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**2**

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**Summary**

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## Draft Regulations

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### Draft Regulation

Environment Quality Act  
(chapter Q-2)

#### Cap-and-trade system for greenhouse gas emission allowances —Amendment

Notice is hereby given, in accordance with sections 10, 12 and 13 of the Regulations Act (chapter R-18.1) and section 124 of the Environment Quality Act (chapter Q-2), that the Regulation to amend the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances, the text of which appears below, may be made by the government on the expiry of 45 days from this publication.

The draft Regulation establishes rules for the allocation without charge of emission units for the period 2021-2023.

It also prepares for the alignment of the Ontario carbon market with the Québec and California markets, which could occur in the coming months.

The draft regulation harmonizes certain elements to reflect recent amendments to the California regulations and the passage of the Ontario regulations, in particular concerning the rules governing sales made by the Minister of Sustainable Development, the Environment and the Fight Against Climate Change by mutual agreement and a streamlining of the administrative burden for emitters subject to the regulations.

In addition, the draft regulation amends certain provisions of the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances (chapter Q-2, r. 46.1) to prepare for a possible first three-party auction in 2018.

The draft regulation enables emitters who are not subject to registration to register for the cap-and-trade system, and specifies the rules applicable to them.

Other amendments are made to Chapter IV of the Regulation concerning offset credits, and in particular the issuance of those credits and the verification of project reports.

Amendments are made to the rules on offset credit protocols, in particular concerning the calculation methods for greenhouse gas emissions under the baseline scenario for the protocol for the destruction of CH<sub>4</sub> at landfill sites.

Various other amendments are made by the draft regulation, in particular to the information that must be provided to the Minister in various situations.

In accordance with sections 12 and 13 of the Regulations Act, the draft Regulation may be made within a time shorter than the 60-day period provided for in section 124 of the Environment Quality Act by reason of the urgency due to the following circumstances:

— a first three-party auction is possibly planned for February 2018. The amendments made by the draft Regulation must be in force before the publication of the notice of auction, which must be published 60 days before the date scheduled for the auction under section 45 of the Regulation;

— since the alignment of the Ontario carbon market with that of Québec and California could occur in the coming months, the amendments made by the draft Regulation allowing such alignment must be in force at that time.

Further information may be obtained from Diane Gagnon, coordinator, Direction du marché du carbone, Direction générale de la réglementation carbone et des données d'émission, Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques; telephone: 418 521-3868, extension 4605; email: [diane.gagnon@mddelcc.gouv.qc.ca](mailto:diane.gagnon@mddelcc.gouv.qc.ca); fax: 418 646-4920.

Any person wishing to comment on the draft regulation may submit written comments to Jean-Yves Benoit, Director, Direction du marché du carbone, Direction générale de la réglementation carbone et des données d'émission, Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, Édifice Marie-Guyart, 675, boulevard René-Lévesque Est, 6<sup>e</sup> étage, boîte 31, Québec (Québec) G1R 5V7; email: [jean-yves.benoit@mddelcc.gouv.qc.ca](mailto:jean-yves.benoit@mddelcc.gouv.qc.ca), within the 45-day period.

DAVID HEURTEL,  
*Minister of Sustainable Development,  
the Environment and the  
Fight Against Climate Change*

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## REGULATION TO AMEND THE REGULATION RESPECTING A CAP-AND-TRADE SYSTEM FOR GREENHOUSE GAS EMISSION ALLOWANCES

Environment Quality Act

(chapter Q-2, s. 31, 1st par., subpars. *b*, *c*, *d*, *e*.1, *h*, *h*.1 and *l*, s. 46.1, s. 46.5, s. 46.6, ss. 46.8 to 46.15, s. 115.27 and s. 115.34)

1. Section 2 of the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances (chapter Q-2, r. 46.1) is amended

(1) by inserting the following subparagraph after subparagraph 1 of the second paragraph:

"(1.1) sells or trades in Québec electricity generated outside Québec, for consumption, trade or sale in Québec, except electricity produced in the territory of a partner entity, if the greenhouse gas emissions attributable to the generation of the quantity of electricity acquired, calculated in accordance with the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere, are equal to or exceed 25,000 metric tonnes CO<sub>2</sub> equivalent;"

(2) by replacing "ships" in subparagraph (1) of the third paragraph by "boats".

2. The following is added after section 2:

"2.1. For the purposes of this Regulation, a person or municipality operating an enterprise in a sector of activity referred to in Appendix A and reporting for an establishment, in accordance with paragraph 1 of section 6.1 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), annual greenhouse gas emissions in a quantity equal to or greater than 10,000 but less than 25,000 metric tonnes CO<sub>2</sub> equivalent and that registers for the system for one of its establishments covered by the reporting without being required to do so, is also an emitter."

3. Section 3 of the Regulation is amended

(1) by inserting "and in section 2.1" after "section 2" in paragraph 9;

(2) by adding "per year" at the end of subparagraph *i* of subparagraph *a* of paragraph 11.

**4. Section 4 of the Regulation is amended**

(1) by inserting the following after the third paragraph:

"Documents and information relating to an application for access to the electronic system pursuant to section 10 must be kept for the entire period during which a natural person has access to the electronic system and for a minimum period of 7 years following the date on which that person no longer has access to the system.";

(2) by replacing "10" in the fourth paragraph by "11".

**5. Section 5 of the Regulation is amended by inserting "or templates" after "forms" in the first paragraph.**

**6. Section 7 of the Regulation is amended**

(1) by replacing "to which this Regulation applies" in the part preceding subparagraph 1 of the first paragraph by "referred to in section 2";

(2) in the first paragraph

(a) by replacing subparagraph 2 by the following:

"(2) a list of its directors and officers and of any persons having similar functions, with their position within the enterprise and, at the Minister's request, their work addresses;"

(b) by striking out subparagraph 5;

(c) by replacing subparagraph 6 by the following:

"(6) a list of the subsidiaries, parent legal persons and persons having control of the issuer within the meaning of the second paragraph of section 9, with the control percentage between each entity, which information may also be provided in the form of a diagram;"

(d) by replacing "the chief officer" in subparagraph 9 by "a director or any other officer, or by any other person who performs similar functions,".

**7. The Regulation is amended by inserting the following after section 7:**

**7.1.** Before a person or municipality referred to in section 2.1 registers for the system, a written notice must be sent to the Minister, not later than May 1 of the year during which the person or municipality intends to register, stating its intention.

**7.2.** Any person or municipality referred to in section 2.1 must, at the time of registering for the system, provide the Minister with the information and documents referred to in subparagraphs 1 to 3, subparagraphs *b* and *c* of subparagraph 4 and subparagraphs 6 to 9 of the first paragraph of section 7.

The person or municipality must also, at the same time, provide to the Minister, for each covered establishment carrying on an activity referred to in Table A of Part I fAppendix C, the emissions reports for the three consecutive years immediately preceding the year during which it registers, if available, as well as a verification report of its emissions report of the year preceding the year in which the person or municipality registers. If not all the reports are available, the person or municipality must at least send the report for the year preceding the year during which the person or municipality registers.”

**8.** Section 8 of the Regulation is amended in the first paragraph

(1) by striking out "and having previously obtained an identifier in accordance with section 10" in the part preceding subparagraph 1;

(2) by inserting the following after subparagraph 2 of the first paragraph:

"(2.1) in the case of a natural person, a list of the entities the person owns or controls with the control percentage between each entity, the name and contact information for the business corporations in which the person controls over 10% of the voting rights attached to all the outstanding voting securities of the business corporation, and the name and contact information of all partnerships in which the person is a partner, general partner or special partner, and in which the person provided over 10% of the common stock;"

(3) by replacing "natural person" in subparagraph 3 by "mandatary";

(4) by replacing "the chief officer" in subparagraph 4 by "a director or any other officer, or by any other person who performs similar functions,".

**9.** Section 8.1 of the Regulation is amended by replacing "or as an emitter, participant" by "or as an emitter".

**10.** Section 9 of the Regulation is amended

(1) by inserting "or subject to" after "registered for" in the part preceding subparagraph 1 of the first paragraph;

(2) by striking out "and contact information" in subparagraph 1 of the first paragraph and by adding "and, upon request, their contact information" at the end;

(3) by replacing "along with a brief description of the business relationship" in subparagraph 2 of the first paragraph by "along with any explanation allowing the business relationship to be understood;



(4) by striking out ", the name and contact information of its primary account representative" and "and the date and place of its constitution" in subparagraph 2.1 of the first paragraph;

(5) by replacing "up to" in subparagraph *b* of subparagraph 1 of the second paragraph by "more than".

**11.** The Regulation is amended by inserting the following after section 9:

**"9.1.** A person referred to in section 9 that retains the services of an advisor for the application of this Regulation must send to the Minister the name and professional contact information of the advisor, and, where applicable, the name of the advisor's employer.

A person referred to in section 9 who advises another person for the application of this Regulation must send to the Minister a list of all the persons provided with advisory services for the same purpose."

**12.** Section 10 of the Regulation is amended

(1) by replacing the part preceding paragraph 1 by the following:

"To register for the system, an emitter, participant or clearing house or, if they are not natural persons, their account representatives, must first obtain access to the electronic system by providing the Minister with the following information and documents:";

(2) by replacing "an account" in paragraph 5 by "a deposit account" and by striking out "and that an identity check was carried out" at the end of that paragraph;

(3) by adding the following paragraph at the end:

"A natural person authorized to act as an account viewing agent pursuant to section 12 must also obtain access to the electronic system in accordance with the first paragraph if the person has not already obtained access to the electronic system of a partner entity.

The account viewing agent designated by the emitter or the participant, under section 11, after they register for the system, must also obtain access to the electronic system in accordance with the first paragraph.

The emitter referred to in section 2.1, the participant, the clearing house or the account viewing agent or, if they are not natural persons, their account representatives, that requests access to the electronic system under this section must, in order for the request to be admissible, send the documents listed in the first paragraph in the year following the request.

A person whose access to the electronic system is obtained from a partner entity may not, for the time during which access is active, obtain new access from the Minister."

**13.** Section 11 of the Regulation is amended

(1) by striking out " having previously obtained an identifier in accordance with section 10" and "At least 1 of the representatives must be domiciled in Québec. " in the first paragraph;

(2) by inserting the following after the second paragraph:

"If none of the account representatives is domiciled in Québec, the issuer or participant must, in addition to designating a primary account representative, designate a mandatory domiciled in Québec.";

(3) in the third paragraph

(a) by replacing "designation" by "designations" in the part preceding subparagraph 1;

(b) by striking out "and of its chief officer or chief financial officer" in subparagraph 1;

(c) by adding "and of the mandatory, where applicable" at the end of subparagraph 2;

(d) by inserting "and the mandatory, where applicable" in subparagraph 3 after "account representatives";

(e) by inserting "and by the mandatory, where applicable," after "each of the account representatives" in subparagraph 5;

(4) by adding the following after the third paragraph:

"The Minister must be provided with the attestation referred to in subparagraph 4 of the fourth paragraph within three months after the date on which it is made.";

(5) by striking out ", at least one of whom is domiciled in Québec" in the fourth paragraph;

(6) by adding the following at the end:

"At the written request of an issuer or participant, the Minister may, before a request for revocation of mandate is sent to the Minister by the issuer or participant under the seventh paragraph, where the urgency of the situation warrants it, withdraw access to the electronic system from one of its account representatives."

**14.** Section 12 of the Regulation is amended

(1) by striking out “have previously obtained an identifier in accordance with section 10 or with the corresponding rules and regulations of a partner entity” in the first paragraph;

(2) by replacing “the chief officer or chief financial officer” in subparagraph 3 of the second paragraph by “a director or any other officer, or any other person who performs similar functions,”.

**15.** Section 13 of the Regulation is amended by replacing “a United States court” in the fourth paragraph by “any foreign court”.

**16.** Section 14 is amended by inserting “that apply to it” after “7 to 13” in the part preceding paragraph 1.

**17.** Section 14.1 of the Regulation is amended by replacing “sections 7, 8 and 9” by “sections 7, 8, 9 and 9.1”.

**18.** Section 14.2 of the Regulation is amended

(1) by replacing “of the participant’s chief officer or chief financial officer” in paragraph 3 by “of one of the participant’s account representatives, of a director or any other officer, or any other person who performs similar functions,”;

(2) by adding the following at the end:

“When the Minister notes, in the enterprise register, that a participant’s registration has been cancelled for at least 3 years, the Minister notifies the participant that, after 30 days, the Minister may close the participant’s account and terminate the participant’s registration if the participant provides no valid reason for maintaining the account. When the account is closed, if it still contains emission allowances, the Minister may recover them

(1) by transferring the emission units in the account to the auction account;

(2) by transferring the offset credits and early reduction credits to the retirement account; and

(3) by transferring the reserve units to the reserve account.”.

**19.** Section 15 of the Regulation is amended

(1) by replacing the part of the first paragraph preceding subparagraph 1 by the following:

“The Minister may close an emitter’s compliance account and transfer the emission allowances recorded in it to the emitter’s general account”;

(2) by replacing "for over 5 years" in subparagraph 1 of the first paragraph, by "or, as the case may be, section 19.1, the emitter has met all the requirements of Chapter III, and the offset credits placed in the account by a partner entity and used by the emitter to cover GHG emissions can no longer be cancelled";

(3) by replacing subparagraph 3 of the first paragraph by the following:

"(3) if the emitter is closing a covered establishment, operates no other covered establishments, meets the conditions of section 18, has met all the requirements of Chapter III, and the offset credits placed in the account by a partner entity and used by the emitter to cover GHG emissions can no longer be cancelled."

**20.** Section 16 of the Regulation is amended

(1) by striking out "and contains no emission allowances";

(2) by adding the following at the end:

"When the participant's general account still contains emission allowances, the Minister may, when closing the account, recover the allowances

(1) by transferring the emission units in the account to the auction account;

(2) by transferring the offset credits and early reduction credits to the retirement account; and

(3) by transferring the reserve units to the reserve account."

**21.** Section 17 of the Regulation is amended by adding the following at the end:

"The new operator is required, in place of the former operator, to meet all the requirements that applied to the former operator pursuant to this Regulation."

**22.** Section 18.1 is amended by replacing "the chief officer" in paragraph 5 by "a director or any other officer, or any other person who performs similar functions,".

**23.** Section 19 of the Regulation is amended

(1) in the first paragraph

(a) by replacing "to which this Regulation applies" by "referred to in section 2";

(b) by replacing "referred to in section 2" by "referred to in the same section";

(2) by adding the following paragraph after the first:

“As for emitters referred to in subparagraph 2 of the second paragraph of section 2, they are bound by the obligation provided for in the first paragraph until 31 December of the first year covered by an enterprise’s verified emissions report, sent to the Minister, in which the enterprise’s GHG emissions are equal to zero.”;

(3) by replacing subparagraph 3 of the second paragraph by the following:

“(3) in the case where an emitter’s verified emissions are equal to or greater than the emissions threshold during a year after the year mentioned in subparagraph 1, beginning on 1 January of the year following the year in which the first report for emissions equal to or greater than the threshold, and for the years that follow 2020, beginning on 1 January of the year in which an emitter’s verified emissions reach or exceed the threshold.”;

(4) by replacing "on 1 January of the year following the year in which the first report of verified emissions for an establishment, including a new facility, is submitted and includes the GHG emissions from the new facility" in subparagraph 4 of the second paragraph by "in the year in which it becomes operational”;

(5) by inserting ", in place of the former operator," after "is required " in the third paragraph.

**24.** The following is added after section 19:

**“19.0.1.** An emitter referred to in section 2.1 is bound, in accordance with the terms and conditions in this Chapter, to cover each tonne CO<sub>2</sub> equivalent of the verified emissions of an establishment referred to in that section, until 31 December of the last year of the compliance period during which the emitter informs the Minister of its intent to request that the Minister cancel its registration in the system.

The emitter is bound by the obligation provided for in the first paragraph as of the following dates:

(1) where the emitter’s registration in the system is done on or before 1 September of a given year, as of 1 January following that date;

(2) where the emitter’s registration in the system is done after 1 September of a given year, as of 1 January of the second year following the year of registration in the system.”.

**25.** Section 25 of the Regulation is amended by adding "or is a bundled transfer" at the end of the second paragraph.

**26.** Section 27 of the Regulation is amended by adding the following at the end:

"An emitter or a participant may retire no more than 10,000 emission units per year.”.

**27.** Section 32 of the Regulation is amended

(1) by inserting "business" after "5" in the sixth paragraph;

(2) by replacing "and pays them into the Minister's auction account for sale at a later date." in the sixth paragraph by the following:

"in the following order:

(1) the emission units from the Minister's reserve account;

(2) the early reduction credits;

(3) the other emission units, chronologically, from the least recent to the most recent, according to their vintage.";

(3) by adding the following paragraph at the end:

"The units referred to in subparagraphs 1 and 3 of the sixth paragraph are transferred to the Minister's auction account, while the early reduction credits are transferred to the retirement account."

**28.** Section 40 of the Regulation is amended

(1) by replacing the second paragraph by the following:

"The estimated total quantity is calculated in accordance with Part II of Appendix C using, depending on the year concerned, equation 1-1 or 7-1, and replacing

(1) the factor "PRi j" in equations 2-1, 2-9, 3-1, 3-10, 4-1, 4-8, 4-9, 4-15, 4-25, 4-31, 5-1, 5-2, 6-2, 6-7, 6-8, 6-9, 6-12, 6-13, 6-15, 8-1, 9-1, 10-1, 11-1, 13-1, 14-1, 16-1, 16-3, 16-7 and 16-9 by the factor "PRi j -2", which corresponds to the total quantity of reference units produced or used in the year 2 years before the allocation year;

(2) the factors "EC<sub>TOTAL i</sub>", "GHG<sub>FP i</sub>" and "GHG<sub>O i</sub>" in equations 4-21, 4-37, 6-15, 11-5 and 14-5 by the factors "EC<sub>TOTAL i-2</sub>", "GHG<sub>FP i-2</sub>" and "GHG<sub>O i-2</sub>", which correspond respectively to the energy consumption, fixed process emissions and other emissions in the year 2 years before the allocation year;

(3) the factors "EC<sub>NF TOTAL i</sub>", "GHG<sub>NF FP i</sub>" and "GHG<sub>NF O i</sub>" in equation 6-6-A by the factors "EC<sub>NF TOTAL i-2</sub>", "GHG<sub>NF FP i-2</sub>" and "GHG<sub>NF O i-2</sub>", which correspond respectively to the energy consumption, fixed process emissions and other emissions in the year 2 years before the allocation year.";

(2) by adding the following paragraph after the fourth paragraph:

"When the operator of a covered establishment changes before 14 January of a given year, the emission units referred to in the fourth paragraph are allocated to the new operator if, not later than the business day immediately before that date, the former operator notified the Minister of the change pursuant to the first paragraph de section 17."

**29.** Section 41 of the Regulation is amended

(1) by replacing "of the vintage of the units allocated under the fourth paragraph of section 40 or of a prior vintage" in the fourth paragraph by "of the vintage of the year for which the allocation referred to in the fourth paragraph of section 40 was made or of a prior vintage";

(2) by adding the following paragraph at the end:

"When the operator of a covered establishment changes before 14 September of a given year, the new operator receives the allocation provided for in the third paragraph or, where applicable, meets the requirements of the fourth paragraph, if, not later than the business day immediately preceding that date, the former operator has notified the Minister of the change under the first paragraph of section 17."

**30.** Section 44 of the Regulation is struck out.

**31.** Section 46 of the Regulation is amended

(1) by inserting "in which the emitter or participant wishes to take part" after "units" in the part of the second paragraph preceding subparagraph 1;

(2) by striking out the third paragraph.

**32.** Section 49 of the Regulation is amended

(1) by replacing "tel qu'illustré par la formule" in the French text of subparagraph 2 of the third paragraph by "conformément à l'équation";

(2) by replacing subparagraph 2 of the fourth paragraph by the following:

"(2) the joint minimum price of the emission units is the higher, on the day of the auction, of the price set under the third paragraph and the price set by the partner entity, at the daily average exchange rate published on the website of the Bank of Canada on the day prior to the sale."

**33.** Section 51 of the Regulation is amended by replacing the second paragraph by the following:

"In addition, a bidder that retains the services of an advisor to develop its bidding strategy must ensure that the advisor does not disclose any of the information listed in the first paragraph and does not coordinate the bidding strategy of any other bidder."

**34.** Section 58 of the Regulation is replaced by the following:

"**58.** Until 31 December 2020, the emission units placed in the reserve account are divided equally into 3 categories and are sold at the following prices, increased annually by 5% since 2014 and adjusted from that date in the manner provided for in section 83.3 of the Financial Administration Act (chapter A-6.001):

- (1) for reserve emission units in Category A, \$40 per emission unit;
- (2) for reserve emission units in Category B, \$45 per emission unit;
- (3) for reserve emission units in Category C, \$50 per emission unit.

As of 1 January 2021, the emission units referred to in the first paragraph form a single category and for the year 2021, their price is calculated as per the equation below:

$$PR_{2021} = PM_{2021} + M_{2021}$$

Where:

$PR_{2021}$  = Price of the emission units of the reserve for 2021;

$PM_{2021}$  = Minimum price of the emission units that are auctioned for the year 2021;

$M_{2021}$  = Fixed amount for the year 2021, calculated according to the equation in the third paragraph.

The fixed amount referred to in the equation in the second paragraph is calculated according to the following equation:

$$M_{2021} = (PR_{c, 2020} - PM_{2020}) \times (1 + T_{i2021})$$

Where:

$M_{2021}$  = Fixed amount for the year 2021;

$PR_{c, 2020}$  = Price of the emission units in the category C reserve, for the year 2020;

$PM_{2020}$  = Minimum price of the emission units auctioned for the year 2020;

$T_{i2021}$  = Annual adjustment rate for the year 2021, calculated in the manner set out in section 83.3 of the Financial Administration Act (chapter A-6.001).



As of 1 January of the year 2022, the price of emission units in the reserve is calculated according to the following equation:

$$PR_t = PM_t + M_{t-1} \times (1+T_i)$$

Where:

$PR_t$  = Price of the emission units in the reserve for the year  $t$ ;

$t$  = current year;

$PM_t$  = Minimum price of the emission units auctioned for the year  $t$ ;

$M_{t-1}$  = Fixed amount of the year preceding year  $t$ ;

$T_i$  = Annual adjustment rate for the current year, calculated in the manner set out in section 83.3 of the Financial Administration Act (chapter A-6.001).

However, beginning on 1 January 2021, although the price of the emission units is calculated in accordance with the third and fourth paragraphs, the units are not necessarily sold at that price, but at the higher of the price set by partner entities and the price calculated pursuant to those paragraphs, according to the daily average exchange rate of the Bank of Canada published on its website, in force on the fifth business day preceding the date of publication of that price on the Department's website. That publication is done yearly on the first business day of December."

**35.** Section 59 of the Regulation is amended by striking out the second paragraph.

**36.** Section 68 is amended by replacing "the chief officer" in paragraph 9 by "a director or any other officer, or any other person who performs similar functions,"

**37.** Section 70.2 of the Regulation is amended by replacing the second paragraph by the following:

"Only projects implemented in Québec are eligible for the issue of offset credits under the first paragraph, except if otherwise provided for in a protocol.

Subject to any specific period provided for in a protocol, an offset credit project must be conducted during a continuous period of not more than 10 years. The period constitutes, for the purposes of this Chapter, a crediting period for the issue of offset credits, also called a "crediting period", during which the project remains eligible until the expiry of the period."

**38.** Section 70.5 of the Regulation is amended

(1) by replacing "second" in the part preceding subparagraph 1 of the first paragraph by "third";

(2) by inserting the following after the subparagraph 9 of the first paragraph:

"In the case of an offset credit project that began before a protocol applicable to that type of project was included in Appendix D, the promoter must send an application for registration to the Minister in the 3 years following the date of coming into force of such a protocol.";

(3) by replacing "reporting period" in the second paragraph by "year";

(4) by replacing the third paragraph by the following:

"In the case of a promoter referred to in the second paragraph, the first project report under the third paragraph must be sent to the Minister within 6 months from the date of registration and must cover the whole period that began on or after 1 January 2007 and ended on the date of registration.".

**39.** The Regulation is amended by striking out section 70.6.

**40.** Section 70.7 of the Regulation is amended by replacing "second" in subparagraph 1 of the second paragraph by "third".

**41.** Section 70.8 of the Regulation is amended by replacing "documents referred to in the second paragraph of section 70.5" in the first paragraph by "documents referred to in the third paragraph of section 70.5".

**42.** Section 70.12 of the Regulation is amended by replacing "second" in the second paragraph by "third".

**43.** Section 70.13 of the Regulation is amended by replacing "second" in subparagraph 1 of the first paragraph by "first".

**44.** The Regulation is amended by inserting the following after section 70.13:

**"70.13.1.** Every promoter must, when forwarding the first project report provided for in the third paragraph of section 70.5, send the first issuance request for offset credits to the Minister.

The promoter may then ask the Minister to issue offset credits at any time during the crediting period. The promoter must, however, send the application not later than 6 months following the end of the issuance period concerned.

Every issuance request for offset credits must include all the information and documents required by the protocol applicable to the project. In addition, it must include a declaration from the promoter attesting

(1) that the promoter is the sole owner of the GHG emission reductions resulting from the project; if several parties are involved in the project, a copy of an agreement indicating that the parties have transferred their rights with respect to the reductions to the promoter must be included; and

(2) that the promoter has not applied for credits for the GHG emission reductions targeted by the project under another GHG emission reduction program, and will not make such an application once the project is registered.

"Issuance period" means the period of time during a crediting period when the promoter may apply for the issue of offset credits for which such an application has not yet been made."

**45.** Section 70.14 of the Regulation is amended

(1) by striking out the first paragraph;

(2) by replacing the part of the second paragraph preceding subparagraph 1 by the following:

"Every issuance request for offset credits must be submitted with a project report covering the most recent issuance period and include the following information and documents:";

(3) by inserting "issuance" after "during the" in subparagraph 3 of the second paragraph;

(4) by striking out the third, fourth and fifth paragraphs.

**46.** The Regulation is amended by inserting the following after section 70.15:

**70.15.1.** In addition to the requirements of the standards ISO 14064-3 and ISO 14065 concerning conflicts of interest, the promoter must ensure that none of the following situations exists between the promoter, its officers, the verification organization and the members of the verification team:

(1) during the 3 years preceding the year of issue, one of the members of the verification team was employed by the promoter;

(2) a member of the verification team or a close relative of that member has personal ties with the promoter or one of its officers;

(3) during the 3 years preceding the year of issue, one of the members of the verification team or one of the subcontractors who took part in the verification provided the promoter with one of the following services:

(a) the design, development, commissioning or maintenance of a data inventory or data management system for GHG emissions from the establishment or facility of the promoter or, where applicable, for data on electricity or fuel transactions;

(b) the development of GHG emission factors or other data that were used for quantification or for the issuance request for offset credits under this Regulation;

(c) consultation concerning GHG emissions reductions, and in particular the design of an energy efficiency or renewable energy project and the assessment of assets relating to greenhouse gas sources;

(d) the preparation of manuals, guides or procedures connected with the promoter's GHG emissions reports under the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere;

(e) consultation in connection with a greenhouse gas emission allowances market, including

i. brokerage, with or without registration, while acting as a promoter or subscriber on behalf of the promoter;

ii. advice concerning the suitability of a GHG emissions transaction;

iii. the holding, purchase, sale, negotiation or withdrawal of emission allowances referred to in the second paragraph of section 46.6 of the Environment Quality Act (chapter Q-2);

(f) a consultation in the field of health and safety and environmental management, including the consultation leading to ISO 14001 certification;

(g) actuarial consulting, bookkeeping or other consulting services relating to accounting documents or financial statements;

(h) a service connected with the process data management systems used in an offset credit project;

(i) an internal audit of GHG emissions;

(j) a service provided in connection with litigation or an inquiry into GHG emissions;

(k) a consultation for a GHG emissions reduction project in accordance with this Regulation, including any notice concerning the project's regulatory compliance;

(4) the person at the verification organization responsible for carrying out an internal review of the verification process, in accordance with the standards ISO 14065 and ISO 14064-3, has previously provided a verification or other service referred to in subparagraph 3 to the promoter during the issue year or the current year.

The existence of one of the situations described in the first paragraph is considered to be a conflict of interest that invalidates the verification report.

For the purposes of this section, a close relative of a member of the verification team is that person's spouse, child, spouse's child, mother or father, mother's or father's spouse, child's spouse or spouse's child's spouse.

**47.** Section 70.16 of the Regulation is amended by inserting ", confirming the implementation of the project and the proper operation of the measurement and monitoring instruments," after "visit" in paragraph 2.

**48.** Section 70.17 of the Regulation is amended

(1) by adding the following at the end of subparagraph 2.1 of the first paragraph:

", along with the verification plan and all the exchanges of information between the promoter and the verifier for project verification purposes";

(2) by replacing subparagraph 5 of the first paragraph by the following:

"(5) a list of any errors, omissions or inaccuracies noted by the verifier at the time of the project verification or project report or relating to the data, information or methods used, including the following elements:

(a) the date on which the promoter was informed of the errors, omissions or inaccuracies;

(b) a description of any errors, omissions or inaccuracies;

(c) where applicable, a description of the action taken by the promoter to correct any errors, omissions or inaccuracies and the date on which the action was taken;

(d) for errors, omissions or inaccuracies that cannot be corrected, an assessment of the impact of each of them on the quantity of GHG emission reductions eligible for the issue of offset credits;"

(3) by striking out subparagraph 6 of the first paragraph;

(4) by replacing "the corrections" in subparagraph 7 of the first paragraph by "any correction".

**49.** Section 70.18 of the Regulation is replaced by the following:

**"70.18.** The promoter must, before submitting a project report to the Minister in accordance with section 70.14, correct any error, omission or inaccuracy identified during the verification, if correction is possible."

**50.** Section 70.19 of the Regulation is replaced by the following:

**"70.19.** A verification report of a project report is deemed positive if the verifier can attest with reasonable assurance that the project has been implemented in accordance with this Regulation."

**51.** Section 70.20 of the Regulation is amended

(1) by replacing "proportion" in the first paragraph by "provision";

(2) by inserting "of an issuance request along with" after "receipt" in the first paragraph.

**52.** Section 70.21 of the Regulation is amended

(1) by replacing the part of the first paragraph preceding subparagraph 1 by the following:

"**70.21.** The Minister may require the promoter to replace any offset credit issued for a project under the first paragraph of section 70.20 in the following cases:";

(2) by replacing the second sentence of the third paragraph by the following:

"The Minister also transfers the number of offset credits paid into the environmental integrity account for the project under the second paragraph of section 70.20, in proportion to the number of offset credits replaced by the promoter, into the invalidation account to be extinguished."

**53.** Section 71 is amended in paragraph 1 by inserting "the second paragraph of section 19.0.1," after "section 19,".

**54.** Section 73 is amended in paragraph 1 by inserting "the first paragraph of section 19.0.1," after "section 19,".

**55.** Section 74 is amended by inserting "the second paragraph of section 19.0.1," after "section 19," in the part preceding subparagraph 1 of the first paragraph.

**56.** Section 75.4 is amended by inserting "the first paragraph of section 19.0.1," after "section 19,".

**57.** The Regulation is amended by inserting the following after section 75.4:

**"CHAPTER I.2  
OTHER SANCTIONS**

"**75.5.** The Minister may suspend or cancel the registration for the system of a person other than an emitter referred to in section 2, when the Minister has reasonable grounds to believe that the integrity of the system is threatened."

**58.** Appendix A of the Regulation is amended by striking out ", except activities to process waste by dismembering and related activities" in the fifth line of the table.

**59.** Appendix B.1 of the Regulation is amended by adding the following at the end:

"2. Province of Ontario

The emission allowances issued by the Province of Ontario pursuant to the document "O. Reg. 144/16: The cap and trade program", are deemed to be equivalent to the emission allowances issued pursuant to this Regulation, based on the correspondence indicated in the following table for each type of emission allowance:

	Québec	Ontario
Types of emission allowance (each having a value corresponding to 1 metric tonne CO <sub>2</sub> equivalent)	Emission unit	Ontario emission allowance
	Early reduction credit	Ontario early reduction credit
	Offset credit	Ontario offset credit

**60.** Division A of Part II of Appendix C of the Regulation is amended

(1) by inserting, in the definition of "covered establishment as of 2013", " , other than those to which in paragraphs 2 and 4 to 6 apply," after "establishment";

(2) by replacing "an establishment to which paragraph 1 applies" in the definition of "covered establishment after 2013" by "establishments to which paragraphs 1 and 3 to 6 apply";

(3) by adding the following definitions at the end:

"(3) "covered establishment as of 2018" means an establishment, other than an establishment to which paragraphs 1, 2 and 4 to 6 apply, for which the verified emissions are equal to or exceed the emissions threshold in 2016 or in a subsequent year;

(4) "establishment covered prior to 2021" means an establishment referred to in paragraph 1, 2 or 3, that is still targeted by the cap-and-trade system for greenhouse gas emission allowances in 2021;

(5) "covered establishment as of 2021" means an establishment, other than an establishment to which paragraphs 1 to 4 and 6 apply, for which the verified emissions are equal to or exceed the emissions threshold in 2019 or in a subsequent year;

(6) "covered establishment referred to in section 2.1" means an establishment referred to in section 2.1 for which the reported annual GHG emissions, excluding the emissions referred to in subparagraphs 2, 3 and 3.1 of the second paragraph of section 6.6 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), are equal to or greater than 10,000 but less than 25,000 in metric tonnes CO<sub>2</sub> equivalent."

**61.** Division D of Part II of Appendix C of the Regulation is amended

(1) by replacing "fourth" in the part of the third paragraph preceding subparagraph 1 by "fifth" and by inserting "referred to in section 2" after "an emitter";

(2) by replacing, in subparagraph 4 of the third paragraph, "using equations 1-1, 5-1 and 5-2" by "using equation 1-1 and 5-1 for the years 2013 to 2014, using equation 5-2 for the years 2015 to 2018 and using equation 5-3 for the years 2018 to 2020;

(3) by inserting the following after the subparagraph 4 of the third paragraph:

"(5) in the case of a covered establishment as of 2018 that possesses all the GHG emissions data for years  $d-2$  to  $d$  and that is not considered on a sectoral basis, using equations 1-1 and 4-9 to 4-14;

(6) in the case of a covered establishment as of 2018 that does not possess all the GHG emissions data for years  $d-2$  to  $d$ , that is not considered on a sectoral basis and for which, as the case may be,

(a) the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are all available, using equations 1-1 and 4-15 to 4-20;

(b) the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are not all available, using equations 1-1, 4-21 and 4-22, until the data are all available;

(7) in the case of a covered establishment as of 2018 that does not possess a determined reference unit, that is not considered on a sectoral basis and for which, as the case may be,

(a) the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are all available, using equations 1-1 and 4-23 and 4-24;

(b) the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are not all available, using equations 1-1, 4-21 and 4-22, until those data are all available;



(8) in the case of an establishment covered prior to the year 2021 that is not considered on a sectoral basis, using equations 7-1 and 8-1 to 8-10 for years 2021 to 2023;

(9) in the case of an establishment covered prior to the year 2021 that produces cement, prebaked anodes or aluminum by using a prebaked anode technology other than the side-worked prebaked anode technology, using equations 7-1 and 9-1 for years 2021 to 2023;

(10) in the case of a covered establishment as of 2021 that possesses all the GHG emissions data for years  $d-2$  to  $d$  and that is not considered on a sectoral basis, using equations 7-1 and 10-1 to 10-4;

(11) in the case of a covered establishment as of 2021 that does not possess all the GHG emissions data for years  $d-2$  to  $d$ , that is not considered on a sectoral basis and for which, as the case may be,

(a) the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are all available, using equations 7-1 and 11-1 to 11-4;

(b) the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are not all available, using equations 7-1, 11-5 and 11-6, until the data are all available;

(12) in the case of a covered establishment as of 2021 that does not possess a determined reference unit and for which, as the case may be,

(a) the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are all available, using equations 7-1, 12-1 and 12-2;

(b) the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are not all available, using equations 7-1, 11-5 and 11-6, until the data are all available;

(13) in the case of an establishment that produces liquid aluminum by using a side-worked prebaked anode technology, using equations 7-1 and 8-1 to 8-7 for years 2021 to 2023;”;

(4) by adding the following after the third paragraph:

“Subject to the fifth paragraph, the total quantity of GHG emission units allocated without charge to an emitter referred to in section 2.1 is calculated in accordance with the following methods:

(1) in the case of a covered establishment referred to in section 2.1 that possesses all the GHG emissions data for years  $e-3$  to  $e-1$  and that is not considered on a sectoral basis, using equations 1-1 and 4-25 to 4-30;

(2) in the case of a covered establishment referred to in section 2.1 that is not considered on a sectoral basis, that does not possess all the GHG emissions data for years e-3 to e-1 and for which, as the case may be,

(a) the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are all available, using equations 1-1 and 4-31 to 4-36;

(b) the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are not all available, using equations 1-1 and 4-37 and 4-38, until the data are all available;

(3) in the case of a covered establishment referred to in section 2.1 that does not possess a determined reference unit, that is not considered on a sectoral basis and for which, as the case may be,

(a) the GHG emissions data, for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are all available, using equations 1-1, 4-39 and 4-40;

(b) the GHG emissions data, for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are not all available, using equations 1-1 and 4-37 and 4-38, until the data are all available;

(4) in the case of a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and that possesses all the GHG emissions data for years e-3 to e-1, using equations 7-1 and 13-1 to 13-4;

(5) in the case of a covered establishment referred to in section 2.1 that is not considered on a sectoral basis, that does not possess all the GHG emissions data for years e-3 to e-1 and for which, as the case may be,

(a) the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are all available, using equations 7-1, 14-1 and 14-4;

(b) the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are not all available, using equations 7-1, 14-5 and 14-6, until the data are all available;

(6) in the case of a covered establishment referred to in section 2.1 that does not possess a determined reference unit and for which, as the case may be,

(a) the GHG emissions data, for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are all available, using equations 7-1, 15-1 and 15-2;

(b) the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are not all available, using equations 7-1, 14-5 and 14-6, until the data are all available;";

(5) by adding “for the years 2013 to 2020 and using equations 6-10.1 and 6-10.2 for the years 2021 to 2023” at the end of subparagraph 4 of the fourth paragraph;

(6) by inserting, in subparagraph 5 of the fourth paragraph, “and the production of a new reference unit” after “new facility”;

(7) by adding “for the years 2013 to 2020 and using equation 6-11.1 for the years 2021 to 2023” at the end of subparagraph 7 of the fourth paragraph;

(8) by adding “for the years 2013 to 2020 and using equation 6-14 for the years 2021 to 2023” at the end of subparagraph 8 of the fourth paragraph;

(9) by replacing the fifth paragraph by the following:

“To be considered in the calculation of emission units allocated without charge, any change to the information provided for in subparagraph 4 of the first paragraph of section 7 provided by the emitter when registering for the system must be sent to the Minister, together with any supporting document, not later than 1 June following the end of the compliance period affected by the change.”;

(10) by adding the following after the fifth paragraph:

“Any change sent to the Minister within the time limit prescribed in the fifth paragraph applies from the beginning of the compliance period referred to in that paragraph.”;

(11) by inserting “for the years 2013 to 2020” at the end of the heading of division 1;

(12) by replacing equation 2-8 by the following:

**“Equation 2-8 Calculation of the intensity target of GHG emissions by type of activity at an establishment that is not considered on a sectoral basis for year 2020**

$$I_{2020 j} = I_{FP 2020 j} + I_{C 2020 j} + I_{O 2020 j}$$

Where:

$I_{2020 j}$  = Intensity target of GHG emissions attributable to type of activity  $j$  at the establishment for year 2020, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$I_{FP 2020 j}$  = Intensity of fixed process emissions calculated for year 2020 for type of activity  $j$ , using equation 2-8.1;

$I_{C\ 2020\ j}$  = Intensity of combustion emissions calculated for year 2020 for type of activity  $j$ , using equation 2-8.2;

$I_{O\ 2020\ j}$  = Intensity of other emissions calculated for year 2020 for type of activity  $j$ , using equation 2-8.3.

**Equation 2-8.1 Calculation of the intensity target of fixed process emissions by type of activity at an establishment that is not considered on a sectoral basis for year 2020**

$$I_{FP\ 2020\ j} = I_{FP\ av\ j}$$

Where:

$I_{FP\ 2020\ j}$  = Intensity of fixed process emissions calculated for year 2020 for type of activity  $j$ ;

$j$  = Type of activity;

$I_{FP\ av\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  for the establishment for the period 2007-2010, calculated using equation 2-3, in metric tonnes CO<sub>2</sub> equivalent per reference unit.

**Equation 2-8.2 Calculation of the intensity target of combustion emissions by type of activity at an establishment that is not considered on a sectoral basis for year 2020**

$$I_{C\ 2020\ j} = R \times \min[(0.95)I_{C\ min\ j}; (0.90)I_{C\ av\ j}]$$

Where:

$I_{C\ 2020\ j}$  = Intensity of combustion emissions calculated for year 2020 for type of activity  $j$ ;

$j$  = Type of activity;

$R$  = Intensity multiplication factor for combustion emissions at the establishment calculated using equations 2-4 and 2-5 or, in the case of an establishment producing pulp and paper described by NAICS code 3221 or 321216, a value of 1;

$\min$  = Minimum value, representing the lesser of the 2 elements calculated;

0.95 = Proportion corresponding to 95% of the minimum intensity of combustion emissions;

$I_{C\ min\ j}$  = Minimum annual intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years 2007 to 2010 inclusively, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

0.90 = Proportion corresponding to 90% of the average intensity of combustion emissions;

$I_{C\ av\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years 2007 to 2010, calculated using equation 2-6, in metric tonnes CO<sub>2</sub> equivalent per reference unit.

**Equation 2-8.3 Calculation of the intensity target of other emissions by type of activity at an establishment that is not considered on a sectoral basis for year 2020**

$$I_{O\ 2020\ j} = \min[(0.95)I_{O\ min\ j}; (0.90)I_{O\ av\ j}]$$

Where:

$I_{O\ 2020\ j}$  = Intensity of other emissions calculated for year 2020 for type of activity  $j$ ;

$j$  = Type of activity;

min = Minimum value, representing the lesser of the 2 elements calculated;

0.95 = Proportion corresponding to 95% of the minimum intensity of other emissions;

$I_{O\ min\ j}$  = Minimum annual intensity of other emissions attributable to type of activity  $j$  at the establishment for years 2007 to 2010 inclusively, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

0.90 = Proportion corresponding to 90% of the average intensity of other emissions;

$I_{O\ av\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years 2007 to 2010, calculated using equation 2-7, in metric tonnes CO<sub>2</sub> equivalent per reference unit.";

(13) by inserting "for establishments covered prior to 2018" at the end of the title to Division 4.2;

(14) by inserting "but prior to 2018" after "2013" in the title of Equation 4-8;

(15) by inserting "for establishments covered as of the year 2013 and after the year 2013" at the end of the heading of Division 4.2;

(16) by inserting the following after Division 4.2:

#### "4.3. Calculation method for the years 2018 to 2020 for covered establishments as of 2018

"4.3.1. Covered establishment as of 2018 that is not considered on a sectoral basis for the years 2018 to 2020 and that possesses all the GHG emissions data for years  $d-2$  to  $d$

**Equation 4-9 Calculation of the number of GHG emission units allocated without charge by type of activity for a covered establishment as of 2018 that is not considered on a sectoral basis for the years 2018 to 2020 and that possesses GHG emissions data for years  $d-2$  to  $d$**

$$A_{ij} = [I_{FP\ dep\ j} \times a_{FP,i} + R \times I_{C\ dep\ j} \times a_{C,i} + I_{O\ dep\ j} \times a_{O,i}] \times P_{Ri\ j}$$

Where:

$A_{ij}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at an establishment for year  $i$ ;

$i$  = Each year in the period 2018-2020 for which the emitter is required to cover GHG emissions;

$j$  = Type of activity;

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , calculated using equation 4-10, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$R$  = Intensity multiplication factor for combustion emissions at the establishment, calculated using equation 4-11 or, in the case of an establishment producing pulp and paper described by NAICS code 3221 or 321216, a value of 1;

$I_{C\ dep\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , calculated using equation 4-13, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$I_{O dep j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , calculated using equation 4-14, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$P_{Ri j}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-10 Calculation of the intensity of fixed process emissions by type of activity for a covered establishment as of 2018 that is not considered on a sectoral basis**

$$I_{FP dep j} = \frac{\sum_{i=(d-2)}^d GHG FP_{ij}}{\sum_{i=(d-2)}^d P_{Rij}}$$

Where:

$I_{FP dep j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d-2$ ,  $d-1$  and  $d$ ;

$GHG FP_{ij}$  = Fixed process emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Ri j}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-11 Calculation of the intensity multiplication factor for combustion emissions at a covered establishment as of 2018 that is not considered on a sectoral basis**

$$R = 0.80 \times GFR + (1 - GFR)$$

Where:

R = Intensity multiplication factor for combustion emissions at the establishment;

0.80 = Proportion corresponding to 80% of the GFR ratio;

GFR = Ratio between the total combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, and total combustion emissions at the establishment, calculated using equation 4-12.

**Equation 4-12 Calculation of the GFR ratio for a covered establishment as of 2018 that is not considered on a sectoral basis**

$$GFR = \frac{\sum_{i=(d-2)}^{(d)} GHG\ GFR_i}{\sum_{i=(d-2)}^{(d)} GHG\ C_i}$$

Where:

GFR = Ratio between the total combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, and total combustion emissions at the establishment;

d = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

i = Years  $d-2$ ,  $d-1$  and  $d$ ;

GHG  $GFR_i$  = Combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, at the establishment during year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

GHG  $C_i$  = Total combustion emissions attributable to the use of fuel at the establishment during year  $i$ , in metric tonnes CO<sub>2</sub> equivalent.

**Equation 4-13 Calculation of the intensity of combustion emissions by type of activity of a covered establishment as of 2018 that is not considered on a sectoral basis**

$$I_{C\ dep\ j} = \frac{\sum_{i=(d-2)}^d GHG\ C_{ij}}{\sum_{i=(d-2)}^d P_{Rij}}$$



Where:

$I_{C\ dep\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d-2$ ,  $d-1$  and  $d$ ;

GHG  $C_{i\ j}$  = Combustion emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Ri\ j}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-14 Calculation of the intensity of other emissions by type of activity of a covered establishment as of 2018 that is not considered on a sectoral basis**

$$I_{O\ dep\ j} = \frac{\sum_{i=(d-2)}^d GHG\ O_{ij}}{\sum_{i=(d-2)}^d P_{Rij}}$$

Where:

$I_{O\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d-2$ ,  $d-1$  and  $d$ ;

GHG  $O_{ij}$  = Other emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Ri\ j}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**"4.3.2. Covered establishment as of 2018 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

The total quantity of GHG emission units allocated without charge to an emitter is calculated in accordance with the following methods:

(1) in the case of an establishment for which the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are all available, using equation 4-15;

(2) in the case of an establishment for which the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are not all available, using equation 4-21.

**Equation 4-15 Calculation of the number of GHG emission units allocated without charge by type of activity for a covered establishment as of 2018 that is not considered on a sectoral basis for the years 2018 to 2020 and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

$$A_{ij} = [I_{FP\ dep\ j} \times a_{PF,i} + R \times I_{C\ dep\ j} \times a_{C,i} + I_{A\ dep\ j} \times a_{O,i}] \times P_{Ri\ j}$$

Where:

$A_{ij}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at an establishment for year  $i$ ;

$i$  = Each year in the period 2018-2020 for which the emitter is required to cover GHG emissions;

$j$  = Type of activity;

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, calculated using equation 4-16, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$a_{PF,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$R$  = Intensity multiplication factor for combustion emissions at the establishment calculated using equation 4-17 and equation 4-18 or, in the case of an establishment producing pulp and paper described by NAICS code 3221 or 321216, a value of 1;

$I_{C\ dep\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, calculated using equation 4-19, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$I_{O\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, calculated using equation 4-20, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-16 Calculation of the intensity of fixed process emissions by type of activity for a covered establishment as of 2018 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

$$I_{FP\ dep\ j} = \frac{\sum_{i=(d)}^{d+2} GHG\ FP_{ij}}{\sum_{i=(d)}^{d+2} P_{Rij}}$$

Or

$$I_{FP\ dep\ j} = \frac{\sum_{i=(d+1)}^{d+3} GHG\ FP_{ij}}{\sum_{i=(d+1)}^{d+3} P_{Rij}}$$

Where:

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational;

GHG  $FP_{ij}$  = Fixed process emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$PR_{ij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-17 Calculation of the intensity multiplication factor for combustion emissions at a covered establishment as of 2018 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

$$R = 0.80 \times GFR + (1 - GFR)$$

Where:

$R$  = Intensity multiplication factor for combustion emissions at the establishment;

0.80 = Proportion corresponding to 80% of the GFR ratio;

GFR = Ratio between the total combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, and total combustion emissions at the establishment, calculated using equation 4-18.

**Equation 4-18 Calculation of the GFR ratio for a covered establishment as of 2018 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

$$GFR = \frac{\sum_{i=(d)}^{(d+2)} GHG GFR_i}{\sum_{i=(d)}^{(d+2)} GHG C_i}$$

Or

$$GFR = \frac{\sum_{i=(d+1)}^{(d+3)} GHG GFR_i}{\sum_{i=(d+1)}^{(d+3)} GHG C_i}$$

Where:

GFR = Ratio between the total combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, and total combustion emissions at the establishment;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational;

GHG  $GFR_i$  = Combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, at the establishment during year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

GHG  $C_i$  = Total combustion emissions attributable to the use of fuel at the establishment during year  $i$ , in metric tonnes CO<sub>2</sub> equivalent.

**Equation 4-19 Calculation of the intensity of combustion emissions by type of activity of a covered establishment as of 2018 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

$$I_{C\ dep\ j} = \frac{\sum_{i=(d)}^{d+2} GHG\ C_{ij}}{\sum_{i=(d)}^{d+2} P_{Rij}}$$

Or

$$I_{C\ dep\ j} = \frac{\sum_{i=(d+1)}^{d+3} GHG\ C_{ij}}{\sum_{i=(d+1)}^{d+3} P_{Rij}}$$

Where:

$I_{C\ dep\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational;

GHG  $C_{ij}$  = Combustion emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-20 Calculation of the intensity of other emissions by type of activity of a covered establishment as of 2018 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

$$I_{O \text{ dep } j} = \frac{\sum_{i=(d)}^{d+2} \text{GHG } O_{ij}}{\sum_{i=(d)}^{d+2} P_{Rij}}$$

Or

$$I_{A \text{ dép } j} = \frac{\sum_{i=(d+1)}^{d+3} \text{GES } A_{ij}}{\sum_{i=(d+1)}^{d+3} P_{Rij}}$$

Where:

$I_{O \text{ dep } j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational;

$\text{GHG } O_{ij}$  = Other emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-21 Calculation of the number of GHG emission units allocated without charge for a covered establishment as of 2018 that is not considered on a sectoral basis for the years 2018 to 2020 and that does not possess all the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational**

$$A_i = (EC_{TOTALi} \times EF \times a_{C,i}) + (GHG_{FPi} \times a_{FP,i}) + (GHG_{Oi} \times a_{O,i})$$

Where:

$A_i$  = Total number of GHG emission units allocated without charge for year  $i$ ;

$i$  = Each year in the period 2018-2020 for which the emitter is required to cover GHG emissions;

$EC_{TOTAL\ i}$  = Energy consumption in year  $i$ , calculated using equation 4-22, in GJ;

EF = Emission factor for natural gas taken from Table 1-3 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), in metric tonnes CO<sub>2</sub> equivalent/GJ;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$GHG_{FP\ i}$  = Fixed process emissions at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$GHG_{O\ i}$  = other emissions at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ .

**Equation 4-22 Calculation of energy consumption for year  $i$  of a covered establishment as of 2018 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d$  to  $d+2$**

$$EC_{TOTAL\ i} = \sum_{k=1}^n Fuel_k \times HHV_k$$

Where:

$EC_{TOTAL\ i}$  = Energy consumption in year  $i$  in GJ;

$i$  = Each year of the period 2018-2020 for which the emitter is required to cover GHG emissions;

$n$  = Total number of types of fuel used;

$k$  = Type of fuel;

Fuel<sub>k</sub> = Mass or volume of fuel burned:

- (a) in dry metric tonnes, where the quantity is expressed as a mass;
- (b) in thousands of cubic metres at standard conditions, where the quantity is expressed as a volume of gas;
- (c) in kilolitres, where the quantity is expressed as a volume of liquid;

HHV<sub>k</sub> = High heat value for measurement period *i*, expressed

- (a) in GJ per dry metric tonne, in the case of fuels whose quantity is expressed as a mass;
- (b) in GJ per thousand cubic metres, in the case of fuels whose quantity is expressed as a volume of gas;
- (c) in GJ per kilolitre, in the case of fuels whose quantity is expressed as a volume of liquid.

**"4.3.3. Covered establishment as of 2018 that is not considered on a sectoral basis and that does not possess a determined reference unit**

The total quantity of GHG emission units allocated without charge to an emitter is calculated in accordance with the following methods:

- (1) in the case of an establishment for which the GHG emissions data for years *d* to *d*+2 or *d*+1 to *d*+3, where *d* is the year in which the establishment became operational, are all available, using equation 4-23;
- (2) in the case of an establishment for which the GHG emissions data for years *d* to *d*+2 or *d*+1 to *d*+3, where *d* is the year in which the establishment became operational, are not all available, using equation 4-21.

**Equation 4-23 Calculation of the number of GHG emission units allocated without charge for the years 2018 to 2020 for a covered establishment as of 2018 that does not possess a determined reference unit and that possesses all the GHG emissions data for years *d* to *d*+2 or *d*+1 to *d*+3, where *d* is the year in which the establishment became operational**

$$A_i = \left[ (EC_{TOTAL,av} \times EF \times a_{C,i}) + (GHG_{FP,av} \times a_{FP,i}) + (GHG_{O,av} \times a_{O,i}) \right]$$

Where:

A<sub>i</sub> = Total number of GHG emission units allocated without charge for year *i*;

*i* = Each year in the period 2018-2020 for which the emitter is required to cover GHG emissions;



$EC_{TOTAL,av}$  = Average energy consumption for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, calculated using equation 4-24, in GJ;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

EF = Emission factor for natural gas taken from Table 1-3 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), in metric tonnes CO<sub>2</sub> equivalent/GJ;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$GHG_{FPav,j}$  = Average fixed process emissions at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$GHG_{O,av}$  = Average other emissions at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ .

**Equation 4-24 Calculation of average energy consumption for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, for a covered establishment as of 2018 that possesses all the GHG emissions data for those years**

$$EC_{TOTAL,av} = \sum_d^{d+2} \left( \sum_{k=1}^n Fuel_k \times HHV_k \right) \div 3$$

Or

$$EC_{TOTAL,av} = \sum_{d+1}^{d+3} \left( \sum_{k=1}^n Fuel_k \times HHV_k \right) \div 3$$

Where:

$EC_{TOTAL,av}$  = Average energy consumption for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in GJ;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$n$  = Total number of types of fuel used;

$k$  = Type of fuel;

$Fuel_k$  = Mass or volume of fuel burned:

(a) in dry metric tonnes, where the quantity is expressed as a mass;

(b) in thousands of cubic metres at standard conditions, where the quantity is expressed as a volume of gas;

(c) in kilolitres, where the quantity is expressed as a volume of liquid;

$HHV_k$  = High heat value for measurement period  $i$ , expressed

(a) in GJ per dry metric tonne, in the case of fuels whose quantity is expressed as a mass;

(b) in GJ per thousand cubic metres, in the case of fuels whose quantity is expressed as a volume of gas;

(c) in GJ per kilolitre, in the case of fuels whose quantity is expressed as a volume of liquid.

**"4.3.4. Establishment that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are all available**

**Equation 4-25 Calculation of the number of GHG emission units allocated without charge by type of activity for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis for the years 2018 to 2020 and for which the GHG emissions data for years e-3 to e-1 are all available**

$$A_{ij} = [I_{FP\ dep\ j} \times a_{FP,i} + R \times I_{C\ dep\ j} \times a_{C,i} + I_{O\ dep\ j} \times a_{O,i}] \times P_{Rij}$$

Where:

$A_{i,j}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at an establishment for year  $i$ ;

$i$  = Each year in the period 2018-2020 for which the emitter is required to cover GHG emissions;

$j$  = Type of activity;

$I_{FP,dep,j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $e-3$  to  $e-1$ , calculated using equation 4-26, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$e$  = Year of application for registration for the system;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ ;

$R$  = Intensity multiplication factor for combustion emissions at the establishment calculated using equation 4-27 or, in the case of an establishment producing pulp and paper described by NAICS code 3221 or 321216, a value of 1;

$I_{C,dep,j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years  $e-3$  to  $e-1$ , calculated using equation 4-29, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ ;

$I_{O,dep,j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $e-3$  to  $e-1$ , calculated using equation 4-30, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ ;

$P_{Ri,j}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-26 Calculation of the intensity of fixed process emissions by type of activity for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are all available**

$$I_{FP\ dep\ j} = \frac{\sum_{i=(e-3)}^{e-1} GHG\ FP_{ij}}{\sum_{i=(e-3)}^{e-1} P_{Rij}}$$

Where:

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years e-3 to e-1, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$e$  = Year of application for registration for the system;

$i$  = Years e-3, e-2 and e-1;

$GHG\ FP_{ij}$  = Fixed process emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-27 Calculation of the intensity multiplication factor for combustion emissions for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are all available**

$$R = 0.80 \times GFR + (1 - GFR)$$

Where:

$R$  = Intensity multiplication factor for GHG combustion emissions at the establishment;

0.80 = Proportion corresponding to 80% of the GFR ratio;

$GFR$  = Ratio between the total combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, and total combustion emissions at the establishment, calculated using equation 4-28.

**Equation 4-28 Calculation of the GFR ratio for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are all available**

$$GFR = \frac{\sum_{i=(e-3)}^{(e-1)} GHG\ GFR_i}{\sum_{i=(e-3)}^{(e-1)} GHG\ C_i}$$

Where:

GFR = Ratio between the total combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, and total combustion emissions at the establishment;

e = Year of registration for the system;

i = Years e-3, e-2 and e-1;

GHG GFR<sub>i</sub> = combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, at the establishment during year *i*, in metric tonnes CO<sub>2</sub> equivalent;

GHG C<sub>i</sub> = Total combustion emissions attributable to the use of fuel at the establishment during year *i*, in metric tonnes CO<sub>2</sub> equivalent.

**Equation 4-29 Calculation of the intensity of combustion emissions by type of activity of a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are all available**

$$I_{C\ dep\ j} = \frac{\sum_{i=(e-3)}^{e-1} GHG\ C_{ij}}{\sum_{i=(e-3)}^{e-1} P_{Rij}}$$

Where:

I<sub>C dep j</sub> = Average intensity of combustion emissions attributable to type of activity *j* at the establishment for years e-3 to e-1, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

j = Type of activity;

e = Year of application for registration for the system;

i = Years e-3, e-2 and e-1;

GHG  $C_{ij}$  = Combustion emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-30 Calculation of the intensity of other emissions by type of activity of a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are all available**

$$I_{O\ dep\ j} = \frac{\sum_{i=(e-3)}^{e-1} GHG\ O_{ij}}{\sum_{i=(e-3)}^{e-1} P_{Rij}}$$

Where:

$I_{O\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years e-3 to e-1, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$e$  = Year of application for registration for the system;

$i$  = Years e-3, e-2 and e-1;

GHG  $O_{ij}$  = Other emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**"4.3.5. Covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are not all available**

The total quantity of GHG emission units allocated without charge to an emitter is calculated in accordance with the following methods:

(1) in the case of an establishment for which the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are all available, using equation 4-31;

(2) in the case of an establishment for which the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are not all available, using equation 4-37.

**Equation 4-31 Calculation of the number of GHG emission units allocated without charge by type of activity for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis for the years 2018 to 2020 and for which the GHG emissions data for years e-3 to e-1 are not all available**

$$A_{ij} = [I_{FP\ dep\ j} \times a_{FP,i} + R \times I_{C\ dep\ j} \times a_{C,i} + I_{O\ dep\ j} \times a_{O,i}] \times P_{Ri\ j}$$

Where:

$A_{ij}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at an establishment for year  $i$ ;

$i$  = Each year in the period 2018-2020 for which the emitter is required to cover GHG emissions;

$j$  = Type of activity;

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, calculated using equation 4-32, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$e$  = Year of application for registration for the system;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ ;

$R$  = Intensity multiplication factor for combustion emissions at the establishment calculated using equation 4-33 or, in the case of an establishment producing pulp and paper described by NAICS code 3221 or 321216, a value of 1;

$I_{C\ dep\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, calculated using equation 4-35, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ ;

$I_{O\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, calculated using equation 4-36, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{0,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ ;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-32 Calculation of the intensity of fixed process emissions by type of activity for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are not all available**

$$I_{FP\ dep\ j} = \frac{\sum_{i=(e-1)}^{e+1} GHG\ FP_{ij}}{\sum_{i=(e-1)}^{e+1} P_{Rij}}$$

Or

$$I_{FP\ dep\ j} = \frac{\sum_{i=(e)}^{e+2} GHG\ FP_{ij}}{\sum_{i=(e)}^{e+2} P_{Rij}}$$

Where:

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$e$  = Year of application for registration for the system;

$i$  = Years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational;

$GHG\ FP_{ij}$  = Fixed process emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .



**Equation 4-33 Calculation of the intensity multiplication factor for combustion emissions for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are not all available**

$$R = 0.80 \times GFR + (1 - GFR)$$

Where:

R = Intensity multiplication factor for combustion emissions at the establishment;

0.80 = Proportion corresponding to 80% of the GFR ratio;

GFR = Ratio between the total GHG combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, and total combustion emissions at the establishment, calculated using equation 4-34.

**Equation 4-34 Calculation of the GFR ratio for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are not all available**

$$GFR = \frac{\sum_{i=(e-1)}^{(e+1)} GHG\ GFR_i}{\sum_{i=(e-1)}^{(e+1)} GHG\ C_i}$$

Or

$$GFR = \frac{\sum_{i=(e)}^{(e+2)} GHG\ GFR_i}{\sum_{i=(e)}^{(e+2)} GHG\ C_i}$$

Where:

GFR = Ratio between the total combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, and total combustion emissions at the establishment;

e = Year of registration for the system;

i = Years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational;

GHG GFR<sub>i</sub> = Combustion emissions attributable to the use of natural gas, gasoline, diesel, heating oil, propane, petroleum coke and coal, excluding refinery fuel gas, at the establishment during year *i*, in metric tonnes CO<sub>2</sub> equivalent;

GHG C<sub>i</sub> = Total combustion emissions attributable to the use of fuel at the establishment during year *i*, in metric tonnes CO<sub>2</sub> equivalent.

**Equation 4-35 Calculation of the intensity of combustion emissions by type of activity of a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are not all available**

$$I_{C\ dep\ j} = \frac{\sum_{i=(e-1)}^{e+1} GHG\ C_{ij}}{\sum_{i=(e-1)}^{e+1} P_{Rij}}$$

Or

$$I_{C\ dep\ j} = \frac{\sum_{i=(e)}^{e+2} GHG\ C_{ij}}{\sum_{i=(e)}^{e+2} P_{Rij}}$$

Where:

$I_{C\ dep\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$e$  = Year of application for registration for the system;

$i$  = Years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational;

$GHG\ C_{ij}$  = Combustion emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-36 Calculation of the intensity of other emissions by type of activity of a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are not all available**

$$I_{O\ dep\ j} = \frac{\sum_{i=(e-1)}^{e+1} GHG\ O_{ij}}{\sum_{i=(e-1)}^{e+1} P_{Rij}}$$

Or

$$I_{o\ dep\ j} = \frac{\sum_{i=(e)}^{e+2} GHG\ O_{ij}}{\sum_{i=(e)}^{e+2} P_{Rij}}$$

Where:

$I_{o\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$e$  = Year of application for registration for the system;

$i$  = Years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational;

$GHG\ O_{ij}$  = Other emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 4-37 Calculation of the number of GHG emission units allocated without charge for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis for the years 2018 to 2020 and for which the GHG emissions data for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, are not all available**

$$A_i = (EC_{TOTAL\ i} \times EF \times a_{C,i}) + (GHG_{FP\ i} \times a_{FP,i}) + (GHG_{O\ i} \times a_{O,i})$$

Where:

$A_i$  = Total number of GHG emission units allocated without charge for year  $i$ ;

$i$  = Each year in the period 2018-2020 for which the emitter is required to cover GHG emissions;

$EC_{TOTAL\ i}$  = Average energy consumption for year  $i$ , calculated using equation 4-38, in GJ;

$EF$  = Emission factor for natural gas taken from Table 1-3 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), in metric tonnes CO<sub>2</sub> equivalent/GJ;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ ;

$GHG_{FP\ i}$  = Fixed process emissions at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ ;

$GHG_{O\ i}$  = Average other emissions at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ .

**Equation 4-38 Calculation of average energy consumption for years  $e$  and  $e+1$  of an establishment for the years 2018 to 2020 that is not considered on a sectoral basis and for which the GHG emissions data for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, are not all available**

$$EC_{TOTAL\ i} = \sum_{k=1}^n Fuel_k \times HHV_k$$

Where:

$EC_{TOTAL\ i}$  = Energy consumption for year  $i$ , in GJ;

$n$  = Total number of types of fuel used;

$k$  = type of fuel;

$Fuel_k$  = Mass or volume of fuel burned:

(a) in dry metric tonnes, where the quantity is expressed as a mass;

(b) in thousands of cubic metres at standard conditions, where the quantity is expressed as a volume of gas;

(c) in kilolitres, where the quantity is expressed as a volume of liquid;

$HHV_k$  = High heat value for measurement period  $i$ , expressed

(a) in GJ per dry metric tonne, in the case of fuels whose quantity is expressed as a mass;

(b) in GJ per thousand cubic metres, in the case of fuels whose quantity is expressed as a volume of gas;

(c) in GJ per kilolitre, in the case of fuels whose quantity is expressed as a volume of liquid.

**"4.3.6. Covered establishment referred to in section 2.1 that is not considered on a sectoral basis and that does not possess a determined reference unit**

The total quantity of GHG emission units allocated without charge to an emitter is calculated in accordance with the following methods:

(1) in the case of an establishment for which the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are all available, using equation 4-39;

(2) in the case of an establishment for which the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are not all available, using equation 4-37.

**Equation 4-39 Calculation of the number of GHG emission units allocated without charge for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis for the years 2018 to 2020, that does not possess a determined reference unit and for which the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are all available**

$$A_i = \left[ (EC_{TOTAL,av} \times EF \times a_{C,i}) + (GHG_{FP,av} \times a_{FP,i}) + (GHG_{O,av} \times a_{O,i}) \right]$$

Where:

$A_i$  = Total number of GHG emission units allocated without charge for year  $i$ ;

$i$  = Each year in the period 2018-2020 for which the emitter is required to cover GHG emissions;

$EC_{TOTAL,av}$  = Average energy consumption for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, calculated using equation 4-40, in GJ;

$e$  = Year of application for registration for the system;

$EF$  = Emission factor for natural gas taken from Table 1-3 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), in metric tonnes CO<sub>2</sub> equivalent/GJ;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ ;

$GHG_{FP,av}$  = Average fixed process emissions at the establishment for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ ;

$GHG_{O,av}$  = Average other emissions at the establishment for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, where  $n=i-(e+1)$ ;

**Equation 4-40 Calculation of average energy consumption for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis, that does not possess a determined reference unit, and for which the GHG emissions data for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, are all available**

$$EC_{TOTAL,av} = \sum_{e-1}^{e+1} \left( \sum_{k=1}^n Fuel_k \times HHV_k \right) \div 3$$

Or

$$EC_{TOTAL,av} = \sum_e^{e+2} \left( \sum_{k=1}^n Fuel_k \times HHV_k \right) \div 3$$

Where:

$EC_{TOTAL,av}$  = Average energy consumption for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, in GJ;

$e$  = Year of application for registration for the system;

$k$  = Type of fuel;

$n$  = Total number of types of fuel used;

Fuel<sub>k</sub> = Mass or volume of fuel burned:

(a) in dry metric tonnes, where the quantity is expressed as a mass;

(b) in thousands of cubic metres at standard conditions, where the quantity is expressed as a volume of gas;

(c) in kilolitres, where the quantity is expressed as a volume of liquid;

HHV<sub>k</sub> = High heat value for measurement period *i*, expressed

(a) in GJ per dry metric tonne, in the case of fuels whose quantity is expressed as a mass;

(b) in GJ per thousand cubic metres, in the case of fuels whose quantity is expressed as a volume of gas;

(c) in GJ per kilolitre, in the case of fuels whose quantity is expressed as a volume of liquid.";

(17) by replacing "2020" by "2018" in equation 5-2 of Division 5.2;

(18) by adding the following after equation 5-2 of Division 5.2:

**"Equation 5-3 Calculation of the total quantity of GHG emission units allocated free of charge by type of activity of an establishment covered from 2018 that is considered on a sectoral basis for the years 2018 to 2020 and that does not possess all the GHG emissions data for the years *d* to *d*+2 or *d*+1 to *d*+3, where *d* is the year in which the establishment became operational**

$$A_i = \max \left( \sum_{j=1}^m I_{2020S} \times P_{Rij} ; \frac{p}{q} \right) \times \left[ (CE_{TOTAL\ i} \times FE \times a_{C,i}) + (GES_{PF\ i} \times a_{PF,i}) + (GES_{A\ i} \times a_{A,i}) \right]$$

Where :

A<sub>i</sub> = Total number of GHG emission units allocated free of charge for an establishment for year *i*;

*i* = Each year of the period 2018-2020 for which the emitter is required to cover GHG emissions;

max = Maximum value between the 2 calculated values;

$j$  = Type of activity;

$m$  = Total number of type of activities of the establishment;

$I_{2020S}$  = Target intensity for GHG emissions attributable to type of activity  $j$  of the sector for the year 2020, calculated using equation 3-2, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$PR_{ij}$  = Total quantity of reference units produced or used by the establishment for the type of activity  $j$  during year  $i$ ;

$p$  = 2020- $i$ ;

$q$  = Maximum value between 1 and  $p$ ;

$CE_{TOTAL\ i}$  = Energy consumption of year  $i$ , calculated using equation 4-22, in GJ;

$FE$  = Natural gas emission factor taken from Table 1-3 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), in metric tonnes CO<sub>2</sub>/GJ equivalent;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, with  $n=i-(d+2)$ ;

$d$  = First year for which the establishment's GHG emissions reach or exceed the emissions threshold;

$GES_{PF\ i}$  = Fixed process emissions of the establishment for year  $i$ , in metric tonnes equivalent CO<sub>2</sub>;

$a_{PF,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishment covered between 2018 and 2020, as defined in Table 4 of this Appendix, with  $n=i-(d+2)$ ;

$GES_{A\ i}$  = other emissions of the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$a_{A,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2018 and 2020, as defined in Table 4 of this Appendix, with  $n=i-(d+2)$ .”;

(19) by adding the following equations after Equation 6-7:

**"Equation 6-7.1 Calculation of the intensity target of fixed process emissions at an establishment fabricating rigid foamed insulation**

$$I_{FP2020j} = I_{FP}$$



Where:

$I_{FP2020j}$  = Intensity of fixed process emissions calculated for year 2020 for type of activity  $j$ ;

$j$  = Type of activity, namely the fabrication of rigid foamed insulation;

$I_{FP}$  = Intensity of fixed process emissions at the establishment for year 2010, calculated using equation 6-4, in metric tonnes CO<sub>2</sub> equivalent per board foot of rigid foamed insulation.

**Equation 6-7.2 Calculation of the intensity target for combustion emissions at an establishment fabricating rigid foamed insulation**

$$I_{C2020j} = R \times 0.9415 \times I_C$$

Where:

$I_{C2020j}$  = Intensity of combustion emissions calculated for year 2020 for type of activity  $j$ ;

$j$  = Type of activity, namely the fabrication of rigid foamed insulation;

$R$  = Intensity multiplication factor for combustion emissions at the establishment, calculated using equations 4-6 and 4-7;

0.9415 = Proportion corresponding to an annual improvement of 1% in the intensity factor during years 2015 to 2020;

$I_C$  = Intensity of combustion emissions at the establishment for year 2010, calculated using equation 6-5, in metric tonnes CO<sub>2</sub> equivalent per board foot of rigid foamed insulation.

**Equation 6-7.3 Calculation of the intensity target of other emissions at an establishment fabricating rigid foamed insulation**

$$I_{O2020j} = 0.9415 \times I_O$$

Where:

$I_{O2020j}$  = Intensity of other emissions calculated for year 2020 for type of activity  $j$ ;

$j$  = Type of activity, namely the fabrication of rigid foamed insulation;

0.9415 = Proportion corresponding to an annual improvement of 1% in the intensity factor during years 2015 to 2020;

$I_0$  = Intensity of fixed process emissions at the establishment for year 2010, calculated using equation 6-6 in metric tonnes CO<sub>2</sub> equivalent per board foot of rigid foamed insulation.";

(20) by replacing "2014 and using equation 6-9 for 2015 to 2020" in the first paragraph of Division 6.4 by "2014, using Equation 6-9 for 2015 to 2020 and using equation 6-10.1 for 2021 to 2023";

(21) by adding the following equations after Equation 6-10:

**"Equation 6-10.1 Calculation of the number of GHG emission units allocated without charge by type of activity of an establishment producing catalytic zinc and using hydrogen as a fuel to supply its furnaces for years 2021 to 2023**

$$A_{i,j} = (I_{PF,ref,j} \times a_{PF,i} + I_{C,ref,j} \times a_{C,i} + I_{A,ref,j} \times a_{A,i} + F_{Hi}) \times P_{i,j} \times FA_{i,j}$$

Where:

$A_{i,j}$  = Total quantity of GHG emission units allocated without charge for the production of catalytic zinc at the establishment for year  $i$ ;

$i$  = Each year included in the period 2021 to 2023;

$j$  = Type of activity, namely the production of cathodic zinc;

$I_{PF,ref,j}$  = Standard intensity of fixed process emissions attributable to the production of cathodic zinc at the establishment for years 2021 to 2023, calculated using equation 8-6, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{PF,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$ , as defined in Table 5 of this Appendix;

$I_{C,ref,j}$  = Standard intensity of GHG combustion emissions attributable to the production of cathodic zinc at the establishment for years 2021 to 2023, calculated using equation 8-4, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$ , as defined in Table 5 of this Appendix;

$I_{A,ref,j}$  = Standard intensity of other emissions attributable to the production of cathodic zinc at the establishment for years 2021 to 2023, calculated using equation 8-6, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{A,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$ , as defined in Table 5 of this Appendix;

$F_{Hi}$  = Adjustment factor for the partial or total loss of hydrogen supply for year  $i$ , calculated using equation 6-10.2;

$P_{Ri j}$  = Total quantity of cathodic zinc produced at the establishment in year  $i$ , in metric tonnes of cathodic zinc;

$FA_{ij}$  = Assistance factor for the production of catalytic zinc for year  $i$ , as defined in Table 7 of this Appendix.

**Equation 6-10.2 Calculation of adjustment factor for the partial or total loss of hydrogen supply**

$$F_{Hi} = \left[ 0.060 - \frac{H_{2,i}}{P_{ij}} \right] \times 0.3325 \times 1.889 \times 0.80 \times 0.9415 \times a_{c,i} \text{ where } \left[ \frac{H_{2,i}}{P_{ij}} \right] \leq 0.060$$

$$F_{Hi} = 0 \text{ where } \left[ \frac{H_{2,i}}{P_{ij}} \right] > 0.060$$

Where:

$F_{Hi}$  = Adjustment factor for the partial or total loss of hydrogen supply for year  $i$ ;

$i$  = Each year included in the period 2021 to 2023;

0.060 = Ratio between the annual consumption of hydrogen and the annual production from 2007 to 2010, in cubic kilometres of hydrogen per metric tonne of cathodic zinc;

$H_{2,i}$  = Hydrogen consumption for year  $i$ , in cubic kilometres;

$P_{ij}$  = Total quantity of cathodic zinc produced at the establishment in year  $i$ , in metric tonnes of cathodic zinc;

0.3325 = Volume equivalency factor for hydrogen and natural gas, in cubic kilometres of natural gas per cubic kilometre of hydrogen;

1.889 = Emission factor for natural gas, in metric tonnes CO<sub>2</sub> equivalent per cubic kilometre of natural gas;

0.80 = Proportion corresponding to 80% combustion emission intensity;

0.9415 = Proportion corresponding to an annual improvement of 1% in the intensity factor during years 2015 to 2020;

$a_{c,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$ , as defined in Table 5 of this Appendix.";

(22) in the French text, by adding "étalon" after "unité" in the title of Division 6.5;

(23) in Division 6.5.1:

(a) by replacing "The quantity of GHG" in the part preceding paragraph 1 by "(1) Until 31 December 2017, the quantity of GHG";

(b) by replacing "(1)" by "(a)" and "(2)" by "(b)";

(c) by adding the following after paragraph 2:

"(2) For the years 2018 to 2020, the quantity of GHG emission units allocated without charge to an emitter for a new facility located on the site of one of the emitter's covered establishments at which production does not replace production at another establishment or facility must be calculated using Equation 6.10-3 for the period where the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, are not all available.

**Equation 6-10.3 Calculation of the number of GHG emission units allocated without charge for a new facility at a covered establishment for the period where the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, are not all available**

$$A_{NF\ i} = \left( (EC_{NF\ TOTAL\ i} \times EF \times a_{C,i}) + (GHG_{NF\ FP\ i} \times a_{FP,i}) + (GHG_{NF\ O\ i} \times a_{O,i}) \right)$$

Where:

$A_{NF\ i}$  = Total number of GHG emission units allocated without charge for a new facility for year  $i$ ;

$i$  = Each year in the period for which the emitter is required to cover GHG emissions;

$EC_{NF\ TOTAL\ i}$  = Energy consumption of the new facility in year  $i$ , calculated using equation 6-10.4, in GJ;

$EF$  = Emission factor for natural gas taken from Table 1-3 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), in metric tonnes CO<sub>2</sub> equivalent/GJ;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$ , as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$d$  = First year for which the GHG emissions of the new facility are equal to or exceed the emissions threshold;

$GHG_{NF\ FP\ i}$  = Fixed process emissions of the new facility for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$ , as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ ;

$GHG_{NF\ O\ i}$  = Other emissions of the new facility for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$ , as defined in Table 4 of this Appendix, where  $n=i-(d+2)$ .

**Equation 6-10.4 Calculation of the energy consumption for year  $i$  of a new facility at a covered establishment for the period where the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, are not all available**

$$EC_{NF\ TOTAL\ i} = \sum_{k=1}^n (Fuel_k \times HHV_k)$$

Where:

$EC_{NF\ TOTAL\ i}$  = Energy consumption of the new facility in year  $i$ , in GJ;

$i$  = Each year in the period for which the emitter is required to cover its GHG emissions;

$n$  = Total number of types of fuel used;

$k$  = Type of fuel;

$Fuel_k$  = Mass or volume of fuel burned, expressed

(a) in dry metric tonnes, where the quantity is expressed as a mass;

(b) in thousands of cubic metres at standard conditions, where the quantity is expressed as a volume of gas;

(c) in kilolitres, where the quantity is expressed as a volume of liquid;

$HHV_k$  = High heat value for measurement period  $i$ , expressed

(a) in GJ per dry metric tonne, in the case of fuels whose quantity is expressed as a mass;

(b) in GJ per thousand cubic metres, in the case of fuels whose quantity is expressed as a volume of gas;

(c) in GJ per kilolitre, in the case of fuels whose quantity is expressed as a volume of liquid.

"(3) For the years 2021 to 2023, the quantity of GHG emission units allocated without charge to an emitter for a new facility situated on the site of a covered establishment that is not considered on a sectoral basis must be calculated

(a) for the period where the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, are not all available, using equation 6-10.3;

(b) for the period where the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, are all available, using equations 6-10.5 and 7-1.

**Equation 6-10.5 Calculation of the number of GHG emission units allocated without charge by type of activity of a new facility of a covered establishment that is not considered on a sectoral basis for the years 2021 to 2023 during the period where the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, are all available**

$$A_{NI\ i\ j} = ( I_{PF\ ref\ NI\ j} \times a_{PF,\ i} + I_{C\ ref\ NI\ j} \times a_{C,\ i} + I_{A\ ref\ NI\ j} \times a_{A,\ i} ) \times P_{R\ i,\ j} \times FA_{i,\ j}$$

Where:

$A_{NI\ i\ j}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at a new facility for year  $i$ ;

$i$  = Each year included in the period 2021 to 2023 for which the emitter is required to cover its GHG emissions;

$j$  = Type of activity;

$I_{PF\ ref\ NI\ j}$  = Standard intensity of fixed process emissions attributable to type of activity  $j$  of the new facility using equation 6-10.6, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{PF,\ i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$ , as defined in Table 5 of this Appendix for a new facility covered prior to 2021 and in Table 6 of this Appendix for a new facility covered as of 2021, where  $n=i-(d+2)$ ;

$I_{C\ ref\ NF\ j}$  = Standard intensity of GHG combustion emissions attributable to type of activity  $j$  at the new facility using equation 6-10.6, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{C,\ i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$ , as defined in Table 5 of this Appendix for a new facility covered prior to 2021 and in Table 6 of this Appendix for a new facility covered as of 2021, where  $n=i-(d+2)$ ;

$d$  = First year for which the GHG emissions of the new facility are equal to or exceed the emissions threshold;

$I_{A \text{ ref NI } j}$  = Standard intensity of other emissions attributable to type of activity  $j$  at the new facility calculated using equation 6-10.8, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{A,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$ , as defined in Table 5 of this Appendix for a new facility covered prior to 2021 and in Table 6 of this Appendix for a new facility covered as of 2021, where  $n=i-(d+2)$ ;

$P_{R ij}$  = Total quantity of reference units produced or used by the establishment for type of activity  $j$  during year  $i$ ;

$FA_{i,j}$  = Assistance factor for type of activity  $j$  for year  $i$ , as defined in Table 7 of this Appendix.

**Equation 6-10.6 Calculation of the standard intensity of fixed process emissions by type of activity of a new facility of a covered establishment that is not considered on a sectoral basis for the period in which the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, are all available**

$$I_{PF \text{ réf NI } j} = \frac{\sum_{i=d}^{d+3} GES_{PF \text{ NI } ij}}{\sum_{i=d}^{d+3} P_{R ij}}$$

Where:

$I_{PF \text{ réf NI } j}$  = Standard intensity of fixed process emissions attributable to the type of activity  $j$  of the new facility for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$i$  = Years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the new facility are equal to or exceed the emissions threshold;

$GES_{PF \text{ NI } ij}$  = Fixed process emissions attributable to type of activity  $j$  of the new facility for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{R ij}$  = Total quantity of reference units produced or used by the establishment for type of activity  $j$  during year  $i$ .

**Equation 6-10.7 Calculation of the standard intensity of combustion emissions by type of activity of a new facility of a covered establishment that is not considered on a sectoral basis for the period where the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, are all available**

$$I_{C\text{ stan NF } j} = \frac{\sum_{i=d}^{d+3} \text{GHG}_{C\text{ NF } i j}}{\sum_{i=d}^{d+3} P_{R i j}}$$

Where:

$I_{C\text{ stan NF } j}$  = Standard intensity of GHG combustion emissions attributable to type of activity  $j$  at the new facility for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$i$  = Years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the new facility are equal to or exceed the emissions threshold;

$\text{GHG}_{C\text{ NF } i j}$  = Combustion emissions attributable to type of activity  $j$  at the new facility for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{R i j}$  = Total quantity of reference units produced or used by the establishment for type of activity  $j$  during year  $i$ .

**Equation 6-10.8 Calculation of the standard intensity of other emissions by type of activity of a new facility of a covered establishment that is not considered on a sectoral basis for the period where the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$  where  $d$  is the year in which the new facility became operational, are all available**

$$I_{O\text{ stan NI } j} = \frac{\sum_{i=d}^{d+3} \text{GHG}_{O\text{ NF } i j}}{\sum_{i=d}^{d+3} P_{R i j}}$$

Where:

$I_{O\text{ stan NI } j}$  = Standard intensity of other emissions attributable to type of activity  $j$  at the new facility for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;



$i$  = Years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the new facility are equal to or exceed the emissions threshold;

$GHG_{O,NF,i,j}$  = Other emissions attributable to type of activity  $j$  at the new facility for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{R,i,j}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

"(4) For years 2021 to 2023, the quantity of GHG emission units allocated without charge to an emitter for a new facility situated on the site of a covered establishment that is considered on a sectoral basis must be calculated

(a) for the period during which GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, are not all available, using equation 6-10.3;

(b) for the period during which GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the new facility became operational, are all available, using equations 6-10.9 and 7.1.

**Equation 6-10.9 Calculation of the number of GHG emission units allocated without charge by type of activity of a new facility at a covered establishment that is considered on a sectoral basis for years 2021 to 2023**

$$A_{NF,i,j} = I_{(S,NF),i,j} \times P_{R,i,j} \times AF_{i,j}$$

Where:

$A_{NF,i,j}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at a new facility for year  $i$ ;

$i$  = Each year included in the period 2021 to 2023 for which the emitter is required to cover its GHG emissions;

$j$  = Type of activity;

$I_{(S,NF),i,j}$  = Intensity of GHG emissions attributable to type of activity  $j$  at new facilities in the sector for year  $i$ , determined in accordance with Tables 1 to 3 of this Appendix, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$P_{Rij}$  = Total quantity of reference units produced or used by the establishment for type of activity  $j$  during year  $i$ ;

$AF_{ij}$  = Assistance factor for type of activity  $j$  for year  $i$ , as defined in Table 7 of this Appendix.";

(24) by replacing Division 6.5.3 by the following:

### **"6.5.3. Production of a new reference unit**

(1) until 2020, the quantity of GHG emission units allocated without charge to an emitter for the production of a new reference unit by one of its covered establishments must be calculated using equation 4-21 for the period during which the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the first year of production of the new reference unit, are not all available;

(2) for years 2021 to 2023, the quantity of GHG emission units allocated without charge to an emitter for the production of a new reference unit by a covered establishment must be calculated

(a) in the case of an establishment that is not considered on a sectoral basis, for the period during which the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the first year of production of the new reference unit, are not all available, using equation 11-5;

(b) in the case of an establishment that is not considered on a sectoral basis, for the period during which GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the first year of production of the new reference unit, are all available, using equations 11-1 to 11-4, which apply from 2018;

(c) in the case of an establishment that is considered on a sectoral basis, for the period during which GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the first year of production of the new reference unit, are not all available, using equation 11-5;

(d) in the case of an establishment that is considered on a sectoral basis, for the period during which GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the first year of production of the new reference unit, are all available, using equation 9-1.";

(25) by inserting ", but prior to 2021," in the title of Division 6.6;

(26) in Division 6.7:

(a) by adding ", or that sells or trades in Québec, for consumption, trade or sale in Québec, power generated outside Québec in the territory of an entity that is not a partner entity" at the end of the title;

(b) by adding the following after the title and before Equation 6-11:

"(1) Until 2020, the quantity of GHG emission units allocated without charge to an emitter for an enterprise that acquires, for consumption of the enterprise or for sale in Québec, power generated in another Canadian province or territory or in a US state where a system covering electricity production in particular has been established by an entity that is not a partner entity, or that sells or trades in Québec, for consumption, trade or sale in Québec, power generated outside Québec, in the territory of an entity that is not a partner entity, must be calculated using equation 6-11.

(2) For the years 2021 to 2023, the quantity of GHG emission units allocated without charge to an emitter for an enterprise that acquires, for consumption of the enterprise or for sale in Québec, power generated in another Canadian province or territory or in a US state where a system covering electricity production in particular has been established by an entity that is not a partner entity, or that sells or trades in Québec, for consumption, trade or sale in Québec, power generated outside Québec, in the territory of an entity that is not a partner entity, must be calculated using equation 6-11.1.";

(c) by adding the following before the title of Division 6.3:

**"Equation 6-11.1 Calculation of the total quantity of GHG emission units allocated without charge to an enterprise that acquires, for consumption of the enterprise or for sale in Québec, power generated in another Canadian province or territory or in a US state where a system covering electricity production in particular has been established by an entity that is not a partner entity, or that sells or trades in Québec, for consumption, trade or sale in Québec, power generated outside Québec, in the territory of an entity that is not a partner entity**

$$A_i = \frac{P_i^{Non-WCI}}{P_i^{WCI}} \times E_i^{Non-WCI}$$

Where:

$A_i$  = Total quantity of GHG emission units allocated without charge for an establishment producing alumina from bauxite for year  $i$ ;

$P_i^{Non-WCI}$  = Weighted average sale price of emission allowances of year  $i$  at an auction held during year  $i$  by other Canadian provinces or territories or by US states where a system covering electricity production has been established by an entity that is not a partner entity, in US dollars;

$P_i^{WCI}$  = Weighted average sale price of emission allowances of year  $i$  at an auction held during year  $i$  by Québec or other Canadian provinces or territories or by US states where a system covering electricity production in particular has been established by a partner entity, in US dollars;

$E_{i,Non-WCI}$  = Annual GHG emissions for year  $i$  relating to the production of electricity acquired from another Canadian province or territory or from a US state where producers are subject to a system established by an entity that is not a partner entity, taking into account the new GWP values determined in Addendum III to the document "Report of the Conference of the Parties on its nineteenth session, held in Warsaw from 11 to 23 November 2013", FCCC/CP/2013/10/Add.3, (new GWP values), in metric tonnes CO<sub>2</sub> equivalent;

$i$  = Each year in the period 2021-2023 for which the emitter is required to cover its emissions.";

(27) in Division 6.8:

(a) by replacing "2014 and using equation 6-13 for years 2015 to 2020" in the first paragraph by "2014, using equation 6-13 for years 2015 to 2020, and using equation 6-14 for years 2021 to 2023";

(b) by adding the following after Equation 6-13:

**"Equation 6-14 Calculation of the total quantity of GHG emission units allocated free of charge for a copper foundry for years 2021 to 2023**

$$A_i = \left[ (I_{C\text{ stan } cu} \times a_{C,i}) + (I_{FP\text{ stan } cu} \times a_{FP,i}) \right] \times P_{cu,i} \times AF_{cu,i} \\ + \left[ (I_{C\text{ stan } RSM} \times a_{C,i} \times P_{RSM,i}) + (A_{recycl,i} \times a_{FP,i}) \right] \times AF_{RSM,i}$$

Where:

$A_i$  = Total quantity of GHG emission units allocated free of charge for the production of copper anodes at the establishment for year  $i$ ;

$I_{C\text{ stan } cu}$  = Standard intensity of combustion emissions attributable to the production of copper anodes at the establishment for years 2021 to 2023, calculated using equation 8-2, in metric tonnes CO<sub>2</sub> equivalent per metric tonne of copper anodes;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$ , as defined in Table 5 of this Appendix;

$I_{FP\text{ stan } cu}$  = Standard intensity of fixed process emissions attributable to the production of copper anodes at the establishment for years 2021 to 2023, calculated using equation 8-6, in metric tonnes CO<sub>2</sub> equivalent per metric tonne of copper anodes;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$ , as defined in Table 5 of this Appendix;

$P_{cu,i}$  = Total quantity of copper anodes produced by the establishment during year  $i$ , in metric tonnes of copper anodes;

$AF_{cu,i}$  = Assistance factor for the production of copper anodes during year  $i$ , as defined in Table 7 of this Appendix;

$I_{C\text{ stan RSM}}$  = Standard intensity of combustion emissions attributable to the treatment of gas from the recycling of secondary materials at the establishment for years 2021 to 2023, calculated using equation 8-2, in metric tonnes CO<sub>2</sub> equivalent per metric tonne of recycled secondary materials;

$P_{\text{RSM},i}$  = Total quantity of secondary materials recycled at the establishment in year  $i$ , in metric tonnes of recycled secondary materials;

$A_{\text{recycl},i}$  = GHG emissions attributable to the carbon content of recycled secondary materials introduced into the process materials for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$AF_{\text{RSM},i}$  = Assistance factor for the treatment of gas from the recycling of secondary materials in year  $i$ , as defined in Table 7 of this Appendix.

For the application of Equation 6-14, recycled secondary materials used in a process at a copper foundry are deemed to be all materials used in the process other than fuel, ore, reducing agents, materials used for slag purification, carbonated reactants and carbon electrodes.

**Equation 6-15 Calculation of the total quantity of GHG emission units allocated free of charge for the production of steel (slabs, billets or ingots) or metallic silicon for years 2021 to 2023**

$$A_{i,j} = \left[ (I_{C\text{ ref }j} \times a_{C,i} + I_{A\text{ ref }j} \times a_{A,i}) \times P_{R\text{ }i,j} + \max(GES_{PF\text{ }i,j}; I_{PF\text{ ref }j} \times P_{R\text{ }i,j}) \times a_{PF,i} \right] \times FA_{i,j}$$

Where:

$A_{i,j}$  = Total quantity of GHG emission units allocated free of charge by type of activity  $j$  for year  $i$ ;

$i$  = Each year included in the period from 2021 to 2023 for which the emitter is required to cover GHG emissions;

$j$  = Type of activity, namely the production of steel (slabs, billets or ingots) or the production of metallic silicon;

$I_{C\text{ ref }j}$  = Standard intensity of combustion emissions attributable to type of activity  $j$  of the establishment for years 2021 to 2023, calculated using equation 8-4, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$ , as defined in Table 5 of this Appendix;

$I_{A\text{ ref }j}$  = Standard intensity of other emissions attributable to type of activity  $j$  of the establishment for years 2021 to 2023, calculated using equation 8-6, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{A,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$ , as defined in Table 5 of this Appendix;

$P_{Ri,j}$  = Total quantity of reference units produced or used by the establishment for the type of activity  $j$  during year  $i$ ;

max = Maximum value between  $GES_{PFi,j}$  and  $I_{PF\ ref\ j} \times P_{Ri,j}$

$GES_{PFi,j}$  = Fixed process emissions attributable to the type of activity  $j$  of the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$I_{PF\ ref\ j}$  = Standard intensity of fixed process emissions attributable to the type of activity  $j$  of the establishment for years 2021 to 2023, calculated using equation 8-2, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{PF,j}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$ , as defined in Table 5 of this Appendix;

$FA_{i,j}$  = Assistance factor for the type of activity  $j$  for year  $i$ , as defined in Table 7 of this Appendix.";

(28) by adding the following after Division 6.8:

**"7. Calculation of the total quantity of GHG emission units allocated without charge to an establishment for years 2021 to 2023**

**Equation 7-1 Calculation of the total quantity of GHG emission units allocated without charge to an establishment for years 2021 to 2023**

$$A_{establishment\ i} = \sum_{j=1}^m A_{i,j}$$

Where:

$A_{establishment\ i}$  = Total quantity of GHG emission units allocated without charge to an establishment for year  $i$  for all types of activity  $j$  of the establishment listed in Table B of this Appendix;

$i$  = Each year included in the period 2021 to 2023 for which the emitter is required to cover GHG emissions;

$m$  = Total number of types of activity at the establishment;

$j$  = Each type of activity at the establishment;

$A_{i,j}$  = Number of GHG emission units allocated without charge by type of activity  $j$  for year  $i$ , calculated using equations 8-1, 9-1, 10-1, 11-1, 11-5, 12-1, 13-1, 14-1, 14-5, 15-1, 6-10.1, 6-10.3, 6-10.5 or 6-10.9.

**"8. Establishment covered before 2021 and that is not considered on a sectoral basis or establishment producing lime**

**Equation 8-1 Calculation of the number of GHG emission units allocated without charge by type of activity for years 2021 to 2023 of an establishment covered prior to 2021 that is not considered on a sectoral basis or an establishment producing lime or liquid aluminum using a side-worked prebaked anode technology**

$$A_{i,j} = (I_{C\ stan\ j} \times a_{c,i} + I_{FP\ stan\ j} \times a_{FP,i} + I_{O\ stan\ j} \times a_{o,i}) \times P_{R\ i,j} \times AF_{i,j}$$

Where:

$A_{i,j}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at an establishment for year  $i$ ;

$i$  = Each year included in the period 2021 to 2023 for which the emitter is required to cover GHG emissions;

$j$  = Type of activity;

$I_{C\ stan\ j}$  = Standard intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years 2021 to 2023 using equation 8-2, 8-8 or equation 8-11, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{c,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$ , as defined in Table 5 of this Appendix;

$I_{FP\ stan\ j}$  = Standard intensity of GHG combustion emissions attributable to type of activity  $j$  at the establishment for years 2021 to 2023 using equation 8-4, 8-9 or 8-13, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{FP,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$ , as defined in Table 5 of this Appendix;

$I_{O\ stan\ j}$  = Standard intensity of other emissions attributable to type of activity  $j$  of the establishment for years 2021 to 2023 using equation 8-6, 8-10 or 8-17, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{o,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$ , as defined in Table 5 of this Appendix;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ ;

$AF_{ij}$  = Assistance factor for type of activity  $j$  for year  $i$ , as defined in Table 7 of this Appendix.

### "8.1. Calculation method for standard intensities for an establishment using GHG emissions data for the years 2007 to 2011

**Equation 8-2 Calculation of the standard intensity of fixed process emissions by type of activity at an establishment that is not considered on a sectoral basis or an establishment producing liquid aluminum using a side-worked prebaked anode technology for years 2021 to 2023 and using GHG emissions data of years 2007 to 2010**

$$I_{C\ stan\ j} = C_{C\ j} \times I_{C2020\ j}$$

Where:

$I_{C\ stan\ j}$  = Standard intensity of fixed process emissions for the period 2021-2023 for type of activity  $j$ ;

$C_{C\ j}$  = Correction factor for the intensity of fixed process emissions for type of activity  $j$ , calculated using equation 8-3;

$I_{C2020\ j}$  = Intensity of fixed process emissions calculated for year 2020 for type of activity  $j$ , using equation 2-8.1, or using equation 6-7.1 in the case of the fabrication of rigid foamed insulation, using the old GWP values.

### Equation 8-3 Calculation of correction factor for fixed process emissions to take into account the new GWP values

$$C_{C\ j} = av \left[ \frac{GHG_{C\ j\ 2013} (new\ GWP)}{GHG_{C\ j\ 2013} (old\ GWP)}; \frac{GHG_{C\ j\ 2014} (new\ GWP)}{GHG_{C\ j\ 2014} (old\ GWP)}; \frac{GHG_{C\ j\ 2015} (new\ GWP)}{GHG_{C\ j\ 2015} (old\ GWP)} \right]$$

Where:

$C_{C\ j}$  = Correction factor for the intensity of fixed process emissions for type of activity  $j$ ;

$j$  = Type of activity;

$av$  = Average fixed process emissions for years 2013, 2014 and 2015;

$GHG_{C\ j}$  = Fixed process emissions for type of activity  $j$  at the establishment for years 2013, 2014 and 2015, calculated using the old or new GWP values, in metric tonnes CO<sub>2</sub> equivalent, excluding unusable years;



**Equation 8-4 Calculation of the standard intensity of combustion emissions by type of activity at an establishment that is not considered on a sectoral basis or an establishment producing liquid aluminum using a side-worked prebaked anode technology and using GHG emissions data for the years 2007 to 2011**

$$I_{FPj} = C_{FPj} \times I_{FP2020j}$$

Where:

$I_{FPj}$  = Standard intensity of combustion emissions for the period 2021-2023 for type of activity  $j$ ;

$C_{FPj}$  = Correction factor for the intensity of combustion emissions for type of activity  $j$ , calculated using equation 8-5;

$I_{FP2020j}$  = Intensity of combustion emissions calculated for year 2020 for type of activity  $j$ , using equation 2-8.2, or using equation 6-7.2 in the case of the fabrication of rigid foamed insulation, use the old GWP values.

**Equation 8-5 Calculation of correction factor for combustion emissions by type of activity to take into account the new GWP values**

$$C_{FPj} = av \left[ \frac{GHG_{FPj2013}(new\ GWP)}{GHG_{FPj2013}(old\ GWP)}, \frac{GHG_{FPj2014}(new\ GWP)}{GHG_{FPj2014}(old\ GWP)}, \frac{GHG_{FPj2015}(new\ GWP)}{GHG_{FPj2015}(old\ GWP)} \right]$$

Where:

$C_{FPj}$  = Correction factor for the intensity of combustion emissions for type of activity  $j$ ;

$j$  = Type of activity;

$av$  = Average combustion emissions for years 2013, 2014 and 2015;

$GHG_{FPj}$  = Combustion emissions for type of activity  $j$  at the establishment for years 2013, 2014 and 2015, calculated using the old GWP values, determined in Schedule A.1 to the Regulation respecting the mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15) (old GWP values) or the new GWP values in metric tonnes CO<sub>2</sub> equivalent, excluding unusable years.

**Equation 8-6 Calculation of the standard intensity of other emissions by type of activity at an establishment that is not considered on a sectoral basis or an establishment producing liquid aluminum using a side-worked prebaked anode technology for years 2021 to 2023 using GHG emissions data for the years 2007 to 2010**

$$I_{Oj} = C_{Oj} \times I_{O2020j}$$

Where:

$I_{Oj}$  = Standard intensity of other emissions for the period 2021-2023 for type of activity  $j$ ;

$j$  = Type of activity;

$C_{Oj}$  = Correction factor for the intensity of other emissions for type of activity  $j$ , calculated using equation 8-7;

$I_{O2020j}$  = Intensity of other emissions  $j$  calculated for year 2020 for type of activity  $j$ , using equation 2-8.3, or using equation 6-7.3 For the fabrication of rigid foamed insulation, using the old GWP values.

**Equation 8-7 Calculation of the correction factor for other emissions by type of activity to take into account the new GWP values**

$$C_{Oj} = av \left[ \frac{GHG_{Oj2013} (new\ GWP)}{GHG_{Oj2013} (old\ GWP)}; \frac{GHG_{Oj2014} (new\ GWP)}{GHG_{Oj2014} (old\ GWP)}; \frac{GHG_{Oj2015} (new\ GWP)}{GHG_{Oj2015} (old\ GWP)} \right]$$

Where:

$C_{Oj}$  = Correction factor for the intensity of other emissions for type of activity  $j$ ;

$j$  = Type of activity;

$av$  = Average of other emissions for years 2013, 2014 and 2015;

$GHG_{Oj}$  = Other emissions for type of activity  $j$  at the establishment for years 2013, 2014 and 2015, calculated using the old GWP or the new GWP values, in metric tonnes CO<sub>2</sub> equivalent, excluding unusable years.

**"8.2. Calculation method for standard intensities for an establishment using no GHG emissions data for the years 2007 to 2011**

**Equation 8-8 Calculation of the standard intensity of fixed process emissions by type of activity at an establishment that is not considered on a sectoral basis for the years 2021 to 2023 and using no emissions data of years 2007 to 2011**

$$I_{PF\ ref\ j} = \frac{\sum_{i=(d-2)}^{d+1} GES\ PF\ C_{ij}}{\sum_{i=(d-2)}^{d+1} P_{Rij}}$$

Where:

$IPF_{ref j}$  = Average standard intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d+1$ , where available, excluding the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d-2$ ,  $d-1$ ,  $d$  and  $d+1$ , where available, excluding the year in which the establishment became operational;

$GES_{PF_{ci j}}$  = Fixed process emissions attributable to type of activity  $j$  at the establishment for year  $i$ , considering the new GWP values, in metric tonnes CO<sub>2</sub> equivalent;

$PR_{ij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 8-9 Calculation of the standard intensity of combustion emissions by type of activity at an establishment that is not considered on a sectoral basis and using no GHG emissions data of years 2007 to 2011**

$$I_{C_{stan j}} = R \times \frac{\sum_{i=(d-2)}^{d+1} GHG_{C_{ci j}}}{\sum_{i=(d-2)}^{d+1} P_{R_{ij}}}$$

Where:

$I_{C_{stan j}}$  = Average standard intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d+1$ , where available, excluding the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$R$  = Intensity multiplication factor for combustion emissions at the establishment, calculated using equation 4-6 in the case of an establishment covered prior to 2018, using equation 4-11 in the case of a covered establishment as of 2018 or, in the case of an establishment producing pulp and paper described by NAICS code 3221 or 321216, a value of 1;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d-2$ ,  $d-1$ ,  $d$  and  $d+1$ , where available, excluding the year in which the establishment became operational;

GHG  $FP_{Ci j}$  = Combustion emissions attributable to type of activity  $j$  at the establishment for year  $i$ , considering the new GWP values, in metric tonnes CO<sub>2</sub> equivalent;

$PR_{i j}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 8-10 Calculation of standard intensity of other emissions by type of activity of an establishment that is not considered on a sectoral basis and using no emissions data of years 2007 to 2011 for years 2021 to 2023**

$$I_{A ref j} = \frac{\sum_{i=(d-2)}^{d+1} GESA_{Ci j}}{\sum_{i=(d-2)}^{d+1} PR_{i j}}$$

Where:

$I_{A ref j}$  = Average standard intensity of other emissions attributable to type of activity  $j$  of the establishment for years  $d-2$  to  $d+1$ , where available, excluding the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which GHG emissions of the establishment reach or exceed emissions threshold;

$i$  = Years  $d-2$ ,  $d-1$ ,  $d$  and  $d+1$ , where available, excluding the year in which the establishment became operational;

$GESA_{Ci j}$  = Other emissions attributable to type of activity  $j$  of the establishment for year  $i$ , by considering new GWP values, in metric tonnes CO<sub>2</sub> equivalent;

$PR_{i j}$  = Total quantity of reference units produced or used by the establishment for type of activity  $j$  during year  $i$ .

### 8.3 Calculation method for standard intensities for an establishment producing lime

#### Equation 8-11 Calculation of the standard intensity of fixed process emissions by type of activity of an establishment in the lime sector

$$I_{PF\ ref\ j} = \frac{\sum_{i=2007}^{2010} \sum_{k=1}^l C_{PF\ jk} \cdot GES_{PF\ ij k}}{\sum_{i=2007}^{2010} \sum_{k=1}^l P_{R\ ij k}}$$

Where:

$I_{PF\ ref\ j}$  = Standard intensity of fixed process emissions in the lime sector for the period 2021-2023 for type of activity  $j$ ;

$j$  = Type of activity;

$i$  = Each year included in the period 2007-2010;

$k$  = Covered establishment in the lime sector;

$l$  = Number of covered establishments from 2013 in the lime sector;

$C_{PF\ jk}$  = Correction factor for the intensity of fixed process emissions for type of activity  $j$  of establishment  $k$ , calculated using equation 8-12;

$GES_{PF\ ij k}$  = Fixed process emissions for type of activity  $j$  of establishment  $k$  during years  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{R\ ij k}$  = Total quantity of reference units produced or used by establishment  $k$  for type of activity  $j$  during year  $i$ .

#### Equation 8-12 Calculation of correction factor for fixed process emissions to take into account new GWP values

$$C_{PF\ jk} = \text{moy} \left[ \frac{GES_{PF\ 2013\ jk} (\text{nouveaux PRP})}{GES_{PF\ 2013\ jk} (\text{anciens PRP})}; \frac{GES_{PF\ 2014\ jk} (\text{nouveaux PRP})}{GES_{PF\ 2014\ jk} (\text{anciens PRP})}; \frac{GES_{PF\ 2015\ jk} (\text{nouveaux PRP})}{GES_{PF\ 2015\ jk} (\text{anciens PRP})} \right]$$

Where :

$C_{PF\ jk}$  = Correction factor for the intensity of fixed process emissions for type of activity  $j$  of establishment  $k$ ;

$j$  = Type of activity;

$k$  = Covered establishment in the lime sector;

moy = Average of fixed process emissions for years 2013, 2014 and 2015;

GES<sub>PF jk</sub> = Fixed process emissions for type of activity *j* of establishment *k* for years 2013, 2014 and 2015, using for the calculation old GWP or new GWP values, in metric tonnes CO<sub>2</sub> equivalent, excluding years that are not usable.

**Equation 8-13 Calculation of the standard intensity of combustion emissions by type of activity of an establishment in the lime sector**

$$I_{C\ ref\ j} = R_s \cdot \min\{0,95 \cdot I_{C\ ref\ min\ j}; 0,90 \cdot I_{C\ ref\ moy\ j}\}$$

Where:

$I_{C\ ref\ j}$  = Standard intensity of combustion emissions in the lime sector for the period 2021-2023 for type of activity *j*;

*j* = Type of activity;

$R_s$  = Sectoral intensity multiplication factor for combustion emissions calculated using equations 3-4 and 3-5;

min = Minimum value between the 2 calculated elements;

0,95 = Proportion corresponding to 95% of the minimum intensity of combustion emissions;

$I_{C\ ref\ min\ j}$  = Minimum annual intensity of combustion emissions for type of activity *j* for years 2007-2010, calculated using equation 8-14, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

0,90 = Proportion corresponding to 90% of the average intensity of combustion emissions;

$I_{C\ ref\ moy\ j}$  = Average intensity of combustion emissions for type of activity *j* for years 2007-2010, calculated using equation 8-15, in metric tonnes CO<sub>2</sub> equivalent per reference unit.

**Equation 8-14 Calculation of the minimum intensity of combustion emissions by type of activity of an establishment in the lime sector**

$$I_{C\ ref\ min\ j} = \min \left[ \frac{\sum_{k=1}^l C_{C\ jk} \cdot GES_{C\ 2007\ jk}}{\sum_{k=1}^l P_{R\ 2007\ jk}}; \frac{\sum_{k=1}^l C_{C\ jk} \cdot GES_{C\ 2008\ jk}}{\sum_{k=1}^l P_{R\ 2008\ jk}}; \frac{\sum_{k=1}^l C_{C\ jk} \cdot GES_{C\ 2009\ jk}}{\sum_{k=1}^l P_{R\ 2009\ jk}}; \frac{\sum_{k=1}^l C_{C\ jk} \cdot GES_{C\ 2010\ jk}}{\sum_{k=1}^l P_{R\ 2010\ jk}} \right]$$

Where:

$I_{C \text{ ref min } j}$  = Minimum annual intensity of combustion emissions for type of activity  $j$  for years 2007-2010, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

min = Minimum value of annual intensities of combustion emissions for years 2007-2010;

$k$  = Covered establishment in the lime sector;

$l$  = Number of covered establishments from 2013 in the lime sector;

$C_{Cjk}$  = Correction factor for the intensity of combustion emissions for type of activity  $j$  of establishment  $k$ , calculated using equation 8-16;

$GES_{Cjk}$  = Combustion emissions for type of activity  $j$  of establishment  $k$  during years 2007 à 2010, in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rjk}$  = Total quantity of reference units produced or used by establishment  $k$  for type of activity  $j$  during years 2007 to 2010.

**Equation 8-15 Calculation of the average intensity of combustion emissions by type of activity of an establishment in the lime sector**

$$I_{C \text{ ref moy } j} = \frac{\sum_{i=2007}^{2010} \sum_{k=1}^l C_{Cjk} \cdot GES_{Cijk}}{\sum_{i=2007}^{2010} \sum_{k=1}^l P_{Rijk}}$$

Where:

$I_{C \text{ ref moy } j}$  = Average intensity of combustion emissions for type of activity  $j$  for years 2007-2010, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$i$  = Each year included in the period 2007-2010;

$k$  = Covered establishment in the lime sector;

$l$  = Number of covered establishments from 2013 in the lime sector;

$C_{Cjk}$  = Correction factor for the intensity of combustion emissions for type of activity  $j$  of establishment  $k$ , calculated using equation 8-16;

$GES_{C\ jk}$  = Combustion emissions for type of activity  $j$  of establishment  $k$  during year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$PR_{ijk}$  = Total quantity of reference units produced or used by establishment  $k$  for type of activity  $j$  during year  $i$ .

**Equation 8-16 Calculation of the correction factor for combustion emissions by type of activity to take into account new GWP values**

$$C_{C\ jk} = moy \left[ \frac{GES_{C\ 2013\ jk} (\text{nouveaux PRP})}{GES_{C\ 2013\ jk} (\text{anciens PRP})}; \frac{GES_{C\ 2014\ jk} (\text{nouveaux PRP})}{GES_{C\ 2014\ jk} (\text{anciens PRP})}; \frac{GES_{C\ 2015\ jk} (\text{nouveaux PRP})}{GES_{C\ 2015\ jk} (\text{anciens PRP})} \right]$$

Where:

$C_{C\ jk}$  = Correction factor for the intensity of combustion emissions for type of activity  $j$  of establishment  $k$ ;

$j$  = Type of activity;

$k$  = Covered establishment in the lime sector;

moy = Average of the combustion emissions for years 2013, 2014 and 2015;

$GES_{C\ jk}$  = Combustion emissions for type of activity  $j$  of establishment  $k$  for years 2013, 2014 and 2015, using for the calculation old or new GWP values, in metric tonnes CO<sub>2</sub> equivalent, excluding years that are not usable.

**Equation 8-17 Calculation of the standard intensity of other emissions by type of activity of an establishment in the lime sector**

$$I_{A\ ref\ j} = \min\{0,95 \cdot I_{AC\ min(S)}; 0,90 \cdot I_{AC\ moy(S)}\}$$

Where :

$I_{A\ ref\ j}$  = Standard intensity of other emissions in the lime sector for the period 2021-2023 for type of activity  $j$ ;

$j$  = Type of activity;

$R_s$  = Sectoral intensity multiplication factor of other emissions calculated using equations 3-4 and 3-5;

min = Minimum value between the 2 calculated elements;

0,95 = Proportion corresponding to 95% of the minimum intensity of other emissions;



$I_{A \text{ ref min } j}$  = Minimum annual intensity of other emissions for type of activity  $j$  for years 2007-2010, calculated using equation 8-18, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

0,90 = Proportion corresponding to 90% of the average intensity of other emissions;

$I_{A \text{ ref moy } j}$  = Average intensity of other emissions for type of activity  $j$  for years 2007-2010, calculated using equation 8-19, in metric tonnes CO<sub>2</sub> equivalent per reference unit.

**Equation 8-18 Calculation of the minimum intensity of other emissions by type of activity of an establishment in the lime sector**

$$I_{A \text{ ref min } j} = \min \left[ \frac{\sum_{k=1}^l C_{A \text{ jk}} \cdot GES_{A \text{ 2007 } jk}}{\sum_{k=1}^l P_{2007 \text{ jk}}}; \frac{\sum_{k=1}^l C_{A \text{ jk}} \cdot GES_{A \text{ 2008 } jk}}{\sum_{k=1}^l P_{2008 \text{ jk}}}; \frac{\sum_{k=1}^l C_{A \text{ jk}} \cdot GES_{A \text{ 2009 } jk}}{\sum_{k=1}^l P_{2009 \text{ jk}}}; \frac{\sum_{k=1}^l C_{A \text{ jk}} \cdot GES_{A \text{ 2010 } jk}}{\sum_{k=1}^l P_{2010 \text{ jk}}} \right]$$

Where:

$I_{A \text{ ref min } j}$  = Minimum annual intensity of other emissions for type of activity  $j$  for years 2007-2010, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

min = Minimum value of annual intensities of other emissions for years 2007-2010;

$k$  = Covered establishment in the lime sector;

$l$  = Number of covered establishments from 2013 in the lime sector;

$C_{A \text{ jk}}$  = Correction factor for the intensity of other emissions for type of activity  $j$  of establishment  $k$ , calculated using equation 8-20;

$GES_{A \text{ jk}}$  = Other emissions for type of activity  $j$  of establishment  $k$  during years 2007 to 2010, in metric tonnes CO<sub>2</sub> equivalent;

$P_{R \text{ jk}}$  = Total quantity of reference units produced or used by establishment  $k$  for type of activity  $j$  during years 2007 to 2010.

**Equation 8-19 Calculation of the average intensity of other emissions by type of activity of an establishment in the lime sector**

$$I_{A \text{ ref moy } j} = \frac{\sum_{i=2007}^{2010} \sum_{k=1}^l C_{A \text{ k}} \cdot GES_{A \text{ ijk}}}{\sum_{i=0}^n \sum_{i=0}^n P_{R \text{ ijk}}}$$

Where:

$I_{A \text{ ref moy } j}$  = Average intensity of other emissions for type of activity  $j$  for years 2007-2010, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$i$  = Each year included in the period 2007-2010;

$k$  = Covered establishment in the lime sector;

$l$  = Number of covered establishments from 2013 in the lime sector;

$C_{A \text{ } jk}$  = Correction factor for the intensity of other emissions for type of activity  $j$  of establishment  $k$ , calculated using equation 8-20;

$GES_{A \text{ } ijk}$  = Other emissions for type of activity  $j$  of establishment  $k$  during year  $i$  in metric tonnes CO<sub>2</sub> equivalent;

$PR_{ijk}$  = Total quantity of reference units produced or used by establishment  $k$  for type of activity  $j$  during year  $i$ .

**Equation 8-20 Calculation of the correction factor for other emissions by type of activity to take into account new GWP values**

$$C_{A \text{ } jk} = \text{moy} \left[ \frac{GES_{A \text{ } 2013 \text{ } jk} (\text{nouveaux PRP})}{GES_{A \text{ } 2013 \text{ } jk} (\text{anciens PRP})}; \frac{GES_{A \text{ } 2014 \text{ } jk} (\text{nouveaux PRP})}{GES_{A \text{ } 2014 \text{ } jk} (\text{anciens PRP})}; \frac{GES_{A \text{ } 2015 \text{ } jk} (\text{nouveaux PRP})}{GES_{A \text{ } 2015 \text{ } jk} (\text{anciens PRP})} \right]$$

Where:

$C_{A \text{ } jk}$  = Correction factor for the intensity of other emissions for type of activity  $j$  of establishment  $k$ ;

$j$  = Type of activity;

$k$  = Covered establishment in the lime sector;

moy = Average of the other emissions for years 2013, 2014 and 2015;

$GES_{A \text{ } jk}$  = Other emissions for type of activity  $j$  of establishment  $k$  for years 2013, 2014 and 2015, using for the calculation old or new GWP values, in metric tonnes CO<sub>2</sub> equivalent, excluding years that are not usable.

**"9. Establishment producing cement, prebaked anodes or aluminum by using a prebaked anode technology covered prior to 2021 that is considered on a sectoral basis**

**Equation 9-1 Calculation of the number of GHG emission units allocated without charge by type of activity of an establishment producing cement, prebaked anodes or aluminum using a prebaked anode technology other than the side-worked technology, covered prior to 2021 that is considered on a sectoral basis for years 2021 to 2023**

$$A_{ij} = I_{(S)ij} \times P_{Rij} \times AF_{ij}$$

Where:

$A_{ij}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at an establishment for year  $i$ ;

$i$  = Each year included in the period 2021 to 2023;

$j$  = Type of activity;

$I_{(S)ij}$  = Intensity of GHG emissions attributable to type of activity  $j$  in the sector for year  $i$ , determined in accordance with Tables 1 to 3 of this Appendix, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ ;

$AF_{ij}$  = Assistance factor for type of activity  $j$  for year  $i$ , as defined in Table 7 of this Appendix.

### "9.1. Sectoral intensities in the aluminum sector

**Table 1: Sectoral intensities in the aluminum sector**

Year	Intensity of GHG emissions for liquid aluminum production (leaving the electrolysis hall)	Intensity of GHG emissions for the production of baked anodes removed from furnace
2021	1.787	0.3129
2022	1.777	0.3102
2023	1.767	0.3074

### "9.2. Sectoral intensities in the cement sector

**Table 2: Sectoral intensities in the cement sector**

Year	Intensity of GHG emissions for the production of clinker and the mineral additives added to the clinker produced
2021	0.7814
2022	0.7767
2023	0.7721

**"10. Covered establishment as of 2021 that is not considered on a sectoral basis and that possesses all the GHG emissions data for years  $d-2$  to  $d$**

**Equation 10-1 Calculation of the number of GHG emission units allocated without charge by type of activity for a covered establishment as of 2021 that is not considered on a sectoral basis for years 2021 to 2023 and that possesses GHG emissions data for years  $d-2$  to  $d$**

$$A_{ij} = [I_{FP\ dep\ j} \times a_{FP,i} + I_{C\ dep\ j} \times a_{C,i} + I_{O\ dep\ j} \times a_{O,i}] \times P_{Ri\ j} \times AF_{i,j}$$

Where:

$A_{ij}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at an establishment for year  $i$ ;

$i$  = Each year in the period 2021-2023 for which the emitter is required to cover its GHG emissions;

$j$  = Type of activity;

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , calculated using equation 10-2, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$I_{C\ dep\ j}$  = Average intensity of GHG combustion emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , calculated using equation 10-3, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$I_{O\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , calculated using equation 10-4, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ ;

$AF_{ij}$  = Assistance factor for type of activity  $j$  for year  $i$ , as defined in Table 7 of this Appendix.

**Equation 10-2 Calculation of the intensity of fixed process emissions by type of activity at a covered establishment as of 2021 that is not considered on a sectoral basis**

$$I_{FP\ dep\ j} = \frac{\sum_{i=(d-2)}^d GHG\ FP_{ij}}{\sum_{i=(d-2)}^d P_{Rij}}$$

Where:

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d-2$ ,  $d-1$  and  $d$ ;

$GHG\ FP_{ij}$  = Fixed process emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 10-3 Calculation of the intensity of combustion emissions by type of activity of a covered establishment as of 2021 that is not considered on a sectoral basis**

$$I_{C\ dep\ j} = \frac{\sum_{i=(d-2)}^d GHG\ C_{ij}}{\sum_{i=(d-2)}^d P_{Rij}}$$

Where:

$I_{C\ dep\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d-2$ ,  $d-1$  and  $d$ ;

GHG  $C_{i\ j}$  = Combustion emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$PR_{ij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 10-4 Calculation of the intensity of other emissions by type of activity of a covered establishment as of 2021 that is not considered on a sectoral basis**

$$I_{O\ dep\ j} = \frac{\sum_{i=(d-2)}^d GHG\ O_{ij}}{\sum_{i=(d-2)}^d P_{Rij}}$$

Where:

$I_{O\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $d-2$  to  $d$ , in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d-2$ ,  $d-1$  and  $d$ ;

GHG  $O_{ij}$  = Other emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$PR_{ij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**"11. Covered establishment as of 2021 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

The total quantity of GHG emission units allocated without charge to an emitter is calculated in accordance with the following methods:

(1) in the case of an establishment for which the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are all available, using equation 11-1;

(2) in the case of an establishment for which the GHG emissions data for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, are not all available, using equation 11-5;

**Equation 11-1 Calculation of the number of GHG emission units allocated without charge by type of activity at a covered establishment as of 2021 that is not considered on a sectoral basis for years 2021 to 2023 and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

$$A_{ij} = [I_{FP\ dep\ j} \times a_{FP,i} + I_{C\ dep\ j} \times a_{C,i} + I_{O\ dep\ j} \times a_{O,i}] \times P_{Ri\ j} \times AF_{i,j}$$

Where:

$A_{ij}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at an establishment for year  $i$ ;

$i$  = Each year in the period 2021-2023 for which the emitter is required to cover its GHG emissions;

$j$  = Type of activity;

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, calculated using equation 11-2, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$I_{C\ dep\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, calculated using equation 11-3, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{c,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$I_{o\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, calculated using equation 11-4, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{o,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$P_{Ri\ j}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ ;

$AF_{i,j}$  Assistance factor for type of activity  $j$  for year  $i$ , as defined in Table 7 of this Appendix.

**Equation 11-2 Calculation of the intensity of fixed process emissions by type of activity at a covered establishment as of 2021 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

$$I_{FP\ dep\ j} = \frac{\sum_{i=(d)}^{d+2} GHG\ FP_{ij}}{\sum_{i=(d)}^{d+2} P_{Rij}}$$

Or

$$I_{FP\ dep\ j} = \frac{\sum_{i=(d+1)}^{d+3} GHG\ FP_{ij}}{\sum_{i=(d+1)}^{d+3} P_{Rij}}$$

Where:

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;



$i$  = Years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational;

GHG  $FP_{ij}$  = Fixed process emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 11-3 Calculation of the intensity of combustion emissions by type of activity at a covered establishment as of 2021 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

$$I_{C\ dep\ j} = \frac{\sum_{i=(d)}^{d+2} GHG\ C_{ij}}{\sum_{i=(d)}^{d+2} P_{Rij}}$$

Or

$$I_{C\ dep\ j} = \frac{\sum_{i=(d+1)}^{d+3} GHG\ C_{ij}}{\sum_{i=(d+1)}^{d+3} P_{Rij}}$$

Where:

$I_{C\ dep\ j}$  = Average intensity of GHG combustion emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational;

GHG  $C_{ij}$  = Combustion emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 11-4 Calculation of the intensity of other emissions by type of activity at a covered establishment as of 2021 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d-2$  to  $d$**

$$I_{O\ dep\ j} = \frac{\sum_{i=(d)}^{d+2} GHG\ O_{ij}}{\sum_{i=(d)}^{d+2} P_{Rij}}$$

Or

$$I_{O\ dep\ j} = \frac{\sum_{i=(d+1)}^{d+3} GHG\ O_{ij}}{\sum_{i=(d+1)}^{d+3} P_{Rij}}$$

Where:

$I_{O\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$i$  = Years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational;

$GHG\ O_{ij}$  = Other emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 11-5 Calculation of the number of GHG emission units allocated without charge for a covered establishment as of 2018 that is not considered on a sectoral basis for years 2021 to 2023 and that does not possess all the GHG emissions data for years  $d$  to  $d+2$**

$$A_i = \left( (EC_{TOTAL\ i} \times EF \times a_{C,i}) + (GHG_{FP\ i} \times a_{FP,i}) + (GHG_{O\ i} \times a_{O,i}) \right) \times AF_{i,j}$$

Where:

$A_i$  = Total number of GHG emission units allocated without charge for year  $i$ ;

$i$  = Each year in the period 2021-2023 for which the emitter is required to cover its GHG emissions;

$EC_{TOTAL\ i}$  = Energy consumption in year  $i$ , calculated using equation 11-6, in GJ;

EF = Emission factor for natural gas taken from Table 1-3 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), in metric tonnes CO<sub>2</sub> equivalent/GJ;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$GHG_{FP\ i}$  = Fixed process emissions at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$GHG_{O\ i}$  = Other emissions at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$AF_{i,j}$  = Assistance factor for type of activity  $j$  for year  $i$ , as defined in Table 7 of this Appendix.

**Equation 11-6 Calculation of energy consumption for a year at a covered establishment as of 2021 that is not considered on a sectoral basis and that does not possess all the GHG emissions data for years  $d$  to  $d+2$**

$$EC_{TOTAL\ i} = \sum_{k=1}^n (Fuel_k \times HHV_k)$$

Where:

$EC_{TOTAL\ i}$  = Energy consumption in year  $i$ , in GJ;

$n$  = Total number of types of fuel used;

$k$  = Type of fuel;

Fuel<sub>k</sub> = Mass or volume of fuel burned:

- (a) in dry metric tonnes, where the quantity is expressed as a mass;
- (b) in thousands of cubic metres at standard conditions, where the quantity is expressed as a volume of gas;
- (c) in kilolitres, where the quantity is expressed as a volume of liquid;

HHV<sub>k</sub> = High heat value for measurement period *i*, expressed

- (a) in GJ per dry metric tonne, in the case of fuels whose quantity is expressed as a mass;
- (b) in GJ per thousand cubic metres, in the case of fuels whose quantity is expressed as a volume of gas;
- (c) in GJ per kilolitre, in the case of fuels whose quantity is expressed as a volume of liquid.

**"12. Covered establishment as of 2021 that is not considered on a sectoral basis and that does not possess a determined reference unit**

The total quantity of GHG emission units allocated without charge to an emitter is calculated in accordance with the following methods:

(1) in the case of an establishment for which the GHG emissions data for years *d* to *d*+2 or *d*+1 to *d*+3, where *d* is the year in which the establishment became operational, are all available, using equation 12-1;

(2) in the case of an establishment for which the GHG emissions data for years *d* to *d*+2 or *d*+1 to *d*+3, where *d* is the year in which the establishment became operational, are not all available, using equation 11-5.

**Equation 12-1 Calculation of the number of GHG emission units allocated without charge for an establishment covered as of 2021 that is not considered on a sectoral basis for years 2021 to 2023, that does not possess a determined reference unit and that possesses all the GHG emissions data for years *d* to *d*+2 or *d*+1 to *d*+3, where *d* is the year in which the establishment became operational**

$$A_i = \left[ (EC_{TOTAL,av} \times EF \times a_{C,i}) + (GHG_{FP,av} \times a_{FP,i}) + (GHG_{O,av-j} \times a_{O,i}) \right] \times FA_{i,j} MAX$$

Where:

$A_i$  = Total number of GHG emission units allocated without charge for year  $i$ ;

$i$  = Each year in the period 2021-2023 for which the emitter is required to cover GHG emissions;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$EC_{TOTAL,av}$  = Average energy consumption for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, calculated using equation 12-2 in GJ;

$EF$  = Emission factor for natural gas taken from Table 1-3 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), in metric tonnes CO<sub>2</sub> equivalent/GJ;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$GHG_{FPav}$  = Average fixed process emissions at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$GHG_{Oav-j}$  = Average other emissions at the establishment for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(d+2)$ ;

$AF_{i,j MAX}$  = Maximum of assistance factors for each type of activity  $j$  at the establishment for year  $i$ , as defined in Table 7 of this Appendix.

**Equation 12-2 Calculation of average energy consumption for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, at a covered establishment as of 2021 that is not considered on a sectoral basis and that possesses all the GHG emissions data for those years**

$$EC_{TOTAL,av} = \sum_d^{d+2} \left( \sum_{k=1}^n Fuel_k \times HHV_k \right) \div 3$$

Or

$$EC_{TOTAL,av} = \sum_{d+1}^{d+3} \left( \sum_{k=1}^n Fuel_k \times HHV_k \right) \div 3$$

Where:

$EC_{TOTAL,av}$  = Average energy consumption for years  $d$  to  $d+2$  or  $d+1$  to  $d+3$ , where  $d$  is the year in which the establishment became operational, in GJ;

$d$  = First year for which the GHG emissions of the establishment are equal to or exceed the emissions threshold;

$k$  = Type of fuel;

$n$  = Total number of types of fuel used;

$Fuel_k$  = Mass or volume of fuel burned:

(a) in dry metric tonnes, where the quantity is expressed as a mass;

(b) in thousands of cubic metres at standard conditions, where the quantity is expressed as a volume of gas;

(c) in kilolitres, where the quantity is expressed as a volume of liquid;

$HHV_k$  = High heat value for measurement period  $i$ , expressed

(a) in GJ per dry metric tonne, in the case of fuels whose quantity is expressed as a mass;

(b) in GJ per thousand cubic metres, in the case of fuels whose quantity is expressed as a volume of gas;

(c) in GJ per kilolitre, in the case of fuels whose quantity is expressed as a volume of liquid.

**"13. Establishment that is not considered on a sectoral basis for which the GHG emissions data for years e-3 to e-1 are all available**

**Equation 13-1 Calculation of the number of GHG emission units allocated without charge by type of activity for year 2021 to 2023 for an establishment that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are all available**

$$A_{ij} = [I_{FP\ dep\ j} \times a_{FP,i} + I_{C\ dep\ j} \times a_{C,i} + I_{O\ dep\ j} \times a_{O,i}] \times P_{Ri\ j} \times AF_{i,j}$$

Where:

$A_{ij}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at an establishment for year  $i$ ;

$i$  = Each year in the period 2021-2023 for which the emitter is required to cover its GHG emissions;

$j$  = Type of activity;

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years e-3 to e-1, calculated using equation 13-2, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$e$  = Year of application for registration for the system;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(e+1)$ ;

$I_{C\ dep\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years e-3 to e-1, calculated using equation 13-3, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(e+1)$ ;

$I_{O\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years e-3 to e-1, calculated using equation 13-4, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(e+1)$ ;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ ;

$AF_{ij}$  = Assistance factor for type of activity  $j$  for year  $i$ , as defined in Table 7 of this Appendix.

**Equation 13-2 Calculation of the intensity of fixed process emissions by type of activity for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are all available**

$$I_{FP\ dep\ j} = \frac{\sum_{i=(e-3)}^{e-1} GHG\ FP_{ij}}{\sum_{i=(e-3)}^{e-1} P_{Rij}}$$

Where:

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years e-3 to e-1, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$e$  = Year of application for registration for the system;

$i$  = Years e-3, e-2 and e-1;

$GHG\ FP_{ij}$  = Fixed process emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 13-3 Calculation of the intensity of combustion emissions for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are all available**

$$I_{C\ dep\ j} = \frac{\sum_{i=(e-3)}^{e-1} GHG\ C_{ij}}{\sum_{i=(e-3)}^{e-1} P_{Rij}}$$



Where:

$I_{C\ dep\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years  $e-3$  to  $e-1$ , in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$e$  = Year of application for registration for the system;

$i$  = Years  $e-3$ ,  $e-2$  and  $e-1$ ;

GHG  $C_{i\ j}$  = Combustion emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Ri\ j}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 13-4 Calculation of the intensity of other emissions for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years  $e-3$  to  $e-1$  are all available**

$$I_{O\ dep\ j} = \frac{\sum_{i=(e-3)}^{e-1} GHG\ O_{ij}}{\sum_{i=(e-3)}^{e-1} P_{Ri\ j}}$$

Where:

$I_{O\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $e-3$  to  $e-1$ , in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$e$  = Year of application for registration for the system;

$i$  = Years  $e-3$ ,  $e-2$  and  $e-1$ ;

GHG  $O_{ij}$  = Other emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Ri\ j}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**"14. Covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are not all available**

The total quantity of GHG emission units allocated without charge to an emitter is calculated in accordance with the following methods:

(1) in the case of an establishment for which the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are all available, using equation 14-1;

(2) in the case of an establishment for which the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are not all available, using equation 14-5.

**Equation 14-1 Calculation of the number of GHG emission units allocated without charge by type of activity of a covered establishment referred to in section 2.1 that is not considered on a sectoral basis for years 2021 to 2023 and for which the GHG emissions data for years e-3 to e-1 are not all available**

$$A_{ij} = [I_{FP\ dep\ j} \times a_{FP,i} + I_{C\ dep\ j} \times a_{C,i} + I_{O\ dep\ j} \times a_{O,i}] \times P_{Ri\ j} \times AF_{i,j}$$

Where:

$A_{ij}$  = Total number of GHG emission units allocated without charge by type of activity  $j$  at an establishment for year  $i$ ;

$i$  = Each year in the period 2021-2023 for which the emitter is required to cover its GHG emissions;

$j$  = Type of activity;

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, calculated using equation 14-2, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$e$  = Year of application for registration for the system;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n = i - (e + 1)$ ;

$I_{C\ dep\ j}$  = Average intensity of combustion emissions attributable to type of activity  $j$  at the establishment for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, calculated using equation 14-3, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{c,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(e+1)$ ;

$I_{o\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, calculated using equation 14-4, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$a_{o,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(e+1)$ ;

$P_{Ri\ j}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ ;

$AF_{i,j}$  = Assistance factor for type of activity  $j$  for year  $i$ , as defined in Table 7 of this Appendix.

**Equation 14-2 Calculation of the intensity of fixed process emissions by type of activity for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years  $e-3$  to  $e-1$  are not all available**

$$I_{FP\ dep\ j} = \frac{\sum_{i=(e-1)}^{e+1} GHG\ FP_{ij}}{\sum_{i=(e-1)}^{e+1} P_{Rij}}$$

Or

$$I_{FP\ dep\ j} = \frac{\sum_{i=(e)}^{e+2} GHG\ FP_{ij}}{\sum_{i=(e)}^{e+2} P_{Rij}}$$

Where:

$I_{FP\ dep\ j}$  = Average intensity of fixed process emissions attributable to type of activity  $j$  at the establishment for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$e$  = Year of application for registration for the system;

$i$  = Years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational;

GHG  $FP_{ij}$  = Fixed process emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$PR_{ij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 14-3 Calculation of the intensity of combustion emissions by type of activity of a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are not all available**

$$I_{C\ dep\ j} = \frac{\sum_{i=(e-1)}^{e+1} GHG\ C_{ij}}{\sum_{i=(e-1)}^{e+1} P_{Rij}}$$

Or

$$I_{C\ dep\ j} = \frac{\sum_{i=(e)}^{e+2} GHG\ C_{ij}}{\sum_{i=(e)}^{e+2} P_{Rij}}$$

Where:

$I_{C\ dep\ j}$  = Average intensity of GHG combustion emissions attributable to type of activity  $j$  at the establishment for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$e$  = Year of application for registration for the system;

$i$  = Years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational;

GHG  $C_{ij}$  = Combustion emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$PR_{ij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 14-4 Calculation of the intensity of other emissions by type of activity for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years e-3 to e-1 are not all available**

$$I_{O\ dep\ j} = \frac{\sum_{i=(e-1)}^{e+1} GHG\ O_{ij}}{\sum_{i=(e-1)}^{e+1} P_{Rij}}$$

Or

$$I_{O\ dep\ j} = \frac{\sum_{i=(e)}^{e+2} GHG\ O_{ij}}{\sum_{i=(e)}^{e+2} P_{Rij}}$$

Where:

$I_{O\ dep\ j}$  = Average intensity of other emissions attributable to type of activity  $j$  at the establishment for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent per reference unit;

$j$  = Type of activity;

$e$  = Year of application for registration for the system;

$i$  = Years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational;

$GHG\ O_{ij}$  = Other emissions attributable to type of activity  $j$  at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$P_{Rij}$  = Total quantity of reference units produced or used at the establishment for type of activity  $j$  during year  $i$ .

**Equation 14-5 Calculation of the number of GHG emission units allocated without charge for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis for years 2021 to 2023 and for which the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are not all available**

$$A_i = \left( (EC_{TOTAL\ i} \times EF \times a_{C,i}) + (GHG_{FP\ i} \times a_{FP,i}) + (GHG_{O\ i} \times a_{O,i}) \right) \times AF_{i,j}$$

Where:

$A_i$  = Total number of GHG emission units allocated without charge for year  $i$ ;

$i$  = Each year in the period 2021-2023 for which the emitter is required to cover its GHG emissions;

$EC_{TOTAL\ i}$  = Energy consumption in year  $i$ , calculated using equation 14-6, in GJ;

EF = Emission factor for natural gas taken from Table 1-3 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), in metric tonnes CO<sub>2</sub> equivalent/GJ;

$a_{c,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(e+1)$ ;

$e$  = Year of application for registration for the system;

$GHG_{FP\ i}$  = Fixed process emissions at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(e+1)$ ;

$GHG_{O\ i}$  = Other emissions at the establishment for year  $i$ , in metric tonnes CO<sub>2</sub> equivalent;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(e+1)$ ;

$AF_{i,j}$  = Assistance factor for type of activity  $j$  for year  $i$ , as defined in Table 7 of this Appendix.

**Equation 14-6 Calculation of energy consumption in year  $i$  for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis and for which the GHG emissions data for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, are not all available**

$$EC_{TOTAL\ i} = \sum_{k=1}^n (Fuel_k \times HHV_k)$$

Where:

$EC_{TOTAL\ i}$  = Energy consumption in year  $i$ , in GJ;

$n$  = Total number of types of fuel used;

$k$  = Type of fuel;

Fuel $_k$  = Mass or volume of fuel burned:

(a) in dry metric tonnes, where the quantity is expressed as a mass;

(b) in thousands of cubic metres at standard conditions, where the quantity is expressed as a volume of gas;

(c) in kilolitres, where the quantity is expressed as a volume of liquid;

HHV $_k$  = High heat value for measurement period  $i$ , expressed

(a) in GJ per dry metric tonne, in the case of fuels whose quantity is expressed as a mass;

(b) in GJ per thousand cubic metres, in the case of fuels whose quantity is expressed as a volume of gas;

(c) in GJ per kilolitre, in the case of fuels whose quantity is expressed as a volume of liquid.

**15. Covered establishment referred to in section 2.1 that is not considered on a sectoral basis and that does not possess a determined reference unit**

The total quantity of GHG emission units allocated without charge to an emitter is calculated in accordance with the following methods:

(1) in the case of an establishment for which the GHG emissions data for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, are all available, using equation 15-1;

(2) in the case of an establishment for which the GHG emissions data for years  $e-1$  to  $e+1$  or  $e$  to  $e+2$ , where  $e-1$  is the year in which the establishment became operational, are not all available, using equation 14-5.

**Equation 15-1 Calculation of the number of GHG emission units allocated without charge for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis for years 2021 to 2023, that does not possess a determined reference unit and for which the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are all available**

$$A_i = \left[ (EC_{TOTAL,av} \times EF \times a_{C,i}) + (GHG_{FP,av} \times a_{FP,i}) + (GHG_{O,av} \times a_{O,i}) \right] \times AF_{i,j MAX}$$

Where:

$A_i$  = Total number of GHG emission units allocated without charge for year  $i$ ;

$i$  = Each year in the period 2021-2023 for which the emitter is required to cover its GHG emissions;

$EC_{TOTAL,av}$  = Average energy consumption for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, calculated using equation 15-2, in GJ;

e = Year of application for registration for the system;

EF = Emission factor for natural gas taken from Table 1-3 of the Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere (chapter Q-2, r. 15), in metric tonnes CO<sub>2</sub> equivalent/GJ;

$a_{C,i}$  = Cap adjustment factor for the allocation of combustion emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(e+1)$ ;

$GHG_{FP,av}$  = Average fixed process emissions at the establishment for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent;

$a_{FP,i}$  = Cap adjustment factor for the allocation of fixed process emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(e+1)$ ;

$GHG_{O,av}$  = Average other emissions at the establishment for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, in metric tonnes CO<sub>2</sub> equivalent;

$a_{O,i}$  = Cap adjustment factor for the allocation of other emissions for year  $i$  for establishments covered between 2021 and 2023, as defined in Table 6 of this Appendix, where  $n=i-(e+1)$ ;

$AF_{i,j MAX}$  = Maximum of assistance factors for each type of activity  $j$  at the establishment for year  $i$ , as defined in Table 7 of this Appendix.



**Equation 15-2 Calculation of average energy consumption for a covered establishment referred to in section 2.1 that is not considered on a sectoral basis, that does not possess a determined reference unit and for which the GHG emissions data for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, are all available**

$$EC_{TOTAL,av} = \sum_{e-1}^{e+1} \left( \sum_{k=1}^n Fuel_k \times HHV_k \right) \div 3$$

Or

$$EC_{TOTAL,av} = \sum_e^{e+2} \left( \sum_{k=1}^n Fuel_k \times HHV_k \right) \div 3$$

Where:

$EC_{TOTAL,av}$  = Average energy consumption for years e-1 to e+1 or e to e+2, where e-1 is the year in which the establishment became operational, in GJ;

e = Year of application for registration for the system;

n = Total number of types of fuel used;

k = Type of fuel;

Fuel<sub>k</sub> = Mass or volume of fuel burned:

(a) in dry metric tonnes, where the quantity is expressed as a mass;

(b) in thousands of cubic metres at standard conditions, where the quantity is expressed as a volume of gas;

(c) in kilolitres, where the quantity is expressed as a volume of liquid;

HHV<sub>k</sub> = High heat value for measurement period *i*, expressed

(a) in GJ per dry metric tonne, in the case of fuels whose quantity is expressed as a mass;

(b) in GJ per thousand cubic metres, in the case of fuels whose quantity is expressed as a volume of gas;

(c) in GJ per kilolitre, in the case of fuels whose quantity is expressed as a volume of liquid.

## 16. Allocation cap adjustment factors

### 16.1. Covered establishment as of 2018 for the period 2018-2020

**Table 4: Allocation cap adjustment factors for a covered establishment as of 2018 for the period 2018-2020**

Year $i$	$ac_i$	$a_{FP,i}$	$ao_i$
2018	$(1.00)^n$	0.99	$(0.99)^n$
2019	$(1.00)^n$	0.99	$(0.99)^n$
2020	$(1.00)^n$	0.99	$(0.99)^n$

### 16.2. Establishment covered prior to 2021 for the period 2021-2023

**Table 5: Allocation cap adjustment factors for an establishment covered prior to 2021 for the period 2021-2023**

Year $i$	$ac_i$	$a_{FP,i}$	$ao_i$
2021	0.995	0.985	0.970
2022	0.990	0.970	0.940
2023	0.985	0.955	0.910

### 16.3. Covered establishment as of 2021 for the period 2021-2023

**Table 6: Allocation cap adjustment factors for a covered establishment as of 2021 for the period 2021-2023**

Year $i$	$ac_i$	$a_{FP,i}$	$ao_i$
2021	$1-(0.005*n)$	$1-(0.015*n)$	$1-(0.03*n)$
2022	$1-(0.005*n)$	$1-(0.015*n)$	$1-(0.03*n)$
2023	$1-(0.005*n)$	$1-(0.015*n)$	$1-(0.03*n)$

## 17. Assistance factors

**Table 7: Assistance factor defined for a reference unit by compliance period**

Sector	Reference unit	Assistance factor 2021-2023
Aluminum	metric tonne of liquid aluminum (leaving the electrolysis hall)	1.00
	metric tonne of baked anodes removed from furnace	1.00
	metric tonne of baked cathodes removed from furnace	1.00
	metric tonne of calcinated coke	1.00

Sector	Reference unit	Assistance factor 2021-2023
	metric tonne of aluminum hydroxide expressed as Al <sub>2</sub> O <sub>3</sub> equivalent calculated at the precipitation stage	1.00
Other	metric tonne of sugar	0.95
	metric tonne of glass	1.00
	metric tonne of processed oilseeds	1.00
	metric tonne of carbon dioxide	1.00
	cubic metre of gypsum products	1.00
Lime	metric tonne of calcic lime and metric tonne of calcic lime kiln dust sold	1.00
	metric tonne of dolomitic lime and metric tonne of dolomitic lime kiln dust sold	1.00
Chemical	board foot of rigid insulation	0.95
	metric tonne of xylene and toluene	1.00
	metric tonne of steam sold to a third person	1.00
	metric tonne of titanium pigment equivalent (raw material)	1.00
	metric tonne of PTA	1.00
	metric tonne of LAB	1.00
	kilolitre of ethanol	1.00
	metric tonne of hydrogen	1.00
	kilolitre of alcohol	0.90
	metric tonne of catalyzer (including additives)	1.00
metric tonne of tires	0.90	
Cement	metric tonne of clinker and metric tonne of additives (gypsum and limestone) added to the clinker produced	1.00
Electricity	megawatt-hour	0.60
	metric tonne of steam	0.60
Metallurgy	metric tonne of reduced iron pellets	1.00
	metric tonne of steel (slabs, pellets or ingots)	1.00
	metric tonne of rolled steel	1.00
	metric tonne of Ti O <sub>2</sub> slag cast at the reduction furnaces	1.00

Sector	Reference unit	Assistance factor 2021-2023
	metric tonne of silicon metal	1.00
	metric tonne of ferrosilicon (50% and 75% concentration)	1.00
	metric tonne of copper anodes	1.00
	metric tonne of recycled secondary materials	1.00
	metric tonne of copper cathodes	1.00
	metric tonne of lead	1.00
	metric tonne of wrought steel	1.00
	metric tonne of iron powder and steel powder at bagging, after additives	1.00
	metric tonne of cathodic zinc	0.95
	metric tonne of iron load	0.95
Mining and pelletization	metric tonne of flux pellets	1.00
	metric tonne of low silica flux pellets	1.00
	metric tonne of direct reduction pellets	1.00
	metric tonne of blast furnace pellets	1.00
	metric tonne of intermediate pellets	1.00
	metric tonne of nickel produced	1.00
	metric tonne of nickel and copper produced	1.00
	metric tonne of iron concentrate	1.00
	metric tonne of standard pellets	1.00
Pulp and paper	metric tonne of various air-dried saleable products	1.00
	metric tonne of various saleable air-dried products of each of the establishments common to a steam network	1.00
Refining	kilolitre of total crude oil refinery load	1.00
	reference unit not determined elsewhere in the table	0.90

**62.** Appendix D of the Regulation is amended

(1) in Protocol 2, in Part I:

(a) in Division 6.1

(i) by striking out the second paragraph;

(ii) by replacing the definition of "OX" in Equation 3 by the following:

"OX = Factor for the oxidation of CH<sub>4</sub> by soil bacteria, using the value established for each of the cases provided for in subparagraphs 1, 2 and 3 below;

(iii) by inserting the following after the definition of the factor "DF" in Equation 3:

"The factor for the oxidation of CH<sub>4</sub> by soil bacteria is established as follows:

(1) for closed landfill sites with a geomembrane covering the entire area of the landfill, the promoter must use a CH<sub>4</sub> oxidation rate of zero (0%) and show, in the first project report, that the landfill site has a geomembrane that meets the requirements of the Regulation respecting the landfilling and incineration of residual materials (chapter Q-2, r. 19);

(2) for landfills in operation, part of which is filled and covered by a geomembrane, the promoter must use a CH<sub>4</sub> oxidation rate of zero (0%) for the area covered by a geomembrane and a CH<sub>4</sub> oxidation rate of 10% for the area not covered by a geomembrane, and must pro-rate the CH<sub>4</sub> oxidation factor based on areas which are covered and uncovered by a geomembrane using Equation 3.1 (with areas measured in m<sup>2</sup>);

(3) for all other landfill sites, the promoter must use a CH<sub>4</sub> oxidation factor of 10%.

In the cases referred to in subparagraphs 1 and 2, the promoter must show, in the project reports, that the landfill site has a geomembrane that meets the requirements of the Regulation respecting the landfilling and incineration of residual materials (chapter Q-2, r. 19). In the case referred to in subparagraph 2, the project report must include a verification of the covered and uncovered areas.

**Equation 3.1**

$$OX = \frac{(0\% \times AC.) + (10\% \times ANC.)}{AC + ANC.}$$

Where:

OX = Factor for the oxidation of CH<sub>4</sub> by soil bacteria, for the case provided for in subparagraph 2;

AC = Area, in m<sup>2</sup>, of the area of the landfill site that is filled and covered by a geomembrane;

ANC = Area, in m<sup>2</sup>, of the area of the landfill site that is operating and not covered by the geomembrane under final cover at the start of the reporting period.”;

(b) in Division 7.3, by replacing subparagraph 3 of the first paragraph by the following:

“(3) calibrated by the manufacturer or by a third person certified for that purpose by the manufacturer, at the intervals prescribed by the manufacturer or, if the intervals are greater than 5 years, every 5 years.”;

(2) in Protocol 3, in Part I,

(a) by replacing "second" in the first paragraph of Division 2 by "third";

(b) by replacing "second" in the first paragraph of Division 8.1 by "first ";

(c) by replacing the third paragraph of Division 9.4 by the following:

"If the moisture content determined under subparagraph 3 of the second paragraph is above 75% of the saturation point for the ODS, the promoter must dry the ODS mixture, conduct the circulation again in accordance with the method provided for in Division 9.2 in the case of mixed ODS, or take the sample again and analyze it in accordance with the method in Divisions 9.3 and 9.4, or deduct the weight of the water, which includes the weight of the layer of free water floating on the ODS and the amount of dissolved water in the ODS.”;

(3) in Protocol 4, in Division 2 of Part I, by replacing "second" in the first paragraph by "third";

(4) in Protocol 5, in Division 2 of Part I, by replacing "second" in the first paragraph by "third".

**63.** The Regulation, including its appendices, is amended by replacing "project reporting period", wherever it occurs, by "issuance period".

**64.** This Regulation comes into force on the date of its publication in the *Gazette officielle du Québec*, with the exception of section 59, which comes into force on the date of publication in the *Gazette officielle du Québec* of a first order concerning the ratification of an agreement with Ontario entered into pursuant to section 46.14 of the Environment Quality Act (chapter Q-2).

## Notice

Environment Quality Act  
(chapter Q-2)

### **Determination of annual caps on greenhouse gas emission units relating to the cap-and-trade system for greenhouse gas emission allowances for the 2021-2030 period**

Notice is hereby given, in accordance with section 46.7 of the Environment Quality Act (chapter Q-2), that the Order concerning the determination of annual caps on greenhouse gas emission units relating to the cap-and-trade system for greenhouse gas emission allowances for the 2021-2030 period, appearing below, may be made by the Government on the expiry of 60 days following this publication.

The Order sets annual caps on greenhouse gas emission units that may be granted by the Minister of Sustainable Development, the Environment and the Fight Against Climate Change, as part of the cap-and-trade system for greenhouse gas emission allowances for the 2021-2030 period.

The caps represent the maximum quantity of greenhouse gas, in metric tons of greenhouse gas expressed in CO<sub>2</sub> equivalents, that may be emitted into the atmosphere by emitters subject to the cap-and-trade system for greenhouse gas emission allowances for the 2021-2030 period. The caps were set in accordance with section 46.7 of the Environment Quality Act based on the objective of reduction of greenhouse gas emissions that the Government set for 2030, that is a 37.5% reduction under the level of 1990.

Further information may be obtained by contacting Jonathan Beaulieu, Economist, Direction du marché du carbone, Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques; telephone: 418 521-3868, extension 7235; email: [spede-bcc@mddelcc.gouv.qc.ca](mailto:spede-bcc@mddelcc.gouv.qc.ca); fax: 418 646-4920.

Any person wishing to comment is requested to submit written comments within 60 days to Jean-Yves Benoit, Director, Direction du marché du carbone, Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, édifice Marie-Guyart, 675, boulevard René-Lévesque Est, 6<sup>e</sup> étage, boîte 31, Québec (Québec) G1R 5V7, email: [jean-yves.benoit@mddelcc.gouv.qc.ca](mailto:jean-yves.benoit@mddelcc.gouv.qc.ca)

DAVID HEURTEL,  
*Minister of Sustainable Development,  
the Environment and the  
Fight Against Climate Change*

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## Draft order

Environment Quality Act  
(chapter Q-2)

Determination of annual caps on greenhouse gas emission units relating to the cap-and-trade system for greenhouse gas emission allowances for the 2021-2030 period

WHEREAS, under the first paragraph of section 46.4 of the Environment Quality Act (chapter Q-2), to fight global warming and climate change, the Government sets, by order, an overall greenhouse gas reduction target for Québec for each period it determines, using 1990 emissions as the baseline;

WHEREAS, by Order in Council 1018-2015 dated 18 November 2015, the Government set the greenhouse gas emission reduction target at 37.5% for 2030 under the level of 1990;

WHEREAS, under the first paragraph of section 46.7 of the Environment Quality Act, in light of the targets set, the Government, by order, sets a cap on the emission units that may be granted by the Minister of Sustainable Development, the Environment and the Fight Against Climate Change for each period referred to in the regulation of the Government;

WHEREAS, under subparagraph 1 of the first paragraph of section 46.8 of the Act, subject to the conditions determined by regulation of the Government, the Minister may grant the available emission units, either by allocating them without charge to emitters required to cover their greenhouse gas emissions, or by selling them at auction or by agreement to persons or municipalities determined by regulation of the Government;

WHEREAS paragraph 12 of section 3 of the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances (chapter Q-2, r. 46.1) defines the compliance periods for which an emitter is required to cover its greenhouse gas emissions, in particular the period starting on 1 January 2021 and ending on 31 December 2023, and the periods after 3 calendar years;

WHEREAS, by Order in Council 1185-2012 dated 12 December 2012, the Government set the caps on emission units for each of the years covering the 2013-2020 period;

WHEREAS it is necessary to set the caps on emission units for each of the years covering the 2021-2030 period, in particular for future sales at auction;

IT IS ORDERED, therefore, on the recommendation of the Minister of Sustainable Development, the Environment and the Fight Against Climate Change:

THAT the caps on the emission units that may be granted by the Minister of Sustainable Development, the Environment and the Fight Against Climate Change, within the cap-and-trade system for greenhouse gas emission allowances, for each year covering the 2021-2030 period are set at,

- for the year 2021, 55.26 million emission units;
- for the year 2022, 54.02 million emission units;
- for the year 2023, 52.79 million emission units;
- for the year 2024, 51.55 million emission units;
- for the year 2025, 50.31 million emission units;
- for the year 2026, 49.08 million emission units;
- for the year 2027, 47.84 million emission units;
- for the year 2028, 46.61 million emission units;
- for the year 2029, 45.37 million emission units;
- for the year 2030, 44.14 million emission units.

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Abbreviations: **A**: Abrogated, **N**: New, **M**: Modified

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