

ESG and Impact Indicators

Definitions and
Methodology



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ESG and

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Contents.

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In this document we provide details on the calculation methodology for ESG and impact indicators, including data sources, formulas, and potential limitations of calculations.

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Defini- tions

1. Definitions of issuer and position level metrics.



Metrics calculated at portfolio level use the following position and issuer level data as building blocs. Portfolio aggregation formulas a given in the next section.

Metric	Definition	Values	Source
<p>Corporate GHG emissions</p> <p>Trucost ESG Analysis</p> <p>S&P Global</p>	<p>Company's carbon emissions measured in tons of carbon dioxide equivalent (tCO₂-eq) per year. Three scopes of carbon emissions can be distinguished:</p> <ul style="list-style-type: none"> • Scope 1 emissions are direct emissions from owned or controlled sources • Scope 2 emissions are indirect emissions from the generation of purchased energy • Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions <p>Candriam includes scope 1 and 2 GHG emissions in published figures. Scope 3 will be included as soon as we consider the data accurate and stable.</p> <p>Green bonds are excluded from calculations. They will be integrated once accurate and stable instrument level data is available regarding use of proceeds.</p>	tCO ₂ -eq	<p>Trucost</p> <p>https://www.trucost.com/</p>
<p>Country CO₂ emissions</p> <p></p>	<p>Total country CO₂ emissions, measured in tons per year and available in the EDGAR (Emissions Database for Global Atmospheric Research) database from the European Commission</p> <p>Green bonds are excluded from calculations.</p>	tCO ₂	<p>EDGAR</p> <p>https://edgar.jrc.ec.europa.eu/</p>



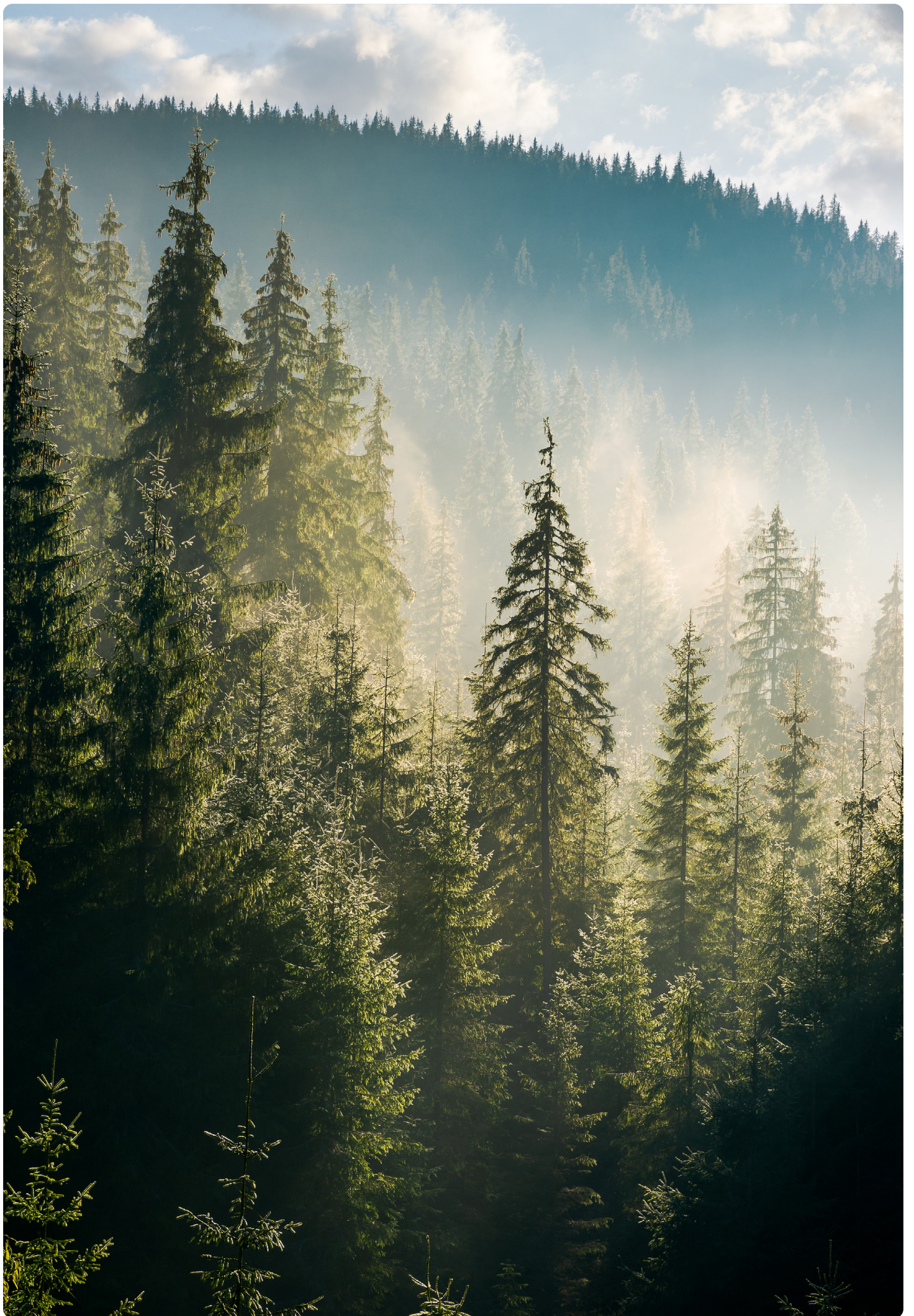
Metric	Definition	Values	Source
ESG score	<p>Score resulting from Candriam internal ESG analysis:</p> <ul style="list-style-type: none"> • For corporate issuers, analysis is done from two angles: analysis of the impacts of business activities (products and services) and management of companies' key stakeholders. • For sovereign issuers, it incorporates the 4 essential dimensions of sustainability: human capital, natural capital, social capital and economic capital. <p>More details on Candriam's ESG analysis methodology are available in the transparency code.</p>	Score [0-100]	Candriam https://www.candriam.com/en/private/market-insights/sri-publications/#transparency
Freedom House Index (FHI) 	<p>"Freedom in the World is an annual global report on political rights and civil liberties, composed of numerical ratings and descriptive texts for each country and a select group of territories. The 2021 edition covers developments in 195 countries and 15 territories.</p> <p>The report's methodology is derived in large measure from the Universal Declaration of Human Rights, adopted by the UN General Assembly in 1948."</p>	Score [0-100]	Freedom House https://freedomhouse.org/
Green Bond	<p>Reflects issuer's intended use of the capital raised by the offering to finance projects that, respectively:</p> <ul style="list-style-type: none"> • have positive environmental or climate effects (for example clean energy plants and projects such as wind and solar) with an appropriate framework (e.g. ICMA (International Capital Market Association)/ CBI (Climate Bond Initiative)/EU Green Bond Standard) and subject to independent external review 	Binary value 0 or 1	LuxSE https://www.luxse.com
Social Bond	<ul style="list-style-type: none"> • aim to improve social welfare or help disadvantaged populations 		
Sustainable Bond	<ul style="list-style-type: none"> • combine both environmental and social objectives 		
High Stake	Sectors listed in Article 3 of EU Climate Transition and EU Paris-aligned Benchmark regulation	Binary value 0 or 1	Delegated regulation (EU) C(2020) 4757
R&D expenditure	Research and development expenditure as a proportion of the company's market capitalization	% of market cap	Bloomberg https://www.bloomberg.com
% Doctorates	Percentage of senior executives of the issuing company holding a doctorate	[0-100%]	Bloomberg https://www.bloomberg.com
% Women Board 	Percentage of female board members at the issuer company	Ratio [0-100%]	Oekom https://www.issgovernance.com
Gender Diversity Score 	<p>Score determined by Candriam internal analysis, based on 4 underlying categories of factors:</p> <ul style="list-style-type: none"> • Gender Balance • Equal Compensation and Work-Life Balance • Policies promoting Tender Equality • Commitment & Transparency 	Score [0-100]	Equileap, Candriam, Bloomberg https://equileap.com/



Metric	Definition	Values	Source
Children revenue score	<p>Score determined by Candriam internal analysis, representing the children thematic revenue exposure, based on 2 fundamental pillars:</p> <ul style="list-style-type: none"> • Children's Essentials Pillar (nutrition, sanitation, access to water, health care, housing and/or family support) • Children's Development Pillar (education, family income & financial inclusion, sports & leisure, safety and/or infrastructure) 	<p>Ratio [0-100%]</p>	<p>Candriam, Bloomberg, Alphasense</p>
Climate rating (for portfolio temperature calculation) 	<p>The methodology is based on a bottom-up analysis, adapted to each sector, which models sectoral decarbonization trajectories based on IPCC scenarios and IEA sectoral trajectories.</p> <p>It is a detailed assessment of the specific climate performance of each issuer, which integrates past, present and future performance in terms of greenhouse gas emissions, as well as an analysis of the company's ability to meet its climate objectives, focusing in particular on its governance, strategy and investment plans.</p> <p>The climate ratings are used as inputs to the portfolio temperature calculation (see next section)</p>	<p>Climate rating [1-15]</p>	<p>Carbon4Finance http://www.carbon4finance.com</p>
Taxonomy-aligned revenues 	<p>For each company, a percentage of activities which are taxonomy-aligned, i.e. contribute to a given taxonomy objective while satisfying all the technical requirements and at the same time not causing significant harm to the other environmental objectives or not meeting certain minimum social requirements. These activities are identified via turnover/revenues.</p> <p>When available, the figure reported by the company is used, and in the absence of a reported figure an estimated figure can be used.</p>	<p>% of revenues</p>	<p>Sustainalytics, Candriam</p>
Net exposure	<p>Physical positions: market value of the position</p> <p>Derivatives: market value of the equivalent position in the underlying asset</p>	<p>M€</p>	<p>Candriam</p>
Enterprise value	<p>For each issuer the sum of:</p> <ul style="list-style-type: none"> • Total market value of all outstanding shares • Short and long term debt • Preferred equity and hybrid capital • Minority/non-controlling interest 	<p>M€</p>	<p>Bloomberg https://www.bloomberg.com</p>

2. Portfolio aggregation formulas.

Metric	Definition	Scope
Carbon Footprint per M€ invested	$\frac{\sum_i \left(\frac{\text{net exposure}_i}{\text{enterprise value}_i} \times \text{Corporate GHG emissions}_i \right)}{\sum_i \text{net exposure}_i}$	Corporate issuers Exclusion of green bonds
Country CO₂ intensity	$\frac{\sum_i \left(\text{net exposure}_i \times \frac{\text{Country CO}_2 \text{ emissions}_i}{\text{Gross Domestic Product}_i} \right)}{\sum_i \text{net exposure}_i}$	Sovereign issuers Exclusion of green bonds
ESG Score	$\frac{\sum_i \text{net exposure}_i \times \text{ESG Score}_i}{\sum_i \text{net exposure}_i}$	3 versions of the score are used: • Corporates • Sovereigns • Corporates + sovereigns
Percentage of Women on the Board	$\frac{\sum_i \text{net exposure}_i \times \% \text{ women board}_i}{\sum_i \text{net exposure}_i}$	Corporate issuers
Gender Diversity Score	$\frac{\sum_i \text{net exposure}_i \times \text{gender diversity}_i}{\sum_i \text{net exposure}_i}$	Corporate issuers
Freedom House Score	$\frac{\sum_i \text{net exposure}_i \times \text{FHI}_i}{\sum_i \text{net exposure}_i}$	Sovereign issuers
% Children Revenue Score	$\frac{\sum_i \text{net exposure}_i \times \text{children revenue}_i}{\sum_i \text{net exposure}_i}$	Corporate issuers
Environmental Performance Index Score	$\frac{\sum_i \text{net exposure}_i \times \text{EPI}_i}{\sum_i \text{net exposure}_i}$	Sovereign issuers
Percentage of High Stake Companies	$\frac{\sum_i \text{net exposure}_i \times \text{high stake}_i}{\text{AUM}}$	Corporate issuers
Percentage of Green Bonds	$\frac{\sum_i \text{net exposure}_i \times \text{green bond}_i}{\text{AUM}}$	Corporate + sovereign issuers
Percentage of Green/Social/Sustainable Bonds	$\frac{\sum_i \text{net exposure}_i \times (\text{green or social or sustainable bond}_i)}{\text{AUM}}$	Corporate + sovereign issuers
Portfolio temperature (°C)	<p>The analysis and calculation of the portfolio temperature is based on a methodology that assesses the alignment of a portfolio with a greenhouse gas reduction scenario in line with the «below 2°C» scenario by 2050.</p> <p>The calculation of the temperature at the portfolio level is based on the weighted aggregation of the climate ratings of the issuers in the portfolio. Company ratings range from 1 to 15, with 1 representing a company that contributes very strongly to achieving the «below 2°C» objective, and 15 being a company that is totally incompatible with this objective.</p>	Corporate issuers
Percentage of Taxonomy-aligned revenues	$\frac{\sum_i \text{net exposure}_i \times \text{taxonomy_alignment}_i}{\text{AUM}}$	Corporate issuers Exclusion of green bonds
Portfolio percentage of doctorates	$\frac{\sum_i \text{net exposure}_i \times \% \text{ de doctorates}_i}{\sum_i \text{net exposure}_i}$	Corporate issuers
Portfolio R&D expenditure	$\frac{\sum_i \text{net exposure}_i \times \text{R\&D expenditure}_i}{\sum_i \text{net exposure}_i}$	Corporate issuers



3. Product coverage.

Calculations are made on eligible products i.e. products exposed to single name issuers (e.g. stocks, bonds, single name CDS, single name equity derivative). Therefore products such as cash and deposits, FX forwards, products linked to indexes, interest rate derivatives and external funds are excluded.

Certain sub-sovereign issuer categories, being equivalent to neither sovereign nor corporate issuers, are excluded (Iboxx categories Agencies, Public Banks and Other Sub-Sovereigns). Supra-national issuers are also excluded. For carbon footprint, green bonds are excluded.

Data coverage ratios are calculated as:

- the sum of net exposures on eligible products with data, divided by
- the sum of net exposures on eligible products



4. Limitations on metrics.

ESG raw data are updated at least four times a year. Internal data are updated on a more regular basis. The following paragraphs summarize the various limitations to the methodologies, these are mainly due to the lack of disclosed or verified data.



Data Coverage

ESG data in general is continually improving, however certain data may not be available for all issuers in the fund or in the benchmark, implying that sustainability indicators scores given at portfolio level may only be representative of a sub-portfolio

of issuers for which data is available. It is therefore always important to consider coverage ratios when interpreting the levels of the Sustainability indicators.

Data granularity

For certain types of data, the necessary level of granularity is not always readily available. Data is generally available at issuer level but not always at instrument level. For example, at this stage this is the case for carbon data on green bonds, where project-specific data is not yet readily available;

this situation is addressed by excluding the green bonds from the Sustainability indicators calculation (both in the numerator and the denominator) rather than assigning issuer level data or a zero carbon value to the green bond.

Issuer mapping

Regarding mapping between subsidiaries and parent companies, ESG data is not always available at the level of the specific issuer held in position, but can be mapped with ESG data from a reference company of the same group. This is the case when the relationship between the two companies is deemed relevant from an ESG standpoint.

Harmonized methodology

For certain indicators such as temperature, the absence at this stage of common or harmonized definitions and hypothesis can make figures based on one provider's methodology hard to compare to figures based on other provider's methodologies. Thus, on the same portfolio, the temperature via one provider's methodology could differ from the temperature via another provider's methodology.





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