



2021 REPORT

The Task Force on  
Climate-related  
Financial  
Disclosures (TCFD)  
Recommendations

SETANTA  
Asset Management





## FOREWORD

# A message from our managing director

*"Climate change is the tragedy of the horizon. We don't need an army of actuaries to tell us that the catastrophic impacts of climate change will be felt beyond the traditional horizons of most actors – imposing a cost on future generations that the current generation has no direct incentive to fix."*

**Former Bank of England Governor Mark Carney**

It is beyond doubt that our planet is facing a climate crisis and that it is society's duty to ensure our planet's viability for future generations. There is growing evidence that if we do not deal with the impacts of greenhouse gas emissions the consequences for the planet will be catastrophic. As careful stewards of our clients' capital our fiduciary duty compels us to consider the risks climate change poses to our investments. Beyond the risk, we are reflecting on our role as a global asset manager and how we will need to evolve to contribute positively to these challenges and opportunities ahead.

At Setanta Asset Management, we have a long history of being careful stewards of the assets that our clients have entrusted us with. Our purpose is to deliver long term investment risk adjusted returns for our clients and ensure their objectives are met. Our investment approach focuses on high quality companies with sustainable long term competitive advantages. We believe that certain environmental, social, and corporate governance issues may impact the value of these businesses and include these factors in our extensive fundamental research.

We do recognise that we are in privileged position as a global asset manager to make a meaningful and positive difference to the environmental and social challenges that we face. Through our investment approach we are integrating these considerations fully into our investment process. We have always been actively engaged, when appropriate, with the companies that we

invest in and will continue to do so. We are committed to our engagement in active ownership and believe strong governance on all matters including climate risks is critically important.

At the end of 2021, we were entrusted with €14bn, a portion of which had specific client criteria toward directing investment away from activities harmful to our planet. Not only are we on a journey, but so too are our clients, and it is our privilege to support our client's efforts in shaping their journey.

We are global supporters of the Financial Stability Board (FSB) Task Force on Climate-related Financial Disclosures (TCFD) and I am pleased to share with you our firms very first TCFD report. This is an important first step on our wider sustainability journey and this report not only provides stakeholders with full transparency on where we find ourselves today but details how we will grow and improve during 2022 and beyond.

We recognise that we are on a journey, and we have a significant amount of learning to do and our objective on this journey is to provide full transparency in what we do and seek feedback to help us navigate the challenges and opportunities ahead.

We look forward to continuing our engagement with clients, peers, regulators, and all stakeholders as we work towards our common goal.

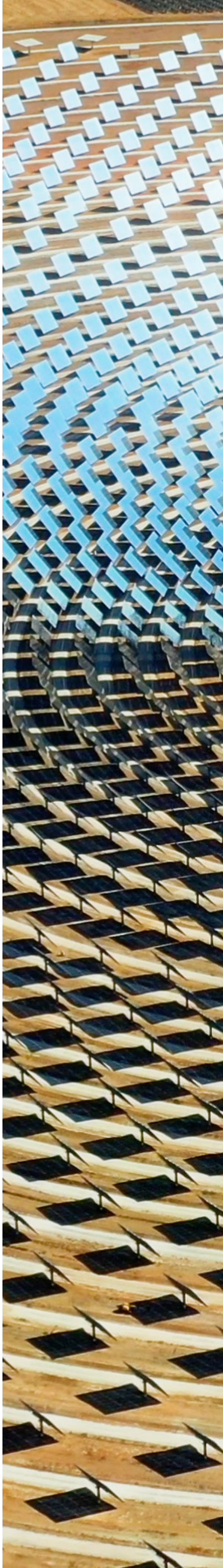
On behalf of all of us at Setanta, I would like to sincerely thank all our clients for their continued support and welcome any feedback.

**Kieran Dempsey,**  
*Managing Director & Chief Investment Officer,  
Setanta Asset Management*



# Table of Contents

A.	EXECUTIVE SUMMARY	4
B.	INTRODUCTION AND BACKGROUND	5
	1. Setanta Asset Management	5
	2. What is the TCFD?	5
	A. Overview	5
	B. Supplementary guidance for Investors	6
C.	ASSESSMENT ACCORDING TO THE TCFD RECOMMENDATIONS	7
	Governance	7
	Strategy	8
	Risk Management	11
	Metrics and Targets	13
D.	CONCLUSION	21
E.	APPENDIX I – METHODOLOGY	22



# Executive Summary

Setanta Asset Management Limited are a global asset management firm managing over EUR 14 billion in AUM (as of 31 Dec 2021) for a range of institutional clients based in Europe and North America. We are part of the Great-West Lifeco group of companies, and the Irish Life Group, and our work around ESG investing reflects the strong commitment towards ESG considerations from our parent company and group affiliations.

We apply a long-term, active and value investing approach to our equity and multi-asset funds. We provide discretionary management services to institutional investors, stating in our Responsible Investment Policy (pg.1) that “we integrate ESG factors into our investment approach where it is possible to do so while meeting our fiduciary responsibility to help them achieve their long-term investment objectives”. Our integration of ESG factors is always cognisant of client mandates, some of which require greater or less consideration of climate-related factors.

This report details an important first step for the development of our climate-related strategy, management, and oversight, according to the disclosure recommendations by the Task Force on Climate-related Financial Disclosures (TCFD). As our first TCFD Report, the objective is to be transparent about the status of our climate-related strategy, management, and oversight across the four pillars recommended by the TCFD. A key aspect of TCFD reporting is to provide transparency regarding progress in relation to asset manager’s climate-related journey, and our plans for significant progress in 2022 and beyond have been reflected in this report.

**Governance:** Our Executive Management Team “EMT” is supported by our Responsible Investing Committee. The EMT reports to the Board of Directors through the MD & CIO. The Responsible Investing Committee is responsible for, among other things, our firm’s ESG activities including overseeing compliance with ESG-related investment mandates, some of which implicitly include climate considerations, by way of exclusionary criteria.

**Strategy:** All climate-related investment strategies are mandate-driven, adhering to exclusionary criteria in combination with enhanced, voluntary climate-relevant reporting. In addition, all active equity funds are subject to our Principle Adverse Impact due diligence process. As of Q1 2022, a portion of our AUM is aligned with Article 8 of the EU’s Sustainable Finance Disclosure Regulation (SFDR), in accordance with specific client mandates. A firmwide analysis of Climate-related risks and Opportunities has been conducted, as part of the process for compiling this TCFD Report.

**Risk Management:** Climate-related risk identification occurs at Fund Manager level, however, a process for communicating analysis on climate-related risks, independent of Fund Management, is currently under development.

**Metrics and Targets:** Consistent with the 2021-updated TCFD reporting recommendations, this report includes an extensive set of metrics per asset class, identifying climate-related risks and opportunities. The most comprehensive set of climate metrics are disclosed for our main asset classes: equity and corporate fixed income.

We are currently reviewing our climate-related strategy and management processes. As part of the process for developing this TCFD report, we have identified a series of items for development and improvement. Development items have been included in the Conclusion (Section D) of this report, as well as being referenced in the various TCFD Pillar sections as identified above.



# Introduction and Background

## 1. Setanta Asset Management Limited

Setanta Asset Management Limited are a global asset management firm managing over EUR 14 billion in AUM (as of 31 Dec 2021) for a range of institutional clients based in Europe and North America. We are part of the Great-West Lifeco group of companies, and the Irish Life Group, and our work around ESG investing reflects the strong commitment towards ESG considerations from our parent company and group affiliations.



## 2. What is TCFD?

### a) OVERVIEW

The Task Force on Climate-related Financial Disclosures (TCFD) was launched after the 2015 Paris Agreement by the Financial Stability Board (FSB). Considering climate transparency as a crucial factor for the stability of financial markets, the goal of the TCFD, is to improve climate disclosure through specific recommendations. These recommendations, released on 29th June 2017, are meant to provide a *“consistent framework that improves the ease of both producing and using climate-related financial disclosures”*. In a context where more than 400 disclosure frameworks for corporates and 20 for investors exist, the objective of the TCFD is to create a harmonised standard for both corporate and investment climate disclosure, taking into account that domestic and local regulatory frameworks may require different levels of compliance.

TCFD Core Recommendations are split into four pillars:

- + Governance
- + Strategy
- + Risk Management
- + Metrics & Targets

Each Pillar has sub-categories with specific approaches for assessment and disclosure of the associated climate risks and opportunities.

In its 2021 Recommendations update, the TCFD has not modified its four overarching recommendations on Governance, Strategy, Risk Management, Metrics & Targets or the 11 associated recommended disclosures.

Additional guidance was provided on 2 pillars: Strategy and Metrics & Targets for all sectors as well as supplementary guidance for the Financial Sector.



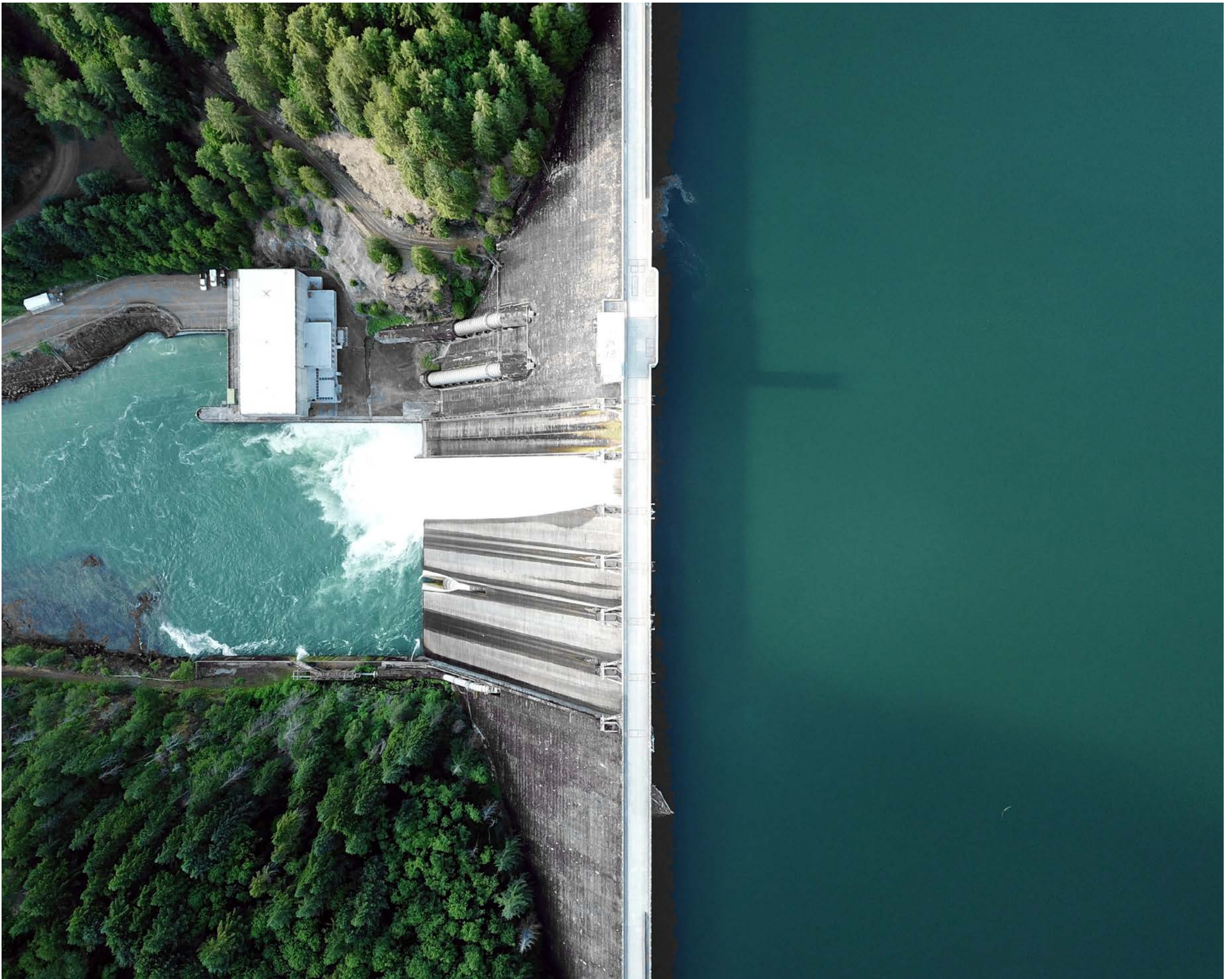
## b) SUPPLEMENTARY GUIDANCE FOR INVESTORS

A key FSB proposal was for the development of climate-related disclosures that *“would enable stakeholders to understand better the concentrations of carbon-related assets in the financial sector and the financial system’s exposures to climate-related risks”*.

TCFD divides the Financial Sector into four major industries:

- + Banks (lending)
- + Insurance Companies (underwriting)
- + Asset Owners (investing; includes public & private pension plans, endowments, and foundations)
- + Asset Managers (asset management)

All are expected to report, and all have at least one set of supplementary guidance in the Core elements (Governance, Strategy, Risk Management, Metrics and Targets). All four areas are covered in TCFD Final Report Annex D **‘Supplemental Guidance for the Financial Sector’ (pg.22-44)**.





# Assessment according to the TCFD recommendations

## 1. Governance

### A) BOARD'S OVERSIGHT

Our Responsible Investment strategy includes a set of policies, including the Responsible Investment Policy, Sustainability Risks Policy, Engagement Policy, Voting Policy, and Principal Adverse Impacts (PAI) Due Diligence Policy. These are approved by the Setanta Board of Directors at least on an annual basis. The Board has the responsibility of monitoring the policies to ensure their ongoing appropriateness. At present, there is not an explicit mandate of the board to monitor climate-related issues specifically.

The board sits above our management stakeholder and committees' structure, as outlined in the below diagram. The Responsible Investment Committee (a sub-committee of the Executive Management Team (EMT), with Senior Leadership representation) communicates Responsible Investment-related content to the Board via the EMT. This content covers adherence and compliance with any stipulated ESG and / or climate criteria (e.g., coal exposure restrictions within specific client mandates), and forms a part of our Board of Directors regular update.



Figure 1: Setanta Corporate Management structure.

### B) SENIOR MANAGEMENT'S ROLE

We have established the Setanta Responsible Investment Committee ('SRIC'). The Committee, which meets at least quarterly, is responsible for supporting and overseeing our growing responsible investment activities and related reporting. The Responsible Investment Committee is comprised of:

Managing Director & Chief Investment Officer; Director, Business Development – Ireland (Chairperson); Head of Equities, Head of Multi-asset Funds; Investment Risk Representative; Head of Operations; a Senior Leadership Team representative; ESG Project Manager (Secretary) and our Sustainable Investing Lead.

*In terms of current and future Governance-related developments:*

- + We will continue to develop the Board's oversight role specifically as regards climate-related risks and opportunities.

## 2. Strategy

### A) IDENTIFYING CLIMATE-RELATED RISKS AND OPPORTUNITIES

Setanta's investment approach is fundamental in nature. At present there is no systematic approach to identifying climate-related risks and opportunities. These factors are identified through the bottom-up investment process. However, our approach to identifying climate-related risks and opportunities is currently under review (see future developments at the end of this section).

There are certain client mandates and regulatory requirements which necessitate explicit consideration of certain climate-related factors. This is discussed further in section 2(b).

### B) INCORPORATING CLIMATE-RELATED RISKS AND OPPORTUNITIES INTO INVESTMENT STRATEGIES

As noted in 2(a), climate risk identification currently occurs from a bottom-up perspective at Fund Management level.

At a firm-wide level we have established a Responsible Investment (RI) policy, with the goal of integrating ESG considerations into investment management processes and ownership practices *"where it is possible to do so while meeting our fiduciary responsibility"*. While there is currently no mechanism for analysing concentrations of climate-related risks at either the fund or corporate level, there are certain client mandates and regulatory requirements which necessitate explicit consideration of certain climate-related factors.



#### Client Mandates

Currently integration of climate-related considerations is predominantly client-driven and is the result of specific client requirements and/or mandates for their AUM to be managed in accordance with specific restrictions.

#### Regulatory Requirements

Another instance where climate related risks are incorporated into investment strategies relate to the Principal Adverse Impact (PAI) due diligence process as part of our SFDR regulatory commitments. PAI due diligence is firmwide and is conducted on all active equity funds and has been applied to all new stocks researched since March 2021. PAI considerations specific to climate relate to the disclosure of reported Scopes 1, 2 and 3 GHG emissions. Within the PAI due diligence process, there are allowable client-driven exceptions e.g., where a client mandate and/or Investment Management Agreement requires for related investments to be excluded from that due diligence process. All such exemption requests would go through a PAI exclusion process as detailed in the Setanta PAI policy.



## C) USING CLIMATE-RELATED SCENARIOS TO INFORM INVESTMENTS

At present climate-related scenarios do not inform investments. However, as part of this TCFD Report analysis, a full scenario alignment and Transition VaR assessment has occurred against our firmwide equity and corporate fixed income groupings, as a means of informing future strategy in this area. We will consider using the outcomes of this scenario alignment to advise and inform our climate strategy.

To summarise the scenario alignment analysis conducted:

- + Scenario alignment aims at analysing the current and future emission intensity from the direct and indirect emissions of an asset (including Scope 1, 2, & 3) to assess alignment with different climate scenarios based on its market share and carbon budget.
- + The ISS ESG scenario analysis combines the three climate scenarios: The Sustainable Development Scenario (SDS, Paris Agreement-aligned), the Actual Policies Scenario (APS), and the Stated Policies Scenario (STEPS) provided by the International Energy Agency (IEA) in their report World Energy Outlook 2021 (IEA World Energy Outlook 2021 report published May 2021). Each scenario expects a certain level of carbon budget and temperature increase in 2050. Full analysis is represented in Metrics Section 4.1 with accompanying analysis. Table 1 shows the extent to which the firmwide Equity and Corporate Fixed Income asset classes are positioned relative to the three carbon budgets of the IEA-derived climate scenarios at given points in time (2021, 2030, 2040 and 2050).

Firmwide Asset Class	Year SDS Budget Exceeded	Temperature Increase by 2050 in (°C)	Portfolio Comparison to SDS Budget (%; Red = Overshoot)			
			2021	2030	2040	2050
Equity	2034	2.4	-37.0	-17.2	+53.0	+236.8
Corporate Fixed Income	2021	2.9	+34.4	+77.6	+198.8	+463.4

*Table 1: Asset Class-level Scenario Alignment data vs IEA SDS Scenario. Source: ISS, 31 December 2021.*

- + The Firmwide Equity asset-class in its current state is misaligned with a SDS scenario by 2050, representing a potential temperature increase of 2.4°C, and an SDS-based budget exceed year of 2034.
- + The Firmwide Corporate Fixed Income asset-class in its current state is also misaligned with a SDS scenario by 2050 presenting a potential temperature increase of 2.9°C, and an SDS-based budget exceed year of 2021.



## *In terms of current and future strategy-related developments:*

Over the next 12 months we are expecting to make material progress on ESG strategy and climate-related integration:

### **ESG integration project:**

- + In May 2022 we appointed a new Sustainable Investing Lead, with a mandate to address a comprehensive upgrade to our ESG integration in our investment process. Climate-related risks will likely be an integral part of that integration.
- + We will look to incorporate the firm-wide Climate-related risks and opportunities (also in Metrics section C.4 of this report) into our ongoing ESG integration project.

### **Additional regulatory Alignment:**

- + Within Equities, we are viewing the possibility of further alignment to Article 8 status under SFDR. In addition, we are exploring the potential to implement a minimum % alignment to EU Taxonomy aligned assets.

### **Net Zero:**

- + Over the course of 2022 & 2023, and in collaboration with an external consultant, we are exploring the potential for Setanta to make a Net Zero commitment, in line with our parent company. This research will consist of (i) firmwide data due diligence, (ii) the completion of financed emissions analysis, (iii) Paris-alignment analysis, and (iv) target-setting advisory process. Certain asset classes and/ or client mandates may be excluded from this process.



### 3. Risk Management

#### A) INTEGRATING CLIMATE-RELATED RISKS INTO SETANTA'S OVERALL RISK MANAGEMENT

Risk management is at the forefront of our investment process. We primarily manage risk at the stock selection level during our detailed fundamental research process, whereby an assessment will be made on three fronts: financial risk, operational risk, and valuation risk. We take a long-term view of risk management, focused as much on what we want to avoid as company characteristics we seek out.

Some of the characteristics we look for when searching for credible investment ideas are as follows:

- + Low risk of obsolescence: *Can we envision the business predicament 5-10 years hence?*
- + Stable financial structure: *Are Liabilities/Liquidity dangerously unpredictable?*
- + Long-term business planning: *Ideally with significant reinvestment opportunities*
- + Business misunderstood/strengths under-appreciated: *e.g., dull; cyclical pressures; investment costs depressing profits; etc.*
- + Trustworthy management with shareholder focus: *Ideally management will be significant co-investors*

Our premise is that a diversified portfolio of resilient businesses, purchased at attractive prices offers the best protection against impairment of capital as well as the best prospects of superior risk adjusted returns over time.

On an ongoing basis, risk is managed by the Fund Managers during regular reviews within the investment team including our Head of Equities and MD & Chief Investment Officer, where appropriate. Operational and Compliance risk is managed via restrictions being embedded in our pre-trade compliance investment system.

In addition to the above, we have several policies in place designed to manage & mitigate risk where possible. The implementation of our policies is overseen by our Executive Management Team, who in turn, through the MD & Chief Investment Officer report to the Board of Directors, as reflected in our corporate management structure (Strategy, Figure 1).

Accompanying these processes & policies, is our independent Investment Risk (IR) function.

- + The IR function is tasked with overseeing investment practices and is independent from our Fund Management team.
- + A key focus of the IR function relates to ensuring adherence to client-driven mandates, whereby IR monitor and report on alignment to client restrictions.

#### B) POSITIONING THE PORTFOLIO WITH RESPECT TO THE TRANSITION TO A LOWER CARBON ENERGY SUPPLY, PRODUCTION, AND USE

We do not have specific positioning with regards to decarbonisation. As outlined earlier, we currently conduct reporting on specific client-driven mandates, a portion of which, has been aligned to SFDR Article 8 status. This reporting includes carbon intensity data and exposure to fossil fuel activities.

To inform any future climate strategy development regarding climate-related risks and opportunities, a series of



assessments have been conducted and presented in Metrics and Targets section 4(a), assessing our grouping of Firmwide Equity, Corporate Fixed Income and Sovereign asset class groupings (however Sovereign is subjected to a subset of available analytics). Combined, these firmwide asset class grouping represent approximately 90% of AUM (as of 31st December 2021). Analytics conducted include:

- (i) Asset Class Exposure to Fossil Fuels\*
- (ii) Weighted Average Carbon Risk Rating (all firmwide asset class groupings)
- (iii) Scenario Alignment\*
- (iv) Transition VaR\*
- (v) Power Generation Exposure / Energy Mix\*
- (vi) EU Taxonomy: Not-Aligned OR Likely Not-Aligned Revenues\*

*\*Firmwide Equity and Corporate Fixed Income only*

## C) ACTIVE ENGAGEMENT WITH INVESTEE COMPANIES AND PROXY VOTING

We participate in detailed discussions with investee companies to fully comprehend their long-term objectives and challenges, as well as their operating and decision-making frameworks. Discussions also address corporate governance considerations, business risk, management incentive arrangements and their plans for maximising shareholder value. Our Fund Managers proactively provide feedback to management teams when appropriate regarding their business strategies, governance, and reporting.

We utilise a variety of internal and external resources to assist in the analysis and monitoring of investee companies. Direct engagement with the management teams of investee companies is integral to our ongoing research and monitoring processes. We also use third party research providers, such as, Sustainalytics for detailed ESG analysis.

We are an engaged asset manager with the objective of voting for the securities of companies for which we have proxy-voting authority, in a manner most consistent with the long-term economic interest of fund investors. Our discretion to vote on behalf of clients' portfolios is set out in the Investment Management Agreement. Where such discretion has been granted to us, clients adopt our standard voting policy.

We endeavour to vote on all voting decisions and do not outsource proxy voting responsibility. We use Broadridge's ProxyEdge system which allows us to manage, track, reconcile and report on our voting activity.

We currently make available our quarterly voting records on our website in accordance with the Shareholder Rights Directive (SRD II).

### *In terms of future developments:*

- + We will consider the best approach to integrating climate-related factors into the wider risk management framework.



## 4. Metrics and Targets

The TCFD recommendations Metrics and Targets pillar includes the following disclosures:

- a. Disclose metrics used to assess Climate Related risks and opportunities
- b. Disclose scope 1, 2 and 3 GHG emissions
- c. Describe targets used to manage climate related risks and progress towards targets

Analysis within this TCFD Disclosure section relates to three specific asset class groupings:

### 1. Firmwide Equity

- a. Asset Class value EUR 10.2bn
- b. Represents approximately 73% of total AUM
- c. Grouping represents an aggregation of all Equity holdings managed by Setanta

### 2. Firmwide Corporate Fixed Income

- a. Asset Class value EUR 1.5bn
- b. Represents approximately 11% of total AUM
- c. Grouping represents an aggregation of all Corporate Debt holdings managed by Setanta

### 3. Sovereign Portfolio

- a. Asset Class value EUR 1.1bn
- b. Represents approximately 8% of total AUM
- c. Grouping represents an aggregation of all Sovereign holdings managed by Setanta

*Note: Above values as at 31 December 2021.*

As per section 4(b), Firmwide GHG Emissions are a foundational disclosure, covering:

- (i) Absolute Scope 1, Scope 2, and Scope 3
- (ii) Emissions intensity measures (including WACI and Relative Carbon Footprint)

In addition to the above disclosures, metrics coverage has been expanded to incorporate the range of cross-sector climate-related metrics TCFD required, following its 2021 update to recommended disclosures.

1. Transition Risks (including amount and Extent of Assets or Business Activities Vulnerable to Transition Risks)
  - (i) Portfolio Exposure to Fossil Fuels
  - (ii) Weighted Average Carbon Risk Rating (all portfolios)
  - (iii) Scenario Alignment
  - (iv) Transition VaR
  - (v) Power Generation Exposure / Energy Mix
2. Physical Risks (and the Amount and Extent of Assets or Business Activities Vulnerable to Physical Risks)
  - (i) Physical Value at Risk (VaR)
  - (ii) Physical Risk Management



3. Climate-Related Opportunities (including proportions of Revenue, Assets, or Other Business Activities Aligned with Climate-Related Opportunities)
  - (i) Green Revenues
4. Capital Deployment (including Amount of Capital Expenditure, Financing, or Investment Deployed toward Climate-Related Risks)
  - (i) Brown / Fossil Fuel Expansion (as weighted % of portfolio)

## A) ASSESSING CLIMATE-RELATED RISKS AND OPPORTUNITIES

### a. Transition Risks: Amount and Extent of Assets or Business Activities Vulnerable to Transition Risks

#### (i) Exposure to Fossil Fuels (Equities & Fixed Income Portfolios)

Firmwide Asset Class	Revenue Linked to Fossil Fuels		Exposure to FF Revenue, by FF Type (%)			Fossil Fuel Expansion (as unweighted % of issuers)	Potential Reserves (000's tCO <sub>2</sub> e)	Coal as % of Potential Reserves
	Absolute (EURm)	As % of Total Revenue	Coal	Oil	Gas			
Equity	103.1	2	2	75	23	4	354	0
Corporate Fixed Income	57.3	13	3	72	25	8	451	60

*Table 2: Fossil Fuel Exposure – Firmwide Equity and Corporate class groupings. Source: ISS, 31 December 2021.*

#### (ii) Weighted Average Carbon Risk Rating (all asset classes)

Firmwide Asset Class	Weighted Average CRR
Equity	52
Corporate Fixed Income	55
Sovereign	50

*Table 3: Weighted Average Carbon Risk Rating (all asset classes). Source: ISS, as at 31 December 2021.*



Both the Equity and Corporate Fixed Income asset-class groupings are exposed to carbon risk, with evidence of revenue linkage to Fossil Fuel activity. Both asset class groupings contain exposure to all of the Coal, Oil and Gas activities. The Equity asset class is considerably less exposed to Fossil Fuel than the Corporate Fixed Income, with revenue exposure representing 2% and 13% of total attributable revenue respectively.

In terms of Weighted Average Carbon Risk Rating, both groupings marginally outperform i.e., are scored above 50. Carbon Risk Rating is an assessment of overall strategy Carbon Risk Rating, and issuer exposure and management of material carbon issues in its own operations as well as its products and services. In addition, at each value chain stage, a company’s vulnerability to carbon risks is assessed.

For the Sovereign asset class, limited data is available related to Country Weighted Average Carbon Risk Rating. The Weighted Average Carbon Risk Rating of the portfolio is 50.

(iii) Scenario Alignment and Transition Value-at-Risk

Firmwide Asset Class	Year SDS Budget Exceeded	Temperature Increase by 2050 in (°C)	Portfolio Comparison to SDS Budget (%; Red = Overshoot)			
			2021	2030	2040	2050
Equity	2034	2.4	-37.0	-17.2	+53.0	+236.8
Corporate FI	2021	2.9	+34.4	+77.6	+198.8	+463.4

Table 4: Asset Class-level Scenario Alignment data vs IEA SDS Scenario.  
Source: ISS, 31 December 2021.

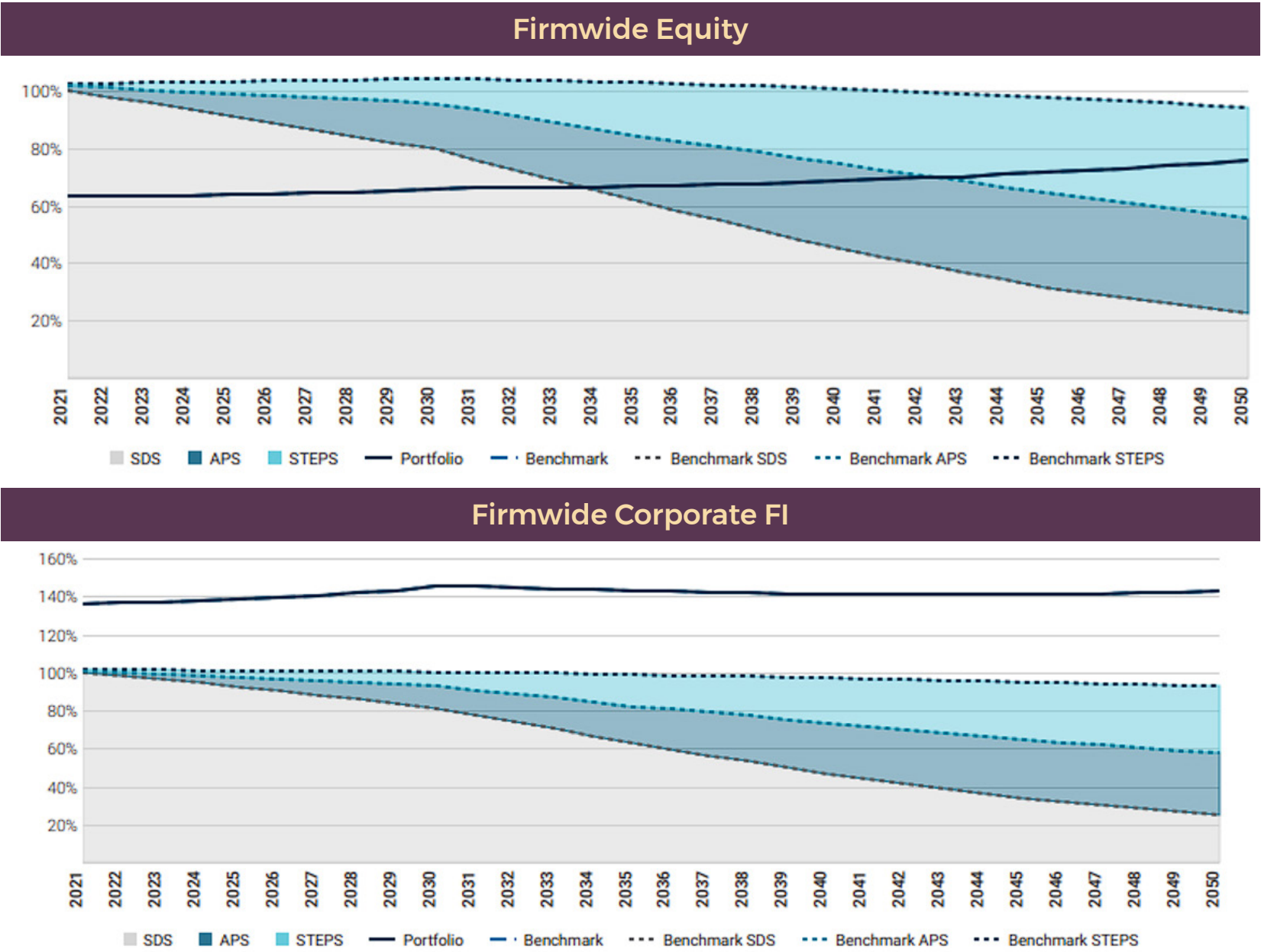


Figure 2: Graphical Representation of Asset Class-level Scenario Alignment data vs All IEA Scenarios. Source: ISS, 31 December 2021.



Climate Scenario Alignment represents one pillar of scenario analysis. This analyses the current and future emission intensity of an issuer, to understand which climate scenario, it is best aligned with until 2050 (for further explanation of methodology, see Appendix I). This analysis incorporates three climate scenarios provided by the International Energy Agency (IEA) in their report World Energy Outlook 2020: the Sustainable Development Scenario (SDS), the Stated Policy Scenario (STEPS), and Actual Scenario (APS).

- + The Firmwide Equity asset-class in its current state is misaligned with a SDS scenario by 2050, representing a potential temperature increase of 2.4°C, and an SDS-aligned budget-exceed year of 2034.
- + The Firmwide Corporate asset-class in its current state is also misaligned with a SDS scenario by 2050, representing a potential temperature increase of 2.9°C, and an SDS-aligned budget-exceed year of 2021.

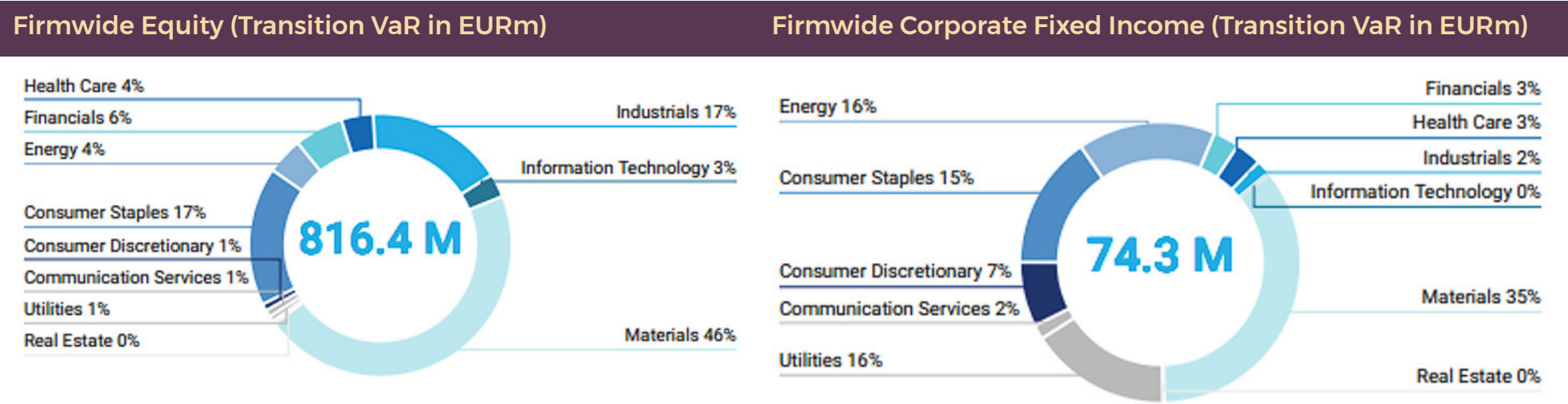


Figure 3: Asset Class-level Transition Risk (EURm based on NZE2050 scenario), with GICS Sector distributions. Source: ISS, 31 December 2021.

As per Figure 3, the total estimated Transition Value at Risk for the Firmwide Equity asset class is EUR 816.4 (8% of the total grouping by weight), compared with EUR 74.3m (5% of total by weight). Both are based on the IEA 'NZE 2050' scenario. Both charts show the sector-level contribution to the total potential financial impact of transition risks and opportunities on the portfolio. The Value at Risk presented is a net number between the positive and negative potential share price performance in the portfolio.

The Transition VaR is an equity-based analysis, and its output should not be interpreted as the potential change in price of a bond. Nevertheless, the VaR remains a useful metric for fixed income as it is a holistic indicator of the issuer's exposure to Physical or Transition Risks, even if not directly material to a bond price itself.

(iv) Power Generation Exposure / Energy Mix

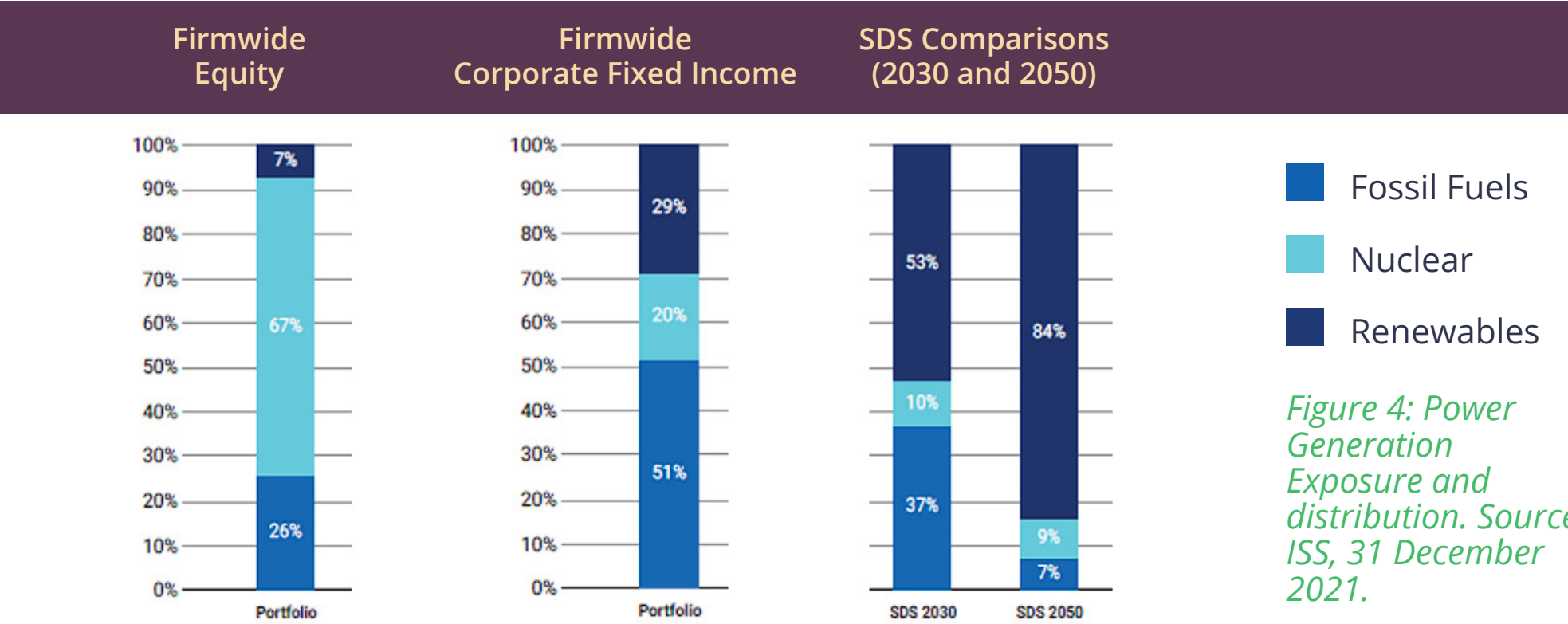


Figure 4: Power Generation Exposure and distribution. Source: ISS, 31 December 2021.



Figure 4 shows the energy generation mix in % from different sources by power generators in the portfolio. The two right-most bars are static and illustrate an SDS compatible generation mix in 2030 and 2050, according to the International Energy Agency. Corporate Fixed Income outperforms Equity asset class in terms of proportional exposure to green energy source, however both remain over-exposed to fossil fuel types, and are both misaligned with an energy mix for 2030 that would represent an alignment with Paris-aligned SDS scenario.

B) PHYSICAL RISKS: AMOUNT AND EXTENT OF ASSETS OR BUSINESS ACTIVITIES VULNERABLE TO PHYSICAL RISKS

(i) Physical Value at Risk (VaR)

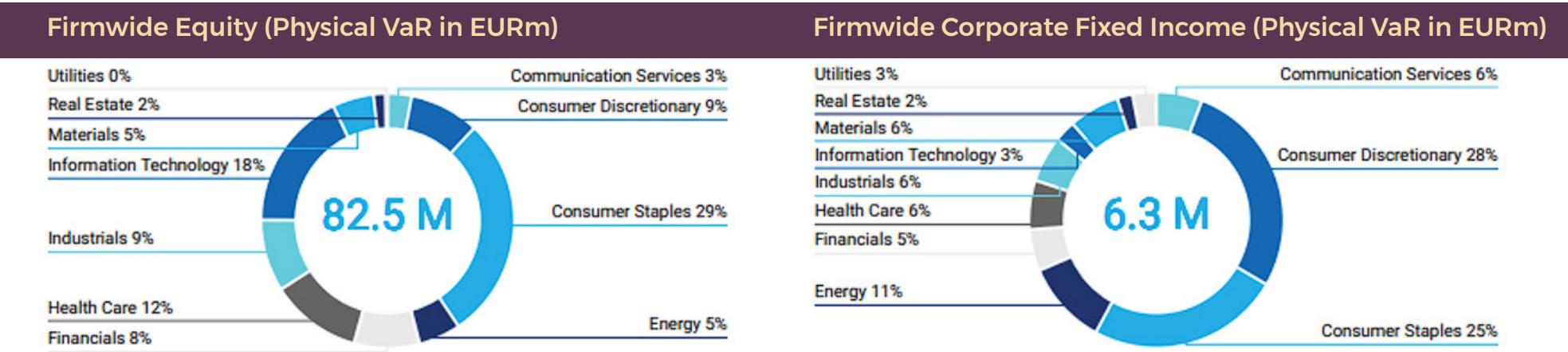


Figure 5: Physical Risk Var in EURm with GICS Sector distribution. Source: ISS, 31 December 2021

Firmwide Asset Class	Asset Class Value at Risk* (EURm)	Physical Value at Risk (as % of total Assets)	Asset Class Change in Value by 2050 (EURm)		Issuers at Risk (as unweighted %)
			Current	Future* (Climate Change)	
Equity	82.5	0.8	6.02	76.48	20
Corporate FI	6.3	0.8	0.88	4.79	24

Table 5: Physical VaR (\*Data based on IPCC RCP 4.5 'Most Likely' Scenario). Source: ISS, 31 December 2021.

The Value at Risk (VaR) of an individual issuer estimates the change in share price as a result of considering the financial impact of physical risks. The VaR is computed using a valuation model based on the Economy Value Added (EVA) framework and highlights potential impact on the portfolio value in 2050 based on current risk levels and hazards due to climate change, along with total anticipated net change in value.

Aggregated-up to portfolio level, the Equity and Corporate Fixed Income asset classes display a path to Physical Risk-related damage to annual EVA of EUR 82.5million and USD 6.3million respectively, by 2050 (see Figure 5 for an additional GICS Sector breakdown). Both represent less than 1% of total asset values (as shown in Table 5).



(ii) Physical Risk Management

Portfolio	Issuers at Risk (as unweighted %)	Physical Risk Score	Physical Risk Management - Assessment Categories (as % of total)			
			Robust	Moderate	Weak	Not Covered Or None
Equity	20	59	2	25	7	67
Corporate Fixed Income	10	60	3	38	8	52

Table 6: Physical Risk Management Data at Asset Class level. Source: ISS, 31 December 2021.

Physical risks that can have a financial impact on the portfolio both at the operational and the market level. The Physical Risk Score of the Equity and Corporate FI asset class groupings are in similar order of magnitude. In Table 6, the Equity asset-class shows a 20% of Issuers are at risk of Physical Risk damage, with 27% of issuers showing a Physical Risk Management assessment that is moderate or higher.

Corporate Fixed Income firmwide grouping shows a lower number of issuers exposed to Physical Risk (10%), with 41% showing a moderate-or-greater Physical Risk management assessment (moderate plus robust).

C) CLIMATE-RELATED OPPORTUNITIES

(i) Green Revenues (% of portfolio holdings)

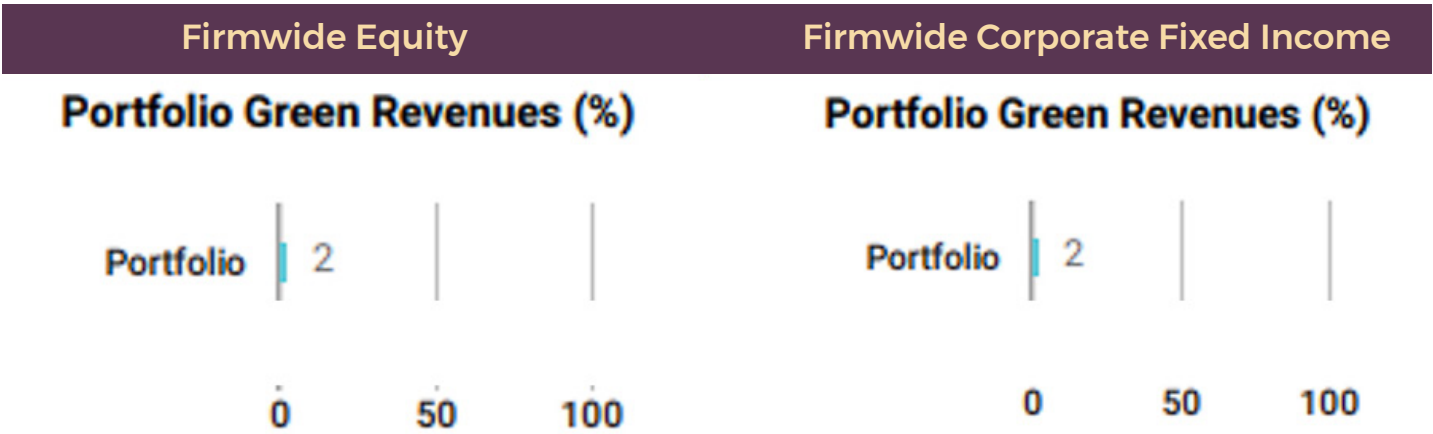


Figure 6: Portfolio Green Revenues. Source: ISS, 31 December 2021.

For both asset class groupings, 2% of attributable revenue to the portfolio is derived from products or services with significant or limited contribution to SDG Goal number (Climate Action). This assessment is derived from the ISS ESG assessment from the Sustainable Development Goals Solutions product, where percentages of revenue are attributed to products and / or services that contribute to, or obstruct, the achievement of specific SDGs.

D) CAPITAL DEPLOYMENT: CAPITAL EXPENDITURE, FINANCING, OR INVESTMENT DEPLOYED TOWARD CLIMATE-RELATED RISKS AND OPPORTUNITIES

(i) Issuers exposed to Brown Expansion Capex (% of portfolio)

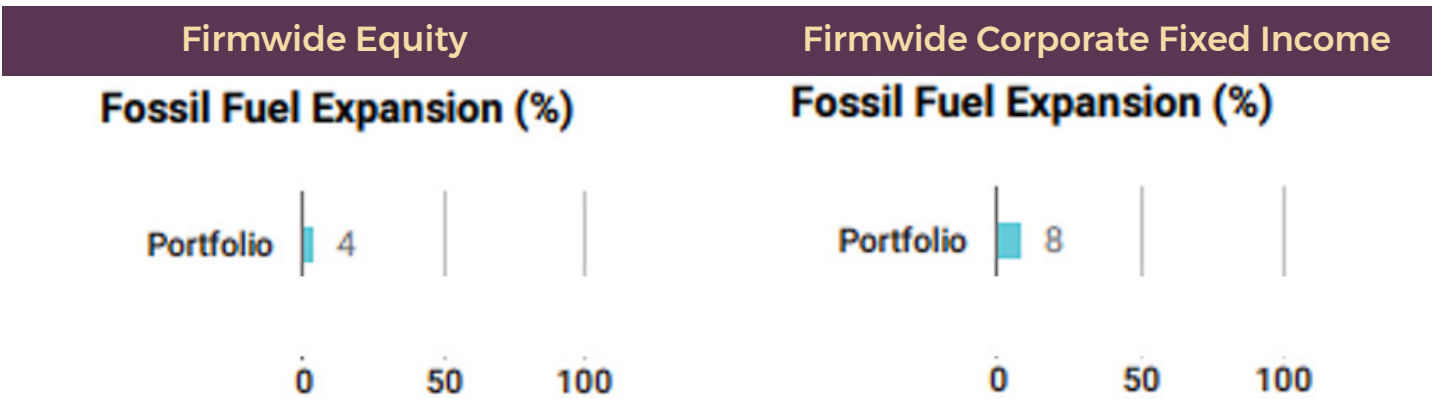


Figure 7: Fossil Fuel Expansion (as unweighted % of portfolio). Source: ISS, 31 December 2021.



For both asset classes, the analysis shows percentage-numbers (unweight) of the count of issuers in the portfolio that have fossil fuel relevant-assets in the previous fiscal year, 4% and 8% respectively. This assessment identifies issuers currently engaged in the expansion or development of fossil fuel projects or have declared plans to do so in the near future. Fossil fuel projects incorporate oil, gas, and coal extraction operations, as well as energy generation assets powered by fossil fuels, and infrastructure which is critical for the fossil fuel industry (e.g., pipelines and terminals).

### b) The weighted average carbon intensity and other metrics

The Weighted Average Carbon Intensity (WACI) is the metric explicitly recommended by the TCFD for asset managers and asset owners. The WACI allocates Scope 1 & 2 GHG emissions based on portfolio weights and is comparable across asset classes. It also allows for blending fixed income and equity holdings as it is only linked to the underlying issuer, and not based on a security-level valuation. The Relative Carbon Footprint, a normalised measure, defined as the total carbon emissions of the portfolio per million EUR invested (For further details please refer to Appendix I – Methodology) is an additional useful metric based on the ownership principle, which is the key logic of the GHG protocol.

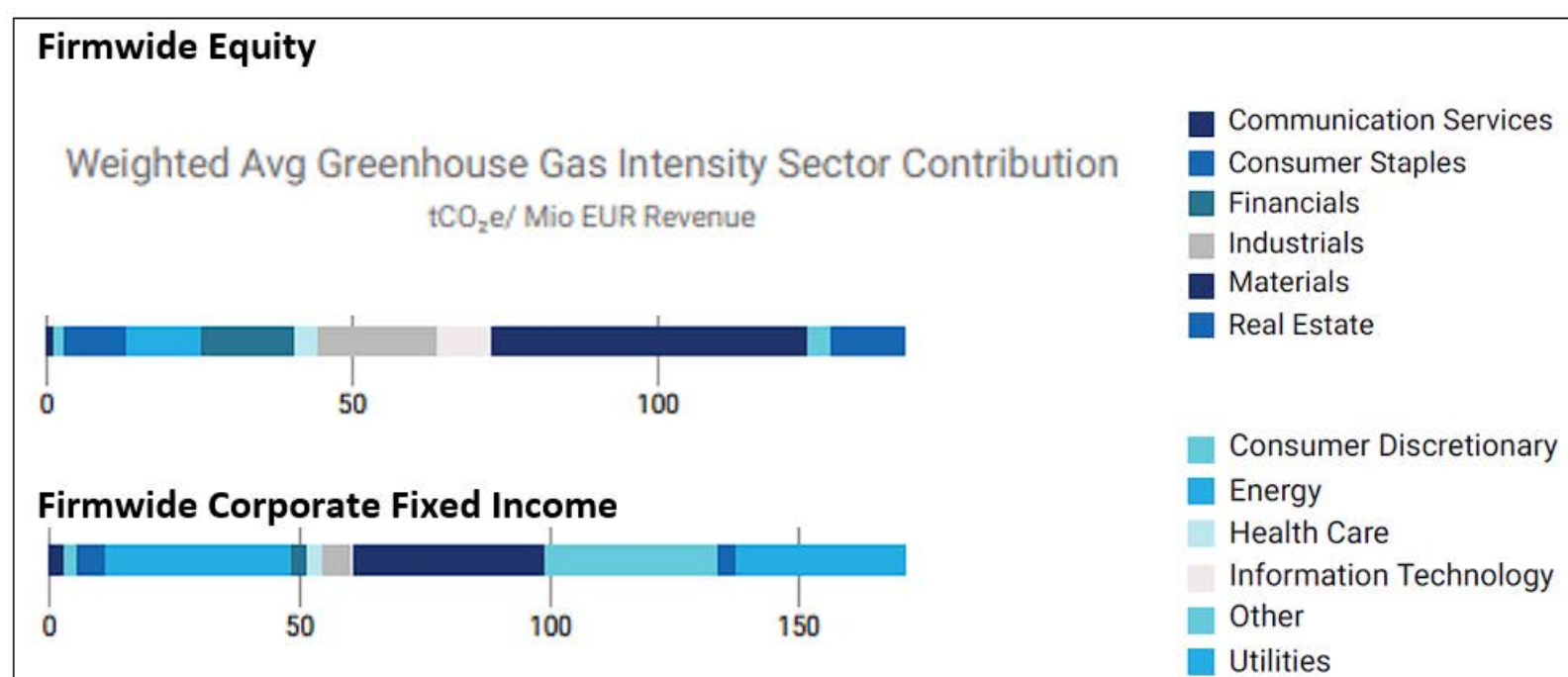
#### (i) Equities & Corporate Fixed Income Portfolios

Portfolio	% of AUM	Portfolio Absolute Emissions (tCO <sub>2</sub> e)		Weighted Average Carbon Intensity (tCO <sub>2</sub> e / mUSD Revenue)	Relative Carbon Footprint (tCO <sub>2</sub> e / mUSD Invested)
		Scopes 1+2	Scope 3		
Equity	80	567,912	6,491,752	140.58	55.73
Corporate Fixed Income	10	107,703	883,281	171.51	74.54

*Table 7: GHG Emissions metrics Equity & Mixed Asset Class. Source: ISS, 31 December 2021.*

Table 7 illustrates the performance of the Firmwide Asset Classes side-by-side. Despite the significantly larger size of absolute carbon emissions at all Scopes 1, 2 and 3, the Equity Asset Class outperforms the Corporate Fixed Income aggregation in both WACI and Relative Carbon Footprint due primarily to less exposure to the Utilities and Energy sectors, as well as the selection of less emissions-intense issuers from the Utilities sector. Emission contributions by sector are illustrated in Figure 8 below.

#### (ii) Sovereign Portfolio



*Figure 8: WACI with sector-distributions. Source: ISS, 31 December 2021.*



Portfolio	% of AUM	Emissions Type	Absolute Emissions (tCO2e)	Weighted Average Carbon Intensity (tCO2e / GDP)	Relative Carbon Footprint (tCO2e / mUSD Debt)
Sovereign	<10	Production	245,507	186.77	220.02
		Government	34,844	26.06	31.23

Table 8: GHG Emissions metrics Sovereign Debt Asset Class. Source: ISS, 31 December 2021.

More than 50% of the sovereign AUM is invested in the Netherlands, Germany, and France. As the definitions of WACIs slightly differ between corporate and sovereign portfolios, where Gross Domestic Product (GDP) is used as a proxy for Revenue, a meaningful comparison between Sovereign and non-sovereign asset class groupings is not possible.

Further details and the respective tables on the asset class groupings in the accompanying Climate Impact and Sovereign Emissions reports. Methodology elaboration is included in the Appendix.

c) Targets for climate-related risks and opportunities

We currently have no targets specific to climate-related risks and opportunities. This may change because of the ongoing Net Zero research and broader ESG integration project.

In terms of future Metrics and Targets-related developments:

- + We will use these metrics as inputs into the future development of our climate-related strategy.





# Conclusion

This report outlining our efforts along the TCFD recommendations covers the full scope of the TCFD's four categories and 11 recommendations. This report will be invaluable as we continue our work to refine our Climate-related strategy. The process highlighted several areas for future development, many of which are already in motion. Areas of recommended improvement have included:

## Governance

- + We will continue to develop the Board's oversight role specifically as regards climate-related risks and opportunities.

## Strategy

- + *ESG integration project:*  
In May 2022 we appointed a new Sustainable Investing Lead, with a mandate to address a comprehensive upgrade to our ESG integration in our investment process. Climate-related risks will likely be an integral part of that integration.

We will look to incorporate the firm-wide Climate-related risks and opportunities (also in Metrics section C.4 of this report) into our ongoing ESG integration project.

- + *Additional regulatory Alignment:*  
Within Equities, we are viewing the possibility of further alignment to Article 8 status under SFDR. In addition, we are exploring the potential to implement a minimum % alignment to EU Taxonomy aligned assets, involving an identification of aligned revenues from sustainable activities associated with climate mitigation and adaptation.
- + *Net Zero:*  
Over the course of 2022, and in collaboration with an external consultant, we are exploring the potential for Setanta to make a Net Zero commitment. This research will consist of (i) firmwide data due diligence, (ii) the completion of financed emissions analysis, (iii) Paris-alignment analysis, and (iv) target-setting advisory process.

## Risk Management:

- + We will consider the best approach to integrating climate-related factors into the wider risk management framework

## Metrics and Targets:

- + We will use these metrics as inputs into the future development of our climate-related strategy.



# Appendix I – Methodology

## 1) GHG EMISSIONS

### (i) Equities & Fixed Income Portfolios

#### *Scope 1 & 2 emissions for issuers*

The emissions methodology was developed over three years with the Swiss Federal Institute of Technology and includes about 800 sector and sub-sector specific models, allowing ISS ESG's researchers to calculate the GHG emissions of companies based on those criteria that are most relevant to their line of business.

A summary of the process is provided below:

- + Self-reported emissions data is collected from all available sources.
- + Self-reported numbers are evaluated for trustworthiness and, where necessary, discarded.
- + All companies are classified according to the proprietary ISS ESG CICS (Carbon Industry Classification System) – i.e., companies are classified considering their carbon-profile, allowing ISS ESG to benchmark non-reporting companies against their reporting peers.
- + ISS ESG applies its 800 sub-sector specific models to estimate the emissions of non-reporting companies according to sector-relevant financial or operational metrics.

#### *Scope 3 emissions for issuers*

ISS ESG's methodology conceptually differentiates between two sources of Scope 3 emissions: a.) emissions from a company's upstream and downstream supply chains and b.) emissions from the "use phase" of a company's product or service.

Upstream emissions include GHG emissions that occur before the primary inputs for production (raw material / machinery etc.) enter the company's operational control. Downstream emissions are those emitted after a product/service leaves a company's control or ownership. Purchased goods and services (upstream, category 1) and use of sold products (downstream, category 11) are responsible for most of the emissions across high emitting sectors<sup>4</sup>. Among the Climate Action 100+ companies, two thirds of the Scope 3 emissions from the reporting companies were estimated to be concentrated in the 'use of sold products' category<sup>5</sup>. These findings were confirmed in ISS ESG's analysis of self-reported Scope 3 data. Only companies reporting on most of the relevant categories were considered<sup>6</sup> to ensure a sound analysis based on high quality data.

The highest contributors to upstream emissions in most sectors were found to be Category 1 (Purchased Goods and Services), Category 2 (Capital goods), Category 3 (Fuel and energy-related activities) and Category 4 (Upstream transportation).

The highest contributors to downstream emissions in most sectors were found to be Category 11 (Use of sold products), Category 9 (Downstream transportation and distribution) and Category 12 (End-of-life treatment of sold products). The Scope 3 emission estimation approaches were designed to capture these categories to ensure a high degree of coverage.

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



operations and emission profile of the underlying company. The upstream and downstream approaches are described in sections 3 and 4 below.

APPROACH TYPE	UPSTREAM	DOWNSTREAM	EXAMPLE SECTORS
Bottom-up Approach	Emission Multipliers from EEIO Models	Output production or a proxy (E.g., revenue) used with standardized emission factors.	Oil & Gas Extraction Coal Mining Auto manufacture
Product Profile Top-down Approach		Downstream emission ratios from EPDs and LCAs <sup>8</sup> used for a standardized product profile	Manufacturing Cement Electronics Electricals
Peer Top-down Approach		Emission profile of representative peers with high quality disclosure for diversified or low impact sectors	Chemicals Services Wholesale and Retail Real Estate

Carbon Metrics (Equity and Fixed Income)

Position Ownership Ratio	For equity and corporate fixed income calculations below, the adjusted enterprise value of a company (AEV) is used to represent the value of a company.
Emission Exposure	Calculated using the following formula for Scope 1&2 (the same approach is used for calculating Scope 3 emissions): $\sum_i^n Position\ Ownership\ Ratio \times Position\ Scope\ 1\&2\ Emissions_i$
Relative Carbon Footprint	$\frac{Emission\ Exposure}{Total\ Analysis\ Value}$
Carbon Intensity	$\frac{(\sum_i^n Position\ Ownership\ Ratio_i \times Position\ Scope\ 1\&2\ Emissions_i)}{(\sum_i^n Position\ Ownership\ Ratio_i \times Position\ Revenue_i)}$
Weighted Average Carbon Intensity	$\sum_i^n Position\ Weight_i \times \frac{Position\ Scope\ 1\ \&\ 2\ Emissions_i}{Position\ Revenue_i}$

(ii) Emissions for sovereign fixed income

The methodology was developed in accordance with the indications of the Platform Carbon Accounting Financials (PCAF) and allows ISS ESG’s researchers to calculate the GHG emissions attributable to the governmental activities of a specific country. A summary of the process is provided below:

- + Greenhouse gas emissions data are gathered. PCAF separates emissions caused by direct government activity from emissions caused by other sectors. Emissions from government activity is attributed directly to the government.



- + The sources of data include the sectoral greenhouse gas emissions for each country published by the United Nations Framework Convention on Climate Change (UNFCCC). This approach allocates emissions to a government using expenditure input-output data from the World Input Output Database (WIOD). To cover countries for which such data is not available, a secondary approach is used, in which a country’s greenhouse gas emissions are allocated to the government by using the government’s consumption expenditure as part of total GDP.
- + The emissions are allocated to the bond based on bond investment as part of total national debt.

To account for the different calculation possibilities as well as to offer various perspectives, ISS ESG provides data for the following two different sovereign emission categories:

*Production Emissions*

Emission footprint of a country’s production according to International Sovereign accounting guidelines. Production emissions are calculated based on production of goods and services in each country, i.e., they include the direct emissions of tCO2e emitted within the country’s borders.

*Government Emissions*

Following the “Platform Carbon Accounting Financials (PCAF)” standard: This approach states that a government bond co-finances both direct emissions from the public sector and investments made by the government.

Carbon Metrics (Sovereign debt)

<b>Position Ownership Ratio</b>	For sovereign fixed income, the denominator total national debt is used
<b>Emission Exposure</b>	Sum of (Position Ownership Ratio X Position Production Emissions)  OR  Sum of (Position Ownership Ratio X Position Government Emissions)
<b>Relative Carbon Footprint</b>	$\frac{Emission\ Exposure}{Total\ Analysis\ Value}$
<b>Weighted Average Carbon Intensity</b>	Sum of (Position Weight X (Position Production Emissions / Position GDP))  OR  Sum of (Position Weight X Position Government Emissions / Position GDP)



## 2) TRANSITION RISK

### (i) Exposure to Fossil Fuels

#### *Revenue From Fossil Fuels, Overall and By FF Type*

These graphs show the revenue linked to fossil fuel extraction for the portfolio. The share of revenue derived from exposure to fossil fuels, a major contributor to climate change, is a widely used quantitative metric to measure an issuer's involvement in this area. This allows investors to capture involvement for issuers beyond industry sector classification. The data covers involvement in, and revenues derived from, the following fossil fuel-related activities:

- + Coal Extraction/Mining
  - Thermal Coal Mining
  - Metallurgical Coal Mining
- + Coal Power Generation
- + Coal Refining & Processing
- + Oil Extraction
- + Oil Power Generation
- + Oil Refining & Processing
- + Natural Gas Extraction
- + Natural Gas Power Generation
- + Natural Gas Refining & Processing
- + Fossil Fuel Exploration
- + Coal Mining Exploration
- + Fossil Fuel Distribution
- + Fossil Fuel Services
  - Coal Mining Services

The data covers the latest fiscal year. If issuer reporting has not been updated, older reported data may be used.

#### *Fossil Fuel Expansion (%)*

The graph shows the percent of weight of issuers that have expanded fossil fuel assets in the previous fiscal year. The factor identifies issuers currently engaged in the expansion or development of fossil fuel projects or have declared plans to do so soon. Fossil fuel projects incorporate oil, gas, and coal extraction operations, as well as energy generation assets powered by fossil fuels, and infrastructure which is critical for the fossil fuel industry (e.g., pipelines and terminals). The International Energy Agency (IEA) states in their Net Zero 2050 scenario (NZE), that "there is no need for investment in new fossil fuel supply" (Source: <https://www.iea.org/reports/net-zero-by-2050>). The scenario expects a sharp decline in fossil fuel demand. The graph in the Climate Impact Report is built around a binary Yes or No metric.

#### *Reserves Potential Emissions (GtCO<sub>2</sub>e)*

The graph shows the potential future emissions from fossil fuel reserves expressed in megatons of carbon dioxide equivalent (GtCO<sub>2</sub>e). The factor covers Proven (P1) oil, gas, and coal reserves as of the latest reporting year. 'Proven' is aligned with the OECD definition, P1 reserves are estimated quantities of mineral deposits, at a specific date, as analysis of geologic engineering data demonstrates with reasonable certainty to be recoverable in the future under the same economic and operational conditions.



(ii) Weighted Average Carbon Risk Rating (CRR)

The Carbon Risk Rating is a comprehensive assessment of the carbon-related performance of companies, based on a combination of quantitative indicators, forward-looking qualitative indicators, and a classification of the company's absolute climate risk exposure due to its business activities. Quantitative factors include, for example, information on the current intensity and trend of the greenhouse gas emissions of an issuer, the carbon impact of the product portfolio including revenue shares of products or services associated with positive as well as negative climate impact. Corporate policies, shifts in product and services portfolio, emission reduction targets and action plans, are some of the forward-looking indicators considered.

CRR provides a numeric score from 0 to 100 for the rated entity's overall carbon risk based on an assessment of over 100 industry-specific indicators and a carbon risk classification at the industry and sub-industry levels. Calculated as:

<b>Weighted Average Carbon Risk Rating</b>	$\sum_i^n Position\ Weight_i \times Position\ Carbon\ Risk\ Rating_i$
--	---

(iii) Scenario Alignment

*SDS Exceed year, Temperature Score*

The SDS Exceedance Year and Temperature Score metrics display the estimated temperature performance of the portfolio at the end of the analysed period, and the year the emissions of the portfolio exceed the allocated carbon budget.

The purpose of the scenario alignment is to analyse the current and future emission intensity from the direct and indirect emission of a company (Scope 1, 2 & 3) to see which climate scenario it is aligned with until 2050. The approach is based on three climate scenarios provided by the International Energy Agency (IEA) in their report World Energy Outlook 2020. The report presents three scenarios, Sustainable Development Scenario (SDS), Stated Policy Scenario (STEPS) and Announced Pledges Scenario (APS). Each scenario expects a certain level of carbon budget and temperature increase in 2050.

Each scenario is tied to a carbon budget. A carbon budget specifies the amount of fossil carbon that can be combusted worldwide to remain within a certain temperature. The carbon budget changes depending on scenario. For example, to remain within the limits of the SDS, less carbon can be combusted compared to the scenarios that expect a significant temperature increase, i.e., the CPS. Each company's carbon budget is defined based on its revenue-based market share.

- + **Sustainable Development Scenario (SDS)** - The Sustainable Development Scenario pathway is fully aligned with the Paris Agreement by holding the rise in global temperatures to “well below 2°C ... and pursuing efforts to limit [it] to 1.5°C” and meets Sustainable Development Goals (SDGs) objectives related to achieve universal access to energy (SDG 7), to reduce the severe health impacts of air pollution (part of SDG 3) and to tackle climate change (SDG 13).
- + **Stated Policy Scenario (STEPS)** - The Stated Policies Scenario pathway assumes today's policy intentions and targets and considers only specific policy initiatives that have already been announced.
- + **Announced Pledges Scenario (APS)** - Aims to show to what extent the announced ambitions and targets, including the most recent ones, are on the path to deliver emissions reductions required to achieve net zero emissions by 2050. It includes all recent major national announcements of 2030 targets and longer-term net



zero and other pledges, regardless of whether these have been anchored in implementing legislation or in updated NDCs.

Temperature estimates on issuer and portfolio level can be used as a compliment to other climate related physical risk and alignment analysis. The temperature score should be used with caution since a single metric cannot explain the full dynamics of an issuer or portfolio contribution to the global temperature increase.

#### *Portfolio Comparison to SDS Budget*

This section of Table 4 shows the portfolio over/undershoot of their specific SDS budget used with a 10-year interval. Red/positive numbers signify an overshoot while green/negative numbers signify an undershoot of the SDS budget in % for any given year.

#### *Emissions Pathways*

The “Portfolio Emission Pathway vs Climate Scenarios” graphs plot the alignment on a portfolio level per year while the shaded areas illustrate the emission budgets per year according to the respective scenarios. The % alignment is normalized at 100% for the portfolio SDS for the current year. The slope of the portfolio line is influenced by the portfolio composition and the ownership ratio in each company. Emission reduction targets are also taken into consideration, and the expected trajectories of companies are adjusted downwards if companies set either ambitious targets, committed or approved SBTs.

### **(iv) Transition VaR**

#### *Summary:*

The ISS ESG Climate Transition Value at Risk (TVaR) solution helps investors assess their portfolio’s exposure to climate-related transition risks and opportunities. It provides forward-looking returns-based analysis, leveraging financial data and modelling via ISS ESG’s EVA solution, company-specific data, and scenario inputs. The TVaR solution allows financial institutions to identify assets which may be most at risk from carbon pricing and demand changes, as well as those which may be better positioned to seize opportunities. The total estimated TVaR for the portfolio in absolute terms, including a sector-level contribution breakdown.

The TVaR presented is a net number between the positive and negative potential share price performance in the portfolio. The TVaR is concerned at issuer level with the impact of the below changes on projected issuer emissions out to 2050:

- (i) Changes in demand, and
- (ii) Changes in costs (including Operating costs and Carbon costs)

#### *Input Modelling basis:*

Analysis of the potential transition risks and opportunities is based on two of the most common reference transition risk scenarios, as developed by the International Energy Agency (IEA):

- + **Sustainable Development (SDS)**, corresponding to a 1.65°C temperature increase
- + **Net Zero (NZE2050)**, corresponding to a 1.5°C temperature increase

Both scenarios are part of the IEA’s World Energy Outlook (WEO) series, published annually, with current data (as per Q2 2022) based on the 2021 WEO release. The temperature increases implied within the two scenarios illustrate potential futures with a high level of transition risks. The selection of these scenarios is consistent with TCFD



recommendations, which propose the use of a 2°C or lower scenario within Scenario Analysis.

The IEA's World Energy Model (WEM) which produces the scenarios, is a hybrid Integrated Assessment Model, incorporating (i) policy, (ii) market and also (iii) technology risks. The IEA's WEM models not only the energy system, but also assumptions about policy and behavioural changes, as well as relative technology cost trajectories of key low-carbon technologies compared to traditional fossil fuel alternatives.

- (i) **Policy transition risks** describe the additional costs or revenues that a company may experience as a result of changes in the policy environment. Various policy risks such as carbon tax, emissions trading schemes or coal production restrictions, are often summarized under a single carbon price instrument.
- (ii) **Market risk** is considered via the integration of Carbon prices per region/country, where each scenario applied to the Scope 1 and 2 emissions of specific sectors, consistent with the IEA approach. Relevant sectors with direct carbon prices are Power Generation, Energy Production and Industry. Theoretically, high-emitting companies with relatively inelastic demand would be able to pass through any additional carbon prices to counterparties. The analysis reflects this, with Power Generation companies assumed to pass through a proportion of their carbon price to other sectors' Scope 2 emissions.

The below table shows the IEA sectors used in the analysis. Companies are assigned an IEA sector using mapping based on the ISS ESG proprietary Industry classification system (CICS).

IEA Sectors:

Power Generation	Electricity and heat generating companies
Energy Production	Energy supply and transformation outside of power generation
Industry	Manufacturing and construction activities
Buildings/Services	Businesses mainly running commercial activities in facilities such as offices, shops, institutional buildings, etc.
Transport	Transport of goods and people through road, marine and aviation

- (iii) **Technology risks** include the potential changes in the relative price or demand for low carbon technologies versus fossil fuel technologies. The compound annual growth rates between 2020 and 2050 in energy and power supply from each of the SDS and NZE2050 scenarios are used as proxies for potential changes in demand linked to technology risks.
- (iv) Green, Brown, and Neutral growth rates are derived to distinguish between growing faster, slower or at the same pace as the wider economy. These growth rates are applied to the respective Green, Brown, or Neutral proportions of a company's revenue. Please refer the next section for further detail on revenues. Categorizations of green/brown energy and power supply technologies are below:

GREEN TECH	BROWN TECH
Renewables	Oil
Natural Gas with CCUS	Unabated natural gas
Coal with CCUS	Unabated coal
Nuclear	



(v) **Power Generation Exposure / Energy Mix**

The graph shows the energy generation mix in % from different sources by power generators in the portfolio. The two right-most bars are static and illustrate an SDS compatible generation mix in 2030 and 2050, according to the International Energy Agency (IEA).

### 3) PHYSICAL RISK

(i) **Physical Value-At-Risk (VaR)**

*Overall*

Physical risk levels linked to a changing climate, amongst other factors, vary depending on the issuer's financial profile, including where the company operates, the total value of its assets, and in which countries the issuer generates its revenue. **The present analysis quantifies the current and anticipated Portfolio Financial Value at Risk emerging from individual issuers' exposure to Physical risks.** Physical risks can have a financial impact on a company at both the operational and the market level.

Operational risks are quantified by considering the costs of repairing assets damaged by Tropical Cyclones, River Floods, and Wildfires, and the loss of income due to the associated business interruptions. The impact of Heat Stress on labour productivity and the resulting increase in production costs are also considered. Market risks are quantified by the revenue at risk due to the nation-wide effects on country Gross Domestic Products (GDP) due to the combined impact of Droughts and Heat Stress on agricultural productivity, decrease in labour productivity, and human health effects. The ISS-ESG physical risk assessment assumes a one-to-one relation between GDP changes and changes in company revenue.

The ISS ESG analysis extends to the year 2050 and includes two of the most relevant scenarios, both used in the IPCC 5th Assessment Report (AR5). A "most likely" scenario built around Representative Concentration Pathway (RCP) 4.5 (equivalent to a 1-3 °C temperature rise by 2100), and a "worst-case" scenario, based on RCP 8.5 (equivalent to above 3-5 °C temperature rise by 2100). As a comparison point, the current risk level is assessed in the form of a historical scenario.

*Physical Risk VaR*

The Value at Risk (VaR) of an individual issuer estimates the change in share price as a result of considering the financial impact of physical risks. The VaR is computed using a valuation model based on the Economy Value Added (EVA) framework. Individual issuers are first valued without the consideration of Physical Risks to calibrate the model. For some scenarios, issuers are re-evaluated, accounting for financial changes due to physical risks. The resulting shift in share-price is the value at risk. The valuation model considers the following financial risks:

- + Changes in Capital value via changes in Property, Plant and Equipment (PP&E)
- + Repair Costs to damaged assets via investments in Capital Expenditure (CAPEX)
- + Increases in production costs via changes in Selling, General and Administrative Expenses (SG&A) or Cost of Goods Sold (COGS)
- + Change in income via SALES

For physical risk specifically, usage of the ISS EVA data allows to, for example, account not only for owned (traditional accounting method) but also for rented and leased PP&E. This is critical, as business interruptions can occur independently of whether a production facility is rented or owned.

## (ii) Physical Risk Management

### *Physical Risk Score*

The Physical Risk Score measures the change in an issuer's financial risk relative to its GICS sector (level 2) for a specific scenario. A score of 0 reflects an increase in financial risk that is large relative to the sector median, and a score of 100 represents an increase in financial risk that is low relative to the sector median.

### *Management Score*

Each company is given a Physical Climate Risk Management Score. The Management Score shows if the company has taken physical climate risk into consideration in their risk management strategies. For a company to receive a Management Score, they must report to the CDP and specifically mention how they are affected by physical risks, the strategies they have in place, and how they expect the costs will affect their balance sheet. The more detail an issuer provides about their physical risk management strategy and risk management, the higher their score.

## 4) CLIMATE-RELATED OPPORTUNITIES

### (i) Green Revenues positively affecting SDGA Environmental Objective: Climate Change

#### *Portfolio Attributable Revenue (Significant and Limited Contribution)*

The SDG Solutions Assessment (SDGA) measures the positive and negative sustainability impacts of companies' product and service portfolios. It follows a thematic approach that encompasses 15 distinct sustainability objectives, using the United Nations' (UN) Sustainable Development Goals (SDGs) as a reference framework. The product's focus is on assessing to what extent companies are making use of existing and emerging opportunities to contribute to the achievement of global sustainability objectives by offering (innovative) products and services with a positive real-life impact.

The SDG Solutions Assessment applies a proprietary classification of products and services into five categories – based on their direct impact on the achievement of the different sustainability objectives:

- + significant contribution
- + limited contribution
- + no (net) impact
- + limited obstruction
- + significant obstruction

For Mitigating Climate Change, the share of net sales generated with relevant products and services is quantified per category. While some companies report exact figures on relevant product sales, others only report on geographic segments or do not report segment sales at all. The analyst in charge of the assessment takes all relevant and available information into account to estimate the share of net sales a company generates with relevant products. Clear estimation rules exist to ensure that results are based on reasonable assumptions with medium to high certainty.



## 5) CAPITAL DEPLOYMENT

### (i) Brown Expansion (as % of portfolio)

The graph shows the percent of weight of issuers that have expanded fossil fuel assets in the previous fiscal year. The factor identifies issuers currently engaged in the expansion or development of fossil fuel projects or have declared plans to do so soon. Fossil fuel projects incorporate oil, gas, and coal extraction operations, as well as energy generation assets powered by fossil fuels, and infrastructure which is critical for the fossil fuel industry (e.g., pipelines and terminals). The International Energy Agency (IEA) states in their Net Zero 2050 scenario (NZE), that “there is no need for investment in new fossil fuel supply”. The scenario expects a sharp decline in fossil fuel demand. The graph in the Climate Impact Report is built around a binary Yes or No metric. Portfolio Attributable Revenue (Significant and Limited Contribution)



## IMPORTANT INFORMATION

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