

Notice is hereby given, pursuant to subsection 332(1)^a of the *Canadian Environmental Protection Act, 1999*^b, that the Governor in Council, pursuant to subsections 93(1) and 330(3.2)^c of that Act, proposes to make the annexed *Reduction of Carbon Dioxide Emissions from Coal-Fired Generation of Electricity Regulations*.

Any person may, within 60 days after the date of publication of this notice, file with the Minister of the Environment comments with respect to the proposed Regulations or a notice of objection requesting that a board of review be established under section 333 of that Act and stating the reasons for the objection. All comments and notices must cite the *Canada Gazette*, Part I, and the date of publication of this notice, and be sent by mail to Caroline Blais, Director, Electricity and Combustion Division, Environmental Stewardship Branch, Department of the Environment, Gatineau, Quebec K1A 0H3, by fax to 819-994-9938 or by email to ecd-dec@ec.gc.ca.

Any person who provides information to the Minister of the Environment may submit with the information a request for confidentiality under section 313 of that Act.

Ottawa, , 2011

Jurica Čapkun
Assistant Clerk of the Privy Council

^a S.C. 2004, c. 15, s. 31

^b S.C. 1999, c. 33

^c S.C. 2008, c. 31, s. 5

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REDUCTION OF CARBON DIOXIDE EMISSIONS FROM COAL-FIRED GENERATION OF ELECTRICITY REGULATIONS

OVERVIEW

- Purpose **1.** (1) These Regulations establish a regime for the reduction of carbon dioxide (CO₂) emissions that result from the production of electricity by means of thermal energy using coal as a fuel, whether in conjunction with other fuels or not.
- Contents (2) These Regulations are divided into four Parts:
- (a) Part 1 sets out a performance standard for the intensity of emissions of CO₂ from regulated units and provides for exceptions based on the substitution of units and for temporary exemptions in relation to emergencies and units integrated with carbon capture and storage systems;
- (b) Part 2 sets out requirements for the reporting, sending and recording of information;
- (c) Part 3 sets out quantification rules for determining the intensity of emissions of CO₂ from regulated units; and
- (d) Part 4 provides dates for the coming into force of these Regulations and, in particular, provides for the delayed coming into force of the performance standard in respect of standby units until January 1, 2020.

INTERPRETATION

- Definitions **2.** (1) The following definitions apply in these Regulations.
- “Act”
« Loi » “Act” means the *Canadian Environmental Protection Act, 1999*.
- “ASTM”
« ASTM » “ASTM” means ASTM International, formerly known as the American Society for Testing and Materials.
- “auditor”
« vérificateur » “auditor” means a person who
- (a) is independent of the responsible person who is to be audited;
- (b) is certified as an auditor by a certification body accredited by the Standards Council of Canada; and
- (c) has a good knowledge of continuous emission monitoring systems.
- “authorized
official”
« agent
autorisé » “authorized official” means
- (a) in respect of a responsible person that is a corporation, an officer of the corporation who is authorized to act on its behalf;
- (b) in respect of a responsible person who is an individual, that person or a person authorized to act on their behalf; and

(c) in respect of a responsible person that is another entity, a person authorized to act on its behalf.

“biomass” « <i>biomasse</i> »	“biomass” means a fuel that consists only of plants or parts of plants, waste of animal origin, or any product made of either of those, and includes wood and wood products, agricultural residues and wastes, biologically derived organic matter found in municipal and industrial wastes, landfill gas, bio-alcohols, spent pulping liquor, sludge gas and animal- or plant-derived oils.
“calendar year” « <i>année civile</i> »	“calendar year” means (a) for 2015, the period of six consecutive months that begins on July 1, 2015; and (b) in any other case, the period of twelve consecutive months that begins on January 1.
“capacity factor” « <i>facteur de capacité</i> »	“capacity factor”, in respect of a unit in a calendar year, means the ratio of the quantity of electricity referred to in section 18 that is produced by the unit to the quantity of electricity that would be produced by the unit in the calendar year if it were to operate at its production capacity at all times during the calendar year.
“coal” « <i>charbon</i> »	“coal” includes petroleum coke and synthetic gas that is derived from coal or petroleum coke.
“commissioning date” « <i>date de mise en service</i> »	“commissioning date” means (a) for an electricity generator that began producing electricity by means of thermal energy using a fuel other than coal, and not in conjunction with coal, but, before June 23, 2010, was converted into a unit, the day that is 18 months after the day on which that generator began to produce electricity for sale using fuel other than coal, and not in conjunction with coal; and (b) in any other case, the day on which a unit begins to produce electricity for sale.
“existing unit” « <i>groupe existant</i> »	“existing unit” means a unit that is neither an old unit nor a new unit.
“facility” « <i>centrale</i> »	“facility” means all units, buildings and other structures, and stationary equipment — including equipment for the separation and initial pressurization of CO ₂ of the capture element of a carbon capture and storage system — either on a single site or on adjacent sites that function as a single, integrated site to enable the production of electricity.
“fossil fuel” « <i>combustible fossile</i> »	“fossil fuel” means a fuel other than biomass.
“front end engineering design study” « <i>étude d’ingénierie d’avant projet détaillé</i> »	“front end engineering design study” means a collection of studies that provide the necessary details to support the carrying out of a construction project for the capture element of a carbon capture and storage system, including (a) technical drawings and documents that describe the capture element of the system in sufficient detail to permit the tendering of a contract for its construction;

- (b) an estimation of the capital cost of that capture element with a margin of error of \pm 20%;
- (c) a safety review of that capture element;
- (d) a risk assessment of the carbon capture and storage system, namely an assessment of the risks that may delay or prevent the completion of the construction of the system, including technical, economic, environmental, legal and labour-related risks;
- (e) a strategy to mitigate those risks; and
- (f) a detailed plan to carry out the construction of the carbon capture and storage system, including a schedule for the completion of its major steps.

“gasification system”
« système de gazéification »

“gasification system” includes a gasification system that is in part located underground.

“GPA”
« GPA »

“GPA” means the Gas Processors Association of the United States.

“operator”
« exploitant »

“operator” means the person that operates or has the charge, management or control of a unit.

“new unit”
« groupe nouveau »

“new unit” means a unit, other than an old unit, whose commissioning date is on or after July 1, 2015.

“major equipment”
« équipement majeur »

“major equipment” means a boiler, gasifier, shift reactor, turbine, air pollution control device, air separation unit, compressor, CO₂ separation system or any other equipment that

(a) is manufactured in accordance with specifications in its purchase order and takes more than 12 months after the date of the purchase order to be manufactured and delivered; or

(b) costs \$10,000,000 or more.

“old unit”
« groupe en fin de vie utile »

“old unit” means a unit that has reached the end of its useful life but continues to produce electricity.

“power purchase agreement”
« accord d’achat d’électricité »

“power purchase agreement” means an agreement between the responsible person for a unit and a distributor of electricity in respect of the sale of the electricity produced by that unit to that distributor.

“production capacity”
« capacité de production »

“production capacity”, in relation to a unit, means

(a) the maximum continuous rating, expressed in MW, as reported in a given calendar year to a competent provincial authority or an electric system operator in accordance with the laws of the province where the unit is located; or

(b) if no report has been made, the most electricity that was produced for sale, expressed in MW, during two continuous hours in that calendar year.

“Reference Method”
« Méthode de référence »

“Reference Method” means the document entitled *Reference Method for Source Testing: Quantification of Carbon Dioxide Releases by Continuous Emission Monitoring Systems from Thermal Power Generation* published in June 2011 by Her Majesty in right of Canada, as represented by the Minister of the Environment.

“responsible person”
« *personne responsable* »

“responsible person” means an owner or operator of a unit.

“standard cubic metre” or “standard m³”
« *mètre cube normalisé* » ou « *m³ normalisé* »

“standard cubic metre” or “standard m³” has the meaning assigned to a cubic metre at standard pressure and standard temperature by the definition “standard volume” in subsection 2(1) of the *Electricity and Gas Inspection Regulations*.

“standby unit”
« *groupe de réserve* »

“standby unit” means an old unit that, for a given calendar year, operates at a capacity factor of 7% or less.

“unit”
« *groupe* »

“unit” means a unit comprised of equipment — including boilers and other combustion devices, generators, turbines and air pollution control devices — for the production of electricity by means of thermal energy using coal as a fuel, whether in conjunction with other fuels or not.

“useful life”
« *vie utile* »

“useful life”, in respect of a unit, means the period that begins on the commissioning date and ends on the latest of

- (a) December 31 of the calendar year that is 45 years after the commissioning date,
- (b) subject to paragraph (c), if a power purchase agreement in relation to the unit was in force on June 23, 2010, the earlier of
 - (i) December 31, 2020, and
 - (ii) December 31 of the calendar year in which the power purchase agreement expires, and
- (c) if the later of the dates described by paragraphs (a) and (b) is the date referred to in subparagraph (b)(ii) and that power purchase agreement expires on or before December 31, 2016, the earlier of
 - (i) December 31, 2016, and
 - (ii) December 31 of the calendar year that is three years after the calendar year in which that power purchase agreement expires.

Interpretation of incorporated documents

(2) For the purposes of interpreting documents incorporated by reference into these Regulations, “should” must be read to mean “must” and any recommendation or suggestion must be read as an obligation.

Standards incorporated by reference

(3) Any standard of the ASTM, GPA or International Standards Organization that is incorporated by reference into these Regulations is incorporated as amended from time to time.

PART 1
REGULATED UNITS AND EMISSION LIMIT

EMISSION-INTENSITY LIMIT

- 375t/GWh **3.** (1) A responsible person for a new unit or an old unit must not, on average, emit with an intensity of more than 375 tonnes CO₂ emissions from the combustion of fossil fuels in the unit for each GWh of electricity produced by the unit during a calendar year.
- Quantification of electricity and emissions (2) The quantity of
(a) electricity referred to in subsection (1) is to be determined in accordance with section 18; and
(b) emissions referred to in subsection (1) is to be determined in accordance with the applicable provisions of sections 19 to 23.
- CO₂ released from sorbent (3) The CO₂ emissions released from the use of sorbent to control the emission of sulphur dioxide from a unit are to be included as CO₂ emissions from the combustion of fossil fuels in that unit for the purpose of subsection (1).
- Coal gasification systems (4) Emissions from a gasification system that produces synthetic gas derived from coal or petroleum coke that is used as a fuel to produce electricity from a unit referred to in subsection (1) are to be included as emissions from that unit for the purpose of subsection (1), if that coal gasification system has at least one responsible person in common with that unit.
- CCS excluded (5) The CO₂ emissions from a unit referred to in subsection (1) do not include emissions that are captured in accordance with the laws of Canada or a province that regulate that capture and are transported and stored in accordance with the laws of Canada or a province, or the United States or one of its states, that regulate, as the case may be, that transportation or storage.
- Partial year exemption (6) For greater certainty, if a responsible person is exempted under subsection 6(4), 7(3) or 13(4) from the application of subsection (1) for a period during a calendar year, the average emission-intensity limit set out in that subsection applies for the remainder of that calendar year.

REGISTRATION

- Registration **4.** (1) A responsible person for a unit must register the unit by sending to the Minister a registration report that contains the information set out in Schedule 1
(a) for an existing unit and old unit, on or before February 1, 2013; and
(b) for a new unit, on or before 30 days after its commissioning date.
- Registration number (2) On receipt of the registration report, the Minister must assign a registration number to the unit and inform the responsible person of that registration number.

Change of information

(3) If the information provided in the registration report changes, the responsible person must send a notice to the Minister that provides the updated information not later than 30 days after the change.

SUBSTITUTION OF UNITS

Application of subsection 3(1)

5. (1) For the purpose of subsection 3(1), a responsible person for a unit that reaches the end of its useful life during a calendar year before 2020 may apply to the Minister to have another unit (referred to in this section as the “substituted unit”) substituted for the original unit if

- (a) the substituted unit is an existing unit;
- (b) the original unit and the substituted unit have a common owner who has an ownership interest of 50% or more in each of those two units;
- (c) those two units are located in the same province; and
- (d) the production capacity, during the calendar year before the calendar year in which the application is made, of the substituted unit was equal to or greater than the production capacity, during that calendar year, of the original unit.

Period of application

(2) The application must be made

- (a) if the original unit is an old unit that has reached the end of its useful life in a calendar year before 2015, in the period of 2014 before June 1; and
- (b) if the original unit is an existing unit that will reach the end of its useful life during a calendar year before 2020, in the period of that calendar year before 2020 before June 1.

Content of application

(3) The application must include the registration number of the original unit and the substituted unit and information, with supporting documentation, to demonstrate that paragraphs (1)(b) to (d) are satisfied.

Granting of application

(4) The Minister must, within 30 days after receiving the application, grant the application if

- (a) the substituted unit is not involved in an exemption granted under subsection 13(4); and
- (b) the Minister is satisfied that paragraphs (1)(a) to (d) are satisfied.

Effect

(5) The effect of the granting of the application is that subsection 3(1) applies in respect of the substituted unit rather than the original unit as of the later of

- (a) the beginning of the calendar year after an application is made, and
- (b) July 1, 2015.

Cessation of effect

(6) The substitution referred to in subsection (5) ceases to have effect, and subsection 3(1) applies in respect of the original unit, as of the earliest of

- (a) the calendar year that begins after the day on which the responsible person for that unit and the substituted unit notifies the Minister that they wish that the granting of the application no longer have any effect,
- (b) the calendar year that begins after the day on which paragraph (1)(b) is no longer satisfied,
- (c) the calendar year that begins after a calendar year during which the production capacity of the original unit was more than the production capacity of the substituted unit referred to in paragraph (1)(d),
- (d) the calendar year that begins after the end of the useful life of the substituted unit, and
- (e) a calendar year during which the electricity produced by the substituted unit by means of thermal energy used fossil fuels without any use of coal as a fuel.

EMERGENCY CIRCUMSTANCES

Conditions for application

6. (1) A responsible person for a unit may, under emergency circumstances referred to in subsection (2), apply to the Minister for an exemption from the application of subsection 3(1) in respect of the unit, if

- (a) as a result of the emergency circumstances, there is a disruption, or a significant risk of disruption, to the electricity supply in the province where the unit is located; and
- (b) the operation of the unit will end, decrease the risk of, or mitigate the consequences of, the disruption.

Definition of emergency circumstances

- (2) An emergency circumstance is a circumstance
 - (a) that arises due to an extraordinary, unforeseen and irresistible event; or
 - (b) under which one or more of the measures referred to in paragraph 1(a) of the *Regulations Prescribing Circumstances for Granting Waivers Pursuant to Section 147 of the Act* has been made or issued in the province where the unit is located.

Application

(3) The responsible person must, within 15 days after the emergency circumstance arises, provide the Minister with their application. The application must include the registration number of the unit and information, with supporting documentation, to demonstrate that paragraphs (1)(a) and (b) are satisfied.

Granting of exemption

(4) The Minister must, within 30 days of receipt of the application, grant the exemption if the Minister is satisfied that paragraphs (1)(a) and (b) are satisfied.

Period of exemption

- (5) The exemption has effect as of the day on which the emergency circumstance began and ceases to have effect on the earliest of
 - (a) the day that is 90 days after that day,
 - (b) the day specified by the Minister, and
 - (c) the earlier of

- (i) the day on which the event referred to in paragraph (2)(a) ceases to cause a disruption, or a significant risk of disruption, to the electricity supply in the province where the unit is located, and
- (ii) the day on which the measure, if any, referred to in paragraph (2)(b) ceases to be in effect.

- Extension **7.** (1) If paragraphs 6(1)(a) and (b) will continue to apply on and after the day on which an exemption granted under subsection 6(4) is to cease to have effect, the responsible person may, before that day, apply to the Minister for an extension of the exemption.
- Application (2) The application must include the registration number of the unit and information, with supporting documentation, to demonstrate that
- (a) paragraphs 6(1)(a) and (b) will continue to apply after the day on which the exemption is to cease to have effect; and
 - (b) steps — other than the operation of the unit during the period of the exemption — have been, and are being, taken to end, decrease the risk of, or mitigate the consequences of, the disruption.
- Granting of extension (3) The Minister must, within 15 days after receiving the application, grant the extension if Minister is satisfied that paragraphs (2)(a) and (b).
- Duration (4) The extension ceases to have effect on the earliest of
- (a) the day that is 90 days after the day on which the application for the extension was made,
 - (b) the day specified by the Minister, and
 - (c) the day referred to in paragraph 6(5)(c).

CARBON CAPTURE AND STORAGE

Temporary Exemption — System to be Constructed

- Application **8.** (1) A responsible person for a new unit or an old unit may apply to the Minister for a temporary exemption from the application of subsection 3(1) in respect of the unit if
- (a) for a new unit, the unit is designed to permit its integration with a carbon capture and storage system; and
 - (b) for an old unit, the unit may be retrofitted to permit its integration with a carbon capture and storage system.
- Granting and content of application (2) The application must indicate the registration number of the unit and include the following supporting documents and information:
- (a) a copy of the resolution of the board of directors of the owner of the new unit or old unit in question that approved of the construction of a carbon capture and storage system for the unit;

(b) a declaration that includes the following statements:

- (i) that, based on the economic feasibility study referred to in paragraph (c), the unit, when operating with an integrated carbon capture and storage system is, to the best of the responsible person's knowledge and belief, economically viable, and
- (ii) that, based on the technical feasibility study referred to in paragraph (d) and the implementation plan referred to in paragraph (f), the responsible person expects to satisfy the requirements referred to in section 9 and, as a result, to be in compliance with subsection 3(1) by January 1, 2025;

(c) an economic feasibility study that demonstrates the economic viability of the unit when it operates with an integrated carbon capture and storage system and that

- (i) provides project cost estimates, with their margin of error, for the construction of the integrated carbon capture and storage system, and
- (ii) identifies the source of financing for that construction;

(d) a technical feasibility study that establishes — based on information referred to in Schedule 2 related to the capture element, transportation element and storage element of the carbon capture and storage system — that there are no insurmountable technical barriers to carrying out the following activities:

- (i) capturing a sufficient volume of CO₂ emissions from the combustion of fossil fuels in the unit to enable the responsible person to comply with subsection 3(1),
- (ii) transporting the captured CO₂ emissions to suitable geological sites for storage, and
- (iii) storing the captured CO₂ emissions in those suitable geological sites;

(e) a description of any work that has been done to satisfy the requirements referred to in section 9, along with the information referred to in Schedule 3 with respect to that work; and

(f) an implementation plan that provides a description of the work to be done, with a schedule for the steps necessary, to achieve the following objectives:

- (i) satisfaction of the requirements referred to in section 9, and
- (ii) compliance of the responsible person with subsection 3(1) by January 1, 2025 when the unit is operating with an integrated carbon capture and storage system that captures CO₂ emissions from the combustion of fossil fuels in the unit in accordance with the laws of Canada or a province that regulate that capture and transports and stores those emissions in accordance with the laws of Canada or a province, or the United States or one of its states, that regulate, as the case may be, that transportation or storage.

(3) The Minister must, within 120 days after receiving the application, grant the temporary exemption if

(a) the resolution referred to in paragraph (2)(a) unconditionally approves of the construction of a carbon capture and storage system for the unit;

Granting of application

- (b) the application includes the documents referred to in subsection (2); and
- (c) the information contained in those documents can reasonably be regarded as establishing that
 - (i) the operation of the unit, when integrated with the carbon capture and storage system, will be economically viable,
 - (ii) the capture, transportation and storage elements of the carbon capture and storage system will be technically feasible,
 - (iii) if applicable, a requirement referred to in section 9 has been satisfied by work done before the application was made, and
 - (iv) the responsible person will satisfy the requirements of section 9 and, as a result, will be in compliance with subsection 3(1) by January 1, 2025 when the unit is operating with an integrated carbon capture and storage system.

Duration (4) A temporary exemption, unless revoked under section 12, remains in effect until December 31, 2024.

Requirements **9.** A responsible person who has been granted a temporary exemption in respect of a unit under subsection 8(3) must satisfy the following requirements:

- (a) carry out a front end engineering design study by
 - (i) in the case of a new unit, January 1, 2020, and
 - (ii) in the case of an old unit,
 - (A) July 1, 2016, if the end of its useful life occurred before July 1, 2015, and
 - (B) in any other case, the earlier of
 - (I) one year after the end of its useful life, and
 - (II) January 1, 2020;
- (b) purchase any major equipment that is necessary for the capture element by
 - (i) in the case of a new unit, January 1, 2021, and
 - (ii) in the case of an old unit,
 - (A) July 1, 2017, if the end of its useful life occurred before July 1, 2015; and
 - (B) in any other case, the earlier of
 - (I) two years after the end of its useful life, and
 - (II) January 1, 2021;
- (c) enter into any contract required for the transportation and storage of CO₂ emissions from the unit by
 - (i) in the case of a new unit, January 1, 2022, and
 - (ii) in the case of an old unit,

- (A) July 1, 2018, if the end of its useful life occurred before July 1, 2015, and
 - (B) in any other case, the earlier of
 - (I) three years after the end of its useful life, and
 - (II) January 1, 2022;
- (d) take all necessary steps to obtain all permits or approvals required in relation to the construction of the capture element by
- (i) in the case of a new unit, January 1, 2022, and
 - (ii) in the case of an old unit,
 - (A) July 1, 2018, if the end of its useful life occurred before July 1, 2015, and
 - (B) in any other case, the earlier of
 - (I) three years after the end of its useful life, and
 - (II) January 1, 2022;
- (e) in the case of an old unit, take all necessary steps to secure delivery of the major equipment referred to in paragraph (b) by
- (i) July 1, 2019, if the end of its useful life occurred before July 1, 2015, and
 - (ii) in any other case, the earlier of
 - (A) four years after the end of its useful life, and
 - (B) January 1, 2023;
- (f) ensure that the unit, when operating with an integrated carbon capture and storage system, captures CO₂ emissions from the combustion of fossil fuels in the unit in accordance with the laws of Canada or a province that regulate that capture and transports and stores those emissions in accordance with the laws of Canada or a province, or the United States or one of its states, that regulate, as the case may be, that transportation or storage by
- (i) in the case of a new unit, January 1, 2024, and
 - (ii) in the case of an old unit,
 - (A) July 1, 2020, if the end of its useful life occurred before July 1, 2015, and
 - (B) in any other case, the earlier of
 - (I) five years after the end of its useful life, and
 - (II) January 1, 2024;
- (g) in the case of an old unit that is operating with an integrated carbon capture and storage system, ensure that, during a calendar year, at least 30% of the CO₂ emissions from the combustion of fossil fuels in the unit are captured in accordance with the laws of Canada or a province that regulate that capture and are transported and stored accordance

with the laws of Canada or a province, or the United States or one of its states, that regulate, as the case may be, that transportation or storage by

- (i) July 1, 2021, if the end of its useful life occurred before July 1, 2015, and
- (ii) in any other case, the earlier of
 - (A) six years after the end of its useful life, and
 - (B) January 1, 2024.

Implementation
report

10. (1) A responsible person who has been granted a temporary exemption in respect of a unit must, for each calendar year following the granting of the temporary exemption, provide the Minister with an implementation report that indicates the unit's registration number and includes supporting documents that contain the following information:

- (a) the steps taken during that year to construct the capture, transportation and storage elements of the carbon capture and storage system and to integrate those elements with the unit;
- (b) any requirement referred to in section 9 that was satisfied during that year, along with the information or documents referred to in Schedule 3;
- (c) a description of the manner in which those steps were carried out or those requirements were satisfied;
- (d) any changes, with respect to the most recently provided information to the Minister, to the proposed engineering design for the capture element, to the preferred transportation methods or routes or to the preferred storage sites, for the carbon capture and storage system; and
- (e) a description of any steps necessary, with a schedule for those steps, to achieve the following objectives:
 - (i) the satisfaction of any requirements referred to in section 9 that remain to be satisfied, and
 - (ii) the compliance of the responsible person with subsection 3(1) by January 1, 2025 when the unit is operating with an integrated carbon capture and storage system that captures CO₂ emissions from the combustion of fossil fuels in the unit in accordance with laws of Canada or a province that regulate that capture and transports and stores those emissions in accordance with laws of Canada or a province, or the United States or one of its states, that regulate, as the case may be, that transportation or storage.

Due date

(2) The implementation report must be provided by March 31 of the calendar year that follows the calendar year in question.

Updated
information

11. If any event occurs or any circumstance arises that may prejudice the ability of the responsible person to achieve an objective referred to in paragraph 10(1)(e), the responsible person must send a notice, without delay, to the Minister that indicates the unit's registration number and contains the following information:

- (a) a description of the event or circumstance and the nature of the prejudice;
- (b) an explanation of how the prejudice is to be overcome in order to ensure that the objective will be achieved; and
- (c) in relation to that explanation, an update to any information previously provided to the Minister under paragraphs 10(1)(c) to (e), together with any necessary supporting documents.

Revocation —
non-satisfaction
or misleading

12. (1) The Minister must revoke a temporary exemption granted under subsection 8(3) if

- (a) the responsible person does not satisfy a requirement referred to in section 9; or
- (b) any information indicated or contained in the application for the temporary exemption, an implementation report referred to in section 10 or a notice referred to in section 11 is false or misleading.

Revocation —
implementation
report or
reasonable
grounds

(2) The Minister may revoke the temporary exemption if

- (a) the responsible person has not provided an implementation report in accordance with section 10;
- (b) there are reasonable grounds for the Minister to believe that the carbon capture and storage system will not operate so as to capture, transport and store CO₂ emissions as described in paragraph 9(f) by the date referred to in that paragraph; or
- (c) there are reasonable grounds for the Minister to believe that the responsible person will not emit CO₂ from the combustion of fossil fuels in the unit in accordance with subsection 3(1) by January 1, 2025.

Reasons and
representations

(3) The Minister must not revoke the temporary exemption under subsection (1) or (2) unless the Minister has provided the responsible person with

- (a) written reasons for the proposed revocation; and
- (b) an opportunity to be heard, by written representation, in respect of the proposed revocation.

Eighteen-month Exemption — Existing Unit with System

Exemption

13. (1) A responsible person for an old unit may, on application made to the Minister before September 1, 2021, be exempted from the application of subsection 3(1) in respect of the old unit for a period of 18 consecutive months that begins on January 1 of the calendar year subsequent to the calendar year in which the application is made if

- (a) an existing unit and the old unit have a common owner who has a ownership interest of 50% or more in each of those two units;
- (b) the production capacity of the existing unit, during the calendar year before the calendar year in which the application is made, was equal to or greater than the production capacity of the old unit during that calendar year;
- (c) the existing unit and the old unit are located in the same province;

- (d) the CO₂ emissions from the combustion of fossil fuels in the existing unit are captured in accordance with the laws of Canada or a province that regulate that capture and are transported and stored in accordance with the laws of Canada or a province, or the United States or one of its states, that regulate, as the case may be, that transportation or storage;
- (e) at least 30% of those CO₂ emissions are captured, transported and stored in accordance with paragraph (d) for a period of five consecutive calendar years; and
- (f) the existing unit does not reach the end of its useful life during that period.
- Application (2) A responsible person for an old unit must apply for the exemption before September 1 of the calendar year immediately before the calendar year for which the exemption is sought.
- Contents (3) The application must indicate the registration number of the old unit and of the existing unit and include supporting documents that contain information to demonstrate that

 - (a) paragraphs (1)(a) to (d) and (f) are satisfied; and
 - (b) for a period of six consecutive months that ends before the day on which the application is made, at least 30% of the CO₂ emissions from the combustion of fossil fuels in the existing unit were captured, transported and stored in accordance with paragraph (1)(d).
- Grant (4) The Minister must, within 30 days after receiving the application, grant the exemption if

 - (a) no exemption referred to in subsection (1) has been previously granted in respect of the old unit;
 - (b) no exemption referred to in subsection (1) that involved the existing unit has been previously granted;
 - (c) the existing unit referred to in subsection (1) is not a substituted unit referred to in subsection 5(5); and
 - (d) the Minister is satisfied that subsection (3) is satisfied.
- Obligation to capture 30% of CO₂ emissions (5) A responsible person who has been exempted under subsection (4) in respect of an existing unit must ensure that paragraphs (1)(d) and (e) are satisfied for the remaining portion of the period of five consecutive calendar years that begins on or before January 1 of the calendar year in which the application was made.

PART 2

REPORTING, SENDING AND RECORDING OF INFORMATION

- Annual report **14.** (1) For each calendar year, a responsible person for each of the following units must, on or before June 1 following the end of that calendar year, send an annual report to the Minister that contains the information set out in Schedule 4:

 - (a) a new unit;

- (b) an old unit;
- (c) a substituted unit referred to in subsection 5(1); and
- (d) an existing unit referred to in subsection 13(1), if that calendar year is a calendar year included in the remaining portion of the five consecutive calendar years referred to in subsection 13(5).

Existing units (2) The responsible person for an existing unit must send a report in accordance with subsection (1) for the calendar year in which its useful life is to end and for the preceding calendar year.

Electronic report, notice and application **15.** (1) A report or notice that is required, or an application made, under these Regulations must be sent electronically in the form and format specified by the Minister and must bear the electronic signature of an authorized official of the responsible person.

Paper report or notice (2) If the Minister has not specified an electronic form and format or if it is impractical to send the report, notice or application electronically in accordance with subsection (1) because of circumstances beyond the person's control, the report, notice or application must be sent on paper, signed by an authorized official of the responsible person, and in the form and format specified by the Minister. However, if no form and format have been so specified, it may be in any form and format.

Record-making **16.** (1) A responsible person for a unit must make a record

- (a) of any application referred to in subsections 5(3), 6(3), 7(2), 8(2) or 13(3), including the information referred to in those subsections, along with a copy of the supporting documents;
- (b) of any notice referred to in section 11 that was sent to the Minister, along with a copy of the information that was contained in it and any supporting documents;
- (c) for each calendar year during which a responsible person used a continuous emission monitoring system referred to in paragraph 19(1)(a), of any document, record or information referred to in section 8 of the Reference Method;
- (d) of the results of the analysis of every sample collected in accordance with section 26;
- (e) of every measurement and calculation used to determine a value of an element of a formula set out in section 18 and sections 20 to 23;
- (f) that demonstrates that the installation, maintenance and calibration of measuring instruments referred to in subsection 24(1) was in accordance with that subsection and subsection 24(3) and of every calibration referred to in subsection 24(2); and
- (g) that demonstrates that any meter referred to in section 18 complies with the requirements of the *Electricity and Gas Inspection Act* and the *Electricity and Gas Inspection Regulations*, including a certificate of inspection or verification referred to in those regulations.

When records made

(2) Records referred to in paragraphs (1)(c) to (g) must be made as soon as feasible but not later than 15 days after the information to be recorded becomes available.

Retention of records and reports

17. A responsible person who is required under these Regulations to make a record or send a report must keep the record or a copy of the report, as well as any supporting documents that relate to the information contained in that record or copy, for at least seven years after they make the record or send the report. The record or copy must be kept at the person’s principal place of business in Canada or at any other place in Canada where it can be inspected. If the record or copy is kept at one of those other places, the person must provide the Minister with the civic address of that other place.

PART 3

QUANTIFICATION RULES

PRODUCTION OF ELECTRICITY

Electricity

18. (1) The quantity of electricity referred to in paragraph 3(2)(a) is to be determined in accordance with the following formula

$$G_{gross} - G_{aux}$$

where

G_{gross} is the gross quantity of electricity that is produced by the unit during the calendar year, expressed in GWh and measured at the electrical terminals of the generators of the unit using meters that comply with the requirements of the *Electricity and Gas Inspection Act* and the *Electricity and Gas Inspection Regulations*;

G_{aux} is the quantity of electricity — that is used by the facility in which the unit is located during the calendar year to operate infrastructure and equipment and that is related to the unit for electricity generation and for separation, but not pressurization, of CO₂ — expressed in GWh and determined under a method of attribution considered by the responsible person to be most appropriate, based on data collected using meters that comply with the requirements of the *Electricity and Gas Inspection Act* and the *Electricity and Gas Inspection Regulations*.

Same method of attribution in subsequent years

(2) Once the responsible person has, for a calendar year, decided on the method of attribution referred to in the description of G_{aux} that they consider to be most appropriate, they must use that method for every subsequent calendar year, unless

(a) during a subsequent calendar year, a unit located at the facility ceases to produce electricity or a new unit is added to those located at the facility; or

(b) during a subsequent calendar year, the operation of any unit located at the facility is integrated with a carbon capture and storage system.

Change of method of attribution

(3) If paragraph (2)(a) or (b) applies in a subsequent calendar year, the responsible person must — when making the determination referred to in the description of G_{aux} in subsection (1)

for that subsequent calendar year — use the method that they consider most appropriate under the circumstances described in that paragraph. Subsection (2) applies in respect of that method of attribution and that subsequent calendar year as if they were, respectively, the method of attribution and the calendar year referred to in that subsection.

CO₂ EMISSIONS

Quantification Methods

CEMS or fuel-based methods

19. (1) For the purposes of sections 3 and 14, the quantity of CO₂ emissions from the combustion of fossil fuels in a unit for a calendar year is to be determined

- (a) by using a continuous emission monitoring system (CEMS) in accordance with section 20; or
- (b) by using a fuel-based method, based on the quantity of carbon in the fossil fuel fed for combustion, in accordance with section 21 and section 22 or 23.

Emissions from coal gasification systems

(2) If a coal gasification system referred to in subsection 3(4) is used to produce fuel for a unit, the quantity of emissions from the unit referred to in subsection (1) must be determined in accordance with paragraph (1)(a). To the extent that the emissions from the coal gasification system are not captured, transported and stored as described in subsection 3(5), that quantity must be determined for the purpose of subsection 3(1) by using a direct measure of the flow of, and concentration of CO₂ in, those emissions.

Continuous Emissions Monitoring System

Quantification

20. (1) If paragraph 19(1)(a) applies, the quantity of CO₂ emissions referred to in subsection 19(1) is to be determined in accordance with the following formula:

$$E_u - E_{bio} + E_{non-ccs}$$

where

E_u is the quantity of CO₂ emissions, expressed in tonnes, from the unit, “u”, during the calendar year from the combustion of fuel, as measured by the CEMS in accordance with sections 7.1 to 7.7 of the Reference Method;

E_{bio} is the quantity of CO₂ emissions, expressed in tonnes, from the combustion of biomass in the unit during the calendar year, determined

- (a) by using a fuel-based method
 - (i) in accordance with paragraphs 23(1)(a) or (b), if the unit combusts solid biomass at an average daily rate of less than 3t/day during the given calendar year, and
 - (ii) in accordance with the applicable formula set out in paragraphs 22(a) to (c) for the type of biomass combusted, in any other case, or
- (b) by using the method, based on data from the CEMS, described in subsection (2); and

$E_{\text{non-ccs}}$ is the quantity of CO₂ emissions, expressed in tonnes, from the combustion of fuel in the unit, including those emissions referred to in subsection 3(4), during the calendar year — other than the quantity of those emissions as measured by the CEMS and described by E_u — that is determined using a direct measurement of the flow of, and concentration of CO₂ in, the emissions from that combustion of fuel but that are not ultimately captured, transported and stored as described in subsection 3(5).

E_{bio} based on CEMS data

(2) For the purpose of determining the value of E_{bio} , the method, based on data from the CEMS, consists of making the following sequence of determinations:

(a) determine the volume of CO₂ emitted from combustion of fuel in the unit for each hour of production of electricity during the calendar year in accordance with the following formula:

$$0.01 \times \% \text{CO}_{2\text{w,h}} \times Q_{\text{w,h}} \times t_{\text{h}}$$

where

$\% \text{CO}_{2\text{w,h}}$ is the average concentration of CO₂ in relation to all gases in the stack emitted from the combustion of fuel in the unit during a given hour, “h”, during which the unit produced electricity in the calendar year — or, if applicable, a calculation made in accordance with section 7.4 of the Reference Method of that average concentration of CO₂ based on a measurement of the concentration of oxygen (O₂) in relation to all those gases — expressed as a percentage on a wet basis,

$Q_{\text{w,h}}$ is the average volumetric flow during that hour, measured on a wet basis by the stack gas volumetric flow monitor, expressed in standard m³,

t_{h} is the period during which the unit produced electricity, expressed in hours to two decimal places, the digit at the second decimal place being increased by one if the digit at the third decimal place is 5 or more;

(b) determine the volume of CO₂ emitted from combustion of fossil fuel in the unit during the calendar year, expressed in standard m³ and referred to in this subsection as V_{ff} , in accordance with the following formula:

$$\sum_{i=1}^n Q_i \times F_{\text{c,i}} \times \text{HHV}_{\text{d,i}}$$

where

Q_i is the quantity of fossil fuel type “i” combusted in the unit during the calendar year, determined

(a) for solid fuels, in the same manner as used in the determination of M_f in the formula set out in paragraph 22(1)(a) and expressed in tonnes,

- (b) for liquid fuels, in the same manner as used in the determination of V_f in the formula set out in paragraph 22(1)(b) and expressed in kL, and
 - (c) for gaseous fuels, in the same manner as used in the determination of V_f in the formula set out in paragraph 22(1)(c) and expressed in standard m^3 ;
- i is the i^{th} fossil fuel type combusted in the unit during the calendar year, with “ i ” going from the number 1 to n , where n is the number of fossil fuels so combusted,
- $F_{c,i}$ is the fuel-specific carbon based F-factor for each fossil fuel type “ i ” — as the case may be, the default value as set out in column 3 of the Table to subsection (3) for each fuel type set out in column 2 of that Table or as determined for that fuel type in accordance with Appendix A of the Reference Method — expressed in standard m^3 of CO_2/GJ ,
- $HHV_{d,i}$ — expressed in $GJ/tonne$, for a solid fuel, in GJ/kL , for a liquid fuel, and in $GJ/standard\ m^3$, for a gaseous fuel — is
- (a) the default higher heating value listed in column 2 of Schedule 5 for the fossil fuel type “ i ” listed in column 1 of that Schedule, and
 - (b) in the absence of that default higher heating value, a default higher heating value for that fossil fuel type “ i ” established by a body that is internationally recognized as competent to establish default higher heating values for fuels;
- (c) determine the volume of CO_2 emitted from the combustion of biomass in the unit during the calendar year, expressed in standard m^3 and referred to in this subsection as V_{bio} , in accordance with the following formula:

$$V_T - V_{ff}$$

where

- V_T is the sum of the volumes of CO_2 emitted from combustion of fuel in the unit during each hour of production of electricity during the calendar year, as determined under paragraph (a), and
- V_{ff} is the element determined in accordance with the formula set out in paragraph (b); and
- (d) determine the quantity of the CO_2 emissions from the combustion of biomass in the unit during the calendar year, namely the element E_{bio} described in the formula set out in subsection (1), by making the following two determinations:

(i) determine the fraction of the volume of CO₂ emissions from all fuel combusted in the unit attributable to the combustion of biomass in the unit during the calendar year, referred to in this section as Bio_{fr}, in accordance with the following formula:

$$\frac{V_{\text{bio}}}{V_{\text{T}}}$$

where

V_{bio} is the volume of CO₂ emitted from the combustion of biomass in the unit during the calendar year determined in accordance with the formula set out in paragraph (c),

V_T is the value of V_T determined in accordance with the formula set out in paragraph (c), and

(ii) determine the quantity of CO₂ emissions namely E_{bio} in accordance with the following formula:

$$(\text{Bio}_{\text{fr}} \times E_{\text{u}}) - E_{\text{s}}$$

where

Bio_{fr} is the fraction of the volume of CO₂ emissions from all fuel combusted in the unit attributable to the combustion of biomass in the unit during the calendar year determined in accordance with the formula set out in subparagraph (i),

E_u is the value for E_u determined in accordance with the formula set out in subsection (1), and

E_s is the quantity of CO₂ emissions, expressed in tonnes, measured by the CEMS that is released from the use of sorbent to control the emission of sulphur dioxide from the unit during the calendar year, determined in accordance with the following formula:

$$S \times R \times \frac{44}{\text{MW}_{\text{s}}}$$

where

S is the quantity of calcium carbonate (CaCO₃) or other sorbent material so used, expressed in tonnes,

R is the stoichiometric ratio, on a mole fraction basis, of CO₂ released on usage of one mole of sorbent material, where R=1 if the sorbent material is CaCO₃, and

MW_s is the molecular weight of the sorbent material, expressed in grams, where MW_s = 100 g if the sorbent material is CaCO₃.

Default F-factor (3) The default value for the fuel-specific carbon based F-factor for certain types of fossil fuel is set out in column 3 of the following table:

TABLE

Item	Column 1 Fossil fuel	Column 2 Type	Column 3 F-factor (standard m ³ /GJ)
1.	Coal	Anthracite	54.2
		Bituminous	49.2
		Sub-bituminous	49.2
		Lignite	53.0
2.	Oil	Crude, residual or distillate	39.3
3.	Gas	Natural	28.4
		Propane	32.5

Disaggregation (4) Despite subsection (1), if there is one or more other units at a facility where a unit is located and a CEMS measures emissions from that unit and some of those other units at a common stack rather than at the exhaust duct of that unit and of each of those other units that brings those emissions to the common stack, then the quantity of emissions attributable to that unit for the purpose of subsection (1) is determined based on the ratio of the heat input of that unit to the heat input of that unit and all of those other units sharing the common stack in accordance with the following formula:

$$\left[\frac{\sum_{j=1}^n Q_{uj} \times \text{HHV}_{uj}}{\sum_{i=1}^n \sum_{j=1}^n Q_{ij} \times \text{HHV}_{ij}} \right] \times E$$

where

Q_u is the quantity of fuel type “j” combusted in that unit “u” during the calendar year, determined

(a) for a solid fuel, in the same manner used in the determination of M_i in the formula set out in paragraph 22(1)(a) and expressed in tonnes,

(b) for a liquid fuel, in the same manner used in the determination of V_f in the formula set out in paragraph 22(1)(b) and expressed in kL, and

(c) for a gaseous fuel, in the same manner used in the determination of V_f in the formula set out in paragraph 22(1)(c) and expressed in standard m³;

HHV_{uj} is the higher heating value, determined in accordance with section 23 and expressed in the applicable unit of measure referred to in that section of fuel type “j” combusted during the calendar year in that unit “u”;

i is the i^{th} unit located at the facility with “i” going from the number 1 to n, where n is the number of units that share a common stack;

- j is the j^{th} fuel type, including types of biomass, combusted during the calendar year in a unit located at the facility with “ j ” going from the number 1 to m , where m is the number of those fuel types;
- Q_{ij} is the quantity of fuel type “ j ” combusted in each unit “ i ” during the calendar year, determined for a solid fuel, a liquid fuel and a gaseous fuel, respectively, in the manner described in Q_{ij} ;
- HHV_{ij} is the higher heating value, determined in accordance with section 23 and expressed in the applicable unit of measure referred to in that section, of fuel type “ j ” combusted during the calendar year in unit “ i ”; and
- E is the quantity of CO_2 emissions, expressed in tonnes, from the combustion of fuels in all the units during the calendar year, measured by a CEMS at the common stack in accordance with subsection 20(1).

Fuel-based Methods

Determination **21.** If paragraph 19(1)(b) applies, the quantity of CO_2 emissions referred to subsection 19(1) is to be determined by the following formula:

$$\sum_{i=1}^n E_i \times E_s - E_{\text{ccs}}$$

where

- E_i is the quantity of CO_2 emissions attributable to the combustion of fossil fuel “ i ” in the unit during the calendar year, expressed in tonnes, determined in accordance with section 22 or 23;
- i is the i^{th} type of fossil fuel combusted in the unit during the calendar year, with “ i ” going from the number 1 to n , where n is the number of types of fossil fuel so combusted;
- E_s is E_s in the formula set out in subparagraph 20(2)(d)(ii); and
- E_{ccs} is the quantity of CO_2 in those emissions, expressed in tonnes, from the combustion of fuel in the unit, during the calendar year, that are captured in accordance with the laws of Canada or a province that regulate that capture and are transported and stored in accordance with the laws of Canada or a province, or the United States or one of its states, that regulate, as the case may be, that transportation or storage, which quantity is determined using a direct measurement of the flow of, and concentration of CO_2 in, those emissions.

Measured carbon content **22.** (1) Subject to section 23, the quantity of CO_2 emissions attributable to the combustion of a fuel in a unit during a calendar year, expressed in tonnes, is determined in accordance with the applicable formula, as follows:

(a) for a solid fuel

$$M_f \times CC_A \times 3.664$$

where

M_f is the mass of the fuel combusted during the calendar year as determined, as the case may be, on a wet or dry basis, expressed in tonnes and measured by a measuring device, and

CC_A is the weighted average, expressed in kg of carbon per kg of the fuel, of the carbon content of the fuel determined in accordance with subsection (2) on the same wet or dry basis as used in the determination of M_f ;

(b) for a liquid fuel

$$V_f \times CC_A \times 3.664$$

where

V_f is the volume of the fuel combusted during the calendar year, expressed in kL, determined by using flow meters, and

CC_A is the weighted average, expressed in tonnes of carbon per kL of the fuel, of the carbon content of the fuel determined in accordance with subsection (2) at the same temperature as used in the determination of V_f ; and

(c) for a gaseous fuel

$$V_f \times CC_A \times \frac{MM_A}{MV_{cf}} \times 3.664 \times 0.001$$

where

V_f is the volume of the fuel combusted during the calendar year, expressed in standard m^3 , determined by using flow meters,

CC_A is the weighted average, expressed in kg of carbon per kg of the fuel, of the carbon content of the fuel determined in accordance with subsection (2),

MM_A is the average molecular mass of the fuel, expressed in kg per kg-mole of the fuel, determined based on fuel samples collected in accordance with section 26, and

MV_{cf} is the molar volume conversion factor, namely 23.645 standard m^3 per kg-mole of the fuel at standard conditions of 15°C and 101.325 kPa.

Weighted
average

(2) The weighted average, CC_A referred to in paragraphs (1)(a) to (c) is, based on fuel samples collected in accordance with section 26, determined in accordance with the following formula:

$$\frac{\sum_{i=1}^n CC_i \times Q_i}{\sum_{i=1}^n Q_i}$$

where

CC_i is the carbon content of, as the case may be, the composite sample, or the sample, of the fuel for the i^{th} sampling period expressed for solid fuels, liquid fuels and gaseous fuels, respectively, in the same unit of measure as set out in CC_A , as provided to the responsible person by the supplier of the fuel or determined by the responsible person, and measured

(a) for a solid fuel that is

(i) coal, biomass or derived from waste, in accordance with ASTM D5373-08, entitled *Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal*, and

(ii) any other solid fuel, in accordance with an applicable ASTM standard for the measurement of the carbon content of the fuel;

(b) for a liquid fuel, in accordance with any of the following ASTM standards that applies for the measurement of the carbon content of the fuel:

(i) ASTM D3238-95 (2005), entitled *Standard Test Method for Calculation of Carbon Distribution and Structural Group Analysis of Petroleum Oils by the n-d-M Method* and along with either of the following applicable ASTM standards:

(A) ASTM D2503-92 (2007), entitled *Standard Test Method for Relative Molecular Mass (Molecular Weight) of Hydrocarbons by Thermoelectric Measurement of Vapor Pressure*, and

(B) ASTM D2502-04 (2009), entitled *Standard Test Method for Estimation of Molecular Weight (Relative Molecular Mass) of Petroleum Oils From Viscosity Measurements*, and

(ii) ASTM D5291-10, entitled *Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants*; and

(c) for a gaseous fuel, in accordance with

(i) either of the following ASTM standards that applies for the measurement of the carbon content of the fuel:

(A) ASTM D1945-03 (2010), entitled *Standard Test Method for Analysis of Natural Gas by Gas Chromatography*, and

(B) ASTM D1946-90 (2006), entitled *Standard Practice for Analysis of Reformed Gas by Gas Chromatography*, or

(ii) by means of a direct measuring device that determines the carbon content of the fuel;

i is the i^{th} sampling period referred to in section 26, with “ i ” going from the number 1 to n , where n is the number of those sampling periods; and

Q_i is the mass or volume, as the case may be, of the fuel combusted during the i^{th} sampling period expressed

- (a) for a solid fuel, in tonnes,
- (b) for a liquid fuel, in kL, and
- (c) for a gaseous fuel, in standard m^3 .

Quantification based on HHV

23. (1) For an eligible fuel referred to in subsection (2), the quantity of CO_2 emissions attributable to the combustion of the fuel in a unit during a calendar year, expressed in tonnes, may be determined in accordance with subsection (4) based on the following higher heating value of the fuel:

(a) the higher heating value of the fuel that is measured in accordance with subsection (6) as provided by the supplier of the fuel to the responsible person and, if not so provided, as so measured by the responsible person; and

(b) in the absence of a measured higher heating value referred to in paragraph (a), the default higher heating value, listed in column 2 of Schedule 5, of the fuel, as listed in column 1 and, in the absence of that default higher heating value, a default higher heating value for that fuel established by a body that is internationally recognized as competent to establish default higher heating values for fuels.

Eligible fuel

(2) Eligible fuels are

(a) a fuel combusted in a unit in respect of which an exemption from the application of subsection 3(1) has been granted under subsection 6(4);

(b) a fuel referred to in section 22 that is combusted during the calendar year at less than any of the average daily rates referred to in subsection (3);

(c) a fuel listed in Part 4 of Schedule 5; and

(d) a fuel combusted in a standby unit.

Average daily rates

(3) The average daily rates are

(a) for a solid fuel, 3 t/day;

(b) for a liquid fuel, 1900 L/day; and

(c) for a gaseous fuel, 500 standard m^3 /day.

Quantity of emissions

(4) The quantity of emissions is to be determined in accordance with the following formula:

$$Q \times \text{HHV} \times \text{EF} \times 0.001$$

where

Q is the quantity of the fuel combusted in the unit during the calendar year determined

(a) for a solid fuel, in the same manner as used in the determination of M_f in the formula set out in paragraph 22(1)(a) and expressed in tonnes,

(b) for a liquid fuel, in the same manner as used in the determination of V_f in the formula set out in paragraph 22(1)(b) and expressed in kL, and

(c) for a gaseous fuel, in the same manner as used in the determination of the element V_f in the formula set out in paragraph 22(1)(c) and expressed in standard m^3 ;

HHV — expressed in GJ/tonne, for a solid fuel, in GJ/kL, for a liquid fuel, and in GJ/standard m^3 , for a gaseous fuel — is

(a) if paragraph (1)(a) applies, the weighted average of the higher heating value of the fuel, determined in accordance with subsection (5), based on fuel samples collected in accordance with section 26, and

(b) if paragraph (1)(b) applies, the default higher heating value set out in column 2 of Schedule 5 for the fuel, as listed in column 1 and, in the absence of that default higher heating value, a default higher heating value for that fuel established by a body that is internationally recognized as competent to establish default higher heating values for fuels;

EF is the default emission factor, set out in column 3 of Schedule 5, for that fuel listed in column 1 and, in the absence of that default emission factor, a default emission factor for that fuel established by a body that is internationally recognized as competent to establish default emission factors for fuels.

Weighted average

(5) The weighted average higher heating value of the fuel is determined in accordance with the following formula:

$$\frac{\sum_{i=1}^n \text{HHV}_i \times Q_i}{\sum_{i=1}^n Q_i}$$

where

HHV_i is the higher heating value of, as the case may be, each composite sample, or sample, of the fuel for the i^{th} sampling period measured in accordance with subsection (6) as provided by the supplier of the fuel to the responsible person and, if not so provided, as so measured by the responsible person;

- i* is the *i*th sampling period referred to in section 26, with “*i*” going from the number 1 to “*n*”, where *n* is the number of those sampling periods; and
- Q_i* is the mass or volume, as the case may be, of the fuel combusted during the *i*th sampling period, expressed
 - (a) for a solid fuel, in the same manner as used in the determination of *M_f* in the formula set out in paragraph 22(1)(a) and expressed in tonnes,
 - (b) for a liquid fuel, in the same manner as used in the determination of *V_f* in the formula set out in paragraph 22(1)(b) and expressed in kL, and
 - (c) for a gaseous fuel, in the same manner as used in the determination of *V_f* in the formula set out in paragraph 22(1)(c) and expressed in standard m³.

Measurement of
HHV

- (6) The higher heating value of a fuel is to be measured
 - (a) for a solid fuel that is
 - (i) coal or biomass, in accordance with ASTM D5865-10a, entitled *Standard Test Method for Gross Calorific Value of Coal and Coke*,
 - (ii) derived from waste, in accordance with either ASTM D5865-10a or ASTM D5468-02 (2007), entitled *Standard Test Method for Gross Calorific and Ash Value of Waste Materials*, and
 - (iii) any other solid fuel, an applicable ASTM standard for the measurement of the higher heating value of the fuel;
 - (b) for a liquid fuel that is
 - (i) a middle distillate, an oil or a liquid fuel derived from waste, in accordance with
 - (A) ASTM D240-09, entitled *Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter*, or
 - (B) ASTM D4809-09a, entitled *Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method)*, and
 - (ii) any other liquid fuel, an applicable ASTM standard for the measurement of the higher heating value of the fuel; and
 - (c) for a gaseous fuel,
 - (i) in accordance with any of the following applicable ASTM or GPA standards:
 - (A) ASTM D1826-94 (2010), entitled *Standard Test Method for Calorific (Heating) Value of Gases in Natural Gas Range by Continuous Recording Calorimeter*,
 - (B) ASTM D3588-98 (2003), entitled *Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels*,
 - (C) ASTM D4891-89 (2006), entitled *Standard Test Method for Heating Value of Gases in Natural Gas Range by Stoichiometric Combustion*,

(D) GPA Standard 2172-09, entitled *Calculation of Gross Heating Value, Relative Density, Compressibility and Theoretical Hydrocarbon Liquid Content for Natural Gas Mixtures for Custody Transfer*, and

(E) GPA standard 2261-00, entitled *Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography*, or

(ii) by means of a direct measuring device that determines the higher heating value of the fuel, but if the measuring device provides only lower heating values, those lower heating values must be converted to the corresponding higher heating values.

ACCURACY OF DATA

Measuring devices other than CEMS

24. (1) A responsible person for a unit must install, maintain and calibrate any measuring instrument, other than a CEMS referred to in paragraph 19(1)(a), used for the purpose of section 3 or 14 in accordance with the manufacturer’s instructions or any applicable generally recognised national or international industry standard.

Frequency of calibration

(2) The responsible person must calibrate every measuring device referred to in subsection (1) at the greater of the following two frequencies:

(a) at least once in every calendar year but at least five months after a previous calibration, and

(b) the frequency recommended by the manufacturer.

Accuracy of measurements

(3) Any measuring device referred to in subsection (1) must enable measurements to be made with a margin of error of $\pm 5\%$.

CEMS

25. (1) A CEMS referred to in paragraph 19(1)(a) that is used by a responsible person for the purpose of section 3 or 14 must comply with the Reference Method.

Certification

(2) Before a CEMS referred to in paragraph 19(1)(a) is used for the purpose of that paragraph, it must be certified by the responsible person in accordance with section 5 of the Reference Method.

Annual audit

(3) For each calendar year during which a responsible person uses a CEMS referred to in paragraph 19(1)(a), the auditor must

(a) assess, based on the review referred to in section 6.5.2 of the Reference Method, whether, in the auditor’s opinion, the responsible person’s use of the CEMS complied with the Quality Assurance/Quality Control manual referred to in section 6 of the Reference Method;

(b) ensure that the Quality Assurance/Quality Control manual has been updated in accordance with section 6.5.2 of the Reference Method; and

(c) assess whether, in the auditor’s opinion, the CEMS has met the specifications set out in the Reference Method, in particular, in its sections 3 and 4.

Auditor's report (4) The responsible person must obtain a report, signed by the auditor, in respect of the audit that contains the information set out in Schedule 6. They must send the auditor's report to the Minister with their annual report referred to in subsection 14(1).

FUEL SAMPLING AND TESTING REQUIREMENTS

Fuel sampling **26.** (1) The determination of the value for the elements related to carbon content and higher heating values referred to in sections 20 to 23 must be based on fuel samples taken in accordance with this section.

Frequency (2) Each fuel sample must be taken at a time and location in the fuel handling system that provides the following representative sample of the fuel combusted at the following minimum frequency:

(a) for coal other than synthetic gas derived from coal or derived from petroleum coke, one composite sample during each week that the unit produces electricity prepared in accordance with ASTM D2013/D2013M-09, entitled *Standard Practice for Preparing Coal Samples for Analysis*, that consists of sub-samples taken at least twice from coal that was fed for combustion during that week and at least 48 hours apart, in accordance with

(i) ASTM D2234/D2234M-10, entitled *Standard Practice for Collection of a Gross Sample of Coal*, or

(ii) ASTM D7430-10b, entitled *Standard Practice for Mechanical Sampling of Coal*;

(b) for a type of solid fuel other than coal, one composite sample per month that consists of sub-samples of the fuel of that type, each of which has the same mass, that were taken — from fuel that was fed for combustion during each week that begins in that month and during which the unit produces electricity — at least 48 hours after any previous sub-sample and after all fuel treatment operations have been carried out but before any mixing of the fuel from which the sub-sample is taken with other fuels;

(c) for a type of liquid fuel and of a gaseous fuel other than natural gas, one sample per quarter with each sample of fuel of that type taken at least one month after any previous sample was taken; and

(d) for natural gas, two samples per calendar year with each sample taken at least four months after any previous sample was taken.

Additional samples (3) For greater certainty, the responsible person who takes, for the purpose of these Regulations, more samples than the minimum required under subsection (2) must make the determination referred to in subsection (1) based on each sample — and, in the case of composite samples, each sub-sample — taken, including those additional samples.

Missing Data **27.** (1) If, for any reason out of the control of a responsible person, the emission-intensity referred to in subsection 3(1) cannot be determined in accordance with the formulae set out in section 18 or any of sections 20 to 23 because data required to determine an element of one of those formulae was not obtained for a given period within the calendar year,

replacement data for that given period must be used in accordance with this section to determine that emission-intensity.

Replacement data — CEMS

(2) If a CEMS referred to in paragraph 19(1)(a) is used for the determination of an element of a formula set out on in section 20 for which data was not obtained, replacement data is to be obtained in accordance with section 3.5.2 of the Reference Method.

Replacement data — Fuel-based methods

(3) If a fuel-based method referred to in paragraph 19(1)(b) is used for the determination of an element of a formula set out in any of sections 20 to 23 that is related to the higher heating value, carbon content or molecular weight of a fuel and for which data was not obtained for a given period of 28 days or less, replacement data is to be the average of the determinations for that element using the fuel-based method in question during the equivalent period immediately before and if applicable, the equivalent period immediately after that given period. However, if that determination is not available during the equivalent period immediately before the given period, the replacement data is to be the determination for that element using the fuel-based method in question during the equivalent period immediately after the given period.

Maximum use of replacement data

(4) During a calendar year, there may be up to six given periods referred to in subsection (3), but the number of days for which data was not obtained during all of those periods combined is not to exceed 28.

PART 4

COMING INTO FORCE

January 1, 2013

28. (1) Subject to subsections (2) and (3), these Regulations come into force on January 1, 2013.

July 1, 2015

(2) Section 3 in respect of new units and old units other than standby units, subsections 5(1) and (6) and sections 6 to 13 come into force on July 1, 2015.

January 1, 2020

(3) Section 3 in respect of standby units comes into force on January 1, 2020.

SCHEDULE 1 (Subsection 4(1))

REGISTRATION REPORT — INFORMATION REQUIRED

1. Information respecting the responsible person:

- (a) whether they are the owner or operator of the unit and their name and civic address;
- (b) the name, title, civic and postal addresses, telephone number and, if any, email address and fax number, of their authorized official; and
- (c) the name, title, civic and postal addresses, telephone number and, if any, email address and fax number, of a contact person, if different from the authorized official.

2. Information respecting the unit:

- (a) for each responsible person for the unit, other than the one mentioned in paragraph 1(a), if any
 - (i) their name and civic address,
 - (ii) whether they are an owner or operator, and
 - (iii) in the case of an owner, their percentage of ownership interest;
- (b) its name and civic address, if any;
- (c) if applicable, its National Pollutant Release Inventory identification number assigned by the Minister for the purpose of section 48 of the Act;
- (d) for an existing or old unit
 - (i) the calendar year in which the unit reaches, or reached, the end of its useful life, and
 - (ii) whether it will cease to produce electricity for sale before July 1, 2015 and, if known, the date by which it will cease production;
- (e) its commissioning date; and
- (f) the date of expiry of any power purchase agreement in relation to the unit that was in force on June 23, 2010.

SCHEDULE 2
(Paragraph 8(2)(d))

TECHNICAL FEASIBILITY STUDY — INFORMATION REQUIRED

- 1.** Information respecting the capture element of the carbon capture and storage system:
- (a) a description of how the emissions are to be captured, including a preliminary engineering design and a description of the preferred technology and processes to be used;
 - (b) a description of any changes to the unit that are needed for its integration with the capture element;
 - (c) an identification of any major equipment to be installed and of any other significant equipment to be modified or replaced;
 - (d) process flow diagrams and mass and energy balances, including external energy inputs;
 - (e) a summary of auxiliary energy loads;
 - (f) an estimate of the unit's production capacity when it is operating with an integrated capture element;
 - (g) an estimate of the unit's gross quantity of electricity produced for a calendar year — as described in G_{gross} in the formula set out in subsection 18(1) of these Regulations — when it is operating with an integrated capture element;

- (h) an estimate of the rate of capture of CO₂ emissions and of the volume of CO₂ emissions to be captured for a calendar year and for the operating life of the unit;
- (i) a preliminary resource analysis for the unit when it is operating with an integrated capture element, including water consumption, heat and power consumption, raw material consumption and fuel consumption;
- (j) documents establishing that adequate space has been set aside at the facility in which the unit is located and that adequate access is to be provided for the purpose of installing the required equipment, including site plans that show
 - (i) the outline and location of all significant electricity generating equipment, carbon capture equipment and compression equipment, as well as any ancillary equipment necessary, sized to capture the sufficient volume of CO₂ referred to in subparagraph 8(2)(d)(i) of these Regulations,
 - (ii) the area, or areas, to be used to stage construction activities, and
 - (iii) the point of exit of the pipeline to transport the captured CO₂ from the facility to the storage site, if the captured CO₂ is not stored at the facility;
- (k) an identification of the potential risks and obstacles, based on the preferred capture technology, to the construction and operation of the capture element integrated with the unit;
- (l) a list of each environmental, safety and other approval or permit required for the construction and operation of the unit integrated with the capture element; and
- (m) a list of potential suppliers of equipment, materials or services that are needed for the construction and operation of the unit integrated with the capture element.

2. Information respecting the transportation element of the carbon capture and storage system:

- (a) an identification of, and justification for, one or more preferred transport methods and routes to an appropriate geological storage site referred to in paragraph 3(b), supported by a routing map and a geographic information system (GIS) file for each method and route;
- (b) the expected location and size of pumping stations and receipt and delivery points and any interconnects on the pipeline for each preferred route;
- (c) an estimation of the diameter of the pipeline for each preferred route that is required to transport the sufficient volume of CO₂ referred to in subparagraph 8(2)(d)(i) of these Regulations;
- (d) if applicable, a detailed description of how any tankers that are to be used to transport the captured CO₂ emissions are to be obtained and, if required, commissioned and a plan detailing how any required port infrastructure for shipping the captured CO₂ emissions on those tankers is to be developed;

(e) an identification of the potential risks and obstacles, for each preferred route, to the construction and operation of the pipeline or shipping network along that route, including any surface or subsurface land use that may conflict with that construction or operation, along with an explanation of how those risks and obstacles are to be overcome in order to permit that construction or operation;

(f) a list of each environmental, safety and other approval or permit that is required for the construction or operation of the transportation element; and

(g) a list of potential suppliers of equipment, materials or services that are needed for construction and operation of the transportation element.

3. Information respecting the storage element of the carbon capture and storage system:

(a) an estimation of the volume of CO₂ emissions to be captured and stored during each calendar year and over the anticipated operating life of the unit;

(b) an identification of one or more feasible storage sites that are expected to be used to store the captured CO₂ emissions, supported by a delineation of the geographical extent of each storage site and at least one study showing that the required capacity to store the sufficient volume referred to in subparagraph 8(2)(d)(i) of these Regulations is available based on generally accepted national or international protocols for storage capacity estimation;

(c) an identification of any requirement under federal or provincial laws for the purity of captured CO₂ emissions, along with an explanation of how that requirement is to be met;

(d) a preliminary assessment of the integrity of the storage element in preserving an impervious barrier to leakage of stored CO₂ emissions and of any risk to breaching that integrity at each feasible storage site referred to in paragraph (b), along with a preliminary strategy to mitigate the risk;

(e) a preliminary plan for measuring and verifying the volume of stored CO₂ emissions and for monitoring any leak of the stored CO₂ emissions from the storage element;

(f) an identification of any surface or subsurface land use that may conflict with the operation of the storage element at each feasible storage site referred to in paragraph (b), along with an explanation of how the conflict is to be resolved in order to ensure access to each of those sites;

(g) a list of each environmental, safety and other approval or permit that is required for the construction or operation of the storage element; and

(h) a list of potential suppliers of equipment, materials or services that are needed for the construction and operation of the storage element for each feasible site referred to in paragraph (b).

SCHEDULE 3
(Paragraphs 8(2)(e) and 10(1)(b))

INFORMATION ON SECTION 9 REQUIREMENTS

1. If a front end engineering design study referred to in paragraph 9(a) of these Regulations has been carried out, the following information to summarize that study:

- (a) an overall description of the construction project for the carbon capture and storage system, including technical drawings and documents that describe
 - (i) the configuration and layout of the facility in which the unit is located when it is operating with an integrated capture element of the system,
 - (ii) the transportation element of the system, and
 - (iii) the site of the storage element of the system;
- (b) an estimate of its capital cost, including a summary of the analysis that led to that estimate and a justification for the margin of error of that estimate;
- (c) a summary of the safety review of the capture element of the carbon capture and storage system;
- (d) a summary of the risk assessment of the carbon capture and storage system;
- (e) a summary of the strategy to mitigate those risks;
- (f) a summary of the plan to carry out the construction of the carbon capture and storage system, including a schedule for the completion of its major steps;
- (g) the identification of potential persons with whom to enter into agreements to carry out the construction of the carbon capture and storage system;
- (h) the name and business address of the persons responsible for the development of the front end engineering design study and a description of their contribution to its development;
- (i) a description of the capture technology selected in the front end engineering design study for the capture element of the carbon capture and storage system and of its integration with the unit;
- (j) an identification of any major equipment required to be purchased for the construction of the capture element of the carbon capture and storage system;
- (k) an estimate of the performance of the unit when it is operating with an integrated carbon capture and storage system, supported by process flow diagrams and mass and energy balances, including an estimate of
 - (i) the rate of capture of CO₂ emissions and the volume of CO₂ emissions to be captured for a calendar year and for the operating life of the unit,
 - (ii) the production capacity of the unit,

- (iii) the unit's gross quantity of electricity produced for a calendar year — as described by G_{gross} in the formula set out in subsection 18(1) of these Regulations — when it is operating with an integrated capture element,
 - (iv) a summary of auxiliary energy loads,
 - (v) the period during a calendar year that a unit is expected to be available for producing electricity, and
 - (vi) for a calendar year, the quantity of CO₂ emissions from the combustion of fossil fuels in the unit referred to in subsection 3(1) of these Regulations and of nitrogen oxides, sulphur oxides, particulate matter, mercury and, if applicable, ammonia emissions from the unit; and
- (l) a summary of the resource analysis for the unit when it is operating with an integrated capture element of the carbon capture and storage system, including water consumption, heat and power consumption, raw material consumption and fuel consumption.
2. If any major equipment that is necessary for the capture element referred to in paragraph 9(b) of these Regulations has been purchased, a copy of the purchase orders and receipts respecting the purchase of that equipment.
 3. A declaration, signed by all contracting parties to any contract referred to in paragraph 9(c) of these Regulations that indicates that it has been entered into and the date on which it was entered into.
 4. A copy of any permit or approval referred to in paragraph 9(d) that has been obtained.
 5. A copy of a receipt that demonstrates that final payment has been made in respect of any major piece of equipment referred to in paragraph 9(e) of these Regulations that has been delivered and that indicates the date of delivery.
 6. A declaration — signed by the responsible person and, if applicable, any party contracting with the responsible person for the capture element, transportation element or storage element of the carbon capture and storage system — that indicates the date on which CO₂ emissions from the combustion of fossil fuels in the unit have been captured in accordance with the laws of Canada or a province that regulate that capture and have been transported and stored in accordance with the laws of Canada or a province, or the United States or one of its states, that regulate, as the case may be, that transportation or storage.
 7. A declaration, signed by the responsible person for an old unit, that indicates the date on which 30% of the CO₂ emissions from the combustion of fossil fuels in that unit have been captured by that unit in accordance with the laws of Canada or a province that regulate that capture and have been transported and stored in accordance with the laws of Canada or a province, or the United States or one of its states, that regulate, as the case may be, that transportation or storage.

SCHEDULE 4
(Subsection 14(1))

ANNUAL REPORT — INFORMATION REQUIRED

1. Information respecting the responsible person:

- (a) whether they are the owner or operator of the unit and their name and civic address;
- (b) the name, title, civic and postal addresses, telephone number and, if any, email address and fax number, of their authorized official; and
- (c) the name, title, civic and postal addresses, telephone number and, if any, email address and fax number, of a contact person, if different from the authorized official.

2. Information respecting the unit:

- (a) for each responsible person for the unit, other than the one mentioned in paragraph 1(a), if any
 - (i) their name and civic address,
 - (ii) whether they are an owner or operator, and
 - (iii) in the case of an owner, their percentage of ownership interest;
- (b) its name and civic address, if any;
- (c) its registration number and, if applicable, its National Pollutant Release Inventory identification number assigned by the Minister for the purpose of section 48 of the Act;
- (d) if applicable, the number of other units located at facility in which the unit is located and, for each of those other units, the information referred to in (a); and
- (e) if applicable, a statement that indicates that the unit shares a common stack with any of those other units and, if so, a statement that identifies each of those units.

3. Information respecting the emission-intensity referred to in subsection 3(1) of these Regulations from the combustion of fuel in the unit — other than a unit referred to in 4(d) — during the calendar year:

- (a) the emission-intensity for the unit, namely the ratio of the quantity of CO₂ emissions referred to in paragraph (c) to the quantity of electricity referred to in subparagraph (b)(i), expressed in tonnes per GWh;
- (b) in respect of the quantity of electricity produced by the unit
 - (i) that quantity determined in accordance with section 18 of these Regulations, expressed in GWh,
 - (ii) the value determined for G_{gross} and G_{aux} in the formula set out in subsection 18(1) of these Regulations,
 - (iii) the gross electricity produced by units located at the facility for the calendar year, namely the sum of the value determined for G_{gross} referred to in subparagraph (ii) and of

the gross electricity produced by all other units located at the facility determined in accordance with that description of G_{gross} ,

(iv) the quantity of electricity, expressed in GWh, that is used by the facility in which the unit is located during the calendar year to operate infrastructure and equipment for electricity generation and for separation, but not pressurization, of CO_2 , based on data collected using meters that comply with the requirements of the *Electricity and Gas Inspection Act* and the regulations made under it,

(v) if that calendar year is the calendar year referred to in subsection 18(2) of these Regulations for which a method of attribution was considered to be most appropriate, a detailed description of that method of attribution and an explanation of why they considered it to be most appropriate, and

(vi) if that calendar year is a subsequent calendar year referred to in subsection 18(3) of these Regulations, a detailed description of the method of attribution referred to in that subsection used for that subsequent calendar year and an explanation of why they considered it to be most appropriate;

(c) in respect of the quantity of CO_2 emissions from the combustion of fuels in the unit,

(i) if paragraph 19(1)(a) of these Regulations applies for the determination of that quantity

(A) that quantity, expressed in tonnes, determined in accordance with section 20 of these Regulations,

(B) the values, expressed in tonnes, determined for E_u , E_{bio} and $E_{\text{non-ccs}}$ in the formula set out in subsection 20(1) of these Regulations,

(C) a statement that indicates whether paragraph (a) or (b) of the description of that E_{bio} was used to determine the value of that element, and

(D) the value, expressed in tonnes, determined for E_s in the formula set out in subparagraph 20(2)(d)(ii) of these Regulations, and

(ii) if paragraph 19(1)(b) of these Regulations applies for the determination of that quantity

(A) that quantity, expressed in tonnes, determined in accordance with sections 21 and, as the case may be, 22 or 23 of these Regulations,

(B) the values, expressed in tonnes, determined for E_f for each fuel combusted, and for E_{ccs} in the formula set out in section 21 of these Regulations,

(C) the value, expressed in tonnes, determined for E_s in the formula set out in subparagraph 20(2)(d)(ii) of these Regulations,

(D) a statement for each fuel combusted that indicates whether the quantity referred to in clause (A) was determined in accordance with section 22 or 23 of these Regulations,

(E) if that quantity was determined in accordance with section 22 of these Regulations,

(I) the value of CC_A in the formula set out in paragraph 22(1)(a), (b) or (c) of these Regulations, as the case may be, for each fuel combusted, and

(II) a statement that indicates which ASTM standards referred to in that description of CC_i were used to determine that value of CC_A referred to in subclause (I) or, for a sample of gaseous fuel, that indicates that a direct measuring device was used to determine that value,

(F) if that quantity was determined in accordance with section 23 of these Regulations,

(I) for each fuel combusted,

1. its type,
2. a statement that indicates which of paragraph 23(2)(a),(b) or (c) of these Regulations describes the fuel, and
3. for a fuel described by paragraph 23(2)(c) of these Regulations, the average daily rate at which the fuel was combusted,

(II) if paragraph 23(1)(a) of these Regulations applies

1. the measured value of HHV, as described in paragraph (a) of that element, in the formula set out in subsection 23(4) of these Regulations for each fuel combusted,
2. the default CO_2 emission factor, set out in column 3 of the applicable table to Schedule 5, for that fuel if that fuel is listed in column 1 of that table and, if that fuel is not so listed, the default CO_2 emission factor for that fuel established by a body that is internationally recognized as competent to establish default emission factors for fuels and a statement that indicates the name of the body, and
3. a statement that indicates which ASTM or GPA standard, as the case may be, referred to in subsection 23(6) of these Regulations was used to determine the measured value of HHV referred to in subsubclause 1 or, for a gaseous fuel, that indicates that a direct measuring device was used to determine that measured value,

(III) if paragraph 23(1)(b) of these Regulations applies

1. the default value of HHV, as described in paragraph (b) of that element, in the formula set out in subsection 23(4) of these Regulations for each fuel combusted,
2. a statement that explains the absence of a measured higher heating value and that indicates, if that default higher heating value is established by a body that is

internationally recognized as competent to establish default higher heating values for fuels, the name of the body, and

3. the default CO₂ emission factor, set out in column 3 of the applicable table to Schedule 5, for that fuel if that fuel is listed in column 1 of that table and, if that fuel is not so listed, the default CO₂ emission factor for that fuel established by a body that is internationally recognized as competent to establish default emission factors for fuels and a statement that indicates the name of the body;

(d) if applicable, documents that establish that the captured CO₂ emissions were captured, transported and stored as described in subsection 3(5) of these Regulations; and

(e) for each type of fuel combusted,

(i) the type and, if that type is biomass, an explanation of why that type meets the criteria set out in the definition “biomass” in section 2 of these Regulations, and

(ii) the quantity of fuel combusted.

4. Information for the calendar year respecting

(a) the number of hours during which the unit produced electricity;

(b) if a substituted unit referred to in subsection 5(1) of these Regulations has been substituted for the unit, the production capacity of that unit;

(c) for a standby unit, the capacity factor for the standby unit;

(d) for a unit referred to in subsection 6(4) of these Regulations

(i) the emergency period for the calendar year, namely, the first day in the calendar year on which the emergency existed and the last day in the calendar year on which it existed,

(ii) the number of hours in the emergency period during which the unit operated, and

(iii) the information referred to in 3 for each of the emergency period and any other period of the calendar year; and

(e) for an existing unit referred to in subsection 13(4) of these Regulations, the rate of capture of CO₂ emissions from the unit.

5. A copy of the auditor’s report referred to in subsection 25(4) of these Regulations.

6. If replacement data referred to in section 27 of these Regulations was used for any period during the calendar year

(a) the reason for which data required to determine an element of a formula set out in section 18 or any of sections 20 to 23 of these Regulations was not obtained and an explanation as to why that reason was out of the control of the responsible person;

(b) the element of the formula for which, and the given period referred to in subsection 27(1) of these Regulations during which, data was not obtained, including the hour or day, as the case may be, on which that given period begins and ends; and

(c) the value determined for that element using replacement data, along with details of that determination, including

- (i) the data used to make that determination for each period referred to in subsection 27(2) or (3) of these Regulations,
- (ii) the method used to obtain that data, and
- (iii) a justification of the period or periods used as the basis of that determination.

SCHEDULE 5

(Subsections 20(2) and (4), 23(1), (3) and (6) and 26(2))

LIST OF FUELS

PART 1

SOLID FUELS

TABLE

Item	Column 1 Type of fuel	Column 2 Default higher heating value (GJ/tonne)	Column 3 Default CO ₂ emission factor (kg CO ₂ /GJ)
1.	Bituminous Canadian coal – Western	25.6	86.1
2.	Bituminous Canadian coal – Eastern	27.9	82.1
3.	Bituminous non-Canadian coal – U.S.	25.7	95.6
4.	Bituminous non-Canadian coal – Other Countries	29.9	85.2
5.	Sub-bituminous Canadian coal – Western	19.2	89.9
6.	Sub-bituminous non-Canadian coal – U.S.	19.2	95.0
7.	Coal – lignite	15.0	92.7
8.	Coal – anthracite	27.7	86.3
9.	Coal coke and metallurgical coke	28.8	86.0
10.	Petroleum coke from refineries	46.4	82.3
11.	Petroleum coke from upgraders	40.6	86.1
12.	Municipal solid waste	11.5	86.0
13.	Tires	31.2	81.5
14.	Wood and wood waste ¹	19.0	88.0
15.	Agricultural byproducts ¹	17.0	112.0
16.	Peat	9.3	106.0

¹ The default higher heat values for wood and agricultural byproducts are on a totally dry basis.

PART 2

LIQUID FUELS

TABLE

Item	Column 1 Type of fuel	Column 2 Default higher heating value (GJ/kL)	Column 3 Default CO ₂ emission factor (kg CO ₂ /GJ)
1.	Diesel	38.3	69.5
2.	Light fuel oil	38.8	70.2
3.	Heavy fuel oil	42.5	73.5
4.	Ethanol	21.0	64.9

PART 3

GASEOUS FUELS

TABLE

Item	Column 1 Type of fuel	Column 2 Default higher heating value (GJ/standard m ³)	Column 3 Default CO ₂ emission factor (kg CO ₂ /GJ)
1.	Biogas (captured methane)	0.0281	49.4

PART 4

LIST OF FUELS FOR THE PURPOSE OF SUBSECTION 23(2)

TABLE

Item	Column 1 Type of fuel	Column 2 Default higher heating value (GJ/kL)	Column 3 Default CO ₂ emission factor (kg CO ₂ /GJ)
1.	Distillate fuel oil No.1	38.78	69.37
2.	Distillate fuel oil No. 2	38.50	70.05
3.	Distillate fuel oil No. 4	40.73	71.07
4.	Kerosene	37.68	67.25
5.	Liquefied petroleum gases (LPG)	25.66	59.65
6.	Propane (pure, not mixtures of LPGs) ¹	25.31	59.66
7.	Propylene	25.39	62.46
8.	Ethane	17.22	56.68
9.	Ethylene	27.90	63.86
10.	Isobutane	27.06	61.48
11.	Isobutylene	28.73	64.16
12.	Butane	28.44	60.83
13.	Butylene	28.73	64.15
14.	Natural gasoline	30.69	63.29
15.	Motor gasoline	34.87	65.40
16.	Aviation gasoline	33.52	69.87
17.	Kerosene-type aviation	37.66	68.40

Item	Column 1 Type of fuel	Column 2 Default higher heating value (GJ/kL) (GJ/standard m3)	Column 3 Default CO ₂ emission factor (kg CO ₂ /GJ) (kg CO ₂ /GJ)
18.	Pipeline quality natural gas	0.03826	47.57

¹ The defaults factors for propane are only for pure gas propane. The product commercially sold as propane is to be considered LPG for the purpose of these Regulations.

SCHEDULE 6
(Subsection 25(4))

AUDITOR’S REPORT — INFORMATION REQUIRED

- 1.** The name, civic address and telephone number of the responsible person.
- 2.** The name, civic address, telephone number and qualifications of the auditor and, if any, the auditor’s fax number and email address.
- 3.** The procedures followed by the auditor to assess whether
 - (a) the responsible person’s use of the CEMS complied with the Quality Assurance/Quality Control manual referred to in section 6 of the Reference Method; and
 - (b) the CEMSs meets the specifications set out in the Reference Method, in particular, in its sections 3 and 4.
- 4.** A declaration of the auditor’s opinion as to whether
 - (a) the responsible person’s use of the CEMS complied with the Quality Assurance/Quality Control Manual referred to in section 6 of the Reference Method; and
 - (b) the CEMS met the specifications set out in the Reference Method, in particular, in its sections 3 and 4.
- 5.** A statement of the auditor’s opinion as to whether the responsible person ensured that the Quality Assurance/Quality Control manual was updated in accordance with section 6.5.2 of the Reference Method.