Update on the proposed Output-Based Pricing System

Multi-sector meeting

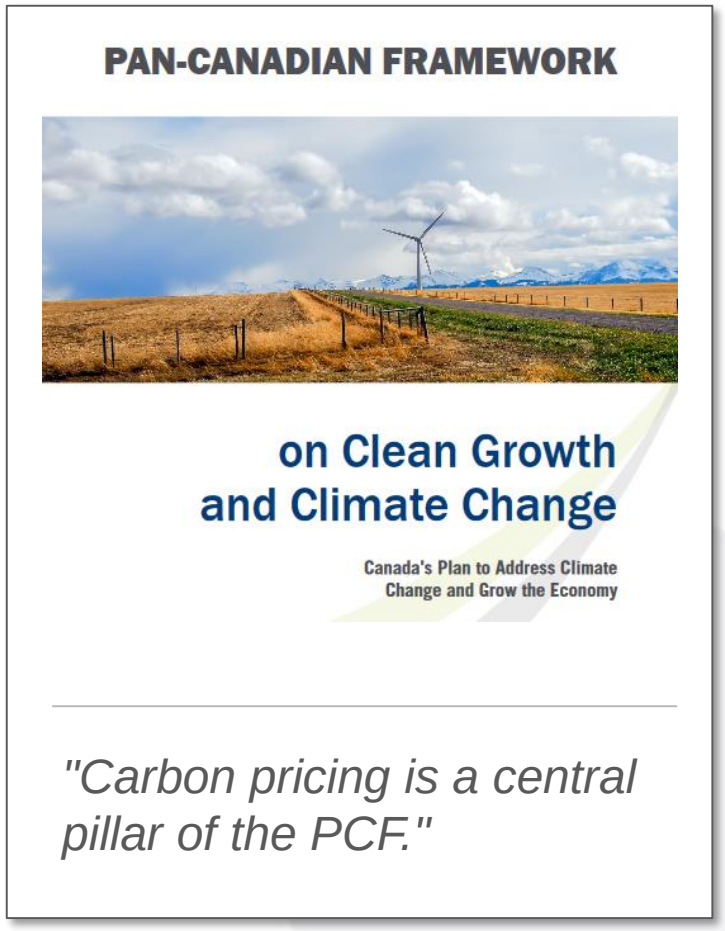
September 13, 2018

Outline

- Overview of proposed federal backstop
- Covered facilities and opt-in
- Output-based standards
- Compliance
- Quantification, reporting and verification
- Next steps

Pan-Canadian approach to pricing carbon pollution

- Carbon pollution pricing is widely recognized as an efficient way to reduce GHG emissions and to support innovation and the transition to a low-carbon economy.
- Provinces and territories have the flexibility to implement their own carbon pollution pricing system.
- The federal government set a carbon pollution pricing standard, or benchmark, that all Canadian jurisdictions must meet.



Federal backstop

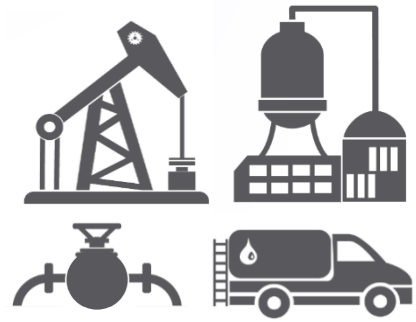
- The federal carbon pollution pricing 'backstop' system will apply in whole or in part on January 1, 2019 in jurisdictions that request it, or in those that do not have a system in place in 2018 that aligns with the federal benchmark.
  - The *Greenhouse Gas Pollution Pricing Act* adopted on June 21, 2018 provides the authority to implement the federal backstop.
  - Decisions on where the federal system will apply will be communicated in the fall 2018.

Components of the proposed federal backstop

- The proposed federal backstop has two elements:
  - A fuel charge applied to fossil fuels:
    - Generally payable by fuel producers or distributors;
    - $20 per tonne of carbon dioxide equivalent (CO_2e) in 2019, rising by $10 per year to $50 per tonne CO_2e in 2022; and,
  - An output-based pricing system (OBPS) for industrial facilities:
    - Designed to address competitiveness risks for industrial facilities that are emissions intensive and trade exposed;
    - Retains the carbon price signal and incentive to reduce GHG emissions;
    - Covered facilities will have a compliance obligation for the portion of their emissions that exceeds an annual output-based emissions limit; enables emissions trading.

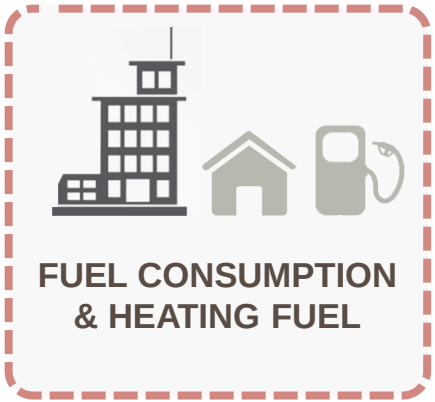
Overview of the federal backstop

FUEL PRODUCTION AND DISTRIBUTION



- Pay fuel charge to GoC
- Proposed 2019 rates (= $20/t CO_2e)
  - Gasoline: 4.42 ¢/L
  - Light fuel oil: 5.37 ¢/L
  - Natural gas: 3.91 ¢/m^3
  - Propane: 3.10 ¢/L
- Some exclusions

FUEL DELIVERY



- Consumers do not pay the fuel charge directly to the federal government
- Fuel price paid by consumers may have costs of the fuel charge embedded
- Registered OBPS facilities would generally not pay the charge on fuels that they purchase
- Instead, would be subject to the carbon price on the portion of emissions above a facility emissions limit

Covered facilities

Mandatory participants

- Covered facilities:
  - An facility emitting 50 kt CO_2e or more (reported to the federal GHG Reporting Program for 2014 or a subsequent year);
  - Located in a backstop jurisdiction; and
  - Undertaking an activity/producing a product for which an output-based standard (OBS) is prescribed.

Voluntary opt-in

- Considering opening OBPS to voluntary opt-in for 2019 for facilities:
  - Emitting 10-50 kt CO_2e (reported to the federal GHG Reporting Program for 2017 or a subsequent year);
  - Located in a backstop jurisdiction; and
  - Undertaking an activity/producing a product for which an OBS is prescribed.

Proposed opt-in for new, expanded, retrofitted facilities

- Propose that new, expanded and retrofitted facilities be eligible for opt-in based on reported or projected emissions (engineer stamped estimates)
  - New facilities : commissioned 2017 or after;
  - Expanded facilities : facilities that increase their production capacity by 25% (e.g., new product line/new assembly line);
  - Retrofitted facilities : facilities that have undergone a major retrofit such that the emissions intensity previously reported to GHG Reporting Program is no longer relevant

- Facilities that are still reporting <10 kt by the end of the second full compliance year (as reported in their compliance report the year after), would no longer meet the criteria for covered facilities

Ceasing to be a covered facility

- Propose a covered facility would cease to be a covered facility when:
  - it is no longer in a backstop jurisdiction;
  - it shuts down (temporarily) for more than one year and requests it;
  - it permanently closes;
  - it stops undertaking an activity/producing a product for which an OBS is prescribed; or,
  - a new, expanded or retrofitted facility does not reach 10 kt after two complete compliance periods.

- A facility that ceases to be a covered facility would have a compliance obligation for the portion of the year during which it was covered by the OBPS.

Output-based standards

Output-based standards (OBS)

- For most sectors, basis of OBS is the production-weighted, national average emissions intensity
  - At sector or sub-sector level, or for a product or grouping of products
  - In terms of emissions per unit of product
  - Representing recent performance
    - Based on 2014-2016, most recent data from the federal GHG Reporting Program
  - Data from facilities with emissions of 50 kt CO_2e or more
  - Emissions from steam included in industrial sector OBS
  - Emissions from electricity generation not included in industrial sector OBS

OBS currently under development

- Initial sectors (Batch 1) which were identified for OBS development:

Base Metal Smelting and Refining	Bitumen and Heavy Oil Upgrading	Food processing – potatoes processing and oilseed processing
Iron Ore Pelletizing	Bitumen and Heavy Oil	Lime
Mining	Refining	Grey cement
Potash	Natural Gas Pipelines	Nitrogen Fertilizers
Electricity	Natural Gas Processing	Chemicals (Ethanol)
Pulp and Paper	Iron and Steel (mini mills)	

OBS currently under development

- Recent sectors (Batch 2) which were identified for OBS:

Chemicals - Carbon Black, High Value Chemicals, Aromatics (BTX), Polyethylene, Hydrogen, Styrene, Citric Acid, MPMD, Pharmaceutical, Nylon resin and Nylon fibres		
Activated carbon production	Automotive	Brick manufacturing
Char production	Food – wet corn milling, sugar, distilleries	Glass
Gypsum panel manufacturing	Iron and steel – integrated	Mineral wool insulation
Natural gas liquids production	Tube mills	White cement

- Additional standards will be developed over time

Proposed disaggregation and denominators for batch 1 sectors

SECTOR / SUB-SECTOR	INITIAL STANDARD BASIS	PROPOSED STANDARD METRIC
Base Metal Smelting and Refining	t CO_2e / t base metals produced	Pyrometallurgical smelting of copper: t CO_2e /t copper anodes Pyrometallurgical smelting of lead: t CO_2e/t lead & lead alloys Pyrometallurgical smelting of zinc: t CO_2e/t zinc & lead Pyrometallurgical smelting of nickel: t CO_2e/t nickel matte Hydrometallurgical production base metals: t CO_2e/t base metals produced
Oil and Gas	Upgrading: t CO_2e / barrel SCO Refining: t CO_2e / CWB NG Processing: t CO_2e / m^3 Oil Production: t CO_2e / barrel oil NG Transmission Pipelines: t CO_2e / m^3km	Upgrading: t CO_2e / barrel SCO Refining: t CO_2e/CWB NG Processing: t CO_2e/ 100 000 m^3 Oil Production: t CO_2e/barrel light oil t CO_2e/ barrel heavy oil NG Transmission Pipelines: t CO_2e/MWh
Cement	t CO_2e / t clinker	t CO_2e / t cement (CGL:clinker+gypsum+limestone)
Chemicals (Ethanol)	t CO_2e / t ethanol	t CO_2e / t fuel ethanol t CO_2e / t industrial ethanol
Iron ore pelletizing	t CO_2e / t iron ore pellets	t CO_2e / t iron ore flux pellets t CO_2e / t iron ore pellets other than flux pellets

Proposed disaggregation and denominators for batch 1 sectors

SECTOR / SUB-SECTOR	INITIAL STANDARD BASIS	PROPOSED STANDARD METRIC
Iron and Steel (mini-mills)	t CO_2e / t cast steel	t CO_2e / t cast steel t CO_2e / t rolled steel
Lime	t CO_2e / t lime	t CO_2e / t high calcium lime + lime kiln dust sold t CO_2e / t dolomitic lime + lime kiln dust sold
Mining	t CO_2e / t overburden and ore or coal product	t CO_2e / t thermal coal t CO_2e / t metallurgical coal t CO_2e / t iron ore t CO_2e / kg precious metal t CO_2e / t metal (excluding precious metal and iron) t CO_2e / carat diamonds t CO_2e / kg uranium
Nitrogen Fertilizers	t CO_2e / t nitric acid t CO_2e / t ammonia	t CO_2e / t nitric acid t CO_2e / t ammonia t CO_2e / t gross urea t CO_2e / t other N-fertilizer products
Food Processing	t CO_2e / t product	Potato processing : t CO_2e / t raw potatoes processed Oilseeds processing: t CO_2e / t finished products
Potash	Conventional: t CO_2e / t potash Solution: t CO_2e / t potash	Conventional: t CO_2e / t potash Solution: t CO_2e / t potash
Pulp and Paper	Chemical: t CO_2e / t air dried finished product Other: t CO_2e / t air dried finished product	Chemical: t CO_2e / t finished product Other: t CO_2e / t finished product

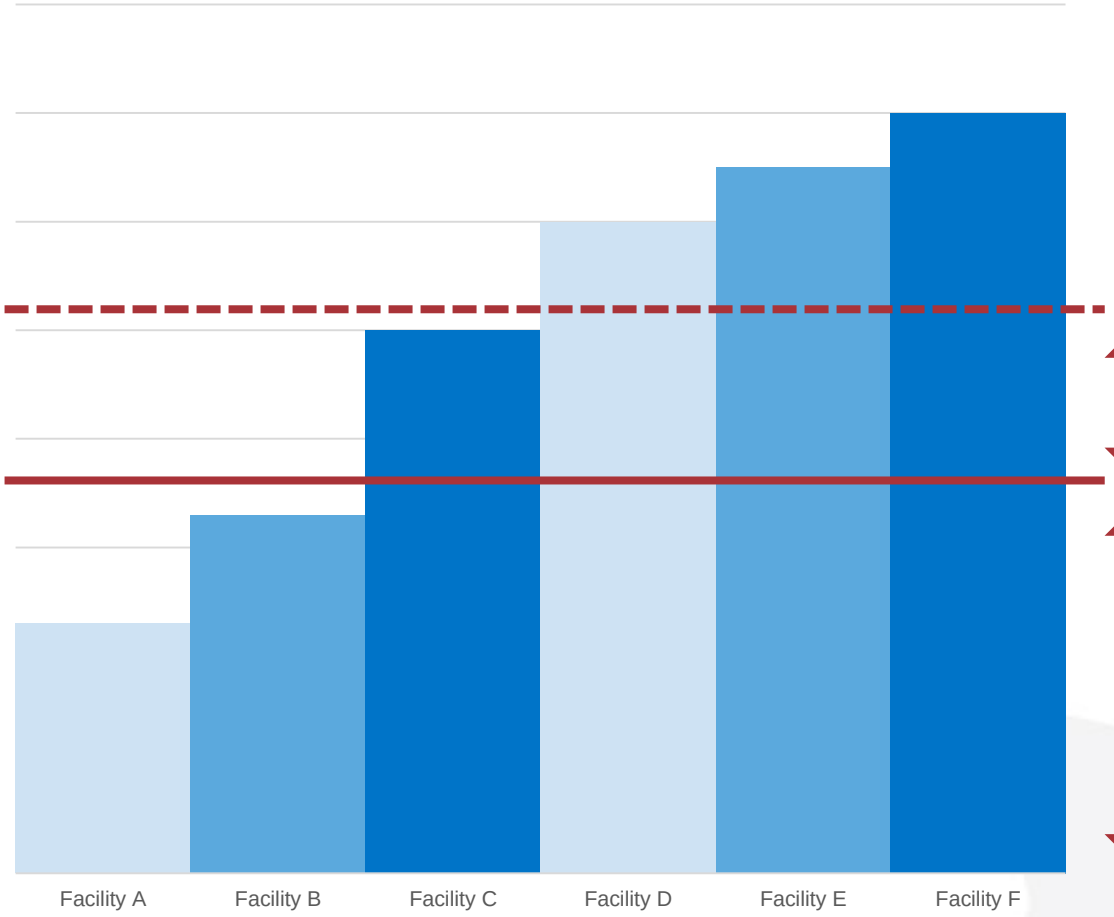
OBS starting point

- Initial proposed starting point for OBSs was set at 70% of the production-weighted national average emissions intensity

- Based on analysis of competitiveness impacts of carbon pollution pricing, and stakeholder feedback the starting point was revised to:
  - 90% for a small number of sectors identified as being at higher competitiveness and carbon leakage risk,
  - 80% for all other covered sectors.

- Further sectors or sub-sectors may see adjustments to their OBSs based on the results of further analysis of competitiveness issues associated with carbon pricing.

Approach to setting output-based standards



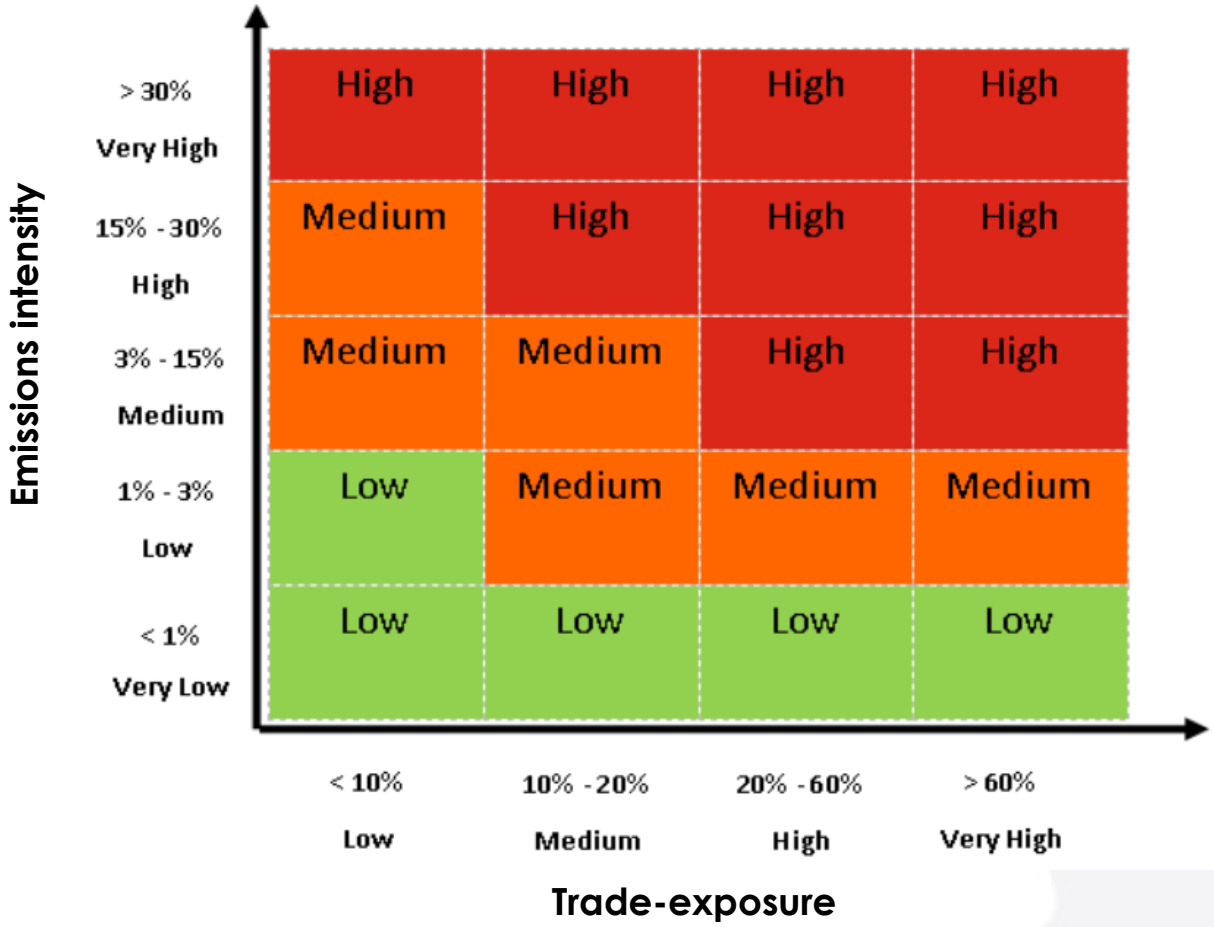
Three-Phased Approach to Competitiveness Analysis

- Phase 1: static EITE tests at the sector level
  - Emissions-intensity (EI) & Trade-exposure (TE) metrics (adapted from Alberta's EITE thresholds):
    - EI: Covered GHG emissions * 0.2 * Carbon Price (@ $50/tonne) / Gross Value Added
    - TE: (Imports + Exports)/(Sales + Imports)

- Phase 2: Dynamic EITE test at the sector level
  - Using ECCC's EC-Pro model
  - Assess same metrics as static test: EI, TE
  - Considers sectoral changes in response to pricing

- Phase 3: Consider additional information and supporting analysis relevant to competitiveness issues associated with carbon pricing

Thresholds for EI and TE



Assessing competitiveness and carbon leakage risk

- Objective of OBPS is to address competitiveness and carbon leakage risk while retaining carbon price signal and incentive to reduce GHG pollution

Status of competitiveness analysis

- Batch 1 OBSs:
  - Phase 1 and 2 preliminary results released July 27 to working groups – identified 4 sectors for adjustment to a 90% starting point (cement, lime, nitrogen fertilizers, iron and steel manufacturing)
  - Phase 3 analysis is underway

- Batch 2 OBSs:
  - Phase 1, 2, 3 analysis targeted for fall 2018

Proposed approach to steam/heat

- Steam/heat generation is not treated as a product and would not have its own OBS

- Emissions from steam/heat associated with the industrial product are included in the industrial product OBSs

- Product OBSs, based on the national production weighted average emissions intensities, will be adjusted to account for material steam/heat imports and exports.

Proposed approach to electricity

- Initially proposed a single OBS of 420 t CO_2e/GWh applied to all fossil fuel electricity generation

- Consultations indicated a poor fit for:
  - Facilities subject to the federal electricity regulations
  - Facilities without alternatives to diesel for electricity production
  - Northern communities already facing high electricity costs

- ECCC considering revising proposed approach
  - Options could include fuel specific OBS

Compliance

Annual limit and compliance obligation

- Annual facility emissions limits would be calculated as follows:

$$\textit{Annual Facility Emissions Limit } (t\ CO_2e) = \sum_{i=1}^{n} [OBS_i \left(t \frac{CO_2e}{Units\ i} \right) x\ Production\ (units\ i)$$

- Compliance obligation would be calculated as follows:

$$\textit{Compliance obligation } (t\ CO_2e) = \textit{Total Annual Facility Emissions} - \textit{Annual Facility Emissions Limit}$$

** Note: The annual facility limit would not be adjusted for steam/heat imported or transferred off site*

Treatment of Carbon Capture and Storage

- Propose to recognize emissions reductions from carbon capture and storage (CCS).
  - GHG emissions permanently stored using eligible sequestration mechanisms would be deducted from a facility's total annual emissions.
  - Sequestration of biomass emissions would not be deducted since they are not counted in total facility emissions.

- Proposed eligible sequestration mechanisms:
  - Geological sequestration
    - Deep saline aquifer
    - Enhanced oil recovery

Compliance for new facilities

- New facilities are an important opportunity for clean growth

- Propose no compliance obligation for up to first three years (1st partial year + 2 full years) after a new facility is first commissioned

Compliance periods

- Compliance periods will generally be the calendar year, January 1 to December 31
  - The first OBPS compliance period for newly covered facilities will start when the facility becomes subject to the OBPS and will end on December 31
  - Compliance period for facilities that cease to be a covered facility will end when the facility ceases to be a covered facility

Compliance report

- For each compliance period, facilities will be required to submit a third-party verified compliance report
- Propose annual compliance reports be due by June 1 of the calendar year following the relevant compliance period,
  - e.g. the report for the 2019 compliance year would be due by June 1, 2020

Deadline for compensation (true-up)

- Propose that facilities that emit above their annual facility emissions limit would need to fulfill their compliance obligations by December 31 of the year following the compliance year

- Rates of compensation
  - 1:1 by November 1st of the calendar year following the relevant compliance period
  - 4:1 after November 1

- The compliance obligation could be met by:
  - Payment of an excess emissions charge to the Government of Canada;
  - Remittance of federal OBPS surplus credits issued by Environment and Climate Change Canada;
  - Remittance of eligible offset credits.

Compliance options

Surplus credits

- A facility that emits less than its annual emissions limit will receive surplus credits.
  - Each surplus credit represents one tonne CO2e
  - Credits can be banked for future use or traded

- Only federal OBPS surplus credits will be accepted for compliance with the OBPS.
  - Not planning to accept provincial/territorial allowances or performance credits at this time.
  - Not planning to accept credits generated under the future Clean Fuel Standard at this time

- A system to track issuance and use of surplus credits is under development
  - Each OBPS facility will be required to open an account in the tracking system

Offset credits

- Represent GHG emissions reductions / removal enhancements generated from voluntary, project-based activities that:
  - Are not subject to carbon pollution pricing or regulations; and
  - Would not have occurred under business-as-usual conditions.

- Offset supply for the OBPS
  - To support short term availability, certain eligible offsets from provincial and territorial offset programs will be accepted for compliance.
    - Domestic reductions are initial focus; however, may consider international credits (ITMOs) once the Paris Rulebook is agreed.

Eligible offset credits

- Facilities wishing to use provincial/territorial offset credits for compliance would be required to:
  - Confirm that they were from an 'eligible' provincial/territorial program;
  - Confirm that they were generated from a project that used an eligible protocol;
  - Confirm that project start date was 2016 or later;
  - Confirm that offset credits have been verified by an accredited third party verification body;
  - Open an account within the provincial/territorial offset system; and
  - Conduct any trades / purchases of credits independent of the OBPS.

Proposed use and expiry of compliance units

- Expiry limits on surplus credits.
  - Surplus credits issued for the 2019 to 2022 compliance periods can only be within a 5-year period following the year for which the credits were issued.

- Expiry dates for both surplus and offset credits may change over time and could be reconsidered in future compliance periods.

Revocation or replacement of credits

- If an error is detected in facility's end of year report AFTER surplus credits have been issued:
  - Responsible person must provide compensation if GHGs emitted exceed the emissions limit; or
  - ECCC will revoke excess surplus credits
    - If a facility has received too many (if still in account)
    - If sold to another entity, the facility must either replace with another credit or pay emissions charge.

- Requirements to replace provincial/territorial offset credits found to be invalid AFTER submission for compliance will be developed in consultation with the provincial/territorial offset programs.

Quantification, reporting and verification requirements

Quantification methods

- Facilities would be required to quantify their emissions and production as of January 1, 2019

- Quantification methods primarily sourced from the federal Greenhouse Gas Reporting Program (GHGRP) and the Western Climate Initiative (WCI).
  - Proposed methods have been shared via working groups (batch 1 OBS).
  - Plan to seek feedback on quantification methods for Batch 2 sectors in Fall 2018
  - Proposed approach to determine quantification methods for Batch 2 consistent with Batch 1 (WCI – GHG RP – Provincial requirements).

- Where no method is identified for a specified emission source, facilities would quantify emissions using an unbiased alternative method and provide a detailed description of that method.

Quantification requirements

- Total emissions by emissions source and by gas :
  - Stationary fuel combustion emissions
  - Industrial process emissions
  - Industrial product use emissions
  - Venting emissions
  - Flaring emissions
  - Leakage emission
  - On-site transportation emissions
  - Waste emissions
  - Wastewater emissions

- Production data - Total amount of production for each identified product undertaken at the facility, including electricity generated from fossil fuels (if applicable).

Content of compliance report

- Information to be reported includes:
  - Administrative information
  - Total annual facility emissions
  - Total of permanently sequestrated emissions (CCS), if applicable
  - Annual facility emissions limit
  - Total annual product(s) produced
  - Prescribed OBS(s)
  - Total compensation for excess emissions or total quantity of surplus credits

Verification requirements

- Reports will need to be verified:
  - By an accredited verification body (AVB) that is accredited to ISO 14065:2013 by any IAF member (SCC / ANSI);
  - To a reasonable level of assurance; and,
  - In accordance with ISO 14064-3:2006 with specific program requirements, including independence, conflict of interest and site visits provisions.

Proposed specific program requirements

- Independence and conflict of interest
  - Must ensure that there is no current or potential threat to or compromise to the impartiality of the AVB
  - Report can be verified by an AVB if it has not verified six consecutive reports prepared with respect to the facility, unless at least three years have passed since the last verification

- Situations when site visits would be required include:
  - No site visit has been conducted as part of carrying out the verification for the last two reports
  - At least three years have passed since the AVB conducted a verification at the facility
  - Major changes have occurred at the facility
  - The AVB is conducting its first verification for a particular facility
  - AVB is of the opinion a site visit is required

Material discrepancy

- At the end of the verification activities and procedures, the AVB will provide an opinion on whether the report contains a material discrepancy in the total GHG emissions or the amount of a type of product produced

- A material discrepancy exists if there are one or more errors or omissions that makes it probable that there is a discrepancy of:
  - 5% or more of quantified GHG emissions for facilities emitting 500 kt CO_2e or less;
  - 2% or more of quantified GHG emissions for facilities emitting more than 500 kt CO_2e; and
  - for production parameters, ± 0.1%.

- Material discrepancy should not be confused with margin of error associated with quantification.

Next steps

Next steps on OBS development

- Fall 2018: engagement through working groups (batch 1 and batch 2)
  - Seek feedback on draft OBS
  - Continue engagement to inform analysis of carbon pricing impact on competitiveness and carbon leakage risk

- Winter 2019: engagement through working groups (batch 1 and batch 2)
  - Seek feedback on draft OBS published in draft regulatory proposal

Upcoming milestones for OBPS

- Fall 2018:
  - Communication of where the federal backstop will apply
  - Release of criteria for OBPS registration, requirements for information gathering for 2019 compliance year
  - Targeting OBPS registration system live on November 1, 2018
  - Release of OBPS draft regulatory proposal for comment, including draft OBSs (batch 1 and batch 2)
- Jan. 1, 2019: Federal backstop comes into affect in specified jurisdictions
- Winter 2019: engagement and analysis to inform final OBPS regulations
- Spring 2019: release of final OBPS regulations
- As committed to under the pan-Canadian Framework, FPT review of carbon pricing in 2022 (and interim review in 2020)

Contact information

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