

GICS Sector GHG Average Dataset

Methodology

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Terms and Definitions

Greenhouse gases: Greenhouse gases are gases that trap heat in the Earth's atmosphere, contributing to the greenhouse effect and global warming. The main greenhouse gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases.

Direct Emissions: Greenhouse gas emissions from sources that are owned or controlled by the reporting entity. This equates to GHG Protocol Scope 1 but it broadens the scope to cover an additional three greenhouse gases.

First Tier Indirect: Greenhouse gases emitted by the direct suppliers to a company. The most significant sources are typically purchased electricity (Scope 2 of the GHG Protocol) and employees' business air travel.

Scope 1: Greenhouse gas emissions generated from burning fossil fuels and production processes which are owned or controlled by the company.

Scope 2: Greenhouse gas emissions from consumption of purchased electricity, heat or steam by the company.

Scope 3 downstream: Downstream indirect greenhouse gas emissions associated with the use of sold goods and services.

Scope 3 upstream: Other upstream indirect greenhouse gas emissions, such as from the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g. T&D losses) not covered in Scope 2, outsourced activities, waste disposal, etc.

Total Indirect: The sum of Scope 2 and Scope 3 upstream emission.

Introduction and Context

The GICS Sector GHG Average Dataset presents yearly average emissions across the four GICS levels – Subindustry, Industry, Industry Group and Sector. The data solution provides intensity emission levels (tCO₂e per USD million) for each business activity in the four GICS level for the following type of emissions: *Direct Emissions, First Tier Indirect, Scope 1, Scope 2, Scope 3 downstream, Scope 3 upstream, Total Indirect*

Data Sources and Collection

The estimation of the GICS Sector GHG Average Dataset leverages on the Trucost Environmental data developed by S&P Global Sustainable1. The data provides robust, quality-checked, and standardized environmental data on more than 16,000 companies. Based on its Extended Environmental Input-Output model (EEIO), the Trucost Environmental dataset measures environmental impact across key dimensions on the environmental topics: Carbon - Greenhouse gas (GHG) emissions; Land, water, air pollutants, and waste disposal; Natural resource and water use; and, Fossil fuel reserves, power generation capacity & associated carbon metrics. In addition, the methodology leverages the Trucost Sector Revenue dataset which provides sector-level revenues for the universe of +16,000 companies.

Methodology Overview

The GICS average emissions are calculated based on actual and estimated company level data collected from CSR, sustainability reports, and other documentation. The company level emission data is then transformed from company level

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to sector level estimates leveraging sector-level revenues and in-house pollutant specific Estimation Factors that are updated on a yearly level.

The process for the creation of the GICS Sector GHG Average Dataset follows these steps:

1. From company level to company-sector level emission: Company-level emissions are estimated at the company-Trucost business activity level using the revenue at sector level and pollutant-specific estimation factors estimates. These estimates are weighted against the company total emissions (disclosed or estimated) to calculated sector level company emissions.
2. From company-sector to sector level transformation: Revenues and emissions are summed at the Trucost Business Activity level.
3. From company-Trucost sector level to GICS level intensities: Trucost Business Activity level are mapped and aggregated for each of the different GICS levels. For each GICS level, the sum of the emissions is divided by the sum of revenues to calculate the relevant intensities.

Based on the approach above, the methodology estimates the GICS average emissions for all the GICS levels. The GICS average (EFs) are calculated for the following types of emissions.

- EF_Direct Emissions (tCO₂e/\$mn): Greenhouse gas emissions from sources that are owned or controlled by the reporting entity. This equates to GHG Protocol Scope 1 but it broadens the scope to cover an additional three greenhouse gases.
- EF_First Tier Indirect (tCO₂e/\$mn): Greenhouse gases emitted by the direct suppliers to a company. The most significant sources are typically purchased electricity (Scope 2 of the GHG Protocol) and employees' business air travel.
- EF_Scope 1 (tCO₂e/\$mn): Greenhouse gas emissions generated from burning fossil fuels and production processes which are owned or controlled by the company.
- EF_Scope 2 (tCO₂e/\$mn): Greenhouse gas emissions from consumption of purchased electricity, heat or steam by the company.
- EF_Scope 3 downstream (tCO₂e/\$mn): Downstream indirect greenhouse gas emissions associated with the use of sold goods and services.
- EF_Scope 3 upstream (tCO₂e/\$mn): Other upstream indirect greenhouse gas emissions, such as from the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g. T&D losses) not covered in Scope 2, outsourced activities, waste disposal, etc.
- EF_Total Indirect (tCO₂e/\$mn): The sum of Scope 2 and Scope 3 upstream emission.

Monitoring and Review

The model and its outcomes are subjected to an annual analysis, which involves a comparison of results from one year to the next. This process is aimed at discerning the underlying factors responsible for shifts in results and at evaluating any anomalies or possible inaccuracies within the calculations. The analysis aims to ensure the integrity and accuracy of the model over time, considering potential changes in data quality, reporting standards, and other relevant factors.

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All new methodologies and any material changes to existing methodologies are reviewed and approved by an independent methodology governance committee.

Updates

The methodology and outcomes are reviewed on a yearly basis.

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