GHG Reporting Methodology

2022

Issued by

Scotiabank's Real Estate Department

January 2023

Version 1.0

Contents

Background 3
1. Organizational Boundaries 3
2. Operational Boundaries 4
3. Application of Boundaries 5
4. Historical Years Comparison 5
5. Renewable Energy Certificates 6
6. Carbon Offsets 6
7. Data Sources and Quality 6
8. Reporting Absolute Emissions Results 7
9. Global Target Setting 8
10. Emission Factors 10
11. Glossary of Terms 13

Background

Scotiabank's corporate Real Estate Department ("RED") tracks utility consumption and greenhouse gas ("GHG") emissions for Scotiabank's global portfolio. Scope 1 and 2 emissions are tracked for all global locations operated by RED of behalf of all of Scotiabank and all its subsidiaries. Scope 3 emissions are globally tracked for: (i) business travel; and (ii) electricity grid transmission and distribution losses (T&D Losses).

Each year, RED prepares a GHG report, summarizing progress made in reducing energy and emissions across Scotiabank's global portfolio.

Scotiabank tracks emission trends from our selected 2016 baseline year, following the guidance of Corporate Standard and Scope 2 Technical Guidance of the GHG Protocol, to determine progress towards Scotiabank's emission targets.

This document details the current methodology used to track GHG emissions reported by Scotiabank for fiscal 2022 reporting year of November 1, 2021 through October 31, 2022 ("FY2022").

1. Organizational Boundaries

Organizational Boundaries define the approach to determine ownership or control over the energy and emissions reported for the property portfolio.

Scotiabank reports energy and emissions using the "Operational Control" approach. Operational Control is determined for each property and utility account. According to the GHG Protocol, Operational Control refers to when a company accounts for 100% of emissions from operations over which it, or one of its subsidiaries, has operational control. It does not account for GHG emissions from operations in which it owns an interest but has no control. Having Operational Control does not mean that a company necessarily has authority to make all decisions concerning an operation. Operational Control *does* mean that a company has the authority to introduce and implement its operating policies.

1.1 Scotiabank Properties

All properties (either owned or leased by Scotiabank) are reported on by RED using the Operational Control approach. Emissions are considered to be within the Operational Control approach, at locations where Scotiabank pays the utility company directly or pays the landlord for the sub-metered utility use, or where the utility bills are paid by the landlord for which emissions are proportionate for the share of Scotiabank's total gross leasable area (GLA).

1.1.1 Determining Responsibility for Emissions

The responsibility for emissions from utility consumption belongs to the party responsible for paying the utility costs. In general, utility accounts billed to Scotiabank, or their agents, are defined to be within Scotiabank's Operational Control.

1.1.2 Sub-metered Consumption

Sub-metered energy use is within the organizational boundary. Where sub-metering of Scotiabank's leased premises occurs, Scotiabank is directly responsible for the utility costs, which is a reasonable method for determining control. Where Scotiabank is a landlord and installs sub-meters for its third-party tenants, each tenant would be responsible for payment of the electricity consumed, such that Scotiabank would not be responsible for any associated emissions.

1.1.3 Where Landlord Pays

When landlords pay utility bills for properties that are leased by Scotiabank without separate sub- meters, Scotiabank is charged for utilities based on the proportionate share of the building's GLA. In this scenario, Scotiabank still has control for consumption by control devices.

2. Operational Boundaries

Operational boundaries define the parts of the operation, or "activities", for which emissions will be reported. There are 3 scopes of emissions reported for energy consumed across the portfolio, as well as for corporate travel.

2.1 RED Properties

Scope 1 Emissions are reported for heating fuel combustion (excluding steam and hydro purchasing) billed directly or indirectly from landlords to Scotiabank. Where Scotiabank has operational control over heating equipment, emissions associated with fuel combustion at source in the leased space are included in Scope
1. For oil, propane, and diesel, Scotiabank assumes purchased amounts during a period are equivalent to consumption.

Scope 2 Emissions are reported for purchased electricity and steam consumption that is consumed at properties where Scotiabank pays for utilities directly, or where utility use is sub-metered by the landlord and billed to Scotiabank. At locations where the landlord pays the utilities, Scotiabank is responsible for its proportionate share of the building's total GLA.

Scope 3 Emissions are reported for electricity T&D Losses.

2.2 Corporate Travel

Scope 1 Emissions are reported for Canadian field fleet vehicles and corporate jets, using the consumption-based method, as per the GHG Protocol, whereby consumption is multiplied by the appropriate emission factor to calculate emissions that are reported under Scope 1.

Scope 3 Emissions are reported for corporate air travel, using the distance-based method for air travel, as per the GHG Protocol, whereby the distance travelled is multiplied by the appropriate emission factor to calculate emissions that are reported under Scope 3 (Category 6: Business Travel per GHG Protocol).

2.3 Inventory Exclusions

The following emission sources are not included in the FY2022 reporting year: (i) rail; (ii) rental car; (iii) fugitive emissions from refrigerants; and (iv) personal vehicle travel.

3. Application of Boundaries

The following table summarizes the application of the operational and organizational boundaries detailed in sections 2 and 3 above:

Portfolio Segment	Bill Payment by	Scope 1	Scope 2	Scope 3
RED				
Heating Fuels (Directly Billed)	Scotiabank	X		
Heating Fuels (Scotiabank as Tenant)	Landlord	X		
Electricity/Steam (Directly Billed)	Scotiabank		X	
Electricity/Steam (Indirectly Billed)	Landlord		X	
Electricity T&D Losses*	Scotiabank/Landlord			X
Corporate Travel				
Corporate Jets	Scotiabank	X		
Canadian Field Fleet Vehicles	Scotiabank	X		
Business Air Travel	Scotiabank			X

* Electricity T&D Losses emissions are captured under Scope 3 based on GHG Protocol.

4. Historical Years Comparison

4.1 Base Year Selection

Scotiabank reports current year GHG emissions and for comparative purposes the three prior years a rolling basis. Scotiabank's GHG reduction target was set using a 2016 baseline.

4.2 Base Year Recalculation Policy

Going forward, Scotiabank will recalculate energy and emissions for the Base Year and each historical year, in keeping with GHG Protocol, to account for the following factors:

1. Spaces owned/occupied or emissions from other sources in past years, but previously excluded from scope;

2. Changes to the reporting methodology; and

3. Any strategic acquisition or divestment which significantly increases or reduces square footage by more than 10%.

5. Renewable Energy Certificates

Renewable Energy Certificates (RECs) evidence the rights to environmental benefits derived as a result of generating electricity from renewable sources.

Scotiabank is not currently purchasing or receiving RECs to offset its emission-causing electricity consumption globally. The reporting process leverages a location-based approach, that reflects the average intensity of grids on which energy consumption occurs and does not account for REC purchases or any other contractual instruments.

6. Carbon Offsets

Carbon Offsets (also known as "offset credits" or "verified emission reductions") represent the reduction, removal, or avoidance of GHG emissions from a specific project that is used to compensate for GHG emissions occurring elsewhere.

Scotiabank is not currently purchasing Carbon Offsets to cover its operational Scope 1, 2 and 3 Emissions globally.

7. Data Sources and Quality

The reported emissions data for Scotiabank's global portfolio falls into one of the following three categories with respect to data quality:

Validated	Utility bill data entered by RED's accounting group and International Finance groups. Canadian field fleet vehicles and business travel data is provided by third parties.
Non-Validated	Utility data provided by third parties (property managers, facility managers, landlords, etc.) in spreadsheet format.
Estimated	Canadian estimated consumption is based on each province's average intensity. International estimated consumption is based on each country's average intensity. Estimated consumption is then multiplied by the square footage of each property where no actual consumption data is available.

The FY2022 GHG Report calculation process includes:

- 10-Month Dataset - Utility data collection for ten months, starting from November 2021 to August 2022 for all portfolio segments (Canadian Branches and Offices, International Branches and Offices, etc.) except for Business Travel, corporate jets, and Canadian field fleet vehicles where full fiscal year data was used.

- 2-Month Dataset - Utility data for two months estimation (September and October 2022) is calculated by:

  1. Electricity: Using the average of ten months of actual data for every location and then multiplied by 2; and

  2. Gas/Oil/Propane/Steam: Using previous years' available data for the months of September and October. If the data is not available, we use provincial consumption averages per square foot for those two months, or the nearest provincial consumption averages.

- Full fiscal year data is calculated by adding the 10-month and 2-month datasets.

- Scotiabank-paid accounts:
  - Consumption data is obtained directly from the monthly utility bills that are entered by each country in a database. There are validation procedures to prevent incorrect data entry uploads, billing errors and consumption anomalies. Where issues are detected, the RED Sustainability team will contact the appropriate parties to ensure accuracy of the data for reporting purpose. Where verifiable data is not available, consumption is estimated based on each location's average intensity.

- Landlord-paid accounts:
  - Scotiabank requests that third party property managers enter consumption data from utility bills and submeters into a spreadsheet template. Data is then reviewed by the RED Sustainability team and compared to historical data and to other leased offices in the province/country to identify anomalies in energy consumptions. Where anomalous data is identified, Scotiabank follows up with landlords to check consumption amounts.

- Corporate Travel:
  Distances travelled are provided by our third party service providers in aggregate for each business unit and mode of transportation.

8. Reporting Absolute Emissions Results

Scotiabank reports its Absolute emissions on a four-year rolling basis for comparative purposes. Absolute emissions for Scope 1 and 2 Emissions are the metric used to determine Scotiabank's performance against its global GHG emissions reduction target against its 2016 base year.

8.1 Recalculation for Canadian Field Fleet Vehicles

Emissions from Canadian field fleet vehicles are captured in the FY2022 report, as a new measure and have been added to our scope on go forward.

8.2 Change for Methodology

Natural gas consumption from leased office locations was previously tracked under Scope 2. Going forward, Scotiabank will now track Natural Gas under Scope 1 following the GHG Protocol Operational Control approach.

Non-reported international portfolio estimation methodology was improved to capture more accurate data with respect to natural gas, which was not previously reported.

Electricity grid T&D losses emissions are now reported under Scope 3.
Corporate jets methodology was updated to improve accuracy by using actual fuel consumption, rather than average fuel consumption, which was previously used.

9. Global Target Setting

9.1 GHG Target Overview

In 2017, Scotiabank set a target to reduce its Canadian Absolute Scope 1 and 2 emissions by 10% by 2021, using the 2016 baseline. This target was achieved in FY2019.

In 2020, Scotiabank set a target to reduce its Global Absolute Scope 1 and 2 emissions by 25% by 10%, using the 2016 baseline. This target was achieved in FY2021.

Currently, Scotiabank has a target to reduce 35% of its Global Absolute Scope 1 and 2 emissions by 2030, using the 2016 baseline.

Absolute Scope 1 and 2 Emission Reduction (Baseline 2016)	Achieved in:
10% by 2021 (Canada)	2019
25% by 2025 (Global)	2021
35% by 2030 (Global)	TBD

9.2 Fixed Target Base Year Target and Saving Approach

Year	2016	2030
Scope 1 and 2 Target	Base	35%

9.3 Summary of Target Setting and Reporting Methodology

GHG Protocol: Steps in setting a GHG Target	Scotiabank Target Methodology	Alignment with GHG Protocol
1. Obtain senior management commitment	Commitment from RED SVP	Yes
2. Decide on the target type	Absolute Target	Yes
3. Decide on the target boundary	**Operations included:** Global Real Estate Portfolio Canadian Field Fleet Vehicles Corporate Jets Business Travel Electricity Grid T&D Losses **Activities Included:** Energy	Yes
4. Choose the base year approach	Fixed Target Base Year	Yes
5. Define the target completion date	Long-Term	Yes
6. Define the length of the target commitment period	Single Year Commitment Period	Yes
7. Decide on the use of offsets or credits	No	
8. Establish a target double counting policy	No	
9. Decide on the target level	35% by 2030 vs. 2016	Yes
10. Track and report progress	Scotiabank reports progress annually. Scotiabank recalculates previous years' emissions, where applicable, to remove the impact of: • spaces owned/occupied or emissions from other sources in past years but previously excluded from scope; and • changes to the reporting methodology	Yes

10. Emission Factors

Emissions were calculated using emission factors from publicly available sources, wherever possible. The following sections detail the emission factors used for Canada and other international countries with the source for each factor. Global Warming Potential (GWP) figures (CH4 and N2O) for natural gas in Canada (NIR), International (IEA) and DEFRA factors for business travel are based on IPCC fourth assessment report. GHG Protocol Stationary combustion tool emission factors are aligned with IPCC fifth assessment.

10.1 Canada

The following table provides the source for each emission factor used:

Utility Type	Province	Factor	Unit	Source
Electricity	AB	0.0005900	tCO2e/KWh	National Inventory Report 1990-2020: Greenhouse Gas Sources and Sinks in Canada (2022)
	BC	0.0000073		
	MB	0.0000011		
	NB	0.0002900		
	NL	0.0000240		
	NS	0.0006700		
	ON	0.0000250		
	PE	0.0000020		
	QC	0.0000015		
	SK	0.0005800		
	YT	0.0001000		
	NT	0.0001800		
Natural Gas	AB	0.0019734	tCO2e/KWh	National Inventory Report 1990-2020: Greenhouse Gas Sources and Sinks in Canada (2022)
	BC	0.0019774		
	MB	0.0019264		
	NB	0.0019324		
	NL	0.0019324		
	NS	0.0019324		
	ON	0.0019324		
	PE	0.0019324		
	QC	0.0019374		
	SK	0.0019314		
	YT	0.0019774		
	NT	0.0019774		
Oil	Canada	0.00269	tCO2e/KWh	GHG Protocol Stationary combustion tool (Version4-1)
Propane	Canada	0.00162	tCO2e/KWh	GHG Protocol Stationary combustion tool (Version4-1)
Steam	Canada	76.6	gCO2/lb	Enwave Toronto District Steam

10.2 International

Country	Electricity Factor (tCO2e/KWh)	Gas Factor (tCO2/m3)	Oil Factor (tCO2/Liter)	Propane Factor (tCO2/Liter)	Diesel Factor (tCO2/Liter)	Source
Australia	0.0006878	0.00189	0.00269	0.00162	0.00269	IEA (International Energy Agency) considering CH4 and N2O factors. For Oil, Diesel and Propane, GHG Protocol Stationary combustion tool (Version4-1).
Bahamas	0.0001847					
Brazil	0.0001044					
Cayman Islands	0.0001847					
China	0.0006257					
England	0.0002104					
Guyana	0.0001847					
India	0.0007261					
Ireland	0.0002954					
Japan	0.0004888					
Malaysia	0.0006649					
Singapore	0.0003866					
Turks And Caicos Islands	0.0001847					
United States	0.0003839					
Chile	0.000443600					
Costa Rica	0.000006200					
Colombia	0.000192700					
Dominican Republic	0.000589200					
Jamaica	0.000653000					
Mexico	0.000398400					
Panama	0.000415800					
Peru	0.000202200					
Trinidad Tobago	0.000564800					
Uruguay	0.000012200					

10.3 Travel

Mode of Transportation	Emission Factor	Unit	Source
Car (Tier 2 Gasoline)	0.002317	tCO2e/Liter of fuel	National Inventory Report 1990-2020: Greenhouse Gas Sources and Sinks in Canada (2022)
Long Distance - Business	0.42882	tCO2e/km	Government GHG Conversion Factors for Company Reporting (DEFRA, 2021) USA Environmental Protection Agency Emission Factors (EPA, 2021)
Long Distance - Economy	0.14787		
Long Distance - First	0.59147		
Long Distance - Premium	0.23659		
Long Distance - Others	0.19309		
Medium Distance - Business	0.22652		
Medium Distance - Economy	0.15102		
Medium Distance - Other	0.15353		
Short Distance - All	0.24587		
Jets Fuel	0.001415	lb CO2/lb fuel	GHG Protocol Stationary combustion tool (Version4-1)

11. Glossary of Terms

Base Year	The earliest year selected for inclusion in reporting, for comparative purposes, as per Section 5
CO2e	Carbon Dioxide equivalent
gCO2e	Grams of Carbon Dioxide equivalent
tCO2e	Metric tons of Carbon Dioxide equivalent
GHG	Greenhouse Gases, for the purposes of this report: CO2, CH4, N2O
GWP	Global Warming Potential
IPCC	The Intergovernmental Panel on Climate Change
KWh	Kilowatt-hours of electricity
m3	Cubic meter
REC	Renewable Energy Certificate
RED	Real Estate Department
T&D Losses	Transmission and Distribution losses for electricity grid
Scope 1	Direct GHG emissions occur from sources that are owned or controlled by the company
Scope 2	Indirect GHG emissions occur from the generation of purchased electricity consumed by the company.
Scope 3	Scope 3 is an optional reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the company but occur from sources not owned or controlled by the company.