

Compendium of Federal Offset Protocols

Version 9.0
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Canada's Greenhouse Gas
Offset Credit System



Environment and
Climate Change Canada

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Canada

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Document revision history

Version number	Publication date	Summary of changes
9.0	September 9, 2026	Inclusion of: • <i>Reducing Manure Methane Emissions, Version 1.0; and</i> • <i>Landfill Methane Recovery and Destruction, Version 2.0</i>
8.0	March 31, 2026	Inclusion of <i>Improved Forest Management on Private Land, Version 1.2</i>
7.0	October 24, 2025	Inclusion of <i>Reducing Enteric Methane Emissions from Beef Cattle, Version 1.0</i>
6.0	January 27, 2025	Inclusion of <i>Reducing Greenhouse Gas Emissions from Refrigeration Systems, Version 1.2</i>
5.0	October 15, 2024	Inclusion of <i>Improved Forest Management on Private Land, Version 1.1</i>
4.0	May 6, 2024	Inclusion of <i>Improved Forest Management on Private Land, Version 1.0</i>
3.0	December 8, 2023	Inclusion of <i>Reducing Greenhouse Gas Emissions from Refrigeration Systems, Version 1.1</i>
2.0	February 24, 2023	Inclusion of: • <i>Reducing Greenhouse Gas Emissions from Refrigeration Systems, Version 1.0; and</i> • <i>Landfill Methane Recovery and Destruction, Version 1.1</i>
1.0	June 8, 2022	Initial version including <i>Landfill Methane Recovery and Destruction, Version 1.0</i>

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1.0 Introduction

[Canada's Greenhouse Gas \(GHG\) Offset Credit System](#) is established under Part 2 of the *Greenhouse Gas Pollution Pricing Act* to provide an incentive to implement projects that result in domestic GHG reductions that would not have been generated in the absence of the project, that go beyond legal requirements and that are not subject to carbon pollution pricing mechanisms.

Canada's GHG Offset Credit System consists of:

- the [Canadian Greenhouse Gas Offset Credit System Regulations](#) (the Regulations), which establish the system, implement the operational aspects and set the general requirements applicable to all project types
- federal offset protocols, included in the *Compendium of Federal Offset Protocols* (the Compendium), each containing requirements for project implementation and methods for quantifying GHG reductions for a given project type, and
- the [Credit and Tracking System](#) (CATS) to register offset projects, issue and track offset credits, and share key information through [Canada's GHG Offset Credit System Public Registry](#)

The Regulations apply to a proponent of a project which is of a type for which a protocol has been included in the Compendium; that aims to generate GHG reductions by preventing GHG emissions or removing GHGs from the atmosphere; and with respect to which the GHG reductions are real, additional, quantified, verified, unique and permanent.

Offset credits will be issued to a proponent of a project for the period covered by a project report in the amount determined in accordance with subsection 29(2) of the Regulations if requirements of subsection 29(1) of the Regulations are met.

2.0 Protocols

The Regulations require a proponent to register their project using the most recent version of a federal offset protocol that applies to the project when the project is registered. This version of the protocol will apply to the project for the duration of its crediting period unless, after an update to the protocol, the proponent opts to use the new version. A proponent opting to use the new version of a protocol must ensure their project meets all requirements of this new version and must specify any updates to the registration information in the project report. Note that only one version of a protocol may be used per reporting period.

The proponent must meet requirements set out in the applicable protocol and the Regulations, including those to quantify and report GHG reductions generated from eligible project activities. The federal offset protocols are designed to ensure projects generate GHG reductions that are real, additional, quantified, verified, unique and permanent. The protocols are also developed in accordance with the principles of ISO 14064-2:2019 *Greenhouse gases – Part 2 – Specification with guidance at the project level for quantification, monitoring and reporting greenhouse gas emission reductions or removal enhancements* to ensure reported GHG reductions generated as a result of implementing a project are relevant, complete, consistent, accurate, transparent, and conservative.

2.1 Landfill methane recovery and destruction

Methane emissions from landfills are generated by the decomposition of organic matter in the buried waste in anaerobic conditions (absence of oxygen). The installation of a landfill gas recovery and destruction system enables the landfill methane to be converted into biogenic carbon dioxide instead of allowing it to be passively released to the atmosphere.

The *Landfill Methane Recovery and Destruction* federal offset protocol is intended for use by a proponent implementing a project that actively recovers and destroys landfill gas to generate GHG emission reductions for which federal offset credits may be issued under the Regulations.

GHG emission reductions generated by a project implemented following this protocol can result from:

- avoided methane emissions achieved through active recovery of landfill gas from within the project site and the methane destruction in one or more eligible destruction devices, which are:
 - open and enclosed flares, boilers, turbines, internal combustion engines, stations for the direct injection of upgraded landfill gas into a natural gas network, and stations for the compression or liquefaction of upgraded landfill gas prior to its transport and injection into a natural gas network, and
- displacement of fossil fuels by eligible landfill gas actively recovered as part of the project

Version number	Publication date	Eligible for project registration	Protocol download
2.0	September 9, 2026	September 9, 2026 – present	• Landfill Methane Recovery and Destruction, Version 2.0 [HTML] • Landfill Methane Recovery and Destruction, Version 2.0 [PDF, 954 KB]
1.1	February 24, 2023	February 24, 2023 – September 8, 2026	• Landfill Methane Recovery and Destruction, Version 1.1 [HTML] • Landfill Methane Recovery and Destruction, Version 1.1 [PDF, 646 KB]
1.0	June 8, 2022	June 8, 2022 – February 23, 2023	• Landfill Methane Recovery and Destruction, Version 1.0 [HTML] • Landfill Methane Recovery and Destruction, Version 1.0 [PDF, 1.37 MB]

2.2 Reducing greenhouse gas emissions from refrigeration systems

Emissions of hydrofluorocarbons (HFCs) from commercial and industrial refrigeration or air conditioning systems are caused by releases during equipment installation, when charging equipment with refrigerant, either initially or when re-filling (top-up), and leaks from equipment operations. Lowering the global warming potential (GWP) of refrigerants used in these systems in Canada ensures that the associated impacts on climate change from unavoidable equipment leaks are minimized to the extent possible.

The *Reducing Greenhouse Gas Emissions from Refrigeration Systems* federal offset protocol is intended for use by a proponent implementing a project to transition away from refrigerants with high GWP values in their commercial and industrial refrigeration or air conditioning systems, in order to generate GHG emission reductions for which federal offset credits may be issued under the Regulations, from the following eligible project activities:

- retrofitting a pre-existing refrigeration or air conditioning system to use an eligible refrigerant, or
- installing a new refrigeration or air conditioning system containing an eligible refrigerant

The high-GWP refrigerant from a pre-existing system must be sent to an authorized destruction or reclamation facility in Canada. GHG emission reductions can be generated by destroying HFCs contained within the high-GWP refrigerant from a pre-existing system, but for a project to be eligible, HFC destruction must occur in Canada.

GHG emission reductions generated from destroying, reducing or replacing ozone-depleting substances are not eligible under this protocol.

Version number	Publication date	Eligible for project registration	Protocol download
1.2	January 27, 2025	January 27, 2025 – present	• Reducing Greenhouse Gas Emissions from Refrigeration Systems, Version 1.2 [HTML] • Reducing Greenhouse Gas Emissions from Refrigeration Systems, Version 1.2 [PDF, 494 KB]
1.1	December 8, 2023	December 8, 2023 – January 26, 2025	• Reducing Greenhouse Gas Emissions from Refrigeration Systems, Version 1.1 [HTML] • Reducing Greenhouse Gas Emissions from Refrigeration Systems, Version 1.1 [PDF, 461 KB]
1.0	February 24, 2023	February 24, 2023 – December 7, 2023	• Reducing Greenhouse Gas Emissions from Refrigeration Systems, Version 1.0 [HTML] • Reducing Greenhouse Gas Emissions from Refrigeration Systems, Version 1.0 [PDF, 1.44 MB]

2.3 Improved forest management on private land

Forests have a large capacity to sequester carbon by removing carbon dioxide from the atmosphere and converting it into biomass through photosynthesis. This carbon is stored in the forest as live biomass as well as dead organic matter and forest soil. The implementation of improved forest management relative to the baseline can reduce the amount of carbon lost from managed forests and/or increase the rate of carbon sequestration in forest biomass.

The *Improved Forest Management on Private Land* federal offset protocol is intended for use by a proponent implementing a project to carry out forest management activities on managed forestlands that go beyond a business-as-usual management scenario in order to generate GHG emission reductions and removals (GHG reductions) for which federal offset credits may be issued under the Regulations.

GHG reductions generated by a project implemented following this protocol can only result from the implementation of improved forest management. GHG reductions under this protocol cannot be generated from afforestation/reforestation or avoided conversion of forestlands.

This protocol is applicable to projects on private land and is not applicable to projects on provincial and federal Crown lands and public lands in the territories. This protocol is also applicable on provincial and federal Crown lands where a First Nation has exclusive use and occupation.

Version number	Publication date	Eligible for project registration	Protocol download
1.2	March 31, 2026	March 31, 2026 – present	• Improved Forest Management on Private Land, Version 1.2 [HTML] • Improved Forest Management on Private Land, Version 1.2 [PDF, 1.15 MB]
1.1	October 15, 2024	October 15, 2024 – March 30, 2026	• Improved Forest Management on Private Land, Version 1.1 [HTML] • Improved Forest Management on Private Land, Version 1.1 [PDF, 961 KB]
1.0	May 6, 2024	May 6, 2024 – October 14, 2024	• Improved Forest Management on Private Land, Version 1.0 [HTML] • Improved Forest Management on Private Land, Version 1.0 [PDF, 911 KB]

2.4 Reducing enteric methane emissions from beef cattle

Enteric methane emissions are a by-product of a natural digestive process in ruminants such as cattle. As part of this process, a portion of the feed is converted into methane and released back into the atmosphere by the cattle as an enteric methane emission.

The *Reducing Enteric Methane Emissions from Beef Cattle* federal offset protocol is intended for use by a proponent implementing a project to reduce enteric methane emissions in confined beef cattle feeding operations through improved management, diet reformulation, the use of feed additives, growth promotors or other innovative strategies.

Carrying out eligible project activities will reduce the quantity of GHGs emitted per unit mass of beef produced by improving animal performance or directly reducing enteric methane emissions, for which federal offset credits may be issued under the Regulations.

A project implemented following this protocol cannot generate GHG emission reductions during cattle grazing, from dairy cattle or from the use of novel anti-methanogenic feed additives or gut modifiers.

Version number	Publication date	Eligible for project registration	Protocol download
1.0	October 24, 2025	October 24, 2025 – present	• Reducing Enteric Methane Emissions from Beef Cattle, Version 1.0 [HTML] • Reducing Enteric Methane Emissions from Beef Cattle, Version 1.0 [PDF, 553 KB]

2.5 Reducing manure methane emissions

The decomposition of organic matter in liquid livestock manure in anaerobic conditions (absence of oxygen) in storage structures such as pits or lagoons produces methane, a powerful GHG. The use of liquid manure treatment systems can reduce methane emissions.

The *Reducing Manure Methane Emissions* federal offset protocol is intended for use by a proponent implementing a project that treats liquid manure to reduce methane emissions and generate GHG emission reductions for which federal offset credits may be issued under the Regulations.

The eligible project activities are the following liquid manure treatment systems:

- chemical treatment (acidification), where an acid is added into the liquid manure storage structure to reduce methane production
- mechanical treatment, where liquid manure is separated into a liquid output with a lower organic content and a solid output that is stored aerobically, resulting in both outputs having a lower methane generation potential, and
- anaerobic digestion, on-farm or at a communal facility, where the system is designed to maximize the anaerobic production of methane (biogas) to be used for energy generation

In a project with an anaerobic digestion system, eligible biogas produced and used to displace fossil fuels can generate GHG emission reductions.

Covered liquid manure storage structures with passive methane production and capture are not eligible under this protocol.

Version number	Publication date	Eligible for project registration	Protocol download
1.0	September 9, 2026	September 9, 2026 – present	• Reducing Manure Methane Emissions, Version 1.0 [HTML] • Reducing Manure Methane Emissions, Version 1.0 [PDF, 1.18 MB]