



Retail GHG Emissions Factors, Data & Methodology Matrix

This matrix provides a summary of some sources for greenhouse gas (GHG) emissions factors, data and methodology relevant to retailers who are developing a company GHG inventory, as aligned with the [GHG Protocol](#) scope categories. Please note this list is not exhaustive and is a working document.

Thank you to RILA members and [EPA's Center for Corporate Climate Leadership](#) for reviewing and providing suggestions!

Note about "Retail Relevance" -- While a category may be potentially relevant to all retailers, each organization should undergo a relevance assessment (as described in scope 3 [GHG Protocol](#) methodologies) to determine which sources should be reported.

See a resource that you would suggest adding? Please contact Erin Hiatt at erin.hiatt@rila.org.

Scope 1 Emissions:

Emissions Source	Name	Summary of Guidance	Guidance Type (Emission Factors / Data/ Methodology)	Retail Relevance
Company Facilities (e.g., retail stores, distribution centers, corporate offices and for some, manufacturing facilities.)	WRI GHG Protocol	Leading guidance for tracking and accounting all GHG emissions (facilities and vehicles)	Methodology	All retailers
	EPA GHG Emission Factors Hub	Easy-to-use set of default emission factors for organizational greenhouse gas reporting, includes scope 1, 2 and select scope 3 sources	Emission Factors	All retailers

Emissions Source	Name	Summary of Guidance	Guidance Type (Emission Factors / Data/ Methodology)	Retail Relevance
Company Vehicles	EPA Direct Emissions from Mobile Combustion Sources	Document used to identify and estimate direct GHG emissions associated with fuel combustion in owned or operated mobile sources	Methodology	All retailers

Scope 2 Emissions:

Emissions Source	Name	Summary of Guidance	Guidance Type (Emission Factors / Data/ Methodology)	Retail Relevance
Purchased electricity, steam, heating & cooling for own use	EPA Emissions & Generation Resource Integrated Database (eGRID)	Emissions associated with electricity generation in the United States by grid region	Emission Factors	All retailers
	EEI Electric Company Carbon Emissions and Electricity Mix Reporting Database	Supports corporate sustainable reporting by providing electricity provider carbon intensity emissions rates	Emission Factors	All retailers
	The Climate Registry	Repository for supplier specific emission factors for use in market-based emissions quantification. These factors follow the TCR protocols which are built on GHG Protocol	Emission Factors	Only for Climate Registry Members

Scope 3 Emissions:

 = Upstream Emissions  = Downstream Emissions

Emissions Source	Name	Summary of Guidance	Guidance Type (Emission Factors / Data/ Methodology)	Retail Relevance
All Scope 3	Corporate Value Chain (Scope 3) Standard	Guidance for full value chain emissions upstream and downstream. Note: Use in complement to all the calculation guidance documents linked below.	Methodology	All Retailers
Purchased Good and Services	GHG Protocol Category 1: Purchased Goods and Services	Guide to calculating upstream (i.e., cradle-to-gate) emissions from the production of products purchased or acquired by the reporting company in the reporting year	Methodology	All Retailers
	Sustainable Apparel Coalition Higg Index	Standardized tool to assess value chain sustainability	Methodology/ Supplier Data	Only for SAC Members
	US Environmentally-Extended Input-Output (USEEIO)	A lifecycle analysis that melds data from economic transactions with environmental indicators, appropriate for purchased goods and services and capital goods.	Emission Factors	All Retailers
Capital Goods	GHG Protocol Category 2: Capital Goods	Guide to calculating upstream emissions from the production of capital goods acquired by the reporting company in the reporting year	Methodology	All Retailers

Emissions Source	Name	Summary of Guidance	Guidance Type (Emission Factors / Data/ Methodology)	Retail Relevance
Fuel and Energy Related Activities	GHG Protocol Category 3: Fuel and Energy Related Activities Not Included in Scope 1 or 2	Guide to calculating fuel and energy related emissions outside of Scope 1 and 2	Methodology	All retailers
	The Greenhouse gases, Regulated Emissions, and Energy use in Technologies Model (GREET)	Fuel and electricity upstream environmental impact tool	Tool/ Emission Factors	All Retailers (advanced users)
Transportation and Distribution	GHG Protocol Category 4: Upstream Transportation and Distribution (See EPA Emission Factors Hub for transportation emission factors)	Guide to calculating emissions from transportation of products and services from suppliers	Methodology	All Retailers
	Global Logistics Emissions Council (GLEC) Framework	Harmonized calculation and reporting of the logistics GHG footprint across the multi-modal supply chain	Methodology	All Retailers

Emissions Source	Name	Summary of Guidance	Guidance Type (Emission Factors / Data/ Methodology)	Retail Relevance
Waste Generated in Operations	GHG Protocol Category 5: Waste Generated in Operations (See EPA Emission Factors Hub for waste emission factors)	Guide to calculating emissions from third-party disposal and treatment of waste (solid and wastewater) generated in the reporting company's owned or controlled operations in the reporting year	Methodology	All Retailers
Business Travel	GHG Protocol Category 6: Business Travel (See EPA Emission Factors Hub for business travel emission factors)	Guide to calculating emissions from all employee travel in third-party owned vehicles (taxi, aircraft, train, etc.)	Methodology	All Retailers
	ICAO Air Emissions Calculator	Tool for calculating emissions from employee air travel	Methodology	All Retailers
Employee Commuting	GHG Protocol Category 7: Employee Commuting (See EPA Emission Factors Hub for passenger travel emission factors)	Guide to calculating emissions for employees from their homes to their worksites	Methodology	All Retailers

Emissions Source	Name	Summary of Guidance	Guidance Type (Emission Factors / Data/ Methodology)	Retail Relevance
Leased Assets	GHG Protocol Category 8: Upstream Leased Assets	Guide to calculating emissions from the operation of assets that are leased by the reporting company in the reporting year	Methodology	Retailers that Operate Leased Assets
Transportation and Distribution	GHG Protocol Category 9: Downstream Transportation and Distribution (See EPA Emission Factors Hub for transportation emission factors)	Guide to calculating emissions that occur in the reporting year from transportation and distribution of sold products in vehicles and facilities not owned or controlled by the reporting company	Methodology	All Retailers
	Global Logistics Emissions Council (GLEC) Framework	Harmonized tool for calculating and reporting the logistics GHG footprint across the multi-modal supply chain	Methodology/ Emission Factors	All Retailers
Processing of Sold Products	GHG Protocol Category 10: Processing of Sold Products	Guide to calculating emissions from processing of sold products through site-specific and average data methods	Methodology	All retailers

Emissions Source	Name	Summary of Guidance	Guidance Type (Emission Factors / Data/ Methodology)	Retail Relevance
Use of Sold Products	GHG Protocol Category 11: Use of Sold Products	Guide to calculating emissions from the use of goods and services sold by the reporting company in the reporting year including the Scope 1 and Scope 2 emissions of end users	Methodology	All Retailers
	Exiobase	Multi-Regional Environmentally Extended Supply-Use Table (MR-SUT) and Input-Output Table (MR-IOT)	Data and Methodology	All Retailers
	ENERGY STAR Scope 3 Use of Sold Products Analysis Tool	Benchmarking and scenario analysis of emissions from sold ENERGY STAR products	Data and Methodology	Retailers who sell ENERGY STAR certified products
End-of-life Treatment of Sold Products	GHG Protocol Category 12: End-of-Life Treatment of Sold Products	Guide to calculating emissions from the waste disposal and treatment of products sold by the reporting company in the reporting year at the end of their life	Methodology	All Retailers

Emissions Source	Name	Summary of Guidance	Guidance Type (Emission Factors / Data/ Methodology)	Retail Relevance
	EPA Waste Reduction Model WARM (See EPA Emission Factors Hub for transportation emission factors which are more aligned with the boundary of corporate reporting)	Helps organizations track and voluntarily report GHG reductions, energy savings, and economic impacts from several different waste management practices. Note: Designed for waste reduction but applicable for End-of-Life	Data/Methodology	All Retailers
Leased assets	GHG Protocol Section 13: Downstream Leased Assets	Guide to calculating emissions from the operation of assets that are owned by the reporting company (acting as lessor) and leased to other entities in the reporting year	Methodology	Retailers who are Lessors of Leased Assets
Franchises	GHG Protocol Category 14: Franchises	Guide to calculating emissions from the operation of franchises not included in scope 1 or scope 2	Methodology	All Retailers with Franchises
Investments	GHG Protocol Category 15: Investments	Guide to calculating emissions associated with the reporting company's investments in the reporting year (both companies that make an investment and those which provide financial services)	Methodology	All Retailers

Last Updated: July 22, 2021

About the RILA's Retail Compliance Center: The [Retail Compliance Center](#) (RCC) provides resources on environmental compliance and sustainability for all types and sizes of retailers. The RCC's goal is to develop retail-specific resources, tools and innovative solutions to help companies cost-effectively improve their compliance and environmental performance.