OVERVIEW OF

CANADIAN REFRIGERANT AND ESG REGULATIONS

CANADA'S JOURNEY TOWARD SUSTAINABILITY

Starting in 2018, Canada began to aggressively fight against emissions and climate change.

Canada has pledged to **reduce national GHG emissions by 30% below 2005 levels by 2030 and achieve net zero GHG emissions by 2050.**

As part of this, Canada has developed a federal offset protocol which includes advanced refrigeration systems. This means creating a protocol for activities that reduce or avoid the use of HFCs that include installing new low-GWP refrigeration systems or substituting GHG-intensive refrigerants with less GHG-intensive alternatives through the replacement or retrofitting of existing refrigeration systems.

The Canadian government has also endorsed one of the ESG standards: TCFD.

TCFD focuses on the financial impacts of climate change. There are four core elements of disclosures under TCFD:

1. **GOVERNANCE**
2. **STRATEGY**
3. **RISK MANAGEMENT**
4. **METRICS AND TARGETS**

As far as climate-related risks, the following should be reported on:

Transition Risk, including:

- **Policy and legal risks**
- **Technology risks**
- **Market risks**
- **Reputation risks**

Physical Risk, including:

- **Acute risks**
- **Chronic risks**

Climate-related opportunities also need to be reported on.

This includes:

- **Resource Efficiency**
- **Energy Source**
- **Products and services**
- **Markets**
- **Resilience**

These climate-related opportunities and risks also need to be conceptualized in financial terms.

This is done through:

An income statement, including:

- **Revenues**
- **Expenditures**

A balance sheet, including:

- **Assets and liabilities**
- **Capital and financing**

FEDERAL REFRIGERATION LAWS

Canada has also created federal rules around leak inspections and reporting in refrigeration systems to combat climate change.

For refrigeration systems with a capacity greater than or equal to 19 kW (5 tons of refrigerant)

- Before charging, you must have a certified leak test
- The leak test must be done once every 12 months
- After the leak text, a notice must be affixed to the system
- When a leak is detected, it must be repaired within 7 days

For refrigeration systems with a capacity less than 19 kW (5 tons of refrigerant)

- Before charging, you must have a certified leak test
- A Leak test must be completed once every 12 months
- After the leak text, a notice must be affixed to the system
- When a leak is detected, it must be repaired within 7 days

For a halocarbon release of more than 10kg, a report must be made.

- For a release between 10kg and 100kg – you must report every calendar half-year no later than Jan 31 or July 31
- For more than 100 kg – you must report verbally or through a written report within 24 hours of detecting a release
  - You also must submit a written report that more fully details the circumstance leading to the release, as well as the corrective and preventative actions taken

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In addition to these laws around leak reporting and releasing, there is also a Canadian Enivronmental Code of Practice that relates to the environment and sustainability. It is:

- Published by the Minister of the Environment and the Minister of Health
- Includes risk management instruments
- Includes recommend procedures and practices or environmental controls
- Is voluntary, but is used as guideline by specific provinces to create regulations

FEDERAL PHASE-OUTS AND BANS ON OZONE-DEPLETING SUBSTANCES

HCFCs

As part of The Ozone-Depleting Substances and Halocarbon Alternatives Regulations, the import and manufacture of HCFCs is prohibited as of 202.

An exemption is allowed for the import and manufacture of HCFC-123 for the servicing of existing equipment until 2030.

CFCs

As part of the Montreal Protocol, Canada took action by outlawing the import and export of CFCs in 1996.

The only exceptions are for feedstock, analytical standards, and essential uses.

HFCs

The Federal Halocarbon Regulations, passed in 2003 and then updated in 2014, phase-down the consumption of bulk HFCs and other refrigerants.

A system must follow these regulations if the system is owned by any of the following:

- Her Majesty in right of Canada, federal government departments, boards and agencies
- Crown corporations
- Federal works and undertakings as defined by s. 3(1) of CEPA 1999

Refer to the below chart on when certain types of products using HFCs will be phased out.

SCHEDULE 1.1 - PRODUCTS CONTAINING OR DESIGNED TO CONTAIN AN HFC USED AS A REFRIGERANT

	1	2	3	4	5	6
PRODUCT	Stand-alone medium-temperature refrigeration system: self-contained refrigeration system where the components are integrated within the structure of the system and the system is designed to maintain an internal temperature ≥ 0°C	Stand-alone low-temperature refrigeration system: self-contained refrigeration system where the components are integrated within the structure of the system and the system is designed to maintain an internal temperature of less than 0°C but not less than -50°C	Centralized refrigeration system: refrigeration system whose capacity is > 20 kW, operating with more than one compressor installed in a separate machinery room, with a refrigerant that circulates from the machinery room to the refrigerated area and is designed to maintain an internal temperature ≥ -50°C	Condensing unit: refrigeration system whose capacity is ≤ 20 kW operating with one or two compressors installed in a separate machinery room, with a refrigerant that circulates from the machinery room to the refrigerated area and is designed to maintain an internal temperature ≥ -50°C	Chiller: air-conditioning system that has a compressor, an evaporator and a secondary coolant, other than an absorption chiller	Mobile refrigeration system: refrigeration system that is installed in, or normally operates in or in conjunction with, or is attached to a mean of transportation
USE	Commercial or industrial	Commercial or industrial	Commercial or industrial	Commercial or industrial	Commercial or industrial	Commercial or industrial
	Residential	Residential				
DATE	January 1, 2020	January 1, 2020	January 1, 2020	January 1, 2020	January 1, 2025	January 1, 2025
	January 1, 2025	January 1, 2025				
GLOBAL WARMING POTENTIAL (GWP) OF REFRIGERANT USED IN PRODUCT	700	1500	1500	2200	700	2200
	150	150				

REFRIGERANT DESTRUCTION IS REQUIRED IN CANADA

In Canada, destruction is required for refrigerant waste. This is managed under Refrigerant Management Canda (RMC). There are six steps to this process:

1. The owner contacts their equipment service contractor or a qualified refrigeration and air conditioning service contractor, who then recover the refrigerant in recovery cylinders
2. The contractor transports refrigerant to an RMC wholesaler
3. The wholesaler receives the refrigerant and records information
4. The collection service provider arrange for pickup of containers from the wholesaler
5. The collection service provider receives, tests, and stores refrigerant
6. The collection service provider tracks and reports on the movement of refrigerant

To find wholesalers, visit www.hrai.ca/rmc-wholesaler-locator

PROVINCE-SPECIFIC REGULATIONS

Specific provinces also have their own regulations when it comes to leaks and leak inspections.

BRITISH COLUMBIA

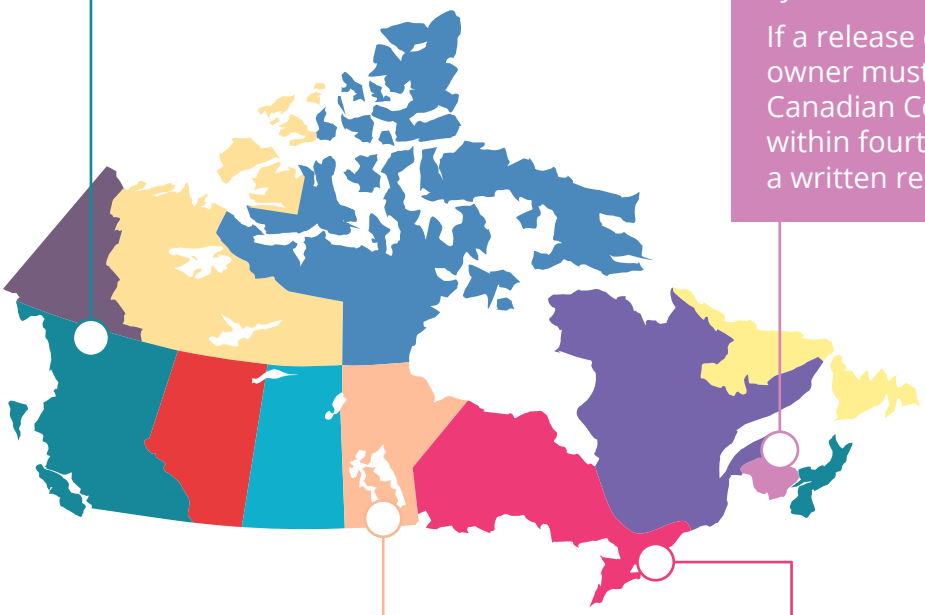
For air conditioning and refrigeration, system owners must perform a leak test. This must be done in accordance with the Code of Practice.

For any release of more than 10kg that is ozone depleting or halocarbon, system owners must report at least once every 30 days after a spill begins.

NEW BRUNSWICK

Any equipment having a motor rating of 3.00 horsepower or 2.24 kilowatts or more, except a heat pump that is owned by an individual must have certified leak test at least once. Results must be affixed to the system.

If a release exceeds 25 kg, the system owner must notify the Minister and the Canadian Coast Guard within 24 hours, and within fourteen days, deliver to the Minister a written report.



MANITOBA

For ODS systems, system owners must have a certified leak test in accordance with the Code of Practice

For a release of more than 10kg, system owners must report within one day on official leak report form and send to Manitoba Sustainable Development.

ONTARIO

For refrigeration systems, a system owner must have a leak test before the charge that is no more than 6 months old. This must be conducted in accordance with the Code of Practice.

If the discharge is 100 kg or more, the system owner must report as soon as possible to the Ministry of Environment.

PROVINCE-SPECIFIC INITIATIVES

In addition to the above specifics around leak inspections and releases for refrigeration and air conditioning systems, certain provinces have their own actions fighting climate change.

QUEBEC

Quebec has its own climate change action plan which includes OPTER, a refrigeration optimization plan that seeks to reduce HFCs. This is a program for the grocery industry, like GreenChill in the US. To take part, a building must:

- be used for commercial purposes
- house refrigerated installations (cold rooms, refrigerated counters, or others) that serve to preserve food (supermarket or equivalent)
- contain interior heated areas and a closed machinery/service room
- be equipped with a mechanical system (heating, ventilation)
- be equipped with an independent refrigeration system
- be located in the province of Quebec

In return for taking part in the program, buildings financial assistance for phasing down their use of HFCs.

MANITOBA

Manitoba has stratospheric ozone and climate protection programs, including the Manitoba ozone Depleting Substances and Other Halocarbons Regulation.

Key responsibilities for service technicians under the act include:

- An annual renewal of technician certification by June 1 of each year through MOPIA
- Record data sheets. The records should document the use of regulated substances for the period January 1 to December 31 of the previous year. Even if you have not used any regulated refrigerant or halon during the year, you need to record this within the database.
- Reporting of all leaks (intentional or not) that exceed 22 kg / 10 lbs. The technician working on a system containing a refrigerant gas (or halon) who discovers a leak must report the leak in their annual services records, but if over 22 lbs, it must be reported to Manitoba Sustainable Development on the same day of the incident or discovery.

PROVINCE-SPECIFIC REGULATIONS

Specific provinces also have their own regulations when it comes to leaks and leak inspections.

ALBERTA

For any refrigeration system, the system owner must conduct servicing procedures in accordance with Environment Canada Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems This means reporting a release with specific rules:

- The location and time of the release
- A description of the circumstances leading to the release
- The type and quantity of substance released
- The details of any action proposed or taken at the release site
- A description of the immediate surrounding area

System owners must also report any releases from any air conditioning.

QUEBEC

For refrigeration or air condition units with a power rating of 22 kW (6 tons of refrigerant) or greater, system owners must have a leak test – but it does not necessarily need to be certified. This must be done once a year.

For a release of more than 25kg, system owners must report immediately if the release contained liquid. If in a gaseous state, it must be reported within 24 hours.

For a release of more than 50kg, system owners must report within 30 days including:

- Cause of release
- A brief description of modifications or corrections made to the system

PROVINCE-SPECIFIC INITIATIVES

In addition to the above specifics around leak inspections and releases for refrigeration and air conditioning systems, certain provinces have their own actions fighting climate change.

ONTARIO

Ontario has the B-52 Mechanical Refrigeration Code.

This code provides requirements for the design, construction, installation, inspection, and maintenance of the mechanical refrigeration systems.

It applies mostly to ice rink facilities.

The code applies to all refrigeration systems installed in a new or existing premise. Each refrigeration system must have a permanent sign with:

- Name and address of installer
- Refrigerant type
- Lubricant type and amount
- Total weight of refrigerant required for normal operation
- Field test pressures applied
- Refrigerant capacity at design or nominal conditions
- For prime movers, the rate in kilowatts or full-load current and voltage

Systems with more than 45kg of refrigeration must have labeling with:

- The main electrical disconnect switches
- Any remote control switches
- Any pressure-limiting devices
- Each pressure vessel
- The main shut-off to each vessel

Systems with a prime mover or that exceed 124 kW (35 tons of refrigerant) must have information about precautions in case of a breakdown or leakage, including:

- Telephone number or first-response organization
- Instructions for shutting down the system
- The name, address, and phone numbers for obtaining service

There are certain maintenance requirements as well, including:

- Pressure-relief valves need to be replaced or recertified every five years
- Pressure-limiting devices need to be tested once every 12 months
- Leak detectors need to be tested
- Power and control electrical terminations must be checked every 12 months
- Must tag with the last test date

Trakref Helps Your Team Follow Canadian Regulations

All the rules and regulations mentioned above are embedded into our rules engine.

With our simplified drop-down menus, you can easily follow them and know exactly what steps are next in the case of regular maintenance or a leak.

Trakref also can report to the right government agencies right in the solution.

This way, you don't have to wonder what reports you need to fill out or where you need to send them – you can do them all right in our interface.

Trakref also helps you have the information you need for the TCFD framework.

Your technicians can do their work, and later when you need data for reporting, you can pull it from the information they input.

This includes information on Scope 1 emissions and information that you need to transform into financial data for investors.

If you're ready to partner with us, get in touch today at sales@trakref.com