Climate Related Portfolio Assessment

WAICA Reinsurance 2023

December 27, 2024

ABOUT SUSTAINABLE1

Sustainable1 is part of S&P Global.

Sustainable1 is part of S&P Global. A leader in carbon and environmental data and risk analysis, Sustainable1 assesses risks relating to climate change, natural resource constraints, and broader environmental, social, and governance (ESG) factors. Companies and financial institutions use Sustainable1 intelligence to understand their ESG exposure to these factors, inform resilience, and identify transformative solutions for a more sustainable global economy. S&P Global's commitment to environmental analysis and product innovation enables its team to deliver essential ESG investment-related information to the global marketplace.

For more information, visit www.sustainable1.com

ABOUT S&P GLOBAL

S&P Global (NYSE: SPGI) is a leading provider of transparent and independent ratings, benchmarks, analytics and data to the capital and commodity markets worldwide.

For more information, visit www.spglobal.com.

CONTACTS

UK: trucostinfo@spglobal.com
North America: trucostnorthamerica@spglobal.com
Europe: trucostemea@spglobal.com
Asia: trucostasiapacific@spglobal.com
Japan: trucostjapan@spglobal.com
South America: trucostsouthamerica@spglobal.com

Telephone (UK): +44 (0) 20 7160 9800
Telephone (North America): +1 800 402 8774
Telephone (Japan): +81 3 4550 8633

www.trucost.com

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INTRODUCTION TO CLIMATE-RELATED REPORTING

The effects of climate change pose considerable and far-reaching risks to the global economy. Among those most directly affecting businesses include physical risks posed by increased climate variability and more frequent extreme weather events, which may result in property damage, challenges linked to business continuity, and the disruption to global supply chains. Businesses also face risks associated with the transition to a low-carbon economy, including policy changes designed to discourage carbon-intensive energy use or favour more resource-efficient industries and operations.

At the request of the G20, the Financial Stability Board (FSB) reviewed how the reporting on climate-related issues in financial reporting could be improved in order to better reflect the risks and opportunities facing financial institutions and non-financial businesses alike. In June 2017, the FSB Taskforce for Climate-Related Financial Disclosure (TCFD) published recommendations on the disclosure of "information needed by investors, lenders, and insurance underwriters to appropriately assess and price climate-related risks and opportunities."

The TCFD provides a voluntary disclosure framework organized around four themes, designed to facilitate better disclosure. These are governance, strategy, risk management, and metrics and targets. In order for organizations to disclose in line with TCFD recommendations, they must be able to quantify or qualify the risks and opportunities facing them, linked to climate-related issues, and be able to describe policies, procedures and systems in place to monitor and address climate-related issues on an on-going basis.

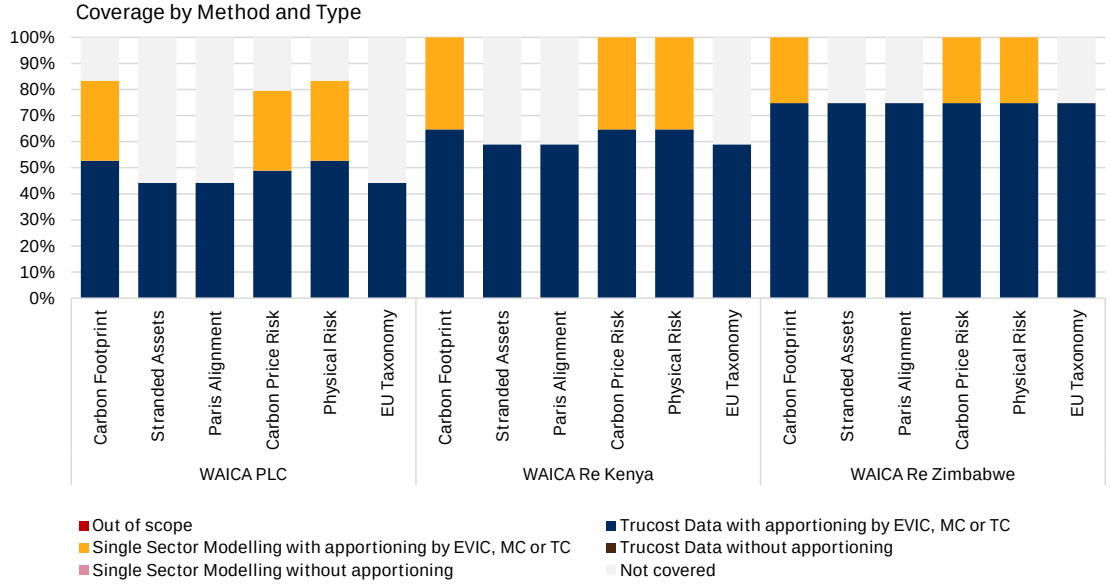
This report by Trucost provides both forward-looking and historical metrics that may be used by asset owners and/or asset managers to support their climate-related disclosures in line with TCFD recommendations, and inform internal processes for risk management and strategy development within an organization.

See Appendix 1 for more information on the TCFD recommended disclosures for asset owners and asset managers.

COVERAGE RATES

A Note on Mapping

- Equity instruments are mapped to the issuing entity. Debt instruments are mapped to the first publicly listed entity in the instrument's parent chain (starting with a bond's issuer, then its immediate parent, and finally it's ultimate parent). Bonds with no public parent are mapped to the issuer.
- 'Out of Scope' indicates the portion of a portfolio relating to non-corporate equity, debt or loans.
- 'Trucost Data with [or without] apportioning' indicates the portion of a portfolio that was mapped to companies in the corresponding product dataset. For example, for the stranded assets module, the corresponding dataset is the Trucost Environmental Register (ER).
- 'Single Sector Modelling with [or without] apportioning' is applicable only to the carbon footprint module. Companies not in the Trucost ER may still have an emissions profile generated and be included in the analysis if both the GICS subindustry and revenues are available.
- Companies without an apportioning factor available will be excluded from portfolio-level metrics that require apportioning - such as absolute footprint - but included in metrics that do not - such as weighted-average carbon intensity (WACI).



	Portfolio Size (mUSD)
WAICA PLC	79
WAICA Re Kenya	20
WAICA Re Zimbabwe	20

CARBON

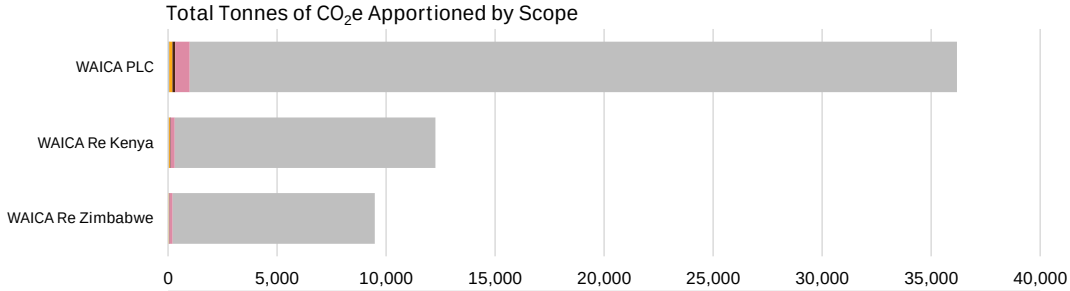
Carbon Apportioned by Scope

Carbon audits offer a systematic assessment of the carbon risks and opportunities within a portfolio or index at a given point in time. The first step of beginning an audit is to decide on the scope of the analysis. This may range from looking only at the operational emissions of investee companies - which avoids the risk of double counting - to looking at emissions throughout their entire supply chain for a more complete picture.

In the chart below, carbon has been apportioned to each of the portfolios analysed and broken out by the following scopes:

- Direct (Scope 1): CO_2e emissions based on the Kyoto Protocol, greenhouse gases generated by direct company operations.
- Direct (Other): Additional direct emissions, including those from CCl_4, $C_2H_3Cl_3$, $CBrF_3$, and CO_2 from Biomass.
- Purchased Electricity (Scope 2): CO_2e emissions generated by purchased electricity, heat or steam.
- Non-Electricity First Tier Supply Chain (Scope 3): CO_2e emissions generated by companies providing goods and services in the first tier of the supply chain.
- Other Supply Chain (Scope 3): CO_2e emissions generated by companies providing goods and services in the second to final tier of the supply chain.
- Downstream (Scope 3): CO2e emissions generated by the distribution, processing and use of the goods and services provided by a company.

For more information on apportioning and scopes, please see Appendix 2 and 3 respectively.



	WAICA Re Zimbabwe	WAICA Re Kenya	WAICA PLC
Direct CO2e (Scope 1)	4	18	35
Direct CO2e (Other)	0	1	14
Purchased Electricity CO2e (Scope 2)	36	62	152
Non-Electricity First Tier Supply Chain CO2e (Scope 3)	27	38	126
Other Supply Chain CO2e (Scope 3)	139	189	668
Downstream CO2e (Scope 3)	9,279	11,949	35,192

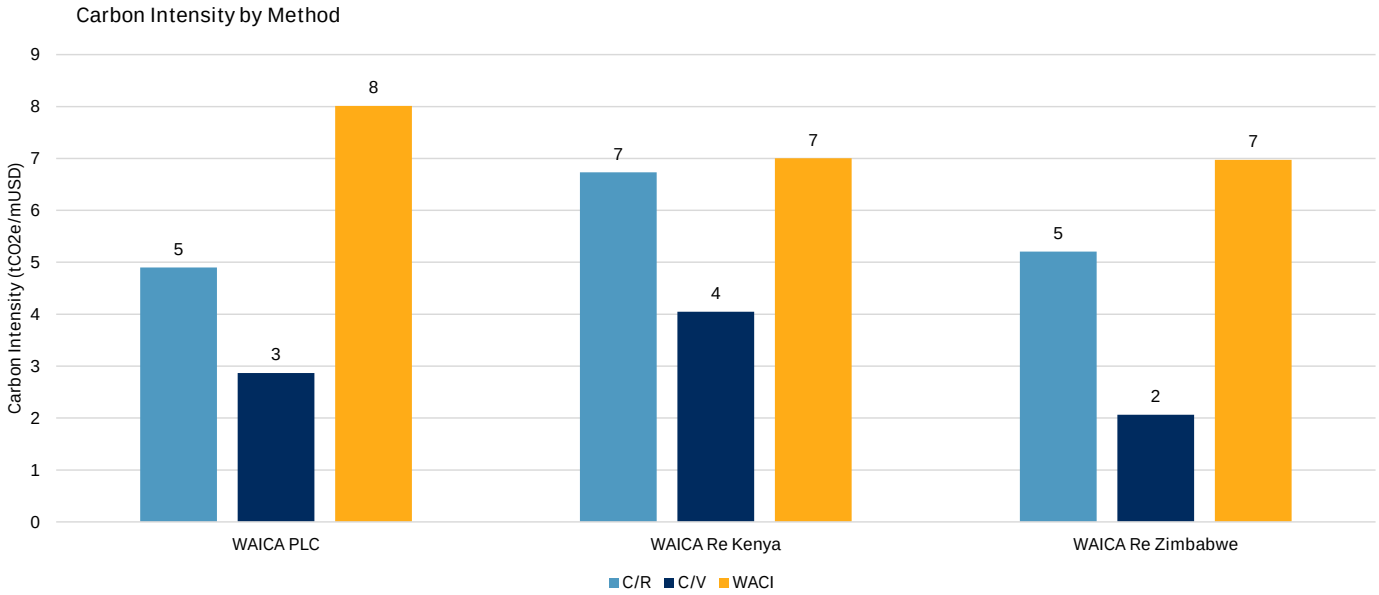
CARBON

Carbon Intensity by Method

Portfolios with larger assets under management will typically also have larger absolute carbon footprints than smaller portfolios due to their size. In order to facilitate fair comparison between portfolios, benchmarks and across years, it is therefore important to normalize the totals, either by revenues or by value invested. The three most common approaches to normalization are:

1. Carbon to Revenue (C/R): Dividing the apportioned CO_2e by the apportioned annual revenues.
2. Carbon to Value Invested (C/V): Dividing the apportioned CO_2e by the value invested.
3. Weighted Average Carbon Intensity (WACI): Summing the product of each holding's weight in the portfolio with the company level C/R intensity (no apportioning).

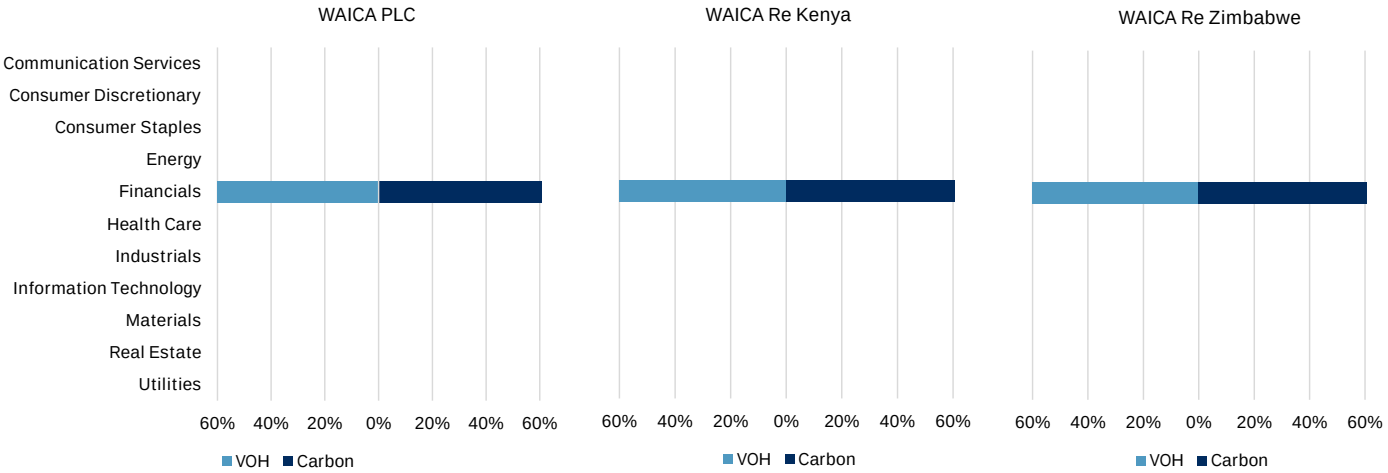
The chart below shows the intensity for portfolios using all three calculation methods. The scopes used for the intensity were Direct and First Tier Indirect Emissions.



CARBON

Sector VOH Share vs. Carbon Share

The charts below compare each sector's value-based weight in a portfolio or benchmark to its share of the total apportioned carbon emissions.

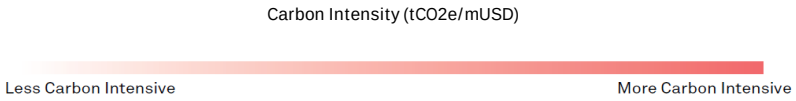


CARBON

Sector Carbon Intensities

The table below shows the C/R intensities of the portfolios and benchmarks at the GICS sector level.

	Communication Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities
WAICA PLC					5						
WAICA Re Kenya					7						
WAICA Re Zimbabwe					5						



CARBON

Top C/R Contributors

The tables below show the top contributors to the carbon intensity of the portfolios analysed. Note that if the method used is C/R or C/V, then a company may appear due to the proportion owned/financed, rather than because it is the most carbon intensive held. The 'Contribution' is the percentage change in the portfolio's intensity that would be caused by excluding the holding referenced. In other words, it is a measurement of how much a specific holding affects the carbon performance of the portfolio.

WAICA PLC

Name	Sector	VOH Weight	Carbon Weight	Company C/R (tCO2e/mUSD)	Portfolio C/R Contribution	Disclosure	Climate 100+*
Faisal Islamic Bank of Sudan	Financials	4.29%	24.17%	7	-8.22%	Modelled	-
GCB Bank Plc	Financials	3.42%	14.71%	7	-4.98%	Modelled	-
Bank of Sierra Leone	Financials	2.46%	10.21%	9	-4.92%	Modelled	-
OmniBSIC Bank Ghana Limited	Financials	6.51%	5.49%	15	-3.71%	Modelled	-
First Atlantic Bank Limited	Financials	4.83%	6.42%	6	-1.42%	Modelled	-
United Capital Plc	Financials	3.76%	1.81%	15	-1.21%	Modelled	-
Waica Re Capital	Financials	5.80%	1.58%	15	-1.05%	Modelled	-
Waica Re Capital (P)	Financials	9.85%	1.58%	15	-1.05%	Modelled	-
United Investments Ltd	Financials	2.29%	0.87%	33	-0.74%	Modelled	-
United Investments Ltd	Financials	1.68%	0.64%	33	-0.54%	Modelled	-

WAICA Re Kenya

Name	Sector	VOH Weight	Carbon Weight	Company C/R (tCO2e/mUSD)	Portfolio C/R Contribution	Disclosure	Climate 100+*
Equity Group Holdings Plc	Financials	12.98%	33.87%	19	-25.10%	Partial Disclosure	No
Equity Group Holdings Plc	Financials	1.80%	4.71%	19	-3.13%	Partial Disclosure	No
I&M Group PLC	Financials	12.92%	15.37%	7	-0.77%	Modelled	-
NCBA Group PLC	Financials	9.22%	13.13%	7	-0.64%	Modelled	-
Absa Bank Kenya PLC	Financials	10.46%	7.68%	7	-0.35%	Modelled	-
Stanbic Holdings Plc	Financials	1.32%	1.53%	7	-0.07%	Modelled	-
Absa Bank Kenya PLC	Financials	1.39%	1.02%	7	-0.04%	Modelled	-
United Bank for Africa Plc	Financials	0.08%	0.03%	2	0.05%	Modelled	No
Bank of Africa Kenya Limited	Financials	5.68%	3.54%	6	0.31%	Modelled	-
Ecobank Transnational Incorporated	Financials	1.65%	0.88%	5	0.44%	Modelled	No

*Climate Action 100+ is an investor initiative to ensure the world's largest corporate greenhouse gas emitters take necessary action on climate change. The companies include 100 'systemically important emitters', accounting for two-thirds of annual global industrial emissions, alongside more than 60 others with significant opportunity to drive the clean energy transition. For more information see http://www.climateaction100.org.

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WAICA Re Zimbabwe

Name	Sector	VOH Weight	Carbon Weight	Company C/R (tCO2e/mUSD)	Portfolio C/R Contribution	Disclosure	Climate 100+*
FBC Bank Limited	Financials	20.43%	11.80%	15	-7.92%	Modelled	-
CBZ Holdings Limited	Financials	2.20%	7.05%	7	-1.94%	Modelled	-
Standard Bank Group Limited	Financials	0.77%	2.04%	17	-1.42%	Partial Disclosure	No
United Capital Plc	Financials	2.56%	1.72%	15	-1.11%	Modelled	-
Ecobank Transnational Incorporated	Financials	32.41%	33.88%	5	8.58%	Modelled	No
Ecobank Transnational Incorporated	Financials	41.62%	43.51%	5	13.47%	Modelled	No

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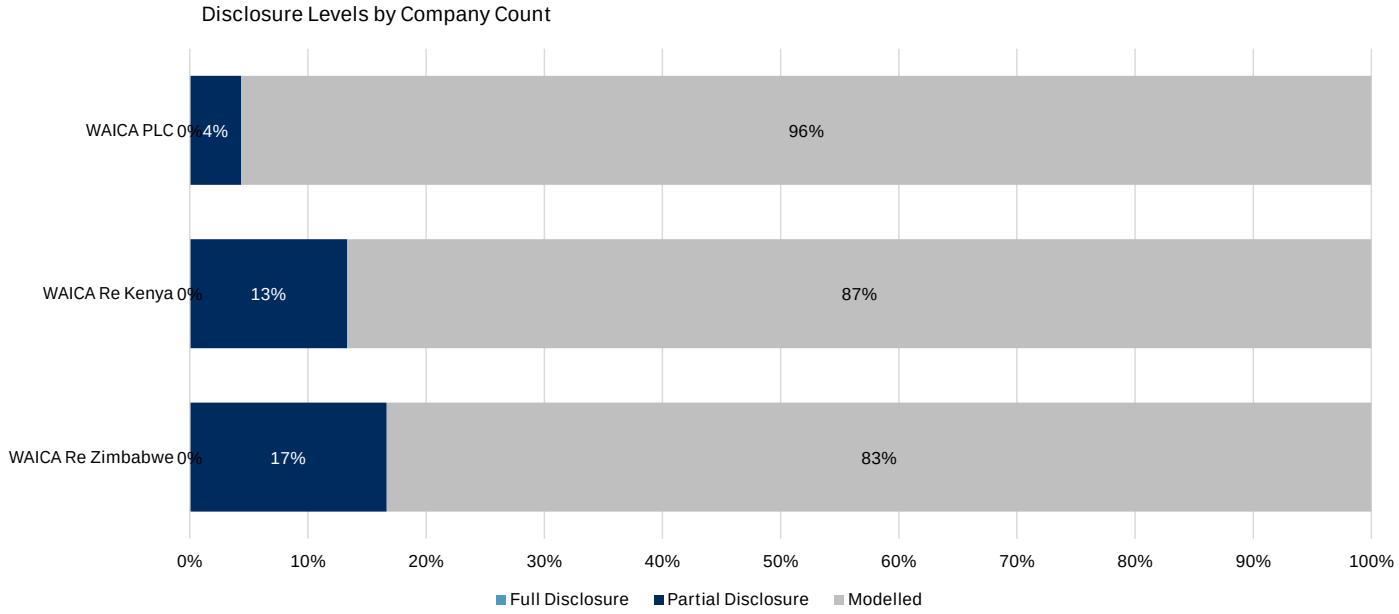
CARBON DISCLOSURE

Disclosure Analysis

In the charts below, the overall level of disclosure in each portfolio is assessed using the following three methods:

1. VOH: The sum of the weights of each holding within each of the three disclosure categories.
2. GHG: The sum of each holding's share of the total apportioned Scope 1 CO_2e within each of the three disclosure categories.
3. Companies: The number of companies, shown as a percent of all companies analysed, within each of the three disclosure categories.

For more information on data collection and disclosure categories, please refer to Appendix 4.



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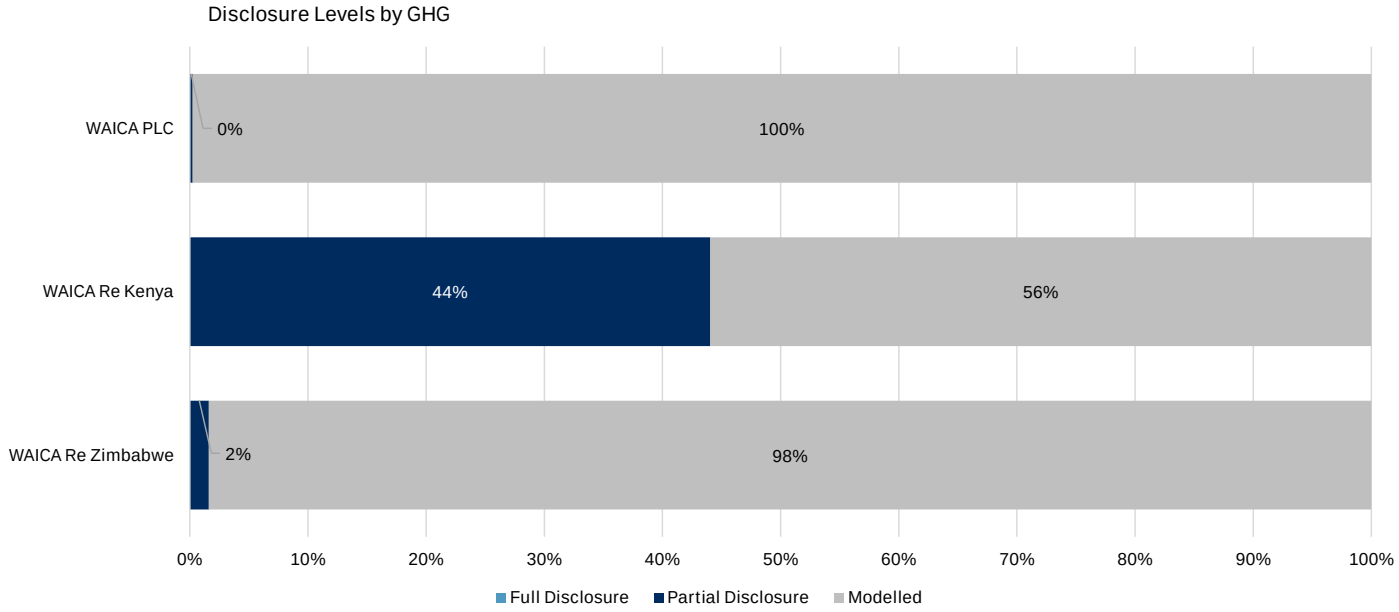

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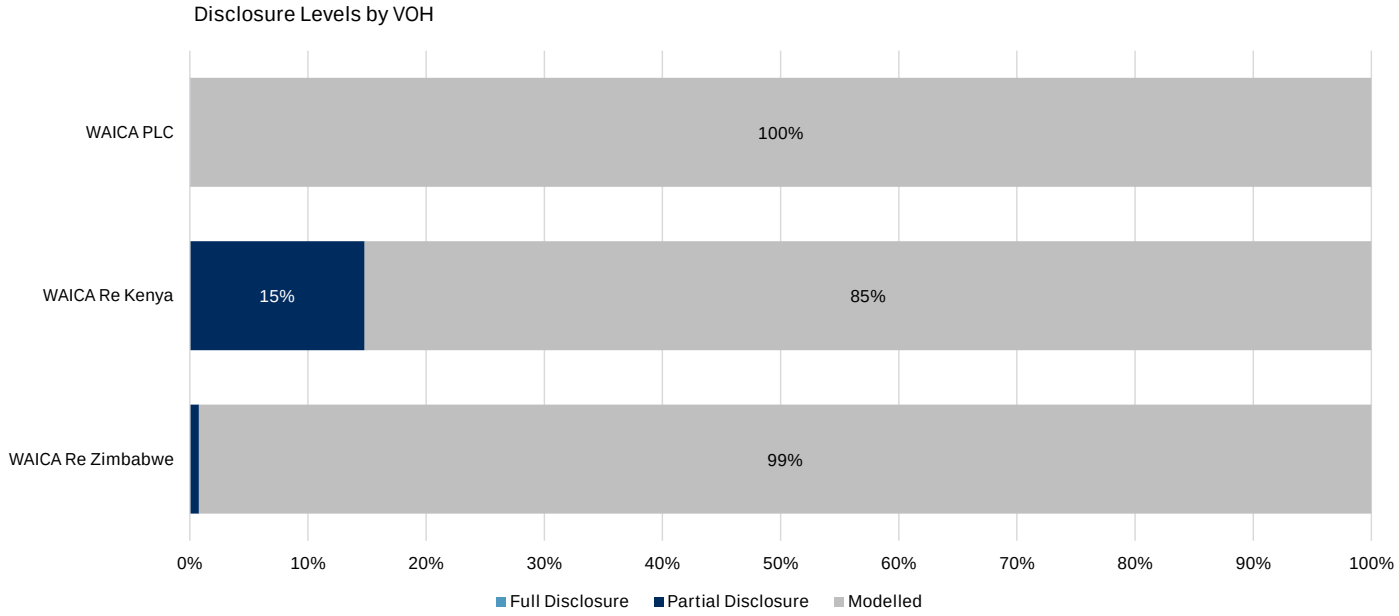

CARBON DISCLOSURE

Top Modelled C/R Contributors

The level of carbon disclosure is based on each company's Scope 1 emissions, which can be classified as fully disclosed, partially disclosed, or modelled. The table below shows the top contributors to each portfolio's C/R intensity whose Scope 1 carbon is classified as modelled. These may be prime candidates for company engagement.

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WAICA Re Kenya

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Ecobank Transnational Incorporated	Financials	1.65%	0.88%	5	0.44%	Modelled	No
KCB Group PLC	Financials	0.85%	0.51%	3	0.77%	Modelled	No
United Bank for Africa Plc	Financials	2.96%	1.05%	2	2.13%	Modelled	No

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WAICA Re Zimbabwe

Name	Sector	VOH Weight	Carbon Weight	Company C/R (tCO2e/mUSD)	Portfolio C/R Contribution	Disclosure	Climate 100+*
FBC Bank Limited	Financials	20.43%	11.80%	15	-7.92%	Modelled	-
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PARIS ALIGNMENT

Transition Pathways

Trucost's 'Transition Pathway Assessment' enables investors to track their portfolios against the goal of limiting global warming to 1.5°C or 2°C above pre-industrial levels. The assessment examines the adequacy of emissions reductions made over time, by investees, in meeting these targets. It incorporates both historical performance as well as forward-looking indicators (over a medium-term time horizon). This avoids the uncertainties of using only forward-looking data, and is of a sufficient time horizon to make the effect of any year-on-year volatility less significant. Historical data on greenhouse gas emissions and company activity levels is incorporated from a base year of 2012. Forward-looking data sources are used to track likely future transition pathways from the most recent year of disclosed data through to 2030.

Trucost's approach is adapted from two methodologies highlighted by the Science Based Targets Initiative (SBTi), these being the Sectoral Decarbonization Approach (SDA) and the Greenhouse gas Emissions per unit of Value Added (GEVA) approach. The SDA is applied to companies with high-emitting, homogeneous business activities, while GEVA is applied to those with lower emitting, heterogeneous business activities. For more information on the methodology please refer to Appendix 5.

The boxes below show the level of warming that each portfolio is aligned with, while the chart shows each portfolio's trajectory and compares that to its own 2°C aligned trajectory.

WAICA PLC

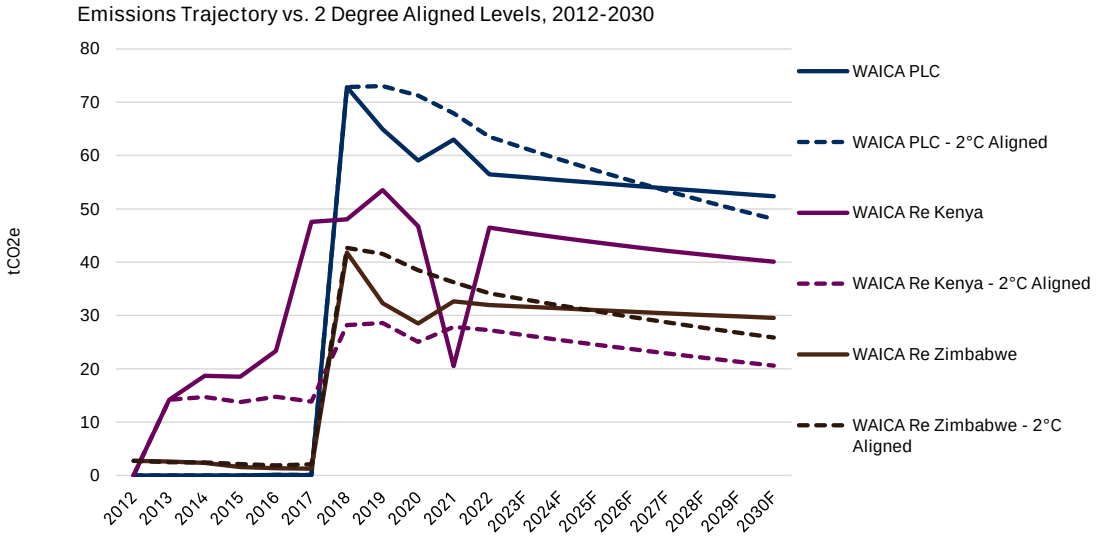
1.5 to 2	°C

WAICA Re Kenya

>3	°C

WAICA Re Zimbabwe

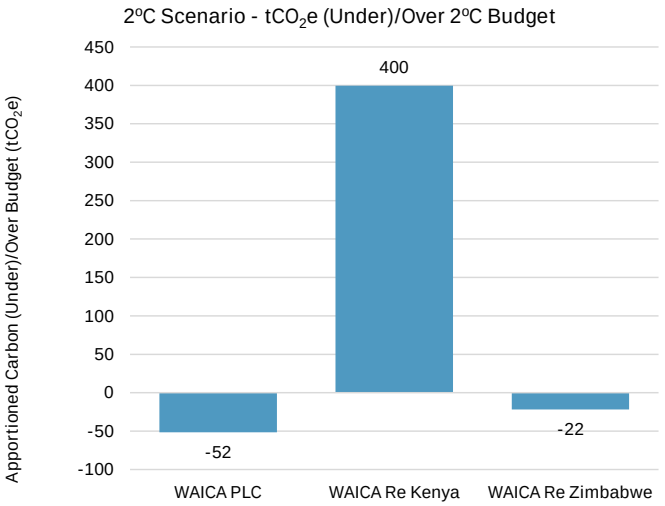
1.5 to 2	°C

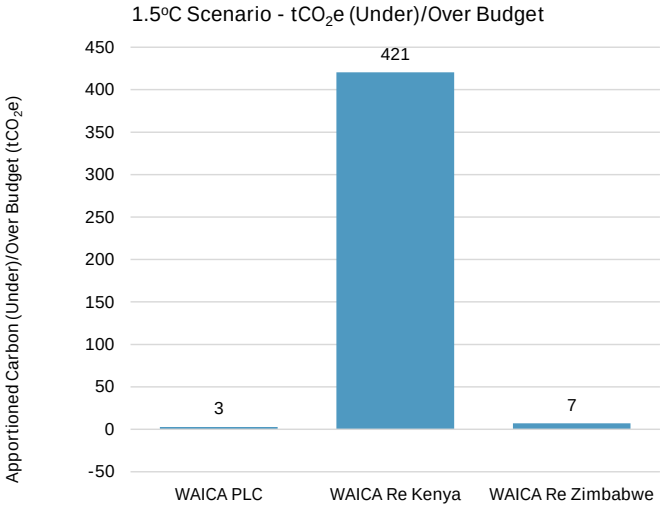


PARIS ALIGNMENT

Carbon Budget Assessment

The charts below show each portfolio's performance against their own 2ºC and 1.5ºC carbon budgets. The chart on this page shows this in absolute tonnes of carbon. A positive number indicates weaker performance, as it means the portfolio is over budget, whereas a negative number indicates stronger performance, as in means the portfolio is under budget.





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Carbon Budget Assessment

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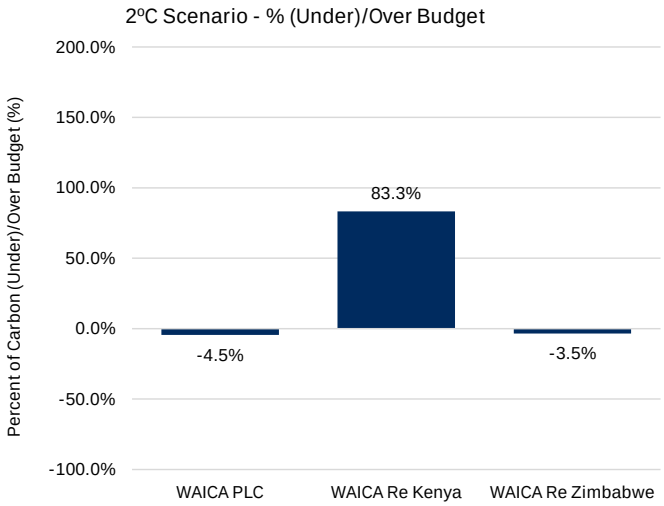

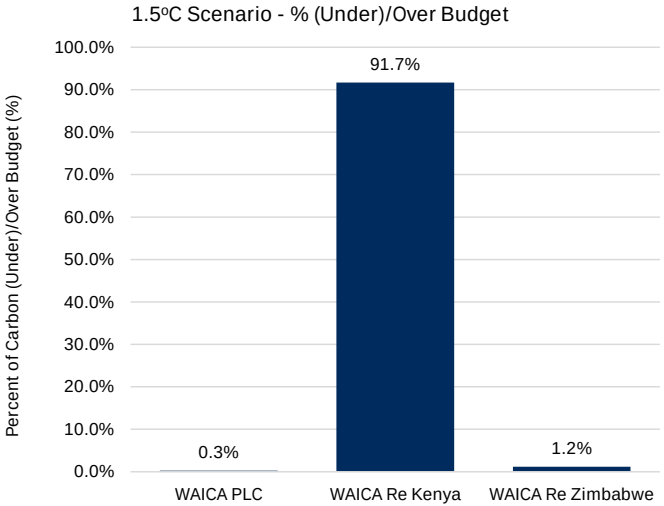

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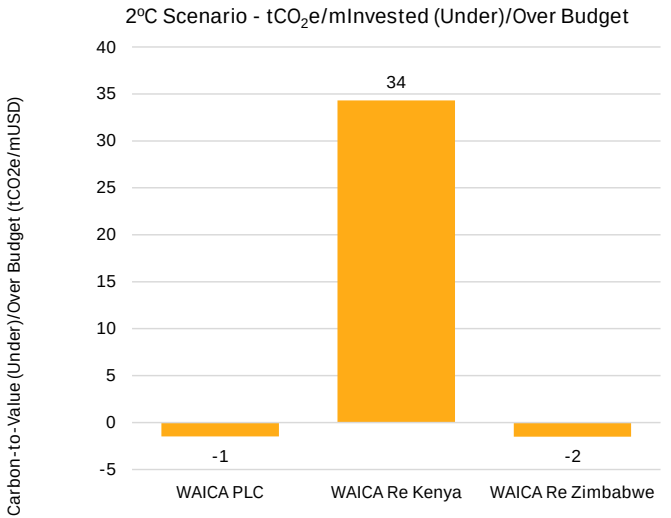
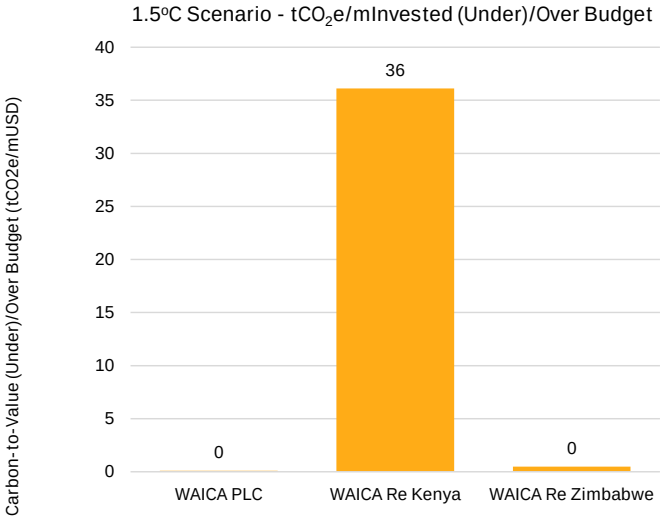




PARIS ALIGNMENT

Sector Contributions

Companies with predominantly homogenous business activities that fall into one of the 5 sectors in the table below were assessed using the SDA approach. This means that the required carbon intensity reductions were calculated in sector specific units of production (for example tonnes of steel produced, or number of passenger miles flown), and each company's share of the overall sector budget is calculated relative to its market share.

Companies with low emitting or heterogeneous business activities were assessed using the GEVA approach. This means that required carbon intensity reductions were calculated in carbon-per-dollar of value added (gross profit), and each company's share of the overall sector budget is calculated using its progress against required reduction rates. For more information, please refer to Appendix 5.

		WAICA PLC		WAICA Re Kenya		WAICA Re Zimbabwe	
Method	Sector	Contribution ($MtCO_2e$)	Pathway (°C)	Contribution ($MtCO_2e$)	Pathway (°C)	Contribution ($MtCO_2e$)	Pathway (°C)
SDA	Power Generation	0		0		0	
	Cement	0		0		0	
	Steel	0		0		0	
	Airlines	0		0		0	
	Aluminum	0		0		0	
GEVA	Communication Services	0		0		0	
	Consumer Discretionary	0		0		0	
	Consumer Staples	0		0		0	
	Energy	0		0		0	
	Financials	-52	1.5 to 2	400	>5	-22	1.5 to 2
	Health Care	0		0		0	
	Industrials	0		0		0	
	Information Technology	0		0		0	
	Materials	0		0		0	
	Real Estate	0		0		0	
	Utilities	0		0		0	

PARIS ALIGNMENT

Worst Performers

The table below shows those companies contributing the most to each portfolio being over a 2°C aligned carbon budget.

WAICA PLC		GHG Emissions Intensity				GHG emissions (under)/over 2°C carbon budget: '12-'30		
Name	GICS Sub-industry	(tCO_2e/Unit)		Unit	Forecast	Total Carbon	Apportioned Carbon	Alignment
		Start	2030F		Source	(tCO_2e)	(tCO_2e)	(°C)
GUARANTY TRUST FUNI	Financials	2	1	m$ VA	Sub-Industry trend	1,804	5	2-3°C
FBN Holdings Plc	Financials	3	2	m$ VA	Sub-Industry trend	1,254	2	2-3°C
Guaranty Trust Holding	Financials	2	1	m$ VA	Sub-Industry trend	1,804	1	2-3°C
Zenith Bank Plc	Financials	12	10	m$ VA	Sub-Industry trend	70,681	1	>5°C

WAICA Re Kenya		GHG Emissions Intensity				GHG emissions (under)/over 2°C carbon budget: '12-'30		
Name	GICS Sub-industry	(tCO_2e/Unit)		Unit	Forecast	Total Carbon	Apportioned Carbon	Alignment
		Start	2030F		Source	(tCO_2e)	(tCO_2e)	(°C)
Equity Group Holdings P	Financials	2	19	m$ VA	Sub-Industry trend	235,410	318	>5°C
Equity Group Holdings P	Financials	2	19	m$ VA	Sub-Industry trend	235,410	44	>5°C
KCB Group PLC	Financials	13	1	m$ VA	Company target	17,330	36	3-4°C
The Co-operative Bank c	Financials	2	1	m$ VA	Sub-Industry trend	1,490	4	2-3°C

WAICA Re Zimbabwe		GHG Emissions Intensity				GHG emissions (under)/over 2°C carbon budget: '12-'30		
Name	GICS Sub-industry	(tCO_2e/Unit)		Unit	Forecast	Total Carbon	Apportioned Carbon	Alignment
		Start	2030F		Source	(tCO_2e)	(tCO_2e)	(°C)
Ecobank Transnational I	Financials	8	4	m$ VA	Sub-Industry trend	-3,338	-6	1.5-2°C
Ecobank Transnational I	Financials	8	4	m$ VA	Sub-Industry trend	-3,338	-8	1.5-2°C
Standard Bank Group Li	Financials	57	15	m$ VA	Company target	-1,484,254	-8	<1.5°C

		GHG Emissions Intensity				GHG emissions (under)/over 2°C carbon budget: '12-'30		
Name	GICS Sub-industry	(tCO_2e/Unit)		Unit	Forecast	Total Carbon	Apportioned Carbon	Alignment
		Start	2030F		Source	(tCO_2e)	(tCO_2e)	(°C)

PARIS ALIGNMENT

Best Performers

The table below shows those companies contributing the most to each portfolio being under a 2°C aligned carbon budget.

WAICA PLC		GHG Emissions Intensity				GHG emissions (under)/over 2°C carbon budget: '12-'30		
Name	GICS Sub-industry	(tCO_2e/Unit) Start	2030F	Unit	Forecast Source	Total Carbon (tCO_2e)	Apportioned Carbon (tCO_2e)	Alignment (°C)
United Bank for Africa P	Financials	5	2	m$ VA	Sub-Industry trend	-7,127	-22	<1.5°C
United Bank for Africa P	Financials	5	2	m$ VA	Sub-Industry trend	-7,127	-16	<1.5°C
Ecobank Transnational I	Financials	8	4	m$ VA	Sub-Industry trend	-3,338	-12	1.5-2°C
United Bank for Africa P	Financials	5	2	m$ VA	Sub-Industry trend	-7,127	-10	<1.5°C

WAICA Re Kenya		GHG Emissions Intensity				GHG emissions (under)/over 2°C carbon budget: '12-'30		
Name	GICS Sub-industry	(tCO_2e/Unit) Start	2030F	Unit	Forecast Source	Total Carbon (tCO_2e)	Apportioned Carbon (tCO_2e)	Alignment (°C)
Ecobank Transnational I	Financials	8	4	m$ VA	Sub-Industry trend	-3,338	-3	1.5-2°C
United Bank for Africa P	Financials	5	2	m$ VA	Sub-Industry trend	-7,127	-2	<1.5°C
Ecobank Transnational I	Financials	8	4	m$ VA	Sub-Industry trend	-3,338	0	1.5-2°C
United Bank for Africa P	Financials	5	2	m$ VA	Sub-Industry trend	-7,127	0	<1.5°C

WAICA Re Zimbabwe		GHG Emissions Intensity				GHG emissions (under)/over 2°C carbon budget: '12-'30		
Name	GICS Sub-industry	(tCO_2e/Unit) Start	2030F	Unit	Forecast Source	Total Carbon (tCO_2e)	Apportioned Carbon (tCO_2e)	Alignment (°C)
Standard Bank Group Li	Financials	57	15	m$ VA	Company target	-1,484,254	-8	<1.5°C
Ecobank Transnational I	Financials	8	4	m$ VA	Sub-Industry trend	-3,338	-8	1.5-2°C
Ecobank Transnational I	Financials	8	4	m$ VA	Sub-Industry trend	-3,338	-6	1.5-2°C

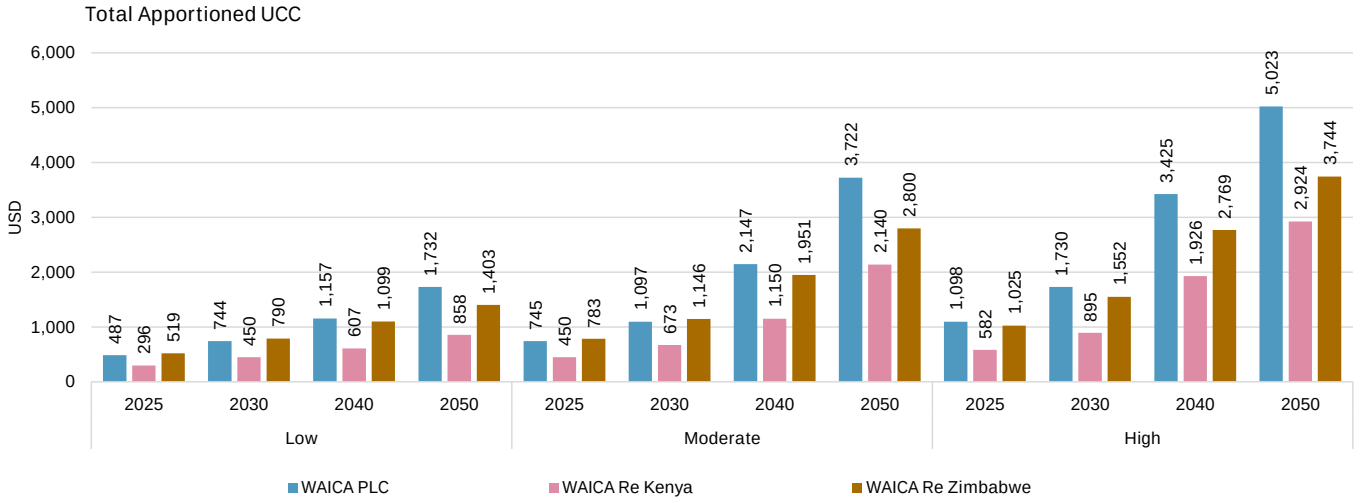
CARBON PRICING

Unpriced Carbon Costs - All Scenarios & Years

Carbon pricing mechanisms are an essential policy tool to reduce GHG emissions and direct capital towards cleaner energy and lower-carbon solutions. There are currently 52 carbon pricing schemes either in operation or scheduled for implementation at a regional, national, or sub-national level, covering about 20% of global GHG emissions. More schemes are likely to appear in order to achieve the Nationally Determined Contributions (NDCs) made by countries that ratified the 2015 Paris Agreement.

To help investors navigate carbon price risk, Trucost has compiled a dataset of possible future carbon prices that can be used to stress test each investee's current ability to absorb future costs. Integral to this analysis is the quantification of an Unpriced Carbon Cost (UCC) – the difference between what a company pays for emitting carbon today and what it may pay in the future. The UCC will vary depending on both the sector a company operates in and the regions in which they emit. It also depends on the scenario and reference year chosen. High and Moderate scenarios both arrive, by 2050, at a price deemed to be sufficient to keep global warming to within 2oC above pre-industrial levels (in the latter action is delayed in the short-term). The Low scenario is not 2oC aligned, but assumes the implementation of the NDCs. For more information on the UCC methodology please refer to Appendix 6.

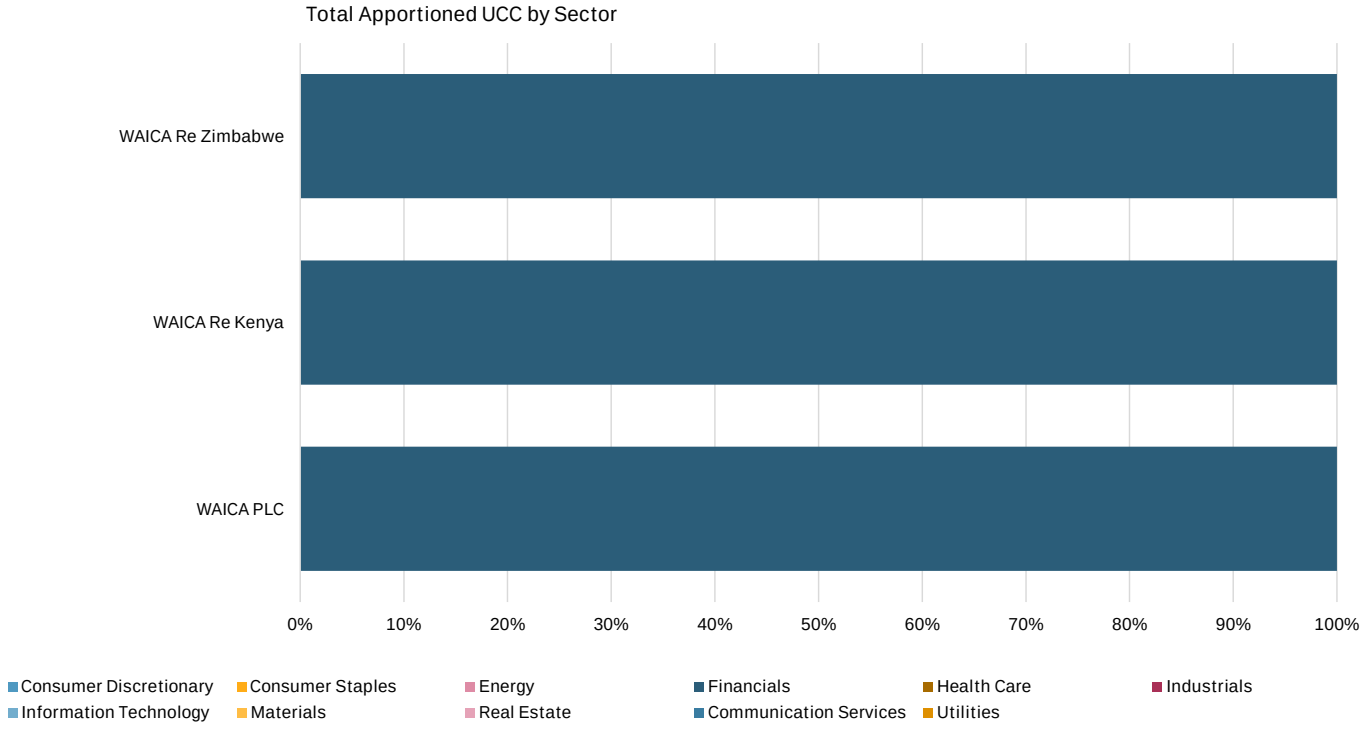
The chart below shows the total UCC apportioned to the portfolio and benchmark under all scenarios and reference years.



CARBON PRICING

Sector Breakdown

The apportioned UCC can be broken out by sector and geography in order to highlight those business activities and juristictions in which carbon price rises could be most impactful to the portfolio. The chart below shows the share of the total apportioned UCC by GICS Sector. The High scenario for 2030 has been used.



CARBON PRICING

Geography Breakdown

The apportioned UCC can be broken out by sector and geography in order to highlight those business activities and juristictions in which carbon price rises could be most impactful to the portfolio. The table below shows the UCC share broken out by geography. The High scenario for 2030 has been used.

	1	2	3	4	5	
WAICA PLC	45.45% Nigeria	13.88% South Africa	9.01% United States	5.34% Cote d'Ivoire	4.73% Egypt	21.59% Remaining Jurisdictions
WAICA Re Kenya	24.41% Uganda	19.65% Kenya	19.29% Rwanda	18.37% Nigeria	6.61% Cote d'Ivoire	11.68% Remaining Jurisdictions
WAICA Re Zimbabwe	70.20% Other	11.05% South Africa	9.71% Nigeria	5.48% Cote d'Ivoire	1.63% Burkina Faso	1.94% Remaining Jurisdictions

CARBON PRICING

Financial Impacts

When the UCC is deducted from a company's profits, we see that even same-sector companies with similar emissions profiles can be faced with very different financial impacts. Portfolio companies with a higher profit margin will have a better chance of absorbing future cost increases. The 'Earnings at Risk' metrics provide a useful indicator of potential vulnerability.

With any forward-looking analysis, a number of assumptions must be used to calculate possible future outcomes. By holding company earnings and absolute emissions constant, Trucost limits the number of variables. Rather than assessing a company's future ability to pay potential carbon costs, we assess the ability of a company to pay future costs now. Trucost has calculated current earnings using a three year trailing average in order to smooth out volatility in financial performance.

In the table below, the 'Earnings at Risk' is shown for each portfolio and benchmark alongside a number of additional metrics that are commonly used for assessing a company's financial health. For more information on these metrics please refer to Appendix 8.

	Apportioned UCC (USD)	EBITDA at Risk (%)	EBITDA Margin Reduction (% points)	VOH with >10% EBITDA at Risk (%)	VOH with Negative Margins (%)
WAICA PLC	1,730	0.01%	-0.01%	0.00%	0.00%
WAICA Re Kenya	895	0.03%	-0.02%	0.00%	0.00%
WAICA Re Zimbabwe	1,552	0.03%	-0.03%	0.00%	0.00%

CARBON PRICING

EBITDA at Risk Company Rankings

The companies with the highest 'Earnings at Risk' are listed in the tables below for each portfolio. Companies with the highest earnings at risk can potentially face the highest valuation multiple changes and the highest risk of diminishing returns to investors.

WAICA PLC

Name	Sector	Rebalanced Weight	Apportioned UCC (USD)	EBITDA at Risk (%)	Change in EBITDA Margin (% points)
Globus Bank Limited	Financials	0.85%	7	0%	-0.03%
Ecobank Transnational Incorporated	Financials	27.88%	1,006	0%	-0.02%
Zenith Bank Plc	Financials	0.05%	2	0%	-0.02%
United Bank for Africa Plc	Financials	13.44%	268	0%	-0.01%

WAICA Re Kenya

Name	Sector	Rebalanced Weight	Apportioned UCC (USD)	EBITDA at Risk (%)	Change in EBITDA Margin (%)
Equity Group Holdings Plc	Financials	3.06%	70	0%	-0.04%
Ecobank Transnational Incorporated	Financials	2.79%	25	0%	-0.02%
Ecobank Transnational Incorporated	Financials	23.60%	213	0%	-0.02%

WAICA Re Zimbabwe

Name	Sector	Rebalanced Weight	Apportioned UCC (USD)	EBITDA at Risk (%)	Change in EBITDA Margin (%)
Standard Bank Group Limited	Financials	0.81%	59	0%	-0.14%
FBC Bank Limited	Financials	21.45%	376	0%	-0.09%
Ecobank Transnational Incorporated	Financials	43.70%	628	0%	-0.02%

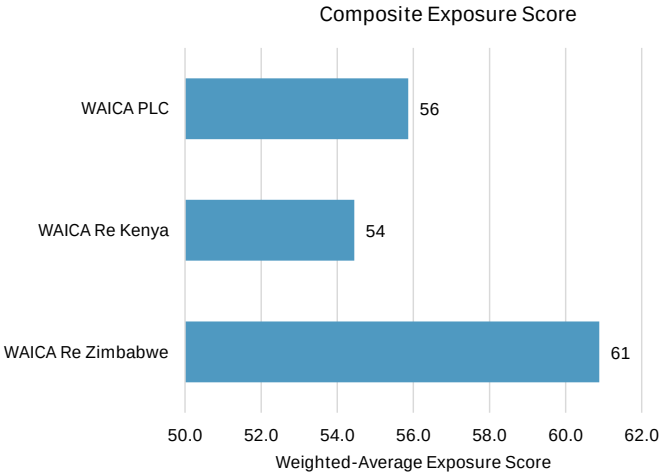
PHYSICAL RISK

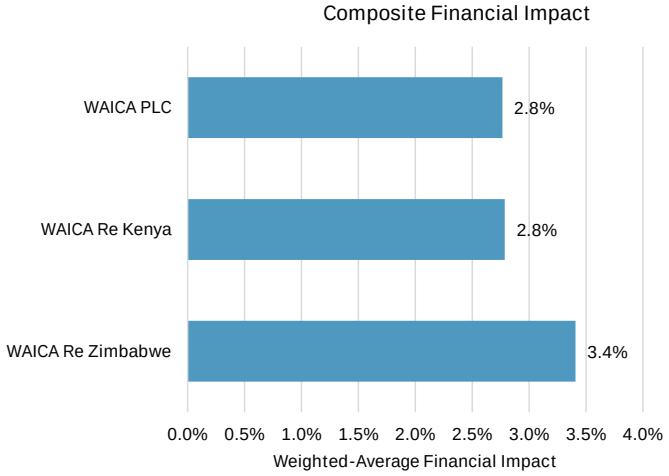
Headline Results

Physical risks resulting from climate change can be acute (events such as floods or storms) or chronic (longer term shifts in climate patterns) and may have financial implications for organizations such as damage to assets, interruption of operations and disruption to supply chains. To better understand these risks S&P Global Sustainable1 has developed a physical risk assessment framework covering eight key hazard types - wildfire, extreme cold, extreme heat, water stress, coastal flood, riverine flood, tropical cyclone and drought. The latest version of the dataset links over 3.1 million built assets to over 20k companies, and provides eight decades of forecasts (2020s-2090s) under four different climate scenarios (see 'Climate Scenarios' section below).

The two key outputs of the dataset are Exposure Scores and Financial Impacts. The former is a point-in-time assessment of exposure to climate hazards relative to global conditions, independent of the characteristics of the asset at a given location. It is provided on a 1-100 scale, with 100 indicating the highest possible risk and 1 indicating the lowest. Composite exposure scores are also provided as a logarithmic function of exposure to all 8 hazards. The latter reflects the financial consequences arising from the change in climate hazard exposure vs a baseline, specific to the asset present at a given location. Financial impacts are presented as the possible climate-linked losses (e.g. from CapEx, OpEx or business interruption) as a percentage of asset value.

Both metrics are calculated as investment-weighted averages of constituent scores/impacts at the portfolio or benchmark level. For more information on the physical risk assessment framework's methodology, please refer to the appendix.





PHYSICAL RISK

Exposure Scores by Hazard Type

The table below displays the weighed-average Exposure Score by hazard type, for the year and climate scenario indicated in the section header.

EXPOSURE SCORE BY HAZARD TYPE | MediumHigh | 2050 Scenario

	Wildfire	Extreme Cold	Extreme Heat	Water Stress	Coastal Flood	Fluvial Flood	Tropical Cyclone	Drought
WAICA PLC	14.0	5.6	42.9	17.0	1.4	2.8	2.7	22.7
WAICA Re Kenya	20.6	5.0	42.2	23.7	1.0	2.0	1.0	12.6
WAICA Re Zimbabwe	20.5	5.0	43.1	22.0	1.0	1.8	1.0	26.8

PHYSICAL RISK

Financial Impacts by Hazard Type

The table below displays the weighed-average Financial Impact by hazard type, for the year and climate scenario indicated in the section header.

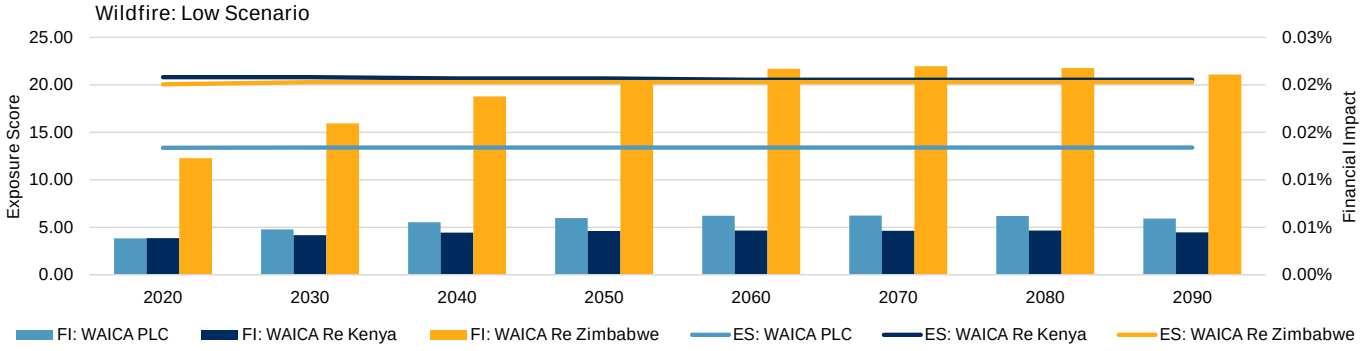
FINANCIAL IMPACT BY HAZARD TYPE | MediumHigh | 2050 Scenario

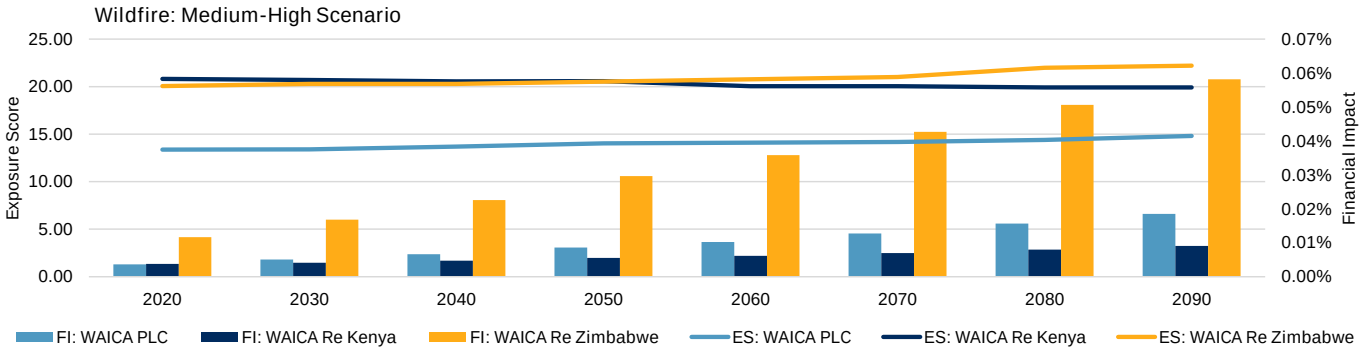
	Wildfire	Extreme Cold	Extreme Heat	Water Stress	Coastal Flood	Fluvial Flood	Tropical Cyclone	Drought
WAICA PLC	0.0%		2.2%	0.1%	0.0%	0.0%	0.0%	0.1%
WAICA Re Kenya	0.0%		2.5%	0.0%	0.0%	0.0%	0.0%	0.0%
WAICA Re Zimbabwe	0.0%		2.9%	0.0%	0.0%	0.0%	0.0%	0.0%

PHYSICAL RISK

Exposure Scores and Financial Impacts by Hazard Type Over Time

The charts below present the changes in the portfolio's Exposure Score (lines) and Financial Impact percentage (bars) by hazard type, and reference year. For comparison, both the 'Low' and 'Medium-High' scenarios are shown. Both metrics are calculated as a weighted-average.





PHYSICAL RISK

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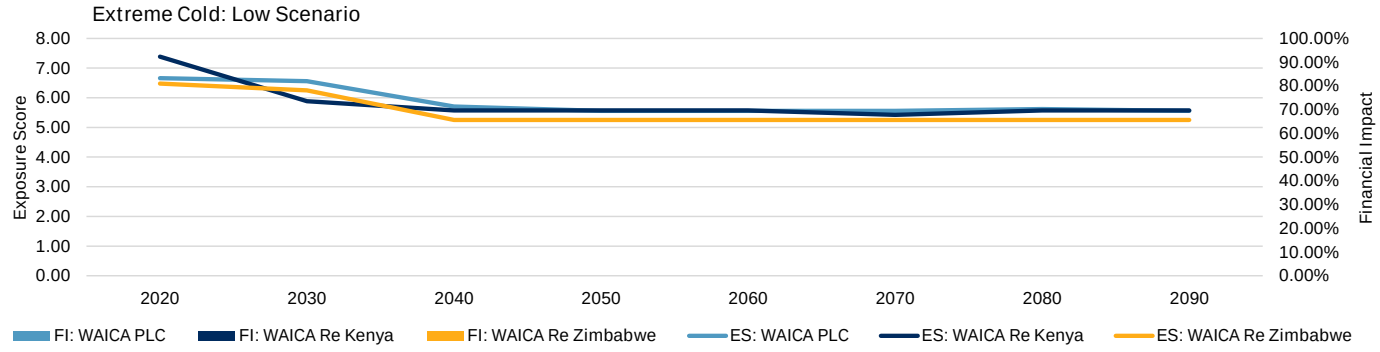
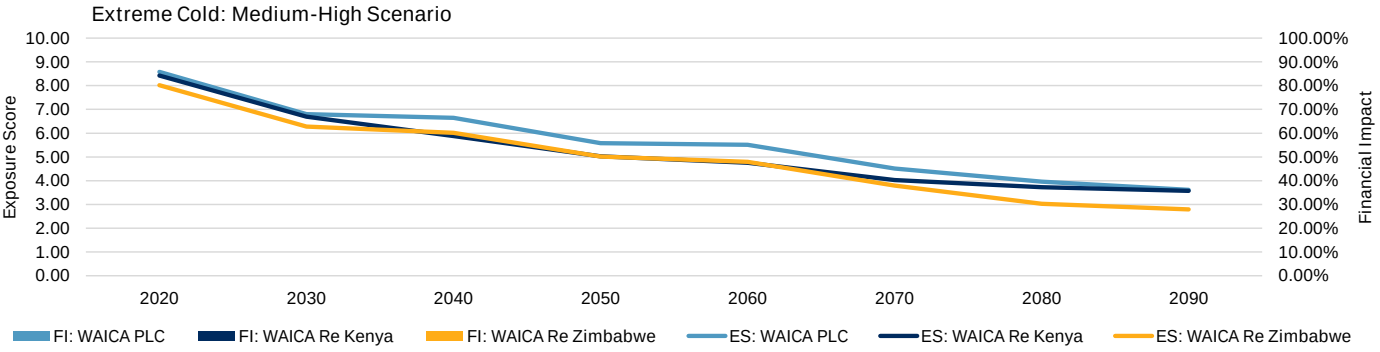
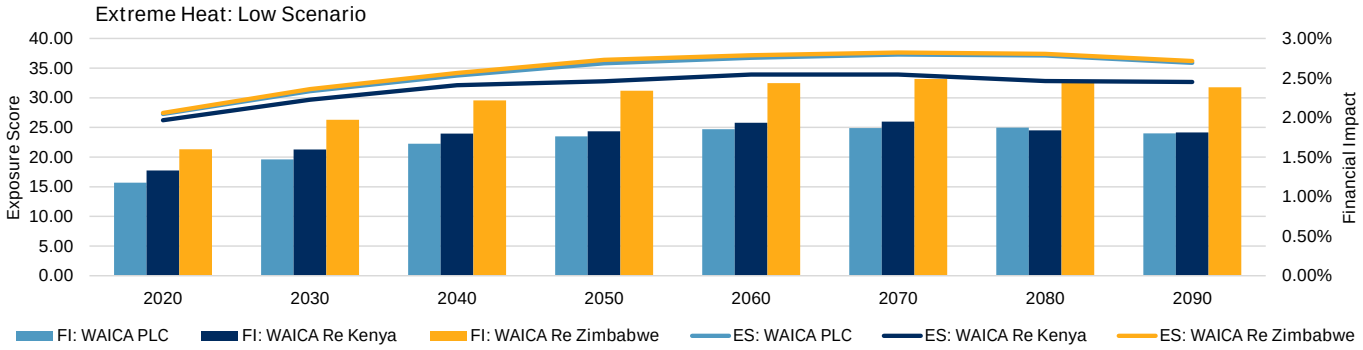


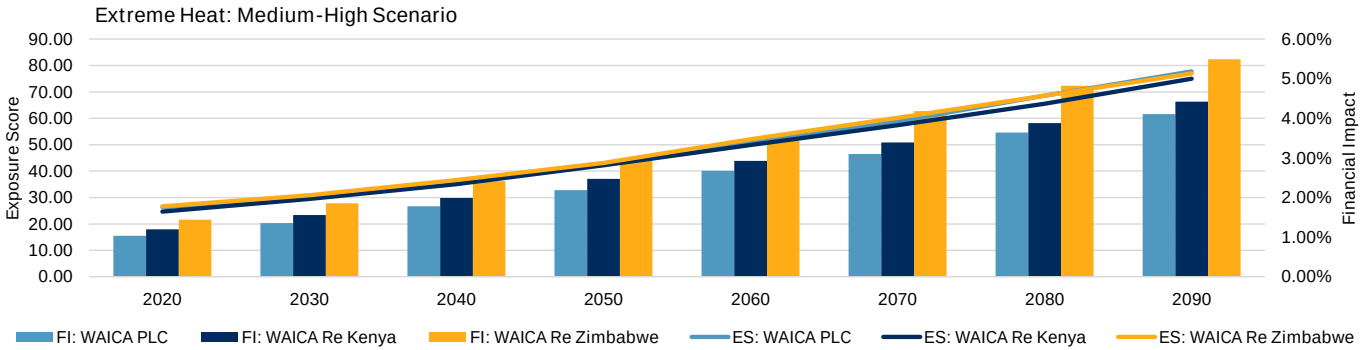


PHYSICAL RISK

Exposure Scores and Financial Impacts by Hazard Type Over Time

The charts below present the changes in the portfolio's Exposure Score (lines) and Financial Impact percentage (bars) by hazard type, and reference year. For comparison, both the 'Low' and 'Medium-High' scenarios are shown. Both metrics are calculated as a weighted-average.





PHYSICAL RISK

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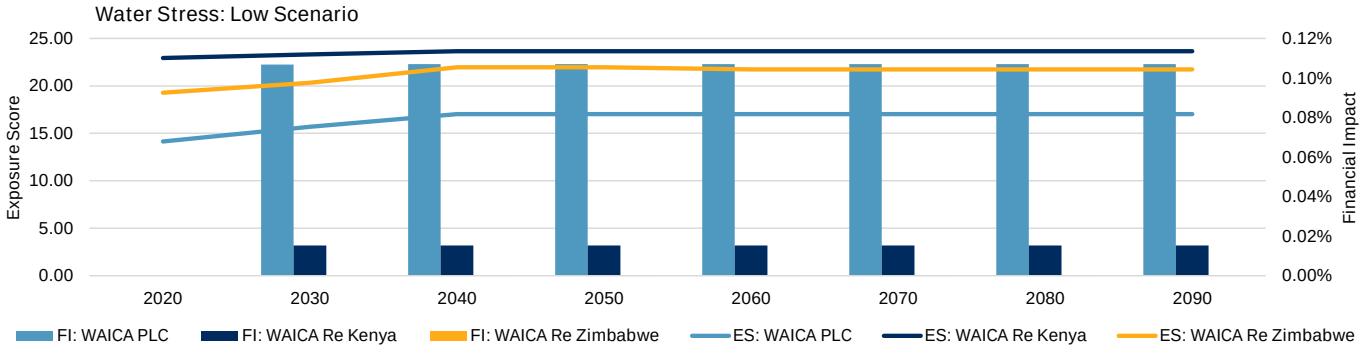
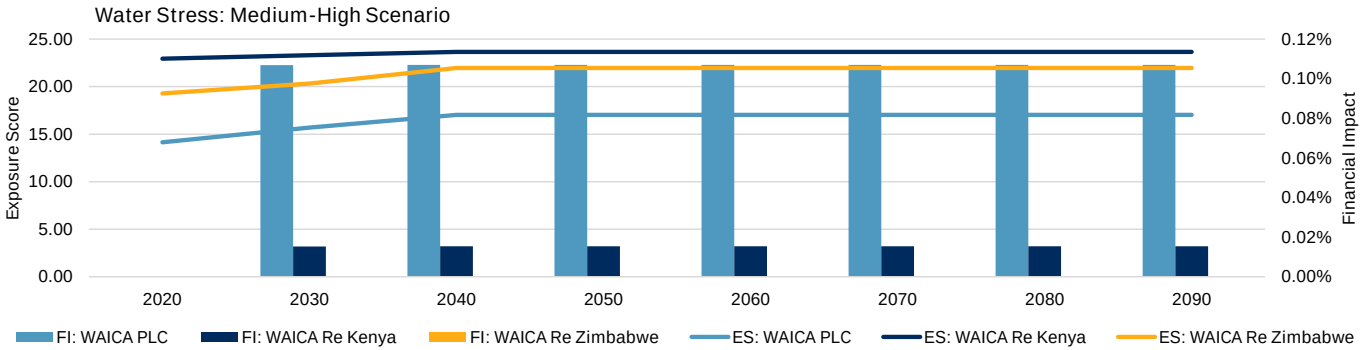
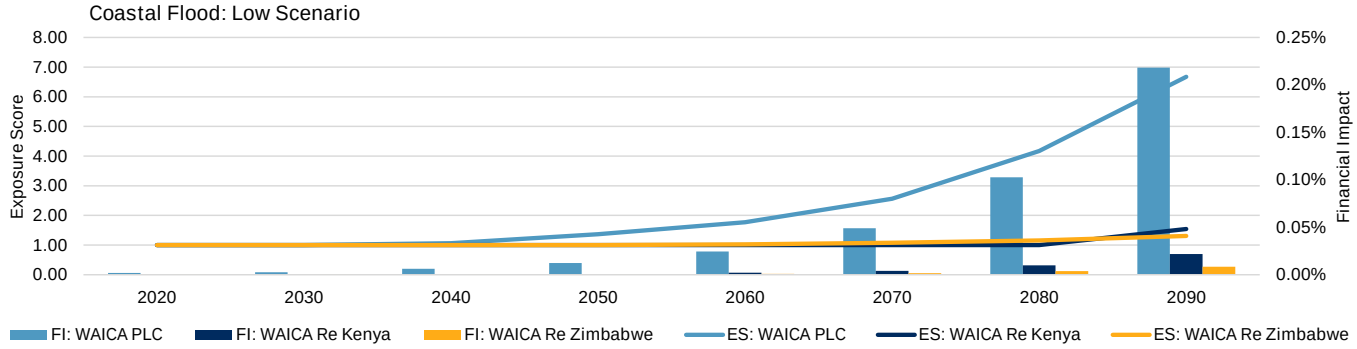


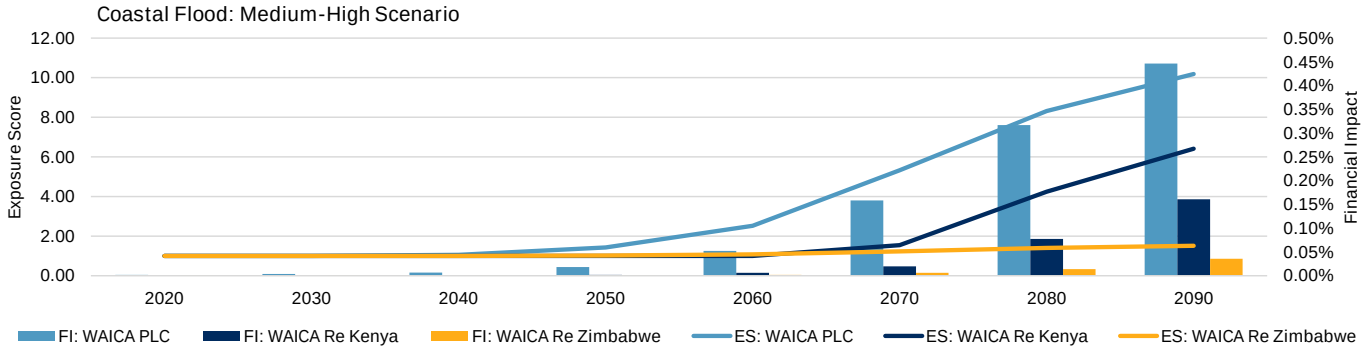


PHYSICAL RISK

Exposure Scores and Financial Impacts by Hazard Type Over Time

The charts below present the changes in the portfolio's Exposure Score (lines) and Financial Impact percentage (bars) by hazard type, and reference year. For comparison, both the 'Low' and 'Medium-High' scenarios are shown. Both metrics are calculated as a weighted-average.

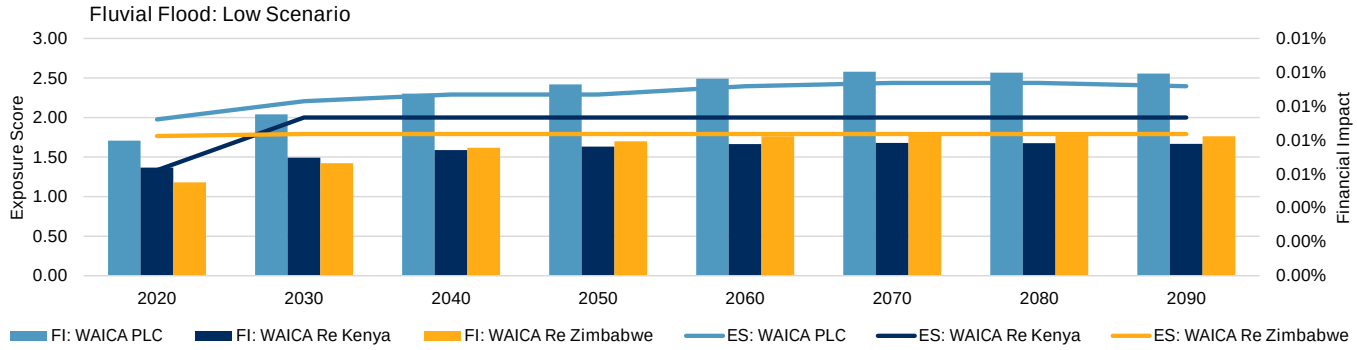


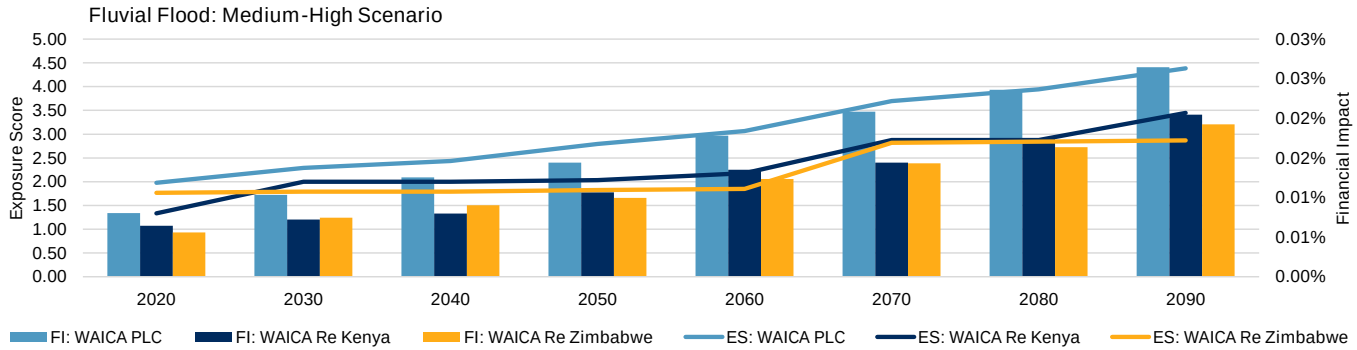


PHYSICAL RISK

Exposure Scores and Financial Impacts by Hazard Type Over Time

The charts below present the changes in the portfolio's Exposure Score (lines) and Financial Impact percentage (bars) by hazard type, and reference year. For comparison, both the 'Low' and 'Medium-High' scenarios are shown. Both metrics are calculated as a weighted-average.

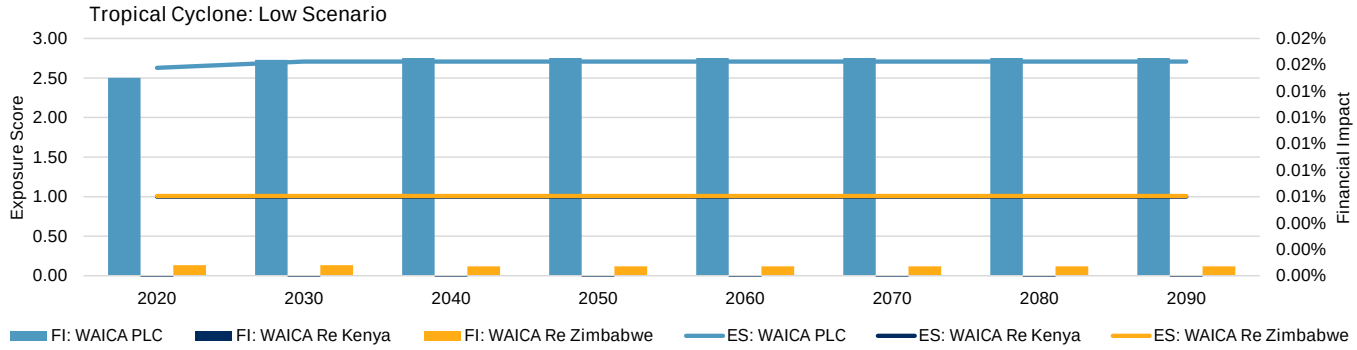


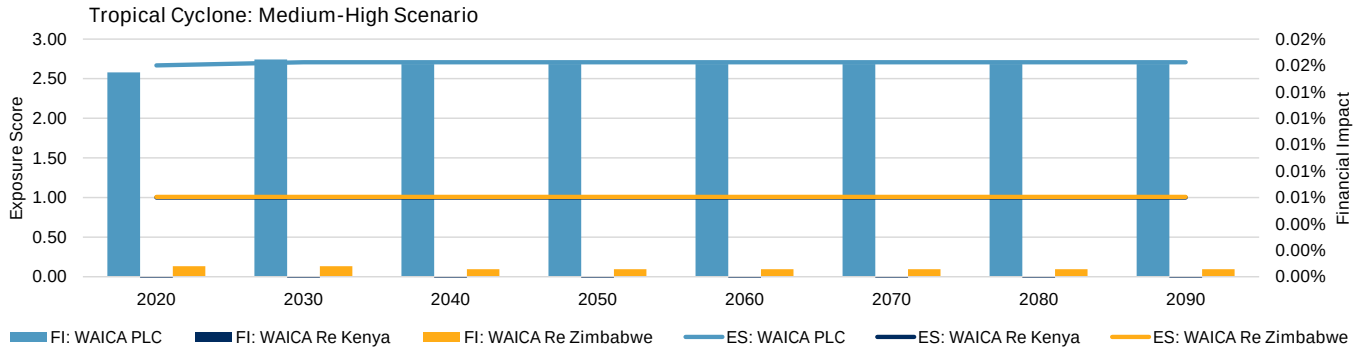


PHYSICAL RISK

Exposure Scores and Financial Impacts by Hazard Type Over Time

The charts below present the changes in the portfolio's Exposure Score (lines) and Financial Impact percentage (bars) by hazard type, and reference year. For comparison, both the 'Low' and 'Medium-High' scenarios are shown. Both metrics are calculated as a weighted-average.





PHYSICAL RISK

Exposure Scores and Financial Impacts by Hazard Type Over Time

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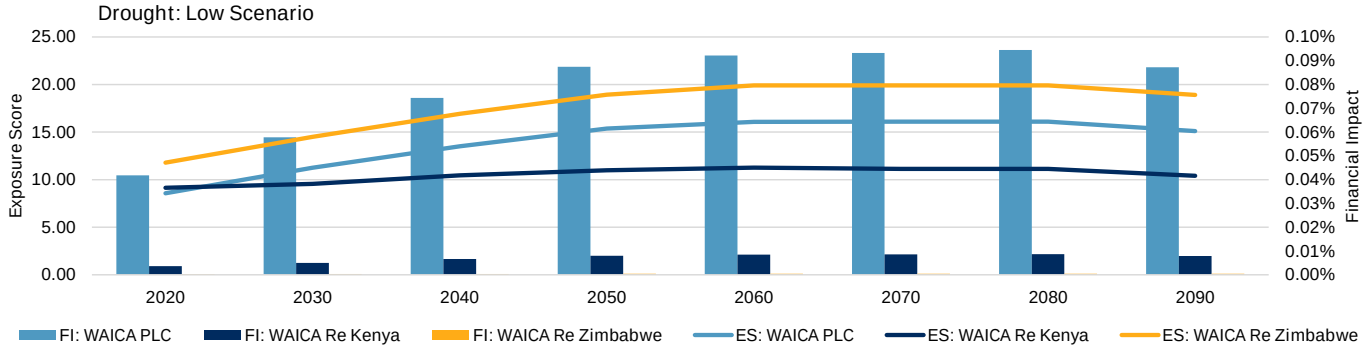
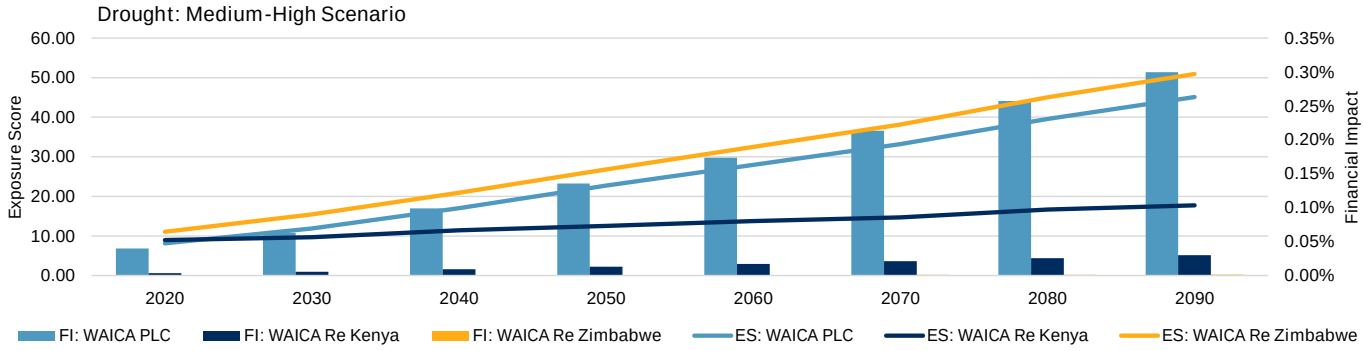
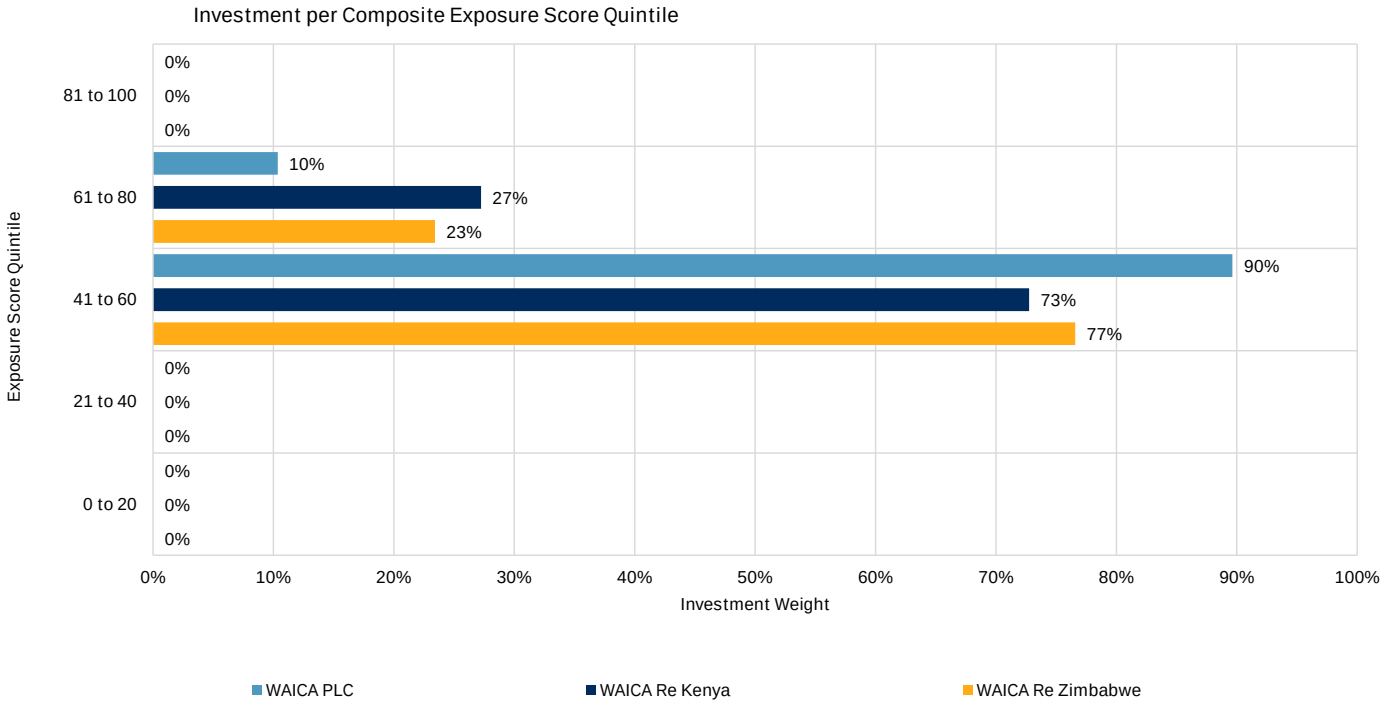




PHYSICAL RISK

Investment Weight per Exposure Score Quintile

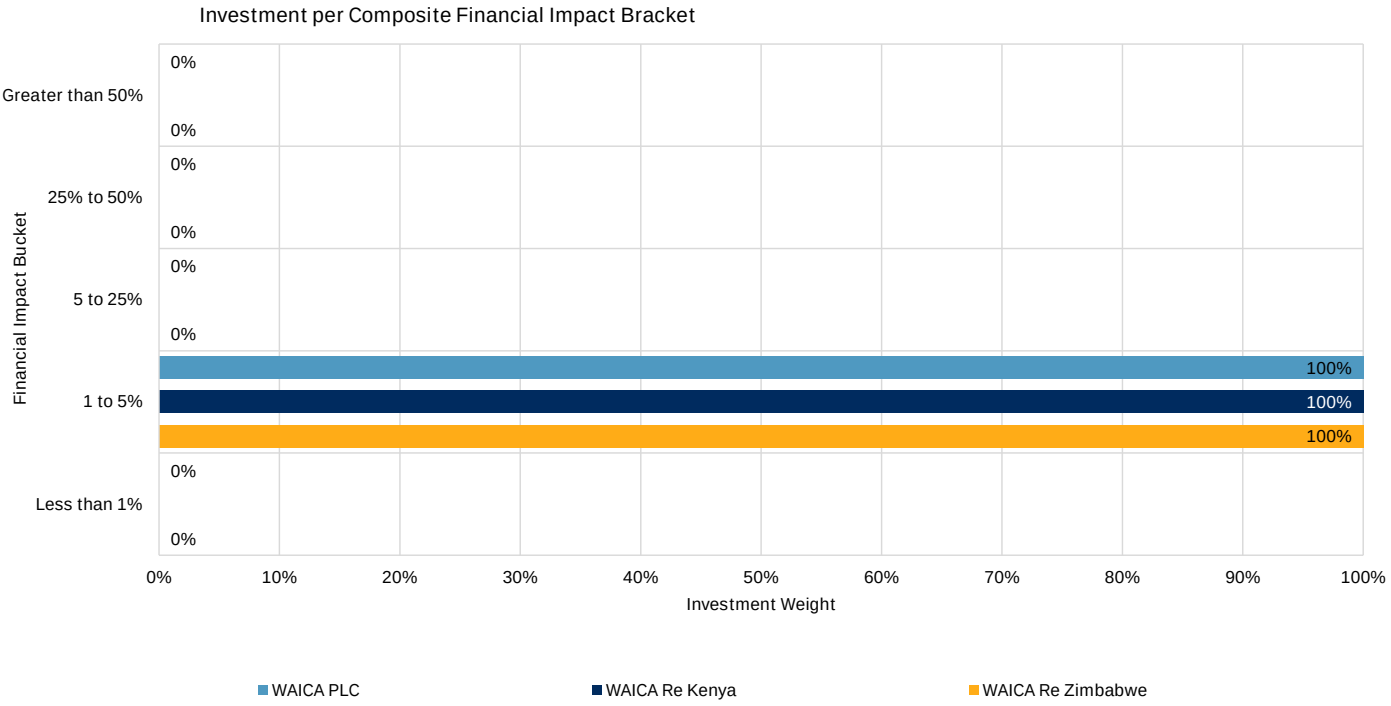
The chart below shows the portfolio or benchmark weight exposed to companies with a composite risk score in each quintile. The reference year and scenario is 2050, Moderate-High.



PHYSICAL RISK

Investment Weight per Financial Impact Bucket

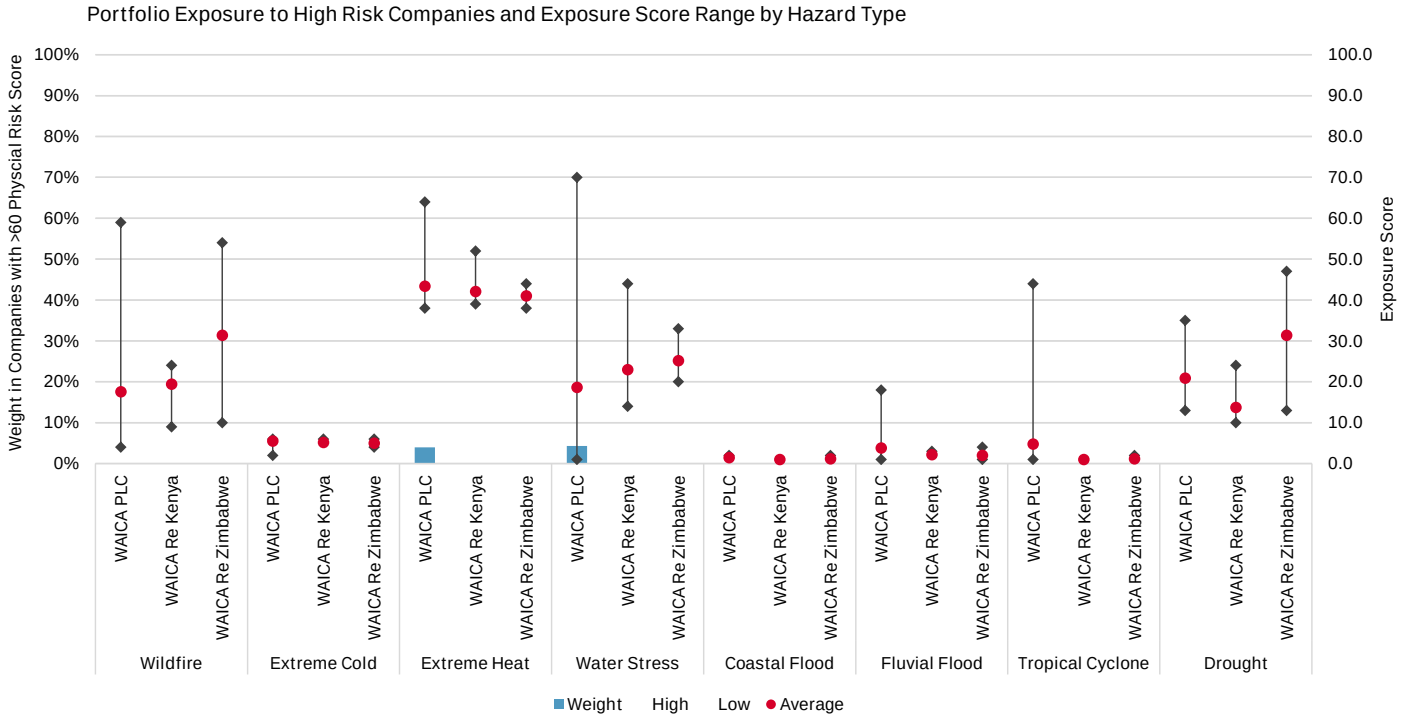
The chart below shows the portfolio or benchmark weight exposed to companies with a financial impact in each bracket for the composite Financial Impact percentage. The reference year and scenario is 2050, Moderate-High.



PHYSICAL RISK

Exposure Score Ranges by Hazard Type & Exposure to High Risk Companies

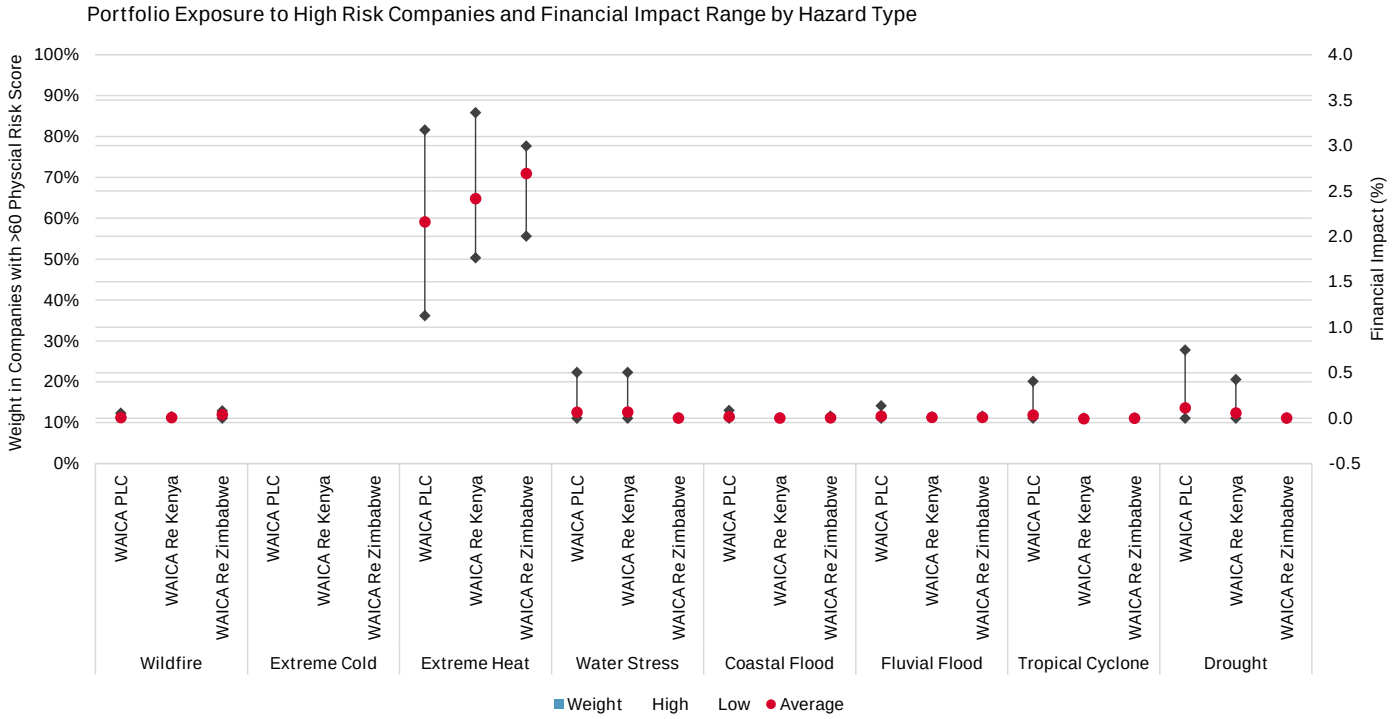
The chart below shows the maximum, minimum and average Exposure Score by hazard type for constituents of each portfolio . The blue bars represent the weight invested in companies with an Exposure Score falling within the top two quintiles (60+).



PHYSICAL RISK

Financial Impact Ranges by Hazard Type & Exposure to High Risk Companies

The chart below shows the maximum, minimum and average Financial Impact by hazard type for constituents of each portfolio. The blue bars represent the weight invested in companies with a Financial Impact falling within the top two brackets (5%+).



PHYSICAL RISK

Sector Risk Scores

The tables below show the weighted-average Exposure Score and Financial Impact percentage at the GICS sector level. Financial impacts for Extreme Cold are not currently available.

WAICA PLC

SECTOR EXPOSURE SCORE BY HAZARD TYPE - MediumHigh 2050 Scenario

	Composite	Wildfire	Extreme Cold	Extreme Heat	Water Stress	Coastal Flood	Fluvial Flood	Tropical Cyclone	Drought
Communication Services									
Consumer Discretionary									
Consumer Staples									
Energy									
Financials	55.9	14.0	5.6	42.9	17.0	1.4	2.8	2.7	22.7
Health Care									
Industrials									
Information Technology									
Materials									
Real Estate									
Utilities									

SECTOR FINANCIAL IMPACT BY HAZARD TYPE - MediumHigh 2050 Scenario

	Composite	Wildfire	Extreme Cold	Extreme Heat	Water Stress	Coastal Flood	Fluvial Flood	Tropical Cyclone	Drought
Communication Services									
Consumer Discretionary									
Consumer Staples									
Energy									
Financials	2.77%	0.01%		2.18%	0.11%	0.02%	0.01%	0.02%	0.14%
Health Care									
Industrials									
Information Technology									
Materials									
Real Estate									
Utilities									

PHYSICAL RISK

Sector Risk Scores

The tables below show the weighted-average Exposure Score and Financial Impact percentage at the GICS sector level. Financial impacts for Extreme Cold are not currently available.

WAICA Re Kenya

SECTOR EXPOSURE SCORE BY HAZARD TYPE - MediumHigh 2050 Scenario

	Composite	Wildfire	Extreme Cold	Extreme Heat	Water Stress	Coastal Flood	Fluvial Flood	Tropical Cyclone	Drought
Communication Services									
Consumer Discretionary									
Consumer Staples									
Energy									
Financials	54.4	20.6	5.0	42.2	23.7	1.0	2.0	1.0	12.6
Health Care									
Industrials									
Information Technology									
Materials									
Real Estate									
Utilities									

SECTOR FINANCIAL IMPACT BY HAZARD TYPE - MediumHigh 2050 Scenario

	Composite	Wildfire	Extreme Cold	Extreme Heat	Water Stress	Coastal Flood	Fluvial Flood	Tropical Cyclone	Drought
Communication Services									
Consumer Discretionary									
Consumer Staples									
Energy									
Financials	2.79%	0.01%		2.47%	0.02%	0.00%	0.01%	-0.01%	0.01%
Health Care									
Industrials									
Information Technology									
Materials									
Real Estate									
Utilities									

PHYSICAL RISK

Sector Risk Scores

The tables below show the weighted-average Exposure Score and Financial Impact percentage at the GICS sector level. Financial impacts for Extreme Cold are not currently available.

WAICA Re Zimbabwe

SECTOR EXPOSURE SCORE BY HAZARD TYPE - MediumHigh 2050 Scenario

	Composite	Wildfire	Extreme Cold	Extreme Heat	Water Stress	Coastal Flood	Fluvial Flood	Tropical Cyclone	Drought
Communication Services									
Consumer Discretionary									
Consumer Staples									
Energy									
Financials	60.9	20.5	5.0	43.1	22.0	1.0	1.8	1.0	26.8
Health Care									
Industrials									
Information Technology									
Materials									
Real Estate									
Utilities									

SECTOR FINANCIAL IMPACT BY HAZARD TYPE - MediumHigh 2050 Scenario

	Composite	Wildfire	Extreme Cold	Extreme Heat	Water Stress	Coastal Flood	Fluvial Flood	Tropical Cyclone	Drought
Communication Services									
Consumer Discretionary									
Consumer Staples									
Energy									
Financials	3.41%	0.03%		2.94%	0.00%	0.00%	0.01%	0.00%	0.00%
Health Care									
Industrials									
Information Technology									
Materials									
Real Estate									
Utilities									

PHYSICAL RISK

Top Contributors - 2050 Medium High Scenario - Composite Financial Impact

WAICA PLC

Name	Sector	Rebalanced Portfolio Weight	Composite Exp. Score	Composite Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
Ecobank Transnational Incorporatec	Financials	19.9%	59	3.59%	-7.40%	A	820
GUARANTY TRUST FUND MANAGER	Financials	4.5%	58	3.94%	-2.02%	A	372
United Bank for Africa Plc	Financials	9.6%	58	3.22%	-1.76%	A	573
United Bank for Africa Plc	Financials	7.2%	58	3.22%	-1.29%	A	573
United Bank for Africa Plc	Financials	4.4%	58	3.22%	-0.76%	A	573

WAICA Re Kenya

Name	Sector	Rebalanced Portfolio Weight	Composite Exp. Score	Composite Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
KCB Group PLC	Financials	11.6%	63	4.00%	-5.73%	A	297
Ecobank Transnational Incorporatec	Financials	13.9%	59	3.59%	-4.67%	A	820
Equity Group Holdings Plc	Financials	13.0%	69	2.91%	-0.65%	A	15
Ecobank Transnational Incorporatec	Financials	1.6%	59	3.59%	-0.48%	A	820
United Bank for Africa Plc	Financials	3.0%	58	3.22%	-0.48%	A	573

WAICA Re Zimbabwe

Name	Sector	Rebalanced Portfolio Weight	Composite Exp. Score	Composite Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
Ecobank Transnational Incorporatec	Financials	41.6%	59	3.59%	-3.81%	A	820
Ecobank Transnational Incorporatec	Financials	32.4%	59	3.59%	-2.56%	A	820
Standard Bank Group Limited	Financials	0.8%	66	2.58%	0.19%	A	1,566
CBZ Holdings Limited	Financials	2.2%	68	3.00%	0.27%	C	1
United Capital Plc	Financials	2.6%	51	2.05%	1.05%	C	1

PHYSICAL RISK

Top Contributors - 2050 Medium High Scenario - Wildfire Financial Impact

WAICA PLC

Name	Sector	Rebalanced Portfolio Weight	Wildfire Exp. Score	Wildfire Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
Ecobank Transnational Incorporatec	Financials	19.9%	10	0.01%	-17.95%	A	820
Bank of Sierra Leone	Financials	2.5%	27	0.06%	-13.94%	C	1
FBN Holdings Plc	Financials	6.0%	14	0.02%	-8.92%	A	73
United Bank for Africa Plc	Financials	9.6%	9	0.01%	-2.61%	A	573
GUARANTY TRUST FUND MANAGER	Financials	4.5%	10	0.01%	-2.28%	A	372

WAICA Re Kenya

Name	Sector	Rebalanced Portfolio Weight	Wildfire Exp. Score	Wildfire Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
KCB Group PLC	Financials	11.6%	22	0.02%	-28.28%	A	297
Ecobank Transnational Incorporatec	Financials	13.9%	10	0.01%	-26.97%	A	820
United Bank for Africa Plc	Financials	3.0%	9	0.01%	-2.83%	A	573
Ecobank Transnational Incorporatec	Financials	1.6%	10	0.01%	-2.79%	A	820
KCB Group PLC	Financials	0.9%	22	0.02%	-1.85%	A	297

WAICA Re Zimbabwe

Name	Sector	Rebalanced Portfolio Weight	Wildfire Exp. Score	Wildfire Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
FBC Bank Limited	Financials	20.4%	54	0.08%	-44.46%	C	1
CBZ Holdings Limited	Financials	2.2%	54	0.08%	-3.90%	C	1
Standard Bank Group Limited	Financials	0.8%	36	0.05%	-0.41%	A	1,566
United Capital Plc	Financials	2.6%	24	0.00%	2.63%	C	1
Ecobank Transnational Incorporatec	Financials	32.4%	10	0.01%	23.99%	A	820

PHYSICAL RISK

Top Contributors - 2050 Medium High Scenario - Extreme Heat Financial Impact

WAICA PLC

Name	Sector	Rebalanced Portfolio Weight	Extreme Heat Exp. Score	Extreme Heat Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
Ecobank Transnational Incorporate	Financials	19.9%	44	2.99%	-9.21%	A	820
GUARANTY TRUST FUND MANAGER	Financials	4.5%	42	3.17%	-2.15%	A	372
Faisal Islamic Bank of Sudan	Financials	4.3%	39	2.64%	-0.94%	C	1
Guaranty Trust Holding Company Pl	Financials	1.3%	42	3.17%	-0.59%	A	372
Bank of Sierra Leone	Financials	2.5%	56	2.31%	-0.14%	C	1

WAICA Re Kenya

Name	Sector	Rebalanced Portfolio Weight	Extreme Heat Exp. Score	Extreme Heat Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
KCB Group PLC	Financials	11.6%	43	3.36%	-4.73%	A	297
Ecobank Transnational Incorporate	Financials	13.9%	44	2.99%	-3.42%	A	820
Ecobank Transnational Incorporate	Financials	1.6%	44	2.99%	-0.35%	A	820
KCB Group PLC	Financials	0.9%	43	3.36%	-0.31%	A	297
United Bank for Africa Plc	Financials	0.1%	40	1.77%	0.02%	A	573

WAICA Re Zimbabwe

Name	Sector	Rebalanced Portfolio Weight	Extreme Heat Exp. Score	Extreme Heat Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
Ecobank Transnational Incorporate	Financials	41.6%	44	2.99%	-1.20%	A	820
Ecobank Transnational Incorporate	Financials	32.4%	44	2.99%	-0.81%	A	820
CBZ Holdings Limited	Financials	2.2%	41	2.91%	0.03%	C	1
Standard Bank Group Limited	Financials	0.8%	38	2.34%	0.16%	A	1,566
FBC Bank Limited	Financials	20.4%	41	2.91%	0.30%	C	1

PHYSICAL RISK

Top Contributors - 2050 Medium High Scenario - Water Stress Financial Impact

WAICA PLC

Name	Sector	Rebalanced Portfolio Weight	Water Stress Exp. Score	Water Stress Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
United Bank for Africa Plc	Financials	9.6%	14	0.50%	-39.32%	A	573
United Bank for Africa Plc	Financials	7.2%	14	0.50%	-28.82%	A	573
United Bank for Africa Plc	Financials	4.4%	14	0.50%	-17.02%	A	573
Faisal Islamic Bank of Sudan	Financials	0.0%	70	0.00%	0.02%	C	1
Zenith Bank Plc	Financials	0.0%	10	0.00%	0.04%	A	448

WAICA Re Kenya

Name	Sector	Rebalanced Portfolio Weight	Water Stress Exp. Score	Water Stress Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
United Bank for Africa Plc	Financials	3.0%	14	0.50%	-97.09%	A	573
United Bank for Africa Plc	Financials	0.1%	14	0.50%	-2.45%	A	573
KCB Group PLC	Financials	0.9%	31	0.00%	0.86%	A	297
Stanbic Holdings Plc	Financials	1.3%	18	0.00%	1.34%	C	1
Absa Bank Kenya PLC	Financials	1.4%	18	0.00%	1.41%	C	1

WAICA Re Zimbabwe

Name	Sector	Rebalanced Portfolio Weight	Water Stress Exp. Score	Water Stress Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
Standard Bank Group Limited	Financials	0.8%	33	0.00%	-13.03%	A	1,566
United Capital Plc	Financials	2.6%	22	0.00%	-11.23%	C	1
CBZ Holdings Limited	Financials	2.2%	28	0.00%	0.56%	C	1
FBC Bank Limited	Financials	20.4%	28	0.00%	6.34%	C	1
Ecobank Transnational Incorporate	Financials	32.4%	20	0.00%	11.85%	A	820

PHYSICAL RISK

Top Contributors - 2050 Medium High Scenario - Coastal Flood Financial Impact

WAICA PLC

Name	Sector	Rebalanced Portfolio Weight	Coastal Flood Exp. Score	Coastal Flood Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
FBN Holdings Plc	Financials	6.0%	2	0.09%	-24.37%	A	73
Waica Re Capital (P)	Financials	9.8%	2	0.03%	-9.07%	C	1
OmniBSIC Bank Ghana Limited	Financials	6.5%	2	0.03%	-5.78%	C	1
Waica Re Capital	Financials	5.8%	2	0.03%	-5.11%	C	1
First Atlantic Bank Limited	Financials	4.8%	2	0.03%	-4.22%	C	1

WAICA Re Kenya

Name	Sector	Rebalanced Portfolio Weight	Coastal Flood Exp. Score	Coastal Flood Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
The Co-operative Bank of Kenya Lim	Financials	13.2%	1	0.00%	-12.83%	C	1
I&M Group PLC	Financials	12.9%	1	0.00%	-12.56%	C	1
Absa Bank Kenya PLC	Financials	10.5%	1	0.00%	-9.89%	C	1
NCBA Group PLC	Financials	9.2%	1	0.00%	-8.60%	C	1
Bank of Africa Kenya Limited	Financials	5.7%	1	0.00%	-5.10%	C	1

WAICA Re Zimbabwe

Name	Sector	Rebalanced Portfolio Weight	Coastal Flood Exp. Score	Coastal Flood Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
United Capital Plc	Financials	2.6%	2	0.02%	-97.39%	C	1
Standard Bank Group Limited	Financials	0.8%	1	0.00%	-1.78%	A	1,566
CBZ Holdings Limited	Financials	2.2%	1	0.00%	2.25%	C	1
FBC Bank Limited	Financials	20.4%	1	0.00%	25.68%	C	1
Ecobank Transnational Incorporate	Financials	32.4%	1	0.00%	47.95%	A	820

PHYSICAL RISK

Top Contributors - 2050 Medium High Scenario - Fluvial Flood Financial Impact

WAICA PLC

Name	Sector	Rebalanced Portfolio Weight	Fluvial Flood Exp. Score	Fluvial Flood Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
Faisal Islamic Bank of Sudan	Financials	4.3%	18	0.14%	-37.84%	C	1
United Capital Plc	Financials	3.8%	4	0.02%	-2.06%	C	1
GUARANTY TRUST FUND MANAGER	Financials	4.5%	3	0.02%	-0.66%	A	372
EDC Asset Management	Financials	1.0%	4	0.02%	-0.53%	C	1
Globus Bank Limited	Financials	0.6%	4	0.02%	-0.32%	C	1

WAICA Re Kenya

Name	Sector	Rebalanced Portfolio Weight	Fluvial Flood Exp. Score	Fluvial Flood Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
Ecobank Transnational Incorporate	Financials	13.9%	2	0.01%	-1.27%	A	820
The Co-operative Bank of Kenya Lim	Financials	13.2%	2	0.01%	-0.48%	C	1
I&M Group PLC	Financials	12.9%	2	0.01%	-0.47%	C	1
Absa Bank Kenya PLC	Financials	10.5%	2	0.01%	-0.37%	C	1
NCBA Group PLC	Financials	9.2%	2	0.01%	-0.32%	C	1

WAICA Re Zimbabwe

Name	Sector	Rebalanced Portfolio Weight	Fluvial Flood Exp. Score	Fluvial Flood Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
Ecobank Transnational Incorporate	Financials	41.6%	2	0.01%	-11.08%	A	820
Ecobank Transnational Incorporate	Financials	32.4%	2	0.01%	-7.45%	A	820
United Capital Plc	Financials	2.6%	4	0.02%	-3.18%	C	1
Standard Bank Group Limited	Financials	0.8%	2	0.01%	0.39%	A	1,566
CBZ Holdings Limited	Financials	2.2%	1	0.00%	1.42%	C	1

PHYSICAL RISK

Top Contributors - 2050 Medium High Scenario - Tropical Cyclone Financial Impact

WAICA PLC

Name	Sector	Rebalanced Portfolio Weight	Tropical Cyclone Exp. Score	Tropical Cyclone Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
United Investments Ltd	Financials	2.3%	44	0.40%	-56.53%	C	1
United Investments Ltd	Financials	1.7%	44	0.40%	-41.15%	C	1
Faisal Islamic Bank of Sudan	Financials	0.0%	1	0.00%	0.02%	C	1
Zenith Bank Plc	Financials	0.0%	1	0.00%	0.04%	A	448
Guaranty Trust Holding Company Pl	Financials	0.1%	1	0.00%	0.12%	A	372

WAICA Re Kenya

Name	Sector	Rebalanced Portfolio Weight	Tropical Cyclone Exp. Score	Tropical Cyclone Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
The Co-operative Bank of Kenya Lim	Financials	13.2%	1	-0.01%	-6.69%	C	1
I&M Group PLC	Financials	12.9%	1	-0.01%	-6.54%	C	1
Absa Bank Kenya PLC	Financials	10.5%	1	-0.01%	-5.15%	C	1
NCBA Group PLC	Financials	9.2%	1	-0.01%	-4.48%	C	1
Bank of Africa Kenya Limited	Financials	5.7%	1	-0.01%	-2.66%	C	1

WAICA Re Zimbabwe

Name	Sector	Rebalanced Portfolio Weight	Tropical Cyclone Exp. Score	Tropical Cyclone Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
Ecobank Transnational Incorporate	Financials	41.6%	1	0.00%	-92.28%	A	820
Ecobank Transnational Incorporate	Financials	32.4%	1	0.00%	-62.08%	A	820
Standard Bank Group Limited	Financials	0.8%	2	0.00%	-1.29%	A	1,566
United Capital Plc	Financials	2.6%	1	0.00%	2.63%	C	1
CBZ Holdings Limited	Financials	2.2%	1	0.00%	9.41%	C	1

PHYSICAL RISK

Top Contributors - 2050 Medium High Scenario - Drought Financial Impact

WAICA PLC

Name	Sector	Rebalanced Portfolio Weight	Drought Exp. Score	Drought Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
FBN Holdings Plc	Financials	6.0%	31	0.75%	-29.11%	A	73
United Bank for Africa Plc	Financials	9.6%	24	0.42%	-22.52%	A	573
United Bank for Africa Plc	Financials	7.2%	24	0.42%	-16.50%	A	573
United Bank for Africa Plc	Financials	4.4%	24	0.42%	-9.75%	A	573
Zenith Bank Plc	Financials	0.0%	27	0.58%	-0.12%	A	448

WAICA Re Kenya

Name	Sector	Rebalanced Portfolio Weight	Drought Exp. Score	Drought Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
United Bank for Africa Plc	Financials	3.0%	24	0.42%	-96.40%	A	573
United Bank for Africa Plc	Financials	0.1%	24	0.42%	-2.43%	A	573
KCB Group PLC	Financials	0.9%	11	0.00%	0.85%	A	297
Stanbic Holdings Plc	Financials	1.3%	10	0.00%	1.33%	C	1
Absa Bank Kenya PLC	Financials	1.4%	10	0.00%	1.39%	C	1

WAICA Re Zimbabwe

Name	Sector	Rebalanced Portfolio Weight	Drought Exp. Score	Drought Financial Impact	Port. Fin. Impact Contribution	Data Quality	Asset Count
FBC Bank Limited	Financials	20.4%	47	0.00%	-45.02%	C	1
CBZ Holdings Limited	Financials	2.2%	47	0.00%	-3.95%	C	1
Standard Bank Group Limited	Financials	0.8%	39	0.00%	-0.10%	A	1,566
United Capital Plc	Financials	2.6%	13	0.00%	1.78%	C	1
Ecobank Transnational Incorporate	Financials	32.4%	21	0.00%	24.65%	A	820

EU TAXONOMY

Eligible and Aligned Taxonomy Revenues

In March 2018, the European Commission (EC) adopted an action plan on sustainable finance as part of a strategy to integrate ESG considerations into its financial policy framework and mobilize finance for sustainable growth. One of the proposals was the development of a unified EU classification system or 'EU Taxonomy' that would define which economic activities are environmentally sustainable. In March 2020, the Technical Expert Group on Sustainable Finance (TEG) published its final recommendations on the design and implementation of the Taxonomy. The first delegated act on sustainable activities linked to objectives one and two - climate change mitigation and climate change adaptation - was published in December 2021. The Taxonomy sets out the criteria and thresholds that must be met for an activity to be considered environmentally sustainable. These include: 1. Substantial Contribution (SC): the activity must make a substantial contribution to one of the six objectives; 2. Do No Significant Harm (DNSH): the activity must not negatively affect the other objectives; and 3. Minimum Social Safeguards (MSS): the activity must meet minimum safeguards to respect human rights and labor standards. Please see the appendix for more details.

S&P Global's EU Taxonomy Data Solution provides an assessment of the proportion of company revenues eligible for alignment with the Taxonomy using a mapping between Trucost's proprietary sector classification system and the business activities outlined in the Taxonomy. Version 2 of the dataset now also provides an assessment of final aligned share following the application of the three criteria described above. The dataset can be applied at the portfolio-level to help financial institutions understand their alignment to the Taxonomy, performance vs. a benchmark, and to support reporting requirements.

HEADLINE RESULTS

	Assets covered (m)	Eligible	Not Assessed	Not Aligned	Partially Aligned	Aligned
WAICA PLC	35	0.00%	0.00%	0.00%	0.00%	0.00%
WAICA Re Kenya	12	0.00%	0.00%	0.00%	0.00%	0.00%
WAICA Re Zimbabwe	15	0.00%	0.00%	0.00%	0.00%	0.00%

EU TAXONOMY

Eligible and Aligned Taxonomy Revenues

In accordance with EU Taxonomy disclosure guidance, users are required to report their aligned revenue share arising from companies subject to the NFRD. This may be supplemented with voluntary reporting on alignment for companies not subject to the NFRD. To support users with their voluntary disclosures we have provided both the top-level view (previous page), and revenue share for EU headquartered companies only, as a proxy for NFRD obligation (table below).

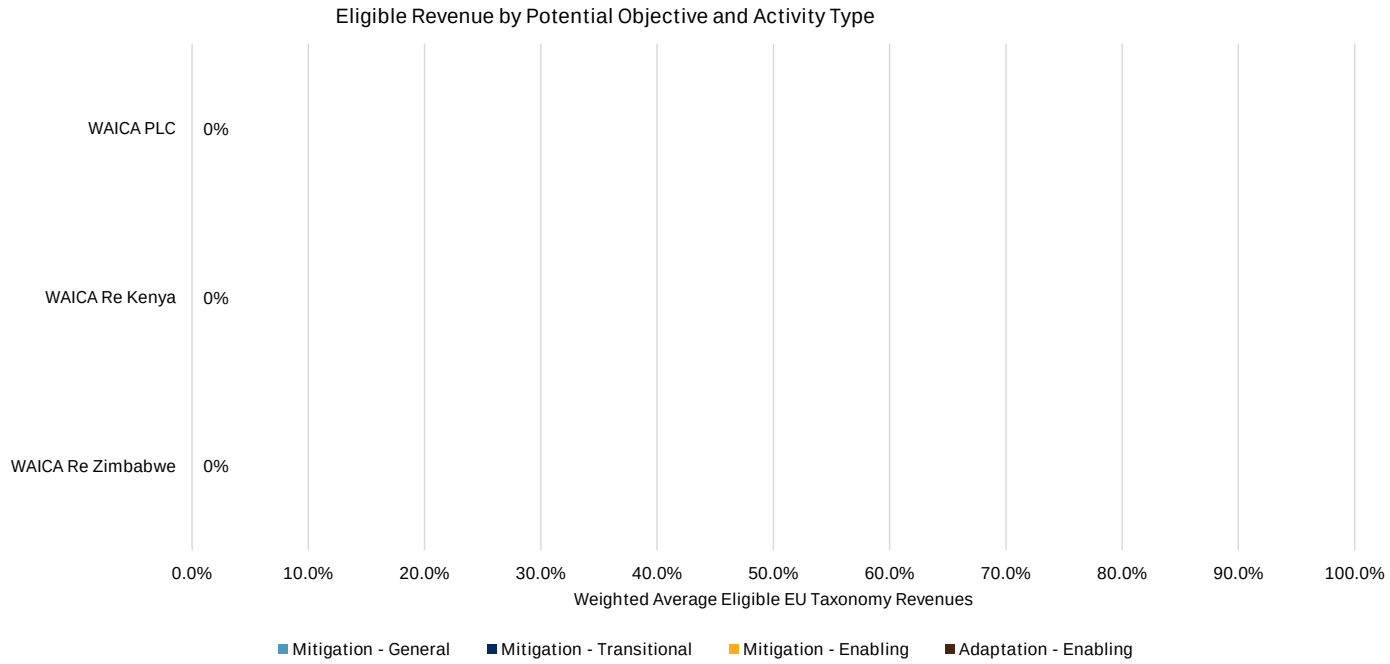
HEADLINE RESULTS - EU HEADQUARTERED

	Assets covered (m)	Eligible	Not Assessed	Not Aligned	Partially Aligned	Aligned
WAICA PLC	0	0.00%	0.00%	0.00%	0.00%	0.00%
WAICA Re Kenya	0	0.00%	0.00%	0.00%	0.00%	0.00%
WAICA Re Zimbabwe	0	0.00%	0.00%	0.00%	0.00%	0.00%

EU TAXONOMY

Eligible Revenue by Potential Objective and Type

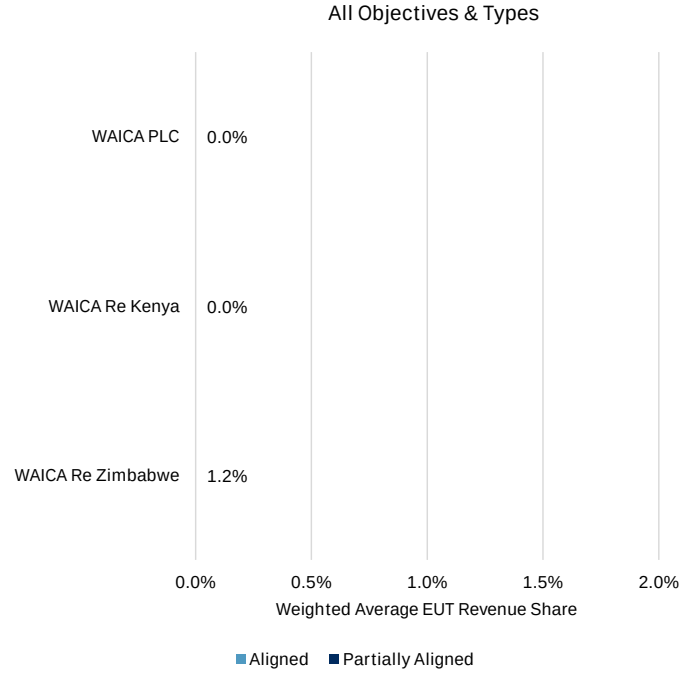
The Taxonomy outlines 96 business activities - linked to thirteen Nomenclature of Economic Activities (NACE) macro sectors - which can be classified as 'general', 'transitional' or 'enabling'. 'General' activities are those that have a direct carbon mitigation potential (e.g. renewable energy). 'Transitional' are those which may have a relatively high carbon intensity but have significant potential to reduce their carbon emissions over time (e.g. steel manufacturing). 'Enabling' activities are those that could support carbon emissions reductions in other sectors (e.g. wind turbine manufacturing). The chart below show the portfolio and benchmark eligible revenue share broken down by the objective and type they would correspond to if classified as 'aligned'.

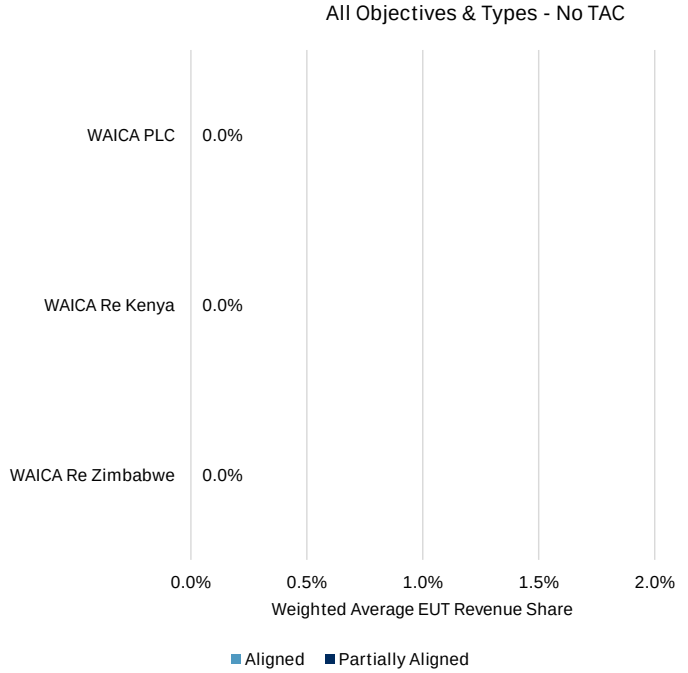


EU TAXONOMY

Aligned and Partially Aligned Revenues by Objective and Activity Type

The charts below show the total level of aligned or partially aligned revenues broken down by objective and activity type. In the absence of available data to assess SC, Trucost may use a Taxonomy Alignment Coefficient (TAC) to classify a share of eligible revenues as aligned for certain thresholds. For example, 15% of Construction and Real Estate revenues may be classed as meeting the SC requirement using the TAC. The difference between the aligned revenues using TAC versus not using TAC gives an indication of the degree to which industry estimates rather than company performance have been used. For more information on TAC please refer to the appendix.

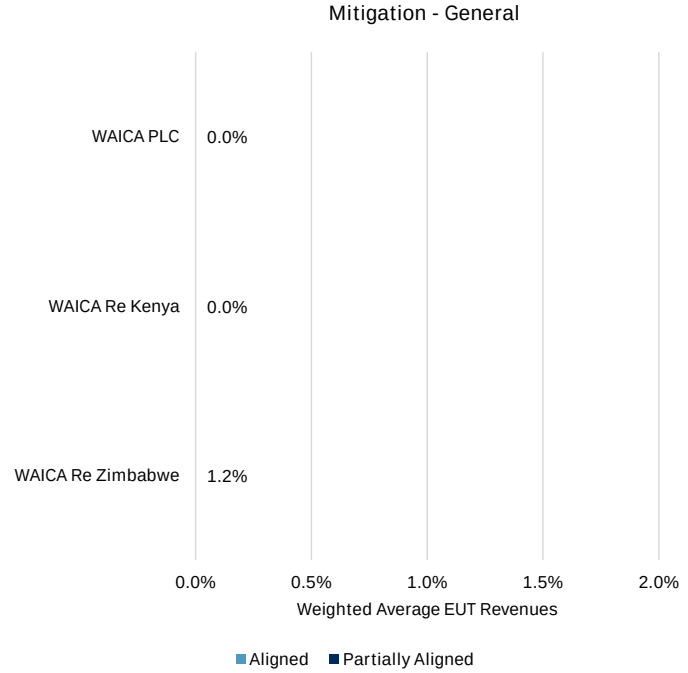


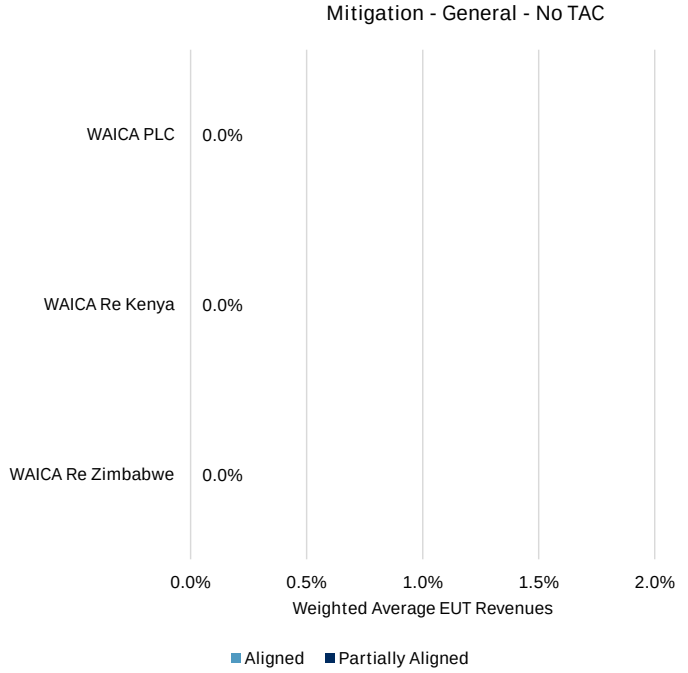


EU TAXONOMY

Aligned and Partially Aligned Revenues by Objective and Activity Type

The charts below show the total level of aligned or partially aligned revenues broken down by objective and activity type. In the absence of available data to assess SC, Trucost may use a Taxonomy Alignment Coefficient (TAC) to classify a share of eligible revenues as aligned for certain thresholds. For example, 15% of Contruction and Real Estate revenues may be classed as meeting the SC requirement using the TAC. The difference between the aligned revenues using TAC versus not using TAC gives an indication of the degree to which industry estimates rather than company performance have been used. For more information on TAC please refer to the appendix.

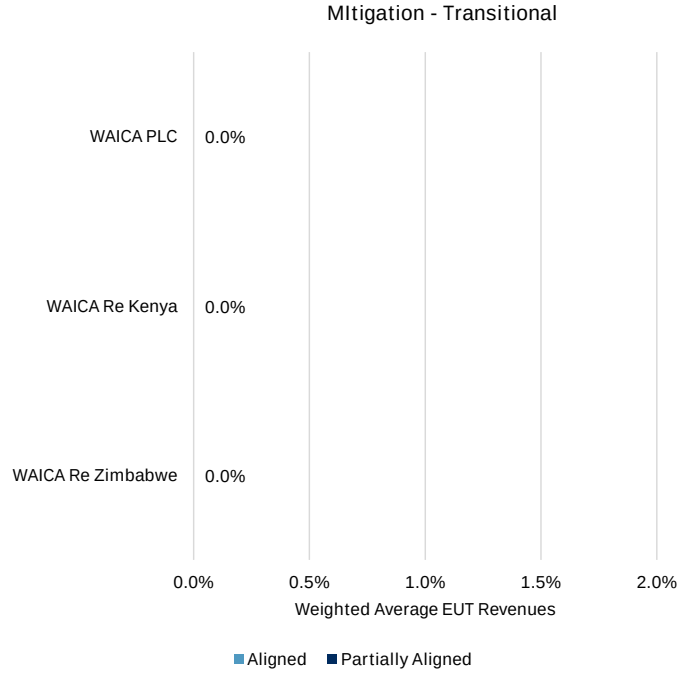


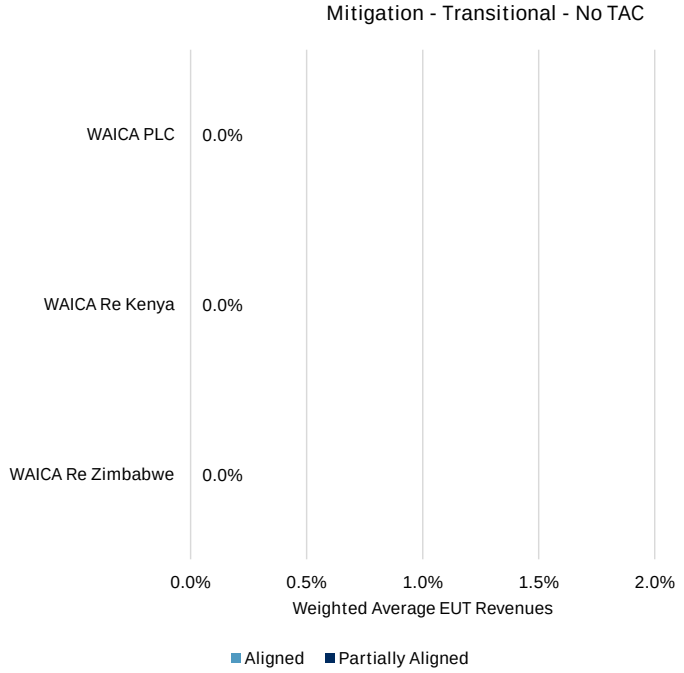


EU TAXONOMY

Aligned and Partially Aligned Revenues by Objective and Activity Type

The charts below show the total level of aligned or partially aligned revenues broken down by objective and activity type. In the absence of available data to assess SC, Trucost may use a Taxonomy Alignment Coefficient (TAC) to classify a share of eligible revenues as aligned for certain thresholds. For example, 15% of Contruction and Real Estate revenues may be classed as meeting the SC requirement using the TAC. The difference between the aligned revenues using TAC versus not using TAC gives an indication of the degree to which industry estimates rather than company performance have been used. For more information on TAC please refer to the appendix.

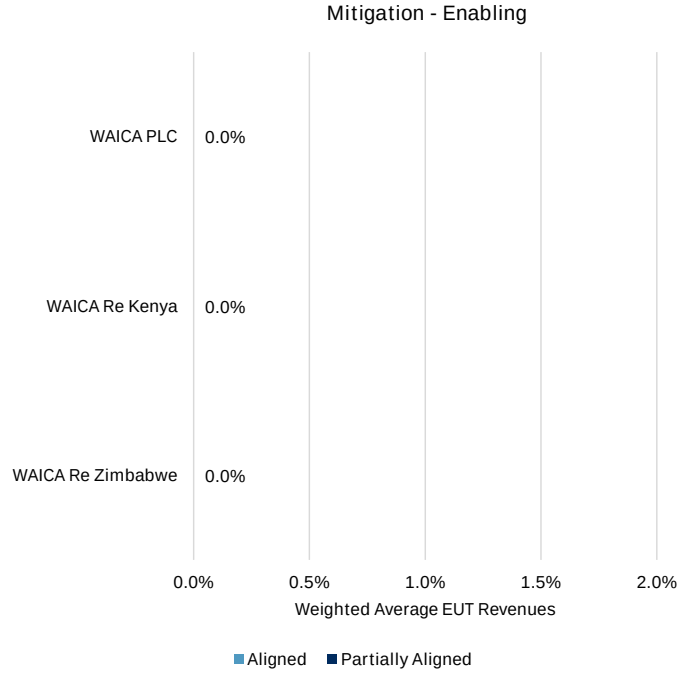


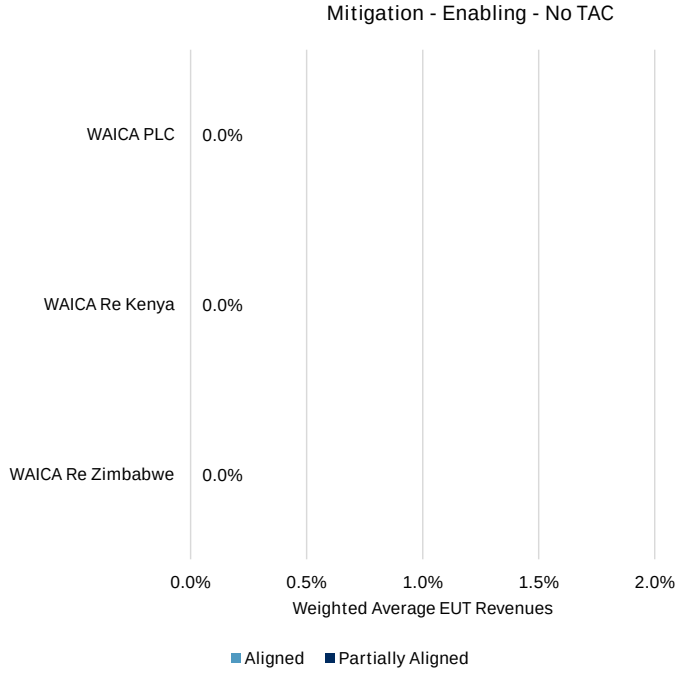


EU TAXONOMY

Aligned and Partially Aligned Revenues by Objective and Activity Type

The charts below show the total level of aligned or partially aligned revenues broken down by objective and activity type. In the absence of available data to assess SC, Trucost may use a Taxonomy Alignment Coefficient (TAC) to classify a share of eligible revenues as aligned for certain thresholds. For example, 15% of Contruction and Real Estate revenues may be classed as meeting the SC requirement using the TAC. The difference between the aligned revenues using TAC versus not using TAC gives an indication of the degree to which industry estimates rather than company performance have been used. For more information on TAC please refer to the appendix.





EU TAXONOMY

Company Rankings - Eligibility & Alignment

WAICA PLC

LARGEST CONTRIBUTORS TO ELIGIBLE PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Partially Aligned Rev. Share	Company Level Aligned Rev. Share	Weighted Eligible Rev. Share

LARGEST CONTRIBUTORS TO NOT ELIGIBLE PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Partially Aligned Rev. Share	Company Level Aligned Rev. Share	Weighted Not Eligible Rev. Share
Ecobank Transnational Incorporate	Financials	37.45%	0.00%	0.00%	0.00%	37.45%
United Bank for Africa Plc	Financials	18.06%	0.00%	0.00%	0.00%	18.06%
United Bank for Africa Plc	Financials	13.58%	0.00%	0.00%	0.00%	13.58%
FBN Holdings Plc	Financials	11.38%	0.00%	0.00%	0.00%	11.38%

LARGEST CONTRIBUTORS TO ALIGNED OR PARTIALLY ALIGNED PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Partially Aligned Rev. Share	Company Level Aligned Rev. Share	Weighted Aligned/Partial Rev. Share
Ecobank Transnational Incorporate	Financials	37.45%	0.00%	0.00%	0.00%	0.00%

LARGEST CONTRIBUTORS TO NOT ALIGNED PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Aligned Rev. Share	Company Level Not Aligned Rev. Share	Weighted Not Aligned Rev. Share
Ecobank Transnational Incorporate	Financials	37.45%	0.00%	0.00%	0.00%	0.00%

EU TAXONOMY

Company Rankings - Eligibility & Alignment

WAICA Re Kenya

LARGEST CONTRIBUTORS TO ELIGIBLE PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Partially Aligned Rev. Share	Company Level Aligned Rev. Share	Weighted Eligible Rev. Share

LARGEST CONTRIBUTORS TO NOT ELIGIBLE PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Partially Aligned Rev. Share	Company Level Aligned Rev. Share	Weighted Not Eligible Rev. Share
Ecobank Transnational Incorporate	Financials	23.60%	0.00%	0.00%	0.00%	23.60%
The Co-operative Bank of Kenya Lim	Financials	22.30%	0.00%	0.00%	0.00%	22.30%
Equity Group Holdings Plc	Financials	22.00%	0.00%	0.00%	0.00%	22.00%
KCB Group PLC	Financials	19.67%	0.00%	0.00%	0.00%	19.67%

LARGEST CONTRIBUTORS TO ALIGNED OR PARTIALLY ALIGNED PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Partially Aligned Rev. Share	Company Level Aligned Rev. Share	Weighted Aligned/Partial Rev. Share
Ecobank Transnational Incorporate	Financials	2.79%	0.00%	0.00%	0.00%	0.00%

LARGEST CONTRIBUTORS TO NOT ALIGNED PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Aligned Rev. Share	Company Level Not Aligned Rev. Share	Weighted Not Aligned Rev. Share
Ecobank Transnational Incorporate	Financials	2.79%	0.00%	0.00%	0.00%	0.00%

EU TAXONOMY

Company Rankings - Eligibility & Alignment

WAICA Re Zimbabwe

LARGEST CONTRIBUTORS TO ELIGIBLE PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Partially Aligned Rev. Share	Company Level Aligned Rev. Share	Weighted Eligible Rev. Share

LARGEST CONTRIBUTORS TO NOT ELIGIBLE PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Partially Aligned Rev. Share	Company Level Aligned Rev. Share	Weighted Not Eligible Rev. Share
Ecobank Transnational Incorporate	Financials	55.64%	0.00%	0.00%	0.00%	55.64%
Ecobank Transnational Incorporate	Financials	43.33%	0.00%	0.00%	0.00%	43.33%
Standard Bank Group Limited	Financials	1.04%	0.00%	0.00%	0.00%	1.04%

LARGEST CONTRIBUTORS TO ALIGNED OR PARTIALLY ALIGNED PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Partially Aligned Rev. Share	Company Level Aligned Rev. Share	Weighted Aligned/Partial Rev. Share
Ecobank Transnational Incorporate	Financials	55.64%	0.00%	0.00%	0.00%	0.00%

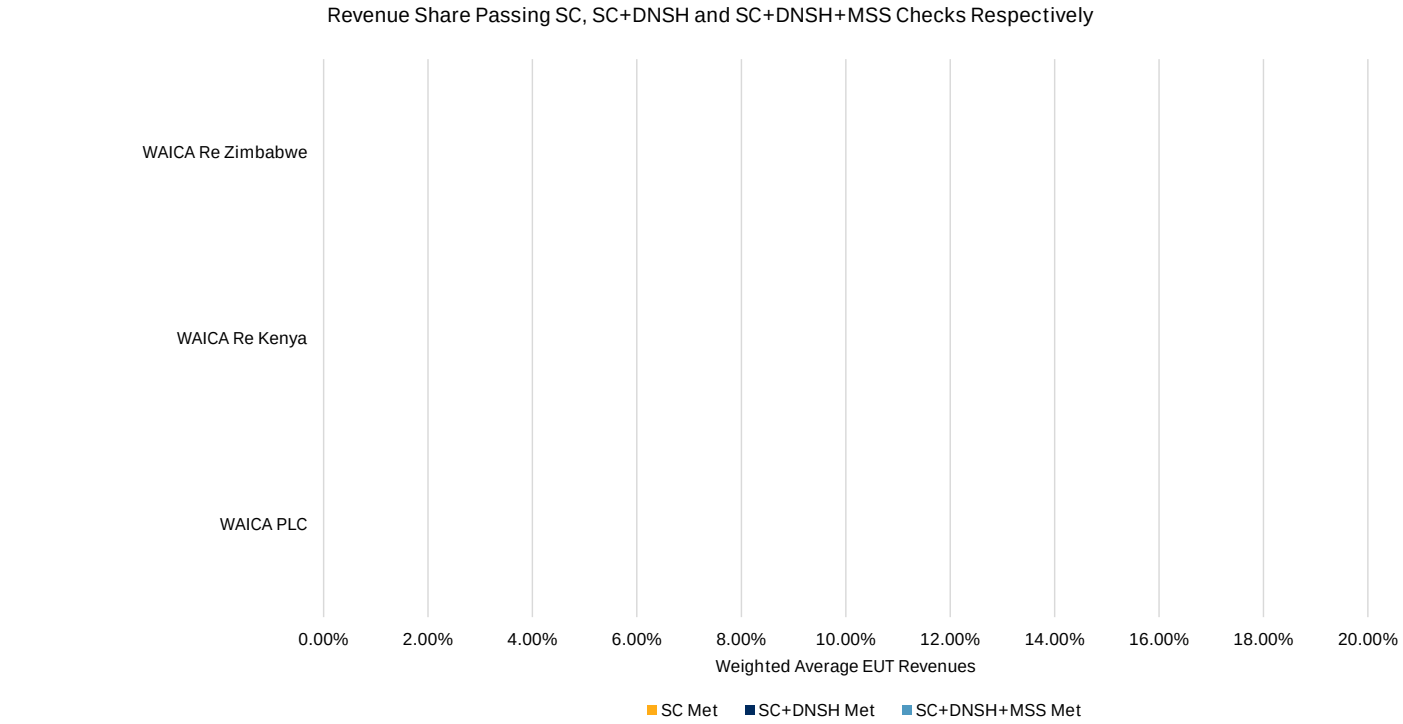
LARGEST CONTRIBUTORS TO NOT ALIGNED PORTFOLIO REVENUES

Name	Sector	Rebalanced Weight	Company Level Eligible Rev. Share	Company Level Aligned Rev. Share	Company Level Not Aligned Rev. Share	Weighted Not Aligned Rev. Share
Ecobank Transnational Incorporate	Financials	55.64%	0.00%	0.00%	0.00%	0.00%

EU TAXONOMY

Alignment Breakdown

The chart below give an indication of the degree to which revenues that are classified as passing the SC criteria may still fail to be classified as 'aligned' due to not meeting either the DNSH or MSS requirements. Business activities deemed as not meeting the DNSH criteria on one or more of the six climate objectives will not be classified as 'aligned'. Similarly, failure on any of the six MSS criteria will preclude all eligible revenues from being categorised as 'aligned'.



EU TAXONOMY

Company Rankings - SC, DNSH or MSS Not Met

WAICA PLC

LARGEST PORTFOLIO WEIGHTED SC NOT MET

Name	Sector	Rebalanced Weight	Company Level Assessed Rev.Share	TAC Assessed Share	Company Level SC Not Met Rev.Share	Weighted SC Not Met Rev. Share

LARGEST PORTFOLIO WEIGHTED DNSH NOT MET

Name	Sector	Rebalanced Weight	Company Level Eligible Rev.Share	DNSH Met Criteria Count	Company Level DNSH Not Met Rev.Share	Weighted DNSH Not Met Rev. Share
Ecobank Transnational Incorporater	Financials	37.45%	0.00%	0/0	0.00%	0.00%

LARGEST PORTFOLIO WEIGHTED MSS NOT MET

Name	Sector	Rebalanced Weight	Company Level Eligible Rev.Share	MSS Met Criteria Count	Weighted MSS Not Met Rev. Share

EU TAXONOMY

Company Rankings - SC, DNSH or MSS Not Met

WAICA Re Kenya

LARGEST PORTFOLIO WEIGHTED SC NOT MET

Name	Sector	Rebalanced Weight	Company Level Assessed Rev.Share	TAC Assessed Share	Company Level SC Not Met Rev.Share	Weighted SC Not Met Rev. Share

LARGEST PORTFOLIO WEIGHTED DNSH NOT MET

Name	Sector	Rebalanced Weight	Company Level Eligible Rev.Share	DNSH Met Criteria Count	Company Level DNSH Not Met Rev.Share	Weighted DNSH Not Met Rev. Share
Ecobank Transnational Incorporater	Financials	2.79%	0.00%	0/0	0.00%	0.00%

LARGEST PORTFOLIO WEIGHTED MSS NOT MET

Name	Sector	Rebalanced Weight	Company Level Eligible Rev.Share	MSS Met Criteria Count	Weighted MSS Not Met Rev. Share

EU TAXONOMY

Company Rankings - SC, DNSH or MSS Not Met

WAICA Re Zimbabwe

LARGEST PORTFOLIO WEIGHTED SC NOT MET

Name	Sector	Rebalanced Weight	Company Level Assessed Rev.Share	TAC Assessed Share	Company Level SC Not Met Rev.Share	Weighted SC Not Met Rev. Share

LARGEST PORTFOLIO WEIGHTED DNSH NOT MET

Name	Sector	Rebalanced Weight	Company Level Eligible Rev.Share	DNSH Met Criteria Count	Company Level DNSH Not Met Rev.Share	Weighted DNSH Not Met Rev. Share
Ecobank Transnational Incorporater	Financials	55.64%	0.00%	0/0	0.00%	0.00%

LARGEST PORTFOLIO WEIGHTED MSS NOT MET

Name	Sector	Rebalanced Weight	Company Level Eligible Rev.Share	MSS Met Criteria Count	Weighted MSS Not Met Rev. Share

EU TAXONOMY

DNSH Issue Breakdown

The table below indicates the relative importance of different DNSH criteria to investee companies (TOTALs), and the degree to which those criteria are being 'met', 'partially met', 'not met' or 'no coverage/no data' was available. For more information on the DNSH assessments please refer to the appendix.

PORTFOLIO		Climate Mitigation	Climate Adaptation	Water	Pollution	Biodiversity	Circular Economy
WAICA PLC	Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Partially Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Covered	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WAICA Re Kenya	Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Partially Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Covered	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WAICA Re Zimbabwe	Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Partially Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Covered	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

EU TAXONOMY

MSS Issue Breakdown

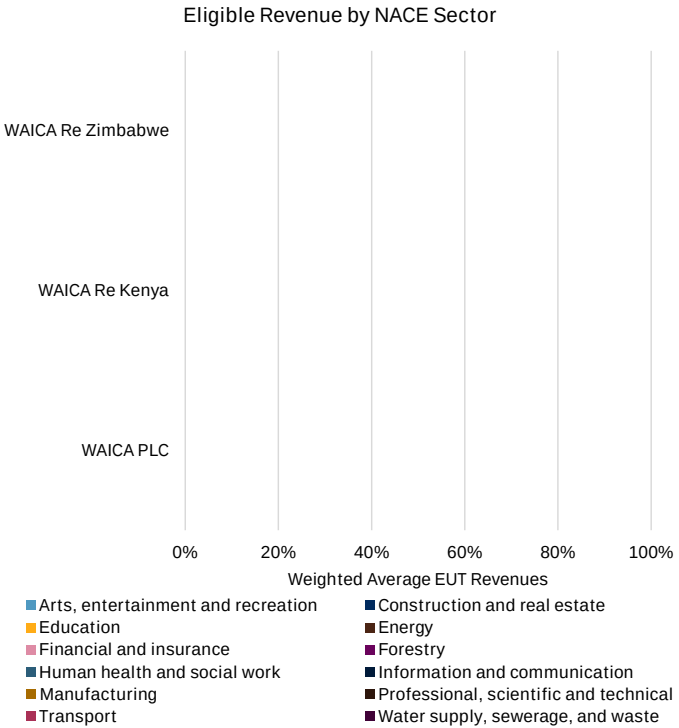
The table below indicate the performance of investee companies against the MSS criteria. Unlike the DNSH criteria, all eligible revenues are assessed against all six MSS criteria. For more information on the MSS assessments please refer to the appendix.

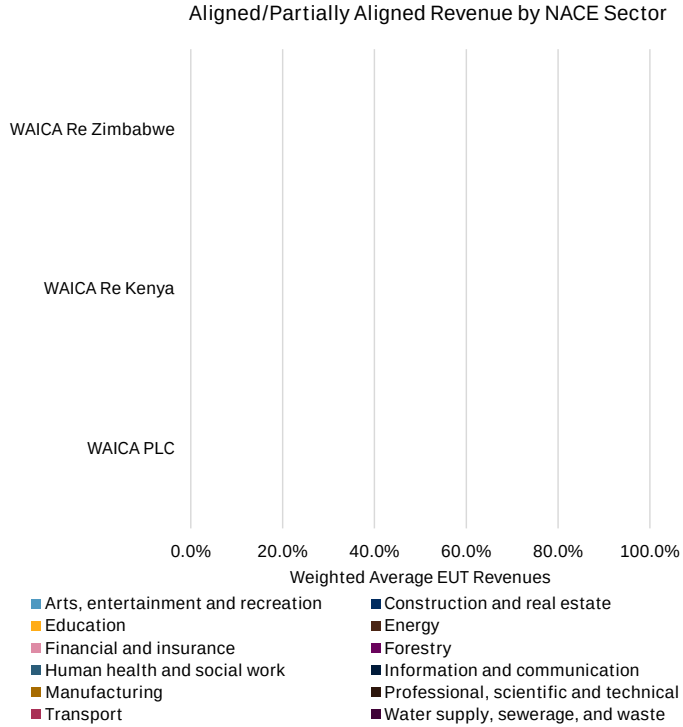
PORTFOLIO		Human Rights	Employee Industry Relations	Corruption	Consumer Interest	Taxation	Supply Chain
WAICA PLC	Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Partially Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Covered	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WAICA Re Kenya	Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Partially Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Covered	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WAICA Re Zimbabwe	Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Partially Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Met	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Not Covered	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

EU TAXONOMY

NACE Sector Breakdown

The charts below shows the breakdown of the weighted-average EU Taxonomy revenues - both by 'eligible' and by 'aligned or partially aligned' revenues - by NACE macro sector.





APPENDIX

1. TCFD Recommended Disclosures and Supplementary Guidance for Asset Owners and Managers

	Governance	Strategy	Risk Management	Metrics & Targets
Recommended Disclosures for All Sectors	a) Describe the board's oversight of climate-related risks and opportunities. b) Describe management's role in assessing and managing climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	a) Describe the organization's processes for identifying and assessing climate-related risks. b) Describe the organization's processes for managing climate-related risks. c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process. b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks. c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.
Supplemental Guidance for Asset Owners / Asset Managers		Asset owners should describe how climate-related risks and opportunities are factored into relevant investment strategies. This could be described from the perspective of the total fund or investment strategy or individual investment strategies for various asset classes. Asset managers should describe how climate-related risks and opportunities are factored into relevant products or investment strategies. Asset managers should also describe how each product or investment strategy might be affected by the transition to a lower-carbon economy. Asset owners that perform scenario analysis should consider providing a discussion of how climate-related scenarios are used, such as to inform investments in specific assets.	Asset owners / managers should describe, where appropriate, engagement activity with investee companies to encourage better disclosure and practices related to climate-related risks to improve data availability and asset owners' / managers' ability to assess climate-related risks. Asset owners should describe how they consider the positioning of their total portfolio with respect to the transition to a lower-carbon energy supply, production, and use. This could include explaining how asset owners actively manage their portfolios' positioning in relation to this transition. Asset managers should describe how they manage material climate-related risks for each product or investment strategy.	Asset owners / managers should describe metrics used to assess climate-related risks and opportunities in each fund / product or investment strategy. Where relevant, asset owners / managers should also describe how these metrics have changed over time. Where appropriate, asset owners / managers should provide metrics considered in investment decisions and monitoring. Asset owners / managers should provide the weighted average carbon intensity, where data are available or can be reasonably estimated, for each fund / product or investment strategy. In addition, asset owners / managers should provide other metrics they believe are useful for decision making along with a description of the methodology used. Source: TCFD

APPENDIX

2. Apportioning

Apportioning, as an approach, began with the principle of ownership. That is, if an investor owns 1% of a company, then they also 'own' 1% of the company's emissions. This concept has since been extended to cover all sources of financing, whether equity, bonds or loans in order to calculate an investor or lender's share of 'financed emissions'.

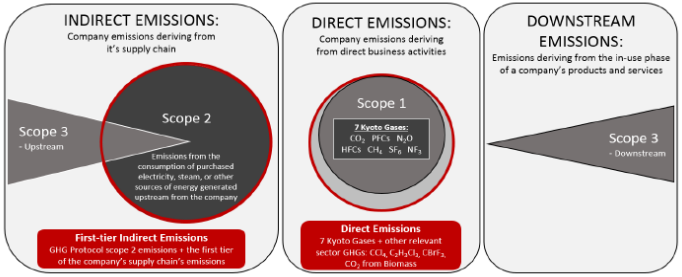
At Sustainable1 we select apportioning denominators in line with the recommendations of the Partnership for Carbon Accounting Financials (PCAF). For listed companies we use Enterprise Value including Cash (EVIC). For unlisted companies we use Total Capital, i.e. the sum of all balance sheet equity and debt, or if this is unavailable then Total Assets. For debt instruments of unlisted companies reporting negative equity, Total Debt is used as the apportioning denominator.

The company level emissions are then multiplied by the apportioning factor to arrive at emissions quantities specific to each holding. The portfolio level emissions are the sum of all of these quantities.

3. Scopes

The right scope of emissions to include in footprint calculations is dependent on the breadth of view that the analyst wishes to take. Restricting the scope to direct operational emissions only (scope 1) removes the risk of double counting carbon, but also limits the level of insight provided as much of what can be considered exposure to 'carbon risks' may exist in the supply chain of investees. Trucost recommends widening the scope of analysis to uncover more of these potential risks. The full list of scopes available is shown below:

- Direct (Scope 1) = CO_2e emissions based on the Kyoto Protocol, greenhouse gases generated by direct company operations.
- Direct (Other) = Additional direct emissions, including those from CCl_4, $C_2H_3Cl_3$, $CBrF_3$, and CO_2 from Biomass.
- Purchased Electricity (Scope 2) = CO_2e emissions generated by purchased electricity, heat or steam.
- Non-Electricity First Tier Supply Chain (Scope 3) = CO_2e emissions generated by companies providing goods and services in the first tier of the supply chain.
- Other Supply Chain (Scope 3) = CO_2e emissions generated by companies providing goods and services in the second to final tier of the supply chain.
- Downstream (Scope 3) = CO_2e emissions generated by the distribution, processing and use of the goods and services provided by a company.



APPENDIX

4. Data Collection & Disclosure

Trucost's unique approach to environmental data collection and modelling enables near complete coverage of most investment universes, despite often low levels of reporting among investees. A four step process is used as part of our data gathering exercise.

1. Analyse Financial and Sector Data - A company's financials are analysed, collecting consolidated revenues for all companies and specifying their reporting scopes and operational boundaries.

2. Map Activities to Trucost's Environmentally Extended Input-Output (EE-IO) Model - Trucost's EE-IO model uses 450+ business activities (broadly aligned to the NAICS, with some additional sectors included to distinguish key activities with materially different physical impacts) to model a company's environmental impacts by assigning portions of each company's revenues to one or more of these activities. The EE-IO model then estimates the pollutant emissions and resource use associated with each business activity, both directly (for a company's own operations) and across the supply chain, using the revenue sector breakdown.

3. Incorporate Disclosures and Public Registry Data - Trucost searches all publicly disclosed data sources of companies to find usable environmental data that will be used to overwrite Trucost's modelled estimates. Trucost ensures the scope and time horizon of any environmental data found matchesthat of its financials.

4. Company Engagement and Data Verification - Trucost analysts quality check the entire research process internally, then share the results with each company directly via a secure online portal. Companies are given one month to respond to Trucost to verify its data or directly engage to provideeither refined, additional or non-public information. If appropriate and applicable data is provided, Trucost will integrate this into its analysis before publishing the data to our subscribers.

All data collected as part of the process described above will be assigned a 'disclosure flag', indicating the source of each specific data-point. These flags will fall into one of three possible 'disclosure categories', Full Disclosure, Partial Disclosure or Modelled.

- Full Disclosure - Trucost has used data disclosed by a company in an un-edited form as it matches the reporting scope and accuracy required by the research process.

- Partial Disclosure - Trucost has used data disclosed by a company but has made adjustments to match the reporting scope required by its research process (e.g. where a company discloses its emissions deriving from 85% of its operational sites, this data is used to model 100% of its emissions). Values may also be derived from a previous year's disclosed data using changes in business activities and consolidated revenues.

- Modelled - In the absence of usable disclosures, the data has been modelled using Trucost's EE-IO model.

At the portfolio level, disclosure may be evaluated using the following three methods:

- VOH: The sum of the weights of each holding within each of the three disclosure categories.

- GHG: The sum of each holding's share of the total apportioned Scope 1 CO2e within each of the three disclosure categories.

- Companies: The number of companies, shown as a percent of all companies analysed, within each of the three disclosure categories.

APPENDIX

5. Paris Alignment

Trucost's transition pathway analysis adapts two approaches prominent in literature produced and referenced by the Science-Based Targets Initiative (SBTi). These are the Sectoral Decarbonization Approach (SDA), and the Greenhouse Gas Emissions per unit of Value Added (GEVA) approach.

SDA Approach

The SDA is applied to companies with high-emitting, homogeneous business activities. Its core principle is that companies in each industry must converge toward emissions intensities consistent with a Paris aligned scenario by 2050 from their unique starting points. It uses industry-specific scenario pathways, with companies measured using industry-specific emissions intensities and physical production levels (eg. tCO2e per GWh or per tonne of steel). Industry -specific transition pathways may be faster (eg. power), or slower (eg. cement) depending on an industry's available technologies, specific mitigation potential and costs of mitigation. Within a given industry, companies with low base year emissions and low production growth can reduce emissions at a gradual rate. Companies with high emissions or high production growth must make faster reductions.

The scenarios used in SDA assessments are International Energy Agency (IEA) scenarios from the IEA Net Zero Scenario and Energy Technology Perspectives 2017. These provide SDA assessment parameters consistent with 1.5°,1.75°, 2°, and 2.7°C of warming.

GEVA Approach

GEVA is applied to companies with lower emitting or heterogeneous business activities. It recognizes that many companies have diverse business activities, most of which do not have distinct transition pathways defined in climate scenarios. For these companies, GEVA entails applying a contraction of carbon intensity principle under which a company should make emissions reductions consistent with rates required for the overall economy, from each company's unique base year emissions intensity. It uses a non-industry specific, economy-wide 2°C scenario, and emissions intensities with a financial, not physical or production denominator. Each company's transition pathway is measured as its GHG per unit of inflation-adjusted gross profit, representing its contribution to total global emissions and emissions intensity. This is compared with a global economy-wide emissions intensity pathway required for achieving below 2 °C of warming.

The scenarios used in GEVA assessments are Shared Socioeconomic Pathway (SSP) scenarios used prominently in the sixth assessment report (AR6) of the Intergovernmental Panel on Climate Change (IPCC), published in 2022-23. These provide GEVA assessment parameters consistent with 1.5 °, 2°, 3°, 4°, and 5°C of warming. The 1.5°C scenario parameter is also consistent with the requirement of the European Union's Paris Aligned Benchmark regulations.

Assessment horizon and data sources

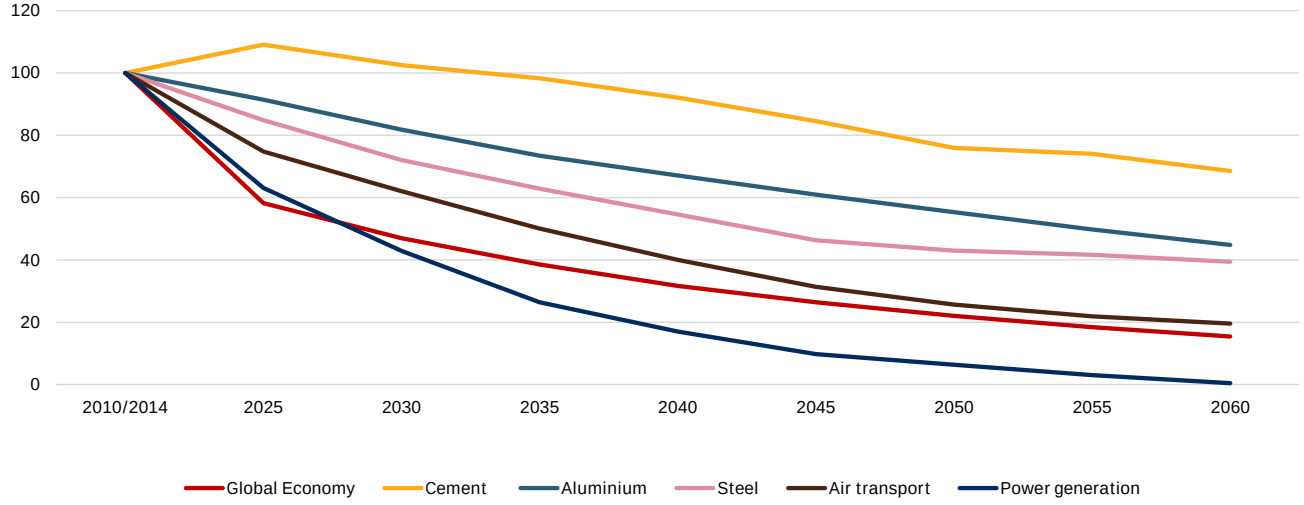
Transition pathways assessed incorporate both historical and forward-looking data in order to provide an assessment that has a medium term outlook. This minimizes the uncertainties involved in using only forward-looking data, and is of a sufficient time horizon to make the effect of any year -to-year volatility less significant. Historical data on greenhouse gas emissions and company activity levels is incorporated from a base year of 2012. Forward-looking data sources are used to track likely future transition pathways beyond the most recent year of disclosed data through to 2030. Forward-looking data is incorporated based on an established data hierarchy made up of the following sources:

1. Disclosed emissions reduction targets.
2. Asset-level data sources that provide signals of potential future changes in production from high-emitting sources.
3. Company-specific historical emissions trends for companies assessed on the basis of homogeneous business activities.
4. Subindustry-specific average historical emissions trends for companies assessed on the basis of heterogeneous business activities.
5. No change in emissions intensity beyond the latest year.

APPENDIX

The chart below illustrates the different decarbonization pathways for the five sectors covered in the SDA approach, as well as that used for the remaining sectors in the GEVA approach ('Global Economy' in the legend). Each sector's unique intensity unit has been indexed to 100 to allow for easy comparison. Sectors in which carbon saving technologies and/or processes are most cost effective are expected to decarbonize more rapidly, and terminate on a lower overall intensity, than sectors where such measures are not. For example, carbon intensity reductions are expected to be greater in the field of power generation than cement production.

2 Degree Aligned Decarbonization Pathways per Sector



APPENDIX

6. Unpriced Carbon Costs

Trucost has assembled a database of publicly available information on current carbon prices across over 44 jurisdictions as of January 2022. The Unpriced Cost of Carbon (UCC) is the estimated additional financial cost per tonne of greenhouse gas emissions in a future year. It is the difference between current carbon prices and possible future carbon prices for a given sector, geography and year.

Rising carbon prices entail direct financial implications for businesses where regulations impose a higher price on greenhouse gas emissions from the direct operations of the business. Companies also face indirect financial risks associated with the pass-through of rising carbon prices applied to the emissions of suppliers who in-turn seek to recover the additional regulatory costs in part or in full through increased prices. Pass-through factors are used to estimate the proportion of the increased carbon prices on scope 2 emissions that are passed through from suppliers to companies.

The Carbon Price Risk Premium varies by geography due to government policy differences, and by sector due to the differential treatment of sectors in many climate change policies. The sectors are based on OECD's research and include:

1. Agriculture and Fisheries
2. Electricity
3. Industry
4. Air Transportation
5. Offroad Transport
6. Residential and Commercial Real Estate
7. Road Transport

Each of Trucost's 464 business activities have been mapped to one of these seven categories.

SCENARIOS:

High Carbon Price Scenario
This scenario represents the implementation of policies that are considered sufficient to reduce greenhouse gas emissions in line with the goal of limiting climate change to 2°C by 2100 (the Paris Agreement). This scenario is based on research by OECD and IEA.

Moderate Carbon Price Scenario
This scenario assumes that policies will be implemented to reduce greenhouse gas emissions and limit climate change to 2 degrees Celsius in the long term, but with action delayed in the short term. This scenario draws on research by OECD and IEA along with assessments of the sufficiency of country Nationally Determined Contributions by Climate Action Tracker by Ecofys, Climate Analytics and New Climate Team. Countries with Nationally Determined Contributions that are not aligned to the 2°C goal in the short term are assumed to increase their climate mitigation efforts in the medium and long term.

Low Carbon Price Scenario
This scenario represents the full implementation of country Nationally Determined Contributions under the Paris Agreement, based on research by OECD and IEA.

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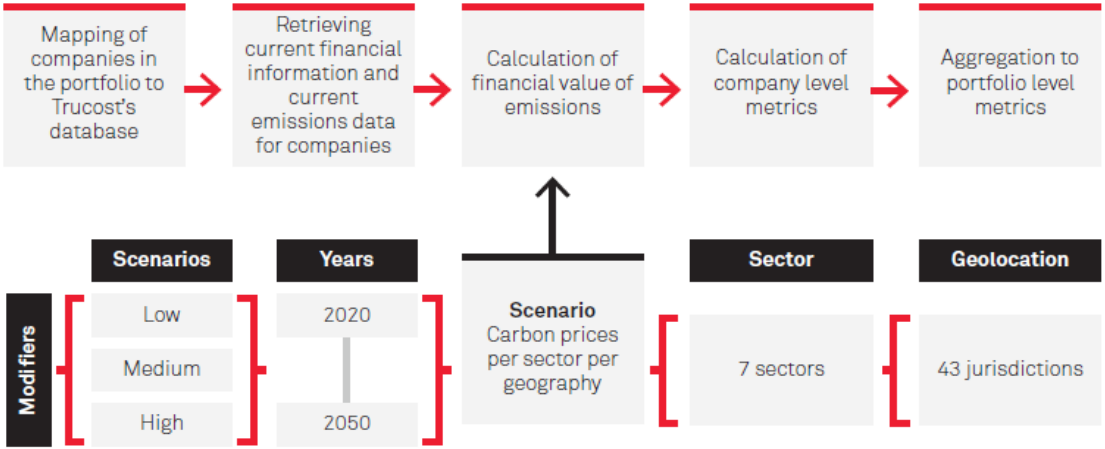
Which Carbon Price Risk Premium is applicable for individual companies will depend on the choice of scenario, companies' sector of operations as well as their geographical exposure. The analysis covers Trucost's standard 464 sectors used for classification of companies that were mapped to the sectors based on OECD's classification for carbon pricing. The geographical exposure to different Carbon Price Risk Premiums is derived based on companies' geographical emissions as reported through the Carbon Disclosure Project (CDP). In case companies do not report to the CDP, Trucost uses the geographical breakdown of companies' revenues as a proxy for emissions' distribution. Together the sector exposure and country level emissions profiles allow for a very granular level bottom up calculation of carbon price risk exposure.

Schema for the Application of UCC to a Portfolio:



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7. Unpriced Carbon Costs - Financial Impacts

Below is a description of the different financial metrics provided:

- Apportioned UCC: The total additional costs arising (in)directly for a given scenario/year at the portfolio level.
- EBIT at Risk: The percentage of Earnings at Risk due to UCC. This highlights areas of risk across the portfolios and can be fed into financial analysis.
- EBIT Margin Reduction: Implied change in EBIT margins based on a scenario/year compared to the current margins. The metric allows for signaling of red flags in the portfolio where the deterioration of margin is significant.
- VOH with EBIT at Risk: Total value of holdings where EBIT at risk is above a certain threshold (e.g. 10%). Identifies companies that are facing the most significant carbon price risk across the portfolio.
- VOH with Negative Margins: Companies who's EBIT margin becomes negative after incorporating the UCC. This is used to flag companies that would potentially no longer operate profitably.

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8. Physical Risk

The release of the TCFD recommendations highlighted the importance of climate change as a driver of material financial risks for companies and investors that should be assessed, disclosed and managed. The risks types are split into two major categories, the first being Transitional Risks (including policy and legal risk, technology risk, market risk and reputational risk), and the second being Physical Risks. Physical risks resulting from climate change can be acute (driven by an event such as a flood or storm) or chronic (arising from longer term shifts in climate patterns) and may have financial implications for organizations such as damage to assets, interruption of operations and disruption to supply chains.

S&P Global Sustainable1 (S1) launched a suite of Climate Change Physical Risk Analytics solutions to the market in 2019, offering an asset based approach to the assessment of physical risk at the company and portfolio level. In 2022, S1 launched an enhanced physical risk framework, leveraging the expertise and intellectual property of The Climate Service (TCS), which was acquired by S&P Global in January 2022. Key features of the updated dataset include:

- Robust and science-based climate change physical hazard characterization methodology, leveraging the latest available climate change models (CMIP6) and proprietary methodologies.
- Coverage of eight key climate change physical hazards at consistent resolution, globally: coastal flood, fluvial flood, extreme heat, extreme cold, tropical cyclone, wildfire, water stress, and drought.
- Coverage of four climate change scenarios based on the IPCC Shared Socioeconomic Pathway (SSP) and Representative Concentration Pathway (RCP) scenarios, and offering annualized decadal averages for all hazards from the 2020s to the 2090s.
- Physical risk exposure scores representing point in time exposure to climate hazards, and physical risk financial impact metrics describing the financial consequences arising from changing climate hazard exposure for over 250 unique asset types.
- Built upon a proprietary database of over 3.1 million asset locations linked to corporate entities and ultimate parent entities—based on S&P Market Intelligence, S&P Commodity Insights, and Sustainable1-assembled datasets—and with flexibility to rapidly analyze client provided asset datasets.
- Physical risk analytics for over 20,000 companies representing over 98% of global market capitalization, ensuring high levels of coverage for equity and fixed income portfolios across all markets.

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EXPOSURE SCORES AND FINANCIAL IMPACT METRICS EXPLAINED:

	Physical Risk Exposure Scores	Physical Risk Financial Impacts
What does this metric represent?	Point in time exposure to climate hazards relative to global conditions, independent of the characteristics of the asset present at a given location	Financial consequences arising from the change in climate hazard exposure vs a baseline, specific to the asset present at a given location
Advtgs	· Efficient and high throughput for rapid screening of large asset portfolios · Offers an expansive view of climate hazards present at a given location, not limited to those hazards that are assumed to be material · Readily applicable where only limited information (location only) is available on assets to be analyzed · Valuable as proxy for risk in a given location (or nearby locations) when asset data is not available	· Deep dive analysis to quantify the financial impact of changing climate hazard exposure based on the best available data and S&P Global's view on the most material impacts for each asset type · Granular analysis based on over 250 different asset type profiles and associated financial impact pathways · Ready integration into downstream financial analysis such as valuation models, credit risk models and the creation of climate risk adjusted financial accounts · Valuable to inform climate resilience strategies that need to respond to specific risk and mechanisms
Use Cases	· Risk screening exercises and portfolio analytics to understand: o Aggregate physical risk exposure at the asset, company or portfolio level, and in comparison with relevant benchmarks o Which climate hazards represent the greatest exposure o The assets or companies in a portfolio which contribute most to portfolio level exposure · Inform initial TCFD disclosures and risk screening initiatives · Focus attention on the most exposed assets, companies or portfolio holdings to direct further investigation to the areas with greatest potential impact	· Deep dive physical risk analysis focusing on the financial materiality of climate hazard exposures to specific asset types · Inform detailed TCFD disclosures and reporting · Integration of climate physical risk into financial modelling, including the development of adjusted financial accounts, credit risk modelling and equity · Climate resilience strategy
Outputs produced?	Exposure Score: 1-100 score representing the exposure to each hazard relative to global conditions	Financial Impact: Financial losses (e.g. CapEx, OpEx, Business Interruption) reflected as a percentage of asset value due to exposure to climate-related physica hazards.

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HAZARD TYPES EXPLAINED:

Hazards	Analysis Metric	Indicator Definition	Spatial Resolution	Data Sources
Coastal Flood	Frequency of 100-yr flood	Projected frequency of the historical baseline 100-yr coastal flood depth	30x30m (USA) 90x90m (RoW)	GTSR hydrodynamic surge model Kopp et al SLR data MERIT /US3DEP USGS global coastlines
Fluvial (River) Flood	Frequency of 100-yr flood	Projected frequency of the historical baseline 100-yr flood depth	~25x25km	Hydro Atlas NEX-GDDP downscaled CMIP6
Extreme Heat	Projected Tx90p (Exposure Scores) Tx50pAbsChg (Financial Impact)	Annual percentage of days with maximum temperature warmer than the 90th percentile local baseline daily maximum temperature	~25x25km	NEX-GDDP downscaled CMIP6
Extreme Cold	Projected Tx10p	Annual percentage of days with minimum temperature colder than the 10th percentile local baseline daily minimum temperature	~25x25km	NEX-GDDP downscaled CMIP6
Tropical Cyclone	Frequency of Cat3+ storms	Projected annual frequency of category 3 and higher tropical cyclones	~25x25km	HURDAT JTWC TC archives CMIP5/6 SST
Wildfire	Wildfire conditions days	Projected number of days with Z-index less than or equal to the historical 10th percentile	~25x25km	NEX-GDDP downscaled CMIP6
Water Stress	Water Stress Index	Projected future ratio of water withdrawals to total renewable water supply in a given area.	River Basin	WRI Aqueduct
Drought	Palmer Drought *Severity Index	Projected number of days with the self-calibrating Palmer Drought Severity Index (scPDSI) less than or equal to the historical 10th percentile	~25x25km	NEX-GDDP downscaled CMIP6

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CLIMATE CHANGE SCENARIOS

The Sustainable1 dataset focuses on four future climate change scenarios based on IPCC Representative Concentration Pathways and Shared Socioeconomic Pathways and informed by the TCFD technical guidelines (FSB, 2017):

- High Climate Change Scenario (SSP5-8.5): Low mitigation scenario in which total greenhouse gas emissions triple by 2075 and global average temperatures rise by 3.3-5.7C by 2100.
- Medium-High Climate Change Scenario (SSP3-7.0): Limited mitigation scenario in which total greenhouse gas emissions double by 2100 and global average temperatures rise by 2.8-4.6C by 2100.
- Medium Climate Change Scenario (SSP2-4.5): Strong mitigation scenario in which total greenhouse gas emissions stabilize at current levels until 2050 and then decline to 2100. This scenario is expected to result in global average temperatures rising by 2.1-3.5C by 2100.
- Low Climate Change Scenario (SSP1-2.6): Aggressive mitigation scenario in which total greenhouse gas emission reduce to net zero by 2050, resulting in global average temperatures rising by 1.3-2.4C by 2100, consistent with the goals of the Paris Agreement.

The Sustainable1 dataset evaluates climate change physical risks for decadal averages from the 2020s to the 2090s. Financial impact quantification pathways are not currently available for extreme cold but are offered for all other climate hazards.

ANALYTICAL APPROACH

The Sustainable1 Physical Risk Scores and Financial Impact methodology is based on five key analytical steps:

1. Climate Hazard Modelling
2. Physical Risk Exposure Quantification
3. Asset and Company Level Physical Risk Exposure Score Calculation
4. Financial Impact Function Modelling
5. Asset and Company Level Physical Rick Financial Impact Calculation

1. Climate Hazard Modeling
Sustainable1 has assembled models and datasets representing projected absolute exposure to eight discrete climate change hazards globally across four climate change scenarios and eight time periods to produce global climate change physical hazard maps. Each indicator, scenario and time period is represented as a geospatial dataset with hazard values assigned to location at a resolution deemed suitable to each hazard. This enables the modelling of exposure to each climate hazard at a given time period and the change in hazard exposure over time and relative to a historical baseline.

2. Physical Risk Exposure Quantification
Exposure to climate change physical hazards is quantified by overlaying asset locations of interest on the climate hazard maps described at step 1. For the purposes of this analysis, 'Assets' represent any structure or real asset owned or leased by a company covered by the Sustainable1 database of over 20,000 companies. The Sustainable1 Climate Change Physical Risk dataset is generated based on an extensive database of physical asset locations, linked to corporate owners (or lessees), developed and maintained by S&P Global.

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3. Asset and Company Level Physical Hazard Exposure Scores
The Sustainable1 physical risk exposure score model assigns risk scores from 1 (lowest risk) to 100 (highest risk) to each asset in the database based on location within the climate change hazard maps described in Step 1. The exposure score is intended to represent the relative level of exposure to each hazard at each location relative to global conditions across all scenarios and time periods. Asset level physical risk exposure scores are aggregated to company level scores as a weighted average of all assets mapped to the company of interest, based on assumed asset values for each asset type. Assumed asset values were derived from a literature review and are intended to be indicative of the relative value of each asset type. Companies evaluated using asset level data are categorized as Data Quality A.

For some companies in the Sustainable1 CorePlus universe, insufficient asset level data is available to calculate physical risk exposure scores. In these cases, physical risk exposure is estimated based on a combination of physical risk exposure at the company headquarters location (20% weight), and a revenue weighted average of the country average physical risk exposure in those countries where the company generates revenues (80% weight). Country physical risk profiles are calculated as a GDP weighted average within the country boundaries, drawing on the climate hazard data described at step 1, and downscaled spatial GDP data. Companies evaluated for physical risk exposure using this method are designated Data Quality B.

The composite exposure score is intended to provide a combined measure of company exposure to all eight climate change physical hazards. It is calculated by taking an equal weighted additive combination of the company physical risk score on each hazard for a given scenario and year, and then rescaled to a 1-100 range using a logarithmic scoring curve. The scoring curve is designed to ensure that assets or companies with high exposure to one hazard, but low exposure to all others, will be assigned a moderate to high composite physical risk exposure score. Alternative approaches, such as a simple average of hazard exposure scores within a given scenario and time period, risk understating the exposure of an asset or company to climate change physical risk.

4. Financial Impact Function Modelling
The Sustainable1 physical risk model quantifies the expected financial consequences of changes in physical risk exposure at both the asset and company level. This model is based on a library of 'Impact Functions' developed by S&P Global which describe the relationship between the degree of change in climate hazard exposure and the financial impact on a given asset type across time and climate change scenarios. Impact functions have been developed for over 250 unique asset types, each focusing on a set of pathways by which climate change hazards may impact on the value, revenues, operations or other value drivers for that asset type. The impact function database has been developed over several years through extensive literature research and analytical development.
At the asset level, Financial Impact is quantified as a the projected financial costs associated with changing climate hazard exposure, expressed as a percentage of the asset value.

The Financial Impact metric is calculated at the asset level for each hazard and can be summed to produce a combined Financial Impact metric, and aggregated to the company level as a weighted average based on the assumed asset value. Financial Impact is expressed as a relative metric because accurate data or estimates of the actual value of each asset is currently not available. The following example describes the process applied to developing impact functions for a single hazard and asset type combination.

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Step 1. Identify Material Impacts

S&P Global has developed over 1,280 impact functions linked to over 250 asset types for application in the physical risk dataset and related tools (e.g., the Climanomics platform). The following example shows the extreme heat impact function for the office building asset type from the owner/occupier perspective. The temperature hazard metric used in this impact function is projected Tx50pAbsChg, measuring the absolute change in the annual 50th-percentile local daily maximum temperature (degree Celsius), relative to the historical value (1950-1999). To analyze the impact of increasing maximum temperature on owned/occupied office properties, a review of available research literature was conducted to identify a range of impact pathways, or avenues by which the operations and value of an office building may be impacted by increasing temperature. The following impact pathways were identified as material to the office building asset type:

- Cooling Costs: Excess operating expenses associated with increased use of cooling equipment/systems to maintain optimal temperatures for employees and plant/equipment in the context of rising temperatures.
- HVAC Degradation: Annualized costs of reduced operating life and early replacement of HVAC systems due to increased operation in response to rising temperatures.
- Employee Productivity: Costs associated with reduced employee productivity and associated expenses caused by increasing ambient temperatures (including employees working indoors).

Step 2. Model Impact Pathway

For each impact pathway a series of relevant research studies and data sources are assembled to quantify the impact of a unit change in hazard on relevant financial performance metrics, as described below:

- Cooling Costs: Excess energy consumption associated with higher temperatures were estimated based on trends identified in a series of papers focusing on changes in energy demand and power generation, and estimated economic damages arising from climate change in the USA. Based on this data, cooling energy demand is projected to increase by 5% per one-degree Celsius increase in average maximum temperature.
- HVAC Degradation: Excess costs associated with reduced operating lifespan for HVAC systems per unit change in temperature were estimated from a series of studies including Fenaughty and Parker (2018). Based on this data, HVAC lifespan is projected to decrease by 6.76% per one-degree Celsius increase in average maximum temperature.
- Employee Productivity: Reductions in employee productivity were estimated based on a global study of the effects of heat on working populations. Based on this data, workforce productivity is projected to decrease by 1.14% per one-degree Celsius increase in average maximum temperature.

Step 3. Quantify Financial Impact

To quantify the total financial impact on asset value, the impact pathways described in the prior section are weighted based on a set of financial ratios reflecting the proportion of the total value of a given asset type that is represented by the value driver impacted by temperature change for each pathway. The asset value metric for the owned/occupied office building asset type is the replacement value, and the financial ratios applied to each impact function described below (These assumptions are based on literature review and analysis by S&P Global):

- Cooling Costs: 1.19% of asset value
- HVAC Degradation: 13.29% of asset value
- Employee Productivity: 7.84% of asset value

The financial impact (%) for each impact pathway is multiplied by the corresponding financial ratio and summed to quantify the aggregated financial impact (%) on the asset value of an owner-occupied office building per one-degree Celsius increase in average maximum temperature, and extrapolated across the range of projected future

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5. Asset and Company Level Physical Risk Financial Impact Calculation
The Sustainable1 physical risk financial impact model quantifies the percentage of asset value at risk for each asset based on:

a) The change in climate change physical hazard under a given scenario and time period relative to a historical baseline.
b) The asset type classification, and associated impact functions, for the asset located at a given location.

Asset level Financial Impact is aggregated to company level as a weighted average of all assets mapped to the company of interest, based on assumed asset values for each asset type. Assumed asset values were derived from a literature review and are intended to be indicative of the relative value of each asset type. Asset and company level Financial Impact is calculated for each climate hazard under each scenario and time period and are summed to a combined Financial Impact metric covering all hazards. Financial impact metrics are not calculated for companies with no linked asset level data (other than the company headquarters) in the 2022 physical risk dataset.

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9. EU Taxonomy

The S&P Global EU Taxonomy Data Solution is based on the first delegated act on sustainable activities for climate change adaptation and mitigation objectives. The Taxonomy outlines 96 business activities that fall into one of the 13 Nomenclature of Economic Activities (NACE) macro sectors that are eligible under the Taxonomy. The business activities include those that have a direct carbon mitigation potential (for example, renewable energy), as well as those that are relatively carbon intensive but have the potential to significantly reduce their carbon emissions (for example, steel manufacturing). It also includes business activities that enable climate change adaptation.

The 13 NACE macro sectors covered by the Taxonomy are:

- Forestry
- Environmental protection and restoration activities
- Manufacturing
- Energy
- Water supply, sewerage, waste management and remediation
- Transport
- Information and communication technologies (ICT)
- Buildings (construction and real estate activities)
- Professional, scientific and technical activities
- Financial and insurance activities
- Education
- Human health and social work activities
- Arts, entertainment and recreation

The S&P Global EU Taxonomy Data Solution includes both S&P Global Sustainable1's assessment of the alignment of each company's revenues with the Taxonomy requirements, either at the individual business activity or aggregated at company level, and the underlying data points utilized to inform that assessment. We take a conservative approach in only assigning the Aligned classification where sufficient data and information are available to demonstrate that an activity or company has met the SC, DNSH and MSS requirements.

We identify business activities as Transitional, Enabling or General, and map these to the Taxonomy objectives of climate change mitigation and/or climate change adaptation. For adaptation activities, expenditure is used as the assessment metric since companies incur costs to implement measures to mitigate physical climate risk. The current dataset only has total Capex and Opex data at the company level. An activity-specific breakdown is not currently available.

Activities associated with other Taxonomy environmental objectives will be added to the dataset as the relevant regulations are released. The dataset covers the 20,000 companies in the Trucost Core Plus Universe, of which approximately 15,000 are publicly listed companies and 5,000 are private companies issuing fixed income securities.

APPENDIX

The following sections provide an overview of how S&P Global Sustainable1 assesses Taxonomy alignment. Figure 1 below provides a high-level overview of the approach, and Figure 2 provides a summary of the data sources used within the dataset.

Figure 1: Overview of S&P Global Sustainable1's approach to assessing EU Taxonomy Alignment

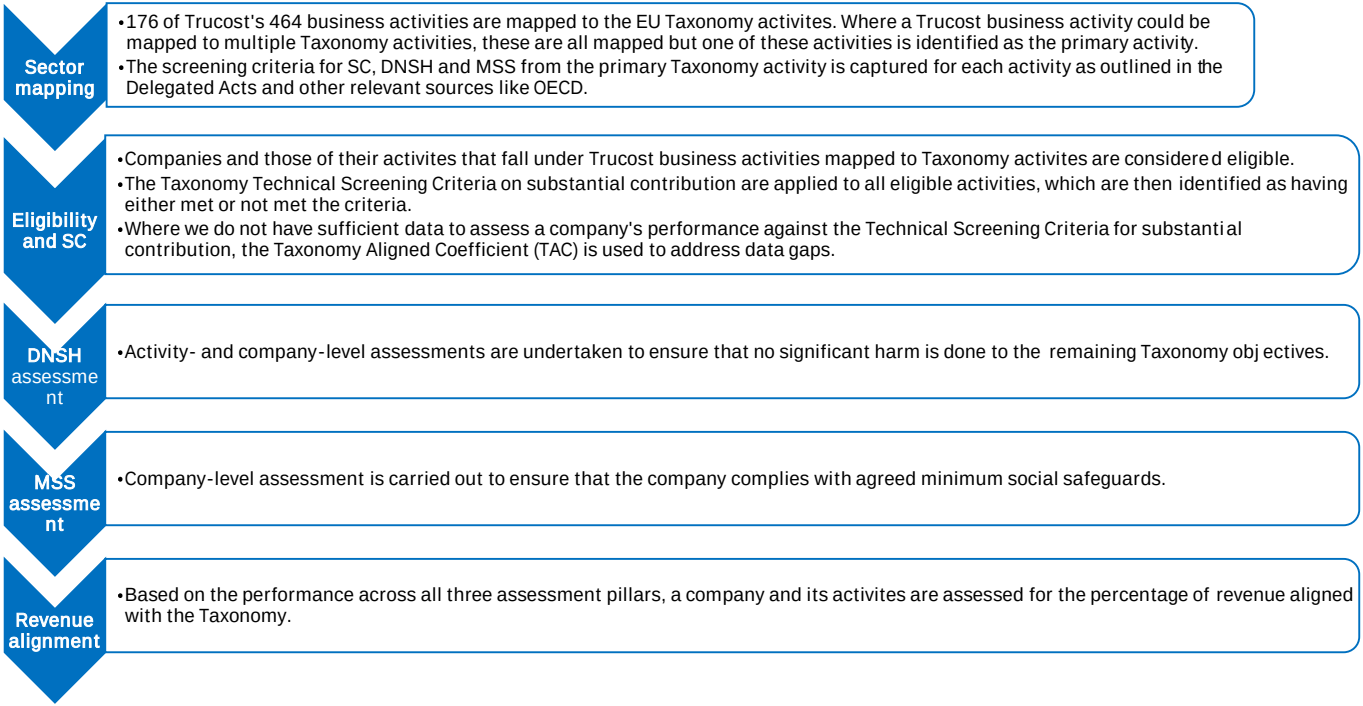

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Figure 2: Data sources used within the dataset

Section	Data point	Description	Data source	Scope
Revenue Eligibility	Sector revenue	Sector-level revenue data is used to identify revenues generated from eligible activities.	Trucost Sector Revenue dataset	Activity Level
Substantial Contribution	Emission intensity	Sector-level emission intensity data for selected companies present in core plus universe (e.g., tCO2e/tonnes of cement).	Trucost Paris Alignment dataset	Activity level
	Capital IQ topic tags	Company-level flags indicating involvement in key business activities. Based on Capital IQ's business description.	S&P Capital IQ	Company Level
	Power plant performance	Market Intelligence dataset on power plants contains details such as capacity of the power plant, energy source used and cogeneration status. This was used for assessing the Taxonomy activity "Electricity generation from bioenergy."	MI Power Plants	Activity level
	Taxonomy Aligned Coefficient	Activity-level revenue alignment score.	European Commission Joint Research Centre	Activity level
Do No Significant Harm	Controversy screening and objective specific data points	DNSH is assessed at objective level and MSS is assessed for each criterion. Media and Stakeholder Assessment (MSA) data was used to screen for incidents that would impact the reputational risk of the company and negative impacts on the environment and society.	S&P Global Corporate Sustainability Assessment	Company level
Minimum Social Safeguards	Controversy screening and indicator-specific data points			

ASSESSING ELIGIBILITY

To assess revenue eligibility, a direct mapping is carried out between the 96 business activities covered by the Taxonomy and 176 of the 464 business activities in Trucost's proprietary sector classification system. The Trucost sector classification system is based on the North American Industry Classification System (NAICS), which is similar to the European NACE system. S&P Global reviews company reported revenues and emissions data from the Trucost Core+ Universe.

Once mapped, following the Taxonomy Delegated Act the 176 Trucost business activities are identified as General, Transitional, or Enabling, and are categorized against the Taxonomy objectives of climate change mitigation and/or climate change adaptation. General activities are directly mitigating the impacts of climate change. Transitional activities are those that are contributing to climate change mitigation based on their capacity to improve their emissions intensity in the future. Enabling activities are those that are providing products and services that improve emissions intensity of other activities and are indirectly mitigating the effects of climate change.

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Activities associated with other Taxonomy environmental objectives will be added to the dataset as the relevant regulations are released. Any business activities remaining after the mapping has been carried out are not considered to be eligible.

ASSESSING SUBSTANTIAL CONTRIBUTION

Once the eligible business activities and associated revenues have been identified, they must then also be shown to make a substantial contribution (SC) to one of the Taxonomy's environmental objectives. At present, SC screening criteria have been finalized only for two objectives: Climate Change Mitigation and Climate Change Adaptation. The regulations set forth a series of technical screening criteria for each eligible activity, identifying performance thresholds (which can be either quantitative or qualitative) that must be met in order for the contribution of a company's business activity to be considered substantial.

In many cases the technical screening criteria for a given activity will include multiple requirements that must be partially or fully satisfied to demonstrate SC. S&P Global Sustainable1 has disaggregated these requirements and presents an assessment against each sub-criterion separately in the dataset. S&P Global Sustainable1 has also identified activity-specific supplementary criteria that should be adopted in certain situations (for example, in the calculation of product carbon intensity metrics). These supplementary criteria are qualitative and relate to the specific frameworks of those situations.

As the Taxonomy regulations are new, many companies/issuers will not yet disclose publicly on the specific data points required to assess the technical screening criteria. Given this, S&P Global Sustainable1 has sought to utilize information from Capital IQ and other Trucost datasets to satisfy the requirements of SC. As the availability of Taxonomy-aligned data reported by companies increases, S&P Global will look to capture these metrics through its core environmental and ESG research processes.

The Capital IQ Topic Tags is one of the datasets used in the context of assessing SC. The topic tags are retrieved from the Capital IQ Business Description of a company. The business description is a description of the business of a company; it is made by the S&P Capital IQ analysts and fed into the Company Intelligence dataset. The topic tags may be helpful in the instances where the Trucost business activity is not granular enough (e.g., for electric vehicles). Trucost Paris Alignment is another dataset that is used to assess SC. This dataset uses company data on carbon emissions and production to calculate a ratio of carbon emissions per unit of production. Such a ratio is calculated for companies in key carbon intensive sectors (also called Sectoral Decarbonization Approach, or SDA, sectors) such as power, steel, cement, aluminum, airlines and automobiles. An S&P Global Market Intelligence dataset on power plants is also used, and it contains details such as the capacity of power plants, energy sources used and cogeneration status. This is used for assessing the Taxonomy activity on electricity generation from bioenergy.

Where relevant data is not currently available to assess the SC requirements for a given Taxonomy business activity, "No dataavailable" will be shown and the analysis will default to a Taxonomy-aligned-coefficient (TAC) that has been assigned by the TEG to that activity. These coefficients reflect an estimate of the proportion of an activity/sector that is expected to meet the SC criteria. If all SC criteria are met, 100% of activity revenue is included; however, if data is insufficient or missing, the eligible revenue multiplied by the TAC is shown.

ASSESSING DO NO SIGNIFICANT HARM

Once an eligible activity has been identified as making a substantial contribution to one of the Taxonomy's environmental objectives, it must also show that it meets the DNSH requirements in relation to the other five environmental objectives.

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The Taxonomy delegated act provides specific activity-level requirements, alongside more generic company-level requirements. Both activity- and company-level requirements are assessed using data collected through the S&P Global Corporate Sustainability Assessment (CSA). It is important to emphasize that the CSA data is based on the company's reporting. This data does not involve the use of any estimates. The CSA process is conducted annually and covers approximately 10,000 companies globally, capturing data on a wide range of Environmental, Social and Governance (ESG) issues. This dataset is the basis for the S&P Global ESG Scores dataset. The S&P Global CSA uses a consistent, rule-based methodology to convert an average of 600 data points per company into a S&P Global ESG Score. These data points are aggregated into question-level, criteria-level and dimension-level scores. The total S&P Global ESG Score results from the sum of weighted dimension scores. Further information on the CSA is available on the S&P Global CSA website.

The DNSH assessment is based on CSA score and data point-level analysis, alongside the Media and Stakeholder Analysis (MSA). The activity and appendix DNSH requirements for each environmental objective are matched to data point and question-level information disclosed by companies assessed through the CSA and used to evaluate whether an activity or company has satisfied the requirements. It is important to note that if a company is identified as being engaged in any of the controversies covered by the MSA, the company would be assessed as not meeting the DNSH threshold irrespective of its performance on the DNSH criteria.

An assessment is provided for each of the individual DNSH objectives (e.g., "DNSH Pollution Assessment") alongside the complete DNSH Combined Assessment, which is a summary of all of the individual objectives. Below is a list of the outputs for the individual assessments of the DNSH objectives and the DNSH Combined Assessment.

- Met: The individual DNSH objective assessment will be considered Met if all of the underlying CSA scores or data points meet the thresholds of the Taxonomy requirements. The DNSH Combined Assessment is considered Met when one or more of the individual DNSH assessments are Met and the remaining assessments are not categorized as Not Met or Partially Met.
- Partially Met: The individual DNSH objective assessment will be considered Partially Met if at least one of the underlying CSA scores or data points meets the thresholds of the Taxonomy requirements. The DNSH Combined Assessment is considered Partially Met when at least one of individual DNSH assessments is categorized as Partially Met and the remaining assessments are not categorized as Not Met.
- Not Met: The individual DNSH assessment will be considered Not Met if none of the underlying CSA scores or data points meets the thresholds that are reflective of the Taxonomy requirements. The DNSH Combined Assessment is categorized as Not Met if one or more of the individual DNSH assessments is categorized as Not Met.
- Not Required: For some activities there are no requirements to meet specific DNSH objectives. These are marked as Not Required under the individual DNSH objectives. The DNSH Combined Assessment is categorized as Not Required if all six of the individual DNSH assessments are categorized as Not Required.
- No Data Available: The individual DNSH assessment will be considered No Data Available if there has not been sufficient data collected on a company or there was not substantial coverage of the Taxonomy delegated act within the CSA methodology. In these cases, the company has participated within the CSA data collection methodology, but insufficient data was collected due to one or both of the above reasons. The DNSH Combined Assessment will be categorized as No Data Available if all six of the individual DNSH assessments are categorized as No Data Available. The No Data Available output affects the Confidence Level score, which is discussed below.
- No Coverage: The individual DNSH assessments are considered No Coverage if the company did not participate in the CSA data collection methodology. The DNSH Combined Assessment will be considered No Coverage if one or more objectives are categorized as No Coverage and the remaining objectives are Not Required.

Where the CSA does not have sufficient data on a company, the Combined DNSH Assessment will be considered as Met if two or more individual DNSH objectives where sufficient data is available are Met and the remaining DNSH objectives are not categorized as either Not Met or Partially Met. Every activity is assessed against the Taxonomy Delegated Act requirements; however, if the MSA assessment identifies a relevant controversy, the DNSH Combined Assessment is automatically considered Not Met, even if the DNSH Combined Score is 100%.

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ASSESSING MINIMUM SOCIAL SAFEGUARDS

Adherence with Minimum Social Safeguards (MSS) is evaluated at the company level using data disclosed by companies in the CSA. S&P Global Sustainable1 reviewed the UN Guiding Principles on Business and Human Rights (UNGPs) and the OECD MNE Guidelines and selected the following themes to be used:

- Human Rights
- Employment and Industrial Relations
- Corruption and Bribery & Anti-Competitive Practices
- Consumer Interest
- Tax Strategy
- Supply Chain Management

The MSS criteria for individual themes are matched to data point and question-level information disclosed by companies assessed through the CSA in order to evaluate whether an activity or company has satisfied the criteria. Where no individual CSA data points/questions are matched or minimum score threshold was applied, the assessment is based on the negative screen through the MSA assessment only. Where a company is identified as being engaged in any of the controversies outlined under the MSA for MSS, the company would be assessed as not meeting the MSA threshold irrespective of the company performance on the individual MSS criteria.

Data points collected in the CSA are mapped to specific MSS Criteria and used to assess a company's performance. Where a company meets all data point level/minimum score threshold requirements, it would be considered to have met the MSS recommendations based on the OECD MNE Guidelines; where some recommendations are met but insufficient data is available on others, the company would be considered Partially Met; and where any of the recommendations are not met, the company would be assessed as Not Met for the relevant MSS Criteria. It is important to emphasize that the CSA data is based on the company's own reporting. Where the company has an MSA case, as explained above, the company fails the MSS check irrespective of the company's performance.

An MSS Metric column is provided for each of the individual MSS criteria that reference the OECD MNE Guidelines, which the MSS assessment is based upon. An individual assessment is provided for each of the MSS criteria, alongside one MSS Combined Assessment which is a summary of all of the individual MSS Criteria assessments. Below is a list of outputs for the individual MSS assessments, alongside the MSS Combined Assessment.

- Met: Individual MSS criteria are considered Met if all of the underlying CSA scores or data points meet the thresholds that are reflective of the recommendations of the OECD MNE Guidelines. The Combined MSS Assessment will be considered Met if two or more of the individual MSS criteria are Met and the remaining metrics are not categorized as Not Met or Partially Met.
- Partially Met: Individual MSS criteria are considered Partially Met if at least one of the underlying CSA scores and data points meets the thresholds that are reflective of the recommendations of the OECD Guidelines. The Combined MSS Assessment will be considered Partially Met if one or more of the individual MSS criteria assessments are categorized as Partially Met and the remaining metrics are not categorized as Not Met.
- Not Met: Individual MSS criteria are considered Not Met if none of the underlying CSA scores or data points meets the thresholds that are reflective of the recommendations of the OECD MNE Guidelines. The Combined MSS Assessment will be considered Not Met if at least one of the individual MSS criteria is categorized as Not Met.
- No Data Available: Individual MSS criteria are considered No Data Available if the company participated in the CSA but the data is not sufficient to conduct an assessment against MSS criteria.

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- No Coverage: The individual and combined MSS assessments will be considered No Coverage if the company did not participate in the CSA data collection process.

Every activity is assessed against the MSS criteria, which are based on the OECD MNE Guidelines. If the MSA assessment identifies a relevant controversy, the MSS Combined Assessment is automatically considered Not Met, although the MSS Combined Score is still available. Where the CSA does not have sufficient data on a company for individual MSS criteria, the Combined MSS Assessment is considered Met only if two or more of the individual MSS criteria are Met and the remaining criteria are not categorized as Not Met or Partially Met.

OVERALL ALIGNMENT ASSESSMENT

S&P Global Sustainable1 provides a final assessment of how companies and business activities align with the Taxonomy overall, incorporating all the assessments on eligibility, Substantial Contribution, Do No Significant Harm and Minimum Social Safeguards. We take a conservative approach in only assigning the Aligned classification where sufficient data and information are available to demonstrate that an eligible activity or company has met SC, DNSH and MSS requirements.

The table below explains the full alignment assessment output logic.

SC	DNSH	MSS	Overall Taxonomy Alignment
Met	Met / Not Required	Met	Aligned
Met	Partially met	No Data Available / Partially met / Met / No Coverage	Partially aligned
Met	No Data Available / Partially met / Met / Not Required / No Coverage	Partially met	Partially aligned
Met	No Data Available / No Coverage	No Data Available / Partially met / Met / No Coverage	Partially aligned
Met	No Data Available / Partially met / Met / Not Required / No Coverage	No Data Available / No Coverage	Partially aligned
Not met	Not met / Partially met / Met / Not Required / No Coverage	Not met / Partially met / Met / No Coverage	Not aligned
Met / Not met	Not met / No Coverage	Not met / Partially met / Met / No Coverage	Not aligned
Met / Not met	Not met / Partially met / Met / Not Required	Not met	Not aligned

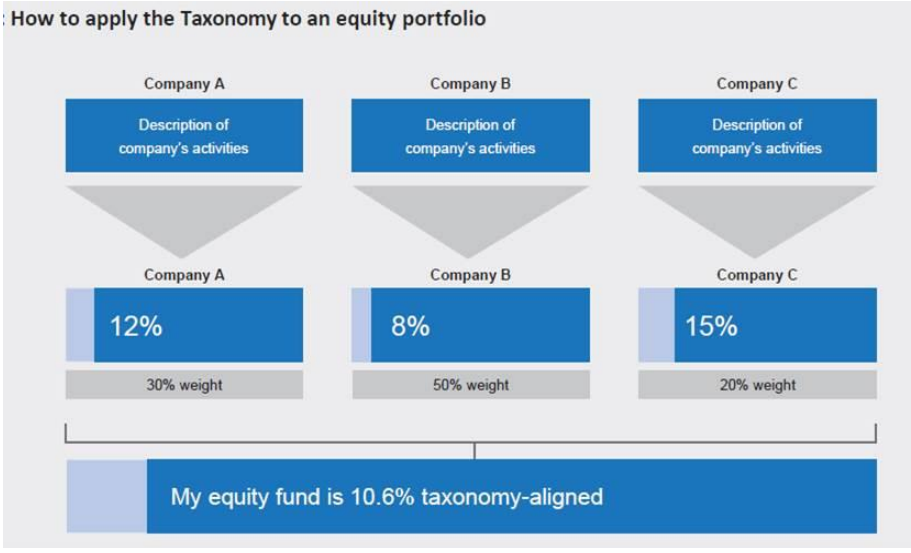
APPENDIX

APPLICATION TO PORTFOLIO ANALYSIS

The S&P Global EU Taxonomy Data Solution can be used at the portfolio level to help financial institutions understand the alignment of their portfolio holdings with the Taxonomy, compare the alignment against their benchmark, and ensure their reporting is in line with the requirements.

For investors, this can be done using a weighted average approach by summing the product of each holding's weight in the portfolio with each holding's share of aligned revenues, as shown in the righthand graphic.

This approach can be applied to any portfolio of companies (equities, corporate bonds, convertible bonds, or even corporate loans covered by S&P Global Sustainable1) to provide the portfolio's overall exposure to revenues currently aligned with the Taxonomy.



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