The Electricity Facility Standard

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Summary of Revisions

Version	Date of Revision	Summary of Revisions
1.0	May 2023	This is the first version of this standard.
1.1	May 2024	Minor edits have been made throughout the document. **Reported Data:** Updates have been made to the prescribed quantification methodologies for quantifying emissions at an electricity facility. **Concerning Emissions:** Section has been updated to provide further clarity on emissions in the on-site transportation source category and the allocation of emissions for an electricity facility within the boundary of an industrial facility. Provisions have been added regarding emissions related to activities of a CCUS project. **Electricity Output Ratio** The electricity output ratio equation has been updated, removing the exclusion of electricity and heat resulting from duct burners and duct firing. **Total Regulated Emissions** The equation to quantify regulated industrial emissions has been removed. The equation to quantify regulated electricity emissions now aggregates emissions for each unit based on the emissions intensity standard to which the emissions will be subject. **Permitted Emissions** One permitted emissions equation will now be used and apply for all electricity facilities. **Regulated Source Categories** CO_2, CH_4 and N_2O are now included under the industrial process emissions source category in Appendix B.

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Table of Contents

1. Introduction

1(1) This standard is adopted under *The Management and Reduction of Greenhouse Gases (Standards and Compliance) Regulations, 2023*.

1(2) Any terms defined in the *Management and Reduction of Greenhouse Gases Act* or *The Management and Reduction of Greenhouse Gases (Standards and Compliance) Regulations, 2023,* hold the same definition in this standard.

1(3) Any conflict or inconsistency in the provisions of this standard will be resolved by giving precedence in the following order: (1) the act, (2) the regulations, (3) this standard, (4) any other document incorporated as part of this standard.

1(4) For greater certainty, any conflict or inconsistency in the provisions of this standard and the ISO 14064-3 or ISO 14065 standards will be resolved by giving precedence to this standard.

1(5) This standard applies to an electricity facility subject to the regulations, including an electricity facility within the boundary of an industrial facility satisfying the criteria in Subsection 1(6), but does not apply to the industrial facility.

1(6) For the purposes of Subsection 2(6) of the regulations and subject to Subsection 4(4) and Section 10, the Minister may consider a unit or group of units within the boundary of an industrial facility satisfying the condition in clause 1(6)(a) to be an electricity facility if, in 2022 or a subsequent year:

(a) a unit or each unit within a group of units at the industrial facility has an electricity output ratio greater than 50 per cent as determined in Section 6; and

(b) the sum of the regulated electricity emissions from the units satisfying the condition in clause 1(6)(a) is equal to or greater than 10,000 tonnes CO_2e,

unless the regulated emitter provides evidence satisfactory to the Minister that the unit or group of units was under construction between January 1, 2022 and December 31, 2022.

1(7) In accordance with Subsection 2(7) of the regulations, this standard does not apply to emergency power generators.

2. Definitions

2(1) In this standard:

"Accredited verification body" means a verification body that meets the following accreditation requirements:

(a) is accredited to ISO 14065 by the Standards Council of Canada, the American National Standards Institute or any other accreditation organization that is a member of the International Accreditation Forum;

(b) has a scope of accreditation that is sufficient to verify the information contained in a return or submission; and

(c) is not suspended by an accreditation organization that issued an accreditation.

"Act" means *The Management and Reduction of Greenhouse Gases Act.*

"Authorized signing officer" means a person who has authority to accept legal responsibility on behalf of the regulated facility.

"Biomass" means non-fossilized plants or plant materials, animal waste or any product made of either of these, including wood and wood products, charcoal, agricultural residues, biologically derived organic matter in municipal and industrial wastes, landfill gas, bio-alcohols, black liquor, sludge digestion gas and animal – or plant – derived oils, but does not include plant or plant materials used as an input in the production of char or briquettes.

"Electricity output ratio" means the gross electricity generation from a unit divided by the sum of the output energy from the unit, determined in accordance with Section 6, where both the numerator and denominator are expressed in the same units of measurement.

"Flaring emissions" means the controlled release of emissions from industrial activities derived from the combustion or incineration of a gas or liquid stream produced at a facility, used for routine, non-routine or emergency disposal of a waste stream, the purpose of which is not to produce heat or work. This includes emissions from waste petroleum incineration, hazardous emission prevention systems (in pilot or active mode), well testing, natural gas gathering systems, natural gas processing plant operation, crude oil production, pipeline operations, petroleum refining, chemical fertilizer production and steel production.

"Gas-to-power operation" means a unit or group of units at an industrial facility that generates electricity from the combustion of associated gas that would otherwise be vented, flared or released to the atmosphere as leakage emissions.

"Independent reviewer" means a person who is qualified, according to Subsection 16(5), to review the work of the verification team prior to a statement of verification being created.

"Industrial process emissions" means emissions from an industrial process that involves a chemical or physical reaction other than combustion, the purpose of which is not to produce heat or work. This does not include venting from hydrogen production associated with fossil fuel production. Emissions from fuel combustion used to provide heat for an industrial process, whether they be internal or external to the industrial process equipment, are not considered industrial.

"Industrial product use emissions" means emissions from the use of a product for an industrial process that does not involve a chemical or physical reaction and does not react in the process. This includes releases from the use of sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) as cover gases, and the use of HFCs and PFCs in foam blowing. This does not include releases from PFCs and HFCs in refrigeration, air conditioning, semiconductor manufacturing, solvents, aerosols and SF_6 in explosion protection, leak detection, electronic application and fire extinguishing.

"IPCC" means the Intergovernmental Panel on Climate Change under the United Nations.

"ISO" means the International Organization for Standardization.

"ISO 14064-3" means the 2019 version of the ISO 14064-3 standard, published by the ISO.

"ISO 14065" means the 2020 version of the ISO 14065 standard, published by the ISO.

"Leakage emissions" mean the uncontrolled release or leak of emissions from fossil fuel production, processing, transmission and distribution; iron and steel coke batteries; or CO_2 capture, transport, injection and storage infrastructure for long-term geological storage.

"Level of assurance" means the depth of detail that a verification team designs into the verification process and the relative degree of confidence required by a verification team to make conclusions as to whether there are any misstatements.

"Materiality" means the assessment of individual misstatements or the aggregation of misstatements that could misrepresent an electricity facility's greenhouse gas emissions or commercial production.

"Misstatements" means errors, omissions, misreporting or misrepresentations in the reported greenhouse gas emissions or commercial production for a regulated facility.

"On-site transportation emissions" means the emissions from machinery used for the transport or movement of substances, materials, equipment or commercial products that are used in the production process within the boundary of a regulated facility.

"Regulations" means *The Management and Reduction of Greenhouse Gases (Standards and Compliance) Regulations, 2023.*

"Statement of verification" means the formal written declaration by the verification team that provides an opinion with respect to the statements in a submission or return by a regulated emitter for a regulated facility in accordance with the applicable verification criteria in Subsection 16(9).

"Stationary fuel combustion" means the releases from stationary fuel combustion sources at a facility in which fuel is burned for the purpose of producing heat or work to be used at the facility.

"Stationary fuel combustion sources" means devices that combust solid, liquid, gaseous or waste fuel for the purpose of producing useful heat or work, including but not limited to boilers, electricity generation units, co-generation units, duct burners and duct firing, combustion turbines, engines, waste incinerators, process heaters and other stationary combustion devices.

"Venting emissions" means the controlled release of process emissions or emissions contained in waste gas released to the atmosphere. This includes emissions of CO_2 associated with carbon capture, transport, injection and storage; hydrogen production associated with fossil fuel production and processing; casing gas; gases associated with a liquid or a solution gas; treater, stabilizer or dehydrator off-gas; blanket gases; pneumatic devices that use natural gas as a driver; compressor start-ups, pipelines and other blowdowns; and metering and regulation control loops.

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

“Verification team” means a team consisting of one or more qualified persons who satisfy the criteria in Subsection 16(2) that conducts a verification on a regulated facility.

“Waste emissions” means emissions resulting from waste disposal activities at a facility, including landfilling of solid waste, flaring of landfill gas and waste incineration. This does not include emissions resulting from the combustion of waste fuels to produce heat or work.

“Wastewater emissions” means the emissions resulting from industrial wastewater and industrial wastewater treatment at a facility.

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3. Reported Data

3(1) When reporting data in a submission or return for an electricity facility, a regulated emitter shall report all numerical data to four decimal digits.

3(2) All quantified emissions included in a submission or return shall be converted to tonnes of CO_2e.

3(3) Subject to Subsections 4(2), 4(3), 4(5) and 4(11), and clause 17(6)(c) of the regulations, a regulated emitter shall ensure that all regulated emissions from an electricity facility are included and accounted for in all submissions and returns.

3(4) For certainty and in accordance with Subsection 5(2), a regulated emitter shall not include in the reported commercial production for an electricity facility any electricity generation or sold heat produced from renewable sources of energy, including from the combustion of biomass.

3(5) A regulated emitter shall consistently use in each compliance year a production quantification methodology to quantify the commercial production at an electricity facility.

3(6) A regulated emitter must quantify the commercial production at an electricity facility for a compliance year within a margin of error of ± five per cent.

3(7) A regulated emitter shall ensure any measuring device that is used to determine a quantity for the purposes of reporting data in a submission or return for an electricity facility is:

(a) installed, operated and maintained in accordance with the manufacturer's specifications or any applicable generally recognized provincial, national or international industry standard;

(b) calibrated:

(i) at the lesser of once every three years or the minimum frequency specified by the manufacturer; and

(ii) upon replacement of a previously calibrated measuring device; and

(c) maintained to be accurate within ± five per cent.

3(8) Notwithstanding any provisions in this section, a regulated emitter shall use Part 38 Electricity Generation of the federal Quantification Methods for the *Output-Based Pricing System Regulations* document to quantify the emissions for electricity generation at an electricity facility, other than the emissions from the electricity generated from the combustion of associated gas.

3(9) A compliance obligation incurred by a regulated emitter shall be rounded to the nearest whole number.

4. Concerning Emissions

4(1) The regulated source categories and the greenhouse gas species applicable for each regulated source category for an electricity facility are those included in Table 3 of Appendix B.

4(2) In accordance with Subsection 5(3), a regulated emitter shall not report CO_2 emissions from the following emission sources when calculating an electricity facility's total regulated emissions:

(a) the combustion of biomass;

(b) the aerobic decomposition of biomass;

(c) the fermentation of biomass.

4(3) In accordance with Subsection 5(3), a regulated emitter shall not report CH_4 and N_2O emissions resulting from the combustion of biomass for the purpose of producing useful energy when calculating the total regulated emissions for an electricity facility.

4(4) For the purposes of Subsections 1(6) and 12(1), any emissions resulting from the use of duct burners and duct firing shall be reported under the stationary fuel combustion source category of:

(a) the regulated industrial emissions of the industrial facility if the electricity facility or unit or group of units, as applicable, is within the boundary of an industrial facility and the use of duct burners and duct firing do not contribute to the generation of electricity or sold heat;

(b) the regulated electricity emissions of the electricity facility if the electricity facility or unit or group of units, as applicable, is within the boundary of an industrial facility and the use of duct burners and duct firing contribute to the generation of electricity or sold heat; and

(c) the regulated electricity emissions of the electricity facility if the unit or group of units are not within the boundary of an industrial facility.

4(5) Subject to Subsection 4(6), a regulated emitter may omit from a return a portion of regulated emissions from a source category if that portion of emissions associated with that source category is less than 0.5 per cent of the total regulated emissions for that electricity facility during the compliance year covered by the return.

4(6) The sum of regulated emissions omitted under Subsection 4(5) must not exceed 100 tonnes CO_2e for an electricity facility.

4(7) For the purposes of reporting greenhouse gas emissions using information from 2023 or a subsequent year, the prescribed greenhouse gases emitted by an electricity facility shall be converted to CO_2e units using the global warming potentials for those greenhouse gases from IPCC's Fifth Assessment Report, pursuant to Appendix A.

4(8) For clarity regarding Subsection 2(8) of the regulations, if an electricity facility consists of a unit or group of units that is not within the boundary of an industrial facility, then:

(a) all emissions that result from electricity generation, including emissions from associated gas combusted in the unit or group of units, from sold heat and heat that is captured and used on-site at the electricity facility, other than energy that is captured and recirculated within the unit or group of units, and from waste energy must be reported under the regulated electricity emissions for the electricity facility; and

(b) no emissions are associated with the energy that is captured and recirculated within the unit or group of units until that energy leaves the unit or group of units as electricity, sold heat, heat captured and used on-site at the electricity facility, or waste energy from the unit or group of units.

4(9) For clarity regarding Subsection 2(8) of the regulations, if an electricity facility consists of a unit or group of units within the boundary of an industrial facility, then:

(a) the emissions that result from electricity generation, other than emissions from associated gas combusted in the unit or group of units, from any sold heat and from waste energy from the unit or group of units, must be reported under the regulated electricity emissions for the electricity facility;

(b) the emissions from associated gas combusted in the unit or group of units and the emissions from any heat produced by the unit or group of units that is captured and used on-site at the industrial facility, other than energy that is captured and recirculated within the unit or group of units, must be reported under the regulated industrial emissions for the industrial facility; and

(c) no emissions are associated with the energy that is captured and recirculated within the unit or group of units until that energy leaves the unit or group of units as:

(i) electricity, sold heat or waste energy from the unit or group of units; or

(ii) heat that is captured and used on-site at the industrial facility.

4(10) Emissions in the on-site transportation source category from fuels for which the federal fuel charge has been levied during a compliance year are not required to be reported as part of the total regulated emissions for an electricity facility for that compliance year.

4(11) Emissions that are captured during a compliance year at an electricity facility subject to this standard must be reported as total regulated emissions for that electricity facility.

4(12) For certainty, emissions released at a regulated facility that are directly related to the activities of a CCUS project registered with the Ministry of Environment under *The CCUS Credit Standard* shall be included in the project emissions described in Table 1 of *The CCUS Credit Standard*, and not included in the regulated emissions for the regulated facility under this standard.

4(13) For certainty, emissions released at a regulated facility that are directly related to the activities of a CCUS project not registered with the Ministry of Environment under *The CCUS Credit Standard* shall be included in the regulated emissions for the regulated facility under this standard.

5. Apportioning Emissions and Production

5(1) If the greenhouse gas emissions produced from a source at an electricity facility that will be included in the regulated electricity emissions can only be quantified for the facility as a whole, a regulated emitter shall apportion those emissions to each unit at the facility based on each unit's gross electricity generation relative to the electricity facility's gross electricity generation.

5(2) If a unit at an electricity facility combusts more than one type of fossil fuel or a combination of fossil fuels and biomass to generate electricity, the gross electricity generated by the unit from each type of fossil fuel during a compliance year shall be determined by:

$$\boldsymbol{EG_{i\text{-}u\text{-}k} = E_{i\text{-}u} \times \left(\frac{H_k}{H_B + \sum_k H_k}\right)}$$

where:

$\boldsymbol{EG_{i\text{-}u\text{-}k}}$ is the gross electricity generation from unit u in compliance year i resulting from use of fossil fuel k, expressed in gigawatt hours;

$\boldsymbol{E_{i\text{-}u}}$ is the gross electricity generation, including all electricity used on-site and all commercial production of electricity, at unit u in compliance year i, expressed in gigawatt hours;

$\boldsymbol{H_k}$ is the energy input into the unit from fossil fuel k during the year, expressed in gigawatt hours, as determined by:

$$\boldsymbol{H_k = \sum_j \left(QF_{k\text{-}j} \times HHV_{k\text{-}j}\right)}$$

where:

$\boldsymbol{QF_{k\text{-}j}}$ is the quantity of each type j of fossil fuel k combusted to generate electricity in unit u during the compliance year, expressed in units of volume;

$\boldsymbol{HHV_{k\text{-}j}}$ is the higher heating value of each type j of fossil fuel k, expressed in units of energy per unit of volume; and

$\boldsymbol{j}$ is a type of fossil fuel;

$\boldsymbol{H_B}$ is the energy input into the unit from biomass during the compliance year, expressed in gigawatt hours, as determined by:

$$\boldsymbol{H_B = \sum_l \left(QF_{B\text{-}l} \times HHV_{B\text{-}l}\right)}$$

where:

$\boldsymbol{QF_{B\text{-}l}}$ is the quantity of each type of biomass fuel l combusted to generate electricity in unit u during the compliance year, expressed in units of volume; and

$\boldsymbol{HHV_{B\text{-}l}}$ is the higher heating value of each type of biomass fuel l, expressed in units of energy per unit of volume; and

$\boldsymbol{l}$ is a type of biomass fuel; and

$\boldsymbol{i}$ is a compliance year; and

$\boldsymbol{k}$ is the kind of fossil fuel, either gaseous, liquid, or solid fuel, combusted in unit u during the compliance year.

5(3) In accordance with Subsections 4(2) and 4(3), if a unit at an electricity facility combusts a mixture of biomass and fossil fuels, the emissions associated with that unit during a compliance year, other than those emissions resulting from the combustion of biomass, shall be determined by:

$$\boldsymbol{GHG_u = GHG_T \times \left(\frac{GHG_F}{GHG_B + GHG_F}\right)}$$

where:

$\boldsymbol{GHG_u}$ are the greenhouse gas emissions associated with unit u in the compliance year to be reported under the regulations, expressed in tonnes CO_2e;

$\boldsymbol{GHG_T}$ are the total emissions from combustion of fuel in unit u during the compliance year, expressed in tonnes CO_2e;

$\boldsymbol{GHG_B}$ is the sum of all CO_2, CH_4 and N_2O emissions from combustion of biomass fuel in unit u during the compliance year, expressed in tonnes CO_2e;

$\boldsymbol{GHG_F}$ are the emissions from combustion of fossil fuels in unit u during the compliance year; and

$\boldsymbol{u}$ is a unit at the facility.

6. Electricity Output Ratio

6(1) Subject to Subsection 6(3), the electricity output ratio for a unit in a year shall be determined by:

$$\boldsymbol{EO_{i\text{-}u} = \frac{E_{i\text{-}u}}{E_{i\text{-}u} + (H_{i\text{-}u} + S_{i\text{-}u})} \times 100\%}$$

where:

$\boldsymbol{EO_{i\text{-}u}}$ is the electricity output ratio for unit u in year i, expressed in per cent;

$\boldsymbol{E_{i\text{-}u}}$ is the gross electricity generation, including all electricity used on-site and all commercial production of electricity, at unit u in year i, expressed in gigajoules;

$\boldsymbol{H_{i\text{-}u}}$ is the useful heat or work, including all useful heat or work used on-site, that is output from unit u in year i, expressed in gigajoules;

$\boldsymbol{S_{i\text{-}u}}$ is the sold heat from unit u in year i, expressed in gigajoules;

i is a year; and

u is a unit at the facility.

6(2) For the purposes of Section 14, the electricity output ratio for a unit at an electricity facility that is not within the boundary of an industrial facility is determined in accordance with Subsection 6(1).

6(3) For the purposes of calculating the electricity output ratio in Subsection 6(1), a regulated emitter shall:

(a) include, for a unit that is not within the boundary of an industrial facility, any heat or work and any electricity generation resulting from the combustion of associated gas; and

(b) exclude:

(i) for a unit within the boundary of an industrial facility, any heat or work resulting from the combustion of associated gas, and the electricity generation resulting from the combustion of associated gas as determined in Subsection 11(6) of *The Aggregate Facility Standard* or in Subsection 14(8) of *The Industrial Facility Standard*, as applicable; and

(ii) for all units, all waste energy and any heat or work that is captured and recirculated within the unit or group of units at the facility that is not considered sold heat, or useful heat or work.

6(4) For the purpose of determining whether an expanded unit has an electricity output ratio greater than 50 per cent, a regulated emitter shall calculate the ratio in Subsection 6(1) using the values applicable for each variable for the unit after the capacity of the unit was expanded.

7. Commercial Products

7(1) With the exception of reporting gross electricity generation in gigajoules for the purposes of Section 6, each regulated emitter shall use:

(a) gigawatt hours as the unit of production for gross electricity generation; and

(b) gigajoule as the unit of production for sold heat.

7(2) The electricity generated from the combustion of associated gas in a gas-to-power operation that is not integrated within an industrial facility shall be included in the gigawatt hours of gross electricity generation at an electricity facility under clause 7(1)(a) and shall not be considered a distinct commercial product for the electricity facility.

7(3) For the purposes of Subsection 7(1), a regulated emitter shall include any electricity generation and sold heat resulting from the use of duct burners and duct firing at an electricity facility in a compliance year.

8. Registration

8(1) If a regulated emitter is required to register an electricity facility pursuant to Section 5 of the regulations, or if the owner or operator of a facility that, on registration, will be considered an electricity facility chooses to voluntarily register that facility under Section 6 of the regulations, the regulated emitter, or owner or operator, as applicable, must notify the Minister of their intent to register the facility.

8(2) After receiving a notice pursuant to Subsection 8(1), the Minister will provide a registration package to the regulated emitter, or owner or operator, as applicable, for the facility intended to be registered.

8(3) In completing the registration package for an electricity facility, it is the responsibility of the regulated emitter, or owner or operator, to ensure that:

(a) all information provided for the electricity facility, including any information provided by the Minister for the electricity facility, is accurate;

(b) all applicable sections of the registration package are completed in full;

(c) any required supplementary components, such as a map that demonstrates the location of the electricity facility within Saskatchewan, are provided; and

(d) the completed registration package is submitted to the Minister in the manner specified by the Minister.

8(4) For the purposes of clause 5(4)(c) of the regulations, a regulated emitter shall submit the required information to register an electricity facility by March 31 of the year the regulations apply to the facility.

8(5) For the purposes of clause 6(6)(c) of the regulations, if the owner or operator of a facility that, on registration, will be considered an electricity facility chooses to register that facility under Section 6 of the regulations, the owner or operator must submit the required information to register the facility in the year that the owner or operator wants the facility to be considered a regulated facility.

8(6) If a unit or group of units within the boundary of an industrial facility satisfies the criteria in Subsection 1(6) and is considered by the Minister to be an electricity facility pursuant to Subsection 2(6) of the regulations,

(a) the unit or group of units will be removed from the industrial facility at the end of the compliance year in which the unit or group of units first meets the criteria to be considered an electricity facility;

(b) the unit or group of units will be considered an electricity facility and subject to this standard beginning on January 1 of the subsequent compliance year; and

(c) the regulated emitter who owns or operates the electricity facility shall submit the information required to register the facility in accordance with Subsection 8(3) by March 31 of that subsequent compliance year.

9. Addition Respecting Electricity Facilities

9(1) If an electricity facility already exists within the boundary of an industrial facility, any unit at the industrial facility not currently part of the electricity facility that satisfies the criterion in Subsection 1(6)(a) in a compliance year will be:

(a) removed from the industrial facility at the end of that compliance year; and

(b) added to the electricity facility and become subject to this standard as part of the electricity facility beginning on January 1 of the subsequent compliance year.

10. Removal Respecting Electricity Facilities

10(1) Notwithstanding Subsection 1(6):

(a) if the electricity output ratio for a unit at an electricity facility that is within the boundary of an industrial facility remains less than or equal to 50 per cent for three consecutive compliance years, that unit shall be removed from the electricity facility at the end of the third consecutive compliance year and be added to the industrial facility whose boundary the unit is within at the start of the subsequent compliance year;

(b) if a regulated emitter expands or converts a unit at an electricity facility that is within the boundary of an industrial facility such that the electricity output ratio for that unit after the expansion or conversion is less than or equal to 50 per cent, that unit shall be removed from the electricity facility at the end of the compliance year when the expansion or conversion occurred and be added to the industrial facility whose boundary the unit is within at the start of the subsequent compliance year;

(c) if an electricity facility within the boundary of an industrial facility is removed from registration at the end of a compliance year under Section 7 of the regulations, the unit or group of units that comprise the electricity facility shall be added to the industrial facility whose boundary the unit or group of units are within on January 1 of the subsequent compliance year.

10(2) If a unit is removed from an electricity facility in accordance with Subsection 10(1)(a) or 10(1)(b), or if an electricity facility is removed from registration in accordance with Subsection 10(1)(c):

(a) the regulated emitter is not required to adhere to the requirements of this standard with respect to that unit or the electricity facility, as applicable, and shall not report the emissions from that unit or electricity facility under this standard, as the case may be, beginning January 1 of the compliance year that the unit or electricity facility is added to the industrial facility; and

(b) if the unit or group of units no longer subject to this standard are within the boundary of an industrial facility, the regulated emitter is required to adhere to the requirements of *The Industrial Facility Standard* or *The Aggregate Facility Standard*, as the case may be, beginning January 1 of the compliance year that the unit or group of units is added to the industrial facility.

11. Responsibility for an Electricity Facility

11(1) The owner or operator of an electricity facility on December 31 of a compliance year is considered responsible for all requirements of that electricity facility in regard to the regulations and this standard for the entirety of that compliance year.

12. Total Regulated Emissions

12(1) The regulated electricity emissions at an electricity facility subject to an emissions intensity standard during a compliance year shall be determined by:

$$\boldsymbol{RE_{i\text{-}j}} = \sum_{\boldsymbol{u}} \sum_{\boldsymbol{y}} \sum_{\boldsymbol{p}} \left(\boldsymbol{E_{i\text{-}j\text{-}u\text{-}y\text{-}p}} \times \boldsymbol{GWP_p} \right)$$

where:

$\boldsymbol{RE_{i\text{-}j}}$ are the regulated electricity emissions subject to emissions intensity standard j in compliance year i, expressed in tonnes of CO_2e;

$\boldsymbol{E_{i\text{-}j\text{-}u\text{-}y\text{-}p}}$ are the total emissions of each greenhouse gas species p associated with the commercial production of electricity and, if applicable, sold heat from regulated source category y at unit u that are subject to emissions intensity standard j in compliance year i, quantified in accordance with Subsection 3(8) and Section 4, expressed in tonnes of the prescribed greenhouse gas species p;

$\boldsymbol{GWP_p}$ is the applicable global warming potential for each prescribed greenhouse gas species p as listed in Table 2 of Appendix A;

$\boldsymbol{i}$ is a compliance year;

$\boldsymbol{j}$ is an emissions intensity standard established in Table 2 of the regulations for the generation of electricity from solid fuel, existing gaseous fuel, new and expanded gaseous fuel or liquid fuel, or for the generation of sold heat;

$\boldsymbol{p}$ is a prescribed greenhouse gas species;

$\boldsymbol{u}$ is a unit at the electricity facility; and

$\boldsymbol{y}$ is a regulated source category included in Table 3 of Appendix B.

12(2) The total regulated emissions under this standard for an electricity facility in a compliance year shall be determined by:

$$\boldsymbol{TE_i} = \sum_{j} \boldsymbol{RE_{i-j}}$$

where:

$\boldsymbol{TE_i}$ are the total regulated emissions under this standard for the electricity facility in compliance year i, expressed in tonnes of CO_2e;

$\boldsymbol{RE_{i-j}}$ are the regulated electricity emissions subject to emissions intensity standard j in compliance year i, expressed in tonnes of CO_2e;

$\boldsymbol{i}$ is a compliance year; and

$\boldsymbol{j}$ is an emissions intensity standard established in Table 2 of the regulations for the generation of electricity from solid fuel, existing gaseous fuel, new and expanded gaseous fuel or liquid fuel, or for the generation of sold heat.

13. Emissions Returns

13(1) When preparing an emissions return for an electricity facility, a regulated emitter shall:

(a) complete all required forms;

(b) provide a signed declaration from an authorized signing officer for the electricity facility attesting to the accuracy of all information provided in and completeness of the emissions return;

(c) include a completed verification report in the format specified by the Minister in an applicable template and a signed statement of verification from a qualified person who performed a verification on the electricity facility; and

(d) submit all required information to the Minister in the manner specified by the Minister.

13(2) Prior to submitting an emissions return, a regulated emitter shall ensure that all information contained within the return is verified by a qualified person.

13(3) For the purposes of clause 23(1)(a) of the regulations, a regulated emitter shall submit a completed, verified emissions return for an electricity facility by June 1 of the calendar year following the compliance year for which the emissions return is being prepared.

13(4) After a submitted emissions return for an electricity facility has been reviewed for completeness, the regulated emitter will be provided with:

(a) a written response approving the information provided in the emissions return and confirming any compliance obligation owed or performance credits earned by the regulated emitter; or

(b) a written response indicating the emissions return is incomplete or has errors, details of the problems or issues, and any action required by the regulated emitter, including:

(i) providing additional information that may be requested or required;

(ii) any corrective action that may be required; and

(iii) if applicable, having the emissions return re-verified.

13(5) Upon receipt of a written response in clause 13(4)(b), a regulated emitter shall fulfil any actions required and resubmit the required information prior to the deadline indicated in the written response.

13(6) If a regulated emitter is required to re-verify an emissions return in accordance with subclause 13(4)(b)(iii), the regulated emitter shall submit:

(a) a new statement of verification;

(b) any new information, including emissions and production data, that was not included in the original emissions return; and

(c) any other documentation, reports or forms that the Minister may require.

13(7) Upon resubmission of required information in clause 13(4)(b), the information will be reviewed and the regulated emitter will be provided a written response in accordance with Subsection 13(4).

14. Permitted Emissions

14(1) Subject to Subsection 14(2), the permitted emissions for an electricity facility in a given compliance year shall be determined by:

$$\boldsymbol{PE_i} = \left(\sum_{u=1} \boldsymbol{S_{i-u}} \times \boldsymbol{ES_{S-i}}\right) + \left(\sum_{u=1} \boldsymbol{L_{i-u}} \times \boldsymbol{ES_{L-i}}\right) + \left(\sum_{u=1} \boldsymbol{G_{i-u}} \times \boldsymbol{ES_{G-i}}\right) + \left(\sum_{u=1} \boldsymbol{N_{i-u}} \times \boldsymbol{ES_{N-i}}\right) + \left(\sum_{u=1} \boldsymbol{T_{i-u}} \times \boldsymbol{ES_{T-i}}\right)$$

where:

$\boldsymbol{PE_i}$ are the permitted emissions under this standard for an electricity facility in compliance year i, expressed in tonnes of CO_2e;

$\boldsymbol{S_{i-u}}$ is the gross electricity generation from solid fuel at unit u in compliance year i, expressed in gigawatt hours;

$\boldsymbol{L_{i-u}}$ is the gross electricity generation from liquid fuel at unit u in compliance year i, expressed in gigawatt hours;

G_{i-u} is the gross electricity generation from gaseous fuel, expressed in gigawatt hours, in compliance year i at:

(a) an existing unit u;

(b) a new unit u with an electricity output ratio less than or equal to 50 per cent;

(c) an expanded unit u with an electricity output ratio less than or equal to 50 per cent; and

(d) an expanded unit u with an electricity output ratio greater than 50 per cent that is associated with the capacity of the unit before the additional capacity was added;

N_{i-u} is the gross electricity generation from gaseous fuel, expressed in gigawatt hours, in compliance year i at:

(a) a new unit u with an electricity output ratio greater than 50 per cent; and

(b) an expanded unit u with an electricity output ratio greater than 50 per cent that is associated with the additional capacity that was added to the unit;

ES_{S-i} is the emissions intensity standard for solid fuel in compliance year i, expressed in tonnes of CO_2e per gigawatt hour, found in Table 2 of the appendix in the regulations;

ES_{L-i} is the emissions intensity standard for liquid fuel in compliance year i, expressed in tonnes of CO_2e per gigawatt hour, found in Table 2 of the appendix in the regulations;

ES_{G-i} is the emissions intensity standard for existing gaseous fuel in compliance year i, expressed in tonnes of CO_2e per gigawatt hour, found in Table 2 of the appendix in the regulations;

ES_{N-i} is the emissions intensity standard for new and expanded gaseous fuel in compliance year i, expressed in tonnes of CO_2e per gigawatt hour, found in Table 2 of the appendix in the regulations;

T_{i-u} is the sold heat at unit u in compliance year i, expressed in gigajoules;

ES_{T-i} is the emissions intensity standard for sold heat, expressed in tonnes of CO_2e per gigajoule, found in Table 2 of the appendix in the regulations;

i is a compliance year;

m is the number of units within the electricity facility in the compliance year; and

u is a unit within the electricity facility.

14(2) For the purpose of 14(1), if a regulated emitter increases an electricity facility's total capacity for

electricity generation by 50 MW or more on or after January 1, 2023, where that increased capacity is from an expanded unit or group of expanded units using gaseous fuel, the new and expanded gaseous fuel emissions intensity standard shall apply to the increased capacity.

14(3) For the purposes of the calculating G_{i-u} and N_{i-u} with respect to an expanded unit u in Subsection 14(1), the gross electricity generation from the expanded unit is apportioned, using engineering estimates, to the capacity added to the unit and to the capacity of the unit before the additional capacity was added, based on the ratio of its increased capacity to its total capacity, taking into account the increased capacity.

14(4) For the purposes of Subsection 14(1), the electricity generation capacity, from gaseous fuels, of an electricity facility increases by 50 MW or more as of the day on which its electricity generation capacity is 50 MW greater than its electricity generation capacity on December 31, 2022. For greater certainty, for the purpose of assessing the 50 MW increase in capacity at an electricity facility, the increase in capacity is cumulative across all applicable units.

14(5) For the purposes of Subsection 14(1), and subject to Subsection 10(1), if the emissions intensity standard for new and expanded gaseous fuel applies to a unit or group of units for a compliance year, that emissions intensity standard will continue to apply to the unit or group of units even if the unit or group of units is not producing electricity from gaseous fuel.

14(6) For the purposes of Subsection 14(1), if a unit at an electricity facility that combusted solid fuel to generate electricity in 2018 has been converted to use liquid or gaseous fuel, a regulated emitter shall continue to apply the emissions intensity standard for solid fuel to determine the permitted emissions associated with the generation of electricity from the liquid or gaseous fuel that replaced the use of solid fuel for that unit.

15. Compliance Returns

15(1) For the purposes of clause 24(2)(a) of the regulations, if it is determined based on the information provided in an emissions return for a compliance year for an electricity facility that a regulated emitter owes a compliance obligation, the regulated emitter shall submit a compliance return and fulfil the compliance obligation incurred by October 31 of the year following the year in which the emissions return for that compliance year is submitted.

15(2) The compliance return must include the following information:

(a) a completed compliance return form;

(b) an indication of the compliance options used to fulfil the compliance obligation incurred including, as applicable:

(i) any payment to the Government of Saskatchewan for deposit in accordance with the act;

(ii) a list of any performance credits retired to fulfil the compliance obligation;

(iii) a list of any CCUS credits retired to fulfil the compliance obligation; and

(c) a signed declaration from the authorized signing officer attesting to the accuracy and completeness of the compliance return.

15(3) After a submitted compliance return for an electricity facility has been reviewed for completeness, the Minister will provide the regulated emitter with:

(a) a written response approving the information provided in the compliance return and confirming that the compliance obligation has been fulfilled; or

(b) a written response indicating that the compliance return is incomplete or has errors, details of the problems or issues, and any action required by the regulated emitter, including:

(i) providing additional information that may be requested or required; and

(ii) any corrective action that may be required.

15(4) Upon receipt of a written response in clause 15(3)(b), a regulated emitter shall fulfil any actions required and resubmit the required information prior to the deadline indicated in the written response.

15(5) Upon resubmission of required information in clause 15(3)(b), the information will be reviewed and the regulated emitter will be provided a written response in accordance with Subsection 15(3).

16. Verification Requirements

16(1) For the purpose of performing verification on an emissions return under the regulations, a qualified person is a person employed by an accredited verification body.

16(2) A regulated emitter shall ensure that all members of the verification team performing verification on an electricity facility are employed by an accredited verification body that meets the requirements of and is accredited under the ISO 14065 standard.

16(3) For the purpose of verifying an emissions return for an electricity facility in accordance with the regulations and this standard, a regulated emitter shall provide access to the electricity facility, any personnel, records and other information and resources as requested by the verification team conducting the verification.

16(4) A regulated emitter shall ensure that a verification report is prepared for the electricity facility in the format specified by the Minister in an applicable template and in accordance with the ISO 14064-3 standard.

16(5) A regulated emitter shall ensure that before an unmodified, modified or adverse opinion is prepared for a statement of verification, the determination that forms the basis of the opinion is 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 with respect to the electricity facility; and

(c) the person has not been a member of a verification team that has performed a verification with respect to the electricity facility for at least three compliance years unless impartiality can be demonstrated by the accredited verification body.

16(6) A regulated emitter shall ensure that the verification of emissions and commercial production data associated with an emissions return for an electricity facility is completed to a reasonable level of assurance in accordance with the ISO 14064-3 standard.

16(7) Materiality is determined according to the following formula:

$$\boldsymbol{Materiality} = \frac{\sum_i |\boldsymbol{A_i}|}{\boldsymbol{B}} \times \mathbf{100}\%$$

where:

$\sum_i |\boldsymbol{A_i}|$ is:

(a) for the purposes of the verification of greenhouse gas emissions, the sum of the absolute value of all individual misstatements of greenhouse gas emissions, in tonnes of CO_2e; or

(b) for the purposes of the verification of production data, the sum of the absolute value of all individual misstatements of commercial production information, in gigawatt hours; and

$\boldsymbol{B}$ is:

(a) for the purposes of the verification of greenhouse gas emissions, the total regulated emissions, in tonnes of CO_2e, as corrected by the verification team; or

(b) for the purposes of the verification of commercial production data, the summation of gross electricity generation and sold heat produced by the electricity facility, where both are expressed in gigawatt hours, as corrected by the verification team.

16(8) For the purpose of completing a verification statement for an electricity facility, a material discrepancy in the emissions and commercial production data reported by the regulated emitter will exist if the level of materiality exceeds the following thresholds:

(a) for greenhouse gas emissions,

(i) five per cent of quantified greenhouse gas emissions for an electricity facility emitting less than 500,000 tonnes CO_2e in the given compliance year; or

(ii) two per cent of quantified greenhouse gas emissions for an electricity facility emitting 500,000 tonnes CO_2e or more in the given compliance year; and

(b) for commercial production, five per cent of quantified commercial product for the electricity facility.

16(9) A regulated emitter shall ensure that at the end of the verification process, a statement of verification is prepared reflecting a type of opinion in column 1 of Table 1 based on the corresponding determination made by the verification team in column 2 of Table 1.

Table 1
Types of Opinion
[Subsection 16(9)]

Type of Opinion	Determination of Verification Team
Unmodified	Both of the following circumstances apply: (i) there is a reasonable level of assurance that the emissions return contains no material discrepancy in emissions or production parameters; and (ii) the emissions return was prepared in accordance with this standard.
Modified	Both of the following circumstances apply: (i) there is a reasonable level of assurance that the emissions return contains no material discrepancy in emissions or production parameters; and (ii) the emissions return was prepared substantially in accordance with this standard.
Adverse	One or both of the following circumstances apply: (i) there is a reasonable level of assurance that the emissions return contains a material discrepancy in emissions or production parameters; and/or (ii) the emissions return was not prepared substantially in accordance with this standard.

16(10) To ensure impartiality with respect to an electricity facility undergoing verification, a regulated emitter shall ensure that a verification team does not perform verification for the electricity facility if there is known to be a current or potential threat to compromise the impartiality of:

(a) a member of the verification team; or

(b) the accredited verification body for which the verification team is employed.

16(11) For the purposes of performing verification with respect to an electricity facility, a site visit to the facility is required if:

(a) no verification team has visited the electricity facility for the purposes of conducting a verification in the most recent three compliance years;

(b) the most recent verification of an emissions return with respect to the electricity facility resulted in an adverse opinion in the statement of verification submitted to the Minister; or

(c) the verification is the first by the accredited verification body with respect to the electricity facility.

16(12) A site visit conducted by an accredited verification body under the requirements of the Government of Canada's *Output-Based Pricing System Regulations* while that facility was subject to the Government of Canada's *Output-Based Pricing System Regulations* is also considered a site visit by that accredited verification body for the purposes of the regulations and this standard.

16(13) For the purposes of Subsection 16(11) the verification team conducting a verification on an electricity facility may undertake a virtual site visit if:

(a) an in-person site visit has previously been undertaken for the electricity facility as part of a verification;

(b) the accredited verification body conducting the verification also conducted the most recent verification for the electricity facility; and

(c) the virtual site visit enables the verification team to complete the verification to a reasonable level of assurance.

16(14) A regulated emitter shall ensure that all records and information respecting the verification of an emissions return are retained and accessible upon request for at least seven years after the date on which the records or information are created.

17. Audits and Inspections

17 The Minister may perform an audit or inspection on an electricity facility in accordance with Section 67 of the act.

Appendix A: Global Warming Potentials

Table 2: Global Warming Potentials by Type of Greenhouse Gas		
Greenhouse Gas Species	**Chemical Formula**	**100 Year Global Warming Potential from AR5**[1]
Carbon Dioxide	CO_2	1
Methane	CH_4	28
Nitrous Oxide	N_2O	265
Sulphur Hexafluoride	SF_6	23,500
Perfluoromethane	CF_4	6,630
Perfluoroethane	C_2F_6	11,100
Perfluropropane	C_3F_8	8,900
Perfluorobutane	C_4F_{10}	9,200
Perfluorocyclobutane	c-C_4F_8	9,540
Perfluoropentane	C_5F_{12}	8,550
Perfluorohexane	C_6F_{14}	7,910
HFC-23	CHF_3	12,400
HFC-32	CH_2F_2	677
HFC-41	CH_3F	116
HFC-43-10mee	$CF_3CHFCHFCF_2CF_3$	1,650
HFC-125	CHF_2CF_3	3,170
HFC-134	CHF_2CHF_2	1,120
HFC-134a	CH_2FCF_3	1,300
HFC-143	CH_2FCHF_2	328
HFC-143a	CH_3CF_3	4,800
HFC-152a	CH_3CHF_2	138
HFC-227ea	CF_3CHFCF_3	3,350
HFC-236fa	$CF_3CH_2CF_3$	8,060
HFC-245ca	$CH_2FCF_2CHF_2$	716

[1] Global warming potentials taken from IPCC's Fifth Assessment Report. See Table 8.A.1 in https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf

Appendix B: Regulated Source Categories

Table 3: Regulated Source Categories Included in Total Regulated Emissions									
Greenhouse Gas	Stationary Fuel Combustion Emissions	Industrial Process Emissions	Industrial Product Use Emissions	Venting Emissions	Flaring Emissions	Leakage Emissions	On-site Transportation Emissions	Waste Emissions	Waste-water emissions
Carbon dioxide[1]	*	*	N/A	*	*	*	*	*	*
Methane[2]	*	*	N/A	*	*	*	*	*	*
Nitrous oxide[3]	*	*	N/A	*	*	*	*	*	*
Sulphur hexafluoride	N/A	*	*	N/A	N/A	N/A	N/A	N/A	N/A
Hydrofluorocarbons (HFC)	N/A	By species	By species	N/A	N/A	N/A	N/A	N/A	N/A
Perfluorocarbons (PFC)	N/A	By species	By species	N/A	N/A	N/A	N/A	N/A	N/A

[1] excluding CO_2 emissions from biomass combustion, aerobic decomposition. and fermentation.

[2] excluding CH_4 emissions from biomass combustion for the purpose of generating useful heat or work.

[3] excluding N_2O emissions from biomass combustion for the purpose of generating useful heat or work.

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Appendix C: Sectors Excluded from the Regulations

Table 4: Excluded Sectors
Agriculture
Transportation (other than on-site transportation)
Distribution pipelines[1]
Landfills
Public institutions (universities, schools and hospitals, municipally owned infrastructure)
District heating

1 Distribution pipelines include pipelines that distribute processed natural gas, their associated installations, and pipelines that are downstream of a metering station.