

TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES REPORT

Global Sustainable Equity Strategy 2022



Marketing Communication. Not for onward distribution.

The value of an investment and the income from it can fall as well as rise and you may not get back the amount originally invested.

In accordance with the Sustainable Finance Disclosure Regulation, Portfolios within this strategy are classified as Article 9 and have sustainability as their objective.

TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES REPORTING

To help identify the information needed by investors, lenders, and insurance underwriters to appropriately assess and price climate-related risks and opportunities, the Financial Stability Board established an industry-led task force: The Task Force on Climate-related Financial Disclosures (TCFD). The Task Force released its final report in June 2017 which outlined recommendations for more effective climate-related disclosures. Since then, the TCFD has stated that almost 10% of reports it has reviewed contained TCFD recommendations, with adoption being strong amongst asset managers.

The Janus Henderson Global Sustainable Equity Strategy welcomes and fully endorses the recommendations of the Financial Stability Board's TCFD and the increased focus on climate change. Our disclosure on climate will focus on how we incorporate risks related to the **transition** to a lower-carbon economy, risks related to the **physical** impacts of climate change, and any opportunities that businesses may be well positioned to capture.

We will be reporting in line with the TCFD's Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures.¹

Governance

Our ESG Oversight Committee, chaired by our Chief Responsibility Officer, provides oversight of a range of issues at a portfolio and security level, including monitoring of issuer-level positions for investments identified as having climate or ESG risks.

Both our Front Office Controls and Governance team embedded within the Investment function and our second line Financial Risk team will provide portfolio level oversight of climate and ESG risks. Our Investment Performance and Risk Committee and Front Office Governance and Risk Committee will provide oversight for their respective areas of governance.

While our Boards of Directors (parent company and relevant subsidiaries) received updates on climate and ESG issues in the past, formal oversight of these issues was put under the remit of the Governance and Nominations Committee of our Parent Company Board in 2023. Our Chief Responsibility Officer is establishing tangible metrics with the Committee and will be providing quarterly updates to the Committee on both operational and investment strategy, targets, and initiatives. These metrics and discussion will encompass both Corporate Responsibility and Responsible Investing. In addition, in 2023, our internal risk functions will be providing upgrades to the Risk Committee of the Parent Company Board and our UK entity Boards on both corporate climate risk and portfolio climate risk.



¹. Task Force on Climate-related Financial Disclosures: Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Implementing_Guidance.pdf.

Strategy

Ever since the launch of the strategy in 1991 we have had clearly defined principles concerning the types of businesses we will allocate capital to. A distinguishing feature of our strategy is our low carbon approach. We believe it makes good investment sense to avoid investing in companies that are heavily exposed to climate-related risk and to invest in climate-related opportunities. We aim to invest in companies that contribute to the transition to a lower-carbon economy that is consistent with a 1.5°C scenario. The investment team implement the strategy's investment approach,² which includes monitoring and reviewing carbon metrics and other related metrics for the portfolio and benchmark.

There are multiple levels to our low carbon investment approach.³



Using the *Task Force on Climate-related Financial Disclosures: Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures*, we have sought to expand on the potential opportunities available to the strategy through its environmental and social themes and ESG analysis.

Climate-related opportunities	Incorporation in strategy
Resource efficiency	The strategy's environmental themes – particularly Efficiency, Sustainable Transport and Water Management – encourage investments in products and services that contribute to resource efficiency. Additionally, the strategy's social theme Sustainable Property and Finance, encourages investment in companies with products and services contributing to sustainable buildings. We also assess companies' operational performance for resource efficiency and report on the portfolio's performance (see appendix at janushenderson.com for a complete list of published metrics).
Energy source	The strategy's environmental theme Cleaner Energy encourages investments in low-emission energy sources. We also assess companies' operational performance for low-emission sources of energy and participation in carbon markets through the purchase of offsets.
Products and services	The strategy's environmental and social themes are intended to be positive. An example is the strategy's social theme, Sustainable Property and Finance, which encourages investment in insurance risk solutions, a form of climate adaptation.
Markets	The team use a thematic framework to identify those businesses that are strategically aligned with opportunities associated with climate change. In addition, we consistently analyse the companies we invest in for climate-related controversies using controversy screening. We also engage with companies on this topic.
Resilience	All the strategy's environmental and social themes address this. An example is the resource substitutes/diversification encouraged under the Environmental Services. Fundamental and ESG analysis includes assessing the reliability of the supply chain and its ability to operate under various conditions.

We actively engage with senior management and company boards to encourage them to reach net zero by a defined date and within a reasonable timeframe, and to do so by developing realistic and credible strategies with currently available technologies. Progress along this journey will vary company to company, meaning that our level of engagement also differs. However, our engagement agenda can broadly be categorised in three ways, starting with the best-case scenario:

- I. Adopting a target to become net zero by 2030.
- II. Reporting on emissions and adopting a target to become net zero by 2050 or earlier.
- III. Reporting on emissions and adopting a target to become net zero by any date.

Engagements II and III are regarded as a progression towards engagement in line with I.

² The full details of our investment approach can be found in our Investment Principles.

³ Task Force on Climate-related Financial Disclosures: Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Implementing_Guidance.pdf.

Risk management

Our investment process considers climate-related risk and opportunities at pre-investment. This analysis is often both quantitative and qualitative in nature. We consider both transitional and physical risks and opportunities associated with a company. Many of these risks are avoided through the design of our investment process. Other risks are captured through our ESG analysis, and the results are incorporated into the




portfolio construction. Where risks cannot be fully eliminated, we seek to engage on potential improvement points.

Using the *Task Force on Climate-related Financial Disclosures: Guidance on Risk Management Integration and Disclosure*, we have sought to expand on the mitigation measures in place for transition and physical risk.

Type	Climate-related risk	Mitigation approach
Transition	Policy and Legal	Policy and legal changes are incorporated into the strategy through a process of continuous improvement. The team analyse the impact of regulatory developments on the companies it invests in as part of the ESG analysis. Where we feel that a risk can be mitigated, they are included as an engagement topic. The strategy monitors the effectiveness of these mitigation measures using stress-testing.
	Technology	The strategy seeks to invest in technology that is enabling the transition to a low carbon economy, and it avoids technology that is associated with the extraction and refinement of fossil fuels. Our ESG analysis includes consideration of a company's use of technology to reduce its climate-related risks. We also engage with companies on this topic.
	Market	We believe that there is already a market shift taking place where companies that do not consider climate-related risk will be negatively impacted. Our investment framework seeks to invest in companies that have a positive impact on the environment and society, while at the same time helping us stay on the right side of disruption.
	Reputation	We have made public our carbon footprint in comparison to our benchmark and also publish reports quarterly and annually on our investments and their performance. In addition, we consistently analyse the companies we invest in for climate-related controversies using controversy screening. We also engage with companies on this topic.
Physical	Acute	As part of our ESG analysis, we consider the location of the companies we invest in as well as the location of their supply chain. As part of this, we use scenario analysis to analyse acute and chronic risk associated with the companies we invest in. We also engage with companies on this topic.
	Chronic	

Metrics and targets

We use a variety of metrics and tools to manage and monitor the impact of climate change on the portfolio, as well as our alignment with the Paris Agreement. We will be discussing the following metrics based on the investment portfolio as of 31 December 2022:

GHG EMISSIONS METRICS 	IMPLIED TEMPERATURE RISE 	SCENARIO ANALYSIS 
Point in time, retrospective <ul style="list-style-type: none"> • Scope 1 and 2 emissions • Scope 3 emissions, upstream and downstream • Carbon footprint • Weight Average Carbon Intensity (WACI) 	Forward looking, planetary impact <ul style="list-style-type: none"> • ISS and MSCI expected temperature rise • 2050 horizon 	Forward looking, portfolio impact <ul style="list-style-type: none"> • IEA emissions scenarios • Climate value at risk • Transitional risks and opportunities • Physical risks and opportunities • 15-year horizon

GHG emissions metrics

Portfolio GHG metrics provide retrospective point-in-time data to help us understand the current source of emissions in our portfolio. This information is useful for identifying companies' or industries' exposure to climate transition risks, as well as to identify climate-focused engagement opportunities. In line with the Greenhouse Gas Protocol (GHGP), we consider GHG emissions in three types:

- ▶ **Scope 1:** Direct emissions that are a result of a firm's facilities, plant, or equipment (including vehicles) use during the production of goods or services.
- ▶ **Scope 2:** Indirect GHG emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company. Scope 2 emissions physically occur at the facility where the electricity, steam, heating, or cooling is generated.
- ▶ **Scope 3:** All other indirect GHG emissions (not included in Scope 2) that occur in the value chain of the reporting company. Scope 3 can be broken down into upstream emissions and downstream emissions.

Upstream emissions include all emissions that occur in the life cycle of a material/product/service up to the point of sale by the producer, such as from the production or extraction of purchased materials. Downstream emissions include all emissions that occur as a consequence of the distribution, storage, use, and end-of-life treatment of the organisation's products or services.⁴

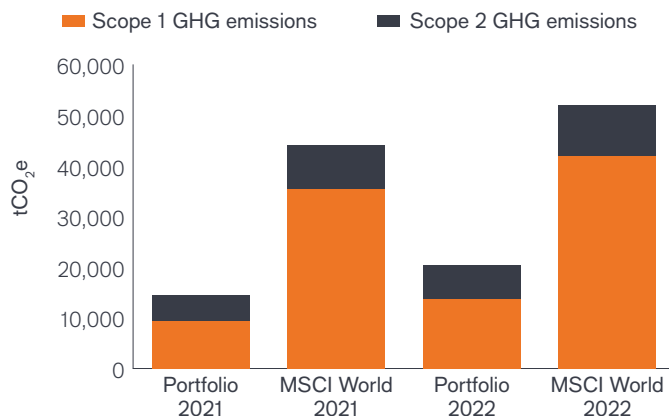
Given some of the challenges of data consistency with GHG emissions metrics, we have elected to report data from two providers, ISS and MSCI, in this year's report.⁵

Scope 1 & 2 GHG emissions

Scope 1 and 2 GHG emissions

Tonnes CO₂e

	ISS		MSCI	
	Portfolio	MSCI World	Portfolio	MSCI World
2021	14,553	44,153	15,140	44,754
Coverage	100%	98.6%	96.1%	96.9%
2022	20,411	51,942	19,985	54,505
Coverage	100%	99.6%	98.9%	99.8%



Source: Janus Henderson Investors, ISS, MSCI, latest available data based on the representative account. Graph based on ISS data. Benchmark: MSCI World. Data as at 30 December 2022.

2022	% of Scope 1 & 2 emissions	Portfolio weight
Materials	40.6%	2.1%
Utilities	31.1%	6.2%
Information technology	9.9%	34.6%
Industrials	7.2%	18.2%
Healthcare	6.9%	7.9%
Consumer discretionary	2.3%	6.9%
Communication services	0.9%	4.6%
Financials	0.6%	15.5%
Real estate	0.4%	3.6%
Consumer staples	0.1%	0.5%

The scope 1 and 2 emissions figures above show the quantity of operational emissions the portfolio is responsible for based on the amount of ownership the portfolio has in a company. As such, scope 1 and 2 emissions data is difficult to compare through time, as the final figure is dependent on portfolio size, which in 2022 was slightly less than in 2021.

Emissions increased significantly in 2022 relative to the previous year in both the portfolio and benchmark. In the portfolio, this was primarily driven by a 10% reduction in exposure to the low emitting information technology sector and increases in exposure to higher emitting sectors such as materials, utilities, industrials, and healthcare. In fact, close to all the strategy's scope 1 and 2

⁴ Further information on what is included within a company's scope 3 emissions can be found via The Greenhouse Gas Protocol.

⁵ Analysis is based on ISS data unless stated otherwise.

emissions increase was due to increases in ownership of London-based paper, packaging, and recycling company DS Smith (3,303 tCO₂e increase), Scotland-based power generator and distributor SSE (1,139 tCO₂e increase), pure-play renewable energy generator Boralex (568 tCO₂e increase), and facility and home-based healthcare services provider Encompass Health (468 tCO₂e increase). Emissions were flat across all four of the highest operationally emitting holdings. The divestment from TSMC, a semi-conductor manufacturer, previously the portfolio's highest emitter in absolute terms, brought the portfolio level figure down slightly (607 tCO₂e decrease). Despite this, the sector rotation towards more operationally resource intensive industries ultimately drove an increase over the period, a trend also seen in the benchmark.

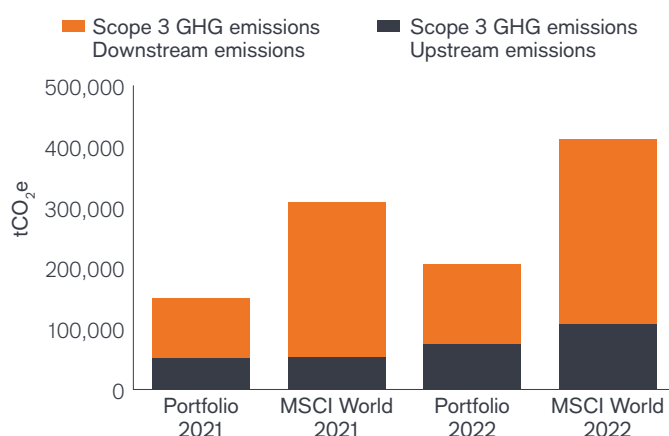
The portfolio's scope 1 and 2 emissions were around two fifths of the benchmark in 2022. As with the previous year, Scope 1 emissions contributed considerably more to the final figure than scope 2. The majority of these emissions are concentrated in two holdings, SSE and DS Smith, which contributed⁶ around 65% towards the portfolio's final scope 1 and 2 emissions figures. We are always working to minimise the portfolio emissions and believe these two companies are well positioned to take advantage of the shift towards renewable energy and the circular economy respectively. Both companies have strong climate strategies, with verified near-term science-based targets to reduce emissions in line with a 1.5°C scenario. We will continue to engage with each firm on their progress and expect to see reductions in emissions output by 2030.

Scope 3 GHG emissions

Scope 3 GHG emissions – estimated

Tonnes CO₂e

	ISS		MSCI	
	Portfolio	MSCI World	Portfolio	MSCI World
2021	155,007	335,643	101,857	266,732
Coverage	100.0%	98.6%	96.1%	96.9%
2022	207,163	406,257	143,084	371,948
Coverage	100.0%	99.6%	98.9%	99.6%



Source: Janus Henderson Investors, ISS, MSCI, latest available data based on the representative account. Graph based on ISS data. Benchmark: MSCI World. Data as at 30 December 2022.

Sector	% of Scope 3 emissions	Portfolio weight
Industrials	64.6%	18.2%
Consumer discretionary	8.8%	6.9%
Information technology	7.5%	34.6%
Materials	6.7%	2.1%
Financials	4.4%	15.5%
Utilities	4.3%	6.2%
Healthcare	2.2%	7.9%
Communication services	0.9%	4.6%
Real estate	0.3%	3.6%
Consumer staples	0.3%	0.5%

The trend seen in the scope 1 & 2 emissions carries through to scope 3 emissions, with increases in emissions attributed to both the portfolio and benchmark. Scope 3 represents approximately 90% of the portfolio's overall emissions which is largely due to the number of different emissions categories that scope 3 encompasses, including use of finished goods, company investments, and company travel.

Upstream emissions from supply chains remains notably smaller than downstream emissions associated with finished products and/or services, although the difference is much less pronounced in the portfolio versus the benchmark. Close to two thirds of emissions are generated by the industrial sector, with one holding in particular, Wabtec, a supplier of equipment and components to the global freight and transit rail industries, contributing over 40% to the final scope 3

⁶. Note that the contribution of a company's emissions to the portfolio's overall emissions is dependent on both the company's emissions and the portfolio's stake in the company. Therefore, the companies discussed above may not be the highest emitters in the portfolio in absolute terms.

References made to individual securities do not constitute a recommendation to buy, sell or hold any security, investment strategy or market sector, and should not be assumed to be profitable. Janus Henderson Investors, its affiliated advisor, or its employees, may have a position in the securities mentioned.

emissions figure. Wabtec is a world leader and innovator supporting an industry that provides the world's most carbon-light form of heavy transport, with its products providing up to 20% fuel efficiency gains versus competitors. The portfolio increased its position in Wabtec in 2022 which drove the majority of the increase in scope 3 emissions over the period.

Due to its complexity, there are significant challenges in measuring scope 3 emissions, meaning that over 50% of

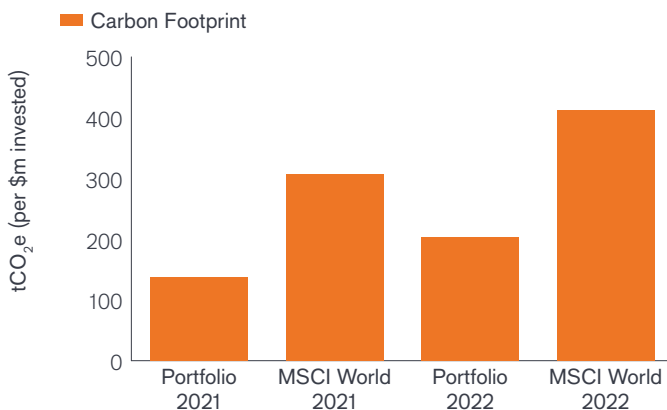
the data is estimated by the data provider and data that is reported is likely to vary in quality across companies. We note that Wabtec's scope 3 emissions data is estimated by the data provider, along with over 50% of the companies in our portfolio. Scope 3 emissions estimates often vary widely based on the data provider, meaning the above information is sensitive to changes in the chosen estimation methodology. As such, scope 3 data should be used for illustrative purposes only.

Carbon footprint (Scope 1, 2 & 3)

Carbon footprint

Tonnes CO₂e per \$1m

	ISS		MSCI	
	Portfolio	MSCI World	Portfolio	MSCI World
2021	137	307	95	250
Coverage	100.0%	98.6%	96.1%	96.8%
2022	204	412	147	381
Coverage	100.0%	99.6%	96.4%	99.5%



Source: Janus Henderson Investors, ISS, MSCI, latest available data based on the representative account. Graph based on ISS data. Benchmark: MSCI World. Data as at 30 December 2022.

Sector	% of Scope 3 emissions	Portfolio weight
Industrials	59.5%	18.2%
Materials	9.7%	2.1%
Consumer discretionary	8.3%	6.9%
Information technology	7.7%	34.6%
Utilities	6.7%	6.2%
Financials	4.1%	15.5%
Healthcare	2.6%	7.9%
Communication services	0.9%	4.6%
Real estate	0.3%	3.6%
Consumer staples	0.3%	0.5%

Whilst the metrics discussed previously are useful for understanding overall exposure, they do not permit comparisons across portfolios due to the positive correlation between portfolio size and the portfolio's proportional ownership of companies. On the other hand, the portfolio carbon footprint measures total emissions based on \$1m invested, thus holding portfolio size constant and enabling cross portfolio comparison. At the end of 2022, the portfolio's carbon footprint was half that of the benchmark, with major contributions aligning with those mentioned in previous sections. The increase in carbon footprint was again driven by the rotation out of

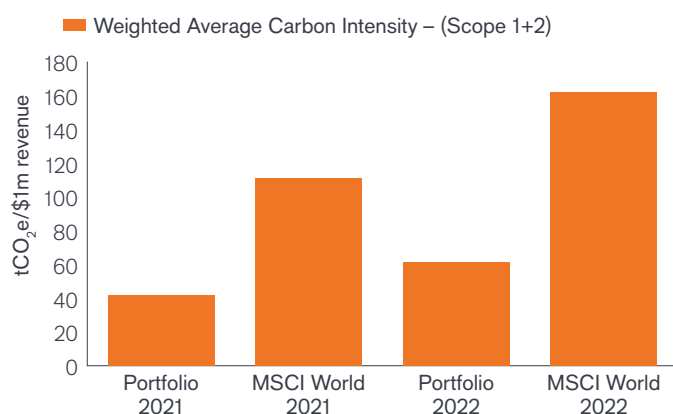
the low carbon information technology sector and into relatively more carbon intensive sectors, such as industrials and materials. The increase in weighting towards Wabtec accounted for close to half the increase in the portfolio's carbon footprint, however we still remain significantly below the benchmark. Our low carbon footprint is driven primarily by our low carbon investment approach which avoids investments in carbon intensive industries, aims to select sustainability leaders in both products and operations, and prioritises engaging with existing holdings on climate change and net-zero.

Weighted average carbon intensity (Scope 1 & 2)

Carbon footprint

Tonnes CO₂e per \$1m

	ISS		MSCI	
	Portfolio	MSCI World	Portfolio	MSCI World
2021	42	111	47	109
Coverage	100%	98.6%	96.1%	97%
2022	61	162	54	141
Coverage	100%	99.5%	98.9%	99.8%



Source: Janus Henderson Investors, ISS, MSCI, latest available data based on the representative account. Graph based on ISS data. Benchmark: MSCI World. Data as at 30 December 2022.

	% of Scope 3 emissions	Portfolio weight
Utilities	49.1%	6.2%
Information technology	16.4%	34.6%
Materials	13.2%	2.1%
Industrials	8.8%	18.2%
Healthcare	4.7%	7.9%
Consumer discretionary	2.8%	6.9%
Real estate	2.7%	3.6%
Communication services	1.0%	4.6%
Consumer staples	0.7%	0.5%
Financials	0.6%	15.5%

A company's scope 1 & 2 carbon intensity measures the quantity of emissions used to generate \$1m of revenue. It is an indicator of the carbon efficiency of revenue generation in company operations. The intensity figures are aggregated to the portfolio level using a weighted average, giving the portfolio's weighted average carbon intensity (WACI). Basing the calculation on revenue instead of millions invested, as used in the carbon footprint, is often the preferred metric for assessing emissions performance, as the WACI is independent of asset price fluctuations.

In 2022, the portfolio's WACI was just over 60% lower than the benchmark. In other words, the portfolio produces over 60% fewer emissions for every \$1m of revenue generated. As with many of the other metrics discussed, the majority of emissions are concentrated in a small number of holdings in the industrials and utilities sectors. In fact, the top three emitters by carbon intensity account for around 62% of the final portfolio WACI. This is extended to close to 86% for the top 10 holdings.

The portfolio WACI increased in 2022. As discussed previously, this was driven primarily by portfolio adjustments which saw an increase in the weight of our three most carbon intensive holdings – SSE, Boralex and DS Smith – from around 4.1% to 6.6% over the period. We believe these companies are vital in supporting the transition to a sustainable economy and are confident in their emissions reduction strategies. Hence we are comfortable that the increase in WACI this year does not contradict the strategy's sustainable development objectives.

Summary

Portfolio level emissions metrics provide a useful point in time assessment of the portfolio's ownership of carbon emission. We see this as an important first step in understanding how climate change impacts risk-adjusted returns, informing forward-looking strategies and decision-making. Some key takeaways include:

- ▶ **The majority of emissions are generated by a small number of holdings** primarily in the industrials, utilities, and materials sectors.
- ▶ **Greenhouse gas emissions metrics have increased in both the portfolio and benchmark relative to the previous year** driven by a market-wide rotation out of the low carbon information technology sector and into more carbon intense industries.
- ▶ **Scope 3 emissions remains a challenge in 2022** both in terms of data quality as well as measurement and reporting for companies.
- ▶ **We maintained benchmark outperformance in 2022**; however, we are mindful not to sacrifice engagement for outperformance. Companies that we consider as having strong alignment between impact and profit may still have work to do in mitigating some of their other externalities. We view it as our responsibility as stewards of these assets to provide support and guidance to ensure continuous improvement in the transition to a low carbon world.

Implied temperature rise

Whilst GHG emissions metrics provide useful point-in-time estimates, it is also important to use forward-looking metrics to understand how emissions output is likely to impact the planet. To this end, we use the portfolio's Implied Temperature Rise (ITR) to understand how well aligned our portfolio is to existing climate scenarios and to the goal of meeting the global warming limits set out in the Paris Agreement. Below, we provide the results of both the ISS and MSCI model for 2021 and 2022 to enable comparison across the different methodologies.

	ISS Model		MSCI Model	
	Portfolio	Benchmark	Portfolio	Benchmark
2021	1.7	2.8	2.1	2.8
2022	1.7	2.8	1.9*	2.6*

Source: ISS and MSCI. Data as at 30 December 2022. *MSCI data for 2022 as at Q1 2023.

Across both data providers the portfolio is shown to have an ITR that is below 2 degrees, with no change on the previous year across both the portfolio and benchmark according to the ISS model, and a marginal improvement under the MSCI model. This makes sense when reviewing the raw carbon footprint data for each portfolio company,

which varied much more significantly for MSCI versus ISS.

We are pleased to see that the strategy maintained its outperformance of the benchmark in 2022. Despite improvement under the MSCI framework, portfolio performance is not as strong as under the ISS methodology. MSCI has labelled poor ESG reporters as having higher ITR, and this has affected some names in the portfolio. This aligns with our key engagement topic on reporting. The analysis also identified our renewable companies as significant contributors to the ITR. We do not agree with this assessment as these companies are working to mitigate climate change through providing almost 100% renewable energy.

Looking at these results in more detail, we employ research from the International Energy Agency (IEA) which provides different energy and emissions scenarios describing the future energy mix and policy outcomes.⁷ The ISS climate scenario alignment tool compares current and future portfolio greenhouse gas emissions with the carbon budget for three scenarios until 2050. The ISS scenario model results below inform the ITR metrics described earlier. The table describes each of the three main IEA scenarios along with the objective of each.

⁷ IEA, World Energy Outlook, 2022.

SCENARIO ⁸	DEFINITION	OBJECTIVE
Stated Policies Scenario (STEPS)	STEPS reflects current policy settings based on a sector-by-sector assessment of the specific policies that are in place, as well as those that have been announced by governments around the world.	To provide a benchmark to assess the potential achievements (and limitations) of recent developments in energy and climate policy.
Announced Pledges Scenario (APS)	APS assumes that all climate commitments made by governments around the world, including Nationally Determined Contributions (NDCs) and longer-term net zero targets, will be met in full and on time.	To show how close current pledges get the world towards the target of limiting global warming to 1.5°C, it highlights the “ambition gap” that needs to be closed to achieve the goals agreed at Paris in 2015.
Sustainable Development Scenario (SDS)	An integrated scenario specifying a pathway aiming at: ensuring universal access to affordable, reliable, sustainable and modern energy services by 2030 (SDG 7); substantially reducing air pollution (SDG 3.9); and taking effective action to combat climate change (SDG 13).	To demonstrate a plausible path to concurrently achieve universal energy access, set a path towards meeting the objectives of the Paris Agreement on climate change and significantly reduce air pollution.

The results show that the portfolio is aligned to the SDS for the next three decades with performance shown as a percentage of assigned budget used by the portfolio and benchmark. We significantly outperform when compared to the benchmark, which is misaligned to all scenarios until 2050. The model suggests that the portfolio starts to exceed the SDS budget in 2043 but remains aligned to the APS scenario until 2050. This aligns with our strong performance on point in time emissions metrics against the benchmark.

Portfolio and benchmark comparison to SDS budget
(Dark Green = SDS; Light Green = APS; Orange = STEPS; Red = Misaligned⁹)

	2020	2030	2040	2050
Portfolio	-71.4%	-64.7%	-21.4%	+111.9%
Benchmark	+5.8%	+36.5%	+137.2%	+364.7%

Source: Janus Henderson Investors, ISS Climate Impact. Latest available data as at 31 December 2022 based on the EU fund structure (Horizon Global Sustainable Equity Fund) to meet SFDR requirements. This is not the representative account and may not be available in all jurisdictions. Please consult availability of other structures with your sales representative or financial advisor.

⁸. IEA, World Energy Model Documentation, 2021.

⁹. Misaligned means the portfolio's level of emissions does not fall within any of the discussed scenarios.

There is no guarantee that past trends will continue, or forecasts will be realised.

Scenario analysis

In the risk management section, we identified the physical and transitional climate-related risks associated with the portfolio as well as some mitigation measures. We now use scenario analysis to understand the effects of different transitions to a low carbon economy on the portfolio relative to the benchmark. Analysing the results of a scenario analysis highlights which risks are driving changes in asset prices, improving our understanding of the portfolio's risk profile, and allowing us to enhance mitigation measures where appropriate.

A security's climate value-at-risk (CVaR) estimates the magnitude of changes in market value resulting from physical and transitional climate risks and opportunities. We analyse three potential scenarios based on the REMIND¹⁰ integrated assessment model and provided by the Network for Greening the Financial System (NGFS)¹¹ below. We have replaced the orderly 1.5°C scenario with an orderly 2°C scenario in this year's report as we felt that an orderly 2°C scenario is a more likely outcome given the current pace of policy action.

Disorderly Transition 1.5°C	Assumes that global warming is limited to 1.5°C by 2050 but with higher costs due to delayed and divergent policies introduced across countries and sectors ¹² leading to a more abrupt fossil fuel phase out.
Orderly Transition 2°C	Assumes climate policies are introduced early and become gradually more stringent. Assumes that we limit global warming to below 2°C gradually increasing the stringency of climate policies, giving a 67% chance of limiting global warming to below 2°C. Both physical and transition risks are relatively subdued.
Hot House World 3°C	Assumes that we meet Nationally Determined Contributions (NDCs) ¹³ which includes all pledged targets even if not yet backed up by effective policies but that global efforts are insufficient to halt significant global warming. Critical temperature thresholds are exceeded leading to severe physical risks and irreversible impacts like sea-level rise.

The CVaR assesses a portfolios performance on three aspects of climate change under the different scenarios identified.

- Policy risks** aggregates future climate policy costs and emissions reduction prices estimates onto current company data, providing insight into how forthcoming climate policies could impact companies.
- Technology opportunities** identifies company's current green revenues and low carbon patents to forecast future revenue and profit based on their low carbon innovative capabilities.
- Physical risks** describe how changes to the physical environment such as extreme weather and temperature change could impact a company's valuation.

The results¹⁴ below describe the expected changes to the value of the portfolio and benchmark on a 15-year horizon:

	Disorderly Transition 1.5°C		Orderly Transition 2°C		Hot House World 3°C	
	Portfolio	Benchmark	Portfolio	Benchmark	Portfolio	Benchmark
Policy risks	-14.9%	-29.4%	-0.7%	-1.8%	-0.6%	-0.6%
Technology opportunities	18.7%	11.9%	1.2%	0.8%	0.3%	0.2%
Physical risks	-2.4%	-4.7%	-2.6%	-5.3%	-3.2%	-6.4%
Aggregated CVaR	1.4%	-22.2%	-2.2%	-6.2%	-3.5%	-6.8%

Source: Janus Henderson Investors, MSCI, 31 March 2023.

¹⁰ REMIND was developed by the Potsdam Institute for Climate Impact Research (PIK) to analyse the future implications of interactions between energy, land-use, economy and climate systems. REMIND uses a general equilibrium model with perfect foresight, meaning the model can anticipate changes happening over the modelling time horizon, to simulate the interactions between the various systems inside a closed economy.

¹¹ This is a group of Central Banks and Supervisors willing, on a voluntary basis, to exchange experiences, share best practices, contribute to the development of environment and climate risk management in the financial sector, and to mobilize mainstream finance to support the transition toward a sustainable economy. Its purpose is to define and promote best practices to be implemented within and outside of the Membership of the NGFS and to conduct or commission analytical work on green finance.

¹² Therefore, carbon prices vary across sectors.

¹³ A climate action plan to cut emissions and adapt to climate impacts. Each Party to the Paris Agreement is required to establish an NDC and update it every five years.

¹⁴ Data as at Q1 2023.

Disorderly Transition 1.5°C

Under a disorderly transition scenario, the impact of policy risk and technology opportunities plays a significant role in affecting asset prices, however the portfolio vastly outperforms the benchmark, with the portfolio marginally gaining whilst the benchmark loses over a fifth of its value. According to the policy risk results, the portfolio would be negatively impacted by large and abrupt increases in carbon pricing driven by companies that have a large physical footprint or that rely on resource heavy manufacturing for which transitioning rapidly away from carbon intense operations would be challenging.

As expected, given its fossil fuel exposure, SSE is predicted to be most heavily impacted by policy risk. However, this is somewhat offset in the model by the company's associated technology opportunities, likely due to its significant efforts to expand renewable energy generation capacity, supporting our investment thesis. The portfolio's investment in Knorr-Bremse, a rail parts and components manufacturer, was also punished by the model due to its reliance on carbon intensive production. However, the model fails to award a value increase through technological opportunities, which we question, given that Knorr-Bremse is integral to the increased adoption of rail, the lowest carbon form of transport available today.

Two of our pure play renewable energy generator holdings, Boralex and Innergex, contributed significantly to the climate opportunities score, along with pipe and water manufacturer Advanced Drainage Systems and electronics manufacturer Murata Manufacturing, which the model identified as holding over 860 low carbon patents that will support the low-carbon transition.

Orderly Transition 2°C

Under a 2°C orderly scenario, where climate policies are introduced early and become gradually more stringent, the portfolio performs less well than in a disorderly 1.5°C scenario, losing value slightly, but still outperforming the benchmark. Under the orderly scenario, the risks and opportunities associated with the transition are much less pronounced in both the portfolio and benchmark, indicating an underlying assumption in the model that companies, given sufficient time, will be able to adjust their business models sufficiently to avoid the impacts of a higher cost of carbon by adjusting revenues towards greener alternatives.

Conversely, the model also suggests that companies already leading the transition will not benefit from their early action on a 15-year horizon because their less transition-friendly competitors will be given time to catch up, limiting the opportunity for outperformance. The portfolio outperformance is driven primarily by the lower physical risk, likely due to the portfolio's overweight to the IT sector where physical infrastructure is generally less core to the production mix relative to other industries. This is confirmed in the data; the model predicted that holdings such as Cadence Design Systems, Nanosonics, ASML Holdings, and Workday are amongst the companies least affected by physical climate risk in this scenario, whilst manufacturers with a large global footprint such as Adidas, AIA Group and Intact Financial are most heavily impacted.

Summary

The results of the forward-looking climate assessment of portfolio and planetary impacts show that:

- ▶ **The portfolio is well positioned for the low carbon transition relative to the benchmark** through reduced exposure to both physical and transition risk and increased opportunities.
- ▶ **The portfolio performs better in more aggressive emissions reduction scenarios** which intensify value creation opportunities and reduce the impacts of physical risks.
- ▶ **Many companies are likely to experience both risks and opportunities** as companies that experience higher policy risk, such as electricity generation, are also likely to experience significant opportunities.
- ▶ **Climate scenario modelling is a useful indicator** but captures just a subset of the potential risks and opportunities. For example, it ignores the interplay between transition and physical risks, as well as feedback loops due to the destruction of the natural world which are extremely challenging to factor in. Our view is that the model underplays the significance of physical risks as a result.

Hot House World 3°C

The logic regarding the 2°C scenario holds under a 3°C hot house world. Companies transition slowly due to slow policy adoption, meaning carbon price shocks don't impact valuations, and there is less opportunity for those with low carbon technologies as there is less incentive to adopt them. As predicted, the portfolio performs least well under this scenario, however, it still outperforms the benchmark, again driven by less exposure to physical climate risks. However, we question the results of the model under this scenario, given that physical climate impacts appear to be extremely low despite large increases in global temperatures which we expect will have significant impacts on the global economy. Under this scenario, the most prominent physical risk to the portfolio is coastal flooding, which negatively impacts holdings such as SSE, Adidas, and AIA, whilst US healthcare company Encompass Health suffers most significantly from extreme heat. The model predicts that insurance would be one of the worst performing sectors in a hot house world, likely given the increased payouts from more regular instances of extreme weather damaging physical infrastructure and impacts on company operations.

Targets

The Strategy aims to maintain a carbon footprint and carbon intensity that is at least 20% below the MSCI World Index, primarily through the exclusion of high-emitting sectors, the consideration of carbon emissions as part of the pre-investment ESG analysis, and an engagement programme with portfolio companies in which the investment manager prioritises climate strategy and emissions reductions. As shown through the disclosure of carbon metrics, this target was met in 2022. The ISS data showed a 38.2% difference between the portfolio and benchmark for carbon footprint and a 31.1% difference for carbon intensity.

Though the portfolio has performed well, work is still needed to ensure continual improvement. We have committed to engaging with companies on reaching net zero and want to work with them to achieve this. The metrics below are an example of how we actively monitor the strategy to identify potential opportunities for engagement.

	Portfolio	Benchmark	Next steps
Paris-aligned company carbon emission reduction strategy	66.0%	59.1%	
% of companies	96.4%	99.5%	Though we have outperformed the benchmark on this metric, we would ideally like all companies we invest in to aim for this as a first step.
Quantitative reduction targets	78.4%	83.9%	
% of companies	98.9%	99.8%	Targets should be measurable and actionable. We have underperformed the benchmark on this, driven in part by poor company disclosures. We will be encouraging companies through engagement to set quantitative reduction targets.
Committed to work on emissions reduction target aligned with SBTi¹⁵	17.3%	16.2%	
% of companies	100.0%	99.9%	The portfolio outperforms the benchmark on every SBTi-related metric below. It is also worth noting that not all sectors and industries have SBTi guidance, for example in healthcare which represents over 17% of the portfolio. We expect the number of companies setting SBTi to increase as more guidance is provided.
One or more active carbon emissions reduction target approved by SBTi	34.6%	28.9%	
% of companies	100.0%	100.0%	
SBTi approved target in place	34.6%	28.5%	
% of companies	100.0%	100.0%	

Targets adopted by companies to reduce GHG emissions are considered 'science-based' if they are in line with what the latest climate science says is necessary to meet the goals of the Paris Agreement—to limit global warming to well below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C. Though the strategy has

not set a science-based target, Janus Henderson, as a company, has. We are exploring the possibility of applying financial sector guidance.¹⁶ Through engagement, we are encouraging investee companies to do so to become approved (where possible) by the SBTi.

¹⁵ The Science Based Targets Initiative (SBTi) drives ambitious climate action in the private sector by enabling organisations to set science-based emissions reduction targets. The SBTi is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF).

¹⁶ Financial Sector Science-based targets Guidance <https://sciencebasedtargets.org/resources/files/Financial-Sector-Science-Based-Targets-Guidance.pdf>

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GLOSSARY

Aggregated Climate Value at Risk (VaR)	The Aggregated Climate VaR is the sum of the Aggregated Policy Risk Climate VaR, the Technology Opportunity Climate VaR, and the Physical Risk Climate VaR with the selected transition and physical risk scenarios. The Climate VaR metric, expressed as a positive or negative percentage reflects a change from a portfolio's current valuation, assesses how an investment portfolio could be impacted by climate policy risk and extreme weather (physical climate risks), and benefitted by a low-carbon technology transition.
Avoided Emissions	Avoided emissions, (also referred to as Scope 4, comparative, substituted emissions, climate positive, or carbon handprint), are those GHG emission reductions that occur outside of a product's life cycle or value chain, but result from the use of that product or service. Usually, they are measured relative to a comparative product or service.
Carbon footprint	The sum of GHG emissions generated per amount invested by the fund.
Carbon handprint	An indicator of the climate change mitigation potential. Describes the GHG emission reduction in a user's activities that occurs when the user replaces a baseline solution with the offered solution.
Carbon Intensity (CI)	The amount of carbon by weight emitted per unit of energy consumed.
CO₂e	Carbon dioxide equivalent is a term for describing different greenhouse gases in a common unit. For any quantity and type of greenhouse gas, CO ₂ e signifies the amount of CO ₂ which would have the equivalent global warming impact.
Emissions, Scope 1	Direct GHG emissions that occur from sources owned or controlled by the reporting company, i.e., emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.
Emissions, Scope 2	Indirect GHG emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company. Scope 2 emissions physically occur at the facility where the electricity, steam, heating, or cooling is generated.
Emissions, Scope 3	All other indirect GHG emissions (not included in Scope 2) that occur in the value chain of the reporting company. Scope 3 can be broken down into upstream emissions and downstream emissions. Upstream emissions include all emissions that occur in the life cycle of a material/product/service up to the point of sale by the producer, such as from the production or extraction of purchased materials. Downstream emissions include all emissions that occur as a consequence of the distribution, storage, use, and end-of-life treatment of the organization's products or services.
EPS	Earnings per share is the monetary value of earnings per outstanding share of common stock for a company. It is a key measure of corporate profitability and is commonly used to price stocks.
ESG Environmental, Social and Governance (ESG)	Aspects of a company's operations, products or services which may be financially material to the business and/or impact the long-term sustainability of an investment. Environmental factors include climate change, energy efficiency, resource depletion, and water and waste management. Social factors include employee and community relations, diversity, quality of life, enhancements in knowledge, and advances in supportive technology for improved sustainability. Governance factors include mitigating risks such as bribery and corruption, ensuring board independence and diversity, executive pay, accounting standards and shareholder rights, and positively influencing corporate behaviour.
ESG integration	The practice of systematically incorporating material environmental, social and governance (ESG) information alongside traditional financial metrics into the investment analysis and decision process with the aim of improving the long-term financial outcomes of portfolios.
Greenhouse Gas	Also known as GHG, these are gases in the Earth's atmosphere that causes the 'greenhouse effect', which traps the sun's radiant heat. The primary greenhouse gases in Earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Human activity is increasing the emission of these gases and resulting in increased greenhouse effect, warming average temperatures and causing changes to climates and weather patterns.
Greenwashing	The practice of misrepresenting the extent to which a financial product or investment strategy is environmentally friendly, sustainable or ethical.
Implied Temperature Rise	The Implied Temperature Rise metric provides an indication of how companies and investment portfolios align to global climate targets. Some institutional investors would like to understand if their portfolios are 2°C aligned, referring to the Intergovernmental Panel on Climate Change (IPCC) goal of limiting the global temperature increase in the year 2100, compared to pre-industrial levels, to 2°C. Another important target is the 1.5°C limit, which was also popularized by the Paris Agreement. This limit has been advocated strongly by small island states, which are most threatened by sea level rise in a world with temperatures exceeding a rise of 1.5°C.
Institutional Shareholder Services (ISS)	Institutional Shareholder Services is a leading provider of corporate governance and responsible investment solutions.

LEAP-FI	<p>The TNFD has developed an integrated assessment process for nature-related risk and opportunity management called LEAP.</p> <ul style="list-style-type: none"> ▶ Locate your interface with nature; ▶ Evaluate your dependencies and impacts; ▶ Assess your risks and opportunities; and ▶ Prepare to respond to nature-related risks and opportunities and report. <p>This LEAP-FI focuses on the assessment of nature-related risks and opportunities in relation to financed activities (e.g. debt and equity investing, trading and insuring). Complex financial products such as derivatives are not included within the scope of the LEAP approach.</p>
MSCI	MSCI is a leading provider of critical decision support tools and services for the global investment community
MSCI World	A broad global equity index that represents large and mid-cap equity performance across 23 developed markets countries. It covers approximately 85% of the free float-adjusted market capitalization in each country and MSCI world index does not offer exposure to emerging markets.
Network of Central Banks and Supervisors for Greening the Financial System (NGFS)	This is a group of Central Banks and Supervisors willing, on a voluntary basis, to exchange experiences, share best practices, contribute to the development of environment and climate risk management in the financial sector, and to mobilize mainstream finance to support the transition toward a sustainable economy. Its purpose is to define and promote best practices to be implemented within and outside of the Membership of the NGFS and to conduct or commission analytical work on green finance.
Nationally Determined Contributions (NDCs)	A climate action plan to cut emissions and adapt to climate impacts. Each Party to the Paris Agreement is required to establish an NDC and update it every five years.
Net zero	Achieving a balance between greenhouse gases emitted into the atmosphere and those removed from the atmosphere.
Principal adverse impacts	Principal adverse impacts are the most significant negative impacts of investment decisions on sustainability factors relating to environmental, social and employee matters, respect for human rights, anti-corruption and anti-bribery matters.
Partnership for Carbon Accounting Financials (PCAF)	An industry-led partnership to facilitate transparency and accountability of the financial industry to the Paris Agreement.
Physical Risk	Climate related physical risk affects all company facilities; to some degree. Particularly at risk are those enterprises with locations in climate sensitive regions, or with long-lived fixed assets. Physical climate risk scenarios are essential in identifying the potential change in extreme weather caused by increased levels of GHG emissions in the atmosphere. Physical risk scenarios model how the physical aspects of the climate system changes including variables such as temperature rise, sea level rise, and changes to the frequency and severity of specific extreme weather events. The physical risk analysis assesses changes in global temperatures, precipitation levels as well as flooding and cyclones due to climate change by relying on the both historical data of observed extreme weather and forward looking climate models. Physical risks and opportunities can be aggregated across company facilities, to issuer level, to portfolio level and capture both acute and chronic risks with 10 hazards being currently modelled.
Policy Risks	The transition to a low-carbon economy will be accompanied by extensive regulatory and policy changes across the globe. Using a hybrid top-down and bottom-up methodology, MSCI ESG Research calculates the potential risks from future climate change policies. Direct GHG Emissions (Scope 1), Electricity Use (Scope 2), and Value Chain GHG Emissions (Scope 3) are calculated separately. Country-level greenhouse gas (GHG) emission reduction targets proposed in the Nationally Determined Contributions (NDCs) of the Paris Agreement are modelled. Country emission reduction targets are broken down into sector level targets and based on MSCI ESG Research's production facilities location database, sector emission reduction targets are then assigned to each company's production facilities. Using scenario production and consumption electricity data and estimates of the costs passed through to final electricity users, MSCI ESG Research calculates the potential costs related to electricity consumption in a transition scenario. Scope 3 emissions can be separated into upstream and downstream elements. A company's exposure to upstream emissions can add input costs whereas downstream emission exposure can lead to a company's loss in market share due to shifts in demand. Therefore, both sides of the supply chain are assessed independently to compute a company's policy risk. Policy costs are aggregated to issuer and portfolio level. The metric incorporates double counting considerations.
Science Based Targets initiative (SBTi)	The Science Based Targets initiative defines and promotes best practice in emissions reductions and net-zero targets in line with climate science. Provides technical assistance and expert resources to companies who set science-based targets in line with the latest climate science.
Task Force on Climate-related Financial Disclosures (TCFD)	<p>Climate-related financial disclosure recommendations designed to help companies provide better information to support informed capital allocation.</p> <p>The disclosure recommendations are structured around four thematic areas that represent core elements of how companies operate: governance, strategy, risk management, and metrics and targets.</p>
Taskforce on Nature-related Financial Disclosures (TNFD)	The TNFD aims to build a risk management and disclosure framework that can be used by organisations of all sizes in all jurisdictions to identify, assess, manage and disclose nature-related dependencies, impacts, risks and opportunities.

Total greenhouse gas emissions	The most recent aggregate GHG emissions of the company based on reported or estimated Scopes 1 and 2, and estimated Scope 3 emissions.
Weighted Average Carbon Intensity (WACI)	The weighted average of individual company intensities (operational and first tier supply chain emissions over revenues), weighted by the proportion of each constituent in the index.
World Business Council For Sustainable Development (WBCSD)	A global, CEO-led community of over 200 of the world's leading sustainable businesses working collectively to accelerate the system transformations needed for a net zero, nature positive, and more equitable future.
The United Nations Global Compact (UNGC)	A voluntary initiative based on CEO commitments to implement universal sustainability principles and to take steps to support UN goals.
United Nations Sustainable Development Goals (UN SDGs)	The 17 Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.

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Janus Henderson
INVESTORS

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