

Carbon Footprinting

Introduction

ISS STOXX's unique and powerful approach to measuring the climate impact of investment portfolios delivers the largest coverage, highest data quality and most transparent analysis in the market that is both standardized and can be customized to your specific needs.

The methodology was developed over three years with the Swiss Federal Institute of Technology and includes about 800 sector and sub-sector specific models – allowing ISS STOXX's researchers to calculate the GHG emissions of companies based on those criteria that are most relevant to their line of business. Most of today's market basics go back to this original approach: how to link greenhouse gas emissions to equity (and later credit) investors, how to think about double counting, how to differentiate between absolute emissions and a footprint relative to the investment size.

This document provides an overview of the steps taken by the ISS STOXX's team of climate change experts to measure the carbon footprint of public equity and corporate fixed income portfolios. Fundamental to the process was the development of a methodology that can assess the credibility of reported emissions data, classify companies by their greenhouse gas profiles, rather than economic sectors, and to model greenhouse gas emissions for non-reporting companies in a credible manner.

A summary of the process is provided below:

1. Self-reported emissions data is collected from all available sources.
2. Self-reported numbers are evaluated for trustworthiness and, where necessary, discarded.
3. All companies are classified according to their carbon-profile, allowing ISS STOXX to benchmark non-reporting companies against their reporting peers.
4. ISS STOXX applies its 800 sub-sector specific models to estimate the emissions of non-reporting companies according to sector-relevant financial or operations metrics.
5. Scope 3 emissions of each company are assessed based on the sector profile of the company.
6. Emissions of holdings are allocated to the portfolio according to an investor ownership logic.

Calculating Scope 1 & 2 GHG Emissions

Self-Reported Emissions Data

As a first step, ISS STOXX collects all publicly available self-reported greenhouse gas emissions data. Common sources include Corporate Sustainability Reports, CDP, Investor Relations, and other company communication and manually researched data.

Traceability of each individual data point is ensured, so that all future calculations can be linked to a specific data source.

Validating Self-Reported Data

Once self-reported emissions data from all available sources is collected, the data is then tested for trustworthiness. This is done through a combination of quantitative and qualitative analysis.

For the first step, ISS STOXX has developed a quantitative rating, referred to here as the “Trust Metric”, to assess the reliability of self-reported data.

If ISS STOXX’s analysts, after manually reviewing the data, do not find the self-reported numbers to be reliable, estimated emissions numbers will be used instead.

Emission Estimations of Non-Reporting Companies

To fill reporting gaps, non-reporting companies are benchmarked against their reporting peers. Industry peers are identified using a proprietary industry classification system based on their carbon-profile.

In a second step, every industry sub-sector gets statistically analyzed to identify the best emission predictors. ISS STOXX applies a statistical regression analysis, which allows ISS STOXX to determine the predictive power of different metrics for particular carbon sub-sectors.

Therefore, while most conventional approaches usually take as a proxy one key financial metric, ISS STOXX’s models are based on those key financial and operational metrics that are most relevant to that sub-sector.

These ‘emission predictors’ are then applied to all companies that either do not report emissions or fail ISS STOXX’s quality validation.

Calculating Scope 3 GHG Emissions

Self-Reported Emissions Data

Scope 3 emissions reporting remains a challenge. Even where Scope 3 emissions are disclosed by companies, many relevant categories are excluded due to complexities in calculations and lack of data availability. Therefore, even the self-reported company data needs to be integrated with care to provide a consistent data set for investors.

In cases where the relevant GHG categories for a company are excluded without a valid explanation, the Scope 3 data is deemed unreliable. In these instances, ISS STOXX instead provides approximated Scope 3 values in lieu of the reported numbers.

Emission Estimations of Non-Reporting Companies

ISS STOXX uses a combination of approaches to estimate the upstream and downstream Scope 3 emissions of companies. Table 1 provides the overview of the Scope 3 emission estimation approaches used for companies in the ISS STOXX climate universe. A unified upstream approach based on Environmentally Extended Input Output models (EEIOs) is used with downstream approaches that vary based on the type of sector and data availability. The order of preference for the downstream approach is based on the accuracy and proximity in representing the operations and emission profile of the underlying company.

Table 1: Overview of Scope 3 emission estimation approaches

UPSTREAM	DOWNSTREAM	EXAMPLE SECTORS
Emission Multipliers from EEIO Models	Bottom-Up Approach: Output production or a proxy (E.g.: revenue) used with standardized emission factors.	Oil & Gas Extraction Coal Mining Auto manufacture
	Product Profile Top-Down Approach: Downstream emission ratios from EPDs and LCAs ¹ used for a standardized product profile	Manufacturing Cement Electronics Electricals
	Peer Top-Down Approach: Emission profile of representative peers with high quality disclosure for diversified or low impact sectors	Chemicals Services Wholesale and Retail Real Estate
	Sub-category 15 approximations: modelled after the Average-data method recommended by the GHG Protocol	Financials

Calculation of Carbon Metrics

ISS STOXX provides metrics that are used by investors to present the results of a carbon footprint. To calculate accurate intensities, measurement and financial information used must be consistent.

Below are three commonly used metrics for investment portfolios²:

Financed Emissions: this metric calculates the emissions financed through investments and loans. It helps to answer the question of “what emissions are associated with my investments” using an attribution factor.

Emissions per million invested: this metric measures how many tons of CO₂e an investor would finance in relation to the respective ownership in a certain company or portfolio. Ownership is here defined as a proportion of a company’s market cap or EVIC.

¹ EPD - Environmental product declarations & LCA - Life Cycle Analysis

² Please refer to the Climate Impact Report Methodology

Carbon Footprinting

Methodology and Research Process

Emission Intensity: the metric aims to describe the greenhouse gas efficiency of underlying companies by linking scope 1&2 emissions to their revenues. This can also be provided individually for each issuer.

Weighted Average Carbon Intensity: This is a key metric derived directly from the TCFD recommendations. The metric calculates a portfolio's exposure to carbon-intensive companies, expressed in tCO₂e/million revenue. It is calculated as the sum of companies' emission intensities over revenues, weighed by each company position weight (investment over total portfolio value).

Cycle of Update

Emissions are updated annually.

Use of Estimated Data

ISS STOXX Climate Solutions uses estimated or modelled data if disclosed data is deemed by ISS STOXX to be insufficient or inadequate.

For companies which do not disclose emissions, and those who report with a low Trust Metric (according to internal analysis conducted by ISS STOXX), emissions data is modelled.

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ISS STOXX Sustainability enables investors to develop and integrate responsible investing policies and practices, engage on responsible investment issues, and monitor portfolio company practices through screening solutions. It also provides climate data, analytics, and advisory services to help financial market participants understand, measure, and act on climate-related risks across all asset classes. In addition, our Sustainability solutions cover corporate and country research and ratings enabling its clients to identify material social and environmental risks and opportunities. Sustainability solutions are provided by Institutional Shareholder Services Inc., an investment adviser registered under the U.S. Investment Advisers Act of 1940.

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