



Québec cap-and-trade system
for greenhouse gas emission
allowances (C&T)

Strengths and Advantages





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This document explains the advantages of a cap-and-trade (C&T) system for greenhouse gas (GHG) emission allowances as a preferred economic instrument to reduce GHG emissions and fight climate change. It also provides an overview of Québec's C&T system for GHG emission allowances and describes its strong points.

As a member of the Western Climate Initiative (WCI) since 2008, Québec has based its C&T system on the WCI's design guidelines and operating rules in order to create a regional C&T system. Since linking its C&T system with California's on January 1, 2014, Québec has been looking for other Canadian provinces and U.S. states wishing to join the WCI regional carbon market. A milestone was achieved in April 2015 when Ontario announced its intention to establish a C&T system with the aim of linking it with those of Québec and California. Ontario's C&T system began operations on January 1, 2017, and the three WCI partners signed an agreement the following September that paved the way for harmonizing and integrating their respective C&T systems starting on January 1, 2018. However, Ontario officially revoked Cap and Trade Program Regulation on July 3, 2018. The WCI regional carbon market then reverted to a two-partner market; Québec and California.

Other governments have shown an interest in the WCI's carbon market and Québec has been open to working with them in order to extend this market's scope, make it more efficient, and increase its contribution to the global effort to fight climate change. Nova Scotia joined Western Climate Initiative, Inc. (WCI, Inc.) on May 14, 2018, in order to obtain administrative and technical services needed for the development a carbon market in the province. WCI, Inc. is a non-profit corporation formed to provide administrative and technical services supporting the implementation of state and provincial greenhouse gas emission trading programs.



Why a C&T system? An overview of its advantages

The C&T system is the primary tool the Québec government has chosen to achieve its ambitious GHG emission reduction targets of 20% below 1990 levels by 2020 and 37.5% below 1990 levels by 2030.

Several reasons motivated Québec's choice of a C&T system over other possible solutions for addressing the climate change issue. First and foremost, it provides governments with the best guarantee of actually reducing GHG emissions, which is, after all, the main goal of this undertaking, by sending a strong carbon price signal to a wide range of economic stakeholders making them aware that GHG emissions now come with a price tag. In other words, the system tells them they cannot carry on as before and emit greenhouse gases into the atmosphere without consequences.

A C&T system is a flexible economic tool based on standards and criteria that differ from those traditionally used to achieve environmental goals by reconciling environmental protection, environmental management, and the fight against climate change with economic development objectives such as growth, efficiency, modernization and competitiveness.

While a C&T system requires polluters to consider the costs of their GHG emissions when they make their business decisions, it also provides them with incentives to improve their production methods, change their consumption habits, adopt energy efficiency measures, invest in new technologies, and turn to cleaner energy sources. In short, it encourages them to get a head start in the economy of the future – the green economy.

The C&T system provides great flexibility in terms of regulatory compliance. Indeed, emitters subject to the C&T system have a number of compliance options available to them. For example:

- Covered emitters can choose to improve their energy efficiency, rely on cleaner or renewable energy sources, or enhance their production methods, either by optimizing the use of current technologies or by using the best technologies available on the market;
- Covered emitters that have reduced their GHG emissions and have a surplus of emission allowances can subsequently use them for new investments, thereby increasing their profitability and making them more competitive;

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- Covered emitters that need to obtain emission allowances in order to meet their regulatory obligations can also turn to the carbon market to:
 - Buy emission units at government auctions;
 - Buy offset credits sold by offset projects promoters as a result of GHG emission reductions in sectors not covered by the C&T system, in accordance with government approved implementation and quantification protocols;
 - Buy emission allowances¹ sold by other carbon market participants.
 - Starting in 2009, facilities that are not subject to the C&T system and that report annual GHG emissions equal to or greater than 10,000 metric tons of CO₂ equivalent can be covered by the C&T system on a voluntary basis and thus be required to cover their emissions. Facilities opting into the system in this way can benefit from cost-free allocation of emission allowances.

Moreover, since the GHG emissions of covered emitters must be calculated with precision and subsequently verified by a third party, the C&T system also creates economic activity around these operations.

It should likewise be mentioned that promoters of GHG emission reduction projects and the accredited experts tasked with verifying and validating these projects to ensure that they meet the established regulatory criteria can benefit from business opportunities related to the issuance of offset credits.

It is also worth noting that, by establishing a C&T system and participating in a carbon market, a government demonstrates its leadership in the fight against climate change, becomes part of a worldwide movement aimed at putting a price on carbon, and is better positioned to exert influence on the actions of world players in this area and forge ties with them.

Finally, a C&T system generates substantial revenues for participating jurisdictions, which they can use as they see fit. For instance, they can:

- Reduce their dependence on imported oil, especially by helping their businesses improve their energy efficiency and production methods
- Encourage alternative energy sources that emit fewer GHGs;
- Encourage the use of renewable energy and clean technologies;
- Stimulate the innovation, design and marketing of low-carbon technologies;
- Create green and sustainable jobs in line with the new economy;

¹ The term "emission allowance" designates an emission unit, offset credit or credit for early reduction. Each emission allowance equals one metric ton of GHG.

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- Prepare their communities to adapt to the effects of climate change and reduce the costs of climate disasters;
 - Take other measures to increase the well-being of populations and the competitiveness of businesses.

For its part, the Québec government has decided to allocate all revenues from its C&T emission unit auctions to finance the GHG emission reduction and climate change adaptation measures contained in its 2013-2020 Climate Change Action Plan (CCAP 2013-2020).

The CCAP 2013-2020

This plan provides for numerous initiatives that support GHG emission reduction programs and climate change adaptation programs, in collaboration with businesses, municipalities, research institutions and civil society. It promotes investments in research and innovation, and also aims to raise public awareness about climate change, and reduce the public sector's carbon footprint.

Transportation is a prime concern in Québec's fight against climate change since over 41% of all GHG emissions in Québec stem from that sector. Consequently, a good proportion of the C&T system's revenues is devoted to initiatives aimed at, among other things, increasing public transit ridership, expanding public and private electric vehicle fleets, and improving the energy efficiency of freight transport.

In the longer term, Québec wants to promote the use of more sustainable modes of production, consumption and organization in its economy so as to significantly decrease its dependency on fossil fuels. These investments should provide a comparative advantage to Québec businesses, spur new technological development, and create lucrative permanent jobs in tomorrow's green economy. Improved air quality and its positive impacts on health should also be beneficial for our communities.



Québec's C&T system at a glance

The *Ministère de l'Environnement et de la Lutte contre les changements climatiques* is responsible for the implementation and proper functioning of Québec's C&T system. The Ministry notably approves the system's registration applications, the creation and distribution of GHG emission allowances and the auction results.

Broadly speaking, the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances (RSPÉDE) provides that persons or municipalities operating a facility whose annual GHG emissions (excluding CO₂ emissions related to the combustion of biomass) are equal to or greater than 25 kilotons of CO₂ equivalent (kt of CO₂ eq.) are subject to the system. Beginning in 2019, facilities that must comply with the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (RDOCECA) because their GHG emissions are equal to or greater than 10 kt of CO₂ eq. will be able to voluntarily join the C&T system.

The first compliance period² of the C&T system started in 2013 and lasted two years. At the end of that period, 100% of covered businesses met their regulatory obligations by remitting one emission allowance to the government for each ton of CO₂ that they emitted into the atmosphere. This represents a remarkable success rate for the start of the C&T system's operations. The first compliance period targeted businesses in sectors associated with industry as well as with electricity production and importation.

Beginning with the second compliance period, which started in January 2015 and, like subsequent periods, should extend over three years, the C&T system targets Québec's entire economy. Indeed, in addition to the sectors covered during the first period, it now includes GHG emissions resulting from the combustion of fossil fuels that are sold or distributed in Québec, thereby encompassing close to 85% of all Québec's GHG emissions. This broad coverage³ provides stability to the system and makes it a comprehensive tool for reducing the province's GHG emissions. The second period of compliance also had a compliance rate of 100 %, which demonstrates that companies are accepting the carbon market as an economic tool for fighting climate change

In addition, GHG emission reduction protocols have been developed or are continuing to be developed to allow for GHG emission reductions in sectors not covered by the C&T system. All offset credit projects must meet the requirements of the applicable protocol in

² A compliance period is a period at the end of which a regulated entity must submit to the government a number of allowances (emission units, offset credits or credits for early reductions) equal to the total GHG emissions reported (and verified) for the period.

³ The requirements relating to the coverage of GHG emissions are described in Chapter III of Title II (Sections 19 to 23) of the Regulation respecting a cap-and trade system for greenhouse gas emission allowances (RSPÉDE). The current version of the regulation can be found at:
http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=3&file=/Q_2/Q2R46_1_A.HTM.



the regulation's appendix. Five protocols currently set the framework for carrying out offset credit projects:

- Destruction of methane by covering a manure pit;
- Destruction or treatment of methane at landfill sites;
- Destruction of ozone depleting substances contained in insulating foam or used as refrigerants removed from refrigeration, freezer and air-conditioning appliances;
- Destruction of methane from an active coal mine drainage system;
- Destruction of ventilation air methane of active underground coal mines.

An afforestation and reforestation protocol, which will be applicable on private forest lands in Québec, is currently being developed for preparing a draft regulation that will be subject to a public hearing process.

The use of offset credits is limited to 8% of the number of emission allowances that emitters subject to the C&T system must submit to cover GHG emissions associated with a regulated entity at the end of a compliance period.



The strengths of Québec's C&T system

The Québec RSPÉDE contains a number of provisions designed to send a strong carbon price signal to Québec's economy, protect the price of emission units from excessive economic fluctuations, avoid the over-allocation of emission units on the market, ensure the environmental integrity of offset credits, and avoid their double counting.

Accurate data

Under the RDOCECA, covered entities must report their GHG emissions using specific and rigorous protocols. Furthermore, data resulting from these reports must be verified independently by an accredited verifier in accordance with ISO standards. This means that calculations determining the number of emission units that must be remitted to the *Ministère de l'Environnement et de la Lutte contre les changements climatiques* by covered emitters at the end of each compliance period are based on reliable and actual data. In addition, the WCI stipulates that this regulation and the standards it establishes must be harmonized among all its members. In this way, everyone can be assured that one ton of GHG emitted and calculated by an emitter is the same in all WCI jurisdictions.

A strong price signal sent to the economy along with a floor price...

The RSPÉDE provides for a minimum price for emission units sold at auctions. At the first auction, which was held on December 3, 2013, the minimum price, or "floor price," was \$10.75. This price will increase by 5% plus inflation annually. This way, the carbon price signal sent to Québec's economy will continue to increase. The minimum price also provides a guarantee against a situation encountered in other C&T systems where prices fell below that threshold.

When Québec and California hold joint auctions, the minimum price is the highest, in U.S. dollars, between Québec's and California's minimum prices. The exchange rate applied is the most recent rate preceding the auction published by the Bank of Canada.

The emission unit selling price at auctions is determined by the lowest offer that allows for the sale of the last GHG emission unit available. The offer cannot be lower than the floor price.



Moreover, a minimum auction price also has the advantage of providing a more stable carbon cost for the most environmentally responsible covered emitters that may count on the revenues from the sale of their excess emission units to finance their green investments.

... and a ceiling price

Should the carbon market find itself in a situation where the demand for emission allowances significantly exceeds the supply, which would disproportionately increase the emission unit price, the RSPÉDE stipulates that the Minister may hold a reserve sale⁴ up to four times a year. In that situation, the RSPÉDE provides for the creation, for each compliance period, of a reserve of a certain percentage of annual emission unit ceilings that can be sold by mutual agreement by the minister. The emission units placed in this reserve are equally divided into three categories (A, B, and C). During these sales, emission unit prices are set based on their category.

The sale price for each category (A: \$40; B: \$45 and C: \$50) has increased annually by 5% plus inflation since 2013. Only emitters covered by the RSPÉDE that do not have enough emission allowances to meet their regulatory obligations can participate in these sales. This mechanism therefore has the effect of imposing a form of ceiling price on emission units.

Avoiding carbon leakage

Companies covered by the C&T system that are experiencing strong competition on the national or international scene do not have much leeway in raising prices and thus recouping the costs of the emission units they may need to buy to fulfil their regulatory obligations. In addition, they are vulnerable to “carbon leakage”, i.e. the transfer of production to jurisdictions where there is no C&T system or a similar price on carbon. Therefore, they receive a majority of the emission units they need to comply with the RSPÉDE free of charge. However, since 2015, the number of these free emission units decreases by 1% to 2% per year to provide them with an additional incentive to reduce their GHG emissions. Québec also considers benchmarking as an efficient way to distribute free allowances.

In order to meet their regulatory obligations, covered emitters in the electricity and fossil fuels distribution sectors, which are not subject to carbon leakage as they can pass on these increased costs to their consumers, have to buy all the emission allowances they need at auctions or on the carbon market. Fossil fuel combustion accounts for more than 70% of GHG emissions in Québec

⁴ Called “sales by mutual agreement of the Minister”.



Avoiding over-allocation

If all emission units available during an auction are not sold, the RSPÉDE provides for unsold emission units to be temporarily taken out of circulation and gradually put back up for sale when the auction price of emission units climbs above the minimum price for two consecutive auctions.

Avoiding market manipulation

To avoid market manipulation, the RSPÉDE provides for purchase and holding limits at auctions and reserve sales of emission units. In addition, because bids are confidential and financial guarantees are required to cover them, the system prevents emission unit prices from skyrocketing and emission units from being hoarded by the most financially sound companies covered by the system or by participants with considerable financial resources.

WCI, Inc., a non-profit organization that provides administrative and technical services to support the C&T system's implementation, has retained the services of an independent firm to oversee the market and detect any evidence of wrongdoing. Finally, the RSPÉDE provides for severe penalties for non-compliance with its provisions. For instance, a failure by an emitter to cover the GHG emissions of a covered establishment on the expiry of the compliance deadline leads to the suspension of its capacity to sell emission units, and the application of an administrative sanction equal to 3 emission units for each missing emission allowance needed to complete the coverage.

An offset credit system based on rigor and environmental integrity

Projects eligible for offset credits under the C&T system are those that meet regulatory requirements and are undertaken according to protocols prescribed by the regulation. All of them provide for a rigorous validation and verification process provided for in the regulations and in compliance with ISO standards before they can generate offset credits. To avoid double counting, these credits cannot be used in conjunction with another C&T system.

Québec has chosen to guarantee the validity of offset credits once they have been delivered by the government and put on the market by the project promoter. However, if those credits turn out to be illegitimate for one reason or another, thus jeopardizing the environmental integrity of the C&T system, the RSPÉDE requires that the promoter replace them. If that promoter is unable to comply, the government may use its



environmental integrity account to replace them while retaining the options at its disposal for recourse against the promoter. The environmental integrity account, which can only be used to that end, is filled by automatically withholding 3% of all offset credits delivered. This is a particularity of the Québec C&T system that is not found in the California system.

A flexible system that allows for long-term planning...

The RSPEDÉ has no end date. It specified that the first compliance period would last only two years, from January 1, 2013 to December 31, 2014, while subsequent compliance periods would last three years each. In all cases, covered establishments have until November 1st following the end of a compliance period to remit to the government the amount of emission allowances corresponding to their reported and verified GHG emissions. Such deadlines give these establishments regulatory certainty as well as the time and flexibility needed to comply with their regulatory obligations and plan investments aimed at reducing their GHG emissions. Furthermore, they can bank their surplus emission allowances and use them during a future compliance period. For instance, a covered entity that plans to expand its activities and increase its production in the coming years may acquire more emission allowances than it will need during a compliance period if it anticipates needing more allowances in the next one. However, covered entities are prohibited from borrowing emission allowances from a future compliance period.

...and for covered businesses to grow

The number of emission units given free of charge to trade-exposed industries is calculated based on GHG emission intensity targets and adjusted according to the actual annual production level of covered facilities taken on an individual basis. Allocating free allowances on the basis of real output is also a way to avoid carbon leakage and profits that would result in a voluntary decrease in production. This approach allows each covered installation to expand production without being penalized. Thus, as output increases, so could the number of emission units allocated free of charge.

Solid, predictable financing

The Québec government has elected to allocate all the revenues resulting from auctions and reserve sales to finance initiatives contained in the 2013-2020 Climate Change Action Plan. The C&T system's floor price therefore ensures minimal, stable and predictable funding for these initiatives, thereby making long-term planning possible. Indeed, it is estimated that the CCAP 2013-2020 will have a budget of about \$3.3 billion by 2020, \$3 billion of which will come from the C&T system.



Additionally, since each auction participant must submit a financial guarantee to the Minister via a financial institution, the government is assured that the winners will pay the amounts that were committed for bidding on the sale's emission units.

In conclusion

The Québec government firmly believes that putting a price on carbon is the most efficient way to reduce GHG emissions. By implementing a rigorous C&T system on its territory and by linking it to California's, Quebec demonstrated not only a strong willingness to take concrete measures to fight climate change, but also foresightedness by laying the groundwork for a green economy. A C&T system is therefore an effective instrument to bring together economic development and environment protection.

For its part, the C&T model designed by the WCI and put in place by Québec contains, as previously demonstrated, a great number of characteristics and safeguards that should assure potential partners of its solidity and efficiency. This model also possesses the necessary flexibility to pave the way for the linking of carbon markets. Indeed, it has the ability to adapt to the industrial structure and economic portrait of a potential partner, to the priorities they have established, and to their GHG emission profile. In fact, it allows for different types and degrees of linking, from the partial linking of a sole economic sector to a complete integration.

Quebec is seeking other partners in order to enhance the scope, performance and potential of the WCI carbon market. In the future, Québec hopes to continue to expand the market even more by linking it with other similar markets around the world. Indeed, the larger the reach of carbon markets, the more effective and the better positioned they will be to contribute to the global effort to combat climate change.

It is in this spirit that Québec has undertaken to share its expertise on the international stage with respect to the development and implementation of C&T systems and carbon market linkages. In 2014, Québec became co-chair, with the Netherlands, of the International Carbon Action Partnership (ICAP), a partnership of sovereign and subnational governments that have implemented a C&T system or are in the process of doing so. That same year, Québec became a member of the World Bank's Carbon Pricing Leadership Coalition (CPLC) by signing a statement on the importance of putting a price on carbon and became a technical partner of the Partnership for Market Readiness (PMR), a World Bank initiative aimed at helping developing countries and emerging economies put in place a carbon market mechanism within their jurisdiction.

Québec also works in co-operation with the non-profit International Emissions Trading Association (IETA), whose membership is comprised of private-sector companies that are dedicated to the establishment of an international framework to facilitate the emergence of carbon markets throughout the world.



On December 2017, on the occasion of the One Planet Summit, Québec signed the Declaration on Carbon Pricing in the Americas along with 11 other national and subnational governments of the Americas. These governments are committed to implement carbon pricing as a central policy instrument for climate change action, create a collaborative platform to improve the alignment of carbon markets, strengthen the harmonization of reporting and verification of greenhouse gas emissions measurement systems, and encourage regional and international collaboration and co-operation pertaining to the development of carbon pricing initiatives.

In addition, in May 2018, Québec, Ontario and Oregon signed the Memorandum of Understanding to Enhance Co-operation on Climate Change. Moreover, following the implementation of its cap-and-trade system, Nova Scotia entrusted part of the system's management to WCI, Inc.

In terms of its bilateral relations, Québec also shares information and its best practices concerning the carbon market with several governments interested in knowing more about the strengths and advantages of its C&T system. For example, in October 2015, Québec and Mexico's Secretariat of Environment and Natural Resources (SEMARNAT) signed a memorandum of understanding to strengthen their cooperation with regard to the environment and the fight against climate change. The agreement is primarily designed to help Mexico set up a carbon market at a level of environmental integrity similar to that of the WCI. In August 2016, Québec reiterated its commitment in this respect by signing a joint statement with the SEMARNAT, California and Ontario.

Québec is a full participant in the international movement to expand carbon markets around the globe and these efforts continue to bear fruit.

For more information:

<http://www.mddelcc.gouv.qc.ca/changements/carbone/index-en.htm>

<http://www.wci-inc.org/index.php>



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