

S&P

Trucost Environmental Data Research Process & Case Studies

25 May 2024

S&P Global is Investing in ESG

We have strengthened our ESG offering over decades, most recently with the acquisitions of Trucost, SAM and The Climate Service, and the launch of our dedicated Sustainable1 organization.

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- 1999 S&P Dow Jones Indices and RobecoSAM create Dow Jones Sustainability Indices, the worlds first ESG index
 - 2015 S&P Global acquires Trucost
 - 2019 S&P Global acquires SAM ESG ratings business from RobecoSAM
 - 2021 S&P Global launches [Sustainable1](#)
 - 2022 S&P Global acquires The Climate Service
 - 2022 S&P Global merges with IHS Markit

Sustainable Solutions **For Every Need**

We offer a comprehensive suite of solutions across our six divisions, all coordinated with the support of our dedicated Sustainable 1 organization.



We Aim to be the **Standard**

Our relationships within the financial community and the depth and breadth of our solutions empower the multi-faceted decisions that help manage risk and create positive impact in the real world.

Recognitions

	<p>Best Smart Beta Index Provider - Americas</p>	<p>2021 Best ESG Index Provider</p>	<p>Best Smart Beta Index provider</p>
	<p>Best Index Provider</p>	<p>Best Index Provider for ETFs</p>	<p>Index Provider of the year</p>
	<p>Best ESG Index provider</p>	<p>Manager of the year - innovation</p>	<p>Innovation Research</p>
	<p>A+ For all seven investment categories</p>		

Associations



About our data



Breadth & Depth of our Data

1

ESG Performance

S&P Global ESG Scores
Business Involvement Screens
Sovereign ESG

2

Environmental Exposure

Environmental Register
Sector Average Emissions
Sovereign Data

3

Climate Scenario Analysis

Paris Alignment
Carbon Earnings at Risk
Physical Risk
Climanomics Real Assets

4

Positive Impact & Compliance

EU Taxonomy Alignment
SFDR Compliance
SDGs Alignment
Green Bonds Data

5

Credit Risk

Climate Credit Analytics
Climate RiskGauge

Trucost Data

Research Process Introduction

S&P Global

Checking and Cleaning Environmental Data to Correct Disclosure Errors

Environmental Data Disclosure Gaps

During the last environmental reporting cycle, we uncovered and corrected errors in 35% of company disclosure through our annual research engagement with 15,000 companies representing 99% of global market capitalization. Our analysts engaged personally with companies to correct 2,680 reporting errors in 1,777 company disclosures.

- 1

516
Disclosure not align with GHGP

Example
- 2

68
Disclosure is partial

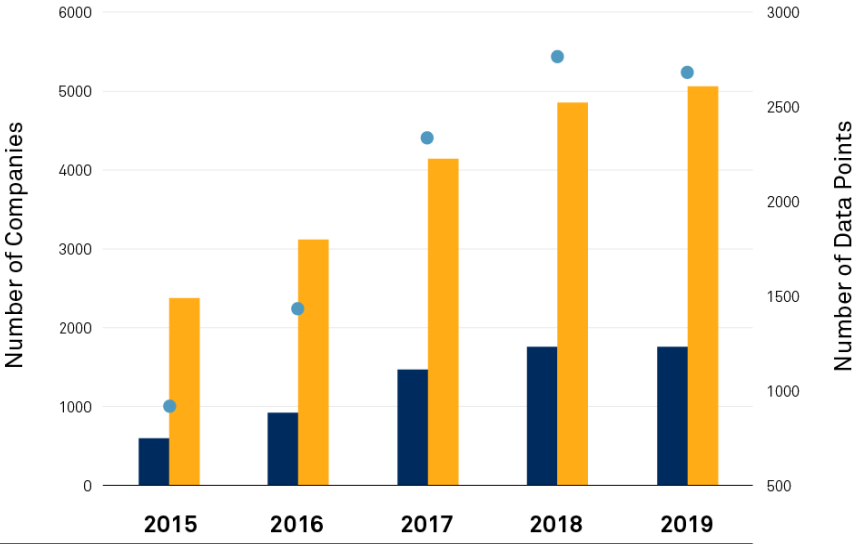
Example
- 3

365
Disclosure of energy use not GHG

Fuel use
- 4

162
Disclosure contains errors or inconsistencies

Quality Check



	2015	2016	2017	2018	2019
No. of Company Disclosures Adjusted	617	930	1484	1766	1777
No. of Companies Disclosing	2380	3112	4132	4844	5047
No. of Data Points Adjusted	925	1441	2338	2766	2680

Source: S&P Global Trucost data as of June 24, 2021. For illustrative purposes only.

Trucost Environmental Data Research Process

1 Financial Report Analysis

Financial and business information analysis

- Collect information of business segments and revenues
- Map the business segments into our Trucost 464 activities

2 EEIO Modelling

Input data into EEIO Model

- Quantify the corporate operation emissions and the supply chain emissions

3 Disclosed Data Collection

Collect the latest environmental data

- Collect, clean the disclosed data
- Observe the data gaps between disclosed data and modelled data
- Qualified data will be put into system

4 Corporate Engagement

Engage and Verify

- Trucost will provide the specific online portal to corporate to provide more information.

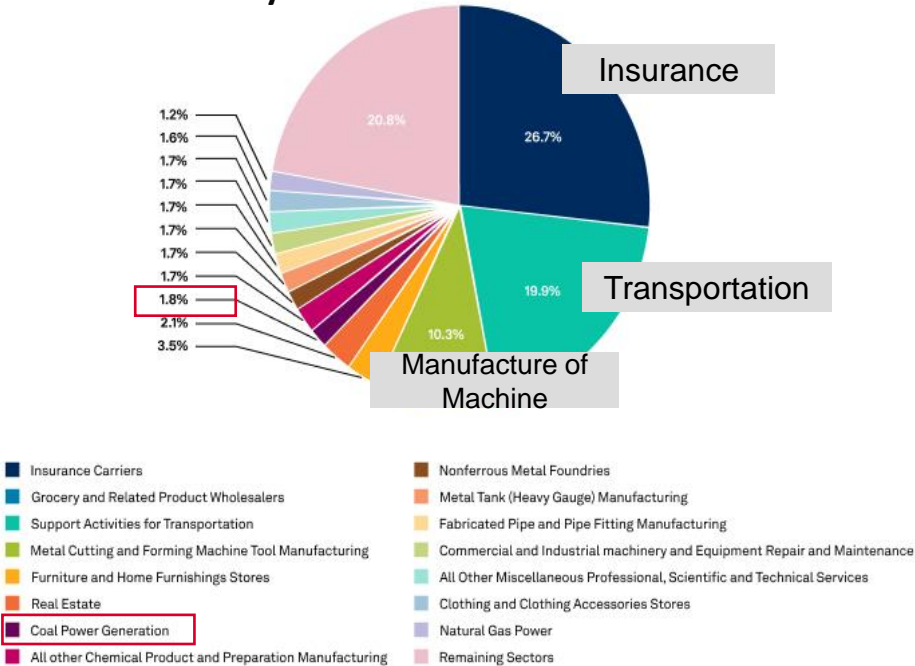
EEIO Model

Trucost’s EEIO is our core environmental profiling model for estimating the environmental impacts across company operations and supply chain tiers right back to primary resource extraction, secondary processing, and final product assembly. This is done in the absence of company disclosure.

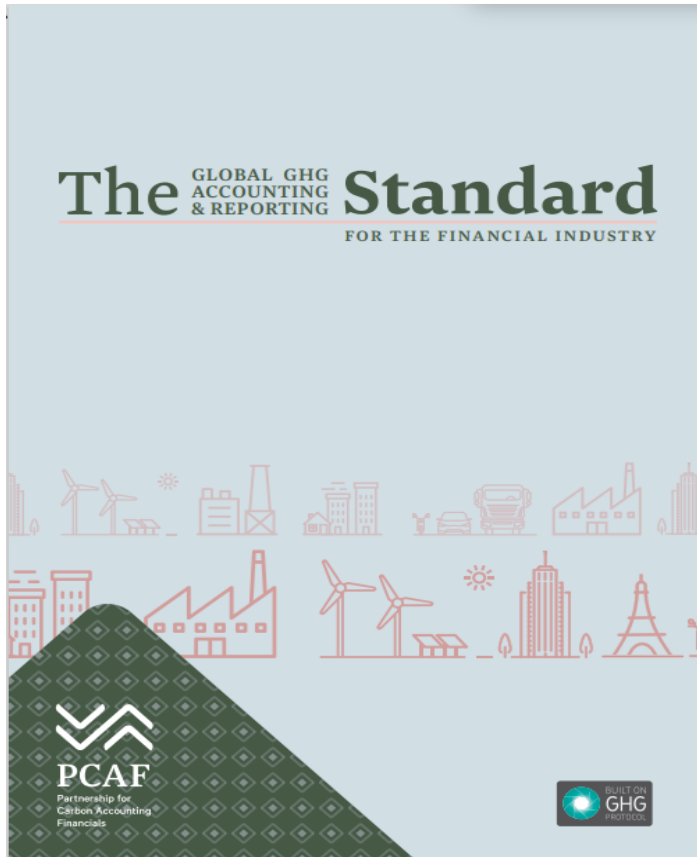
Trucost’s EEIO model enables us to estimate environmental impacts for a company’s own operations and across its entire global supply chain, associated with approximately 500 distinct industry sectors across over 100 environmental key performance indicators (KPIs).

- Unlike marking a company with an industry and calculating it through the industry’s direct use of EEIO, the degree of detail of the business activities in the Trucost EEIO model can capture the emissions of enterprises, and for each enterprise, it will be split into multiple production and operation activities according to its source of revenue.

图： Berkshire Hathaway’s Business Activities



Trucost Environmental Data is Recognized by PCAF



EEIO Model is admitted by PACF

Option 3: Economic activity-based emissions, where emissions are estimated by the reporting financial institution based on economic activity data collected from the borrower or investee company (e.g., euro of revenue or euro of asset) and then allocated to the reporting financial institution using the attribution factor. The emissions data should be estimated using official statistical data or acknowledged **EEIO** tables providing region- or sector-specific average emission factors expressed per economic activity (e.g., tCO₂e/€ of revenue or tCO₂e/€ of asset).⁹⁰

Trucost is one of recognized data providers by PCAF.

Trucost data vs. PCAF Mapping

All sources are displayed in CIQ Pro

PCAF data quality and Trucost data is mapped

Table 5-5. General description of the data quality score table for business loans and unlisted equity⁹²

(score 1 = highest data quality; score 5 = lowest data quality)

Data Quality	Options to estimate the financed emissions	When to use each option
Score 1	Option 1: Reported emissions	1a Outstanding amount in the company and total company equity plus debt are known. Verified emissions of the company are available.
		1b Outstanding amount in the company and total company equity plus debt are known. Unverified emissions calculated by the company are available.
Score 2	Option 2: Physical activity-based emissions	2a ⁹³ Outstanding amount in the company and total company equity plus debt are known. Reported company emissions are not known. Emissions are calculated using primary physical activity data for the company's energy consumption and emission factors ⁹⁴ specific to that primary data. Relevant process emissions are added.
		2b Outstanding amount in the company and total company equity plus debt are known. Reported company emissions are not known. Emissions are calculated using primary physical activity data for the company's production and emission factors specific to that primary data.
Score 3		
Score 4	Option 3: Economic activity-based emissions	3a Outstanding amount in the company, total company equity plus debt, and the company's revenue ⁹⁵ are known. Emission factors for the sector per unit of revenue are known (e.g., tCO ₂ e per euro of revenue earned in a sector).
		3b Outstanding amount in the company is known. Emission factors for the sector per unit of asset (e.g., tCO ₂ e per euro of asset in a sector) are known.
Score 5		3c Outstanding amount in the company is known. Emission factors for the sector per unit of revenue (e.g., tCO ₂ e per euro of revenue earned in a sector) and asset turnover ratios for the sector are known.

Trucost Data Source	PCAF Data Quality	PCAF Data Estimation Option
Exact Value from personal communication	1 or 2	1a or 1b
Exact Value from Annual Report/10K/Financial Accounts Disclosure	1 or 2	1a or 1b
Exact Value from Environmental/CSR	1 or 2	1a or 1b
Exact Value from CDP	1 or 2	1a or 1b
Value derived from data provided in personal communication	1 or 2	1a or 1b
Value derived from data provided in Annual Report/Financial Accounts Disclosure	1 or 2	1a or 1b
Value derived from data provided in Environmental/CSR	1 or 2	1a or 1b
Value derived from data provided in CDP	1 or 2	1a or 1b
Value summed up from data provided in personal communication	1 or 2	1a or 1b
Value summed up from data provided in Annual Report/Financial Accounts Disclosure	1 or 2	1a or 1b
Value summed up from data provided in Environmental/CSR	1 or 2	1a or 1b
Value summed up from data provided in CDP	1 or 2	1a or 1b
Value split from data provided in personal communication	1 or 2	1a or 1b
Value split from data provided in Annual Report/Financial Accounts Disclosure	1 or 2	1a or 1b
Value split from data provided in Environmental/CSR	1 or 2	1a or 1b
Value split from data provided in CDP	1 or 2	1a or 1b
Data approximated from chart/graph in Annual Report/10-K/Financial Accounts	1 or 2	1a or 1b
Data approximated from chart/graph in Environmental Report/CSR Report/Website	1 or 2	1a or 1b
Estimate based on partial data disclosure in personal communication	1 or 2	1a or 1b
Estimate based on partial data disclosure in Annual Report/10-K/Financial Accounts	1 or 2	1a or 1b
Estimate based on partial data disclosure in Environmental/CSR	1 or 2	1a or 1b
Estimate based on partial data disclosure in CDP	1 or 2	1a or 1b
Value derived from fuel use provided in personal communication	2	2a
Value derived from fuel use provided in Annual Report/Financial Accounts Disclosure	2	2a
Value derived from fuel use provided in Environmental/CSR	2	2a
Value derived from fuel use provided in CDP	2	2a
Derived from previous year	1 or 2	1a or 1b
Estimate scaled according to company-specific data	4	3a
Estimate derived from production data	3	2b
Estimate used instead of disclosure - data does not cover global operations	4	3a
Estimate used instead of disclosure - data is normalised and no aggregating factor is available	4	3a
Estimated data	4	3a

Trucost Data Quality Check Process

Year-on-year check

Company environmental metrics are compared year-on-year to investigate any large fluctuations in data, with legitimate variations qualified and quality checked.

Trucost's data and research process is also governed by a quality assurance process and is managed by its Data Strategy and Operations Team, a dedicated team of more than 40 people.

Compare disclosure flag

We will check with the sources of emission data and compare the disclosure flags throughout different years.

Check Zeros

We will check with the 0 data in case of any data errors.

Recheck the estimated vs reported data

The gap between estimated and reported data will be rechecked and we will engage with companies to guarantee the accuracy of estimated data.

Engagement with Companies

- Trucost's analysts quality check the entire research process internally, then share company data per company directly with each company analysed by Trucost via its secure online portal. Companies are given one month to respond to Trucost to verify its data or directly engage to provide either refined, additional or non-public data.

Q&A

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