

THE QUÉBEC
ECONOMIC PLAN

March 2018

Climate Change

BUDGET 2018-2019

Actions to Reduce GHGs



Budget 2018-2019
Climate Change: Actions to Reduce GHGs

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HIGHLIGHTS

The reality of climate change is being confirmed year after year, and this reality has a direct impact on Québec.

The fight against climate change is now one of the greatest issues facing the planet. Québec quickly signed onto the various international agreements reached on this issue, in particular the Paris Agreement. In so doing, Québec took on major commitments to reduce greenhouse gas emissions, most notably by committing to a 37.5% decrease below the 1990 level by 2030. The government has implemented means to respect them.

In the March 2018 Québec Economic Plan, the government takes stock of Québec's battle against climate change, a fight to which it is firmly committed and to which significant financial resources have been allocated.

- To meet its commitments, Québec has chosen a carbon market. It is essential to identify the characteristics of Québec's emission cap-and-trade system and explain how it contributes to reaching targets.
- Québec selected an integrated approach, combining an emission cap-and-trade system with full reinvestment of the revenues from the said system in the implementation of the 2013-2020 Climate Change Action Plan, through the Green Fund. The government implemented the **Conseil de gestion du Fonds vert** and the rules required for these revenues to be used effectively.
- It is now possible to present the approach adopted to honour the commitments, the measures implemented and their initial results, and to outline the main perspectives of Québec's fight against climate change through 2020 and 2030.

As at March 31, 2017, over 70% of the revenues collected and dedicated to the 2013-2020 Climate Change Action Plan has been spent.

- This plan is clearly defined and presents the government's actions to reduce greenhouse gas emissions up to 2020.
- The creation of the Conseil de gestion du Fonds vert makes it possible to ensure better governance of the Green Fund, so that the programs put in place are the most appropriate for fighting climate change and maximizing the reduction of greenhouse gas emissions in Québec.
- As a partner, **Transition énergétique Québec** will contribute to reducing greenhouse gas emissions by promoting Québec's transition toward a low-carbon economy.

Québec's actions in the fight against climate change are coordinated and under control.

1. CHOICE OF A CARBON MARKET TO MEET QUÉBEC'S COMMITMENTS

Confronted with the reality of climate change, Québec chose a carbon market to meet its commitments in the fight against greenhouse gas emissions.

- Already benefiting from one of the best performances in North America in terms of the level of greenhouse gas emissions per capita, Québec adopted targets inspired by major international agreements.
- To achieve these targets, Québec selected an emission cap-and-trade system.

☐ A confirmed reality, an impact on Québec

The reality of climate change is being confirmed year after year by different scientific analyses and publications, among them the analyses included in the reports published by the Intergovernmental Panel on Climate Change.

Climate change directly affects Québec, and its impact is already noticeable. The observed changes in temperature and precipitation have already had tangible impacts on the environment, infrastructures and communities.

These impacts will likely worsen in the future. Northern regions, such as the Estuary and the Gulf of St. Lawrence, are particularly vulnerable to climate change.

Faced with this reality, we must both reduce greenhouse gas emissions to limit the scale of climate change and adapt to these changes to reduce their impacts.

❑ International cooperation

International cooperation is essential to reinforce our collective capability to reduce greenhouse gas emissions and adapt to climate change, as well as support the efforts of less-developed countries.

Signed in 1997,¹ the Kyoto Protocol entered into force in 2005. It was the first international agreement targeting the reduction of greenhouse gas emissions by means of firm commitments from its signatories.

■ The Paris Agreement

The Paris Agreement, signed in 2015, marked a new stage in international cooperation committed to fighting climate change. For the first time, developing countries agreed to join the efforts of industrialized countries to reduce greenhouse gas emissions.

The signatory countries are committed to keeping the long-term increase in the average temperature worldwide below two degrees Celsius, as compared to the level observed prior to the industrial age.

¹ The Kyoto Protocol is the international agreement signed on December 11, 1997 in Kyoto, Japan, at the third Conference of the Parties to the Convention (COP3). It joined the United Nations Framework Convention on Climate Change, whose signatory countries have been meeting annually since 1995. On January 14, 2009, the Kyoto Protocol was ratified by 184 countries.

1.1 Climate change: Québec's performance and targets

In 2015, Québec ranked first among Canadian provinces, with the lowest greenhouse gas emissions per capita, and was well-positioned in North America.

- The rate for Québec is established at 9.9 tonnes of CO₂ equivalent per capita, as compared to 11.3 tonnes in California, 12.1 tonnes in Ontario, 20.1 tonnes for all of Canada, and 20.8 tonnes in the United States.

Québec performance is largely attributable to:

- the important role of hydroelectricity;
- the lowest emissions rate in transport per capita for all of Canada;
- significant reductions achieved in the industrial sector since 1990, notably due to process efficiency gains and improvements.

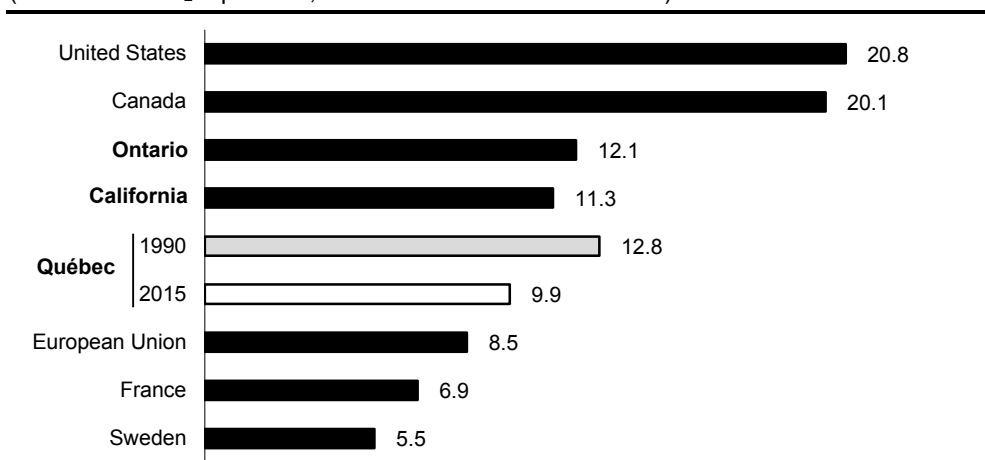
Québec's performance in terms of greenhouse gas emissions means that additional progress, as compared to other jurisdictions, could be more difficult and more costly to achieve.

In fact, a lower level of emissions implies higher cost to further reduce greenhouse gas emissions, and could require significant investments and recourse to more costly technologies.

CHART 1

Greenhouse gas emissions per capita in certain jurisdictions

(in tonnes of CO₂ equivalent, 2015 unless otherwise indicated)



Sources: Statistics Canada, Environment and Climate Change Canada, Eurostat, California Air Resources Board, United States Census Bureau, United States Environmental Protection Agency, Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

❑ Path travelled and targets set

Québec quickly signed onto the various international climate agreements, in particular the Kyoto Protocol and the Paris Agreement.²

In 2015, greenhouse gas emissions in Québec fell 8.8% compared with their level in 1990, the largest reduction seen in the industrial sector, with a 23.7% drop in greenhouse gas emissions.

— The 21.3% increase in greenhouse gas emissions between 1990 and 2015 in the transportation sector explains why more effort needs to be dedicated to this sector.

For 2020, Québec retained a greenhouse gas emissions reduction target of 20% as compared to the level in 1990, by maximizing these reductions within Québec.

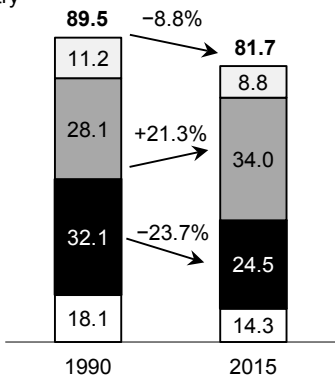
The target set for 2030 is to reduce greenhouse gas emissions by 37.5% compared with their 1990 level.

CHART 2

Changes in greenhouse gas emissions in Québec – 1990 to 2015

(millions of tonnes of CO₂ equivalent, unless otherwise indicated)

- Residential, commercial and institutional
- Transportation
- Industry
- Other

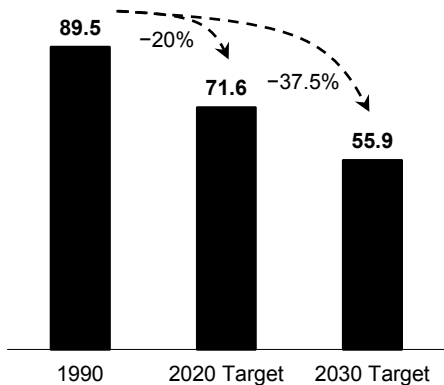


Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

CHART 3

Changes in greenhouse gas emissions in Québec – 1990, and targets for 2020 and 2030

(millions of tonnes of CO₂ equivalent, unless otherwise indicated)



Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

² Decree number 1669-92 of November 25, 1992 for the United Nations Framework Convention on Climate Change and decree number 1074-2007 of December 5, 2007 for the Kyoto Protocol; decree 1052-2016 of December 7, 2016 for the Paris Agreement.

1.2 Québec's greenhouse gas emission cap-and-trade system

To honour its commitments, Québec especially chose an emission cap-and-trade system.

❑ The logic behind an emission cap-and-trade system

An emission cap-and-trade system has two main characteristics.

■ A cap on greenhouse gas emissions

This type of system caps greenhouse gas emissions. The government sets a cap on total emissions for economic sectors subject to the system. Businesses conducting their activities in sectors where the cap applies must hold an emission allowance for each tonne of emissions released into the atmosphere.

Setting annual emission caps that decrease over time, according to the emission reduction targets set, ensures reductions over the established period until the targets are reached.

■ The option to trade emission allowances on the market

The emission cap system includes the option of trading emission allowances on a market to allow companies to maintain the proper level of emission allowances.

— Businesses can receive emission allowances for free, buy them from the government when they are auctioned,³ or acquire them from other businesses, either directly or on the secondary market.

The emission allowance supply is essentially equal to the cap determined by the government, and demand is defined by subject entities' need to purchase emission allowances. The meeting of supply and demand determines the price of emission allowances.

In an emission cap-and-trade system, companies have two choices:

- reduce their greenhouse gas emissions by, for example, improving their manufacturing processes or reducing their fossil fuel consumption;
- buying emission allowances to ensure their compliance in other words, owning emission allowances equivalent to their greenhouse gas emissions.

³ An emitter can also buy emission allowances from the Minister of Sustainable Development, Environment and the Fight against Climate Change by private sale.

■ Two major advantages

Québec's emission cap-and-trade system has two major advantages.

- By definition, it ensures a reduction in greenhouse gas emissions in the sectors of activity it covers by setting declining caps, which is the system's founding principle.
- The system reduces costs associated with decreasing greenhouse gas emissions by encouraging the reduction of emissions where it is least costly to do so.

❑ **The development of emission cap-and-trade systems worldwide**

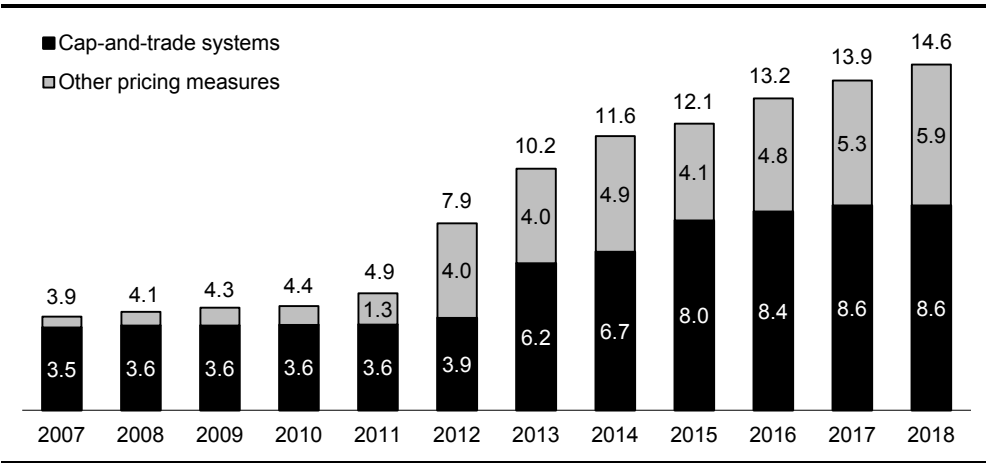
In recent years, carbon pricing, primarily in the form of taxes on carbon or emission cap-and-trade systems, has played an increasingly important role worldwide.

From 2007 to 2018, the portion of greenhouse gas emissions covered by a carbon pricing system rose from 3.9% to 14.6%.

— The majority of these greenhouse gas emissions are under an emission cap-and-trade system, the proportion of which rose from 3.5% to 8.6%.⁴

CHART 4

Emissions worldwide covered by carbon pricing
(percentage of 2012 emissions)



Note: The chart shows the changes in system coverage, not the changes in greenhouse gas emissions worldwide. The annual change therefore comes from implementing carbon pricing by adding new jurisdictions or expanding the scope of existing carbon-pricing initiatives.

Sources: World Bank and Ministère des Finances du Québec.

⁴ This percentage will increase when the parameters for setting up a national cap-and-trade system in China will be confirmed.

❑ **Québec's choice: a regional carbon market**

In Québec's case, the choice of an emission cap-and-trade system to reduce greenhouse gas emissions came about gradually.

In 2006, the government prepared its first climate change action plan, covering the years 2006 to 2012. This plan included initiatives undertaken by the government to fight climate change. The plan was financed through a duty on fuel and fossil fuels implemented in 2007.

■ **Québec's participation in the Western Climate Initiative**

The government found that to further reduce greenhouse gas emissions, Québec had to arm itself with a more solid and comprehensive tool than duties on fuel and fossil fuels.

Québec therefore signed onto the Western Climate Initiative⁵ in 2008 and, together with its new partners, developed the guidelines and operating rules of a regional greenhouse gas emission cap-and-trade system.

This system has become the cornerstone of Québec's fight against climate change.

■ **The system introduced in 2013**

Québec's cap-and-trade system was implemented on January 1, 2013.

In January 2014, Québec linked its system with that of California.⁶ Through this liaison agreement, participants in Québec and California can trade emission allowances to cover their greenhouse gas emissions.

The Western Climate Initiative carbon market was expanded in 2018 with the addition of Ontario.⁷ The systems in Québec, California and Ontario have been linked since January 1, 2018, expanding the scope of what was already the largest carbon market in the Americas.

⁵ The Western Climate Initiative is a group of American states and Canadian provinces that want to adopt a common approach in the fight against climate change, most particularly by developing and implementing a North American greenhouse gas cap-and-trade system.

⁶ Liaison agreement signed in September 2013 and ratified in November 2013 – *Gazette officielle du Québec*, December 4, 2013, 145th year, No. 49.

⁷ Liaison agreement signed in Québec City on September 22, 2017 and in Los Angeles on October 4, 2017, and confirmed in November 2017 – *Gazette officielle du Québec*, November 29, 2017, 149th year, No. 48.

❑ **Operating details of Québec's emission cap-and-trade system**

Québec's emission cap-and-trade system operates according to the principle of a market where allowances are traded to emit a fixed quantity of greenhouse gases.

The system makes it possible to set the annual maximum amount of authorized emission allowances. For the sectors covered, the system guarantees the desired level of reduction over a given period within the regional Western Climate Initiative market.

■ **Sectors targeted**

The Québec emission cap-and-trade system covers approximately 80% of total greenhouse gas emissions in Québec, namely those of the industrial, transportation, residential, commercial, institutional and electricity-production sectors.

Sectors not covered essentially produce emissions from non-energy sources associated with soil fertilization and animal droppings in the agricultural sector, and those associated with the landfill and processing of waste matter.

■ **The major industrial emitters**

Since 2013, Québec's emission allowance cap-and-trade system has directly targeted the major industrial emitters. These are businesses that run establishments that emit over 25,000 tonnes of CO₂ equivalent per year (54 businesses in 2016). These major emitters decide whether it would be preferable for them to buy emission allowances or to invest in order to reduce their greenhouse gas emissions.

— In the latter case, not only are greenhouse gas emissions reduced, but the investments made improve the competitiveness of the business and enable it to better position itself in a competitive context where the pricing of carbon is increasing.

■ **The other sectors**

Since 2015, the other sectors, chiefly the transportation, residential, commercial and institutional sectors, have been indirectly subject to the system through fossil fuel distributors (70 businesses in 2016).

— In this case, fossil fuel distributors can divert the cost of greenhouse gas emission allowances to consumers and businesses by adjusting the sale price of their products—gasoline, diesel, natural gas, etc.

■ Definition of the emission cap

The Québec government sets by decree a cap on annual emission allowances that it issues each year. This cap is gradually being decreased in order to translate into the targets set for 2020 and 2030.

■ The compliance period

A compliance period is a period at the end of which the businesses targeted by the greenhouse gas emission cap-and-trade system must return an emission allowance to the government for each tonne of greenhouse gas emitted into the atmosphere during that period.

- These emissions must be declared under the *Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere*.
- Should these allowances not be returned to the government for each tonne of greenhouse gas emitted, the business will be subject to a minimum penalty of three emission allowances for each allowance missing.

■ Purchases of emission allowances outside Québec

The exchange of greenhouse gas emission allowances in the regional carbon market may result in purchases outside Québec if the level of emissions to be covered is higher than the number of emission allowances issued by the Québec government.

Between 2013 and 2016, businesses active in Québec did not have to buy emission allowances outside Québec to meet the established emission caps.

- All of the measures implemented in the fight against climate change will help to maximize greenhouse gas emission reductions in Québec.

The tools to fight climate change

Governments have several tools at their disposal to fight climate change. These include carbon pricing, regulations, measures and incentive programs.

Carbon pricing

Carbon pricing is one of the key tools used by governments to fight climate change.

- By imposing a price on greenhouse gas emissions, carbon pricing influences the behaviour of businesses and consumers. Those affected will then determine whether it is preferable to pay the carbon price or to change their consumption habits in order to avoid it.

In addition to emission cap-and-trade systems such as that in force in Québec, carbon taxes and output-based standards systems are two mechanisms commonly used.

Carbon taxes are simple mechanisms through which the government sets a price on carbon. This price is integrated into the cost of fossil fuels or energy, or imposed on businesses whose emissions are subject to the tax.

Output-based standards systems consist in setting a threshold maximum intensity of greenhouse gas per production unit. These standards differ according to the product, sector or industrial group emitting greenhouse gases. These systems are generally reserved for major emitters in the industrial or electricity sector.

- Charges apply at a price determined for emissions that exceed the standard set by the government.
- This type of system generally allows businesses with performance that is better than the standard set to accumulate credits that can be used in the future or exchanged with businesses that do not perform as well.

Unlike cap-and-trade systems, carbon taxes and output-based standards systems do not guarantee increasing greenhouse gas emission reductions.

Regulations

Regulations are complementary to carbon pricing tools. Rather than imposing a price on greenhouse gas emissions and letting businesses and consumers make their own decisions in reaction to this price signal, regulations directly impose behavioural changes.

Although it is not a pricing mechanism, regulations are not without cost. They impose an implicit cost on the reduction of greenhouse gases.

Incentive measures and programs

A final option is to develop incentive measures and programs to facilitate or accelerate the transition toward a resilient and low-carbon economy. This can be done using the revenues from carbon pricing.

These programs act in a complementary manner with pricing tools to create comprehensive and integrated approaches to fight climate change.

❑ The system guarantees the objective of reducing greenhouse gas emissions is achieved

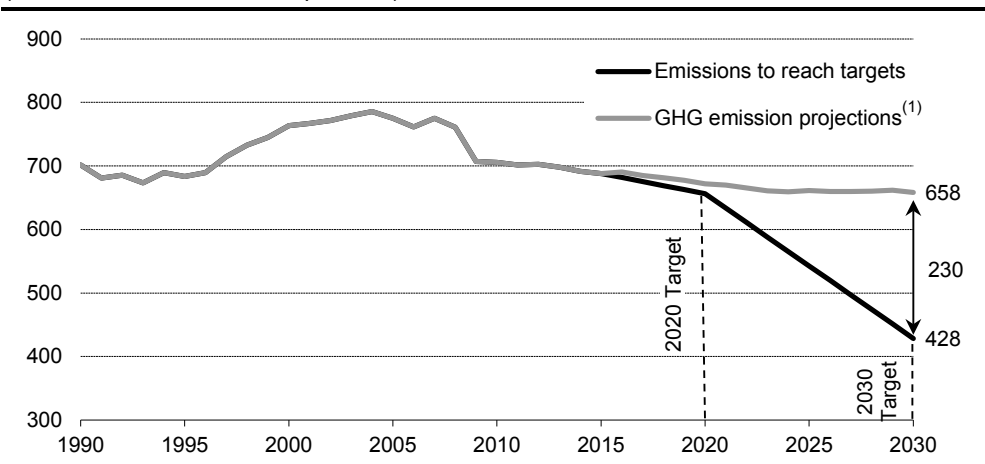
The emission cap-and-trade system is a rationing mechanism. It therefore guarantees increasing greenhouse gas emission reductions by participating jurisdictions.

— The overall reduction objective will be achieved throughout the Western Climate Initiative partners' territory by the effect of the capping mechanism, for the sectors of activity targeted.

By 2030, achieving greenhouse gas emission reduction targets in these three participating jurisdictions will require a combined effort of 230 million tonnes of CO₂ equivalent in the territories of Québec, California and Ontario, 32 million tonnes of CO₂ equivalent which result from Québec's commitment.

CHART 5

Changes and common greenhouse gas emission reduction target for Québec, California and Ontario by 2030
(millions of tonnes of CO₂ equivalent)



(1) Emissions in California, Ontario and Québec in the absence of, most specifically, the emission cap-and-trade system and measures to fight against climate change.

Sources: California Air Resources Board, Environment and Climate Change Canada, Ontario Ministry of the Environment and Climate Change, Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, Transition énergétique Québec, and Ministère des Finances du Québec.

❑ The Québec system makes it possible to take advantage of lower reduction costs

Québec's participation in the joint carbon market could make it possible for subject entities to benefit from lower reduction costs than if the carbon market were confined to Québec.

The cost of reducing greenhouse gas emissions within Québec is higher than that of our market partners in the Western Climate Initiative, in particular due to efforts already made by Québec industrial emitters and the strong position that hydroelectricity holds in Québec.

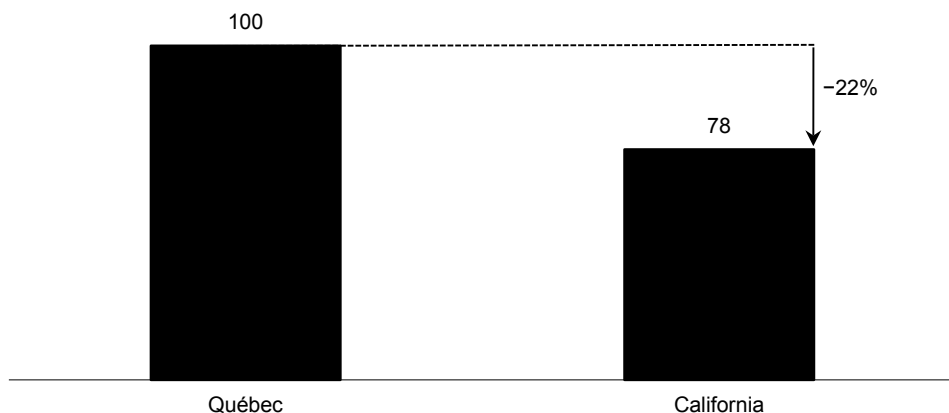
Québec's participation in the common market therefore gives it access to reductions at a lower cost, which would otherwise be difficult to access. If Québec wanted to achieve all of its reductions within its own territory, it could only be accomplished by exerting significant pressure on its economy.

In fact, for example, it is estimated that by 2020, the price of an emission allowance in California would be 22% lower than in Québec.

CHART 6

Illustration of the price of greenhouse gas emission allowances in 2020, in Québec and California

(U.S. dollars per tonne of CO₂ equivalent, index, Québec = 100)



Note: This analysis was conducted in 2012 by the Western Climate Initiative, with the liaison agreement between California and Québec.

Sources: Western Climate Initiative and Ministère des Finances du Québec.

❑ An action in keeping with the worldwide objective of reducing greenhouse gas emissions

The fight against climate change is a worldwide objective; Québec's action must be consistent with this objective.

In this respect, exerting excessive pressure on our economy to generate the same reductions in Québec as with a common market could hinder the worldwide objectives of the fight against climate change.

— This would be the case if the price of carbon were too high, or if the mitigation measures of carbon pricing were ill-adapted to the industrial sector.

In fact, Québec's economy, which is largely based on hydroelectricity and exemplary environmental practices, compares to others very favourably on a global scale, in terms of greenhouse gas emissions per dollar of GDP.

— For example, to generate the same level of economic activity, Québec emits 1.8 times less greenhouse gases than Brazil, 4.2 times less than the Middle East, and 4.7 times less than China.

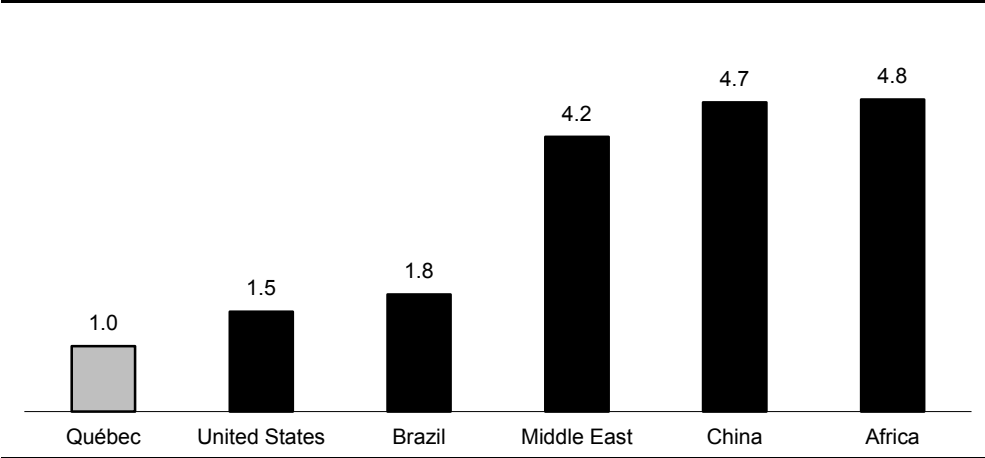
— Thus, exerting excessive pressure on Québec's industrial sector, which faces international competition, could translate into an increase in greenhouse gas emissions on a global level, if it requires a shift in the economic activity.

Québec therefore has everything to gain by assisting its businesses with a perspective of sustainable development, not only in relation to jobs, but also regarding worldwide objectives in the fight against climate change.

CHART 7

Greenhouse gas emissions for a similar level of economic activity by region – 2014

(tonnes of CO₂ equivalent per dollar of GDP, index, Québec = 1)



Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, World Resources Institute, International Monetary Fund, IHS Markit and Ministère des Finances du Québec.

2. AMOUNTS REINVESTED EFFECTIVELY IN THE FIGHT AGAINST CLIMATE CHANGE

Québec’s emission cap-and-trade system constitutes the central tool in Québec’s fight against climate change.

Québec has put in place an integrated approach, combining implementation of an emission cap-and-trade system and full reinvestment of the revenues from the said system with the implementation of measures to fight climate change. This helps to maximize the greenhouse gas emission reductions in Québec, to increase the economic, environmental and social benefits of such actions, and to help Québec’s society to adapt.

□ An integrated approach

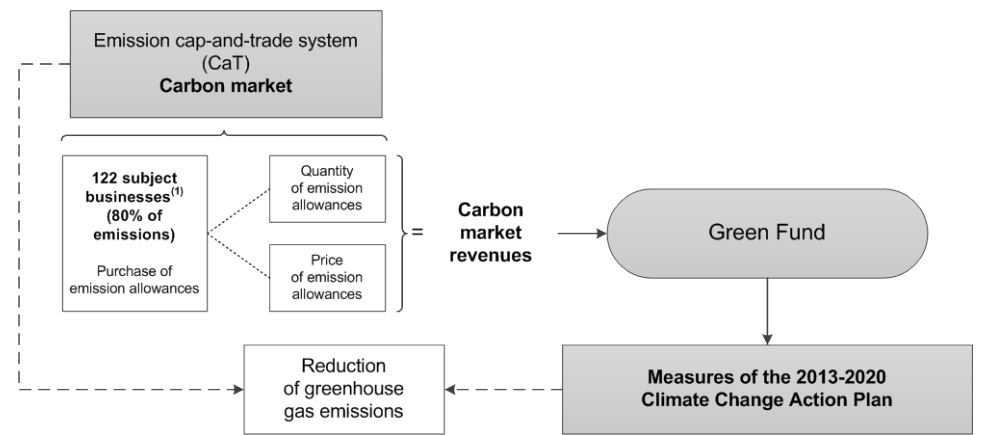
This integrated approach is based on two tools: the emission cap-and-trade system and the 2013-2020 Climate Change Action Plan.

- The action plan lists the initiatives undertaken by the government and its partners to fight against these changes – by reducing greenhouse gas emissions – and to adapt to them.

Moreover, all of the revenues resulting from the emission cap-and-trade system are paid to the Green Fund, for reinvestment in financing the initiatives identified in the 2013-2020 Climate Change Action Plan.

ILLUSTRATION 1

An integrated approach to the fight against climate change



(1) This is the number of businesses in 2016. Certain businesses may be both fossil fuel distributors and major industrial emitters.
Source: Ministère des Finances du Québec.

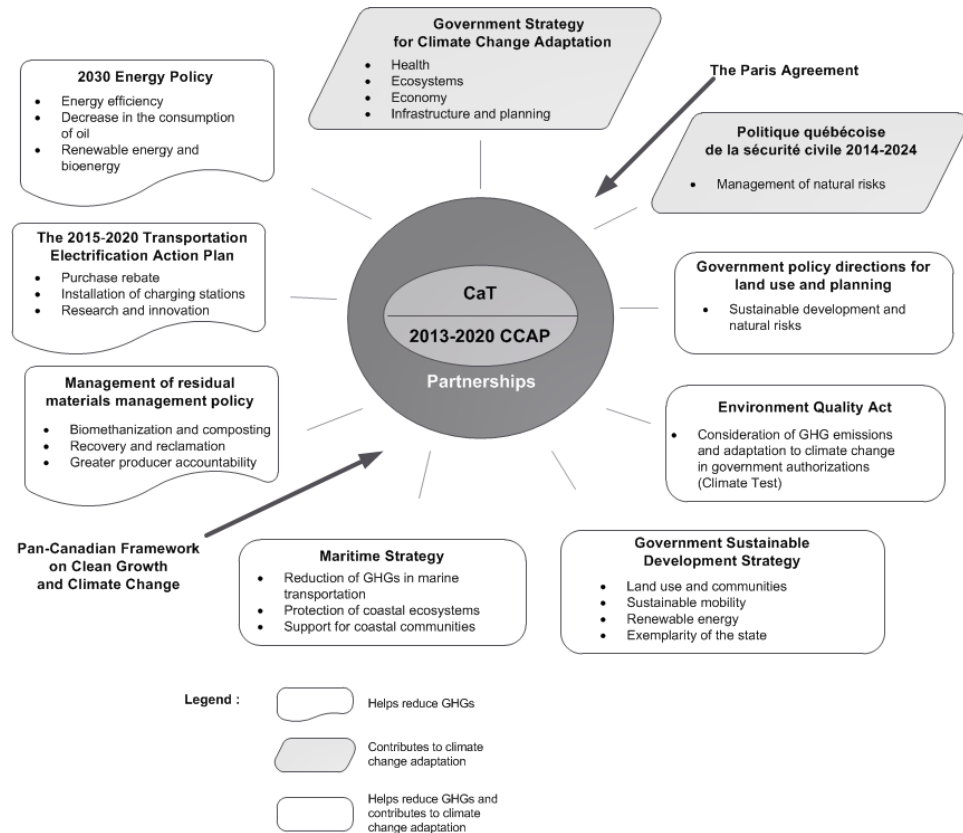
■ Other government actions

Other government actions, whose main purpose is not to fight against climate change, also contribute to the efforts to reduce greenhouse gas emissions and to adapt to climate change, including:

- the 2030 Energy Policy;
- the 2015-2020 Transportation Electrification Action Plan;
- the Maritime Strategy.

ILLUSTRATION 2

Québec's actions regarding the fight against climate change



Note: See Appendix 4 for meaning of abbreviations.

Source: Bilan mi-parcours du Plan d'action 2013 2020 sur les changements climatiques (ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques).

2.1 The 2013-2020 Climate Change Action Plan

The 2013-2020 Climate Change Action Plan defines a series of measures that will contribute to reaching Québec's objectives for the reduction of greenhouse gas emissions and adaptation to the impacts of climate change.

- By maximizing Québec's potential for reduction, the action plan also allows businesses to increase their efficiency and position themselves favourably compared to their competitors.

The action plan is the result of cooperation among the main departments and bodies involved in the fight against climate change.

A supplement to Québec's emission cap-and-trade system

Since 2013, the 2013-2020 Climate Change Action Plan completes five main aspects of Québec's emission cap-and-trade system.

- The action plan pertains to all activity sectors within Québec's economy, including all sectors covered by the system (approximately 80% of total greenhouse gas emissions in Québec) as well as the sectors that are not covered (approximately 20% of the total greenhouse gas emissions).
- The action plan includes measures aiming to maximize greenhouse gas emission reductions on Québec soil.
- The action plan also supports businesses and citizens in the fight against climate change.

By supporting businesses in their efforts to reduce greenhouse gas emissions, the action plan supports economic development and job preservation. This allows them to meet the requirements arising out of the emission cap-and-trade system, while maintaining their activities in Québec and limiting the purchase of emission allowances outside of Québec.

- The action plan has other positive impacts on economic development, promoting the transition to a green economy and fostering the development of new technologies.
- The action plan also includes climate change adaptation measures, specifically the analysis of infrastructure resilience and of the need for deepening our knowledge relating to the impact of climate change on our sectors and communities.

❑ Financing of the 2013-2020 Climate Change Action Plan

The 2013-2020 Climate Change Action Plan is financed mainly with the revenues from Québec's emission cap-and-trade system, which transit through the Green Fund.

Taking into account the results and forecasts for auctioning emission allowances associated with Québec's cap-and-trade system, total revenues could reach \$4.4 billion for the 2013-2020 period.

TABLE 1

Green Fund revenues dedicated to the 2013-2020 Climate Change Action Plan⁽¹⁾ (millions of dollars)

	2013-2014 to 2016-2017	2017-2018 to 2020-2021	Total
Revenues from Québec's emission cap-and-trade system ⁽²⁾	1 457.5	2 159.7	3 617.2
Duty on fuel and fossil fuels	205.9	—	205.9
Reallocation of the 2006-2012 Climate Change Action Plan amounts	308.0	—	308.0
Other revenues ⁽³⁾	23.3	253.7	277.0
TOTAL	1 994.7	2 413.4	4 408.1

(1) Until December 31, 2020.

(2) Total revenues include results of the February 2018 auction and exclude forecasted revenues for the February 2021 auction.

(3) These consist of amounts until 2020-2021 from the federal government's Leadership Fund allocated to specific projects, as well as the Green Fund's returns on the portion of amounts allocated to climate change.

Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

In regards to the expenditures for the 2013-2020 Climate Change Action Plan, they should also amount to \$4.4 billion by December 31, 2020, taking into consideration:

- the enhancement of the Drive Green program;
- the new expenditures to be financed by amounts from the federal government's Low Carbon Economy Leadership Fund;
- other amounts, such as those from the 2017-2018 fiscal year auctions, which will be allocated to projects.

TABLE 2

Changes in the 2013-2020 Climate Change Action Plan amounts
(millions of dollars)

Year*	Projects	Budgets 2013 to 2020
2012	Initial 2013-2020 CCAP	2 665.0
Additional projects financed		
2013	Reallocation of unused amounts at the closing of the 2006-2012 Climate Change Action Plan	308.0
2014	New measures resulting from Québec's economic policy	299.3
2015	New measures resulting from the Paris Agreement	25.5
2016	Addition of new niches: green renovation, coastal erosion, carbon capture technologies, etc.	393.9
Subtotal: 2013-2020 CCAP as at March 31, 2016		3 691.6
2017	Green renovation and enhancement of Drive Green program, etc.	243.9
Subtotal: 2013-2020 CCAP as at March 31, 2017		3 935.5
2018	Enhancement of the Drive Green program	92.1
Subtotal: 2013-2020 CCAP as at March 31, 2018		4 027.6
Other amounts allocated to climate change		
—	Amounts from the federal government's Leadership Fund allocated to specific projects ⁽¹⁾	210.9
—	Other amounts allocated to projects regarding the fight against climate change ⁽²⁾	169.6
TOTAL		4 408.1

* Year that the allocated amounts are enhanced.

Note: Totals may not add due to rounding.

(1) The impact presented applies through 2020-2021. Amounts from the federal government's Leadership Fund total \$261 million over the entire period.

(2) These consist of unallocated additional revenues from the four auctions held during the 2017-2018 fiscal year.

Sources: Bilan mi-parcours du Plan d'action 2013 2020 sur les changements climatiques (Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques) and calculations by the Ministère des Finances du Québec.

❑ Significant amounts for measures regarding transportation

The *Act respecting the Ministère du Développement durable, de l'Environnement et des Parcs* provides for two-thirds of the revenues from the carbon market, namely amounts corresponding to the proceeds from the sale of greenhouse gas emissions allowances, must be reserved for measures applicable to transportation.

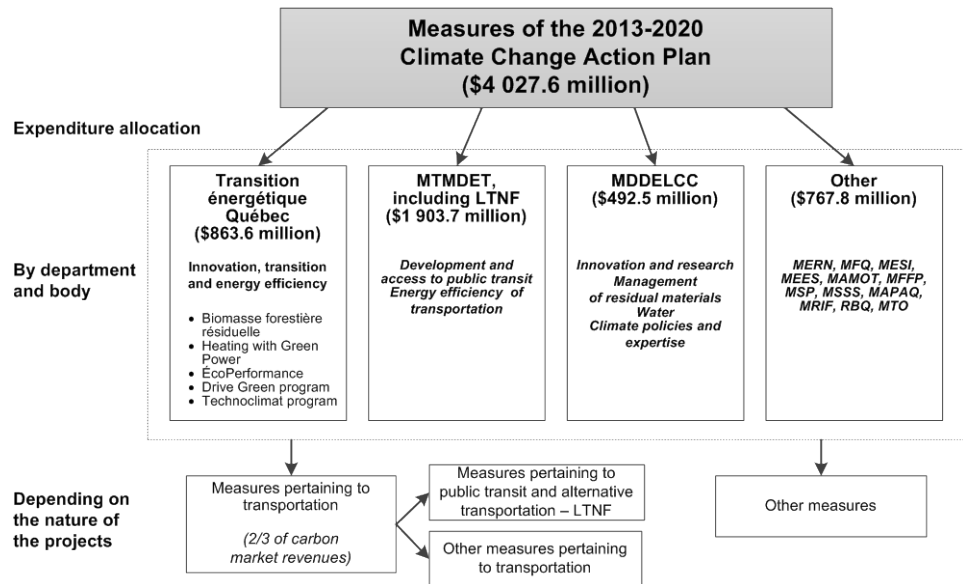
This proportion devoted to transportation is relevant due to the significance of greenhouse gas emissions in this sector and the difficulty in changing behaviours while maintaining economic and social development, as well as the numerous benefits associated with public transit.

Thus, considering the measures announced in the March 2018 Québec Economic Plan, the budget dedicated to the 2013-2020 Climate Change Action Plan amounts to \$4.0 billion. Of this amount, \$2.3 billion are allocated to measures pertaining to transportation, namely:

- \$1.5 billion for measures pertaining to public transit and alternative transportation paid to the Land Transportation Network Fund;
- \$0.8 billion for other transportation measures, such as the Drive Green program, which specifically offers discounts upon acquiring electric vehicles.

ILLUSTRATION 3

Breakdown of the 2013-2020 Climate Change Action Plan (millions of dollars)



Note: See Appendix 4 for meaning of abbreviations.

Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

❑ Expenditures incurred

As at March 31, 2017, the expenditures incurred amounted to \$1.4 billion, or nearly 70.7% of the revenues dedicated to the 2013-2020 Climate Change Action Plan.

Expenditures should accelerate during the period from 2017-2018 through 2020-2021, reaching \$2.6 billion for the last four years of the 2013-2020 Climate Change Action Plan, primarily owing to the full impact of the new programs and measures.

TABLE 3

2013-2020 Climate Change Action Plan revenues and expenditures (millions of dollars, unless otherwise indicated)

	Actual					Forecasts 2017-2018 to 2020-2021	Total
	2013- 2014	2014- 2015	2015- 2016	2016- 2017	Subtotal		
Revenues	454.9	406.0	862.1	271.6	1 994.7	2 413.4	4 408.1
Expenditures	171.5	271.2	373.5	593.4	1 409.6	2 595.5	4 005.1
Surplus (deficit)	283.5	134.8	488.6	-321.7	585.1	-182.1	403.0
– Expenditures, in percentage of revenue					70.7%	107.5%	90.9%

Note: Totals may not add due to rounding.

Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

TABLE 4

2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Departments and bodies	Expenditures			Maximum budget authorized	Gap
	Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Ministère des Transports, de la Mobilité durable et de l'Électrification des transports	180.0	165.3	345.3	379.9	-34.5
Land Transportation Network Fund	671.7	850.5	1 522.2	1 523.8	-1.6
Ministère de l'Énergie et des Ressources naturelles	2.3	25.1	27.4	26.3	1.1
Transition énergétique Québec ⁽¹⁾	284.3	585.9	870.2	771.5	98.7
Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques	88.8	352.4	441.2	492.5	-51.3
Ministère des Finances du Québec	126.2	208.1	334.3	330.7	3.6
Ministère de l'Économie, de la Science et de l'Innovation	17.5	112.1	129.6	147.2	-17.5
Ministère de l'Éducation et de l'Enseignement supérieur	—	93.8	93.8	100.0	-6.3
Ministère des Affaires municipales et de l'Occupation du territoire	0.9	41.1	42.0	50.7	-8.7
Ministère des Forêts, de la Faune et des Parcs	5.4	27.2	32.6	32.6	—
Ministère de la Sécurité publique	9.5	19.2	28.7	28.7	—
Ministère de la Santé et des Services sociaux	11.4	10.9	22.3	22.3	—
Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec	3.5	8.0	11.5	15.2	-3.7
Ministère des Relations internationales et de la Francophonie	6.3	1.2	7.5	7.5	—
Régie du bâtiment du Québec	1.2	2.2	3.3	5.0	-1.7
Ministère du Tourisme	0.7	0.5	1.1	1.7	-0.6
Subtotal	1 409.6	2 503.4	3 913.0	3 935.5	-22.5
March 2018 Québec Economic Plan – Drive Green program	—	92.1	92.1	92.1	—
TOTAL	1 409.6	2 595.5	4 005.1	4 027.6	-22.5

(1) The \$98.7 million difference between total expenditures and maximum authorized budget takes into account the additional expenditures made within the context of the federal government's Leadership Fund agreement.
Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

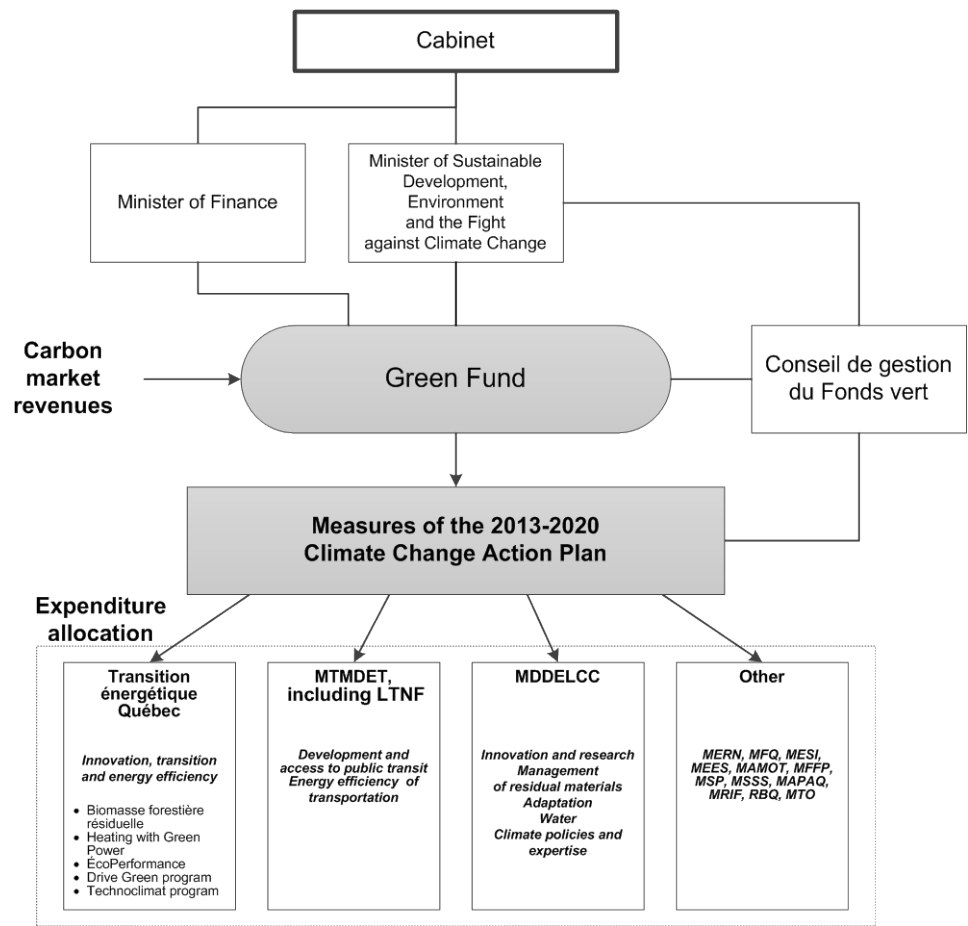
2.2 The Green Fund and its Conseil de gestion

The Green Fund was created in 2006 by the Québec government, under the *Act respecting the Ministère du Développement durable, de l'Environnement et des Parcs* (CQLR, Chapter M-30.001), to support the execution of environmental measures fostering sustainable development in Québec.

This is a special fund whose revenues and expenditures are set out by the Act that established it, meaning that the amounts paid into this fund may be used only for the purposes prescribed by law, and not to finance any other government programs. This type of fund ensures matching of revenues with expenditures, most notably those in the carbon market associated with the fight against climate change.

ILLUSTRATION 4

Governance of the Green Fund regarding climate change



Note: See Appendix 4 for meaning of abbreviations.

Source: Ministère des Finances du Québec.

❑ The Green Fund

■ Revenues

Green Fund revenues stem mainly from four sources:

- proceeds from the sale by the Québec government of greenhouse gas emission allowances as part of the Québec greenhouse gas emission cap-and-trade system (carbon market);
- duties collected for the elimination of residual materials;
- duty payable for water use;
- financial contributions paid by the federal government to finance measures to fight against climate change and promote management of residual materials.

■ Use of funds

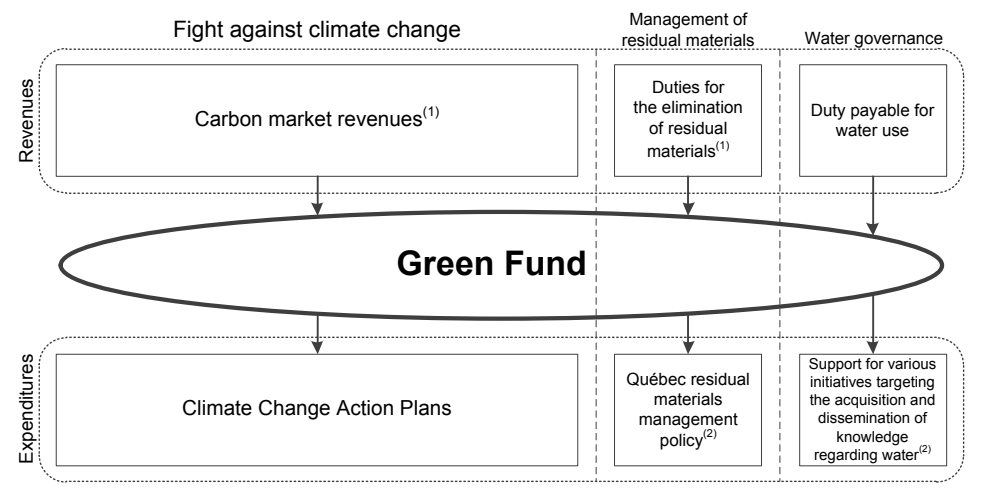
Green Fund amounts are used for three purposes:

- fight against climate change by financing the implementation of climate change action plans in Québec;
- management of residual materials;
- water governance.

The law provides for all revenues from the greenhouse gas emission cap-and-trade system to be used to finance projects that fight against climate change.

ILLUSTRATION 5

The Green Fund



(1) These revenues include transfers from the federal government to finance activities to fight climate change and manage residual materials.

(2) Certain actions may also be financed within the context of the 2013-2020 CCAP.

■ Allocation of Green Fund amounts allocated for the fight against climate change

The 2013-2020 Climate Change Action Plan has a total budget of more than \$4.0 billion. These amounts are distributed in accordance with agreements between the Conseil de gestion du Fonds vert and the 2013-2020 Climate Change Action Plan's partnering departments and bodies.

- Transition énergétique Québec has a budget of \$863.6 million.
- The Ministère des Transports, de la Mobilité durable et de l'Électrification des transports and the Land Transportation Network Fund have a total budget of \$1.9 billion.
- The Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques has a total budget of \$492.5 million.
- The other departments and bodies share a total budget of \$767.8 million.

The Conseil de gestion du Fonds vert monitors the implementation and performance of every measure financed within the framework of these agreements.

❑ The Conseil de gestion du Fonds vert: to improve governance

In 2017, the government set up the Conseil de gestion du Fonds vert to ensure better governance of the Green Fund.⁸

With the creation of the Conseil de gestion du Fonds vert, the government adopted a clearer governance structure and management framework to better achieve the objectives it set for itself, specifically in matters of the fight against climate change, and that are supported by the investments made by the Green Fund.

- Creation of the Conseil de gestion du Fonds vert enabled, most notably, to introduce a governance structure that is more independent from the departments and bodies that benefit from amounts from the Green Fund, thus ensuring greater consistency and coordination of the projects implemented.
- This new governance results in more thoroughness and transparency, as well as improved accountability for the Green Fund.
- The mission of the Conseil de gestion du Fonds vert is to oversee governance of the Green Fund and to ensure its coordination and management from a point of view of sustainable development, effectiveness, efficiency and transparency.
- The Conseil de gestion du Fonds vert favours project-based management, focused on the best possible results to be obtained in conjunction with its mission, policy directions and government objectives.⁹

⁸ The Conseil de gestion du Fonds vert was created in the context of the *Act to amend the Environment Quality Act to modernize the environmental authorization scheme and to amend other legislative provisions, in particular to reform the governance of the Green Fund*, sanctioned by the government on March 23, 2017. The Conseil de gestion du Fonds vert was implemented in April 2017.

⁹ This most particularly consists of policy directions and government objectives set forth in the Sustainable Development Strategy adopted under the *Sustainable Development Act*, (Chapter D-8.1.1) and in the multi-year climate change action plan set out in Section 46.3 of the *Environment Quality Act*, (Chapter Q-2).

■ Role and responsibilities

Within the context of its mandate, the Conseil de gestion du Fonds vert is specifically responsible for:

- planning of the measures financed by the Green Fund, in collaboration with the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques;
- developing recommendations to submit to the Minister regarding strategic policy directions, objectives, areas of intervention and adjustments required to promote better Green Fund performance;
- signing of administrative agreements with the departments and bodies to implement the measures set out under the 2013-2020 Climate Change Action Plan and ensuring compliance with commitments within the context of these agreements;
- assessing the Green Fund's performance, specifically by monitoring global and specific indicators for the 2013-2020 Climate Change Action Plan measures financed by the Green Fund, as well as monitoring expenditures and assessing results;
- submitting an Annual Management Report containing, most particularly, the Green Fund's financial statements, the *Green Fund's accounts*, and the list of measures financed by the Green Fund.

■ Board of directors

The Conseil de gestion du Fonds vert is administered by a board of directors composed of nine members appointed by the government. These members consist of: the president and chief executive officer, three members from the government, including one member representing the Minister of Sustainable Development, the Environment and the Fight Against Climate Change, one member representing the Minister of Finance and five independent members from civil society.

❑ **Minister of Sustainable Development, Environment and the Fight against Climate Change**

The Minister of Sustainable Development, Environment and the Fight against Climate Change is responsible for the Green Fund.

The Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques:

- coordinates government action in matters of the fight against climate change;
- proposes governmental targets for reducing greenhouse gas emissions;
- develops policies, strategies and action plans relating to reducing greenhouse gas emissions and adapting to climate changes;
- provides know-how to its partners in matters of greenhouse gas emission quantification and adaptation;
- implements several measures contributing directly to carrying out the 2013-2020 Climate Change Action Plan.

❑ Québec's Minister of Finance

The Minister of Finance is also signatory of the brief to the Members of Cabinet presenting the allocation of 2013-2020 Climate Change Action Plan expenditures.

Québec's Minister of Finance collaborates¹⁰ in order to make recommendations to the government regarding amounts to be allocated from the Green Fund to the Land Transportation Network Fund in relation to climate change.

- These amounts are allocated to measures applicable to public and alternative transit and financial assistance programs that foster the development and use of public transit or the development and use of public transit modes.¹¹

In addition, the Ministère des Finances du Québec collaborates with the Conseil de gestion du Fonds vert to prepare the *Green Fund's accounts*.

The Green Fund's accounts

The *Green Fund's accounts* are a tool whose purpose is to improve transparency with regards to Green Fund results. The *Green Fund's accounts* informs the population regarding revenues generated most notably by the carbon market, the government's expenditures from the Green Fund, as well as new initiatives implemented during the year.

The first edition of the *Green Fund's accounts*, addressing the 2015-2016 fiscal year, was submitted to the Québec National Assembly on March 28, 2017. The second edition, addressing the 2016-2017 fiscal year, was submitted to the Québec National Assembly on October 3, 2017.

Source: 2016-2017 *Green Fund's accounts*.

¹⁰ The Minister of Finance collaborates with the Minister of Sustainable Development, Environment and the Fight against Climate Change and the Minister of Transport, Sustainable Mobility and Transport Electrification.

¹¹ Section 15.4.1 of the *Act respecting the Ministère du Développement durable, de l'Environnement et des Parcs*.

❑ Green Fund financial framework

In recent years, the Green Fund accumulated a surplus, primarily due to the time frames necessary for implementing various 2013-2020 Climate Change Action Plan programs and standards.

Analysis of the financial framework shows clearly that the Conseil de gestion du Fonds vert will have a significant role to assume to ensure completion of the measures undertaken by the end of the current action plan, in 2020.

Moreover, the Conseil de gestion du Fonds vert could, in certain cases, recommend allocation of residual amounts from the current action plan to the subsequent action plan, or to other measures in the current action plan. This analysis will be done following the examination of the policy directions and priorities that will guide the development of the next action plan.

TABLE 5

Green Fund revenue and expenditure forecasts

(millions of dollars)

	2017- 2018	2018- 2019	2019- 2020	2020- 2021	2021- 2022	2022- 2023
Revenues						
– Climate change ⁽¹⁾	795.4	600.9	581.5	572.1	615.3	581.1
– Residual materials	131.2	131.7	134.3	143.8	140.1	136.3
– Water governance	3.3	3.3	3.3	3.3	3.3	0.3
Total: Revenues	929.9	735.9	719.1	719.2	758.8	717.8
Expenditures						
– Climate change ⁽¹⁾	716.4	830.4	651.1	572.1	616.3	582.1
▪ Transition énergétique Québec ⁽²⁾	159.7	246.5	154.0	123.6	123.1	123.1
▪ LTNF ⁽²⁾	254.2	238.3	230.7	191.1	215.0	215.0
▪ Other	302.5	345.6	266.5	257.4	278.2	244.1
– Residual materials	90.5	79.6	164.8	137.8	197.6	125.0
– Water governance	2.3	3.2	3.2	3.1	0.4	0.4
Total: Expenditures	809.2	913.3	819.1	712.9	814.4	707.6
BALANCE	120.7	-177.4	-100.0	6.3	-55.6	10.2
ACCUMULATED SURPLUS	949.3	771.9	671.8	678.1	622.5	632.8

Note: Totals may not add due to rounding.

(1) In January 2021, the 2013-2020 CCAP will have ended. Since revenues resulting from auctions have to be allocated to measures for fighting against climate change, an equivalent expenditure was recorded for the amounts recorded under auctions, the federal government's Leadership Fund and returns after 2020.

(2) These are forecasts from the 2013-2020 CCAP up to December 31, 2020 and from the Ministère des Finances du Québec for the 2020-2021, 2021-2022 and 2022-2023 fiscal years. The Conseil de gestion du Fonds vert will make recommendations for the final amounts to the Minister of Sustainable Development, Environment and the Fight against Climate Change.

Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

■ Surpluses already allocated

Pursuant to the renewal of administrative agreements between the Conseil de gestion du Fonds vert and the departments and bodies involved in the 2013-2020 Climate Change Action Plan measures, the accumulated Green Fund surpluses for the measures regarding climate change are, for the most part, already allocated to projects.

As at March 31, 2018, the accumulated Green Fund surpluses that have already been allocated should reach \$949.3 million. Of this amount:

- \$730.4 million are for measures associated with fighting against climate change, which is approximately the same amount spent each year for these measures;
- \$214.3 million are reserved for measures pertaining to residual materials;
- \$4.6 million are reserved for measures pertaining to water governance.

It would be desirable for the Green Fund to have sufficient accumulated surpluses to address:

- the difficulty forecasting revenues from Québec's emission allowance cap-and-trade system auctions;
- the possible delays relating to financing and implementing new programs.

A portion of the \$730.4 million surplus associated with climate change will be spent by December 31, 2020, while another portion will be used to finance projects to be carried out beyond 2020.

TABLE 6

Breakdown of the accumulated surpluses – 2017-2018 (millions of dollars)

	As at March 31, 2018
Climate change	730.4
Residual materials	214.3
Water governance	4.6
ACCUMULATED SURPLUS AT THE END OF THE FISCAL YEAR	949.3

Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and calculations by the Ministère des Finances du Québec.

2.3 Transition énergétique Québec: a tool for change to a low-carbon economy

Transition énergétique Québec was established under the *Act to implement the 2030 Energy Policy and to amend various legislative provisions* sanctioned in December 2016. The body started exercising its activities on April 1, 2017.

Transition énergétique Québec's mission is to support, stimulate and promote energy transition, innovation and efficiency.

To that end, the organization contributes to achieving the energy targets that the government established, by coordinating implementation of energy transition measures and programs.

The measures that Transition énergétique Québec administers are mainly financed by the Green Fund.

TABLE 7

Revenue and expenditure forecasts for Transition énergétique Québec (millions of dollars)

	2017- 2018	2018- 2019	2019- 2020	2020- 2021	2021- 2022	2022- 2023
Revenues						
– Recovery of costs by the Green Fund ⁽¹⁾	159.7	246.5	154.0	123.6	123.1	123.1
▪ Regarding Drive Green program ⁽²⁾	63.7	90.8	30.6	—	—	—
▪ For all other measures	96.0	155.7	123.4	123.6	123.1	123.1
– Other revenues ⁽³⁾	55.7	97.2	101.9	96.6	68.9	68.9
Total	215.4	343.8	255.9	220.2	192.0	192.0
Expenditures⁽⁴⁾	217.0	343.9	255.9	220.2	192.0	192.0
BALANCE	-1.6	-0.1	—	—	—	—

Note: Totals may not add due to rounding.

(1) These are forecasts from the 2013-2020 CCAP up to December 31, 2020 and from the Ministère des Finances du Québec for the 2020-2021, 2021-2022 and 2022-2023 fiscal years. The Conseil de gestion du Fonds vert will make recommendations for the final amounts to the Minister of Sustainable Development, Environment and the Fight against Climate Change.

(2) The amounts include an increase of \$92.1 million over two years, provided within the framework of the March 2018 Québec Economic Plan.

(3) These include additional appropriations allocated to the Ministère de l'Énergie et des Ressources naturelles to fund the measures by Transition énergétique Québec announced in the March 2018 Québec Economic Plan.

(4) These include the measures in the March 2018 Québec Economic Plan.

Sources: Transition énergétique Québec and Ministère des Finances du Québec.

❑ Measure announced as part of the March 2018 Québec Economic Plan

The Québec government announces in its March 2018 Québec Economic Plan that the Drive Green program for the acquisition of electric vehicles will be maintained and will receive additional funding for the period from July 1, 2018 to June 30, 2019, for a total of \$92.1 million, broken down as follows:

— \$61.5 million in 2018-2019;

— \$30.6 million in 2019-2020.

This additional funding drawn from the Green Fund will contribute to achieving the goal of 100 000 electric vehicles by 2020, and installing home charging stations.

❑ A master plan for spring 2018

The creation of Transition énergétique Québec is one of the primary means the government implemented to improve energy efficiency and fight climate change.

The Québec government has entrusted Transition énergétique Québec with the mandate of meeting the following two targets by the end of 2018-2023:

— improve average energy efficiency by at least 1% per year throughout Québec;

— reduce total consumption of gas by at least 5% compared to 2013; this represents a real reduction in petroleum product consumption of 900 million litres by 2023.

Transition énergétique Québec intends to table a first master plan for meeting those targets in the spring of 2018, covering the 2018-2023 time period.

Three master plans are projected within the context of the 2030 Energy Policy. By the end of 2016-2030, the policy's initiatives could generate a reduction in greenhouse gas emissions of up to 16 million tonnes of CO₂ equivalent in Québec.

TABLE 8

Programs administered by Transition énergétique Québec

HEATING WITH GREEN POWER For replacing oil home heating systems with systems that use renewable sources of energy Financed by the Green Fund		BIOMASSE FORESTIÈRE RÉSIDUELLE Conversion to residual forest biomass (business clientele) Financed by the Green Fund	
Results from 2013-2014 to 2016-2017	Cumulative	Results from 2013-2014 to 2016-2017	Cumulative
Number of participants	13 904	Number of participants	94
Reduction of GHGs	103 350	Reduction of GHGs	45 130
Financial assistance allocated (millions of dollars)	16.0	Financial assistance allocated (millions of dollars)	33.5
RÉNOCLIMAT For renovating homes and improving their energy performance Financed by Share		DRIVE GREEN PROGRAM Vehicle purchase rebate and home charging station refund Financed by the Green Fund	
Results from 2007-2008 to 2016-2017	Cumulative	Results from 2011-2012 to 2016-2017	Cumulative
Number of participants	84 682	Number of participants	
Energy savings (GJ/year)	1 481 630	– Electric vehicles	34 556
Financial assistance allocated (millions of dollars)	110.6	– Workplace charging stations	1 704
		GHG reductions	38 140
		Financial assistance allocated (millions of dollars)	118.4
ÉCONOLOGIS Improve home energy efficiency (for low-income households) Financed by Share		TECHNOCLIMAT Promote energy innovation and reducing GHG emissions Financed by the Green Fund and Share	
Results from 2008-2009 to 2016-2017	Cumulative	Results from 2013-2014 to 2016-2017	Cumulative
Number of participants	79 460	Number of participants	31
Energy savings (GJ/year)	132 710	Financial assistance allocated (millions of dollars)	37.8
Financial assistance allocated (millions of dollars)	32.7		
NOVOCLIMAT Construction new, high energy performance homes Financed by Share		ÉCOPERFORMANCE Energy efficiency and conversion projects Financed by the Green Fund and Share	
Results from 2008-2009 to 2016-2017	Cumulative	Results from 2013-2014 to 2016-2017	Cumulative
Number of participants	40 284	Number of participants	702
Energy savings (GJ/year)	658 600	Energy savings (GJ/year)	5 615 300
Financial assistance allocated (millions of dollars)	93.5	Reduction of GHGs	516 280
		Financial assistance allocated (millions of dollars)	211.9

Note: See Appendix 4 for meaning of abbreviations.

Source: Transition énergétique Québec.

2.4 Other departments and bodies participating in the fight against climate change

❑ The Land Transportation Network Fund

The mission of the Land Transportation Network Fund, which falls under the jurisdiction of the Minister of Transport, Sustainable Mobility and Transport Electrification, is to develop public transit and make it accessible by funding public transit services and constructing and operating road and public transit infrastructure.

Although the Land Transportation Network Fund is partially funded by a transfer of revenues from the Green Fund, its main sources of revenue are the fuel tax and the fees from driver's licences and vehicle registration.

TABLE 9

Forecast revenues and expenditures for the Land Transportation Network Fund

(millions of dollars)

	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Revenues						
– Transfer revenues from the Green Fund ⁽¹⁾	254.2	238.2	230.7	191.1	215.0	215.0
– Fuel tax	2 241.4	2 303.5	2 335.3	2 364.6	2 393.3	2 422.6
– Fees from driver's licences and vehicle registration	1 088.0	1 115.9	1 145.0	1 181.4	1 219.4	1 259.3
– Other revenues	303.0	518.1	532.4	478.0	273.6	287.7
Total	3 886.6	4 175.6	4 243.4	4 215.0	4 101.3	4 184.5
Expenditures⁽²⁾	4 470.3	4 329.9	4 543.7	4 585.5	4 548.1	4 796.2
BALANCE	-583.7	-154.3	-300.3	-370.5	-446.8	-611.7
ACCUMULATED SURPLUS	2 359.4	2 205.2	1 904.8	1 534.4	1 087.5	475.9

Note: Totals may not add due to rounding.

(1) These are forecasts from the 2013-2020 CCAP up to December 31, 2020 and from the Ministère des Finances du Québec for the 2020-2021, 2021-2022 and 2022-2023 fiscal years. The Conseil de gestion du Fonds vert will make recommendations for the final amounts to the Minister of Sustainable Development, Environment and the Fight against Climate Change.

(2) These include the measures in the March 2018 Québec Economic Plan as well as the debt service.

Sources: Ministère des Transports, de la Mobilité durable et de l'Électrification des transports and Ministère des Finances du Québec.

■ Mission: to develop public transit and make it accessible

Each year the government decides how much money to transfer from the Green Fund to the Land Transportation Network Fund¹² to implement measures from the 2013-2020 Climate Change Action Plan that fall under its jurisdiction. That money is earmarked for measures applicable to public and alternative transit.¹³

A total of \$254.2 million was transferred from the Green Fund to the Land Transportation Network Fund for the 2017-2018 fiscal year.

TABLE 10

Amounts transferred from the Green Fund to the Land Transportation Network Fund to reduce greenhouse gas emissions (millions of dollars)

Measures	2014-2015	2015-2016	2016-2017	2017-2018
13.2 Government assistance program for the public transportation of people	—	89.7	103.7	96.9
13.4 Véloce II – component I and Financial assistance program for the development of active transportation in urban perimeters	10.0	5.0	5.0	—
13.7 Assistance program for the development of public transit	152.8	140.0	140.0	155.3
13.8.1 City Mobility demonstration project	4.0	6.0	1.9	—
13.8.2 Support program for electric public transit demonstration projects	—	3.0	6.0	—
14.11 Support program for electric taxi demonstration projects	2.4	0.7	1.6	2.0
TOTAL	169.2	244.4	258.2	254.2

¹² The Minister of Finance works together with the Minister of Sustainable Development, Environment and the Fight against Climate Change and the Minister of Transport, Sustainable Mobility and Transport Electrification to make recommendations to the government on how much to transfer from the Green Fund to the Land Transportation Network Fund.

¹³ Third paragraph of section 15.4.1 of the *Act respecting the Ministère du Développement durable, de l'Environnement et des Parcs*.

❑ Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques

Different activities by the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques are financed by the Green Fund, including:

- innovation and research;
- management of residual materials;
- water governance;
- climate change adaptation;
- climate policies and expertise.

TABLE 11

Main programs administered by the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques

Results from 2013-2014 to 2017-2018	Cumulative
Program for processing organic matter using biomethanization and composting	
Financially sustain the municipal environment and private sector in the installation of organic matter processing infrastructures, in an effort to reduce the quantity of organic matter destined for elimination and of GHG emissions	
Number of projects	12
Reduction of greenhouse gas emissions (kt CO ₂ eq.) ⁽¹⁾	13
Financial assistance allocated (millions of dollars)	204.5
Composting program for small municipalities	
Financially support municipalities and Aboriginal communities in implementing household or community composting equipment to divert organic matter away from waste and reduce GHG emissions	
Number of projects	3
Financial assistance allocated (thousands of dollars)	83.7
International climate cooperation program	
Contribute to the efforts to reduce GHG emissions and to adapt to the impacts of climate change in the most vulnerable francophone countries	
Number of projects	14
Financial assistance allocated (millions of dollars)	9.4
Québec's Action-Climate program	
Support mobilization and civic action for climate change	
Number of projects	40
Financial assistance allocated (millions of dollars)	12

Note: See Appendix 4 for meaning of abbreviations.

(1) Reductions occurring in the period from 2013-2014 to 2015-2016.

Source: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques.

❑ Partners

Consistent with the vision, policy directions and government objectives for greenhouse gas emission reduction and adaptation to climate change, each department is responsible for implementing the action plan measures associated with their mission, jurisdiction and know-how.

The departments and bodies that directly participate in implementing the 2013-2020 Climate Change Action Plan are:

- Ministère des Transports, de la Mobilité durable et de l'Électrification des transports, including the Land Transportation Network Fund;
- Ministère de l'Énergie et des Ressources naturelles;
- Transition énergétique Québec;
- Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques;
- Ministère des Finances du Québec;
- Ministère de l'Économie, de la Science et de l'Innovation;
- Ministère de l'Éducation et de l'Enseignement supérieur;
- Ministère des Affaires municipales et de l'Occupation du territoire;
- Ministère des Forêts, de la Faune et des Parcs;
- Ministère de la Sécurité publique;
- Ministère de la Santé et des Services sociaux;
- Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec;
- Ministère des Relations internationales et de la Francophonie;
- Régie du bâtiment du Québec;
- Ministère du Tourisme.

3. OUTLOOK

3.1 Results

The 2013-2020 Climate Change Action Plan implementation is progressing.

- As at March 31, 2017, over 70% of the revenues collected and dedicated to the 2013-2020 Climate Change Action Plan has been spent. This means that \$1.4 billion has been dedicated to various initiatives for fighting against and adapting to climate change.
- From 2013 to 2016, those actions led to reductions totalling 0.8 million tonnes of CO₂ equivalent in Québec, across all sectors of activity.

By 2020, another \$2.5 billion will have been invested under the 2013-2020 Climate Change Action Plan; this should lead to further reductions totalling an additional 2.8 million tonnes of CO₂ equivalent, for an estimated total reduction of 3.6 million tonnes of CO₂ equivalent in 2020.

- For example, the transportation sector, which accounted for 42% of greenhouse gas emissions in 2015, represents more than 55% of the reduction potential.

TABLE 12

Relationship between the 2013-2020 Climate Change Action Plan investments and forecasted greenhouse gas reductions

	Total potential reductions (kt CO ₂ eq.)	Sector emissions (% of total emissions in 2015)	CCAP 2013-2020 investments per reduced tonne of GHGs
Transportation	1 964.6	42	\$900 to \$1 000/t
– Public transit	24.5		Over \$60 000/t
– Other measures (Drive Green, Écocardionnage, etc.)	740.1		\$400 to \$500/t
– Emission standards	1 200.0		\$0/t
Industry			
– Forest biomass, ÉcoPerformance	858.5	30	\$300 to \$400/t
Building			
– ÉcoPerformance, Heating with Green Power	450.4	11	\$300 to \$400/t
Agriculture			
– Prime-Vert	8.3	9	\$300 to \$400/t
Waste materials			
– Biomethanization and composting	80.0	8	\$1 200 to \$1 300/t
Other	238.2	—	—
TOTAL	3 600.0	100	—

Note: See Appendix 4 for meaning of abbreviations.

Sources: Bilan mi-parcours du Plan d'action 2013-2020 sur les changements climatiques (Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques).

Cost per reduced tonne of greenhouse gases: a relevant but incomplete indicator

The cost per tonne (\$/tonne) for the government represents the cost of reducing greenhouse gas emissions by 1 tonne. This is an indicator for comparing the cost of a measure solely with its effects on reducing greenhouse gas emissions.

However, in order to properly assess the relevance of greenhouse gas reduction measures, it is necessary to delve deeper than simply an indicator of cost per tonne of reduction; the other objectives targeted by these measures also need to be taken into account.

In fact, a project with a higher cost per tonne of greenhouse gas reduced could be justified if its objectives include any of the following:

- a change in desired consumer behaviour, such as using public transit or purchasing electric cars;
- mitigation of the negative impacts on economic growth;
- reduction of greenhouse gas emissions in Québec rather than abroad;
- development of infrastructures or new technologies for boosting economic development, exporting technologies and creating quality jobs.

For example, the cost of greenhouse gas per tonne is high in the public transit sector because the vast majority of the investment – if not all – is borne by the government. But it will take considerable investment to develop the infrastructure for sustainable transportation.

Significant investments in public transit allow the greenhouse gas emission reductions to be maintained and even accelerated.

Less funding would significantly raise greenhouse gases in the medium term, because consumers would turn to other, more polluting, modes of transportation.

Other measures incorporate recurring greenhouse gas reductions

Several other measures lead to recurring greenhouse gas reductions.

- For example, an oil-fired boiler can be replaced with an electric system. The cost of investment per reduced tonne, which may be \$300 today, would really only work out to \$30 per tonne when the reduction is spread over ten years.

This example is faithful to the spirit of the fight against climate change, which aims at reducing the stock of greenhouse gases in the atmosphere.

Each action outlined in the 2013-2020 Climate Change Action Plan must therefore be analyzed against its own backdrop.

Although the cost of greenhouse gas per tonne reduced remains a relevant indicator, it cannot be the only criterion by which we measure the profitability of programs in terms of sustainable development.

❑ Measures' profitability must be assessed from a sustainable development perspective

We need to go beyond simply analyzing the cost per reduced tonne. We must keep in mind that most initiatives are not solely aimed at reducing greenhouse gas emissions; they may also benefit the environment, economic development and the general population.

As we assess measures, sustainable development principles must be an integral part of the decision-making process. The analysis must be given greater weight than mere cost accounting based on what the government pays per reduced tonne.

❑ The challenges of the 2013-2020 Climate Change Action Plan

Most of the measures of the 2013-2020 Climate Change Action Plan are already under way or at the advanced planning stage, and new measures have been added to take into account new government directions and the progress made on the international scene.

In order for the 2013-2020 action plan to meet its greenhouse gas emission reduction objectives and allow Québec to adapt to the impacts of climate change, some measures of the plan need to be refocused, enhanced or dropped.

Furthermore, to maximize the many economic, social and environmental benefits arising from the action plan measures, it will be important to:

- speed up the implementation of several promising measures under the 2013-2020 Climate Change Action Plan;
- implement new measures that will strongly impact greenhouse gas emission reduction, especially in the transportation sector.

■ Assessment of financed measures

In the coming year, the Conseil de gestion du Fonds vert will assess the measures financed by the Green Fund, for which agreements have been signed.

The Conseil de gestion du Fonds vert will send its recommendations to the Minister of Sustainable Development, Environment and the Fight against Climate Change following this assessment, to review how the measures are funded.

The Conseil de gestion will give greater weight to measures that have the most impact on reducing greenhouse gases emissions and adapting to climate change, but that will not be the only factor under consideration when it comes to reallocation. The Conseil de gestion will also favour:

- development of innovative technologies, emergence of the green economy sector, and competitive positioning of Québec's economy;
- job creation;
- the impact on consumer and businesses' behaviour;
- social equity.

Upon recommendation from the Minister of Sustainable Development, Environment and the Fight against Climate Change, the government may approve reallocations within the context of the 2013-2020 Climate Change Action Plan.

3.2 Horizon 2020: honouring commitments

The tools implemented will allow Québec to honour its commitment to reduce greenhouse gas emissions by 2020.

In 1990, the level of greenhouse gas emissions was 89.5 million tonnes of CO₂ equivalent. A reduction of 17.9 million tonnes of CO₂ equivalent is necessary by 2020 to achieve the 20% reduction target and fall below what the level was in 1990. Of this amount:

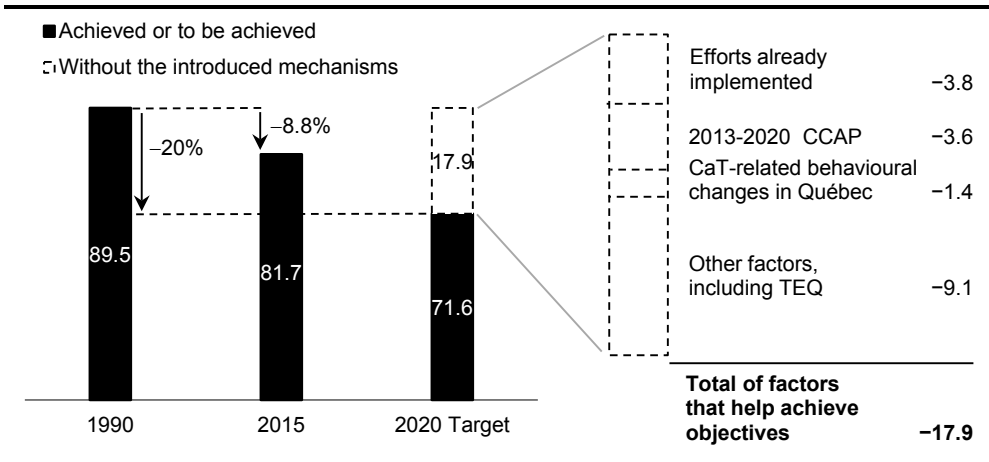
- 3.8 million tonnes comes from efforts already implemented since 1990;
- 3.6 million tonnes would be from the 2013-2020 Climate Change Action Plan;
- 1.4 million tonnes would result from the effect that the increase in emission allowance price will have on the behaviour of consumers and businesses.

Other factors totalling 9.1 million tonnes of CO₂ equivalent will contribute to achieving the objectives, including:

- behavioural change by consumers and businesses, particularly as a result of technological changes and measures recommended by the Conseil de gestion du Fonds vert and retained by the government;
- the Transition énergétique Québec's actions and the effects of other government policies;
- emission allowances from previous years that remain unused, as a result of good performance by subject businesses and, if necessary, the purchase of greenhouse gas emission allowances from outside Québec.

CHART 8

Illustration of the contribution of various factors on greenhouse gas emission reductions in Québec – 2020
(millions of tonnes of CO₂ equivalent)



N.B.: See Appendix 4 for meaning of abbreviations.

Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, Transition énergétique Québec and Ministère des Finances du Québec.

Change in the price of emission allowances

Since its entry into force, the price of greenhouse gas emission allowances has increased as a result of the change in the demand on the common market with California and Ontario, the decrease in greenhouse gas emission caps, and the increase in minimum price.

- Thus, after it was established at US\$12.1 per tonne of CO₂ equivalent during the first joint auction held in November 2014, the emission allowance price increased to US\$14.6 at the auction held on February 21, 2018, very close to the minimum price fixed by regulation (US\$14.5).

The minimum price in 2018 is US\$14.5, and should reach US\$16.6 by 2020. It was US\$13.6 in 2017.

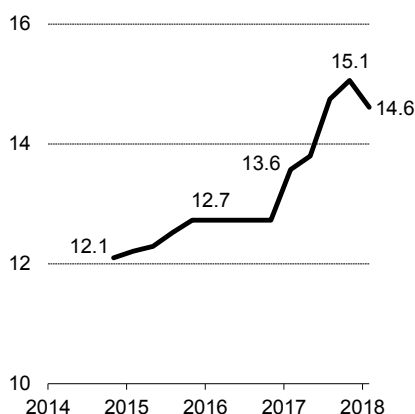
Persistent uncertainty about the future rise of emission allowances

There is still uncertainty regarding the future rise in price. Since the emission cap will decrease over the next few years, emission allowance price could change more quickly than the system's minimum price between now and 2030. However:

- this is still a relatively young market and its participants are still learning;
- future adjustments required by emitters may be smoother or harder to implement than we think. For example, major technological advances may occur, limiting demand and dampening market prices;
- the structure of the market may change – by a partnership with another jurisdiction, for instance – which could make emission reductions cheaper, thereby reducing the pressure on the market.

Greenhouse gas emission allowance prices from 2014 to 2018⁽¹⁾

(U.S. dollars per tonne of CO₂ equivalent, quarterly data)

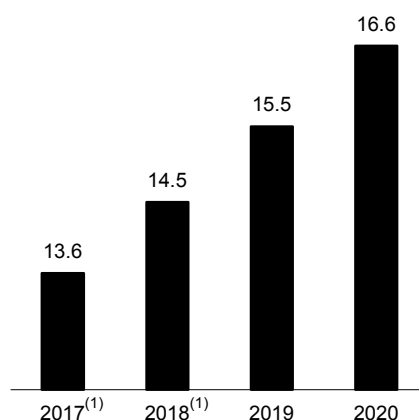


(1) Price of emission allowances for the current year.

Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

Forecasted minimum price for emission allowances

(U.S. dollars per tonne of CO₂ equivalent)



(1) Actual data.

Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

Modulation of free allowances for the 2024-2030 period according to the changes in worldwide carbon pricing

Free allowances: a tool in fighting against climate change

Québec's largest companies are particularly exposed to international competition.

- They export a significant portion of what they produce, which means they may be confronted with competitors from countries where there is very little carbon pricing in force.
- Furthermore, they have relatively little control over the price of their products, which are established by international markets.

For that reason, Québec's greenhouse gas emission cap-and-trade system provides a mechanism to mitigate the effects of carbon pricing for major emitters from the industrial sector.

- In fact, these major emitters are allocated a portion of their emission allowances, free of charge, to prevent the system from imposing exorbitant costs on them, which could ultimately result in relocating their activities to other areas where environmental practices are less stringent. Such a situation could result in an increase in greenhouse gases, on a global scale.

These free emission allowances depend on several factors, such as the major industrial emitters' exposure to trade, as well as their carbon intensity.

The regulation regarding the greenhouse gas emission cap-and-trade system sets out the level of free allowances through 2023.

- Free emission allowance per unit produced will progressively decrease through 2023.

Reducing free allowances too quickly could significantly affect how competitive businesses from Québec's industrial sector can be

Reducing free allowances too quickly could affect how competitive businesses from Québec's industrial sector can be.

- In fact, reducing the free allowances, combined with the increased emission allowance price, imposes a continually rising cost.
- Furthermore after the cost of carbon increases, businesses from Québec's industrial sector will also have to deal with increased prices of certain services, primarily in the transportation sector.

Climate change must be fought with a sustainable development perspective

Exerting excessive pressure on our economy to generate greenhouse gas emission reductions in Québec could hinder the worldwide objectives of the fight against climate change.

Therefore, the government will develop the means necessary to support major industrial companies in their transition toward a low-carbon economy, by modulating future decreases in free greenhouse gas emission allowances, according to the evolution of carbon pricing on a global scale.

Modulation of free allowances for the 2024-2030 period according to the changes in worldwide carbon pricing (cont.)

Modulation of the future reduction of free allowances based on changes in carbon pricing worldwide

To protect the competitiveness of Québec's industrial businesses, increased reductions in free allowances after 2023 will be notably conditional to a decrease in the differences between pricing in Québec and the rest of the world. More precisely:

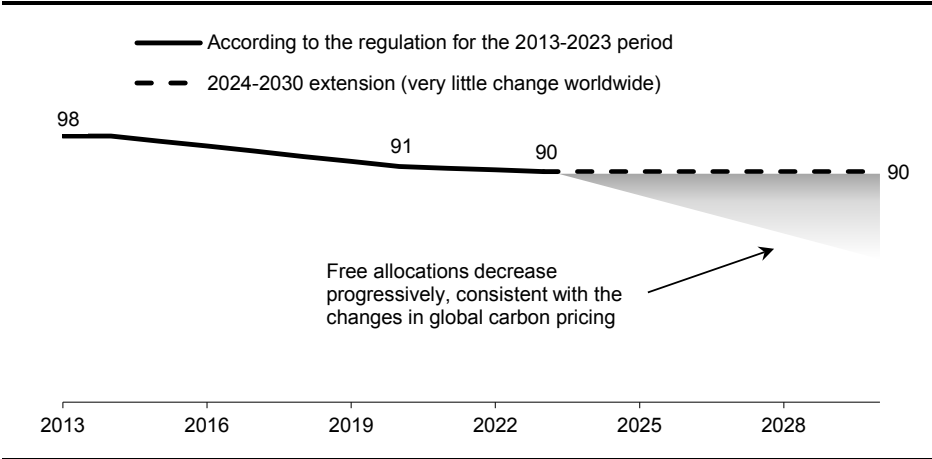
- if carbon pricing on a worldwide scale stagnates or increases more slowly than in Québec, free allowances for major industrial emitters in Québec per unit produced will stay more or less at the same level;
- on the other hand, if carbon pricing initiatives increase worldwide, causing the associated carbon pricing to increase significantly, free allowances may decrease, within a range that the government would define.

A carbon cost ratio comparing Québec with the rest of the world

The first step in implementing the modulation planned beginning in 2024 will consist in developing a carbon cost ratio that would compare the cost in Québec with the average cost seen in the rest of the world.

- Work began in the fall of 2017 in relation to this¹; the industrial sector will be consulted regarding the proposed approach.

Illustration of the modulation in free allowances calculation after 2023 (in average proportion to the emissions covered per unit produced)



Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

¹ This work was initiated through a joint effort by the Ministère des Finances du Québec, the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, the Ministère de l'Économie, de la Science et de l'Innovation, the Ministère de l'Énergie et des Ressources naturelles, and the Ministère des Forêts, de la Faune et des Parcs. This project will help to specify the approach, determine the most relevant jurisdictions to consider in calculating the carbon cost ratio, and to establish the precise mechanism by which this modulation will be incorporated into the system's current parameters.

3.3 Horizon 2030: substantive effects for maximizing reductions in Québec

The government will pursue its efforts to maximize the reduction of greenhouse gas emissions across Québec and to encourage adapting to the impacts of climate change by 2030.

- The beneficial effects of the 2013-2020 Climate Change Action Plan will extend beyond 2020 and will lead to further reductions by 2030.
- As part of its next climate change action plan, the government will put measures in place to reduce GHG emissions beyond 2020.
- Accelerated behavioural changes, coupled with the increase in carbon prices and faster technological changes, will also boost the reduction of greenhouse gas emissions.

Other factors, such as Transition énergétique Québec's master plans, will bring the additional reductions required to honour our commitments.

■ Beyond the 2013-2020 Climate Change Action Plan

The 2013-2020 Climate Change Action Plan will conclude at the end of 2020. Certain programs will endure beyond this time frame. However, other measures may cease to apply at that point.

This will mean formulating a new climate change action plan. The Conseil de gestion du Fonds vert could change, extend or establish other agreements in the next action plan.

The programs to be covered by the various administrative agreements to be concluded between departments and bodies and the Conseil de gestion du Fonds vert will be funded by revenues reserved for climate change programs and stemming most particularly from the sale of emission allowances under Québec's cap-and-trade system.

The next action plan will mainly focus on maximizing the results relating to reduction of greenhouse gas emissions across Québec, as well as the associated economic, social and environmental benefits. It will also seek to help Québec adapt to the impacts of climate change.

The Conseil de gestion du Fonds vert will monitor measures regularly and recommend any adjustments that are required.

❑ Purchases of emission allowances outside Québec

In 2016, there was no need to purchase emission allowances outside Québec to meet the greenhouse gas emission caps established.

Between now and 2030, Québec may have to purchase outside emission allowances in order to honour its commitments.

- Québec would be better off if it were able to purchase lower-cost emission allowances on the carbon market rather than making significant inroads into its own economy.

■ A fight well under way

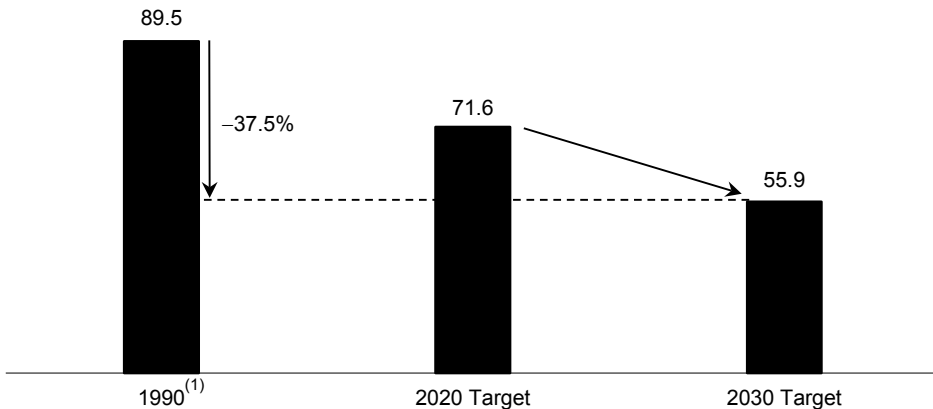
After 2020, the Québec government will continue to follow an integrated approach in the fight against climate change and devote considerable amounts to it, managed efficiently.

- The next climate change action plan will focus mainly on maximizing the reduction of greenhouse gas emissions in Québec, adapting to the impact of climate changes, and deploying structuring measures to encourage both the behavioural changes needed to meet the climate challenge and continue the transition toward a resilient and low-carbon economy.
- Each tool and partner in this integrated approach will act together to maximize Québec's contribution to the worldwide efforts to fight climate change and achieve the established objectives.

CHART 9

Changes in greenhouse gas emissions in Québec – 1990, and targets for 2020 and 2030

(millions of tonnes of CO₂ equivalent)



(1) Actual data.

Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Ministère des Finances du Québec.

APPENDIX 1: THE CHANGES IN CARBON PRICING AROUND THE WORLD

TABLE 13

The development of carbon pricing around the world

Jurisdiction	Pricing type	Year implemented ⁽¹⁾
European Union	Emissions trading system (ETS)	2005
Finland	Carbon tax	1990
Poland	Carbon tax	1990
Norway	Carbon tax	1991
Sweden	Carbon tax	1991
Denmark	Carbon tax	1992
Slovenia	Carbon tax	1996
Estonia	Carbon tax	2000
Latvia	Carbon tax	2004
Liechtenstein	Carbon tax	2008
Iceland	Carbon tax	2010
Ireland	Carbon tax	2010
United Kingdom	Carbon price floor	2013
France	Carbon tax	2014
Portugal	Carbon tax	2015
Alberta	Output-based standards system Carbon tax	2007 2017
Switzerland	Carbon tax and emission cap-and-trade system	2008
New Zealand	Emissions trading system	2008
British Columbia	Carbon tax Output-based standards system	2008 2016
Regional Greenhouse Gas Initiatives (Northeastern United States)	Emission cap-and-trade system	2009
Tokyo (Japan)	Emission cap-and-trade system	2010
Ukraine	Carbon tax	2011
Saitama (Japan)	Emissions trading system	2011
California	Emission cap-and-trade system	2012
Japan	Carbon tax	2012
Australia	Carbon tax	2012 to 2014

TABLE 13 (cont.)

The development of carbon pricing around the world

Jurisdiction	Pricing type	Year implemented⁽¹⁾
Québec	Emission cap-and-trade system	2013
Kazakhstan	Emissions trading system	2013
Shenzhen (China)	Pilot project for an emissions trading system	2013
Shanghai (China)	Pilot project for an emissions trading system	2013
Beijing (China)	Pilot project for an emissions trading system	2013
Canton (China)	Pilot project for an emissions trading system	2013
Tianjin (China)	Pilot project for an emissions trading system	2013
Hubei (China)	Pilot project for an emissions trading system	2014
Chongqing (China)	Pilot project for an emissions trading system	2014
Mexico	Carbon tax	2014
South Korea	Emissions trading system	2015
Australia	Output-based standards system	2016
Fujian (China)	Pilot project for an emissions trading system	2016
Ontario	Emission cap-and-trade system	2017
Chile	Carbon tax	2017
Colombia	Carbon tax	2017
South Africa	Carbon tax	2018

(1) Systems still in place unless otherwise indicated.

Sources: World Bank and Ministère des Finances du Québec.

APPENDIX 2: DETAILED 2013-2020 CLIMATE CHANGE ACTION PLAN EXPENDITURES, BY DEPARTMENT AND BODY

TABLE 14

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body (millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Ministère des Transports, de la Mobilité durable et de l'Électrification des transports						
6.2	Assessment of the risks associated with climate change ⁽¹⁾	0.6	2.1	2.7	3.0	-0.3
6.3	Knowledge on natural risks and adaptive solutions for transportation infrastructure	3.0	6.6	9.6	10.0	-0.4
13.1	Government assistance program to improve public transit services	117.1	—	117.1	119.2	-2.1
13.3	Government assistance program for regional public transit systems	4.0	—	4.0	4.0	—
13.4	Financial assistance program for cycling and pedestrian infrastructure – Véloce II – component 1	1.5	—	1.5	—	1.5
13.5	Transitional government assistance program for road passenger transportation	1.9	—	1.9	2.3	-0.3
13.6	Subsidy program to adapt taxis, coaches and inter-city buses for wheelchair-bound people	1.0	—	1.0	1.0	—
14.3	Communication and education ⁽¹⁾	2.0	4.8	6.8	6.6	0.2

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Measures by department and body						
Ministère des Transports, de la Mobilité durable et de l'Électrification des transports (cont.)						
14.10	Support for the implementation of charging stations along major roadways	0.3	2.2	2.5	2.5	—
15.1	Program to reduce GHG emissions by developing intermodal transportation	7.2	54.2	61.4	82.0	-20.6
16.1	Assistance program to improve marine, air and rail transportation efficiency in terms of reduced GHG emissions	11.9	37.6	49.6	56.5	-6.9
17.1	Assistance program to reduce greenhouse gas emissions in freight transportation by road	29.2	46.9	76.2	81.4	-5.2
28.1	Efficiency and safety of transportation systems in natural adverse climate events	0.2	1.1	1.2	1.5	-0.3
28.2	Adaptation of transportation management and maintenance practices in Nord-du-Québec	0.1	9.7	9.8	10.0	-0.2
Subtotal: Ministère des Transports, de la Mobilité durable et de l'Électrification des transports		180.0	165.3	345.3	379.9	-34.5
Land Transportation Network Fund		671.7	850.5	1 522.2	1 523.8	-1.6
Ministère de l'Énergie et des Ressources naturelles						
18.1	Program for energy efficiency and conversion to lower GHG emitting energy sources ⁽²⁾	—	23.0	23.0	23.0	—

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Ministère de l'Énergie et des Ressources naturelles (cont.)						
24.1	Support for the development of bioenergies to reduce GHG emissions in the short term ⁽²⁾	—	1.1	1.1	—	1.1
24.2	Industrial research chair on biofuels and biocommodities	2.1	0.7	2.8	2.8	—
27.3	Analysis of risks and vulnerabilities in the mining sector	0.2	0.3	0.5	0.5	—
Subtotal: Ministère de l'Énergie et des Ressources naturelles		2.3	25.1	27.4	26.3	1.1
Transition énergétique Québec						
4.6	Support for technological innovation to reduce GHG emissions – Technoclimat program	8.8	28.7	37.5	38.3	−0.7
4.9	Support for the Centre of Excellence in Energy Efficiency	4.7	—	4.7	4.0	0.7
4.12	Ecofuel	—	5.5	5.5	5.5	—
10.2	Integration of climate change in public administration	—	—	—	—	—
11.1	Carbon footprint of public administration ⁽³⁾	—	0.1	0.1	0.1	—
11.3	Standards and guidelines for buildings and vehicle fleets ⁽³⁾	—	0.2	0.2	0.2	—
14.1	Rebate on the purchase of electric vehicles and charging stations	102.5	185.1	287.6	290.2	−2.6
14.2	Deployment of electric vehicles ⁽⁴⁾	8.7	12.2	20.9	20.9	—
14.3	Communication and education ⁽³⁾	1.5	1.7	3.2	3.4	−0.2

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Transition énergétique Québec (cont.)						
15.2	Optimization of freight transportation logistics	1.4	3.6	5.0	5.0	—
17.2	Support for the use of liquefied natural gas for freight transportation (Route bleue)	—	3.0	3.0	3.0	—
17.3	Environmental management of road vehicle fleets, including maintenance and inspection	0.4	8.1	8.5	25.0	-16.5
17.4	Eco-driving for heavy vehicles	1.0	5.5	6.5	—	6.5
18.1	Program for energy efficiency and conversion to lower GHG emitting energy sources ⁽³⁾	81.9	214.3	296.2	238.1	58.2
19.1	Revision of the Construction Code ⁽³⁾	1.3	1.5	2.8	2.8	—
19.2	Sustainable building strategy	0.3	3.0	3.3	3.3	—
19.3	Removal of barriers to green technologies, practices and energy sources	0.2	1.1	1.3	1.3	—
19.5	Building standards in northern regions	0.4	1.6	2.0	2.0	—
19.6	Energy rating of buildings	0.3	0.2	0.5	0.5	—
20.1	Conversion and energy efficiency in commercial and institutional buildings	19.9	66.3	86.2	67.0	19.2
20.2	Conversion of residential heating systems (Heating with Green Power)	17.3	28.5	45.8	65.8	-20.0
20.3	Assistance program to purchase equipment to produce electricity for isolated dwellings	0.2	4.8	5.0	5.0	—

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Transition énergétique Québec (cont.)						
20.4	Banishment of heavy fuel oil from commercial and institutional buildings	0.1	0.4	0.5	0.5	—
20.5	Assistance to install operational solar equipment	0.9	0.3	1.1	5.1	-4.0
21.1	Reduction of GHG emissions from refrigeration systems	7.3	21.7	29.0	19.0	10.0
24.1	Support for the development of bioenergies to reduce GHG emissions in the short term ⁽³⁾	24.9	80.4	105.3	57.2	48.1
25.1	Enhancement of energy efficiency of certain commonly used devices	0.3	0.2	0.5	0.5	—
Subtotal: Transition énergétique Québec		284.3	678.0	962.3	863.6	98.7
Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques						
2.1	Climat municipalités program	0.7	31.6	32.3	50.0	-17.7
2.5	Support for the rehabilitation of contaminated sites	—	19.6	19.6	30.0	-10.4
2.6	Supporting municipalities located along the St. Lawrence River facing coastal erosion	1.7	6.3	8.0	8.0	—
4.2	Efforts to optimize GHG emission reduction initiatives	0.6	3.4	4.0	4.0	—

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques (cont.)						
4.11	Support for carbon capture research	8.5	6.5	15.0	15.0	—
5.1	Monitoring and gaining of knowledge on climate, air quality and precipitations	4.7	4.7	9.5	13.8	-4.3
6.1	Support to Ouranos for adaptation projects	5.9	6.0	11.9	12.0	-0.1
6.7	Socio-economic impacts of climate change	—	4.0	4.0	4.0	—
7.1	Education on climate change issues and promotion of government initiatives	0.1	16.7	16.8	16.8	—
7.2	Development of GHG reduction protocols	0.1	2.7	2.7	5.0	-2.3
7.3	Dissemination of knowledge on adaptation	—	6.1	6.1	8.0	-2.0
8.1	Support for civil society initiatives	3.0	17.0	20.0	20.0	—
8.2	Tools and programs aimed at involving young people in climate change issues	0.2	—	0.2	—	0.2
8.4	Strategic partnerships (ongoing and new) in the fight against climate change	4.7	22.1	26.8	27.4	-0.6
9.1	Québec's international partnerships	0.9	1.4	2.3	2.5	-0.2

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques (cont.)						
9.2	Support for climate cooperation projects	—	18.0	18.0	18.0	—
10.1	Update of authorization and control processes and adaptation of environmental requirements based on risk	—	3.0	3.0	3.0	—
10.2	Integration of climate change in public administration ⁽⁵⁾	0.1	0.9	1.0	1.5	-0.4
11.1	Carbon footprint of public administration	—	3.4	3.4	4.8	-1.4
11.2	Sustainable shuttle program	0.6	4.2	4.8	8.0	-3.2
11.3	Standards and guidelines for buildings and vehicle fleets ⁽⁵⁾	—	0.3	0.3	0.3	—
11.4	Carbon footprint of public procurement	0.2	0.4	0.6	0.6	—
12.1	Participation in the Western Climate Initiative	4.7	5.6	10.3	8.0	2.3
14.4	Integrated approach for light vehicles	3.7	2.7	6.4	7.3	-0.8
14.6	Fees paid	—	3.4	3.4	3.4	—
14.7	Heavy vehicle inspection and maintenance program	0.3	0.7	1.0	1.0	—
14.12	Zero-emission vehicles	0.1	1.6	1.7	3.0	-1.3
21.2	Regulations on halocarbons	0.3	0.4	0.7	0.7	—

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Measures by department and body						
Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques (cont.)						
23.1	Support program for biosolid recovery	0.3	0.2	0.4	10.0	-9.6
23.2	Program for processing organic matter using biomethanization and composting ⁽⁶⁾	11.2	86.0	97.2	97.2	—
23.3	Composting program for small municipalities	—	1.5	1.5	2.0	-0.5
23.4	Application of extended producer responsibility to refrigeration, freezing and cooling devices	—	—	—	0.3	-0.3
26.4	Policy on air quality	6.0	6.0	12.0	12.5	-0.5
29.1	Protection and management of biodiversity and ecosystems – Flora and ecosystems	1.3	2.3	3.7	4.0	-0.3
30.1	Adaptation of the methodology used to set environmental discharge objectives to the context of climate change	0.1	0.1	0.2	0.3	-0.1
30.2	Consolidation of hydrometric and hydrologic tracking, oversight and forecast systems and adaptation of public dam management	2.7	3.7	6.4	6.7	-0.3
30.3	Adaptation of surface and ground water management to the context of climate change	2.5	3.3	5.8	6.6	-0.8
30.4	Adaptation of rain water management to the context of climate change	0.6	0.8	1.4	1.4	—

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques (cont.)						
31.1	Development of policies, expertise and relationships with partners in climate change Declaration of GHGs and management of the carbon market	22.9	34.2	57.0	63.0	-6.0
31.2	Better balance of expenses associated with managing the 2013-2020 Climate Change Action Plan	—	15.7	15.7	6.5	9.3
31.3	Reinforcement of governance through the creation of the Conseil de gestion du Fonds vert	—	6.0	6.0	6.0	—
Subtotal: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques		88.8	352.4	441.2	492.5	-51.3
Ministère des Finances du Québec						
20.6	RénoVert	126.2	208.1	334.3	330.7	3.6
Ministère de l'Économie, de la Science et de l'Innovation						
4.4	Funding of collaborative industrial research projects and innovation research projects	—	22.0	22.0	23.0	-1.1
4.5	Support for university researchers and student groups	3.5	—	3.5	3.5	—
4.7	Support for research and innovation on climate change	3.5	11.5	15.0	15.0	—
4.8	Mobilizing and structural projects	10.0	40.0	50.0	50.0	—
4.10	Support for research on clean technologies	—	2.4	2.4	3.0	-0.6

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Ministère de l'Économie, de la Science et de l'Innovation (cont.)						
12.2	Training on carbon market	0.1	—	0.1	0.4	−0.3
18.2	Procurement, implementation and marketing of equipment and technologies to help SMEs reduce their GHG emissions	0.2	31.5	31.7	47.3	−15.6
27.6	Support and guidance in prevention and recovery for businesses and support for economic activity recovery following a disaster related to climate change	0.2	4.8	5.0	5.0	—
Subtotal: Ministère de l'Économie, de la Science et de l'Innovation		17.5	112.1	129.6	147.2	−17.5
Ministère de l'Éducation et de l'Enseignement supérieur						
11.5	Investment in infrastructure	—	93.8	93.8	100.0	−6.3
Ministère des Affaires municipales et de l'Occupation du territoire						
1.1	Development and dissemination of planning tools for municipalities	0.7	3.4	4.1	5.0	−0.9
1.2	Integration of adaptation to climate change in land use and urban planning decisions ⁽⁷⁾	—	0.4	0.4	0.5	−0.1
2.2	Program for sustainable community development	—	16.3	16.3	20.0	−3.7
2.3	Support for the integration of adaptation to climate change into municipal planning	0.0	11.1	11.1	14.0	−2.9

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Ministère des Affaires municipales et de l'Occupation du territoire (cont.)						
2.4	Support for municipalities in the implementation of rain water management systems	—	9.0	9.0	10.0	-1.0
5.2	Reinforcement of knowledge acquisition and transfer on permafrost degradation in the North	0.2	0.9	1.1	1.2	-0.1
Subtotal: Ministère des Affaires municipales et de l'Occupation du territoire		0.9	41.1	42.0	50.7	-8.7
Ministère des Forêts, de la Faune et des Parcs						
6.4	Risk analysis, monitoring and prevention of infectious diseases related to climate ⁽⁸⁾	—	0.3	0.3	0.3	—
6.8	Map of vulnerabilities in Arctic Québec	0.7	1.1	1.8	1.8	—
19.4	Promotion of low-carbon building construction ⁽⁸⁾	1.3	19.7	21.0	21.0	—
27.5	Vulnerability of forests and forestry activities to climate change	2.0	2.5	4.5	4.5	—
29.2	Protection and management of biodiversity and ecosystems – Fauna and ecosystems	1.4	3.6	5.0	5.0	—
Subtotal: Ministère des Forêts, de la Faune et des Parcs		5.4	27.2	32.6	32.6	—

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Ministère de la Sécurité publique						
1.2	Integration of adaptation to climate change in land use and urban planning decisions ⁽⁹⁾	0.1	0.4	0.5	0.5	—
3.1	Monitoring, forecasting, response and warning systems for risks that can be increased by climate change	0.1	1.7	1.8	1.8	—
3.2	Support for municipalities in the implementation of disaster prevention initiatives	6.5	9.9	16.4	16.4	—
3.3	Increase of the resilience of systems and essential infrastructure to climate change	0.4	2.6	3.0	3.0	—
6.2	Assessment of risks associated with climate change ⁽⁹⁾	2.4	4.6	7.0	7.0	—
Subtotal: Ministère de la Sécurité publique		9.5	19.2	28.7	28.7	—
Ministère de la Santé et des Services sociaux						
6.4	Risk analysis, monitoring and prevention of infectious diseases related to climate ⁽¹⁰⁾	0.9	0.8	1.7	1.7	—
6.5	Targeted research programs to analyze health risks and vulnerabilities related to climate change	2.0	1.3	3.2	2.8	0.4
6.6	Monitoring of observatory of adaptations in health	1.4	1.8	3.2	3.0	0.2
26.1	Fighting the effects of heat: develop knowledge and strengthen intervention methods (heatwaves and heat islands)	5.7	5.5	11.2	10.3	0.8
26.2	Support for the Québec strategy to reduce pollen in the context of climate change	0.4	0.6	1.0	1.0	—

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Ministère de la Santé et des Services sociaux (cont.)						
26.3	Reduction of psychosocial impacts of extreme weather events	1.1	1.0	2.1	3.5	-1.4
Subtotal: Ministère de la Santé et des Services sociaux		11.4	10.9	22.3	22.3	—
Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec						
22.1	Reduction of GHG emissions associated with manure by sealing storage structures and capturing and processing biogas	0.9	1.7	2.6	3.3	-0.7
22.2	Initiatives to increase the implementation of GHG emission-reducing agricultural technologies, practices and production methods in farms	0.3	1.9	2.2	3.3	-1.1
22.3	Reduction of GHG emissions associated with fertilization by revising fertilization grids	1.1	1.8	2.9	3.5	-0.6
27.1	Adaptation of phytosanitary monitoring, pest diagnostic and intervention strategies based on the impacts of climate change	0.9	1.6	2.5	3.2	-0.7
27.2	Support for the implementation of best agroforestry practices to reduce climate risks on agricultural soils	—	0.5	0.5	1.0	-0.5
27.4	Development of water conservation and management strategies for agricultural areas	0.3	0.5	0.8	1.0	-0.2
Subtotal: Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec		3.5	8.0	11.5	15.2	-3.7

TABLE 14 (cont.)

Detailed 2013-2020 Climate Change Action Plan expenditures, by department and body
(millions of dollars)

Measures by department and body		Expenditures			Maximum budget	Difference
		Actual 2013-2014 to 2016-2017	Forecast 2017-2018 to 2020-2021	Total 2013-2014 to 2020-2021		
Ministère des Relations internationales et de la Francophonie						
9.3	Support for multilateral climate funding	6.0	—	6.0	6.0	—
9.4	Support for francophone countries and youth action	0.3	1.2	1.5	1.5	—
Subtotal: Ministère des Relations internationales et de la Francophonie		6.3	1.2	7.5	7.5	—
Régie du bâtiment du Québec						
19.1	Revision of the Construction Code ⁽¹¹⁾	1.0	1.6	2.6	3.0	-0.4
19.4	Promotion of low-carbon building construction ⁽¹¹⁾	0.2	0.5	0.7	2.0	-1.3
Subtotal: Régie du bâtiment du Québec		1.2	2.2	3.3	5.0	-1.7
Tourisme Québec						
27.7	Impact of climate change on the tourist industry	0.7	0.5	1.1	1.7	-0.6
TOTAL		1 409.6	2 595.5	4 005.1	4 027.6	-22.5

Note: Totals may not add due to rounding.

(1) Component of the Ministère des Transports, de la Mobilité durable et de l'Électrification des transports.

(2) Component of the Ministère de l'Énergie et des Ressources naturelles.

(3) Component of Transition énergétique Québec.

(4) This program includes the modifications to the March 2018 Québec Economic Plan.

(5) Component of the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques.

(6) Expenditures amounting to \$5.1 million, authorized by Order in Council, were made in 2012-2013, but were included within the financial framework of the 2013-2020 Climate Change Action Plan.

(7) Component of the Ministère des Affaires municipales et de l'Occupation du territoire.

(8) Component of the Ministère des Forêts, de la Faune et des Parcs.

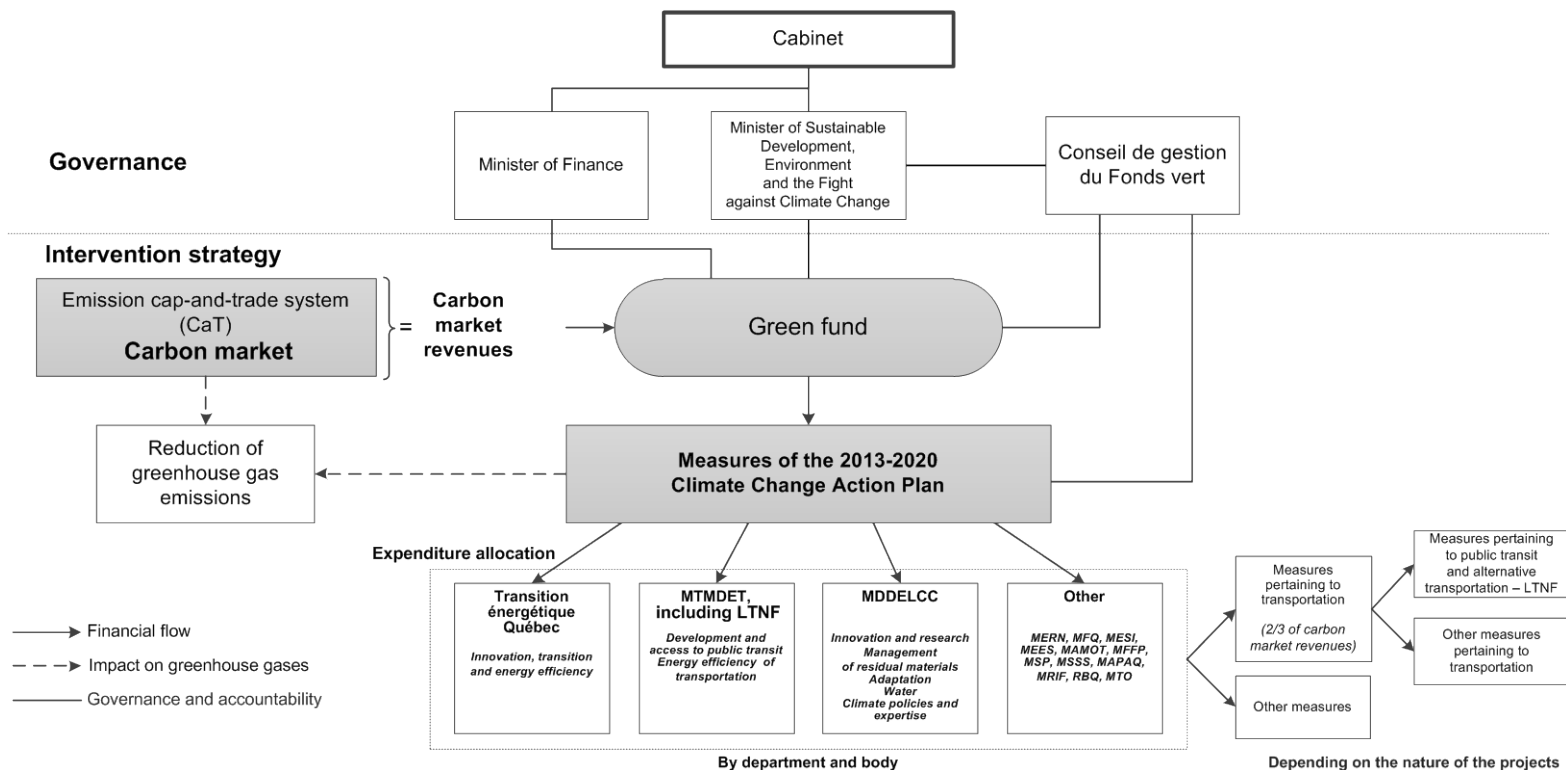
(9) Component of the Ministère de la Sécurité publique.

(10) Component of the Ministère de la Santé et des Services sociaux.

(11) Component of the Régie du bâtiment du Québec.

Source: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques.

APPENDIX 3: MECHANISMS TO FIGHT CLIMATE CHANGE IN QUÉBEC



APPENDIX 4: LIST OF ABBREVIATIONS

Glossary

Departments, organizations and funds

LTNF	Land Transportation Network Fund
MAMOT	Ministère des Affaires municipales et de l'Occupation du territoire
MAPAQ	Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec
MDDELCC	Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques
MEES	Ministère de l'Éducation et de l'Enseignement supérieur
MERN	Ministère de l'Énergie et des Ressources naturelles
MESI	Ministère de l'Économie, de la Science et de l'Innovation
MFFP	Ministère des Forêts, de la Faune et des Parcs
MFQ	Ministère des Finances du Québec
MRIF	Ministère des Relations internationales et de la Francophonie
MSP	Ministère de la Sécurité publique
MSSS	Ministère de la Santé et des Services sociaux
MTMDET	Ministère des Transports, de la Mobilité durable et de l'Électrification des transports
MTO	Ministère du Tourisme
RBQ	Régie du bâtiment du Québec
TEQ	Transition énergétique Québec

Other terms

\$/t	Dollars per tonne
GHGs	Greenhouse gases
GJ/yr	Gigajoules per year
kt CO ₂ eq.	Thousand metric tons of CO ₂ equivalent
mt CO ₂ eq.	Million metric tons of CO ₂ equivalent
2013-2020 CCAP	2013-2020 Climate Change Action Plan
CaT	Emission cap-and-trade system
WCI	Western Climate Initiative
