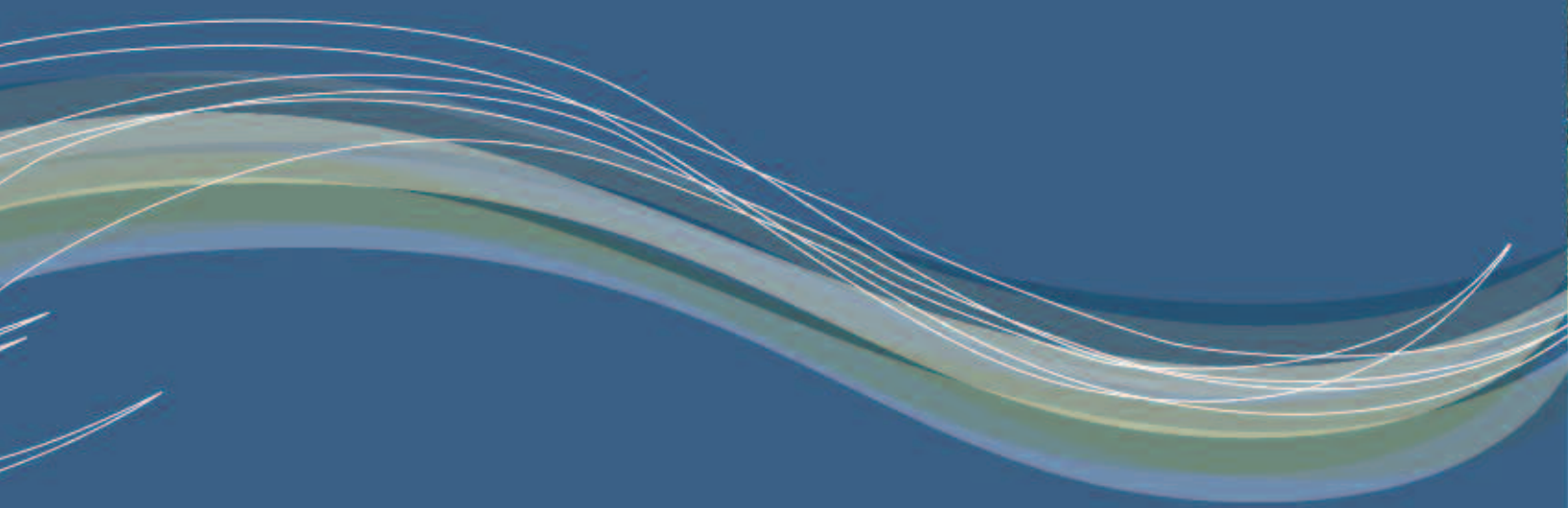
- The Agence de l'efficacité énergétique's mandate has been broadened to support and promote innovation in the energy field.
- An assistance plan for new energy technologies (approved by the Government and monitored by the Régie) will be included in the comprehensive energy efficiency plan prepared by the Agence.
- This plan will be financed through part of the **levy garnered on all forms of energy**, as determined by the Régie.
 - An annual target of \$10 million is set. It could generate up to \$40 million in total investments per year by all partners.
- Support for fuel ethanol and the development of an ethanol production industry in Québec will be a central element in the new energy technology support plan devised by the Agence de l'efficacité énergétique.
- The Government intends to give priority to the recovery of forest and agricultural residue and urban waste, rather than corn grain.
- However, some significant technological challenges will have to be met. Accordingly, the Government intends to:
 - support Québec's research teams in this area;
 - establish a pilot cellulosic ethanol plant to begin operation by 2008, so that the technology can be developed by 2010 and production facilities opened by 2012.
- A task force will be created to better identify potential sources of feedstock and identify the business model best suited to maximize the spin-offs from this new endeavour.
- The Government also intends to increase the market penetration of biodiesel.
- Geothermal and solar energy will be promoted and supported by:
 - circulating more information concerning potential gains from **geothermal and passive solar energy**;
 - introducing a **financial assistance program to improve the market penetration of geothermal energy** in the residential, institutional and commercial sectors;
 - systematically exploring the potential contribution of geothermal energy in building design in the public and parapublic sectors, including the Centre hospitalier de l'Université de Montréal (CHUM) and the Centre universitaire de santé McGill (CUSM);
 - mandating the Agence de l'efficacité énergétique, in collaboration with Hydro-Québec, to develop a program to support the capture of solar energy and submit it to the Régie de l'énergie.
- The Government will also lift certain regulatory obstacles that hinder initiatives by consumers and producers to develop other energy potentials.
 - For example, the Government intends to facilitate the decentralized production of electricity and mandates Hydro-Québec to submit two proposals to the Régie de l'énergie by 2007, to:
 - propose conditions on which individuals and businesses may sell excess production to Hydro Québec;
 - develop and propose a program to purchase electricity from **microproducers** (less than 1 MW).
 - The Government also intends to proceed with the **deregulation of biogas distribution activities** to ensure their development and reduce their related greenhouse gas emissions.

5) CONSOLIDATE AND DIVERSIFY SOURCES OF OIL AND GAS SUPPLY

- The Government hopes to develop the oil and gas resources in the gulf of St. Lawrence and estuary.
 - **The Government's approach will be environmentally friendly.** It includes the following avenues:
 - the application of the "*Guide to good practice for seismic surveys in the marine environment*" that is currently being prepared in conjunction with other Canadian provinces and the federal government;
 - a strategic environmental assessment of the gulf of St. Lawrence and estuary to ensure that development respects the marine environment;
 - subjecting seismic surveys to section 22 of the Environment Quality Act, by incorporating the results of the strategic environmental assessment into the permits issued.
 - The Government will collaborate with the federal government to settle the territorial dispute concerning hydrocarbon exploration and production in the gulf of St. Lawrence and estuary. The agreements signed by the federal government with Newfoundland and Labrador and Nova Scotia constitute precedents that Québec would like to apply to its own situation.
 - Liquefied natural gas (LNG) terminals could be used to diversify our supply options and strengthen our energy security in view of our dependency on natural gas supplies from Western Canada for which demand is high and depend on a single supply route.
 - The Government emphasizes that all analyses and assessments currently under way for these projects will be carried out as rigorously as possible. It will also ensure that citizens are able to express their concerns and receive all relevant information on the projects.
- **To ensure the availability of petroleum products**, the Government intends to:
 - require petroleum companies to file a supply security plan, in the event of difficulties with the availability of petroleum products;
 - work with the industry in order to see how fuel oil and propane consumers can be protected from the consequences of a weaker distribution network.

6) MODERNIZE THE LEGISLATIVE AND REGULATORY FRAMEWORK

- **To respond more effectively to the situation of low-income households**, the Government will introduce various measures.
- **Sustainable development will be better taken into account when energy projects are analyzed.** The Government will give the Régie de l'énergie responsibility for assessing the energy-related and economic justification of projects.
 - The BAPE will continue to examine the environmental aspects of energy projects subject to the Environment Quality Act.
- The Régie de l'énergie will be given the power to oversee the application of **electricity transmission reliability standards**, in the wake of recommendations from the Canada-US task force concerning the August 14, 2003 power blackout.



Ressources naturelles
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Québec 