

# INTRODUCTION TO CAP AND TRADE IN ONTARIO



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Acknowledgment

This Appendix is based on a report from Quebec’s Sustainable Development Commissioner, *Carbon Market: Description and Issues*, published Spring of 2016.<sup>1</sup>

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# Glossary

**Cap:** The maximum amount of GHG allowances that the government will create each year.

**Capped Participant:** A Mandatory Participant or a Voluntary Participant.

**CITSS:** The Compliance Instrument Tracking System Service is the emission allowance tracking system acquired by WCI, Inc. on behalf of member jurisdictions.

**Climate Act:** *Climate Change Mitigation and Low-carbon Economy Act, 2016*

**CO<sub>2</sub>e:** Carbon dioxide equivalent is a standard metric used to standardize emissions from greenhouse gases.

**Compliance account:** Each Capped Participant has this account where it must place the allowances and credits it wishes to use to demonstrate compliance for a given period.

**Compliance Instrument:** An emission allowance, an offset credit or early reduction credit.

**Compliance period:** A period of time determined by government (to align with all jurisdictions within a cap and trade market) during which Capped Participants must obtain sufficient allowances and credits within their compliance accounts to match their GHG emissions for that same period. Ontario's first compliance period will be 2017-2020.

**Early reduction credit:** Compliance instruments created by the Minister which represent emissions reductions that have been undertaken by Mandatory Participants before the program begins.

**Emission allowance:** A government created instrument that represents one metric tonne of carbon dioxide equivalent (t CO<sub>2</sub>e). It is created exclusively by a government.

**Government allowance auction:** A quarterly auction held by government at which Capped Participants and Market Participants can bid for available emission allowances (can also be a joint-auction undertaken by several governments where the governments have agreed to have a linked market).

**GGRA:** The Greenhouse Gas Reduction Account will receive all proceeds from the government auction or sale of emission allowances. Funds from the GGRA may only be used for purposes specified in the Climate Act.

**GHG:** Greenhouse gas, meaning carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride.

**Large Final Emitters:** Facilities emitting at least 25,000 tonnes of CO<sub>2</sub>e annually, that undertake a specified GHG activity: adipic acid production, ammonia production, carbonate use, cement production, coal storage, copper and nickel production, electricity generation, ferroalloy production, general stationary combustion, glass production, HCFC-22 production and HFC-23 destruction, hydrogen production, iron and steel production, lead production, lime production, magnesium production, nitric acid production, operation of equipment for a transmission system or a distribution system (electricity), operation of equipment related to the transmission, storage and transportation of natural gas, petrochemical production, petroleum refining, phosphoric acid production, primary aluminum production, pulp and paper production, refinery fuel gas use, soda ash production, or zinc production.<sup>2</sup>

**Mandatory Participant:** Large Final Emitters and natural gas distributors that deliver an amount of natural gas that if consumed would emit at least 25,000 tonnes of CO<sub>2</sub>e a year, fuel suppliers that sell more than 200 litres of fuel per year, and electricity importers, which are required to register in the cap and trade program according to the Climate Act.<sup>3</sup>

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**Market Participant:** A person, other than a Capped Participant, who is registered to participate in the auction or secondary market.

**Minister:** Minister of the Environment and Climate Change.

**Offset credit:** A compliance instrument that represents a reduction, avoidance or removal of one tonne of CO<sub>2</sub>e deemed to be real, permanent, quantifiable, verifiable, enforceable and additional; achieved by a project of a type approved by government and according to government approved protocols (*tbd*); and where the project and project sponsor is registered by the Minister.

**Offset Sponsor:** An individual or company that has a registered offset project.

**Offset protocols:** The conditions that must be met in order for a project to be eligible for registration and the conditions that must be met in the implementation of a project to be eligible for credits to be created and issued by the Minister in respect of the project.

**Registered Participants:** Means Capped Participants and Market Participants.

**Regulation:** O. Reg. 144/16 (The Cap and Trade Program), made under the Climate Act.

**Reporting Regulation:** O. Reg. 143/16 (Quantification, Reporting and Verification of Greenhouse Gas Emissions) made under the Climate Act.

**Secondary market:** A market where the following transactions can occur:

- the purchase and sale of emissions allowances that have already been distributed to a Capped Participant,
- the purchase and sale of early reduction and offset credits, and
- the purchase and sale of derivative financial products.<sup>4</sup>

**True up:** The process by which all Capped Participants demonstrate compliance with the cap and trade regulation. This is done by submitting allowances and credits equal to the reported and verified emissions of a facility in the preceding compliance period.

**Voluntary Participant:** An owner or operator of a facility that undertakes a specified GHG activity (see Large Final Emitters) that emit between 10,000 and 25,000 tonnes of CO<sub>2</sub>e a year, who is required to submit emissions reports to the government, and who chooses to opt in to the carbon market.<sup>5</sup>

**WCI:** The Western Climate Initiative (WCI) is a collaboration of independent jurisdictions working together to identify, evaluate, and implement emissions trading policies to tackle climate change at a regional level, including Ontario, Quebec, and California.

**WCI, Inc.:** A non-profit corporation formed to provide administrative and technical services to support the implementation of state and provincial greenhouse gas emissions trading programs. The Board of Directors for WCI, Inc. includes officials from the provinces of Quebec, British Columbia, Ontario, and the State of California. The services provided by WCI, Inc. can be expanded to support jurisdictions that join in the future.

## Why cap and trade?

For governments committed to mitigating climate change, policy options include:

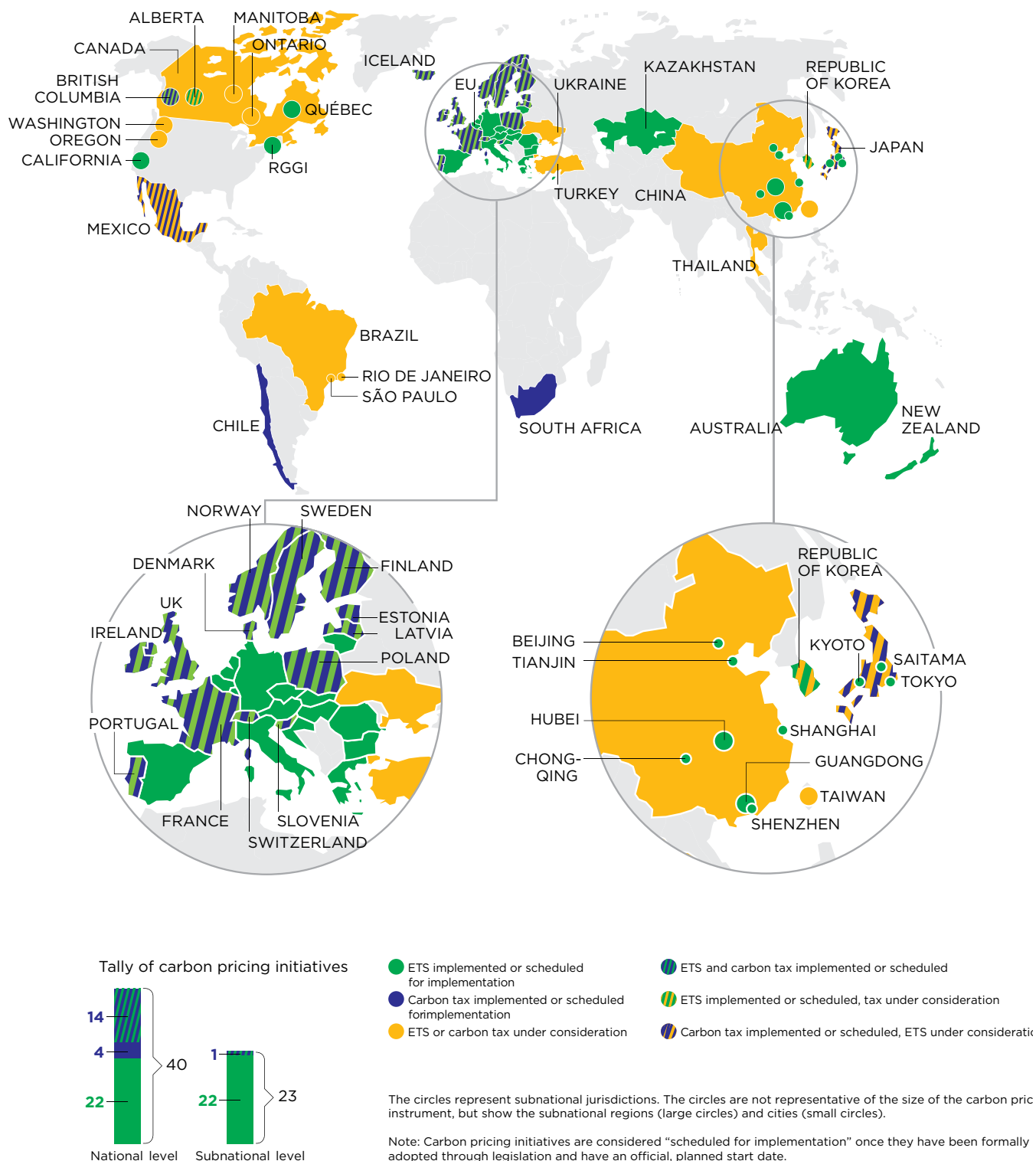
- creating incentives for low carbon-emitting activities (e.g., subsidies for energy efficiency retrofits),
- removing support for high carbon-emitting activities (e.g., subsidies for fossil fuels), and
- establishing deterrents for high carbon-emitting activities (e.g., a price on carbon).

Governments increasingly consider carbon pricing to be a key climate change mitigation policy. The proportion of global greenhouse gas (GHG) emissions covered by a pricing method has tripled over the past decade<sup>6</sup>. Ontario's decision to establish a cap and trade program will mean 90 per cent of Canada's population will be covered by some form of carbon price.<sup>7</sup>

Establishing a price on carbon can be done in two broad ways, via a carbon tax or a cap and trade program (also known as an emissions trading scheme or ETS); both have the potential to effectively reduce a jurisdiction's carbon emissions. The choice of pricing mechanism depends on a variety of factors, including the unique makeup of a jurisdiction's economy. Though a carbon tax is comparatively simple to implement, a cap and trade program can have the added benefit of setting a firm cap on emissions.<sup>8</sup> Cap and trade is currently the more popular of the two pricing mechanisms. The World Bank recently reported that 36 national and 23 subnational level jurisdictions have implemented, or scheduled for implementation, an emissions trading scheme, compared to 28 national jurisdictions and 1 subnational jurisdiction which have chosen a carbon tax (Figure 1).<sup>9</sup> As of 2015, 2 out of 5 people worldwide live in a jurisdiction considering, preparing or operating an emissions trading scheme.<sup>10</sup>

**Table 1 - The advantages and disadvantages of a carbon tax and cap and trade program.**

Mechanism	Advantages	Disadvantages
Cap-and-trade system	<ul style="list-style-type: none"> <li>• Ability to coordinate with other governments to create a larger market that can reduce costs for participants</li> <li>• Certainty, for both the government and participants, about the maximum quantity of emission allowances offered by the government</li> </ul>	<ul style="list-style-type: none"> <li>• Impact on the price of gasoline and fossil fuels alone may not be sufficient to change consumer behaviour</li> <li>• More extensive regulations to put in place</li> <li>• Complex administration</li> <li>• Uncertainty about the cost for participants (market-based fluctuation)</li> </ul>
Carbon tax	<ul style="list-style-type: none"> <li>• Certainty about the cost for participants (cost determined by the government)</li> <li>• Less extensive regulations to put in place</li> <li>• Easier administration and monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Uncertainty about the quantity of GHG emission reductions</li> <li>• Direct and visible impact that could lead to opposition from the population and businesses</li> </ul>



**Figure 1: Map of existing, emerging and potential regional, national and subnational carbon pricing initiatives (emissions trading scheme and tax)**

Source: World Bank, *Carbon Pricing Watch*, 2016, p.4.

## How did Ontario create its cap and trade program?

On April 13, 2015, the Ontario government announced that it would create a cap and trade program.<sup>11</sup> After extensive stakeholder consultation, on May 18, 2016, the *Climate Change and Low-Carbon Economy Act, 2016* (“Climate Act”) became law in Ontario. On May 19, 2016, both O. Reg. 144/16 (The Cap and Trade Program) (“Regulation”), and O. Reg. 143/16 (Quantification, Reporting and Verification of Greenhouse Gas Emissions) (“Reporting Regulation”), made under the Climate Act, were filed. Together, the Climate Act, Regulation and Reporting Regulation, establish the details of Ontario’s cap and trade program to date. Additional regulation provisions regarding, for example, offsets and early reductions, were not yet posted at the time of writing.

Ontario first committed to emissions trading as its choice of carbon pricing mechanism in 2008 when it joined the Western Climate Initiative (WCI). The WCI started the process of designing a regional cap and trade program to encourage subnational governments to take action and to provide a framework for potential future national systems.<sup>12</sup> Thirteen governments (nine U.S. states and four Canadian provinces) formed the WCI, five of which remain (British Columbia, Manitoba, Quebec, Ontario and California), two of which have now implemented a cap and trade program (Quebec and California).<sup>13</sup>

## What carbon market will Ontario be joining?

Quebec and California’s cap and trade markets have been linked since 2014, in the Western Climate Initiative. In November 2011, WCI formed WCI, Inc., a non-profit, which provides administrative and technical services for certain activities related to this common market, such as tracking emission allowances, administering auction sales and monitoring the market. Ontario intends to link its cap and trade program to this larger market by 2018.<sup>14</sup>

## How does cap and trade reduce emissions?

The two main objectives of a cap and trade program are to:

1. create an overall decreasing cap on emissions, and

2. drive investment in low-carbon innovation by increasing the cost of emissions sufficiently to make the cost of reducing emissions less expensive in comparison.

A cap and trade program creates a price on carbon by placing an annual limit on overall emissions, creating allowances up to that limit, distributing those allowances, allowing for the trade of the allowances and credits (compliance instruments) and requiring emitters to submit their allowances (and other compliance instruments) to government to match GHGs emitted during a compliance period. Each year, the annual limit or cap declines; as a result, the corresponding price of allowances is expected to increase.

In the early stages of the system, governments often distribute free allowances to certain facilities in need of transitional support (see below). The government may also authorise a certain number of compliance instruments in the form of early reduction credits to reward early action, as well as offset credits for reductions, avoidance and removals of GHGs in some non-capped sectors (see below).

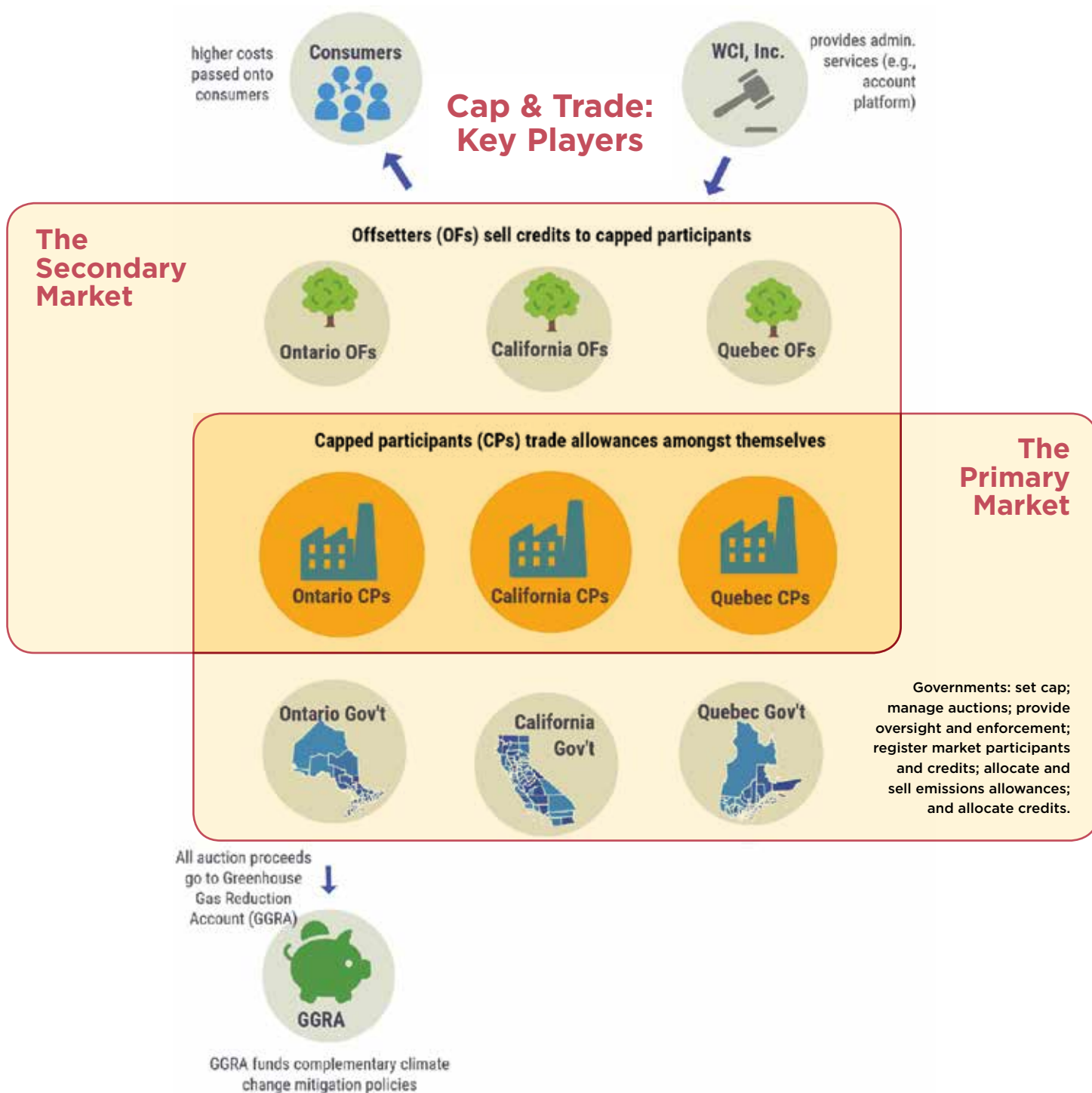
Market controls aim to keep prices stable and predictably increasing over time (see below). However, several factors affect the cost of allowances, including the availability of emission credits and allowances from other jurisdictions and the availability of technology to reduce emissions, as well as general economic conditions (e.g., the U.S. to CDN exchange rate, and the price of gasoline and fuels).

Beyond requiring the purchase of emission allowances, the cap and trade program can also drive down emissions in two important ways. First, the proceeds from the government’s auction of allowances can be reinvested in complementary climate change mitigation efforts. (California’s 2015-2016 state auction revenue will be about U.S. \$1.8 billion,<sup>15</sup> Quebec’s 2015 auction revenue was \$830.2 million,<sup>16</sup> Ontario’s is estimated to be \$1.85 billion each year.<sup>17</sup>) Second, Capped Participants can purchase offset credits, which can spur carbon reduction projects in sectors not otherwise covered by the cap and trade program, such as agriculture and forestry.



## Diagram of Key Players

Key Players in the Ontario-Quebec-California cap and trade program



**Figure 2: Key players in the Ontario-Quebec-California cap and trade program**

Note: Ontario will not be linking its cap and trade market with California and Quebec until 2018. This figure does not include the cap and trade derivative financial market players.

**Table 2 : Ontario's cap and trade program overview**

First Compliance Period (2017-2020)	
Cap on Ontario GHG allowances	2017: 142.3 million tCO <sub>2</sub> e 2018: 136.4 million tCO <sub>2</sub> e 2019: 130.6 million tCO <sub>2</sub> e 2020: 124.7 million tCO <sub>2</sub> e
Greenhouse Gases covered	carbondioxide(CO <sub>2</sub> ),methane(CH <sub>4</sub> ),nitrousoxide(N <sub>2</sub> O),hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF <sub>6</sub> ), and nitrogen trifluoride.
Number of Entities Covered	Estimated 148 (see Table 4)
Sectors Covered	adipic acid production, ammonia production, carbonate use, cement production, coal storage, copper and nickel production, electricity generation and importing, ferroalloy production, general stationary combustion, glass production, HCFC-22 production and HFC-23 destruction, hydrogen production, iron and steel production, lead production, lime production, magnesium production, nitric acid production, operation of equipment for a transmission system or a distribution system (electricity), operation of equipment related to the transmission, storage and transportation of natural gas, natural gas distribution, petrochemical production, petroleum refining, petroleum product suppliers, phosphoric acid production, primary aluminum production, pulp and paper production, refinery fuel gas use, soda ash production, zinc production
Threshold	>25,000 tCO <sub>2</sub> e (Mandatory Participants) >200 litres petroleum product supply (Mandatory Participants) >10,000 tCO <sub>2</sub> e - <25,000 tCO <sub>2</sub> e (Voluntary Participants) None (Market Participants)
% of Provincial Emissions Covered	82%
Compliance Tools & Flexibility Mechanisms	Free allowances for some sectors (diminishing over time), auctions, offsets (up to 8%), allowance price containment reserve, banking, 3-year compliance period, linking with other jurisdictions

## What does the “cap” in cap and trade mean?

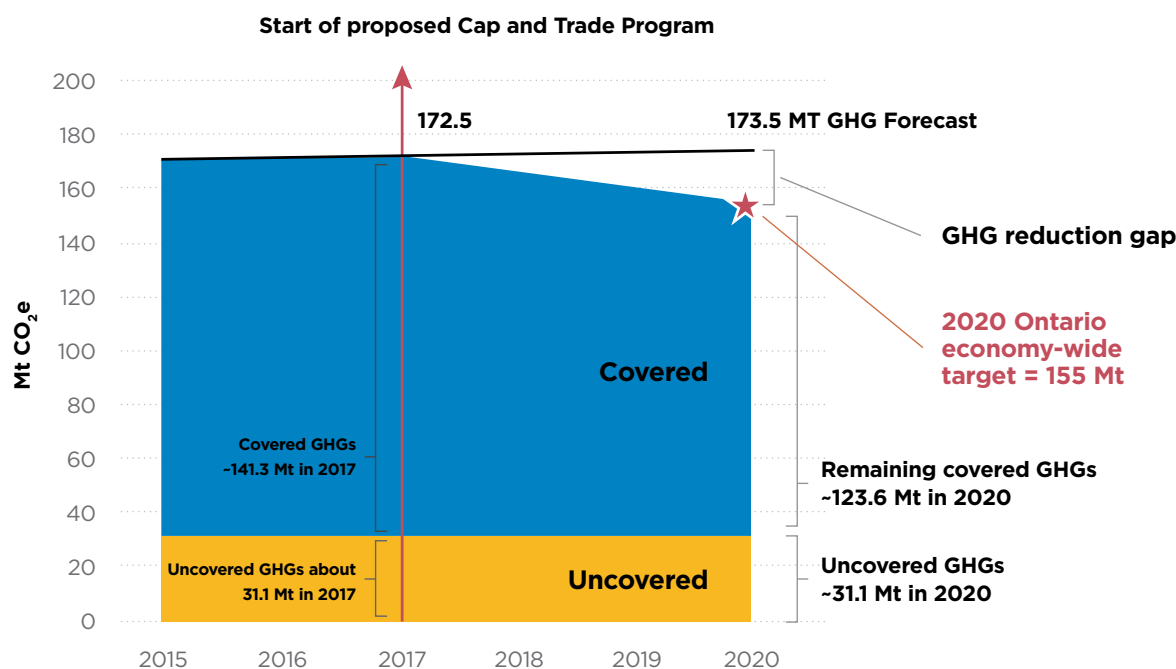
### What is the cap?

The cap is the maximum number of GHG allowances that the government will create each year. Under the Regulation, the Minister of the Environment and Climate Change (“Minister”) sets out the maximum amount of annual emission allowances it will sell. The Minister will create:

- 142,332,000 emission allowances for 2017,
- 136,440,000 for 2018,
- 130,556,000 for 2019, and
- 124,668,000 for 2020.<sup>18</sup>

The cap is ratcheted down over time (at about 4 per cent annually in the first compliance period) to allow emitters to make gradual investments in GHG reductions. Since each allowance will permit emissions

of 1 tonne of CO<sub>2</sub>e, the overall cap is designed to reduce emissions by 17.7 Mt by 2020<sup>19</sup>, which would almost cover the 18.5 Mt reductions needed for Ontario to meet its 2020 target<sup>20</sup> (Figure 3). Chapter 4 and 6 discuss whether Ontario is likely to achieve these projected reductions. Higher emissions can occur in Ontario because Ontario emitters will have access to allowances and credits from California or Quebec. If Capped Participants in Ontario purchase more allowances from partner jurisdictions than there are Ontario allowances, emissions in those jurisdictions may be lower than they otherwise would have been. In a regional market with declining caps in each jurisdiction, the important outcome is that the collective cap is met, given that GHGs are a global pollutant.



**Figure 3: Ontario GHG emission forecast and proposed cap**

Note: Covered emitters in this figure represent Mandatory Participants.

Source: EnviroEconomics, presentation, *Impact Modelling and Analysis of Ontario's Proposed Cap and Trade Program*, p.10, May 17, 2016.

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## Who is capped?

Ontario's cap and trade program is anticipated to include about 82 per cent of Ontario's emissions.<sup>21</sup>

The program will include Ontario's major industrial greenhouse gas (GHG) emitters (Large Final Emitters, businesses that distribute an amount of natural gas that if consumed would emit at least 25,000 tonnes of CO<sub>2</sub>e a year, fuel suppliers that sell more than 200 litres of fuel per year, and electricity importers), a.k.a. Mandatory Participants.<sup>22</sup> Additional businesses that fall between the emissions threshold for Mandatory Participation in cap and trade and the threshold for reporting (emitting between 10,000 and 25,000 tonnes of CO<sub>2</sub>e a year) and that are engaged in specified GHG activities can choose to participate as Voluntary Participants.<sup>23</sup> Others can also choose to participate voluntarily as Market Participants.<sup>24</sup> These three types of participants can purchase, hold, sell or transfer emission allowances for compliance, investment or speculation purposes; however, only Mandatory and Voluntary Participants need to participate in the "true up" at the end of each compliance period. Participants that wish to carry out offset credit projects can also choose to participate. The objective of having such diversity of participants is to drive reductions at the lowest cost.

Ontario's 148 Mandatory Participants (see Table 4 at the end of this document) fall within the following categories:

- industrial and large commercial operations (such as manufacturing, base metal processing, steel, pulp and paper, and food processing);
- institutions (e.g., universities);
- transportation fuel processors and distributors, including propane and fuel oil;
- businesses that generate, import (for consumption in Ontario), or distribute electricity; and
- natural gas generators and distributors.

## How do Capped Participants meet their compliance obligation?

Capped Participants must obtain and surrender to government one allowance or credit for each tonne of CO<sub>2</sub>e they emit in a given compliance period. For emissions in 2017 to 2020, this true-up will occur in 2021.

Compliance instruments can be obtained in several ways, which include:

- free distribution by the government (see "Free allocation" and Table 4, below),
- purchase from government at quarterly auctions and sales (see "Auction sale", below),
- for sale between registered participants on the secondary market,
- early reduction credits granted by the Minister, and
- purchase of offset credits on the secondary market.

## How do Capped Participants stay within the cap?

Capped Participants need to have enough compliance instruments to equal their reported and verified emissions, but there are only enough emission allowances created by the Ontario government to meet the cap. That being said, Capped Participants can meet their compliance obligations by using other types of compliance instruments, as detailed in Table 3. Until the market is linked with California and Quebec, allowances that may be used are those that are created and distributed by the province of Ontario.

**Table 3: Categories of compliance instruments**

<b>Categories of compliance instruments</b>	<b>Description</b>
Emission allowance	<p>A basic compliance instrument</p> <ul style="list-style-type: none"><li>• Emission allowances can be bought or sold at an auction or on the secondary market, or are allocated without charge by the Minister.</li><li>• The total number of emission allowances that may be granted by a government for a given year corresponds to the annual cap for that jurisdiction.</li></ul>
Early reduction credit	<p>A compliance instrument that the Minister can issue to a Mandatory Participant that reduced its emissions before the program was put in place.</p> <ul style="list-style-type: none"><li>• Credits are granted if the reduction was real, permanent, irreversible, additional and verifiable.</li></ul>
Offset credit	<p>A compliance instrument granted by the Minister to a person in Ontario that carries out a project to reduce, capture, store or eliminate emissions not covered by the cap and trade program.</p> <ul style="list-style-type: none"><li>• Credits are granted if the reduction is real, permanent, irreversible, additional and verifiable and is carried out in accordance with prescribed protocols.</li><li>• The Minister may keep some percentage of offset credits in a reserve in case of subsequent offset credit invalidation.</li><li>• The project promoter can sell the credits obtained to other participants.</li><li>• The credits enable sectors not covered by the cap and trade program to participate in the market.</li><li>• For a Capped Participant, the use of offset credits is limited to 8% of the total number of reported and verified emissions for a particular compliance period.</li></ul>
Allowance or credit issued by a partner	<p>Emission allowances or credits that are issued by governments with which Ontario has signed agreements for the implementation of the carbon market, e.g., California and Quebec.</p>

Note: Ontario regulations regarding offsets and early reduction credits had not yet been released at the time of writing.

Source: Adapted from the Sustainable Development Commissioner of Québec, report, Carbon Market: Description and Issues, Spring 2016.

Allowances are associated with a given year, known as their vintage. The use of vintage years is largely for tracking and compliance purposes. At the time of true up, the oldest vintage year compliance instruments are retired first.<sup>25</sup> Capped Participants must have enough emission allowances and credits to cover all of their emissions reported and verified in accordance with the Reporting Regulation for each compliance period. Ontario's first compliance period will be four years (2017-2020); subsequent compliance periods in Ontario will be 3 years long, to align with Quebec and California.

As of now, there are no limits on banking – i.e., a 2017 vintage allowance can be used both within the current compliance period and the subsequent one (however there are holding limits as to the number of allowances – as a share of total allowances – that can be banked). In the future this may change. Each auction will sell the current vintage year and may offer a select number of future vintage year allowances.

### Why create an offset market?

The ability of Capped Participants to cover up to 8 per cent of their emissions with offset credits is meant to reduce the overall cost to the economy of reducing GHG emissions. Offset projects reduce the overall cost to the economy by creating a mechanism where activities *which are not otherwise required to reduce their emissions* (i.e., are additional), but which can do so cheaply, are incentivized to reduce emissions so that they can sell these reductions to the market.<sup>26</sup> It also lowers the cost of compliance for Capped Participants.

### How are emission allowances tracked?

The Minister, Mandatory Participants, Voluntary Participants, and Market Participants have accounts in which their compliance instruments are recorded. There are several types of accounts, and certain rules apply to how these allowances and credits must be registered or transacted.

The Minister holds an issuance account in which all emissions allowances are initially created. Allowances from this account are credited to three different

government accounts based on their method of issuance (i.e., the auction, allocation, and reserve accounts).

When the Minister determines that an offset project meets all the requirements of the regulation and the applicable protocol, offset credits are issued and placed in the Offset Sponsor's holding account. Some per cent of issued offset credits will be placed in the government's Buffer Account (an environmental integrity account that ensures the ongoing validity of offsets in the program), to hedge against the risk of reversal. Each offset protocol will have its own unique risk of reversal that will be outlined in the protocols.

Each type of participant (capped or market) has a holding account in which their emission allowances and credits are deposited. Each Capped Participant also has a compliance account in which they deposit the allowances and credits they will use to meet their compliance obligation. This account system makes it possible to apply controls and gives participants a certain amount of flexibility in managing their compliance and investment strategy.

Ontario, Quebec and California have implemented a single, centralized registration system (the CITSS) for all of their emission allowances.<sup>27</sup> As a result, all allowances issued and all transactions made on the secondary market must be registered in this system, which should limit fraud or market manipulation attempts.

### How is the cap enforced?

Capped Participants have until November 1st after the end of each compliance period to acquire all the allowances and credits they need to match their emissions for that compliance period.<sup>28</sup> Every year, Capped Participants must report to the Ministry how many GHG emissions they emitted from specified GHG activities. On or before the November 1st deadline following the compliance period, Capped Participants must submit the number of allowances and credits from their compliance accounts that match their emissions.

If a Capped Participant does not submit enough allowances or credits to match their emissions for



the period, they will be subject to certain additional obligations and consequences. For example, a Capped Participant's accounts can be suspended in a manner, which prevents them from participating in the secondary market, among other things.<sup>29</sup> The participant may also be required to submit 3 allowances in addition to each allowance they are short.<sup>30</sup>

Capped Participants that do not comply with the Regulation are also liable to penalties under the Climate Act, depending on the offence. For example, the Climate Act provides for fines of \$5,000 to \$6 million or up to five years of imprisonment for individuals convicted of certain offences under the Act (s.51(1) and (5)). For corporations, the fines vary from \$250,000 to \$10 million a day (s.51(2) and (4)). In either case, the fine may be increased by an amount equal to the monetary benefit acquired as a result of the offence (s.51(6)).

## How does the “trade” element work?

### How do companies sell allowances?

Emission allowances in a holding account can be traded between Market and Capped Participants (from any partner jurisdiction, if those jurisdictions have agreed to link their markets). This is the secondary market. Unlike the quarterly auctions, the secondary market does not generate any revenue for the government.

Transactions are made at prices determined freely by the parties. This increases opportunities for Capped Participants to acquire emission allowances at a lower cost or to resell allowances they will not need to fulfill their obligations.

As in financial markets, products derived from allowances (e.g., futures contracts) can also be traded. This is the case, for example, for futures contracts that allow a participant to purchase from another participant a certain quantity of emission allowances that are delivered on a given date and sold at a pre-determined price. Derivative products can also be used to cover risks related to the variation of emission

allowance prices. Like the secondary market, the derivatives market does not generate any revenue for the government.

### How do companies sell offsets?

To qualify as an offset credit, offset projects need to meet certain rules (offset protocols). These rules are intended to ensure that offsets represent real, permanent, additional, irreversible and verifiable emissions reductions; and, be the subject of detailed periodic reports, which must be verified by an accredited organization.<sup>31</sup>

Ontario's offset program will be outlined in a separate regulatory proposal (not yet posted on the Environmental Registry at the date of writing). Based on lessons learned from other jurisdictions, Ontario aims to make offset monitoring, reporting and verification rigorous and transparent. The focus of initial protocols will be on harmonizing with three Quebec offset protocols, namely, protocols for destruction of ozone-depleting substances, destruction of landfill methane and management of emissions from coal mines.

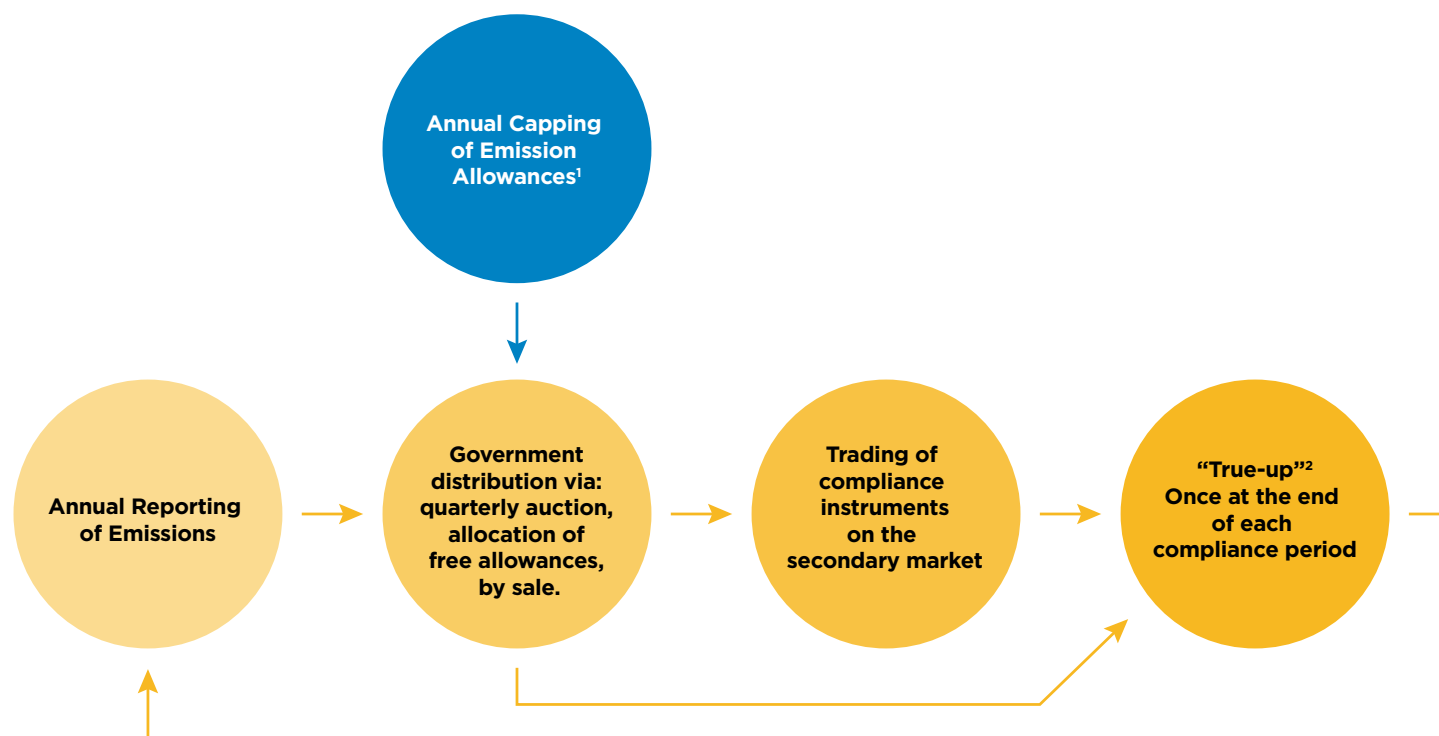
The Minister maintains a public register of offset credit projects that includes detailed information about the sponsor and the project, including verification reports.

Revenues from the sale of offsets will not be received by government, but rather to the project proponent.

## How does emissions trading work?

### What is the cap and trade market cycle?

The cap and trade program has a market cycle made up of compliance periods. Within each compliance period, there are emission allowance distributions, auctions, several emissions reporting deadlines, and one single “true-up” (where the Capped Participant submits the required number of its emission allowances and credits for the compliance period to the Minister). (see Figure 4).



**Figure 4 - The carbon market cycle**

1. The annual cap on GHG emission allowances is pre-determined by the Climate Act.
2. Emission allowances and credits are submitted after the end of each compliance period.

### How do facilities report their GHG emissions?

Since 2009, according to O. Reg. 452/09 (Greenhouse Gas Emissions Reporting), made under the *Environmental Protection Act*<sup>32</sup>, certain industrial facilities in Ontario have had to report their GHG emissions annually to the province. This regulation currently requires that an enterprise must, not later than June 1 of each year, report its emissions for the previous year to the Minister if:

- its emissions are equal to or greater than 10,000 tonnes of CO<sub>2</sub>e in a year (or exceeds another reporting threshold), and
- the GHGs come from particular activities.<sup>33</sup>

This regulation also requires facilities that emit 25,000 tonnes or more of CO<sub>2</sub>e, or that import electricity, or distribute 200 litres or more of petroleum product, or distribute an amount of natural gas that if consumed would emit 25,000 tonnes or more of CO<sub>2</sub>e, to have

an accredited organization verify their report before submitting it to the Minister.<sup>34</sup>

As of January 1, 2017, the Reporting Regulation – a regulation similar in many ways to O. Reg. 452/09, but specifically tailored for the cap and trade program – will come into force. This regulation will replace O. Reg. 452/09.

### Auction sale

Auction sales have a central role in the cap and trade program. They are held up to four times a year. At least 60 days before a sale, the Minister must publish a notice detailing the auction's conditions (i.e., date, time, terms and conditions for registering, the procedure for submitting a bid, the number and vintage of allowances to be auctioned, and the minimum settlement price). Emission allowances are sold in lots of 1,000, except for the last lot, which may consist of a lesser quantity.



WCI, Inc. acquires the administrative and technical services for auction sales on behalf of member jurisdictions, whether they are carried out exclusively for Ontario or in conjunction with Quebec and California.

The Cap and Trade Program Regulation imposes a minimum auction sale price. It also provides for an annual 5 per cent price increase and indexation based on the consumer price index. The minimum price established for emission allowances as part of a joint sale corresponds to whichever jurisdiction's minimum price is highest. A participant in an auction sale can make more than one bid, at different prices, for allowances of the same vintage.

The Minister must distribute the allowances first to the participant that made the highest price bid and then to the other participants by descending value of bids, provided the bids do not violate either the holding limit or the purchase limit of the relevant bidder, and do not exceed the value of the financial assurance that was provided by the bidder to the auction. The final auction-settlement price for all emission allowances distributed corresponds to the lowest accepted bid.

The Regulation requires the Minister to publish a summary within 45 days after each auction or sale. The summary must include the names of the persons registered as bidders for the sale, the settlement price of emission allowances, as well as the total quantity and distribution of the allowances sold.

All auction proceeds are recorded in the province's Greenhouse Gas Reduction Account (GGRA).

### **Sale by government**

The Minister may sell emission allowances at fixed higher prices (i.e., higher than they would be available at auction) to Capped Participants in Ontario that do not have sufficient emission allowances to meet their compliance obligation. Participation in the sale of these allowances is not mandatory.

Such sales may only take place four times a year.<sup>35</sup> At least 60 days before the sale, the Minister must publish

a notice detailing the conditions of the sale. Unlike auction sales, sales by government are not carried out jointly and are therefore always in Canadian currency.

The performance of administrative and support tasks for these sales will also be undertaken by WCI, Inc. Just like for auction sales, the Minister must publish a summary, and the sums collected are recorded in the GGRA.<sup>36</sup>

At the time of printing this report, no "sale by government" had taken place in either Quebec or California.

### **Free Allocation**

Each year, allowances may be allocated free of charge by the Minister according to the methodology set out in the government's Distribution of Allowances Free of Charge methodology document that is incorporated by reference in the Cap and Trade Program Regulation.<sup>37</sup> Application of the methodology will mean that industrial facilities and institutions that apply for free allowances will receive the majority of the allowances they require for free in the first compliance period.<sup>38</sup> As mentioned above, certain Capped Participants are not eligible for free allocation, namely: distributors of natural gas, electricity importers and sellers of liquid fuels like gasoline.<sup>39</sup> (See Table 4 for a list of likely Mandatory Participants that are and are not eligible to apply for free allocation in the first compliance period.)

The Minister must publish, within 24 months after each distribution, the list of emitters that benefited from allocations without charge and the total number of emission allowances allocated without charge.<sup>40</sup>

### **Issuance of credits**

Early reduction credits and offset credits enter the market when they are issued by the Minister. The government does not obtain any revenue from the issuance of these credits.

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## Where does the money go?

The proceeds of auctions and sales of allowances, as well as any fees that may be imposed in the future in relation to the program, are required to be recorded in the Greenhouse Gas Reduction Account (GGRA). This account is expected to record close to \$2 billion dollars annually. (see Chapter 4)

## How will the government ensure stable, effective allowance and offset costs?

To drive down GHG emissions, allowance and offset credit costs will need to strike the right balance. First they need to be high enough to encourage emissions reductions, but low enough to ensure industries can still afford to do business in the province. Second, they need to be predictable so that businesses can plan for the future.

Ontario's cap and trade market will use the same two mechanisms as California and Quebec to introduce price controls:

1. a strategic reserve; and
2. the auction reserve price.

Five per cent of allowances created from the cap are set aside into a strategic reserve, and may be sold at a fixed (high) price (in 3 price tiers), thus acting as a soft ceiling.

The auction reserve price (minimum price level for auction bids) acts as a price floor. A minimum price is imposed to prevent the collapse of prices on the market in the event of a surplus of emission allowances, like the one that occurred in the European market. Moreover, it gives a certain degree of predictability to the price of allowances, which partly provides the market with one of the advantages of a tax. In 2016, Quebec and California set their auction reserve price at \$12.73 USD.<sup>41</sup>

In case there are no buyers for emission allowances in an auction sale, unsold allowances can be put up for

sale again as soon as the sale price of allowances has been above the minimum price for two auction sales.<sup>42</sup>

Purchase limits apply to reduce the risk of market manipulation. A Capped Participant may acquire a maximum of 25 per cent of emission allowances put up for auction during a sale (4 per cent for Market Participants). This purchase limit applies to all related Capped Participants.

Other than the allowances required to meet a compliance obligation, Capped Participants are only allowed to hold a certain amount of emission allowances and early reduction credits (in their holding or compliance accounts). If participants exceed the holding limit, the Minister has the power to remove the excess allowances and early reduction credits.

### How does the market reduce the risk of insider trading?

In order to limit the risk of collusion and insider trading, the Climate Act indicates that a bidder must not disclose information about its participation in these sales or transactions, or any confidential information on its bidding strategy or its bid.<sup>43</sup> If a bidder mandates an advisor to develop its bidding strategy, the advisor must comply with a non-disclosure obligation, and their identity must be provided to the designated Minister.<sup>44</sup> No person is allowed to co-ordinate the bidding strategy of more than one bidder.<sup>45</sup>

## How will Ontario's cap and trade program...

### ...ease the transition for industry?

To ease the transition for businesses, governments implementing a cap and trade program often allocate free allowances and gradually raise their cost over time. As discussed above, Ontario has announced that in the first compliance period (2017-2020) it will distribute most allowances to most large final emitters for free, according to a specific methodology.<sup>46, 47</sup> The amount of free allowances distributed by the

government will decrease each year. The facilities that are not eligible for free allowance distribution are distributors of natural gas, electricity importers, and sellers of liquid fuels like gasoline.<sup>48</sup>

### ...affect regular people?

The transition to lower-carbon business models may result in some workers losing their jobs and new jobs being created. In addition, businesses may pass added

costs from the cap and trade program onto customers. As a result, prices that businesses and residents pay for natural gas, propane, gasoline, diesel, and other carbon-intensive products, will gradually increase.<sup>49</sup> The government is required by law to invest cap and trade proceeds in initiatives that are reasonably likely to reduce or support the reduction of GHG emissions, including in programs designed to improve the energy efficiency of buildings. (see Chapter 6).<sup>50</sup>

**Table 4: Likely Mandatory Participants of Ontario's Cap and trade program**

Facility Owner	Facility Name	Facility City
<b>Entities eligible for free emission allowances</b>		
1. ADM Agri-Industries Company	ADM Agri-Industries - ADM Windsor	Windsor
2. Air Products Canada Ltd.	Corunna Hydrogen Facility	Corunna
3. Emerald Energy From Waste Inc.	Emerald Energy from Waste Inc.	Brampton
4. ArcelorMittal Dofasco Inc.	Dofasco Hamilton	Hamilton
5. Atlantic Packaging Products Ltd.	111 Progress	Scarborough
6. Atlantic Power LP	Kapuskasing Power Plant	Kapuskasing
7. Atlantic Power LP	Nipigon Power Plant	Nipigon
8. Atlantic Power LP	North Bay	North Bay
9. Atlantic Power LP	Tunis Power Plant	Tunis
10. Brampton Brick Limited	Brampton Brick	Brampton
11. Brock University	University/Power Generation Facility	St. Catharines
12. Bunge Canada Holdings I ULC	Bunge Canada - Hamilton Plant	Hamilton
13. Cabot Canada Limited	Cabot Canada Limited	Sarnia
14. Canadian Gypsum Company	CGC Hagersville Plant	Hagersville
15. Carmeuse Lime Canada	Beachville Operation	Ingersoll
16. Carmeuse Lime Canada	Dundas Operations	Dundas
17. Carmeuse Lime Canada	Northern Lime Limited	Blind River
18. Cascades Canada ULC.	Norampac Trenton, a Division of Cascades Canada ULC.	Trenton
19. CertainTeed Gypsum Canada, Inc.	Toronto Board Plant	Mississauga
20. FCA Canada Inc.	Brampton Assembly Plant	Brampton
21. FCA Canada Inc.	Windsor Assembly Plant	Windsor
22. City of Ottawa	Trail Road Waste Facility	Ottawa
23. Clean Harbors Canada, Inc.	Clean Harbors Canada, Inc.	Corunna

Facility Owner	Facility Name	Facility City
<b>Entities eligible for free emission allowances</b>		
24. Columbian Chemicals Canada Ltd.	Hamilton	Hamilton
25. Domtar Inc.	Dryden Mill	Dryden
26. Anthony Forest Products Company	Espanola Mill	Espanola
27. Eastern Power Ltd.	Keele Valley Landfill Gas Power Plant	Vaughan
28. Essar Steel Algoma Inc.	Essar Steel Algoma Inc.	Sault Ste. Marie
29. Essroc Canada Inc.	Picton Plant	Picton
30. Federal White Cement Ltd.	Woodstock Plant	Woodstock
31. Flakeboard Company Limited	Flakeboard Company Limited	Sault Ste Marie
32. Ford Motor Company of Canada, Limited	Oakville Assembly Plant	Oakville
33. General Motors of Canada Limited	CAMI Assembly Plant	Ingersoll
34. General Motors of Canada Limited	Oshawa Car Assembly Plant	Oshawa
35. Gerdau Ameristeel Corporation	Gerdau Ameristeel Corporation, Whitby Mill	Whitby
36. Greater Toronto Airports Authority	Toronto Pearson International Airport	Mississauga
37. GreenField Specialty Alcohols Inc.	Chatham Plant	Chatham
38. GreenField Specialty Alcohols Inc.	Johnstown Plant	Prescott
39. Highbury Canco Corporation	Leamington Facility	Leamington
40. Hamilton Health Sciences Corporation	McMaster University Medical Centre Co-generation Plant	Hamilton
41. Hamilton Specialty Bar Corporation	Hamilton Specialty Bar	Hamilton
42. Hanson Brick	Hanson Brick - Burlington	Burlington
43. Hiram Walker & Sons Ltd.	Walkerville	Windsor
44. Holcim (Canada) Inc.	Mississauga Cement Plant	Mississauga
45. Honda Canada Inc.	Alliston	Alliston
46. Imperial Oil	Nanticoke Refinery	Nanticoke
47. Imperial Oil	Sarnia Chemical Plant	Sarnia
48. Imperial Oil	Sarnia Refinery Plant	Sarnia
49. Ingredion Canada Incorporated	Ingredion Canada Incorporated - London Plant	London
50. Ingredion Canada Incorporated	Ingredion Canada Incorporated - Port Colborne Plant	Port Colborne
51. Innophos Canada Inc.	Port Maitland Plant	Lowbanks
52. Integrated Grain Processors Co-operative Incorporated	IGPC Ethanol Inc. - Aylmer Plant	Aylmer

Facility Owner	Facility Name	Facility City
<b>Entities eligible for free emission allowances</b>		
53. INVISTA (Canada) Company	INVISTA (Canada) Company	Kingston
54. INVISTA (Canada) Company	Maitland Site	Maitland
55. Irving Consumer Products	Irving Tissue	Toronto
56. Ivaco Rolling Mills 2004 L. P.	Ivaco Rolling Mills	L'Orignal
57. Jungbunzlauer Canada Inc.	Jungbunzlauer Canada Inc.	Port Colborne
58. Labatt Breweries of Canada LP	Labatt Breweries Ontario - London Brewery	London
59. Lafarge Canada Inc.	Bath Cement Plant	Bath
60. London Health Sciences Centre	Victoria Hospital	London
61. Maple Lodge Farms Ltd.	Maple Lodge Farms Limited - Brampton	Brampton
62. Nemak of Canada Corp.	Windsor Aluminum Plant	Windsor
63. New Forest Paper Mills LP	New Forest Paper Mills LP	Scarborough
64. NOVA Chemicals (Canada) Ltd.	Corunna Site	Corunna
65. NOVA Chemicals (Canada) Ltd.	Moore Site	Mooretown
66. NOVA Chemicals Corporation	St. Clair River Site	Corunna
67. O-I Canada Corp.	Plant #31 Brampton	Brampton
68. Oxy Vinyls Canada Co.	Niagara PVC Plant	Thorold
69. Petro-Canada Lubricants Inc.	Mississauga Lubricants Centre	Mississauga
70. Plains Midstream Canada	Sarnia Fractionation Plant	Sarnia
71. Queen's University at Kingston	Main Campus	Kingston
72. Redpath Sugar Ltd.	Toronto Refinery	Toronto
73. Produits forestiers Résolu	Fort Frances Division	Fort Frances
74. Produits forestiers Résolu	Thunder Bay Operations	Thunder Bay
75. ROXUL Inc.	ROXUL Inc.	Milton
76. Safety-Kleen Canada Inc.	Oil Recovery Division	Breslau
77. Sanofi Pasteur Ltd.	Connaught Campus	Toronto
78. Shell Canada Products	Sarnia Manufacturing Centre	Corunna
79. Sonoco Canada Corporation	Sonoco - Trent Valley Mill	Trenton
80. St. Marys Cement Inc.	Bowmanville Cement Plant	Bowmanville
81. St. Marys Cement Inc.	St. Marys Cement Plant	St. Marys
82. Strathcona Paper GP Inc.	Strathcona Paper LP	Napanee
83. Styrolution Canada Ltd.	Sarnia Site	Sarnia
84. Suncor Energy Products Partnership	Sarnia Refinery	Sarnia
85. Suncor Energy Products Inc.	St. Clair Ethanol Plant	Mooretown
86. Tembec	Kapuskasing Operations	Kapuskasing

Facility Owner	Facility Name	Facility City
<b>Entities eligible for free emission allowances</b>		
87. Algoma Tubes Inc.	Tenaris Algoma Tubes	Sault Ste. Marie
88. Terra International (Canada) Inc.	CF Industries Courtright Nitrogen Complex	Courtright
89. AV Terrace Bay Inc.	AV Terrace Bay	Terrace Bay
90. The International Group Inc.	Agincourt Plant	Toronto
91. Toyota Motor Manufacturing Canada Inc.	Toyota Motor Manufacturing Canada (Cambridge)	Cambridge
92. Toyota Motor Manufacturing Canada Inc.	Toyota Motor Manufacturing Canada (Woodstock)	Woodstock
93. U.S. Steel Canada Inc.	Hamilton Works	Hamilton
94. U.S. Steel Canada Inc.	Lake Erie Works	Haldimand County
95. University of Guelph	Guelph Campus	Guelph
96. The Governing Council of the University of Toronto	St. George Campus	Toronto
97. The University of Western Ontario	Main Campus	London
98. Glencore Canada Corporation	Kidd Metallurgical Site	Timmins/District of Cochrane
99. Glencore Canada Corporation	Sudbury Integrated Nickel Operations Smelter	Falconbridge
100. York University	York University - Keele Campus	Toronto
101. York Energy Centre LP	York Energy Centre	Newmarket
102. GreenField Specialty Alcohols Inc.	Tiverton Plant	Tiverton
103. University of Windsor	University of Windsor	Windsor
104. Ruetgers Canada Inc.	Ruetgers Canada Inc.	Hamilton
105. Kawartha Ethanol Inc.	Kawartha Ethanol Inc.	Havelock
106. Vale Canada Limited	Copper Cliff Mining, Smelting and Refining Complex	Copper Cliff
107. University of Waterloo	University of Waterloo	Waterloo
<b>Entities not eligible for free emission allowances</b>		
108. Enbridge Gas Distribution Inc.	Enbridge Gas Distribution Inc.	North York
109. Union Gas Limited	Natural Gas Transmission and Distribution	Chatham
110-148	39 Fossil fuel distributors (names unavailable at the time of document update on March 1, 2017)	

Source: Ontario Government, website, *Greenhouse gas emissions reporting by facility*, accessed September 6, 2016.

Further information on fossil fuel distributors provided to the ECO by the Ministry of the Environment and Climate change on March 1, 2017.

## Endnotes

<sup>1</sup> Submitted as part of the Report of the Auditor General of Québec to the National Assembly for 2016-2017.

<sup>2</sup> O. Reg. 143/16 ("the Reporting Regulation"), Schedule 2, "Specified GHG Activities":

<sup>3</sup> The Cap and Trade Regulation, Part IV 'Mandatory Participants',

• s.21 & s.23(1)2 provides that registration in the cap and trade program is not required if the facility meets all of the following criteria:

- The primary activity engaged in at the facility is electricity generation (i.e. item 7 of Schedule 2 of the Reporting Regulation).
- No products are produced at the facility other than electricity and any heat, steam or by-product gas.
- The facility does not receive natural gas directly from an international or inter-provincial natural gas transmission pipeline.
  - (e.g., facilities receiving natural gas directly from a transmission company like TransCanada Pipeline Ltd., as opposed to a distributor like Enbridge or Union Gas Ltd.)

- No electricity is generated at the facility from the incineration of waste.

• S.22 provides that **registration in 2016 is required** if a person meets one of the following descriptions:

- they emit more than 25,000 tonnes of CO<sub>2</sub>e annually from any of the following sources from the following two tables

Adipic acid manufacturing.	Primary manufacturing of aluminum.
Ammonia manufacturing.	Carbonate use.
Cement manufacturing.	Coal storage.
Copper production.	Electricity generation and cogeneration.
Ferroalloy production.	General stationary combustion.
Glass production.	HCFC-22 production and HFC-23 destruction.
Hydrogen production.	Iron manufacturing.
Lead production.	Lime manufacturing.
Nickel production.	Nitric acid manufacturing.
Petrochemical production.	Petroleum refining.
Phosphoric acid production.	Pulp and paper manufacturing.
Refinery fuel gas use within a petroleum refinery.	Soda ash manufacturing.
Steel manufacturing.	Zinc production.

- per the 2015 version of O.Reg. 452/09 ("2015 EPA Reg") s.2(1), s.5(1)

Operation of equipment for natural transmission system or a distribution system (electricity)

Operation of equipment related to a gas.

magnesium production

Petroleum product supply (Equal or greater than 200 litres of petroleum products for both reporting and verification)

Natural gas distribution and (Emissions associated are equal or greater than 25kt)

Electricity importation (No reporting verification threshold – zero MWh)

- per the 2016 version of O.Reg. 452/09 ("2016 EPA Reg"), s.5, Table 2, 7.6(1), (3), and 6(1)-(3).

• S.23 provides that registration in 2017 is required if:

- S.22 applies to them.

• S.24 provides that registration in 2017 and later years is required if a person engages in one of the following specified GHG activities and emits 25,000 tCO<sub>2</sub>e or more a year

Adipic acid manufacturing.	Primary manufacturing of aluminum.
Ammonia manufacturing.	Carbonate use.
Cement manufacturing.	Coal storage.
Copper production.	Electricity generation and cogeneration.
Ferroalloy production.	General stationary combustion.
Glass production.	HCFC-22 production and HFC-23 destruction.
Hydrogen production.	Iron manufacturing.
Lead production.	Lime manufacturing.
Nickel production.	Nitric acid manufacturing.
Petrochemical production.	Petroleum refining.
Phosphoric acid production.	Pulp and paper manufacturing.
Refinery fuel gas use within a petroleum refinery.	Soda ash manufacturing.
Steel manufacturing.	Zinc production.
Operation of equipment for a transmission system or a distribution system (electricity)	Operation of equipment related to natural gas.
magnesium production	

- per the Reporting Regulation (O.Reg. 143/16), s.10, s.1 "specified GHG activity", Schedule 2

Petroleum product supply (Equal greater than 200 litres of petroleum products for both reporting and verification)

Electricity importation (No reporting or and verification threshold – zero MWh)

Natural gas distribution (Emissions associated are equal or greater than 25kt)

- per the Reporting Regulation, s.13, s.12



<sup>4</sup> This last bullet is sometimes considered a tertiary market (see for example: Ontario Energy Board, staff discussion paper, *on a Cap and Trade Regulatory Framework for the Natural Gas Utilities*, p.4, May 25, 2016).

<sup>5</sup> The Regulation, ss.29-31.

<sup>6</sup> Sustainable Development Commissioner of Québec, report, *Carbon Market: Description and Issues*, para. 12, Spring 2016.

<sup>7</sup> Tyler Hamilton, Toronto Star, article, *Ontario agrees to linked cap-and-trade deal with Quebec, Manitoba*, December 7, 2015. [www.thestar.com/news/canada/2015/12/07/manitoba-sign-paris-deal-to-join-ontario-quebec-in-carbon-cap-and-trade-system.html](http://www.thestar.com/news/canada/2015/12/07/manitoba-sign-paris-deal-to-join-ontario-quebec-in-carbon-cap-and-trade-system.html)

<sup>8</sup> An emission trading scheme has the benefit of setting a firm cap on emissions.

<sup>9</sup> World Bank and ECOFYS, report, *Carbon Pricing Watch 2016*, (an advance brief from the State and Trends of Carbon Pricing 2016 report, to be released late 2016), p.5, Figure 1, May 5 2016. [documents.worldbank.org/curated/en/418161467996715909/pdf/105749-REVISED-PUBLIC-New-CPW-05-25-16.pdf](http://documents.worldbank.org/curated/en/418161467996715909/pdf/105749-REVISED-PUBLIC-New-CPW-05-25-16.pdf)

<sup>10</sup> International Carbon Action Partnership, Status Report 2015, *Emissions Trading Worldwide*, p.24, 2015. [icapcarbonaction.com/images/StatusReport2015/ICAP\\_Report\\_2015\\_02\\_10\\_online\\_version.pdf](http://icapcarbonaction.com/images/StatusReport2015/ICAP_Report_2015_02_10_online_version.pdf)

<sup>11</sup> Government of Ontario, news release, *Cap and Trade System to Limit Greenhouse Gas Pollution in Ontario*, April 13, 2015. <http://news.ontario.ca/opo/en/2015/04/cap-and-trade-system-to-limit-greenhouse-gas-pollution-in-ontario.html>

<sup>12</sup> International Carbon Action Partnership, Status Report 2015, *Emissions Trading Worldwide*, p.10, 2015. [icapcarbonaction.com/images/StatusReport2015/ICAP\\_Report\\_2015\\_02\\_10\\_online\\_version.pdf](http://icapcarbonaction.com/images/StatusReport2015/ICAP_Report_2015_02_10_online_version.pdf)

<sup>13</sup> See: [www.westernclimateinitiative.org/history](http://www.westernclimateinitiative.org/history).

<sup>14</sup> Shawn McCarthy, Globe and Mail, article, *Ontario's cap and trade fraught with regulatory and market challenges*, June 3 2016. [www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/ontarios-cap-and-trade-fraught-with-regulatory-and-market-challenges/article30274346/](http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/ontarios-cap-and-trade-fraught-with-regulatory-and-market-challenges/article30274346/).

<sup>15</sup> Ross Brown, California's Legislative Analyst's Office, article, *May 2016 Cap-and-Trade Auction Update*, May 26, 2016. [www.lao.ca.gov/LAOEconTax/Article/Detail/193](http://www.lao.ca.gov/LAOEconTax/Article/Detail/193)

<sup>16</sup> Government of Quebec, website, *Auction Proceeds Allocated to the GGRA*, accessed August 11 2016. [www.mddelcc.gouv.qc.ca/changements/carbone/revenus-en.htm](http://www.mddelcc.gouv.qc.ca/changements/carbone/revenus-en.htm)

<sup>17</sup> Ontario's Climate Change Action Plan, p.14, 2016.

<sup>18</sup> The Regulation, s.54.

<sup>19</sup> 142.3 Mt of allowances -124.7 Mt of allowances = 17.6 Mt.

<sup>20</sup> 173.5 Mt (business-as-usual forecasted emissions for 2020) - 155 Mt (Ontario's 2020 GHG reduction target) = 18.5 Mt.

<sup>21</sup> Ontario Ministry of Finance, *2016 Ontario Budget*, "Cap and trade program". [www.fin.gov.on.ca/en/budget/ontariobudgets/2016/ch1a.html#s7](http://www.fin.gov.on.ca/en/budget/ontariobudgets/2016/ch1a.html#s7).

<sup>22</sup> The Regulation, Part IV; See also, Government of Ontario, website, *Cap and trade: program overview*, 'Mandatory Participants', accessed September 7 2016. [www.ontario.ca/page/cap-and-trade-program-overview#section-2](http://www.ontario.ca/page/cap-and-trade-program-overview#section-2)

<sup>23</sup> The Regulation, ss.28-31.

<sup>24</sup> The Climate Act, s.17; The Regulation, ss.36-38.

<sup>25</sup> The Cap and Trade Regulation, s.16(2).

<sup>26</sup> Marten Law, newsletter, *California Offset Program Upheld*, February 11, 2013. [www.martenlaw.com/newsletter/20130211-california-offset-program-upheld](http://www.martenlaw.com/newsletter/20130211-california-offset-program-upheld)

<sup>27</sup> See [www.wci-citss.org](http://www.wci-citss.org)

<sup>28</sup> The Climate Act, s.14.

<sup>29</sup> The Regulation, s.17.

<sup>30</sup> The Climate Act, s.14(7).

<sup>31</sup> See Note 39.

<sup>32</sup> Ontario Government, website, *Report greenhouse gas (GHG) emissions, the rules for reporting greenhouse gas emissions*, accessed August 10, 2016:

Ontario has filed a new Quantification, Reporting, and Verification of Greenhouse Gas Emissions Regulation *O. Reg. 143/16* made under the *Climate Change Mitigation and Low-carbon Economy Act, 2016* on May 19, 2016 to support implementation of Ontario's cap and trade program. The new Quantification, Reporting and Verification of Greenhouse Gas Emissions Regulation and incorporated Guideline will take effect January 1, 2017 and applies to activities by persons on and after January 1, 2017. It includes a number of changes that will support the implementation of Ontario's cap and trade program. *Ontario Regulation 452/09* under the *Environmental Protection Act* will be revoked after all reporting under it is complete.

[Reporters] should continue to use *Ontario Regulation 452/09* and the Guideline for Greenhouse Gas Emissions Reporting dated December 2015 to prepare emissions reports for 2015 and 2016.

[www.ontario.ca/page/report-greenhouse-gas-ghg-emissions](http://www.ontario.ca/page/report-greenhouse-gas-ghg-emissions)

<sup>33</sup> O. Reg. 452/09 (Greenhouse Gas Emissions Reporting), s.5, Table 2 Activities, (report required if emissions greater than or equal to 10,000 tonnes of CO<sub>2</sub>e in that year):

Adipic acid production	Lime production
Ammonia production	Magnesium production
Carbonate use	Nitric acid production
Cement production	Operation of equipment for a transmission system or a distribution system (electricity)
Coal storage	Operation of equipment related to natural gas
Copper and nickel production	Petrochemical production
Electricity generation	Petroleum refining
Ferroalloy production	Phosphoric acid production
General stationary combustion	Primary aluminum production
Glass production	Pulp and paper production
HCFC-22 production and HFC-23 destruction	Refinery fuel gas use within a petroleum refinery
Hydrogen production	Soda ash production
Iron and Steel production	Zinc production
Lead production	Lime production



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s.6, Other Activities, when report required:

Electricity importation (No reporting and verification threshold – zero MWh)

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Natural gas distribution (Emissions associated with NGD threshold 10kt for reporting and 25kt for verification)

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Petroleum product supply (Equal or greater than 200 litres of petroleum products for both reporting and verification)

<sup>34</sup> O.Reg. 452/09, s.7.6, s.5, s.6(2).

<sup>35</sup> The Regulation, s.59(1).

<sup>36</sup> The Regulation, s.64.

<sup>37</sup> Ontario government, *Methodology for the Distribution of Ontario Emission Allowances Free of Charge*, May 16, 2016.

<sup>38</sup> Ibid.

<sup>39</sup> The Regulation, s.85.

<sup>40</sup> The Climate Act, s.31(5).

<sup>41</sup> Because of exchange rates, the actual reserve prices have been much higher in CAD.

<sup>42</sup> In addition, the quantity of emission units put up for another auction sale cannot exceed 25 per cent of the quantity of units initially planned for the auction.

<sup>43</sup> The Climate Act, s.32(6), (7).

<sup>44</sup> The Climate Act, s.32(8).

<sup>45</sup> The Climate Act, s.32(10).

<sup>46</sup> Government of Ontario, website, *Cap and trade: program overview*, accessed September 7 2016. [www.ontario.ca/page/cap-and-trade-program-overview](http://www.ontario.ca/page/cap-and-trade-program-overview)

In the first compliance period, most large final emitters will receive most of the allowances they require free-of-charge, but the number of allowances allocated will decrease each year. If needed, additional allowances can be purchased at an auction or sale.

<sup>47</sup> Ontario Ministry of the Environment and Climate Change, *Methodology for the Distribution of Ontario Emission Allowances Free of Charge*, May 16, 2016. [www.downloads.ene.gov.on.ca/envision/env\\_reg/er/documents/2016/012-6837\\_Final%20Methodology.pdf](http://www.downloads.ene.gov.on.ca/envision/env_reg/er/documents/2016/012-6837_Final%20Methodology.pdf)

<sup>48</sup> The Regulation, s.85.

<sup>49</sup> For example, Union Gas forecasts that an average homeowner in Ontario will pay an additional \$70-\$80 for their natural gas in 2017. (Union Gas, website, *How Does Cap-and-Trade Affect You?*, accessed September 7 2016, <https://www.uniongas.com/environment/cap-and-trade>)

<sup>50</sup> Ontario Government, policy, *Ontario's Five Year Climate Change Action Plan 2016-2020*, 2016.



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