

# ECONOMIC VIEWPOINT

## A New “Project of the Century”: Quebec’s Energy Transition Must Move from Plans to Action

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This spring’s oil shock has once again highlighted the risks of overdependence on oil and gas, particularly for net importers like Quebec. The province has also been hard hit by US tariffs and is now seeking to reduce its economic reliance on external forces beyond its control. On top of this, deadlines for climate action targets are swiftly approaching and regions with abundant, reliable and affordable clean energy are more attractive than ever. In light of all these developments, energy security and energy sovereignty are emerging as strategic priorities for supporting Quebec’s economic growth over the medium to long term. Now is the time to make clear choices and begin taking concrete action. A rapid expansion of Quebec’s renewable energy production could spur economic growth, giving a boost to several industrial sectors and even helping to create new ones. But this plan comes with a number of risks that must not be underestimated. Instead, they must be anticipated, and the appropriate contingency measures identified ahead of time.

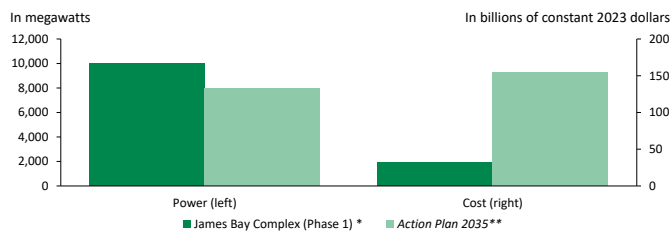
### A New “Project of the Century” for Quebec

[Hydro-Québec’s Action Plan 2035](#) is highly ambitious. It calls for delivering an additional 8,000 MW to 9,000 MW of power to the province, at a cost of nearly \$200B in current dollars. Even the first phase of the James Bay hydroelectric complex—carried out in the 1970s and 1980s, described as the “project of the century”—pales in comparison, especially in terms of cost (graph 1). Using constant 2023 dollars, each new kilowatt

in Hydro-Québec’s plan would cost approximately \$19,375, compared to \$3,140 for the James Bay project. It should be noted, however, that this comparison is not perfect. Today’s projects are designed to meet current social acceptability norms, regulatory constraints and construction standards, all of which push costs higher.

If all of these plans come to fruition, Hydro-Québec will increase its generation capacity by around 40% over the next ten years. While some of this power would come from replacing current generating units with more efficient ones and building new hydropower facilities, nearly 10,000 MW of installed capacity would come from wind power. It’s also important to note that the utilization factor for wind power—how much energy is actually generated, since the wind isn’t constantly blowing—is established at 15% of installed capacity under current regulations. This new direction breaks with Quebec’s historical reliance on hydroelectricity, while still drawing on the state-owned corporation’s expertise and tradition of innovation. In total, Hydro-Québec hopes to add 60 TWh of energy by 2035 (graph 2 on page 2).

**Graph 1**  
Action Plan 2035 Represents a New “Project of the Century”



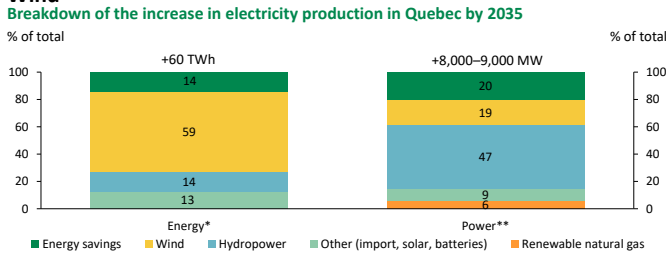
\* Construction costs are expressed in 2023 dollars, based on figures published in 1987 (\$13.7B).  
 \*\* Estimates are based on the lower bounds for capacity and costs provided in Action Plan 2035.  
 Société d’énergie de la Baie James, Hydro-Québec and Desjardins Economic Studies

**NOTE:** Several hyperlinks are available in French only.

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**Graph 2**  
**Hydro-Québec to Add More than 60 TWh of Energy, Mainly from Wind**



\* Average amount of electricity available during the year; \*\* Amount of electricity available at a given time. Hydro-Québec and Desjardins Economic Studies

With this new plan, Hydro-Québec aims to become a leader in wind energy, just as it is for large hydroelectric dams and extra-high-voltage power transmission. *Action Plan 2035* could therefore become an era-defining project for this century, calling for several billion dollars in investments and nearly 35,000 construction workers, according to Hydro-Québec.

**Hydropower**

Hydropower is, and will remain, the foundational pillar of Quebec’s energy supply. The province has 67 of the largest dams in the world, in addition to a number of private stations that fuel industrial sites, including the aluminum production facilities in Saguenay–Lac-Saint-Jean. *Action Plan 2035* builds on this legacy by calling for an additional 4,000 MW through upgrading existing power stations and commissioning new facilities.

However, Hydro-Québec hasn’t built many large dams in the past decade, with the exception of the Romaine hydroelectric complex, which was completed in 2022. While *Action Plan 2035* is ambitious, it focuses primarily on replacing and upgrading existing facilities. That said, Hydro-Québec hasn’t completely closed the door to building new dams.

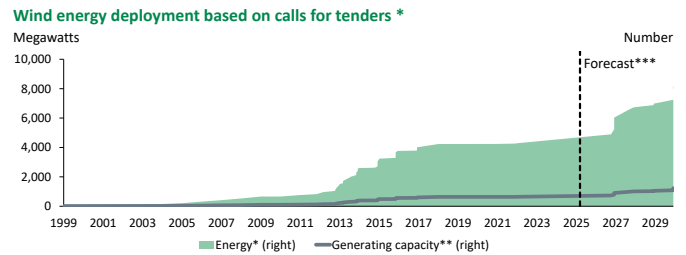
Renewed global interest in hydropower has been accompanied by a series of innovations, such as the digitalization of facilities, predictive turbine maintenance, production optimization and more sophisticated water supply management. Hydro-Québec has already begun to digitize its facilities and incorporate these new technologies, including remote controls, high-precision turbine scans and improved construction techniques and materials.

This transformation should increase the demand for skilled trades, both in technology and construction, in order to modernize, design and maintain the next generation of hydropower facilities.

**Onshore Wind Power**

Though Hydro-Québec’s first commercial wind projects date back to the 1990s, it’s only in the last decade or so that this sector has really taken off. Between 2012 and 2023, approximately 3,000 MW of wind power was deployed, tripling the province’s installed capacity (graph 3). *Action Plan 2035* calls for another major expansion of Hydro-Québec’s total wind fleet, which is set to increase by more than 240% over the next ten years.

**Graph 3**  
**Electricity Generation Capacity from Wind Power Tripled Between 2012 and 2023**



\* Only includes wind farms that were selected through a call for tenders by Hydro-Québec (excludes private projects). \*\* Current regulations only recognize 15% of installed energy capacity as actually producible. \*\*\* Projections for projects selected during a call for tenders (excludes private projects). Ministère de l’Économie, de l’Innovation et de l’Énergie du Québec, Hydro-Québec and Desjardins Economic Studies

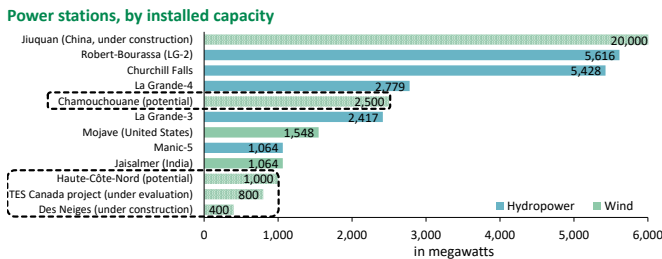
This target may seem ambitious, but a number of factors support its feasibility. Projects totalling more than 3,900 MW are already in review or under construction, meaning there’s only another 6,100 MW to be added. Wind turbine productivity has also increased significantly, reducing the total number of units required. While one wind turbine used to generate an average of 1.5 MW in the early 2000s, technological and efficiency gains now allow more recent wind farms to generate more than 4 MW per unit. Some projects under development, such as the Madawaska project, even place potential generation capacity at around 6 MW per turbine.

Finally, the average facility size is expected to continue to increase, which would provide economies of scale despite the operational and logistical challenges typically associated with larger projects. Some of these projects would be among the largest in the world (graph 4 on page 3).

**Nuclear Power**

Hydro-Québec stopped operating its only commercial nuclear plant, Gently-2, in 2012 and has developed no new nuclear energy projects since. But technology has advanced, particularly with small modular reactors (SMRs). SMRs have simpler, standardized designs and can be pre-assembled at the factory before installation. This brings construction time down to around three years, versus more than a decade for the average conventional nuclear power plant. This swifter build time can also reduce compounded interest costs on financing.

**Graph 4**  
Hydro-Québec’s Wind Farms Will Be Among the Largest in the World



Hydro-Québec, Government of Quebec, TES Canada, Government of China, Government of India, Government of California and Desjardins Economic Studies

**Table 1**  
One-Third of New Supply to Come from Energy Savings

NEW ENERGY SUPPLY BY 2050 COMPARED TO 2022*	Energy (TWh)	% of total
New power generated in Quebec	75	47%
Trade fluctuations	33	20%
Electrical energy efficiency	53	33%
<b>TOTAL</b>	<b>161</b>	<b>100%</b>

\* Based on the intermediate demand scenario (D2) of the preliminary report supporting the development of the IERMP (January 2026).  
Ministère de l'Économie, de l'Innovation et de l'Énergie du Québec and Desjardins Economic Studies

However, this technology is still in the commercial demonstration phase. The Darlington New Nuclear Project in Ontario will be home to the first commercial SMR in the G7. Its 300 MW unit is expected to be operational by 2030 and will test the economic and operational viability of the concept.

While Quebec has historically been opposed to nuclear power, SMRs could prove to be more advantageous. They could be deployed faster than new dams, which can take about 12 years to complete, not including time spent in the permitting process. They could also rely, in part, on a Canadian supply chain, particularly for uranium. Canada is one of the few countries actively mining uranium. However, many types of SMR require enriched uranium. Currently, this step is not carried out domestically, meaning there could be vulnerabilities in the supply chain.

Energy Efficiency

In addition to the conventional power generation sources, Hydro-Québec is also treating efficient consumption as an energy source in and of itself. In this way, energy savings can act as a source of kilowatt hours. By reducing energy demand from consumers, using increasingly sophisticated and affordable technology, Hydro-Québec can make substantial efficiency gains. According to the preliminary report released by the Ministère de l'Économie, de l'Innovation et de l'Énergie in support of its upcoming *Integrated Energy Resources Management Plan* (IERMP), these energy savings could meet more than 16% of the province’s total energy needs in 2050. Cumulative energy efficiency gains of 53 TWh would account for 33% of additional energy supply by 2050, whereas new power generation would account for 47% (table 1). These efficiency gains would help the province avoid building new power generation facilities and the accompanying distribution infrastructure, with clear cost savings—after all, the cheapest projects are the ones you don’t need to build. To reach these goals, energy efficiency measures would target all sectors, focusing on buildings, particularly residential ones<sup>1</sup>. These measures include installing heat pumps in homes, encouraging

renovations to improve the thermal envelopes of buildings, and developing dual-energy initiatives for industrial facilities. All of this would lower heating demand and shift consumption outside of peak periods in the winter, ultimately reducing the need for new power generation capacity.

However, it may be important to temper our expectations. Hydro-Québec’s plan to find 1.6 TWh per year in recurring energy savings (for a total of 21 TWh by 2035) is a rather ambitious goal when you look at the progress made thus far. Between 2018 and 2023, energy efficiency gains were on average 0.7 TWh per year, as estimated by the [Institut du Québec \(2024\)](#). Households will need to be properly incentivized to integrate energy efficiency technology into their homes.

**With Great Power Comes Greater Distribution Needs**

The Power Transmission Grid

There’s no point in generating more electricity if you can’t send it to the areas where it’s needed most. *Action Plan 3035* highlights two major challenges to power transmission.

The first concerns the capacity of the existing network. The current high-voltage lines will not be able to absorb all of the new production volume. As a result, power transmission capacity needs to be increased, whether by adding new lines or upgrading the infrastructure that’s already in place. An example would be the additional lines and substations being added along the Saint Lawrence Valley. The second challenge is geographical in nature: the planned wind farms aren’t located near existing dams, as wind power and water power aren’t efficiently generated in the same types of places. This means that new power lines will be needed to reach the future wind farms, which will mainly be located in the Appalaches–Bas-Saint-Laurent and the Côte-Nord. Several hundred kilometres of power transmission cables and towers would have to be built to bring electricity from these new generation sites in eastern Quebec towards the major urban centres located in the west and centre of the

province. And right now, the price of copper and aluminum—key materials for transmitting electricity—are historically elevated. In its [recent advisory opinion](#), the Régie de l'énergie stated that real energy availability depends on the ability to transmit energy and power just as much as it depends on generation capacity, that a megawatt generated isn't necessarily a megawatt that can be delivered, and that an ambitious energy pathway that relies on a fragile network will not provide real availability.

### Execution Risks

#### [From Planning to Implementation](#)

The Régie de l'énergie du Québec recently stated that the period from 2026 to 2035 would likely be pivotal in determining the true strength of the energy transition. While several broad plans have been adopted, including the Quebec government's *2030 Plan for a Green Economy* and Hydro-Québec's *Action Plan 2035*, the real challenge is no longer deciding on targets. It's figuring out how to reach those targets.

Beyond the construction of new dams and wind farms, Hydro-Québec will also need to modernize its infrastructure management. Because renewable energy sources like wind and solar are intermittent, greater generation flexibility is essential to offset changes in output. Although dams and their reservoirs act as natural batteries, they will likely not be sufficient on their own to maintain grid stability. The deployment of large-scale batteries would help compensate for drops in production when wind weakens or sunlight decreases. These batteries also offer faster adjustment capacity than changes in water flow through a hydroelectric turbine. In this regard, Texas provides an interesting example, with increased integration of storage to support grid reliability. Improved demand-side management, notably through projects such as Hilo, will also help mitigate greater variability in electricity generation.

#### [A Plan That Delivers More Certainty](#)

The *Integrated Energy Resources Management Plan* (IERMP) should be released before Quebec's legislative session closes in June. It is expected to clarify which paths will be taken. Its preliminary version, published in January, presented several possible pathways (including some relating to energy demand from emerging industries, such as artificial intelligence), but was deemed too exploratory by the Régie. In light of this [opinion, published on March 30](#), stakeholders are now expecting a more explicit plan that provides a framework for execution and reduces uncertainties (box on page 5).

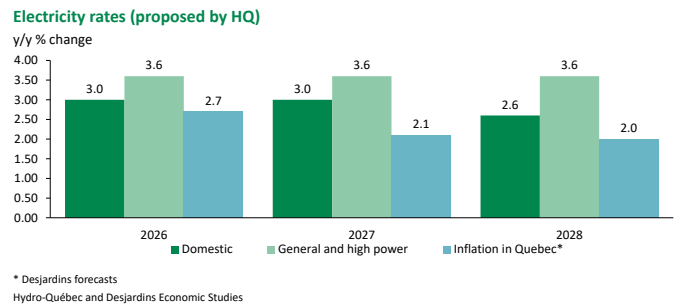
There are many risks to consider: authorization timeframes, labour availability, supply chains, construction costs, social acceptability, institutional coordination, permit constraints, industrial capacity and the technological maturity of some energy sources. That's why the Régie recommends explicitly testing real

energy availability. The test would incorporate three criteria: the physical availability of deliverable energy, reliability under difficult conditions and economic sustainability, taking into account the full cost, the rate impacts for different customer categories and the risks of cost overruns and delays.

### Rate Predictability as a Driver of Change

Predictability will be key to executing this plan. Since 2025, Hydro-Québec's rate planning has been carried out over a three-year horizon rather than annually, to provide more stable prices for consumers and businesses. Hydro-Québec is planning for a 3.0% increase, the maximum possible under the current regulatory framework, in its residential rate in 2026, which is higher than expected inflation (graph 5).

**Graph 5**  
Rate Increases Are Outpacing Inflation



Price signals are an effective and important economic driver of change. Gradual, balanced rate increases encourage energy sobriety and investments to adopt green technology and improve the energy efficiency of buildings, all without excessively limiting economic growth. They can also support the development of new energy sectors, including wind power.

However, the projected increases will likely be insufficient to generate the revenues needed to finance planned investments, as noted by the [Institut du Québec](#). As early as 2025, the 3% increase in the residential tariff was well below the state-owned company's 5.6% growth in expenses. To bridge the funding gap (current and future), Hydro-Québec will be forced to pass the cost on to foreign customers or pay lower dividends to the Government of Quebec. Alternatively, it could revisit the regulatory framework governing pricing.

### Financing Risks

Quebec will need to mobilize substantial capital to build its future energy system and accelerate the decarbonization of its economy. These efforts will take several years and require a stable framework. If there are any lingering doubts about

**BOX**
**The Régie's Recommendations on the IERMP**

According to the *Act respecting the Ministère de l'Économie, de l'Innovation et de l'Énergie*, every six years, the government must establish an integrated energy resources management plan that covers a 25-year horizon. This plan must establish targets for energy, as well as for energy sobriety and efficiency, and must lay out directions for supply, infrastructure and innovation.

The preliminary report submitted on January 14, 2026, presented several different scenarios for supply and demand over the next 25 years, but didn't recommend a specific pathway. In its [March 30 opinion](#), the Régie made 21 recommendations, emphasizing the need to make IERMP a true planning and management tool with clearly defined milestones and responsibilities. Here are some highlights:

- ▶ **The final IERMP will have to clearly and rigorously demonstrate the operational, economic and institutional viability of the proposed energy transition pathway.**
- ▶ **The IERMP must document critical dependencies** related to inputs, equipment, suppliers, supply chains, market institutions and coordination mechanisms.
- ▶ **The IERMP must be much more explicit about how to ensure adequate power supply during the winter, the power grid's capacity to transmit power and the execution risks.**
- ▶ **The IERMP must clearly identify the physical transformations to be undertaken**, the levers to prioritize, the options to keep open, the sequence of investments, the risks to monitor and the conditions that would trigger a revision of this pathway.
- ▶ **The IERMP must provide a robust analysis of the full costs** associated with the different pathways considered. Direct production costs on their own are not sufficient. The plan must include costs for integrating with the grid and support infrastructure, as well as the cost of flexibility<sup>2</sup> and the risks of cost overruns.
- ▶ **The pathway selected in the IERMP should be accompanied by a clear assessment of its rate impacts on different customer classes**, in order to provide insight on trade-offs related to affordability, equity and economic competitiveness.
- ▶ **The IERMP must include two distinct major phases.** The first phase, covering the short and medium terms, must focus on securing energy supplies, managing peak demand, reducing overall demand, optimizing existing infrastructure, strengthening interconnections, expanding flexibility and preparing critical infrastructure. And a second phase to begin in the longer term.
- ▶ **For effective monitoring of the IERMP's implementation, the Régie recommends developing a dashboard of key indicators**, covering demand trends, rate impacts, progress on network projects, energy efficiency, capital expenditures, and grid resilience.

<sup>2</sup> Energy flexibility refers to a power system's ability to adjust the generation, transmission and consumption of electricity to respond to fluctuations in demand and supply on the power grid. The more the power grid relies on intermittent energy, the more flexible it needs to be.

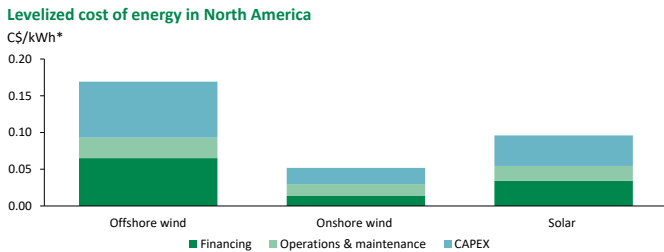
public policy or Hydro-Québec's plans, private capital may stay on the sidelines, limiting investments in private wind projects or in businesses and households as they decarbonize. To attract investment, the government would then have to reduce the risks associated with these projects, mainly by increasing public-sector contributions and adding to the fiscal burden. For public energy projects, the government will need to prove that it can manage funds appropriately and avoid excessive debt, at a time when significant investments are needed to update all of the province's infrastructure.

### Can We Build Affordably?

Energy projects are capital intensive, requiring tens and hundreds of millions of dollars, or even billions of dollars for larger projects. This is referred to as capital expenditures, or CAPEX for short. Essentially, it combines all of the costs, from design to completed construction, including labour and materials. Let's take the example of a wind farm. According to the [International Renewable Energy Agency](#) (IRENA), CAPEX accounts for 42% of an onshore wind farm's levelized cost of

energy, which is the average cost of generating one megawatt-hour over a facility’s operational lifetime (graph 6).

**Graph 6**  
**Financing and CAPEX Account for Roughly 70% of the Total Electricity Generation Costs for an Onshore Wind Farm**



\*Original data in US\$, converted using the 2024 annual average exchange rate. International Renewable Energy Agency and Desjardins Economic Studies

These costs are primarily financed by debt, even for public-sector projects. Because of this, borrowing conditions can become decisive: the higher the amount needed, the more sensitive the project is to interest rates. Interest rates are still at their highest point in a decade, which has a direct impact on project profitability and, ultimately, on electricity prices. IRENA estimates that financing costs account for about 26% of the total generation cost of an onshore wind farm. We also expect bond yields to increase in 2027, which will raise borrowing costs for governments and, consequently, for energy projects. In all, nearly 70% of a facility’s future electricity generation costs depend on construction costs and financing conditions—two factors that are largely determined before work has even begun.

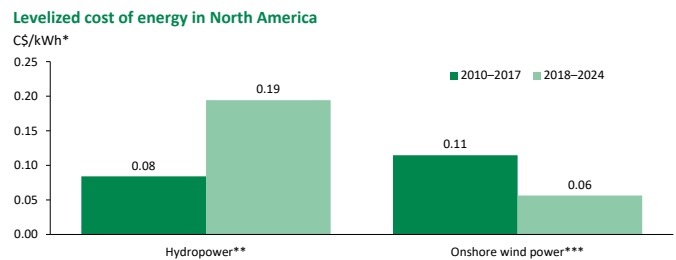
A number of wind power projects are in these critical stages, and the Régie has asked for clarification on how construction costs will affect electricity costs. To limit upward pressure on electricity rates, CAPEX and financing conditions must be strictly managed.

That said, current trends are favourable: the CAPEX needed for wind projects in Canada has dropped by 61% since 2010, thanks to technological advances and optimized production chains. The turbine, comprising the tower, nacelle, and rotor, remains the most expensive component, accounting for approximately 55% of the total cost of a wind energy project. The remainder comes mainly from grid interconnection, transportation, site access and supporting infrastructure. That said, costs could increase in the future, as they are being pushed upward by growing demand for renewable energy, the sharp rise in construction costs and the recent disruptions in North American supply chains caused by trade tensions.

Hydro-Québec’s most recent calls for tenders for wind power projects have costs between 6¢ and 8¢/kWh. Given that the producer’s margin is generally around 1¢/kWh or even less, we

can assume power generation costs are somewhere between 5¢ and 7¢/kWh. This is much higher than the generation costs of existing facilities, which are estimated to be around 3¢/kWh. These numbers suggest that the levelized cost of electricity is higher for new wind projects, which could affect rates. Wind power is still one of the more affordable sources of energy. In contrast, CAPEX for hydropower has risen significantly, bringing the levelized cost of energy up by around 130% for new installations (graph 7). This gap helps explain Hydro-Québec’s interest in wind power, which is relatively advantageous when looking for new energy supply.

**Graph 7**  
**While Wind Power Costs Are Falling, Hydropower Costs Are Going Up**



\*Original data in US\$, converted using the 2024 annual average exchange rate; \*\*For North America; \*\*\*For Canada International Renewable Energy Agency and Desjardins Economic Studies

**New Industrial Sectors**

The preliminary report supporting the IERMP and Hydro-Québec’s plan both reveal several sectors where demand is projected to increase over the coming decades. Some of these sectors are already developed, but growth is expected to accelerate. Other sectors are still emerging—or don’t exist yet in Quebec—and further development is anticipated, albeit over a longer timeline. And each of these sectors will also give rise to indirect demand for services and labour related to the deployment of new technologies (table 2).

**Table 2**  
**The Government’s Plan Will Give Rise to New Industrial Sectors**

	SECTORS	APPLICATION	IMPLICATIONS
1	CCUS technologies (carbon capture, utilization and storage)	Industry (pulp and paper, cement, chemistry), agriculture	Increased demand for related goods and services; Carbon capture technology manufacturing; Development of CO <sub>2</sub> transportation networks.
2	Energy efficiency of buildings (energy-efficient renovations, heat pumps, thermal envelope upgrades, district heating systems / thermal energy recovery)	Residential, commercial, institutional	Manufacturing and installation of technology; Energy-efficient renovations; Construction of infrastructure for the recovery and distribution of thermal energy (district heating)
3	Energy efficiency technologies for businesses	Industry	Associated goods and consulting services
4	Energy storage technologies (batteries, dual-energy systems)	Hydro-Québec, industry	Increased demand for manufacturing, battery recycling, installation of dual-energy systems in factories. Critical mineral demand will surge.
5	Bioenergy (biogas, renewable natural gas, biofuel, biomass recovery)	Transportation, industry, agriculture	Bioenergy manufacturing. Development of specialized engines and boilers (trucks, industrial and agricultural machinery)
6	Electric vehicles	Residential, industry	Increased demand for electric vehicle repair (garages), manufacturing
7	Hydrogen production	Hydro-Québec	Construction of new specialized networks (demand for engineering construction)
8	Small modular reactors (nuclear)	Hydro-Québec	Will depend on the pathway chosen by the IERMP

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Growth appears fairly certain for some sectors, and more conditional for others.

### Sectors Bound for Growth

On its own, Hydro-Québec's action plan will result in new infrastructure being built, generating considerable demand for civil engineering and IT and software services, among others. And, of course, the new power transmission lines will result in increased demand for metal products. The planned expansion of wind power will also result in gains for the manufacturers of equipment used to build wind farms.

Carbon capture, utilization and storage (CCUS) solutions are also expected to play an increasingly important role in industrial decarbonization by 2050, with government plans providing for their use in sectors such as pulp and paper, cement, chemicals and agriculture. This will require business investment, and the workforce will need to be trained to operate these new technologies. Forest biomass utilization is also expected to increase.

The market for developing and installing energy-efficiency technologies is also expected to expand rapidly, particularly for buildings, where heat pumps, smart control systems and thermal envelope upgrades are likely to see growing uptake. Contractors who specialize in energy-efficient renovations will be in increasing demand, as will installers of heat pumps for residential buildings. Significant growth is also likely in the development of thermal energy recovery and distribution infrastructure (especially for non-residential buildings), as district heating networks are mentioned in the preliminary report for the IERMP (appendix on page 9). For the manufacturing sector, this is a welcome development. Increased demand for equipment related to improving the energy efficiency of buildings (often metal products) could give a more lasting boost to this sector, which has been hard hit by the trade dispute with the United States. However, some existing manufacturing operations may need to pivot to these more promising niches.

Consultants, scientific service providers and the developers of software to increase energy efficiency gains within firms are also all well positioned to seize business opportunities arising from the Quebec government's ambitious decarbonization plans.

### Sectors Where Growth Is Conditional

For some of these sectors, growth may ultimately depend on the pathway chosen by the IERMP (for example, whether nuclear power is included in the energy mix). For others, demand is not driven solely by the domestic market: it may also depend on scientific advances that influence technological efficiency and relative cost competitiveness (hydrogen, small modular reactors), as well as on how favourable the North American and global environments prove to be (electric vehicles, batteries and smart

charging stations). Outlooks are favourable for the critical and strategic materials used in the battery industry and in digital technology. A new innovation zone, the Energy Transition Valley, has been officially created in Bécancour, Trois-Rivières and Shawinigan.

Bioenergy is another sector with more nuanced prospects. There's a good chance that companies specializing in biochar carbon capture will see increased demand from the agricultural sector. Renewable natural gas is also expected to grow, given its greater role in the government's projected energy mix, particularly during peak demand periods. The outlook for biofuels in transportation and machinery could be influenced by the broader North American environment. If it's favourable, we can expect demand to go up for specialized components, engines and boiler systems designed for biofuel-powered vehicles and equipment, particularly in agriculture, material handling and mining. Specialized mechanics and garages will also be needed for any repairs these fleets require. However, these technologies usually benefit from economies of scale, and our neighbours to the south currently have little interest in the energy transition. An alternative for Quebec businesses would be to target more supportive markets outside of Canada, particularly in Europe and Asia. Nonetheless, gaining a foothold in these regions will be challenging, as price competition is fierce. Companies will need to distinguish themselves through innovation and quality.

In conclusion, the government's plans involve more than just electricity generation and distribution. They also entail the purchase and replacement of equipment and the widespread adoption of new practices. While this will certainly give rise to business opportunities, considerable efforts will be required to successfully integrate the energy transition into the broader economy and within companies. Substantial expenditures and investments will be needed from organizations throughout the transition, especially in transportation, industry and buildings.

### **Conclusion: Predictability Will Encourage Investment**

Over the last twelve months, economic conditions have weighed on business investment, and trade policy and geopolitical tensions continue to act as headwinds. But businesses and households alike respond to market signals and incentives. Predictable business environments allow for more detailed planning and appropriate strategies.

Hydro-Québec's *Action Plan 2035* and the energy transition should both be significant drivers of demand in the decades to come. They could also open up new markets for Quebec's manufacturing sector, which is currently under strain as international trade dynamics shift. But to develop the sectors that will be called on to meet changing needs for construction, materials, consulting services and related activities, public policies will need to strike a delicate balance between supporting demand and strengthening supply. With electric vehicles, for

example, policies were too focused on stimulating demand, even as the supply was limited. This caused prices to skyrocket. A well-calibrated industrial policy that accounts for the expected acceleration in demand would maximize economic spillovers in Quebec. Otherwise, Hydro-Québec and the province will have to rely more on foreign suppliers to meet their needs.

Finally, the issues discussed in this analysis remain broad and cannot be addressed exhaustively. The impacts of potential electricity rate increases for different customer groups are just one example that would merit a dedicated analysis. Other considerations include solar energy, biomass, social acceptability, and the monitoring of Hydro-Québec's projects. This study therefore aims to shed light on the main challenges while paving the way for complementary analyses and future work.

## Appendix

### Assumptions Used to Identify Potential Growth Sectors (Non-Exhaustive)

#### TRANSPORTATION

By 2045, all light-duty passenger vehicles will be electric, and by 2050, most medium-duty trucks and local transit buses will be as well.

#### BUILDINGS

In all scenarios, heat pumps will become the main heating solution for residential, commercial and institutional buildings, given their considerable efficiency and accessible costs. In the D2 intermediate scenario of the preliminary report, district heating networks cover up to 33% of the energy needs of new buildings and up to 5% of existing buildings.

#### INDUSTRY

The implementation of CCUS technology will play a key role in meeting climate goals. All scenarios incorporate carbon capture solutions in industries like cement, chemistry (via the use of biomass to create biofuels), and pulp and paper, where carbon capture should become notable starting in 2035 and dominant after 2045.

#### AGRICULTURE

All scenarios rely on biochar as a tool for carbon sequestration, at around 3 Mt CO<sub>2</sub>e in 2050 in the agricultural sector.

#### WIND

Wind experiences strong growth in all scenarios of the preliminary report supporting the IERMP. In 2050, hydroelectric power stations will still account for the majority of electricity production. However, in all scenarios, their proportion is decreasing, mostly in favour of wind, which allows the province to slightly diversify its energy mix.

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Source: [Preliminary report supporting the development](#) of the IERMP (January 2026).