

# Output-based Pricing System Reporting and Compliance Standard

Effective January 1, 2023



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# 1. General Information

## 1.1 Applicability

This Standard applies to the owner or operator of a regulated facility registered under the *Output-Based Pricing System Registration and Opt-in Regulations*.

This Standard provides owners or operators of regulated facilities with the required methodology to

- Complete and submit a Baseline Emissions Intensity submission;
- Complete and submit a Greenhouse Gas Emissions Report; and
- Complete and submit a Compliance Report.

This Standard is made under the authority of the *Output-Based Pricing System Reporting and Compliance Standard Adoption Regulations*.

Nova Scotia's Output-Based Pricing System supports the legislative commitments made in Nova Scotia's [Environmental Goals and Climate Change Reduction Act](#) and [Nova Scotia's Climate Change Plan for Clean Growth](#).

## 1.2 Contact Information

For additional information regarding this Standard, including applicable forms, contact Nova Scotia Environment and Climate Change at:

Nova Scotia Environment and Climate Change  
1903 Barrington Street  
Suite 2085  
PO Box 442  
Halifax, NS, B3J 2P8

Phone: (902) 424-3600; Email: [nsobps@novascotia.ca](mailto:nsobps@novascotia.ca)

Website: [Nova Scotia's Output-based Pricing System for Industry | Climate Change Nova Scotia](#)

## 2. Definitions

2.1(1) For the purposes of this Standard, the following definitions apply:

“Accredited verification body” means a verification body that is accredited in accordance with [ISO 14065](#) by either the Standards Council of Canada (SCC) or the American National Standards Institute (ANSI).

“Act” means the *Environment Act*.

“Authorized signing officer” means the owner or operator of the regulated facility or a person designated by the owner or operator of the regulated facility who has authority to accept legal responsibility for the information submitted to the Minister under the Act and associated Regulations and Standard, is in a position to knowledgeably attest and provide a signed declaration to the completeness and accuracy of the information submitted, as required or requested by the Minister.

“Biomass” means plants or plant materials, animal waste or any product made of either of these, including wood and wood products, charcoal, and agricultural residues; biologically derived organic matter in municipal and industrial wastes, landfill gas, bio-alcohols, black liquor, sludge including sludge digestion gas and animal- or plant-derived oils.

“CEMS” means continuous emission monitoring system.

“CO<sub>2</sub> captured” means the quantity of CO<sub>2</sub> captured at the regulated facility, where the quantity of CO<sub>2</sub> may only be included in that description if it has been included in the total regulated emissions and has been permanently stored in a storage project that meets the following criteria:

- (a) the geological site into which the CO<sub>2</sub> is injected in is
  - (i) a deep saline aquifer for the sole purpose of storage of CO<sub>2</sub>, or
  - (ii) a depleted oil reservoir for the purpose of enhanced oil recovery; and
- (b) the quantity of CO<sub>2</sub> stored for the purposes of the project is captured, transported and stored in accordance with the laws applicable to Canada or a province or applicable to the United States or one of its states.

“Cogeneration unit” means a fuel combustion device or system which simultaneously generates electricity and either heat or steam.

“Direct emissions” means the sum of all regulated emissions from regulated sources included in Table 1 from sources that are owned or controlled by the owner or operator of a regulated facility and are associated with the production of a product at a regulated facility.

“ECCC” means the federal ministry of Environment and Climate Change Canada or its successor.

“EITE” means emissions intensive and trade exposed.

“Flaring emissions” refers to controlled releases of regulated emissions from industrial activities, from the combustion of a gas or liquid stream produced at the regulated facility, the purpose of which is not to produce useful heat or work, including regulated emissions from:

- (a) waste petroleum incineration;
- (b) hazardous emission prevention systems (in pilot or active mode);
- (c) well testing;
- (d) natural gas gathering systems;
- (e) natural gas processing plant operations;
- (f) crude oil production;
- (g) pipeline operations;
- (h) petroleum refining;
- (i) chemical fertilizer production; and
- (j) steel production.

“Fugitive emissions” means regulated emissions from:

- (a) venting, flaring or leakage of gases from fossil fuel production, processing and mining;
- (b) iron and steel coke oven batteries; and
- (c) CO<sub>2</sub> capture, transport, injection, and storage infrastructure.

“Gazette Notice” means the notice with respect to the reporting of greenhouse gases for 2022 as published in the Canada Gazette.

“GHGRP” means Environment and Climate Change Canada’s Greenhouse Gas Reporting Program.

“Independent reviewer” means a person who is qualified, in accordance with subsection 7.1(6), to review the work of the verification team prior to a statement of verification being created.

“Industrial process emissions” means regulated emissions from an industrial process that involves a chemical or physical reaction other than combustion, and the purpose of which is not to produce heat or work to be used at a regulated facility. For greater certainty, this does not include:

- (a) venting from hydrogen production associated with fossil fuel production and processing; and,
- (b) regulated emissions from fuel combustion used to provide heat for an industrial process, whether they be internal or external to the industrial process equipment.

“Industrial product use emissions” means regulated emissions from the use of a product, in an industrial process, that is not involved in a chemical or physical reaction and does not react in the process, including:

- (a) releases from the use of SF<sub>6</sub>, HFCs and PFCs as cover gases; and,
- (b) the use of HFCs and PFCs in foam blowing.

For greater certainty, this does not include:

- (a) releases of PFCs and HFCs used in refrigeration, air conditioning, semiconductor production, fire extinguishing, solvents, aerosols; and,
- (b) SF<sub>6</sub> in explosion protection, leak detection, electronic applications, and fire extinguishing.

“IPCC” means the Intergovernmental Panel on Climate Change, an organization under the auspices of the United Nations.

“ISO” means the International Organization for Standardization or its successor.

“ISO 14064-3” means the standard [ISO 14064-3](#), published by the ISO and titled “Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements”, as amended from time to time.

“ISO 14065” means the standard [ISO 14065](#), published by the ISO and titled “Greenhouse gases — Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition”, as amended from time to time.

“Leakage emissions” means the uncontrolled release or leakage of regulated emissions from:

- (a) fossil fuel production, processing, transmission and distribution;
- (b) iron and steel coke oven batteries; and,
- (c) CO<sub>2</sub> capture, transport, injection, and storage infrastructure.

“Level of assurance” means the depth of detail that a verification team incorporates into the verification plan to determine if there are any material errors, omissions, or misrepresentations.

“Materiality” means individual or the aggregate total of actual errors, omissions, and misrepresentations that would misrepresent a regulated facility’s greenhouse gas emissions or production.

“MSHA” means the United States Department of Mine Safety and Health Administration or its successor.

“On-site transportation emissions” means regulated emissions from machinery used for the transport or movement of substances, materials, equipment, or products that are used in the production process at a regulated facility, including regulated emissions from vehicles without public road licenses.

“Performance standard” means the quantity of regulated emissions a regulated facility is permitted to emit when producing a unit of product in the given reduction period without the owner or operator incurring a compliance obligation.

“Production quantification methodology” means the procedure employed by the owner or operator of a regulated facility to quantify the level of production at the regulated facility, including detailing the stage of production at which the measurement takes place.

“Qualified person” has the same meaning as the definition set out in the *Output-Based Pricing System Reporting and Compliance Regulations*.

“Regulations” means the *Output-Based Pricing System Reporting and Compliance Regulations*.

“Sector” means the part of the economy consisting of entities that produce goods or services that are the same or substantially the same.

“Statement of verification” means the formal written declaration by the verification team that provides assurance on the statements in a Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report by the owner or operator of a regulated facility in accordance with the applicable verification

criteria in subsection 7.1(10).

“Stationary fuel combustion emissions” means regulated emissions from stationary fuel combustion sources, in which fuel is burned for the purpose of producing useful heat or work, including regulated emissions from the combustion of waste fuels to produce useful heat or work.

“SUT” means Statistics Canada’s [Supply and Use Tables](#) data.

“Venting emissions” refers to controlled releases of a process or waste emissions to the atmosphere, including regulated emissions from:

- (a) hydrogen production associated with fossil fuel production and processing;
- (b) casing gas;
- (c) gases associated with a liquid or a solution gas;
- (d) treater, stabilizer or dehydrator off-gas;
- (e) blanket gases;
- (f) pneumatic devices which use natural gas as a driver;
- (g) compressor start-ups, pipelines and other blowdowns;
- (h) metering and regulation station control loops;
- (i) CO<sub>2</sub> associated with carbon capture, transport, injection, and storage; and,
- (j) CH<sub>4</sub> associated with ventilation and degasification systems from mines.

“Verification report” means a written report prepared by a verification team during the verification process with respect to a regulated facility.

“Verification team” means one or more qualified persons conducting a verification.

“Waste emissions” means emissions that result from waste disposal activities at a regulated facility, including:

- (a) landfilling of solid waste;
- (b) flaring of landfill gas; and
- (c) waste incineration.

For greater certainty, this does not include releases from the combustion of waste fuels to produce useful heat or work.

2.1(2) Terms defined in the Act and associated Regulations apply to this Standard.



## 3. Quantification of Emissions and Production Data

This section provides detailed information on how an owner or operator of a regulated facility must quantify greenhouse gas (GHG) emissions and production data for the purpose of preparing and submitting a Baseline Emissions Intensity submission and Greenhouse Gas Emissions Report for the regulated facility.

### 3.1 Formatting

3.1(1) Compliance obligation calculations must be rounded to the nearest whole number.

### 3.2 Measuring Device

3.2(1) Any measuring device that is used to determine a quantity for the purposes of reporting data in a submission or report for a regulated facility must be:

- (a) installed, operated, maintained, and calibrated in accordance with the manufacturer's specifications or any applicable generally recognized national or international industry standard; and
- (b) maintained to be accurate within  $\pm 5\%$ .

3.2(2) If it is not possible to directly measure production using a measuring device, the owner or operator of the regulated facility may quantify production using engineering estimates or mass balance.

### 3.3 Quantification of GHG Emissions

3.3(1) The owner or operator of a regulated facility must convert all quantified regulated emissions included in a submission or report to tonnes of CO<sub>2</sub>e.

3.3(2) The owner or operator of a regulated facility must ensure that all regulated emissions from a regulated facility are included and accounted for in all submissions and reports.

3.3(3) All categories in Table 1 are considered regulated sources of emissions.

3.3(4) The owner or operator of a regulated facility must include regulated emissions associated with the generation of on-site electricity for a regulated facility in that regulated facility's direct emissions.

3.3(5) The owner or operator of a regulated facility must determine the total regulated emissions of each regulated source in Table 1 for each product produced at the regulated facility for the compliance period by following the methodology and quantification requirements established by ECCC in the Gazette Notice.

3.3(6) The owner or operator of a regulated facility must determine the direct emissions for each product produced at the regulated facility in accordance with Equation 1.

Equation 1

$$DE_{a_i} = \sum_y ES_{y_a_i}$$

Where:

- $DE_{a_i}$  is the direct emissions for the regulated facility for the purpose of producing product  $a$  in year  $i$ , expressed in tonnes of CO<sub>2</sub>e;
- $ES_{y_a_i}$  is the total regulated emissions for regulated sources  $y$  for product  $a$  in year  $i$ , expressed in tonnes of CO<sub>2</sub>e;
- $a$  is the product produced at the regulated facility;
- $i$  is the baseline year for the purpose of calculating baseline emissions or the compliance period for the purpose of calculating total regulated emissions; and
- $y$  is a regulated source owned or controlled by the owner or operator of the regulated facility and included in Table 1.

- 3.3(7) The owner or operator of a regulated facility must include industrial process emissions in a regulated facility's Baseline Emissions Intensity submission and Greenhouse Gas Emissions Report, but the regulated facility will be provided 100 percent free allocation for these emissions for the purpose of determining the regulated facility's performance standard for a product.
- 3.3(8) The owner or operator of a regulated facility must include regulated emissions associated with electricity generated using a cogeneration unit in a regulated facility's Baseline Emissions Intensity submission and Greenhouse Gas Emissions Report but the regulated facility will be provided 100 percent free allocation for these emissions for the purpose of determining the regulated facility's performance standard for a product.
- 3.3(9) Subject to subsection 3.3(10), the owner or operator of a regulated facility must include all on-site transportation emissions for a regulated facility in the regulated facility's direct emissions.
- 3.3(10) The owner or operator of a regulated facility may exclude those on-site transportation emissions for which the federal fuel charge was paid pursuant to the Greenhouse Gas Pollution Pricing Act.
- 3.3(11) If the owner or operator of a regulated facility sells energy that is produced at the regulated facility to other regulated facilities or purchases energy from any other regulated facility, they must include in their Greenhouse Gas Emissions Report:
  - (a) the quantity of energy, expressed in gigajoules, as well as the temperature and pressure of any thermal energy,
    - (i) sold to another regulated facility during the compliance period, as determined by the quantity of energy on sales receipts or by another objective method, or

- (ii) purchased from another regulated facility during the compliance period, as determined by the quantity of energy on sales receipts or by another objective method; and
  - (b) the ratio of heat from the combustion of fossil fuel to produce that energy, calculated in accordance with this Standard.
- 3.3(12) If two or more adjacent regulated facilities share an energy source, the owner or operator of each regulated facility may apply jointly to the Minister to include the quantity of the greenhouse gas emissions corresponding to their own quantity of energy established in subparagraphs 3.3(11)(a)(i) and 3.3(11)(a)(ii) in their Baseline Emissions Intensity submissions and Greenhouse Gas Emissions Reports.
- 3.3(13) An application under subsection 3.3(12) must be made in the form and manner established by the Minister.

### **3.4 Quantification of Production**

- 3.4(1) The owner or operator of a regulated facility must quantify the production at a regulated facility for a baseline year or compliance period, using the quantification method selected within a margin of error of  $\pm 5$  percent.

### **3.5 Missing Data**

- 3.5(1) If, for any reason beyond the control of the owner or operator of a regulated facility, the data required to quantify the regulated emissions or production of a product at the regulated facility is missing for a compliance period or baseline year, the owner or operator of the regulated facility must calculate replacement data using:
- (a) quantification methods established by ECCC in the Gazette Notice, if those methods are applicable; or,
  - (b) the most recent IPCC Guidelines for National Greenhouse Gas Inventories.

**Table 1. Regulated Sources of Emissions.**

| Greenhouse Gas              | Regulated Sources of Emissions       |                              |                                  |                    |                   |                   |                                  |
|-----------------------------|--------------------------------------|------------------------------|----------------------------------|--------------------|-------------------|-------------------|----------------------------------|
|                             | Stationary Fuel Combustion Emissions | Industrial Process Emissions | Industrial Product Use Emissions | Fugitive Emissions |                   |                   | On-site Transportation Emissions |
|                             |                                      |                              |                                  | Venting Emissions  | Flaring Emissions | Leakage Emissions |                                  |
| Carbon dioxide <sup>1</sup> | •                                    | •                            | N/A                              | •                  | •                 | •                 | •                                |
| Methane                     | •                                    | •                            | N/A                              | •                  | •                 | •                 | •                                |
| Nitrous oxide               | •                                    | •                            | N/A                              | •                  | •                 | •                 | •                                |
| Sulphur hexafluoride        | N/A                                  | •                            | •                                | N/A                | N/A               | N/A               | N/A                              |
| Hydrofluorocarbons          | N/A                                  | by species                   | by species                       | N/A                | N/A               | N/A               | N/A                              |
| Perfluorocarbons            | N/A                                  | by species                   | by species                       | N/A                | N/A               | N/A               | N/A                              |

<sup>1</sup> Excluding CO<sub>2</sub> emissions from biomass combustion, decomposition, and fermentation.

N/A: Not Applicable

## 4. Baseline Emissions Intensity Submission

This section provides the methodology for the owner or operator of a regulated facility to establish and submit a Baseline Emissions Intensity submission for the regulated facility.

As part of the submission, a baseline emissions intensity is required to be established for each product at a regulated facility. The baseline emissions intensity must be representative of the operating conditions at the regulated facility as of the regulated facility's first compliance period and will be used to determine the regulated emissions limit of the regulated facility.

To this end, the owner or operator of the regulated facility is required to select the representative baseline years and determine:

- (a) baseline emissions;
- (b) baseline emissions level;
- (c) baseline production level; and,
- (d) baseline emissions intensity.

### 4.1 Baseline Years

The baseline years are the calendar years selected by the owner or operator of the regulated facility and approved by the Minister as being the most accurate representation of the regulated facility's operating conditions as of its first compliance period under the OBPS.

- 4.1(1) The owner or operator of a regulated facility must select the baseline years for a regulated facility from three consecutive calendar years of the five calendar years preceding the first compliance period for the regulated facility.
- 4.1(2) The selected baseline years must be submitted to the Minister for approval in the form and manner established by the Minister prior to the completion of the Baseline Emissions Intensity submission for the regulated facility.
- 4.1(3) A submission for approval of a regulated facility's selected baseline years must include the following information:
  - (a) the selected baseline years for the regulated facility in accordance with subsection 4.1(1);
  - (b) a Greenhouse Gas Emissions Report for each of the five calendar years preceding the first compliance period for the regulated facility in accordance with the methodology outlined under subsections 5.1(1) and 5.1(2) (a) through (g); and
  - (c) sufficient information to demonstrate that the proposed baseline years are representative of the operating conditions at the regulated facility as of the first compliance period.
- 4.1(4) Notwithstanding subsection 4.1(1), the owner or operator of a regulated facility may request to the Minister to establish baseline years for the regulated facility based on other considerations respecting the special circumstances of the regulated facility if:

- (a) the owner or operator of the regulated facility is unable to establish a baseline emissions intensity that reflects the representative operating conditions at the regulated facility as of the first compliance period using the criteria established under subsection 4.1(1); or
- (b) the regulated facility was in standby during the period outlined under subsection 4.1(1).

4.1(5) All Baseline Years submissions must be made to the Department of Environment and Climate Change by email at [nsobps@novascotia.ca](mailto:nsobps@novascotia.ca) using the email subject line “[Company Name] – [Regulated Facility Name] – [OBPS Registration Number] – Baseline Years Submission”.

## 4.2 Baseline Emissions

Baseline emissions are all regulated emissions associated with the production of a product at a regulated facility in a single baseline year.

4.2(1) The owner or operator of a regulated facility must determine the baseline emissions for a product at a regulated facility in accordance with Equation 2.

Equation 2

$$BE_{a-i} = DE_{a-i}$$

Where:

- $BE_{a,i}$  is the baseline emissions for the purpose of producing product  $a$  in baseline year  $i$ , expressed in tonnes of CO<sub>2</sub>e;
- $DE_{a,i}$  is the direct emissions for the regulated facility for the purpose of producing product  $a$  in baseline year  $i$ , expressed in tonnes of CO<sub>2</sub>e;
- $a$  is the product produced at the regulated facility; and,
- $i$  is a baseline year.

## 4.3 Baseline Emissions Level

The baseline emissions level represents the averaging of baseline emissions at a regulated facility over the approved baseline years. The results will be used later in conjunction with the baseline production level (section 4.4) to determine the baseline emissions intensity associated with the production of a product (section 4.5).

4.3(1) The owner or operator of a regulated facility must determine the baseline emissions level for a product at a regulated facility in accordance with Equation 3.

Equation 3

$$BEL_a = \frac{1}{n} \sum_{i=1}^n BE_{a_i}$$

Where:

$BEL_a$  is the baseline emissions level for a regulated facility for the purpose of producing product  $a$  during the baseline years, expressed in tonnes of CO<sub>2</sub>e;

$BE_{a_i}$  is the baseline emissions for the purpose of producing product  $a$  in the baseline year  $i$ , expressed in tonnes of CO<sub>2</sub>e;

$a$  is the product produced at the regulated facility;

$i$  is a baseline year; and,

$n$  is the number of baseline years.

#### 4.4 Baseline Production Level

The baseline production level represents the averaging of the amount of product produced at a regulated facility over the approved baseline years. The result will be used later in conjunction with the baseline emissions level (section 4.3) to determine the baseline emissions intensity associated with the production of a product (section 4.5).

- 4.4(1) As part of the Baseline Emissions Intensity submission for a regulated facility, the owner or operator of a regulated facility must propose the product(s) and corresponding production quantification methodologies for each product that account for all regulated emissions released at the regulated facility and provide a transparent and accurate representation of the activities at the regulated facility.
- 4.4(2) The owner or operator of a regulated facility must determine the baseline production level in accordance with Equation 4.

Equation 4

$$BPL_a = \frac{1}{n} \sum_{i=1}^n P_{a_i}$$

Where:

$BPL_a$  is the baseline production level for product  $a$  in the baseline years;

$P_{a_i}$  is the amount of product  $a$  produced at the regulated facility in the baseline year  $i$ ;

- $a$  is the product produced at the regulated facility;
- $i$  is a baseline year; and,
- $n$  is the number of baseline years.

#### 4.5 Baseline Emissions Intensity

The baseline emissions intensity is the result obtained by dividing the baseline emissions level for a product at a regulated facility by the baseline production level for that product at the facility. The resulting baseline emissions intensity will be used to determine the emissions limit for a regulated facility in a compliance period. An example demonstrating how the baseline emissions intensity is calculated is presented in Appendix B.

- 4.5(1) The owner or operator of a regulated facility must determine the baseline emissions intensity for a product at a regulated facility in accordance with Equation 5.

Equation 5

$$BEI_a = \frac{BEL_a}{BPL_a}$$

Where:

- $BEI_a$  is the baseline emissions intensity for product  $a$ ;
- $BEL_a$  is the baseline emissions level for product  $a$ ;
- $BPL_a$  is the baseline production level for product  $a$ ; and,
- $a$  is the product produced at the regulated facility.

#### 4.6 Submitting the Baseline Emissions Intensity Submission

A Baseline Emissions Intensity submission is required for each regulated facility. When completing the submission, all numerical entries in the Baseline Emissions Intensity submission must be entered to four decimal digits. This is to prevent rounding errors in the calculations. The owner or operator of a regulated facility must ensure baseline years are approved prior to submitting the Baseline Emissions Intensity submission.

- 4.6(1) All Baseline Emissions Intensity submissions must be made to the Department of Environment and Climate Change by email at [nsobps@novascotia.ca](mailto:nsobps@novascotia.ca) using the email subject line “[Company Name] – [Regulated Facility Name] – [OBPS Registration Number] – Baseline Emissions Intensity Submission”.
- 4.6(2) As part of the Baseline Emissions Intensity submission, the owner or operator of the regulated facility may submit a written request to keep any information provided in the Baseline Emissions Intensity submission confidential.
- 4.6(3) When preparing a Baseline Emissions Intensity submission for a regulated facility, the owner or operator of the regulated facility must:



- (a) complete any required forms;
- (b) provide the required emissions and production information, including:
  - (i) the approved baseline years;
  - (ii) a simplified process flow diagram, in PDF format, that provides an overview of the processes that produce all quantified sources of regulated emissions at the regulated facility;
  - (iii) a list of all sources of regulated emissions included in the regulated facility's baseline emissions;
  - (iv) all regulated emissions, reported by regulated source and by fuel type, included in the baseline emissions for the regulated facility for each baseline year;
  - (v) the type, quantities, and energy content per unit of fuel (High Heating Value) of each fuel, including biomass, consumed within each regulated source, if applicable.
  - (vi) total units of production for each proposed product produced at the regulated facility for each baseline year;
  - (vii) the baseline emissions level, baseline production level, and baseline emissions intensity for each product, calculated in accordance with sections 4.3 to 4.5 of this Standard;
  - (viii) the references for the quantification methods used to calculate regulated emissions for the regulated facility; and,
  - (ix) the references for the production quantification methodology used.
- (c) in the event that a regulated facility has an on-site cogeneration unit, provide a simplified process flow diagram(s), in PDF format, of the cogeneration unit layout and the following information for each baseline year:
  - (i) the type of fuel used by the cogeneration unit;
  - (ii) the total amount of each fuel used by the cogeneration unit;
  - (iii) the energy content (High Heating Value) of each fuel used by the cogeneration unit;
  - (iv) mass or volume of fuel used to produce heat by the cogeneration unit;
  - (v) mass or volume of fuel used to produce electricity by the cogeneration unit;
  - (vi) the total regulated emissions from cogeneration;
  - (vii) the heat production emissions from cogeneration;
  - (viii) the electricity production emissions from cogeneration;
  - (ix) the total net heat produced by cogeneration;
  - (x) the total electricity production from cogeneration; and
  - (xi) the operating time of the cogeneration unit.

4.6(4) The owner or operator of a regulated facility must ensure that all information contained within the Baseline Emissions Intensity submission is verified by a qualified person in accordance with section 7 of this Standard.

4.6(5) Subject to subsection 4.6(6), the owner or operator of a regulated facility must submit the verified Baseline Emissions Intensity submission for the regulated facility on or before September 30th of the first compliance period.

- 4.6(6) For a regulated facility that was registered in the 2023 calendar year, the owner or operator of the regulated facility must submit the verified Baseline Emissions Intensity submission for the regulated facility on or before May 1, 2024.
- 4.6(7) After a submitted Baseline Emissions Intensity submission for a regulated facility has been reviewed for completeness, the owner or operator of the regulated facility will be provided a written response that:
- (a) approves the information provided in the Baseline Emissions Intensity submission for the regulated facility; or,
  - (b) indicates the Baseline Emissions Intensity submission for the regulated facility is incomplete or has errors, details of the problem(s) or issue(s), and any action required by the owner or operator of a regulated facility, including:
    - (i) providing additional information that may be requested or required;
    - (ii) any corrective action that may be required; and/or,
    - (iii) if applicable, having the Baseline Emissions Intensity submission re-verified.
- 4.6(8) Upon receipt of a written response with respect to paragraph 4.6(7)(b), the owner or operator of the regulated facility must fulfil any actions required and resubmit the required information.
- 4.6(9) If the owner or operator of a regulated facility is required to re-verify a Baseline Emissions Intensity submission for the regulated facility in accordance with subparagraph 4.6(7)(b)(iii), the owner or operator of the regulated facility must submit:
- (a) a new verification report;
  - (b) a new statement of verification; and,
  - (c) any additional information, including regulated emissions and production data, that was not included in the original Baseline Emissions Intensity submission.
- 4.6(10) Upon resubmission of the required information with respect to paragraph 4.6(7)(b), the information will be reviewed and the owner or operator of a regulated facility will be provided a written response that provides a statement in accordance with subsection 4.6(7).

## **4.7 Adjustment of Baseline Information**

The circumstances in which the Baseline Emissions Intensity for the regulated facility may require adjustment are outlined under subsections 7(5) and (6) of the Regulations.

- 4.7(1) In the scenario where paragraph 7(5)(d) of the Regulations occurs, the baseline emissions intensity may require adjustment by the Minister unless the owner or operator of the regulated facility can demonstrate to the satisfaction of the Minister that the reduction in emissions intensity of 10% or more was not due to inaccuracies or errors in the established baseline emissions intensity for the regulated facility.
- 4.7(2) If the owner or operator of the regulated facility is required under section 7 of the Regulations to adjust the baseline emission intensity at the regulated facility or if the owner or operator of the regulated facility wants to adjust the baseline emissions intensity at the regulated facility of its own accord in the circumstances outlined under section 8 of the Regulations, the owner

or operator must complete and submit an application to the Minister in accordance with this section.

- 4.7(3) If the owner or operator of a regulated facility applies or is required to adjust the baseline emissions intensity for the regulated facility, the owner or operator must verify any information required to adjust the baseline emissions intensity that has been changed or has not been verified in a previous Baseline Emissions Intensity submission.
- 4.7(4) In an application to adjust the baseline emissions intensity for the regulated facility, the owner or operator must provide the information necessary to properly review the current and proposed baseline emissions intensity, including:
- (a) a statement by the owner or operator of a regulated facility as to why the application to adjust the baseline emissions intensity for the regulated facility is being made;
  - (b) the proposed new baseline emissions intensity; and,
  - (c) evidence that demonstrates the proposed baseline emissions intensity is representative of the operating conditions at the regulated facility.
- 4.7(5) Upon submission of an application by the owner or operator of the regulated facility, the application will be reviewed, and the owner or operator of the regulated facility will be provided with a written response that indicates:
- (a) the proposed baseline emissions intensity has been approved;
  - (b) the application was incomplete or contained omissions or errors, with corrective actions and information that is required to be submitted; or,
  - (c) the application has been denied, including reasons for the denial, along with a written response that establishes the adjusted baseline emissions intensity for the regulated facility in accordance with subsection 7(6) of the Regulations.
- 4.7(6) Upon resubmission by the owner or operator of the regulated facility of required information in accordance with 4.7(5)(b), the information will be reviewed, and the owner or operator of the regulated facility will be provided with a written response in accordance with subsection 4.7(5).

## 5. Greenhouse Gas Emissions Report

In accordance with section 15 of the Regulations, the owner or operator of a regulated facility is required to prepare and submit a Greenhouse Gas Emissions Report to the Minister for each compliance period. This section provides requirements for preparing and submitting a Greenhouse Gas Emissions Report.

### 5.1 Report Contents

- 5.1(1) A Greenhouse Gas Emissions Report prepared for the purposes of this Standard must be consistent in scope and methodology with the emissions reporting requirements established by ECCC in the Gazette Notice for a regulated facility for the compliance period, and include any information required by the Minister.
- 5.1(2) When preparing a Greenhouse Gas Emissions Report for a regulated facility, the owner or operator of the regulated facility must:
- (a) complete any required forms;
  - (b) report all information consistent with both the reportable administrative information and the emissions reporting requirements established by ECCC in the Gazette Notice for a regulated facility for the compliance period, and any information required by the Minister;
  - (c) in accordance with section 3.2 of this Standard, quantify regulated emissions by following the methodology and quantification requirements with the emissions reporting requirements established by ECCC in the Gazette Notice for the compliance period;
  - (d) all numerical entries in the report must be entered to four decimal digits;
  - (e) report the required regulated emissions and production information, including:
    - (i) a list of all sources of regulated emissions included in the regulated facility's total regulated emissions;
    - (ii) all regulated emissions, reported by regulated source category and by fuel type, included in the total regulated emissions for the regulated facility in the compliance period;
    - (iii) the type, quantities and energy content per unit of fuel (High Heating Value) of each fuel, including biomass, consumed within each regulated source, if applicable;
    - (iv) total units of product for each product produced at the regulated facility;
    - (v) the total CO<sub>2</sub> captured at the regulated facility;
    - (vi) the total regulated emissions and emissions limit for the regulated facility in the compliance period in question, calculated using equations in sections 5.5 and 5.6 of this Standard;
    - (vii) a confirmation that the total quantity of regulated emissions by the regulated facility is below, meets or exceeds the emissions limit for the regulated facility for the compliance period in question;

- (viii) references for the quantification methods used to calculate each source of regulated emissions for the regulated facility; and,
- (ix) references to the production quantification methodology used;
- (f) in the event that a regulated facility has an on-site cogeneration unit, report the additional following information:
  - (i) the type of fuel used by the cogeneration unit;
  - (ii) the total amount of each fuel used by the cogeneration unit;
  - (iii) the energy content (High Heating Value) of each fuel used by the cogeneration unit;
  - (iv) mass or volume of fuel used to produce heat by the cogeneration unit;
  - (v) mass or volume of fuel used to produce electricity by the cogeneration unit;
  - (vi) the total regulated emissions from cogeneration;
  - (vii) the heat production emissions from cogeneration;
  - (viii) the electricity production emissions from cogeneration;
  - (ix) the total net heat produced by cogeneration;
  - (x) the total electricity production from cogeneration; and,
  - (xi) the operating time of the cogeneration unit.
- (g) provide a signed declaration from an authorized signing officer for the regulated facility attesting to the accuracy and completeness of the Greenhouse Gas Emissions Report; and
- (h) include a completed verification report and a signed statement of verification from a qualified person who performed a verification on the regulated facility in accordance with section 7 of this Standard.

## 5.2 Reduction Period

The reduction period is used in conjunction with other parameters to determine the regulated facility's performance standard(s) and emissions limit during a given compliance period.

- 5.2(1) For the purposes of section 4 of the Regulations and Tables 1 and 2 of the Regulations, the owner or operator of a regulated facility must establish a reduction period for each product commercially produced at the regulated facility for each compliance period according to the following:
  - (a) the first reduction period is applicable for every product produced at a regulated facility during the regulated facility's first compliance period;
  - (b) for each subsequent compliance period, the subsequent reduction period is applicable for every product produced at the regulated facility; and,
  - (c) if additional reduction periods are not available, the final reduction period applies for each subsequent compliance period for every product produced at the regulated facility.
- 5.2(2) When a regulated facility has the baseline emission intensity for a product re-established, the regulated facility will maintain the same reduction period for that product.
- 5.2(3) If a regulated facility is deemed to be exempt from accruing compliance obligations for the purpose of standby for at least 6 months of a compliance period, the reduction period for each

product commercially produced at the regulated facility must not advance to the subsequent reduction period in the following compliance period.

### 5.3 Determination of EITE Status

Under the Regulations, regulated facilities that produce products that are classified as EITE may be assigned an annual performance standard reduction factor of 1% for EITE classified products. This section sets out the methods for determining whether the product or products produced at a regulated facility qualify for an EITE classification. As well, this section establishes the application process to obtain approval for a EITE classification.

- 5.3(1) The owner or operator of a regulated facility may apply to the Minister for an approval to classify a product or products at the regulated facility as EITE in accordance with this section.
- 5.3(2) To determine the EITE classification of a product, the owner or operator of a regulated facility must input the values obtained from Equation 6 and Equation 7 into Table 2.
- 5.3(3) For the purposes of completing the calculations under Equation 6 and Equation 7 for a product, the owner or operator of the regulated facility must use:
  - (a) sectoral Statistics Canada SUT data for the most recent year available for:
    - (i) gross value added;
    - (ii) international imports;
    - (iii) international exports; and,
    - (iv) sectoral sales;
  - (b) verified facility level data for direct emissions for the regulated facility for the most recent approved baseline year available.
- 5.3(4) An application for classification of a product or products as EITE shall be made in the form, manner, and by the date required by the Minister and include:
  - (a) the data inputs used for Equation 6 and Equation 7, and
  - (b) the resulting plotted values from Table 2.
- 5.3(5) Upon submission of an application by the owner or operator of the regulated facility for classification of a product or products as EITE, the application will be reviewed, and the owner or operator of the regulated facility will be provided with a written response that indicates:
  - (a) the application has been approved;
  - (b) the application was incomplete or contained omissions or errors, with corrective actions and information that are required to be submitted; or,
  - (c) the application has been denied, including reasons for the denial.
- 5.3(6) Upon resubmission by the owner or operator of the regulated facility of required information in accordance with 5.3(5)(b), the information will be reviewed, and the owner or operator of the regulated facility will be provided with a written response in accordance with subsection 5.3(5).

Equation 6

$$EI = \frac{DE}{GVA} \times 100\%$$

Where:

*EI* is the emissions intensity of the regulated facility, expressed in percent;  
*DE* is the direct emissions of the regulated facility; and  
*GVA* is the gross value added for the sector, obtained from SUT data

Equation 7

$$TE = \frac{(II + IE)}{(II + SS)} \times 100\%$$

Where:

*TE* is the trade exposure of the regulated facility, expressed in percent;  
*II* is international imports, obtained from SUT data;  
*IE* is international exports, obtained from SUT data; and  
*SS* is sectoral sales, obtained from SUT data.

**Table 2. EITE Classification.**

|                          |                     |                   |                 |                   |      |
|--------------------------|---------------------|-------------------|-----------------|-------------------|------|
| Emissions Intensity (EI) | >30%<br>Very High   | EITE              | EITE            | EITE              | EITE |
|                          | 15%-30%<br>High     | Non-EITE          | EITE            | EITE              | EITE |
|                          | 3%-15%<br>Medium    | Non-EITE          | Non-EITE        | EITE              | EITE |
|                          | 1%-3%<br>Low        | Non-EITE          | Non-EITE        | Non-EITE          | EITE |
|                          | <1%<br>Very Low     | Non-EITE          | Non-EITE        | Non-EITE          | EITE |
|                          | <10%<br>Low         | 10%-20%<br>Medium | 20%-80%<br>High | >80%<br>Very High |      |
|                          | Trade Exposure (TE) |                   |                 |                   |      |

5.3(7) In accordance with section 6 of the Regulations, to determine the performance standard reduction factor for each product produced at the regulated facility, the owner or operator of the regulated facility must use:

(a) Table 1 of Schedule A of the Regulations for products that are classified as EITE, or

- (b) Table 2 of Schedule A of the Regulations for non-emissions intensive and non-trade exposed products.

#### 5.4 Performance Standards

This section outlines how to determine a regulated facility's performance standard(s). A performance standard represents the amount of regulated emissions a regulated facility is permitted to emit when producing a unit of product in the given reduction period without the owner or operator of the regulated facility incurring a compliance obligation. A regulated facility may have more than one performance standard if it produces multiple products in accordance with section 4.4 of this Standard.

- 5.4(1) The owner or operator of a regulated facility must determine the performance standard for each product produced at the regulated facility in a given reduction period in accordance with Equation 8.

Equation 8

$$PS_{a,k} = \left[ \left( BEI_a - \frac{\sum_{i=1}^n (IP_{a,i} + EC_{a,i} + OE_{a,i})}{\sum_{i=1}^n P_{a,i}} \right) \times PSRF_k + \frac{IP_{a,k} + EC_{a,k} + OE_{a,k}}{P_{a,k}} \right]$$

Where:

|            |  |
|------------|--|
| $PS_{a,k}$ | is the performance standard for product $a$ in reduction period $k$ , expressed in tonnes of CO <sub>2</sub> e per unit of product $a$ ;   |
| $BEI_a$    | is the baseline emissions intensity for product $a$ ;  |
| $IP_{a,i}$ | is the industrial process emissions associated with the production of product $a$ during the baseline year $i$ , if applicable, expressed in tonnes of CO <sub>2</sub> e;  |
| $EC_{a,i}$ | is the portion of stationary fuel combustion emissions associated with electricity generated on-site at the regulated facility using cogeneration for the purposes of producing product $a$ during the baseline year $i$ , if applicable, expressed in tonnes of CO <sub>2</sub> e;  |
| $OE_{a,i}$ | is other excluded emissions under OBPS for purposes producing product $a$ during the baseline year $i$ , if applicable, expressed in tonnes of CO <sub>2</sub> e;  |
| $P_{a,i}$  | is the level of production of product $a$ during baseline period $i$ ;   |
| $PSRF_k$   | is the Performance Standard Reduction Factor for product $a$ in reduction period $k$ as determined by subsection 5.3 of this Standard and Tables 1 and 2 of the Regulations;   |
| $IP_{a,k}$ | is the industrial process emissions associated with the production of product $a$ during the reduction period $k$ , if applicable, expressed in tonnes of CO <sub>2</sub> e;   |
| $EC_{a,k}$ | is the portion of stationary fuel combustion emissions associated with electricity generated on-site at a regulated facility using cogeneration for the purposes of producing product $a$ during the reduction period $k$ , if applicable, expressed in tonnes of CO <sub>2</sub> e; |



|            |  |
|------------|--|
| $OE_{a,k}$ | is other excluded emissions under OBPS for purposes producing product $a$ during the reduction period $k$ , if applicable, expressed in tonnes of CO <sub>2</sub> e; |
| $P_{a,k}$  | is the level of production of product $a$ during reduction period $k$ ;  |
| $a$        | is the product in reduction period $k$ which is produced at the regulated facility;  |
| $k$        | is the current reduction period;   |
| $i$        | is a baseline year; and,   |
| $n$        | is the number of baseline years.   |

5.4(2) The owner or operator of a regulated facility involved exclusively in electricity generation from fossil fuels must determine the performance standard for the electricity generated by each fossil fuel type in a given reduction period at the regulated facility in accordance with paragraph 6(c) of the Regulations.

## 5.5 Total Regulated Emissions

The total regulated emissions for the regulated facility are used in conjunction with its emissions limit (section 5.6 of this Standard) to determine the regulated facility's compliance obligations in accordance with section 10 of the Regulations.

5.5(1) The owner or operator of a regulated facility must determine the total regulated emissions for the regulated facility during a compliance period in accordance with Equation 9.

Equation 9

$$TE_i = \sum_{a=1}^m (DE_{a,i} - CE_{a,i})$$

Where:

|            |  |
|------------|--|
| $TE_i$     | is the total regulated emissions for the regulated facility in compliance period $i$ , expressed in tonnes of CO <sub>2</sub> e;   |
| $DE_{a,i}$ | are the direct emissions released by the regulated facility for the purpose of producing product $a$ in the compliance period $i$ , expressed in tonnes of CO <sub>2</sub> e;  |
| $CE_{a,i}$ | is the quantity of CO <sub>2</sub> captured during the production of product $a$ at the regulated facility that is stored during the compliance period in a storage project, determined using the quantification method described in section 1 of the GHGRP, expressed in tonnes of CO <sub>2</sub> e; |
| $a$        | is a product produced at the regulated facility;   |
| $i$        | is the compliance period; and,   |
| $m$        | is the number of products produced at the regulated facility during compliance period $i$ .  |

## 5.6 Emissions Limit

The emissions limit represents the quantity of regulated emissions a regulated facility is permitted to emit without the owner or operator incurring a compliance obligation.

- 5.6(1) The owner or operator of a regulated facility must determine the emissions limit for the regulated facility for a given compliance period in accordance with Equation 10.

Equation 10

$$EL_i = \sum_{a=1}^m (PS_{a_k} \times P_{a_i})$$

Where:

|            |  |
|------------|--|
| $EL_i$     | is the emissions limit for the regulated facility during the compliance period $i$ , expressed in tonnes of CO <sub>2</sub> e;               |
| $PS_{a_k}$ | is the performance standard for product $a$ during reduction period $k$ , expressed in tonnes of CO <sub>2</sub> e per unit of product $a$ ; |
| $P_{a_i}$  | is the amount of product $a$ produced at the regulated facility during compliance period $i$ ;   |
| $a$        | is a product in reduction period $k$ which is produced at the regulated facility during compliance period $i$ ;                              |
| $i$        | is the compliance period;  |
| $k$        | is the reduction period for product $a$ ; and,   |
| $m$        | is the number of products produced at the regulated facility during compliance period $i$ .  |

## 5.7 Submission of Greenhouse Gas Emissions Report

- 5.7(1) Prior to submitting a Greenhouse Gas Emissions Report, the owner or operator of a regulated facility must ensure that all information contained within the report is verified by a qualified person in accordance with section 7 of this Standard.
- 5.7(2) The owner or operator of a regulated facility must submit the completed, verified Greenhouse Gas Emissions Report for the regulated facility by June 1<sup>st</sup> following the schedule established in Table 4 of Appendix A.
- 5.7(3) If a regulated facility is deemed to be in standby for a part of a compliance period in accordance with section 18 of the Regulations, the owner or operator of the regulated facility must include in the Greenhouse Gas Emissions Report for the compliance period evidence that demonstrates the regulated facility was in standby during the compliance period.

- 5.7(4) After a submitted Greenhouse Gas Emissions Report for a regulated facility has been reviewed for completeness, the owner or operator of the regulated facility will be provided with:
- (a) a written response approving the information provided in the Greenhouse Gas Emissions Report and confirming any compliance obligation owed by the owner or operator of the regulated facility; or,
  - (b) a written response indicating the Greenhouse Gas Emissions Report is incomplete or has errors, details of the problem(s) or issue(s), and/or any action required by the owner or operator of the regulated facility, including:
    - (i) providing additional information that may be requested or required;
    - (ii) any corrective action that may be required; and/or,
    - (iii) if applicable, having the Greenhouse Gas Emissions report re-verified.
- 5.7(5) Upon receipt of a written response in respect to subparagraph 5.7(4)(b), the owner or operator of the regulated facility must fulfil any actions required and resubmit the required information within the time specified by the Minister.
- 5.7(6) If the owner or operator of a regulated facility is required to re-verify a Greenhouse Gas Emissions Report in accordance with 5.7(4)(b)(iii), the owner or operator of the regulated facility must submit:
- (a) a new verification report;
  - (b) a new statement of verification in accordance with section 7 and,
  - (c) any new information, including regulated emissions and production data, that was not included in the original Greenhouse Gas Emissions Report.
- 5.7(7) Upon resubmission of required information with respect to subparagraph 5.7(4)(b), the information will be reviewed and the owner or operator of the regulated facility will be provided a written response in accordance with subsection 5.7(4).
- 5.7(8) A submission of a Greenhouse Gas Emissions Report must be made to the Department of Environment and Climate Change by email at [nsobps@novascotia.ca](mailto:nsobps@novascotia.ca) using the email subject line “[Company Name] – [Regulated Facility Name] – [OBPS Registration Number] – Greenhouse Gas Emissions Report”.

## 6. Compliance Report

This section provides information for regulated facilities on the preparation and submission of a Compliance Report in accordance with section 16 of the Regulations. See Appendix C for example on how compliance is calculated under the program.

- 6.1(1) If it is identified in a Greenhouse Gas Emissions Report for a regulated facility that the owner or operator of the regulated facility has a compliance obligation, the owner or operator of the regulated facility must submit a Compliance Report as outlined in 6.1(2) of this Standard by December 1<sup>st</sup> following the schedule established in Table 4 of Appendix A.
- 6.1(2) The Compliance Report must include the following information:
- (a) any required forms; and
  - (b) a description of the compliance options used to meet the regulated facility's compliance obligation, including:
    - (i) all fund credits, including serial number, purchased by the regulated facility and submitted for compliance; and
    - (ii) all performance credits, including serial number, awarded by the Minister, if any, and submitted for compliance.
- 6.1(3) After a submitted Compliance Report for a regulated facility has been reviewed for completeness, the owner or operator of the regulated facility will be provided with:
- (a) A written response approving the information provided in the Compliance Report; or,
  - (b) A written response indicating the Compliance Report is incomplete or has errors, details of the problem(s) or issue(s), and/or any action required by the owner or operator of the regulated facility, including:
    - (i) providing additional information that may be requested or required; and/or
    - (ii) any corrective action that may be required.
- 6.1(4) A submission of a Compliance Report must be made to the Department of Environment and Climate Change by email at [nsobps@novascotia.ca](mailto:nsobps@novascotia.ca) using the email subject line “[Company Name] – [Regulated Facility Name] – [OBPS Registration Number] – Compliance Report”.

## 7. Verification

All Baseline Emissions Intensity submissions and all Greenhouse Gas Emissions Reports must be verified by a verification team. This section provides detailed information on verification requirements.

Appendix D presents a guide for the preparation of a verification report and includes information and guidance on its contents.

### 7.1 Verification Requirements

- 7.1(1) If there is any conflict between this Standard and [ISO 14064-3](#) or [ISO 14065](#), this Standard prevails.
- 7.1(2) For the purpose of performing verification of Baseline Emissions Intensity submissions or Greenhouse Gas Emissions Reports under the Regulations, a qualified person is a member of a verification team.
- 7.1(3) The owner or operator of a regulated facility must ensure that a verification team performing verification on the regulated facility meets the following criteria:
- (a) all members of a verification team are employed by an accredited verification body; and,
  - (b) each member of the verification team meets the requirements for team members as outlined in ISO 14065.
- 7.1(4) For the purpose of verifying a Baseline Emissions Intensity submission or a Greenhouse Gas Emissions Report for a regulated facility in accordance with the Regulations and this Standard, the owner or operator of a regulated facility must provide the verification team access to:
- (a) the regulated facility;
  - (b) any personnel;
  - (c) records; and,
  - (d) other information or resources as requested by the verification team.
- 7.1(5) The owner or operator of a regulated facility must ensure that a verification report is prepared for the regulated facility in accordance with ISO 14064-3 and include, at a minimum, the following:
- (a) a completed statement of verification;
  - (b) a list of:
    - (i) unresolved qualitative verification findings; and
    - (ii) unresolved quantitative verification findings of errors, omissions, or misstatements;
  - (c) an assessment of the impact of:
    - (i) unresolved qualitative verification findings; and

- (ii) unresolved quantitative verification findings of errors, omissions, or misstatements on the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report that is being verified;
  - (d) confirmation that the quantification methods used by the owner or operator in the Greenhouse Gas Emissions Report for the regulated facility are consistent with the methods used in the Baseline Emissions Intensity submission for the regulated facility;
  - (e) confirmation that the quantification methods used by the owner or operator in the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report are consistent with the emissions reporting requirements established by ECCC in the Gazette Notice, if those methods are applicable, or the most recent IPCC Guidelines for National Greenhouse Gas Inventories.
  - (f) the name and contact information of all members of the verification team, including any external experts consulted in the process of conducting the verification for the regulated facility; and
  - (g) the name and contact information of the independent reviewer.
- 7.1(6) The owner or operator of a regulated facility must ensure that before a positive, qualified positive, or adverse verification statement is prepared, the determination that forms the basis of the statement must be reviewed by an independent reviewer who meets the following qualifications:
- (a) the person is employed by an accredited verification body;
  - (b) the person is not a member of the verification team carrying out the verification report with respect to the regulated facility; and,
  - (c) the person has not been a member of a verification team that has performed verification with respect to the regulated facility for at least three compliance periods.
- 7.1(7) The owner or operator of a regulated facility must ensure that the verification of regulated emissions and production data associated with the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report for the regulated facility is completed to a reasonable level of assurance in accordance with ISO 14064-3.
- 7.1(8) Materiality is determined according to Equation 11.

Equation 11

$$Materiality = \frac{A}{B} \times 100\%$$

Where:

A is:

- (a) for the purposes of the verification of greenhouse gas emissions, the sum of the absolute value of all overstatements and understatement of emissions resulting from errors, omissions, and misstatements of greenhouse gas emissions, in tonnes of CO<sub>2</sub>e; or,

- (b) for the purposes of verification of production data, the sum of the absolute value of all overstatements and understatements of production quantification resulting from errors, omissions, and misstatements of production information, in the unit of production selected by the owner or operator of the regulated facility in accordance with section 4.4; and,

*B* is:

- (a) for the purposes of the verification of greenhouse gas emissions, the total regulated emissions in tonnes of CO<sub>2</sub>e, as corrected by the verification team; or,
- (b) for the purposes of the verification of production data, the total amount of product produced, in the unit of production selected by the owner or operator of the regulated facility in accordance with section 4.4 of this Standard, as corrected by the verification team.

7.1(9) For the purpose of completing a verification statement for a regulated facility, a material discrepancy in the regulated emissions and production data reported by the owner or operator of the regulated facility will exist if the level of materiality exceeds the following thresholds:

- (a) for greenhouse gas emissions,
  - (i) 5 percent of quantified greenhouse gas emissions for a regulated facility emitting less than 500,000 tonnes CO<sub>2</sub>e in the given compliance period; and,
  - (ii) 2 percent of quantified greenhouse gas emissions for a regulated facility emitting 500,000 tonnes CO<sub>2</sub>e or more in the given compliance period; and
- (b) for production, 0.1 percent of quantified product for the regulated facility.

7.1(10) The owner or operator of a regulated facility must ensure that at the end of the verification process, a statement of verification is prepared reflecting a type of verification in Column 1 of Table 3 based on the corresponding determination made by the verification team in Column 2 of Table 3.

7.1(11) To ensure impartiality with respect to a regulated facility undergoing verification, the owner or operator of a regulated facility must ensure that:

- (a) an accredited verification body does not perform verification for the regulated facility if it has verified seven consecutive Greenhouse Gas Emissions Reports with respect to the regulated facility, unless:
  - (i) three years have elapsed since the last of those reports was verified, or,
  - (ii) those verifications were performed under the Nova Scotia cap-and-trade program, in which case they will not count towards this requirement; and,
- (b) a verification team does not perform verification for the regulated facility if there is known to be a current or potential threat to compromise the impartiality of:
  - (i) a member of the verification team; or,
  - (ii) the accredited verification body for which the verification team is employed.

- 7.1(12) For the purposes of performing verification with respect to a regulated facility, a site visit to the facility is required if:
- (a) no verification team has visited the regulated facility for the purposes of conducting a verification in the most recent three compliance periods;
  - (b) the most recent verification of a Greenhouse Gas Emissions Report with respect to the regulated facility resulted in an adverse verification statement being submitted to the Minister; or
  - (c) the verification is the first by the accredited verification body with respect to the regulated facility under the OBPS.
- 7.1(13) For the purposes of performing verification with respect to a regulated facility under subsection 4.7(3), a site visit to the regulated facility may be required as determined by the Minister.

**Table 3. Types of Verification.**

| Column 1: Type of Verification | Column 2: Determination of Verification Team  |
|--------------------------------|---|
| Positive                       | <p>Both of the following circumstances apply:</p> <ul style="list-style-type: none"> <li>(i) there is a reasonable level of assurance that the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report contains no material discrepancy in emissions or production parameters; and,</li> <li>(ii) the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report was prepared in accordance with this Standard.</li> </ul>                         |
| Qualified Positive             | <p>Both of the following circumstances apply:</p> <ul style="list-style-type: none"> <li>(i) there is a reasonable level of assurance that the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report contains no material discrepancy in regulated emissions or production parameters; and,</li> <li>(ii) the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report was prepared substantially in accordance with this Standard.</li> </ul> |
| Adverse                        | <p>One or both of the following circumstances apply:</p>  |



|  |   |
|--|---|
|  | <ul style="list-style-type: none"><li data-bbox="703 201 1406 373">(i) there is a reasonable level of assurance that the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report contains a material discrepancy in regulated emissions or production parameters; and/or</li><li data-bbox="703 415 1406 552">(ii) the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report was not prepared substantially in accordance with this Standard.</li></ul> |
|--|---|

## 8. Underground Coal Mining Operations

This section outlines additional requirements for an owner or operator of a regulated facility engaged in underground coal mining in relation to baseline emissions (section 8.2), greenhouse gas reporting and calculations, sampling, analysis, and measurement (sections 8.3 to 8.6), performance credits (section 8.7), as well as an optional provision for cost containment (sections 8.8).

### 8.1 Definition

- 8.1(1) Underground coal mining operations encompass all active underground coal mines and those under development that have systems in place to safely manage gases before mining begins.
- 8.1(2) Underground coal mines are considered active if any of these five conditions are met:
- (a) mine development is in progress;
  - (b) coal production occurs on at least 90 days of the calendar year;
  - (c) mine personnel are present in the mine;
  - (d) mine ventilation fans are operational; or
  - (e) the mine operates intermittently.
- 8.1(3) Underground coal mining includes the following:
- (a) all ventilation wells or shafts, whether for gas emission or commercial use, including flaring; and
  - (b) all degasification system wells or shafts, regardless of when they are deployed, for gas emission or commercial use, including flaring.
- 8.1(4) Underground coal mining excludes abandoned or closed mines, surface coal mines, and post-coal mining activities like coal storage or transportation.

### 8.2 Baseline Emissions

The owner or operator of a regulated facility engaged in underground coal mining must determine baseline emissions intensities for net vented methane emissions, stationary fuel combustion emissions, and also determine the baseline performance of the degasification system where applicable.

Baseline emissions intensities for net vented methane and stationary fuel combustion emissions are subject to the application of a performance standard in accordance with section 5.4 of this Standard, and an emissions limit is to be calculated for net vented methane and stationary fuel combustion emissions in accordance with section 5.6 of this Standard.

Baseline emissions intensities for both net vented methane emissions and stationary fuel combustion emissions are to be calculated using section 4 of this Standard, with the following exceptions:

- 8.2(1) When calculating the baseline emissions intensity for net vented methane emissions in accordance with section 4.2 of this Standard, the direct emissions in Equation 2 must be limited to include only net vented methane emissions in accordance with Equation 12.

Equation 12

$$BE_{CH_4-coal-i} = DE_{CH_4-coal-i}$$

Where:

- $BE_{CH_4-coal-i}$  is the baseline for net vented methane emissions for the purpose of producing coal in baseline year  $i$ , expressed in tonnes of CO<sub>2</sub>e;
- $DE_{CH_4-coal-i}$  is the total quantity of net vented methane emissions for the regulated facility for the purpose of producing coal in baseline year  $i$ , expressed in tonnes of CO<sub>2</sub>e; and,
- $i$  is a baseline year.

- 8.2(2) When calculating the baseline intensity for stationary fuel combustion emissions in accordance with section 4.2 of this Standard, the direct emissions in Equation 2 must be limited to include only stationary fuel combustion emissions in accordance with Equation 13.

Equation 13

$$BE_{combustion-coal-i} = DE_{combustion-coal-i}$$

Where:

- $BE_{combustion-coal-i}$  is the baseline stationary fuel combustion emissions for the purpose of producing coal in baseline year  $i$ , expressed in tonnes of CO<sub>2</sub>e;
- $DE_{combustion-coal-i}$  is the total stationary fuel combustion emissions for the regulated facility for the purpose of producing coal in baseline year  $i$ , expressed in tonnes of CO<sub>2</sub>e; and,
- $i$  is a baseline year.

- 8.2(3) In the circumstances where the owner or operator of a regulated facility engaged in underground coal mining installs a degasification system at the regulated facility, the owner or operator must establish a baseline for the performance of the degasification system as follows:
- the baseline performance of the degasification system will establish the average quantity of methane destroyed and average quantity of regulated emissions released in the degasification process;
  - the baseline performance of the degasification system will not apply to the first compliance period in which the degasification system was installed;

- (c) the baseline performance of the degasification system will apply to the second compliance period and all future compliance periods as follows:
  - (i) the baseline performance of the degasification system in the second compliance period must be established by June 1 of the compliance period in question and will be based on the data from the first compliance period;
  - (ii) the baseline performance of the degasification system in the third compliance period must be revised by June 1 of the compliance period in question and will be based on the data from the first and second compliance period;
  - (iii) the baseline performance of the degasification system in the fourth compliance period must be revised by June 1 of the compliance period in question and will be based on the data from the first three compliance periods; and
- (d) subject to section 7 of the Regulations, the baseline performance of the degasification system established under 8.2(3)(c)(iii) will apply to all subsequent compliance periods.

8.2(4) Calculate the baseline performance for a degasification system in accordance with Equation 14.

Equation 14

$$BDP_i = \frac{1}{n} \sum_{i=1}^n \frac{CH_{4Destroyedtotal_i} - CO_{2eflaring\ total_i}}{CH_{4VTtotal_i} + CH_{4DTtotal_i}} \times 100$$

Where:

- $BDP_i$  is the baseline degasification performance, expressed in percent;
- $CH_{4Destroyedtotal_i}$  is the amount of methane destroyed in baseline year  $i$ , summed from quarterly measurements in accordance with Equation 21, and converted into tCO<sub>2</sub>e;
- $CO_{2eflaring\ total_i}$  is the total amount of flaring emissions in baseline year  $i$ , calculated using methods prescribed for flaring in section 8.4(1)(m), expressed in tCO<sub>2</sub>e;
- $CH_{4VTtotal_i}$  is the total amount of CH<sub>4</sub> liberated from ventilation systems as calculated using the formula presented in Equation 17, and converted into tCO<sub>2</sub>e;
- $CH_{4DTtotal_i}$  is the total amount of CH<sub>4</sub> liberated from all degasification monitoring points, summed from quarterly measurements in accordance with section 8.4 and Equation 19, and converted into tCO<sub>2</sub>e;
- $i$  is a baseline year; and
- $n$  is the number of baseline years upon which the calculation is based, with an upper limit of  $n = 3$ .

8.2(5) Calculate a degasification performance delta in accordance with Equation 15. The degasification performance delta measures the difference between the annual performance of

the degasification unit in a given year against the baseline performance of the degasification unit.

Equation 15

$$DPD_Y = (ADP_Y - BDP_Y) \times (CH_{4VTtotal_Y} + CH_{4DTtotal_Y})$$

Where:

|                   |  |
|-------------------|--|
| $DPD_Y$           | is the degasification performance delta for year Y, expressed in tCO <sub>2</sub> e;   |
| $ADP_Y$           | is the annual degasification performance for year Y, calculated using Equation 24, and expressed in percent;   |
| $BDP_Y$           | is the baseline degasification performance in year Y, calculated using Equation 14, and expressed in percent;  |
| $CH_{4VTtotal_Y}$ | is the total amount of CH <sub>4</sub> liberated from ventilation systems for the regulated facility for year Y, summed from quarterly emissions measurements in accordance with Equation 17, and converted into tCO <sub>2</sub> e;           |
| $CH_{4DTtotal_Y}$ | is the total amount of CH <sub>4</sub> liberated from all degasification monitoring points for the regulated facility for year Y, summed from quarterly measurements in accordance with Equation 19 and converted into tCO <sub>2</sub> e; and |
| $Y$               | is the year for which the calculations are being estimated.  |

### 8.3 Greenhouse Gas Emissions Report

- 8.3(1) In addition to the requirements outlined under section 5.1, the owner or operator of a regulated facility engaged in underground coal mining must report the following information when preparing a Greenhouse Gas Emissions Report:
- quarterly CH<sub>4</sub> destruction at all ventilation and degasification system destruction devices or points of offsite transport, expressed in tonnes of CH<sub>4</sub>;
  - quarterly net CH<sub>4</sub> emissions from all ventilation and degasification systems, expressed in tonnes of CH<sub>4</sub>;
  - quarterly CO<sub>2</sub> emissions from on-site destruction of coal mine gas CH<sub>4</sub>, where the gas is not a fuel input for energy generation or use (e.g., flaring), expressed in tCO<sub>2</sub>e; and
  - annual coal production, measured in tonnes.

### 8.4 Calculation of Greenhouse Gas Emissions

- 8.4(1) In addition to the requirements outlined under section 5.1, a Greenhouse Gas Emissions Report prepared by the owner or operator of regulated facility engaged in underground coal mining must use the following methodologies:

- (a) calculate quarterly CH<sub>4</sub> emissions from each ventilation point where CH<sub>4</sub> from multiple shafts and/or vent holes is collected in accordance with Equation 16;
- (b) procedures detailed in section 8.5 must be used to measure CH<sub>4</sub> content, flow rate, temperature, pressure, and moisture content;

Equation 16

$$CH_{4V} = n \times \left( V \times MCF \times \frac{C}{100\%} \times 0.6775 \times \frac{288.71K}{T} \times \frac{P}{1atm} \times 1,440 \right) \times 0.001$$

Where:

|                          |  |
|--------------------------|--|
| <i>CH<sub>4V</sub></i>   | is the quarterly CH <sub>4</sub> liberated from a ventilation monitoring point, expressed in tonnes of CH <sub>4</sub> ;   |
| <i>V</i>                 | is the daily volumetric flow rate for the quarter, measured in cubic meters, based on sampling or a flow rate meter. If a flow rate meter is used and the meter automatically corrects for temperature and pressure, replace “288.71K/T × P/1 atm” with “1”;   |
| <i>MCF</i>               | is the moisture correction factor for the measurement period, measured on a volumetric basis. MCF is: <ul style="list-style-type: none"> <li>• 1 when V and C are measured on a dry basis or if both are measured on a wet basis;</li> <li>• 1 - (f<sub>H2O</sub>)<sub>n</sub> when V is measured on a wet basis and C is measured on a dry basis; and</li> <li>• 1/[1-(f<sub>H2O</sub>)] when V is measured on a dry basis and C is measured on a wet basis;</li> </ul> |
| <i>(f<sub>H2O</sub>)</i> | is the moisture content of the CH <sub>4</sub> emitted during the measurement period, measured on a volumetric basis of cubic meters of water per cubic meter of emitted gas;  |
| <i>C</i>                 | is the daily CH <sub>4</sub> concentration of ventilation gas for the quarter, expressed in percent, and measured on a wet basis;  |
| <i>n</i>                 | is the number of days in the quarter where active ventilation of mining operations is taking place at the monitoring point;  |
| <i>0.6775</i>            | is the density of CH <sub>4</sub> at 288.71K (15.56 °C) and 1 atm (kg/m <sup>3</sup> );  |
| <i>288.71K</i>           | is 288.71 Kelvin;  |
| <i>T</i>                 | is the temperature at which flow is measured for the quarter, expressed in Kelvin (K)  |
| <i>P</i>                 | is the pressure at which flow is measured, expressed in atmospheres (atm); and   |

1,440

Is the conversion factor, expressed in minutes per day.

- (c) the quarterly emission calculation periods are as follows:
  - (i) January 1 – March 31;
  - (ii) April 1 – June 30;
  - (iii) July 1 – September 30; and
  - (iv) October 1 – December 31.
- (d) daily values for volumetric flow rate, moisture correction factor, concentration of ventilation gases, temperature, and pressure based on measurements must be conducted at least quarterly with intervals of no less than six weeks between measurements. If measurements are more frequent than quarterly, an owner or operator must calculate the average; if continuous monitoring is in place, the average value is to be used over the monitoring period;
- (e) under the circumstances that there are multiple monitoring points, the owner or operator must determine total CH<sub>4</sub> emissions from ventilation systems by adding the CH<sub>4</sub> emissions from all monitoring points (CH<sub>4VTotal</sub>) within the mine, in accordance with Equation 17;

Equation 17

$$CH_{4VTotal} = \sum_{i=1}^m (CH_{4V})_i$$

Where:

- CH<sub>4VTotal</sub> is the total quarterly amount of CH<sub>4</sub> liberated from ventilation systems, expressed in tonnes of CH<sub>4</sub>;
- CH<sub>4V</sub> is the quarterly amount of CH<sub>4</sub> liberated from each ventilation monitoring point, expressed in tonnes of CH<sub>4</sub>; and
- m is the number of ventilation monitoring points.

- (f) compute the weekly CH<sub>4</sub> emissions at each monitoring point in the degasification system, such as wells, vent holes, or centralized collection points. Utilize weekly or more frequent CH<sub>4</sub> measurements, including those obtained through CEMS, and incorporate CH<sub>4</sub> content, flow rate, temperature, pressure, and moisture content in accordance with Equation 18;

Equation 18

$$CH_{4D} = \sum_{i=1}^n \left( V_i \times MCF_i \times \frac{C_i}{100\%} \times 0.6775 \times \frac{288.71K}{T_i} \times \frac{P_i}{1atm} \times 1,440 \right)$$

Where:

$CH_{4D}$  is the weekly quantity of CH<sub>4</sub> liberated from a monitoring point, expressed in tonnes of CH<sub>4</sub>;

$V_i$  is the daily measured total volumetric flow rate for the days of the week when the degasification system is in operation at that monitoring point, based on sampling or a flow rate meter (cubic meters). If a flow rate meter is used and the meter automatically corrects for temperature and pressure, replace “288.71K/T×P/1 atm” with “1”;

$MCF_i$  is the moisture correction factor for the measurement period, measured on a volumetric basis. MCF is:

- 1 when  $V_i$  and  $C_i$  are measured on a dry basis or if both are measured on a wet basis;
- $1-(f_{H2O})_i$  when  $V_i$  is measured on a wet basis and  $C_i$  is measured on a dry basis; and
- $1/[1-(f_{H2O})_i]$  when  $V_i$  is measured on a dry basis and  $C_i$  is measured on a wet basis;

$(f_{H2O})_i$  is the moisture content of CH<sub>4</sub> emitted during the measurement period, measured on a volumetric basis of cubic meters of water per cubic meter of emitted gas;

$C_i$  is the daily CH<sub>4</sub> concentration of gas for the days in the week when the degasification system is in operation at that monitoring point, measured in percent, and on a wet basis;

$n$  is the number of days in the week that the system is operational at the given measurement point;

0.6775 is the density of CH<sub>4</sub> at 288.71K (15.56 °C) and 1 atm (kg/m<sup>3</sup>);

288.71K is 288.71 Kelvin;

$T_i$  is the daily temperature at which flow is measured, expressed in Kelvin (K);

$P_i$  is the daily pressure at which flow is measured, expressed in atmospheres (atm);

1,440 Is the conversion factor, expressed in minutes per day.



- (g) obtain daily values for volumetric flow rate, moisture correction factor, concentration of ventilation gases, temperature, and pressure from measurements taken at least once per calendar week, with intervals of no less than 3 days between measurements. If measurements are conducted more frequently within a week, the average value must be calculated from all measurements during that week. If continuous measurements are taken and the continuous monitoring equipment is functioning correctly, the average values over the monitoring period must be used;
- (h) calculate the quarterly total of CH<sub>4</sub> emissions from the degasification systems by adding the CH<sub>4</sub> emissions determined at each monitoring point within the mine. This summation must cover the number of weeks in the quarter, in accordance with Equation 19;

Equation 19

$$CH_{4DTotal} = \sum_{i=1}^m \sum_{j=1}^w (CH_{4D})_{i,j}$$

Where:

*CH<sub>4DTotal</sub>* is the quarterly quantity of CH<sub>4</sub> liberated from all degasification monitoring points, expressed in tonnes of CH<sub>4</sub>;

*CH<sub>4D</sub>* is the weekly quantity of CH<sub>4</sub> liberated from a degasification monitoring point, expressed in tonnes of CH<sub>4</sub>;

*m* is the number of monitoring points; and

*w* is the number of weeks in the quarter during which the degasification system is operated.

- (i) when gas from degasification system wells or ventilation shafts is sold, used on-site, or otherwise destroyed, including through flaring, the owner or operator must determine the quarterly CH<sub>4</sub> destroyed for each destruction device and each point of off-site transport to a destruction device in accordance with Equation 20. An owner or operator must measure CH<sub>4</sub> content and flow rate in accordance with the provisions in section 8.5;

Equation 20

$$CH_{4Destroyed} = CH_4 \times DE$$

Where:

*CH<sub>4Destroyed</sub>* is the quarterly quantity of CH<sub>4</sub> destroyed, measured in tonnes of CH<sub>4</sub>;

*CH<sub>4</sub>* is the quarterly quantity of CH<sub>4</sub> routed to the destruction device or offsite

transfer point, measured in tonnes of CH<sub>4</sub>; and

*DE* is the destruction efficiency, which must be the lesser of the manufacturer's specified destruction efficiency and 0.99. If the gas is transported offsite for destruction, DE = 1.

- (j) calculate the total amount of CH<sub>4</sub> destroyed as the sum of the methane destroyed through all destruction devices, both on-site and off-site, in accordance with Equation 21;

Equation 21

$$CH_{4DestroyedTotal} = \sum_{i=1}^d (CH_{4Destroyed})_d$$

Where:

*CH<sub>4DestroyedTotal</sub>* is the total quarterly quantity of CH<sub>4</sub> destroyed at the mine, measured in tonnes of CH<sub>4</sub>;

*CH<sub>4Destroyed</sub>* is the quarterly quantity of CH<sub>4</sub> destroyed from each destruction device or offsite transfer point; and

*d* is the number of on-site destruction devices and points of off-site transport.

- (k) calculate the quarterly measured net CH<sub>4</sub> emissions released to the atmosphere in accordance with Equation 22;

Equation 22

$$CH_{4emitted(net)} = CH_{4VTtotal} + CH_{4DTtotal} - CH_{4DestroyedTotal}$$

Where:

*CH<sub>4emitted (net)</sub>* is the quarterly net quantity of CH<sub>4</sub> emissions from the mine, measured in tonnes of CH<sub>4</sub>;

*CH<sub>4VTtotal</sub>* is the quarterly quantity of CH<sub>4</sub> liberated from all mine ventilation monitoring points (CH<sub>4V</sub>), calculated using Equation 17 and measured in tonnes of CH<sub>4</sub>;

*CH<sub>4DTtotal</sub>* is the quarterly quantity of CH<sub>4</sub> liberated from all mine degasification monitoring points (CH<sub>4D</sub>), calculated using Equation 19 and measured in tonnes of CH<sub>4</sub>;

*CH<sub>4DestroyedTotal</sub>* is the quarterly quantity of measured CH<sub>4</sub> destroyed from all mine ventilation and degasification systems, calculated using Equation 21 and measured in tonnes of CH<sub>4</sub>.

- (l) calculate the total quantity of regulated emissions associated with flaring for on-site destruction of methane collected from degasification and/or ventilation systems, provided the methane is not used as a fuel input for energy generation or use, using the method prescribed in section 2.C of [Canada's Greenhouse Gas Quantification Requirements for 2022](#). The result of the calculation is to be expressed in CO<sub>2</sub>e and represented for the purposes of calculation in this Standard as:

$$CO_{2eflaring\ total}$$

- (m) calculate the total quantity of quarterly CO<sub>2</sub> emissions from CH<sub>4</sub> destruction, measured in tCO<sub>2</sub>e in accordance with Equation 23; and

Equation 23

$$CO_2 = CH_{4Destroyed\ on\ site} \times \left(\frac{44}{16}\right)$$

Where:

*CO<sub>2</sub>* is the total quantity of quarterly CO<sub>2</sub> emissions from CH<sub>4</sub> destruction, measured in tCO<sub>2</sub>e;

*CH<sub>4Destroyedon-site</sub>* is the total quantity of CH<sub>4</sub> destroyed quarterly, calculated as the sum of CH<sub>4</sub> destroyed for each on-site, non-energy use, as calculated individually in Equation 20, measured in tonnes of CH<sub>4</sub>;

*44/16* is the ratio of molecular weights of CO<sub>2</sub> to CH<sub>4</sub>.

- (n) calculate annual degasification performance in accordance with Equation 24.

Equation 24

$$ADP_Y = \frac{CH_{4Destroyedtotal\_Y} - CO_{2eflaring\ total\_Y}}{CH_{4VTtotal\_Y} + CH_{4DTtotal\_Y}} \times 100$$

Where:

*ADP<sub>Y</sub>* is the annual degasification performance for year Y, expressed in percent;

*CH<sub>4Destroyedtotal\\_Y</sub>* is the amount of methane destroyed for the regulated facility for year Y, summed from quarterly measurements in accordance with Equation 21, and converted into tCO<sub>2</sub>e;

|                                |   |
|--------------------------------|---|
| $CO_{2\text{flaring total}_Y}$ | is the total amount of flaring emissions for the regulated facility for year Y, calculated using methods prescribed for flaring in section 8.4(1)(m), and expressed in tCO <sub>2</sub> e;  |
| $CH_{4V\text{Total}_Y}$        | is the total amount of CH <sub>4</sub> liberated from ventilation systems for the regulated facility for year Y, summed from quarterly measurements in accordance with Equation 17, and converted into tCO <sub>2</sub> e;                      |
| $CH_{4D\text{Total}_Y}$        | is the total amount of CH <sub>4</sub> liberated from all degasification monitoring points for the regulated facility for year Y, summed from quarterly measurements in accordance with Equation 19, and converted into tCO <sub>2</sub> e; and |
| $Y$                            | is the year.  |

## 8.5 Sampling, Analysis, and Measurement Requirements

- 8.5(1) In addition to the requirements under section 5.1, a Greenhouse Gas Emission Report prepared by the owner or operator of regulated facility engaged in underground coal mining must estimate regulated emissions in accordance with the following monitoring requirements:
- (a) to monitor CH<sub>4</sub> emissions from ventilation systems it is necessary to assess CH<sub>4</sub> from individual ventilation wells, shafts, centralized monitoring points, or a combination of these options. An owner or operator may aggregate emissions from multiple ventilation sources, provided that regulated emissions from all sources are addressed and that the methodology used to calculate total regulated emissions are documented. Monitoring must take place using one of the following options:
    - (i) take quarterly or more frequent grab samples, with intervals of at least six weeks between measurements, and measure flow rate, temperature, and pressure quarterly. Ensure that sampling and measurements occur at the same locations as MSHA inspection samples, or the equivalent in Canada, and when the mine operates under normal conditions. Adhere to MSHA sampling procedures detailed in the General Coal Mine Inspection Procedures and Inspection Tracking System Handbook Number PH-08-V-1, dated January 1, 2008, or the appropriate Canadian equivalent. Document the date of sampling, airflow, temperature, and pressure measured, handheld methane and oxygen readings in percentages, sample bottle numbers, and the measurement or collection location;
    - (ii) obtain the results of quarterly (or more frequent) testing conducted by the Canadian equivalent of MSHA, if applicable; and
    - (iii) monitor regulated emissions through the use of one or more CEMS. If an owner or operator uses CEMS as the basis for emissions reporting, they must provide documentation on the process for using data obtained from their CEMS to estimate regulated emissions from their mine ventilation systems.
- 8.5(2) In addition to the requirements under section 5.1, a Greenhouse Gas Emission Report prepared by the owner or operator of regulated facility engaged in underground coal mining must estimate CH<sub>4</sub> emissions from degasification systems by monitoring CH<sub>4</sub> from each well and gob gas vent hole, a centralized point, or a combination thereof. An owner or operator

may aggregate regulated emissions from multiple wells or gob gas vent holes, provided all regulated emissions are considered, and the method for calculating total regulated emissions is documented. An owner or operator must monitor both gas volume and methane concentration using one of the following two options:

- (a) monitor regulated emissions with one or more CEMS; or
- (b) weekly (once each calendar week, with at least three days between measurements) or more frequent samples, for all degasification wells and gob gas vent holes. Determine weekly or more frequent flow rates and methane composition from these degasification wells and gob gas vent holes. Methane composition should be determined either by submitting samples to a lab for analysis, or from the use of methanometers at the degasification well site. Follow the sampling protocols for sampling of methane emissions from ventilation shafts, in accordance with subparagraph 8.5(1)(a)(i).

8.5(3) In addition to the requirements under section 5.1, a Greenhouse Gas Emission Report prepared by the owner or operator of regulated facility engaged in underground coal mining must ensure monitoring adhere to one of the following standards:

- (a) [ASTM D1945-03](#) Standard Test Method for Analysis of Natural Gas by Gas Chromatography;
- (b) [ASTM D1946-90](#) (Reapproved 2006) Standard Practice for Analysis of Reformed Gas by Gas Chromatography;
- (c) [ASTM D4891-89](#) (Reapproved 2006) Standard Test Method for Heating Value of Gases in Natural Gas Range by Stoichiometric Combustion; or
- (d) [ASTM UOP539-97](#) Refinery Gas Analysis by Gas Chromatography.

8.5(4) In addition to the requirements under section 5.1, a Greenhouse Gas Emission Report prepared by the owner or operator of regulated facility engaged in underground coal mining must estimate regulated emissions through monitoring requirements outlined as follows:

- (a) all fuel flow meters, gas composition monitors, and heating value monitors that are used to provide data for GHG emissions calculations are calibrated prior to the first reporting year, using the applicable methods specified as follows under subsections 8.5(4)(a)(i) through (vii). Alternatively, calibration procedures specified by the flow meter manufacturer may be used. Fuel flow meters, gas composition monitors, and heating value monitors shall be recalibrated either annually or at the minimum frequency specified by the manufacturer, whichever is more frequent. For fuel, flare, or sour gas flow meters, the owner or operator shall operate, maintain, and calibrate the flow meter using any of the following test methods or follow the procedures specified by the flow meter manufacturer. Flow meters must meet the accuracy requirements specified by regulation in the jurisdiction;
  - (i) [ASME MFC-3M-2004](#) Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi;
  - (ii) [ASME MFC-4M-1986](#) (Reaffirmed 1997) Measurement of Gas Flow by Turbine Meters;
  - (iii) [ASME MFC-6M-1998](#) Measurement of Fluid Flow in Pipes Using Vortex Flowmeters;
  - (iv) [ASME MFC-7M-1987](#) (Reaffirmed 1992) Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles;

- (v) [ASME MFC-11M-2006](#) Measurement of Fluid Flow by Means of Coriolis Mass Flowmeters;
  - (vi) [ASME MFC-14M-2003](#) Measurement of Fluid Flow Using Small Bore Precision Orifice Meters; and
  - (vii) [ASME MFC-18M-2001](#) Measurement of Fluid Flow using Variable Area Meters.
- (b) for CH<sub>4</sub> destruction, CH<sub>4</sub> must be monitored at each on-site destruction device and each point of offsite transport for combustion using continuous monitors of gas routed to the device or point of offsite transport;
  - (c) all temperature and pressure monitors must be calibrated using the procedures and frequencies specified by the manufacturer;
  - (d) procedures used must be documented to ensure the accuracy of gas flow rate, gas composition, temperature, and pressure measurements, where applicable. These procedures include, but are not limited to, calibration of fuel flow meters, and other measurement devices. The estimated accuracy of measurements and the technical basis for the estimated accuracy must be recorded; and
  - (e) follow section 2.D.7 of [Canada's Greenhouse Gas Quantification Requirements for 2022](#) for flares and other control devices.

## 8.6 Missing Data

- 8.6(1) If, for any reason beyond the control of the owner or operator of a regulated facility engaged in underground coal mining, the data required to quantify the regulated emissions or production of a product at the regulated facility is missing for a compliance period or baseline year, the owner or operator of the regulated facility must calculate replacement data using:
- (a) requirements outlined in section 3.5(1);
  - (b) for any missing value of CH<sub>4</sub> concentration, flow rate, temperature, and pressure for ventilation and degasification systems, the substitute data value shall be the arithmetic average of the quality-assured values of that parameter immediately preceding and immediately following the missing data incident; and
  - (c) if no quality-assured data are available prior to the missing data incident, the substitute data value shall be the first quality-assured value obtained after the missing data period.

## 8.7 Performance Credits

Regulated facilities engaged in underground coal mining are eligible to earn performance credits for emissions reductions related to stationary fuel combustion and destruction of methane but are ineligible to earn performance credits related to net vented methane emissions. This section outlines the circumstances under which performance credits may be earned.

- 8.7(1) In accordance with subsection 13(2) of the Regulations, the Minister may decline to issue a performance credit to the owner or operator of a regulated facility engaged in underground coal mining where the net vented methane emissions for the compliance year, as calculated in Equation 22, is less than the emissions limit for net vented methane emissions, calculated using Equation 10.

## 8.8 Cost Containment

Regulated facilities engaged in underground coal mining are eligible to apply for cost containment designation if compliance costs related to net vented methane emissions exceed three per cent of the regulated facility sales revenue for the compliance period in question. Regulated facilities engaged in underground coal mining may apply to the Minister for cost containment designation on an annual basis.

- 8.8(1) On the application of the owner or operator of a regulated facility engaged in underground coal mining, the Minister may declare the regulated facility to be under cost containment and exempt from a portion of the regulated facility’s compliance obligation for a compliance period if the owner or operator of the regulated facility demonstrates to the Minister in accordance with this section that the value of the regulated facility’s compliance obligation resulting from net vented methane emissions exceeds three percent of the value of the regulated facility’s sales for that compliance period.
- 8.8(2) The owner or operator of the regulated facility engaged in underground coal mining must calculate the value of the compliance obligation for the compliance period for the regulated facility related to net vented methane emissions under subsection 8.8(1) in accordance with Equation 25.

Equation 25

$$CH_{4CO\_Y} = CH_{4emitted(net)\_Y} - CH_{4emitted(net)\_Limit\_Y}$$

Where:

- $CH_{4CO\_Y}$  is the compliance obligation as defined in the Regulations for vented methane for the regulated facility for year Y, measured in tonnes;
- $CH_{4emitted(net)\_Y}$  is the net vented methane for year Y, calculated in accordance with Equation 22, expressed in tonnes of CO<sub>2</sub>e;
- $CH_{4emitted(net)\_Limit\_Y}$  is the net vented methane emissions limit for year Y, calculated in accordance with Equation 10 of this Standard, expressed in tonnes of CO<sub>2</sub>e;
- $Y$  is the year.

- 8.8(3) The owner or operator of the regulated facility engaged in underground coal mining must determine the value of sales for the compliance period for the regulated facility under subsection 8.8(1) through the regulated facility’s financial statements for the year in question.
- 8.8(4) The value of sales for the compliance period determined under subsection 8.8(3) must be subject to an independent audit and be in accordance with Generally Accepted Accounting Principles.

- 8.8(5) The Minister may engage an independent auditor to verify the value of sales of the regulated facility submitted in accordance with subsection 8.8(4).
- 8.8(6) A cost containment designation under subsection 8.8(1) applies to the compliance period for which it was applied for and will not apply to subsequent compliance periods.
- 8.8(7) An application for cost containment must be in the form and manner as determined by the Minister and contain the following information:
- (a) the compliance period for which the cost containment designation is requested;
  - (b) the data input and results for Equation 25 for the compliance period for which the cost containment designation is requested; and
  - (c) the audited financial statements for the compliance period for which the cost containment designation is requested.
- 8.8(8) The owner or operator of regulated facility engaged in underground coal mining must submit the completed Cost Containment Application for the regulated facility by September 1 following the schedule established in Table 4 of Appendix A.
- 8.8(9) The Cost Containment Application must be submitted to the Department of Environment and Climate Change by email at [nsobps@novascotia.ca](mailto:nsobps@novascotia.ca) using the email subject line “[Company Name] – [Regulated Facility Name] – [OBPS Registration Number] – Cost Containment Application”.
- 8.8(10) After a submitted Cost Containment Application for a regulated facility engaged in underground coal mining has been reviewed, the owner or operator of the regulated facility will be provided with:
- (a) a written response approving the Cost Containment Application, confirming that the facility is designated as being under Cost Containment for the compliance period and the facility’s revised compliance obligation is to be calculated in accordance with Equation 26; or
  - (b) a written response indicating the Cost Containment Application is incomplete or has errors, details of the problem(s) or issue(s), and/or any action required by the owner or operator of the regulated facility, including:
    - (i) providing additional information that may be requested or required; and/or,
    - (ii) any corrective action that may be required; or,
  - (c) a written response declining the Cost Containment Application.

## 8.9 Cost Containment Compliance Obligation

- 8.9(1) In accordance with section 10 of the Regulation, the compliance obligation for a regulated facility engaged in underground coal mining under cost containment must be calculated in accordance with Equation 26.

Equation 26



$$CO_Y = \min\left(\left[\frac{PSR_Y}{FC\ Price_Y}\right], \max[0, CH_{4CO\_Y}]\right) + ECE_Y + DPD_Y$$

Where:

|               |   |
|---------------|---|
| $CO_Y$        | is the compliance obligation as defined in the Regulations, for the regulated facility for year Y, measured in tonnes;  |
| $PSR_Y$       | is equal to three percent of sales revenue for the regulated facility for year Y, measured in dollars;  |
| $CH_{4CO\_Y}$ | is the compliance obligation as defined in the Regulations for vented methane for the regulated facility for year Y, measured in tonnes;  |
| $FC\ Price_Y$ | is the dollar amount that an owner or operator of a regulated facility must contribute to the Fund to obtain one fund credit for year Y, according to the price schedule in subsection 12(3) of the Regulations;  |
| $ECE_Y$       | is the excess quantity of stationary fuel combustion emissions for the regulated facility for year Y, expressed in CO <sub>2</sub> e, and calculated by subtracting the total amount of stationary fuel combustion emissions released from the combustion emission limit; |
| $DPD_Y$       | is the degasification performance delta for year Y, calculated using Equation 24 and expressed in tonnes of CO <sub>2</sub> e; and  |
| $Y$           | is the year in which the dollar amount of the compliance obligation is being estimated or determined.   |

## Appendix A: Reporting Deadlines

**Table 4. Schedule for Greenhouse Gas Emissions Reports and Compliance Reports.**

| Year   | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--|------|------|------|------|------|------|------|------|------|
| Compliance Period <sup>1</sup>                                       | C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   |      |
| Verified Greenhouse Gas Emissions Report Submitted <sup>2</sup> for: |      | C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   |
| Compliance Report Submitted <sup>3</sup> for:                        |      | C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   |
| Cost Containment   |      | C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   |

<sup>1</sup>Reports and submissions continue to be required every compliance period for the duration of the program.

<sup>2</sup>Verified Greenhouse Gas Emissions Reports must be submitted by June 1<sup>st</sup> of the year indicated.

<sup>3</sup>Compliance Reports must be submitted by December 1<sup>st</sup> of the year indicated.

<sup>4</sup>Cost Containment (applicable to underground coal mines only) must be submitted by September 1<sup>st</sup> of the year indicated.

## Appendix B: Baseline Emissions Intensity – Example

The following example is intended to provide owners or operators of regulated facilities with the guidance necessary to determine the baseline emissions intensity of a regulated facility. This example follows a bottom-up approach, beginning with the direct emissions calculation and ending with the baseline emissions intensity calculation.

This example makes the following assumptions:

- (i) The baseline years 2020, 2021 and 2022 are used to determine the baseline emission intensity of the regulated facility;
- (ii) The regulated facility produces one product, which will be referred to as “widgets”;
- (iii) The regulated facility does not have a cogeneration unit but has industrial process emissions in the form of nitrous oxide (N<sub>2</sub>O).

### Direct Emissions

The GHG emissions associated with production of widgets must first be aggregated and quantified into the appropriate regulated sources. Following the quantification methodologies established by ECCC in the Gazette Notice, it was estimated that the facility’s direct GHG emissions associated with the production of widgets by regulated sources were as summarized in Table 5.

**Table 5. Direct GHG Emissions from Regulated Sources in each Baseline Year (tonnes of CO<sub>2</sub>e).**

| Regulated Source             | 2020   | 2021   | 2022   |
|------------------------------|--------|--------|--------|
| Stationary Fuel Combustion   | 55,000 | 57,000 | 54,000 |
| Industrial Process Emissions | 22,500 | 24,000 | 21,000 |
| Venting                      | 1,000  | 800    | 900    |
| Flaring                      | 2,500  | 2,700  | 2,200  |
| On-site Transportation       | 500    | 400    | 400    |

Table 5 includes all the direct emissions associated with the production of widgets in the 2020 baseline year covered by Table 1. Regulated Sources of Emissions. (Regulated Sources of Emissions). The total amount of direct emissions (DE) can be determined by summing the regulated emissions from each regulated emissions source (ES) from that year as follows:

$$DE_{widget\_2020} = \sum ES_{widget\_2020}$$

$$DE_{widget\_2020} = 55,000 \text{ t CO}_2\text{e} + 22,500 \text{ t CO}_2\text{e} + 1,000 \text{ t CO}_2\text{e} + 2,500 \text{ t CO}_2\text{e} + 500 \text{ t CO}_2\text{e}$$

$$DE_{widget\_2020} = 81,500 \text{ t CO}_2\text{e}$$

Using the same approach, the direct emissions for the other two remaining baseline years can be calculated. Results are summarized in Table 6.

**Table 6. Direct Emissions from the Production of Widgets in each Baseline Year (tonnes CO<sub>2</sub>e).**

| Baseline Year    | 2020   | 2021   | 2022   |
|------------------|--------|--------|--------|
| Direct Emissions | 81,500 | 84,900 | 78,500 |

**Baseline Emissions**

The baseline emissions associated with the production of widgets for a single baseline year can be determined by taking the sum of direct emissions.

Thus, for the 2020 baseline year, the baseline emissions associated with the production of widgets is:

$$BE_{widget\_2020} = DE_{widget\_2020}$$

$$BE_{widget\_2020} = 81,500 \text{ t CO}_2\text{e}$$

Using the same approach, the baseline emissions associated the production of widgets can be determined for the remaining baseline years, as shown in Table 7.

**Table 7. Baseline Emissions in Each Baseline Year (tonnes CO<sub>2</sub>e).**

| Baseline Year      | 2020   | 2021   | 2022   |
|--------------------|--------|--------|--------|
| Baseline Emissions | 81,500 | 84,900 | 78,500 |

**Baseline Emissions Level**

The baseline emissions level is obtained by averaging the baseline emissions associated with the production of a single product over the baseline years. In this example, the baseline emissions level associated with the production of widgets is:

$$BE_{widget} = \frac{1}{3} \sum_t BE_{widget\_t}$$

$$BE_{widget} = \frac{1}{3} \times (81,500 \text{ t CO}_2\text{e} + 84,900 \text{ t CO}_2\text{e} + 78,500 \text{ t CO}_2\text{e})$$

$$BE_{widget} = 81,633 \text{ t CO}_2\text{e}$$

**Baseline Production Level**

For its part, the baseline production level represents the amount of production of a single product averaged over the baseline years. In this example, the owner or operator of the regulated facility employed the most appropriate quantification methodologies for widgets and a summary of the production profile is presented in Table 8.

**Table 8. Production Profile in each Baseline Year (widgets).**

| Baseline Year    | 2020   | 2021   | 2022   |
|------------------|--------|--------|--------|
| Widgets Produced | 32,000 | 34,600 | 33,000 |

Using the production information provided in Table 8, the baseline production for the regulated facility

is determined as:

$$BPL_{\text{widget}} = \frac{1}{3} \sum_t P_{\text{widget}_t}$$

$$BPL_{\text{widget}} = \frac{1}{3} \times (32,000 \text{ widgets} + 34,600 \text{ widgets} + 33,000 \text{ widgets})$$

$$BPL_{\text{widget}} = 33,200 \text{ widgets}$$

### **Baseline Emissions Intensity**

Finally, the regulated facility's baseline emissions intensity associated with the production of widgets is obtained by dividing the baseline emissions level by the baseline production level as shown below:

$$BEI_{\text{widget}} = \frac{BEL_{\text{widget}}}{BPL_{\text{widget}}}$$

$$BEI_{\text{widget}} = \frac{81,633 \text{ t CO}_2\text{e}}{33,200 \text{ widget}}$$

$$BEI_{\text{widget}} = 2.4588 \text{ t CO}_2\text{e/widget}$$

## Appendix C: Calculating Compliance for a Regulated Facility – Example

The following example is intended to provide owners or operators of regulated facilities with the guidance necessary to complete a Greenhouse Gas Emissions Report for a regulated facility. The example builds on the example provided under Appendix B with the calculation of total regulated emissions, emissions limit and compliance obligation for the regulated facility.

The example makes the following assumptions:

- (i) The compliance period is 2023;
- (ii) The owner or operator of the regulated facility previously submitted Baseline Emissions Intensity submission using 2020, 2021 and 2022 as the baseline years;
- (iii) The regulated facility produces one product, referred to as “widgets” ; and,
- (iv) The regulated facility has industrial process emissions in the form of nitrous oxide (N<sub>2</sub>O).

### Direct Emissions

First, the GHG emissions associated with production of widgets must first be aggregated and quantified into the appropriate regulated sources. Following the quantification methodologies established by ECCC in the Gazette Notice, it was estimated that the facility’s direct GHG emissions associated with the production of widgets by regulated sources were as summarized in Table 9.

**Table 9. Direct GHG Emissions from Regulated Sources (tonnes of CO<sub>2</sub>e).**

| Regulated Source             | 2023   |
|------------------------------|--------|
| Stationary Fuel Combustion   | 56,000 |
| Industrial Process Emissions | 20,000 |
| Venting                      | 1,100  |
| Flaring                      | 2,600  |
| On-site Transportation       | 600    |

Using the data from Table 9, the direct emissions associated with the production of widgets in the 2023 compliance period can be determined by summing the regulated emissions from each regulated source from that compliance period, as:

$$DE_{widget\_2023} = \sum ES_{widget\_2023}$$

$$DE_{widget\_2023} = 56,000 \text{ t CO}_2\text{e} + 20,000 \text{ t CO}_2\text{e} + 1,100 \text{ t CO}_2\text{e} + 2,600 \text{ t CO}_2\text{e} + 600 \text{ t CO}_2\text{e}$$

$$DE_{widget\_2023} = 80,300 \text{ t CO}_2\text{e}$$

### Total Regulated Emissions

The total regulated emissions associated with the production of widgets in the compliance period can be determined by taking the sum of direct emissions minus the captured CO<sub>2</sub> emissions.

Therefore, for the 2023 compliance period, the total regulated emissions associated with the production of widgets is:

$$TE_{\text{widget}_{2023}} = DE_{\text{widget}_{2023}} - CE_{\text{widget}_{2023}}$$

$$TE_{\text{widget}_{2023}} = 80,300 \text{ t CO}_2\text{e} - 0 \text{ t CO}_2\text{e}$$

$$TE_{\text{widget}_{2023}} = 80,300 \text{ t CO}_2\text{e}$$

### Performance Standard Reduction Factor

Before calculating the performance standard for the regulated facility for the compliance period, the performance standard reduction factor must be determined. These calculations are with respect to the 2023 compliance period (the first year of the program), which means the regulated facility is in its first reduction period during the year. Using the formulas under section 5.3, it has been determined that the regulated facility produces a product that is emissions intensive and trade exposed and therefore will use Table 1 in Schedule A of the Regulations performance standard reduction factor for the regulated facility in its first reduction period is:

$$PSRF_1 = 0.99$$

### Performance Standard

In order to determine the performance standard for a regulated facility in a given compliance period, data from several sources are needed. First, the performance standard reduction factor for the current compliance period must be determined. Second, data from the approved baseline emissions intensity submission for the regulated facility is required. Third, GHG emissions, production data and cogeneration data (if any) for the current compliance period must be determined.

In this example, the baseline data for the regulated facility was taken from the approved Baseline Emissions Intensity submission that was previously submitted to the Minister. A summary of this information is presented in Table 10.

**Table 10. Baseline Data for the Regulated Facility.**

| Baseline Years | Production | Industrial Process Emissions (t CO <sub>2</sub> e) | Baseline Emissions Intensity (t CO <sub>2</sub> e/widget) |
|----------------|------------|--|---|
| 2020           | 32,000     | 22,500   | 2.4588  |
| 2021           | 34,600     | 24,000   |   |
| 2022           | 33,000     | 21,000   |   |

The regulated emissions and production data required to calculate the performance standard for the regulated facility is shown in Table 11. This data is required to be submitted as part of the Greenhouse Gas Emissions Report for the regulated facility.

**Table 11. Current Compliance Period Data.**

| Production | Industrial Process Emissions<br>(t CO <sub>2</sub> e) |
|------------|---|
| 33,000     | 20,000  |

Using the above information, the performance standard for widgets produced at the regulated facility in the 2023 compliance period is:

$$PS_{widget\_1} = \left[ \left( BEI_{widget} - \frac{\sum_{i=1}^n (IP_{widget\_i} + EC_{widget\_i} + OE_{widget\_i})}{\sum_{i=1}^n P_{widget\_i}} \right) \times PSRF_1 + \frac{IP_{widget\_1} + EC_{widget\_1} + OE_{widget\_1}}{P_{widget\_1}} \right]$$

$$PS_{widget\_1} = \left[ \left( 2.4588 \text{ t CO}_2\text{e/widget} - \frac{(22,500 \text{ t CO}_2\text{e} + 24,000 \text{ t CO}_2\text{e} + 21,000 \text{ t CO}_2\text{e} + 0 \text{ t CO}_2\text{e} + 0 \text{ t CO}_2\text{e} + 0 \text{ t CO}_2\text{e})}{(32,000 \text{ widgets} + 34,600 \text{ widgets} + 33,000 \text{ widgets})} \right) \times 0.99 + \frac{20,000 \text{ t CO}_2\text{e} + 0 \text{ t CO}_2\text{e}}{33,000 \text{ widgets}} \right]$$

$$PS_{widget\_1} = \left[ \left( 2.4588 \text{ t CO}_2\text{e/widget} - \frac{67,500 \text{ t CO}_2\text{e}}{99,600 \text{ widgets}} \right) \times 0.99 + \frac{20,000 \text{ t CO}_2\text{e}}{33,000 \text{ widgets}} \right]$$

$$PS_{widget\_1} = [(2.4588 \text{ t CO}_2\text{e/widget} - 0.6777 \text{ t CO}_2\text{e/widget}) \times 0.99 = 0.6061 \text{ t CO}_2\text{e/widget}]$$

$$PS_{widget\_1} = [(1.7811 \text{ t CO}_2\text{e/widget}) \times 0.99 + 0.6061 \text{ t CO}_2\text{e/widget}]$$

$$PS_{widget\_1} = [1.7633 \text{ t CO}_2\text{e/widget} + 0.6061 \text{ t CO}_2\text{e/widget}]$$

$$PS_{widget\_1} = 2.3694 \text{ t CO}_2\text{e/widget}$$

### Emissions Limit

The emissions limit for the regulated facility in the compliance period is determined using the performance standard for widgets calculated previously and the level of production reported in the Greenhouse Gas Emissions Report.

Thus, the emissions limit for the 2023 compliance period is:

$$EL_{2023} = \sum (PS_{widget\_1} \times P_{widget\_2023})$$



$$EL_{2023} = PS_{\text{widget}_1} \times P_{\text{widget}_{2023}}$$

$$EL_{2023} = 2.3694 \text{ t CO}_2\text{e/widget} \times 33,000 \text{ widgets}$$

$$EL_{2023} = 78,190 \text{ t CO}_2\text{e}$$

### **Compliance Obligation**

The final calculation that must be performed is the determination of a compliance obligation for the regulated facility in the compliance period. This is done by subtracting the emissions limit for the facility in the compliance period from the total regulated emissions reported in the compliance period (as per subsection 16(2) of the Regulations). If the result is a positive value, this is the compliance obligation of the regulated facility.

The calculation for this regulated facility in the 2023 compliance period is:

$$A = B - CA = 80,300 \text{ t CO}_2\text{e} - 78,190 \text{ t CO}_2\text{e}$$

$$A = 2,110 \text{ t CO}_2$$

Therefore, the regulated facility has exceeded its emissions limit in 2023 and has incurred a compliance obligation of 2,110 tonnes of CO<sub>2</sub>e.

## *Appendix D: Verification Report Content Requirements*

This Appendix is intended as a guide for the preparation of a verification report, for the purposes of section 7 of this Standard. The purpose of the verification report is to provide reasonable assurance to the Minister that certain emissions-related information required from the owner or operator of a regulated facility is true and accurate.

In accordance with subsections 7(2) and 15(3) of the Regulations, it is the responsibility of the owner or operator of a regulated facility to acquire the services of a qualified person to conduct verification of all Baseline Emission Intensity submissions and Greenhouse Gas Emissions Reports.

It is the responsibility of the verification team to ensure the verification report is prepared in accordance with the requirements established in the Regulations, section 7 of this Standard and this Appendix. If there is a conflict between this Appendix and section 7 of this Standard, section 7 of this Standard must prevail.

### **1.0 Verification Overview**

In this section of the verification report, the verification team must provide an introduction to the regulated facility and the verification process. This must include:

- (a) a description of the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report being verified;
- (b) historical regulated emissions and production levels;
- (c) a summary of changes since the previous Baseline Emissions Intensity submission or
- (d) Greenhouse Gas Emissions Report; and,
- (e) any other relevant background information.

### **1.1 Objective and Scope**

In this section of the verification report, the verification team must describe the objective of the verification report, which includes the requirement to provide an opinion for the verification at the required assurance level.

In addition, the verification team must define the scope of the verification process in terms of verifying the reported regulated emissions and production information. A list of the greenhouse gases and regulated facility products that were included within the scope of the verification must be provided.

### **1.2 Level of Assurance**

In this section of the verification report, the verification team must confirm that the verification report was completed to a reasonable level of assurance in accordance with this Standard.

### **1.3 Materiality**

In this section of the verification report, the verification team must define the materiality of the verification based on the requirements outlined in this Standard and confirm whether the regulated emissions and production data reported by the owner or operator of the regulated facility exceed the materiality thresholds established in this Standard.

## 1.4 Regulatory Requirements

In this section of the verification report, the verification team must confirm that the verification was conducted in accordance with the requirements and criteria outlines in this Standard. A list of all other supporting documents, legislations, protocols and guidelines that helped guide the verification process should also be provided.

## 2.0 Accredited Verification Body and Verification Team

In this section of the verification report, the verification team must provide an overview of the structure of the accredited verification body. The following information should be included:

- (a) name of the accredited verification body;
- (b) mailing and physical address (if different);
- (c) contact information;
- (d) accrediting agency; and,
- (e) accreditation ID.

In addition, the verification team must provide an overview of the verification team and details about the independent reviewer. The following information for the independent reviewer and each member of the verification team must be included:

- (a) name;
- (b) contact information;
- (c) date of ISO 14064-3 certification;
- (d) additional qualifications;
- (e) responsibilities; and,
- (f) role (lead verifier, designated signing authority, project manager, independent reviewer, etc.).

A signed statement from the independent reviewer indicating that they meet or exceed the qualification requirements found in this Standard must be included.

## 3.0 Methodology

### 3.1 Procedures

In this section of the verification report, the verification team must outline the verification procedures used to assess the regulated facility's data management system and regulated emissions and production data reported in the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report. A detailed sampling plan, which describes the nature, scale and complexity of all verification activity must be provided.

### 3.2 Schedule

In this section of the verification report, the verification team must provide a schedule of all verification activities. This should include the date, duration and location of all verification activities including:

- (a) data review;
- (b) development of Sampling Plan;

- (c) site visits; and,
- (d) development of Verification Statement and Report.

### **3.3 Risk Assessment**

In this section of the verification report, the verification team must describe the consideration of risks and how a risk-based approach was used to develop the verification plan. The verification team must detail how the inherent, control and detection risks were evaluated.

## **4.0 Verification Findings**

### **4.1 Assessment of Data Management Systems and Controls**

In this section of the verification report, the verification team must describe the regulated facility's data management system(s) and quality assurance/quality control systems.

The verification team must provide a list of all unresolved qualitative and quantitative findings associated with the data management system(s) and assess the potential impacts of these unresolved findings. In addition, the verification team must detail how the requirements in section 1.4 of this Appendix have or have not been met.

### **4.2 Assessment of Data**

In this section of the verification report, the verification team must provide a summary of findings from the assessment of the data reported by the regulated facility in the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report. The following should be included in the summary:

- (a) a list of all data collected during the verification process;
- (b) sources of all data collected during the verification process. The verification team must indicate whether the source of data is acceptable for use in the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report;
- (c) confirmation that the regulated emissions and production quantification methods referenced in the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report were appropriately employed;
- (d) confirmation that the regulated emissions and production quantification methodologies referenced in the Greenhouse Gas Emissions Report are the same ones used in the Baseline Emissions Intensity submission; and,
- (e) confirmation that the regulated emissions and production quantification methodologies referenced in the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report are consistent with the emissions reporting requirements established by ECCC in the Gazette Notice, if those methods are applicable, or the most recent IPCC Guidelines for National Greenhouse Gas Inventories.

The verification team must provide a list of all unresolved qualitative and quantitative findings and assess the potential impacts of these unresolved findings. In addition, the verification team must detail how the requirements in section 1.4 of this Appendix are or are not met.

### **4.3 Summary of Findings**

In this section of the verification report, the verification team must provide a summary of all material and immaterial discrepancies. The verification team must indicate whether the accumulated evidence supports the regulated facility's assertion in the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report and whether the assertion meets the required level of assurance and materiality.

### **4.4 Corrections and Opportunities for Improvement**

In this section of the verification report, the verification team must identify all corrections undertaken at the regulated facility during verification. In addition, where a material discrepancy is detected, the verification team must identify aspects that can be improved to minimize the risk of future material findings.

### **5.0 Verification Statement**

In this section of the verification report, the verification team must include a signed verification statement as to whether the regulated emissions and production reported by the owner or operator of the regulated facility in the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report are free from material errors and omission, and whether the Baseline Emissions Intensity submission or Greenhouse Gas Emissions Report was prepared in accordance with the Regulations and Standard.

Any limitations associated with the verification process must be listed.

### **6.0 Declaration**

In this section of the verification report, the verification team must include a signed and dated declaration from the lead verifier. The declaration must state that all requirements of the Regulations and Standard have been met and that any real or potential conflicts of interests have been effectively managed.

