



**FONDS DE  
COMPENSATION**

SUSTAINABLE INVESTOR  
FACTSHEET **2022**

[www.fdc.lu](http://www.fdc.lu)

# 1. 2022 IN NUMBERS

## Sustainability at financial assets level

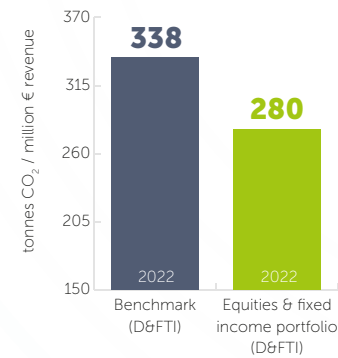
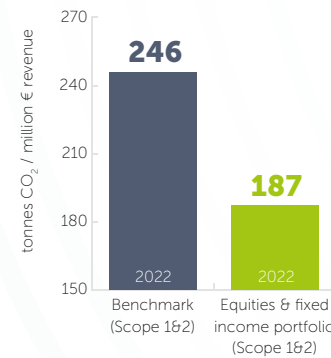
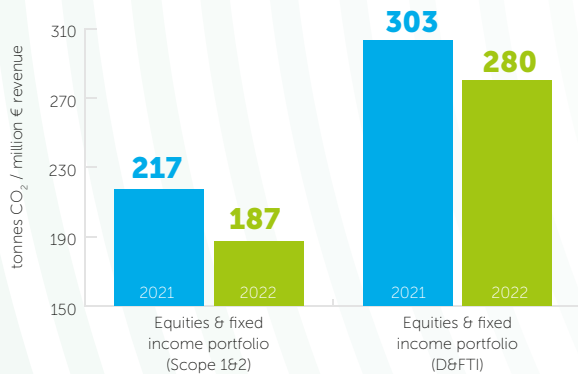
### Carbon to Revenue footprint: equities and fixed income portfolio<sup>1</sup>



**Carbon footprint in decrease** of respectively **-14%** and **-8%** compared to 2021  
(Scope 1&2) (D&FTI)



**Carbon footprint** respectively **-24%** and **-17%** lower than the benchmark<sup>2</sup>  
(Scope 1&2) (D&FTI)



Source: Trucost

<sup>1</sup> Metrics used: Carbon to Revenue (C/R) based on Scope 1&2 emissions as well as Direct and First Tier Indirect (D&FTI) emissions which englobe Scope 1 emissions, direct emissions from four additional sources, Scope 2 emissions as well as upstream Scope 3 emissions. Without green bonds (as classified by Trucost) as well as sustainable impact equities.

<sup>2</sup> Weighted composite benchmark being 79% equity composite benchmark and 21% bond composite benchmark. Equity composite benchmark being 78% MSCI World Total Return Index, 12% MSCI Emerging Markets Total Return Index and 9% MSCI Small Cap World Total Index. Bond composite benchmark being 59% iBoxx EUR Overall Corporate Index, 25% iBoxx Global Core Overall Index and 17% iBoxx ALBI (corporates only) Index.

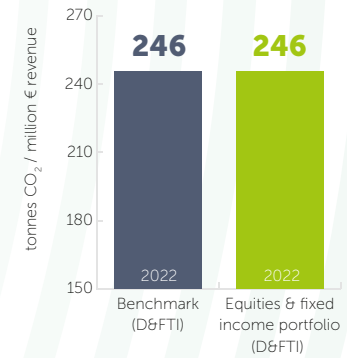
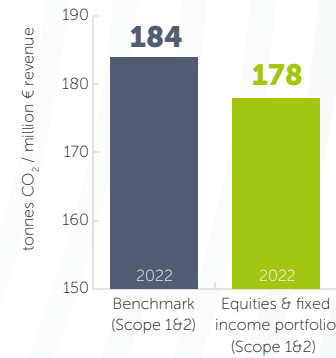
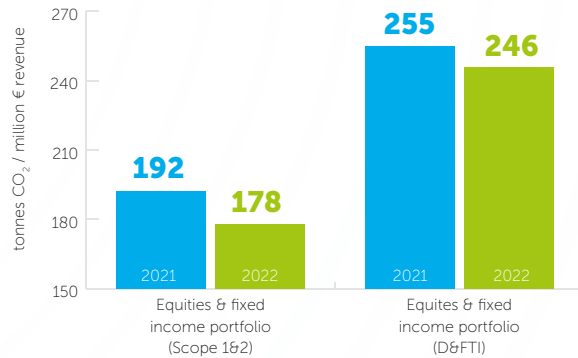
## Carbon intensity (WACI): equities and fixed income portfolio<sup>3</sup>



**Carbon intensity in decrease** of respectively **-7%** and **-4%** compared to 2021  
(Scope 1&2) (D&FTI)



**Carbon intensity in line** with the benchmark



Source: Trucost

<sup>3</sup> Metrics used: Weighted Average Carbon Intensity (WACI) based on Scope 1&2 emissions as well as Direct and First Tier Indirect (D&FTI) emissions which englobe Scope 1 emissions, direct emissions from four additional sources, Scope 2 emissions as well as upstream Scope 3 emissions. Without green bonds (as classified by Trucost).

## Carbon audit: sovereign portfolio<sup>4</sup>



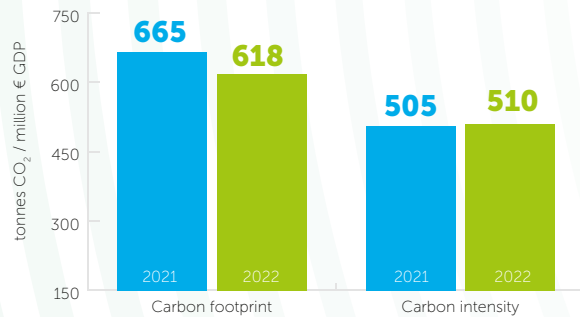
**Carbon footprint (C/EO)**  
**in decrease of**

**-7%**

and

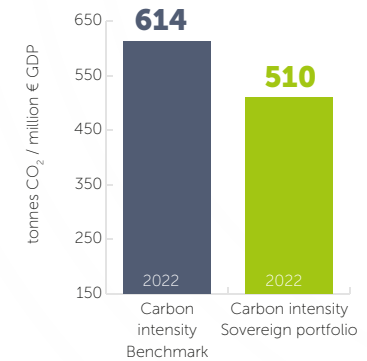
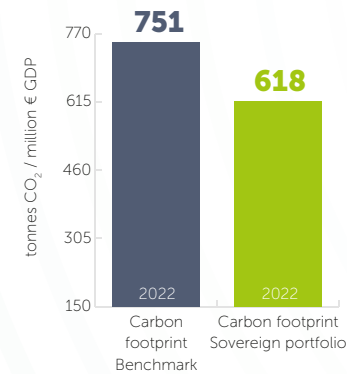


**Carbon intensity (WACI)**  
**in line** compared to 2021



**Carbon footprint (C/EO)**  
and **carbon intensity (WACI)** respectively

**-18% and -17%**  
lower than the benchmark<sup>5</sup>



Source: Trucost

<sup>4</sup> Metrics used: Carbon to Economic Output (C/EO) for carbon footprint data and Weighted Average Carbon Intensity (WACI) for carbon intensity data. Emissions include domestic emissions, direct and indirect imports emissions as well as direct exports emissions.

<sup>5</sup> Weighted composite benchmark being 46% iBoxx EUR Overall Sovereign Index, 28% iBoxx Global Core Overall Sovereign Index, 19% iBoxx ALBI (sovereigns only) Index and 7% customised emerging markets bonds index (11% China, 10% Thailand, Malaysia, Indonesia, Brazil, South Africa and Mexico each, 7% Poland, 6% Czech Republic, 4% Colombia, 3% Romania and Hungary each, 2% Peru and Chile each, 1% Turkey and Egypt each).

## Responsible investment




**All financial assets screened** to be compliant with international standards covering human rights, environment, labour standards as well as fight against corruption and/or linked to controversial weapons ...



... resulting in nearly **140 companies** excluded for investment and more than **170 companies** under observation



**All financial assets** managed by UNPRI signatories



**460 M€** dedicated to investments that, even though passively managed, are in accordance with the Paris Agreement objective to limit global warming to well below 2°C, ideally 1.5°C



**880 M€** invested in green bonds<sup>6</sup>



**9.3 BN€** categorised SFDR Article 8 or 9


**975 M€** invested in real estate funds having achieved **GRESB scores** of



sustainability scores **in excess of respectively 9% and 8%** compared to the broader market<sup>7</sup>



**375 M€** dedicated to investments in equities of listed companies aiming to generate a social or environmental impact next to a financial return



**8.3 BN€** labelled ESG or Environment by LuxFLAG

<sup>6</sup> As classified by Trucost.

<sup>7</sup> As represented by the 2022 GRESB Real Estate Standing Investments Benchmark.

## Sustainability at direct investments level

### Timber

during 2022, FDC owned almost

**700 HA**  
of PEFC certified forest  
absorbing annually  
**7,500 t CO<sub>2</sub>**<sup>8</sup>



<sup>8</sup> In order to determine the exact value of negative emissions (negative emissions permanently remove CO<sub>2</sub>, already emitted into the atmosphere) of FDC's forest estate, further research (types of trees, distribution of the different types of trees, age of trees, etc.) would be required. However, the Luxembourgish Nature and Forest Agency assumes an average of 10.6 tonnes of CO<sub>2</sub> per year that a hectare of forest can store ([https://environnement.public.lu/fr/publications/conserv\\_nature/2022/faltblatt-kiimareduktion.html](https://environnement.public.lu/fr/publications/conserv_nature/2022/faltblatt-kiimareduktion.html)). FDC's forest estate should thus absorb nearly 7,500 tons of CO<sub>2</sub> on an annual basis.

<sup>9</sup> Source: SNHBM Rapport Annuel 2022.

### Real estate

as second largest shareholder of the SNHBM, **FDC contributed to the launch of**

**234**  
affordable  
housing units



the realisation of  
**289**  
affordable  
housing units

more than  
**1,000**  
units are in  
progress<sup>9</sup>

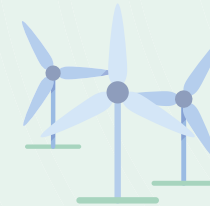


**23**  
low cost units

were **made available to housing aid beneficiaries** via a lease agreement with the Fonds du Logement



**33,000 M<sup>2</sup>**  
lettable space sustainably  
labelled BREEAM Excellent



all administrative buildings  
owned and managed directly  
by FDC supplied with

**100%**  
renewable energy



## FDC's sustainable investor policy continues...

Launch of additional dedicated bond investments of **500 M€**



that, even though **passively managed**, are **in accordance with the Paris Agreement** objective to limit global warming to well below 2°C, ideally 1.5°C



Launch of a tender for sustainable infrastructure investments

with focus on **clean energy** for a volume of

**500 M€**



Additional **1.25 BN€** to be categorised as **SFDR Article 8 compliant**



Additional **52,000 m<sup>2</sup>** lettable space **to be labelled BREEAM Excellent**

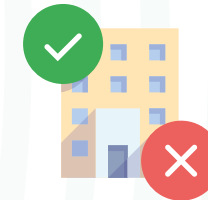


Additional **575 M€** to be labelled **ESG** by LuxFLAG



Real estate projects of **188,000 m<sup>2</sup>**<sup>10</sup> in the pipeline englobing **affordable housing units representing some**

**93,000 m<sup>2</sup>**



Definition and implementation of **criteria leading to an exclusion of companies** that have a **continued observation status with no concrete prospects for improvement**



Definition and implementation of **an engagement policy towards the largest corporate greenhouse gas emitters**

<sup>10</sup> Gross floor area.

# 2. KEY INFORMATION AND CONSIDERATIONS

## What is FDC's legal mission?

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FDC's legal mission is to prudentially manage the reserve of the general pension scheme and to earn an effective return while diversifying risks. When defining FDC's investment strategy, particular attention is paid to the above mentioned criteria.

Since 2007, FDC invests a major part of the reserve in the financial markets through a SICAV. Asset management within the SICAV is entirely entrusted to external asset managers. The off-SICAV balance is managed internally by FDC and is composed of shares of the SNHBM, a direct real estate portfolio, forest holdings of almost 700 hectares, a loan portfolio, cash as well as the balance between receivables and payables essentially representing contributions not yet available for investment.

At year end, 22 billion euros were invested in the SICAV and 1.6 billion euros were directly managed by FDC.

## What is the general pension scheme and its reserve?

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The basis of the Luxembourg pension system is the general pension insurance scheme covering the private sector. The general scheme is based on a pay-as-you-go system meaning that pension contributions paid by the working population are used to finance pension benefits paid to pensioners. Thus, **paid contributions within the pension scheme are above all used for paying out pension benefits and not intended to specifically finance certain investments.** For example, the global contribution rate of 24% exceeded the overall distribution rate on average by approximately 2.7% since the creation of FDC in 2004.

Only the surplus, after deduction of the liquidity needs of the pension scheme, is transferred to FDC, the latter investing given liquidities since 2007 into its SICAV while respecting the principle of broad diversification in terms of asset classes, sectors, regions as well as risk. It should be noted that over the last years and in the context of FDC's responsible investor policy, **new liquidities have predominantly been allocated to sustainable investments.**

FDC is conscious of the importance of taking into account sustainable criteria and aspects into the investment process.



## Why has FDC decided to formalise a sustainable investor policy?

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FDC invests long-term and globally and therefore favours a healthy and sustainable economy. **As an institutional asset manager, FDC is aware of its ecological, social and good governance responsibilities.** When applying the principles of FDC's legal mission to sustainable investments, return on such investments must be in line with the market. In terms of risk management, sustainable criteria and aspects need to be taken into consideration provided that sustainability risks are relevant investment risks. Thus, FDC is conscious of the importance of taking into account sustainable criteria and aspects into the investment process. The latter are analysed in strategic discussions, in the selection process of asset managers as well as in their monitoring. Accordingly, **FDC's responsible investor policy has been designed to comply with its legal requirements while at the same time ensuring that the expected risk-adjusted return remains in line with market returns.**

**FDC is not empowered to accept, beyond the restrictions imposed by legal provisions, the exclusion of companies or entire sectors on the basis of choices not dictated by financial management criteria recognised by the profession, but instead inspired by specific thematic considerations, and to take a position on issues that are the subject of philosophical, religious, political, climatological or societal controversies. If such exclusions were to be taken into account, a modification of the current legal framework applicable to FDC will have to be considered.**

## What does "sustainable approach" mean?

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In 2010, FDC decided to pay more attention to sustainable aspects and criteria taken into account and implemented by tendering asset managers in their offered investment strategies and decision-making processes. **Since 2017, the integration of a sustainable approach into an active investment strategy offered by a tendering asset manager is mandatory.** The type, scope and impact of such an approach on the investment strategy proposed are not predefined by FDC and can therefore take different forms. This approach allows an asset manager to tender with the strategy it deems most appropriate in relation to the tendered mandate and FDC's needs while remaining in compliance with the investment restrictions and guidelines imposed by FDC. The sustainable approach is evaluated according to a predefined evaluation criteria with significant weighting.

The sustainable approach pursued by an asset manager is an integral component of their investment strategy and process executed on behalf of FDC, particularly in terms of financial and risk analysis. Indeed, FDC's asset managers are professionally set up and specialised to assess and evaluate financial and extra-financial risks deemed relevant, including climate risks. In this way, environmental, social and good corporate governance aspects and criteria are incorporated into the portfolio construction process.

Often sustainable approaches of asset managers include engagement policies and proprietary exclusion lists. Engagement is a variant of active ownership and aims to have a sustainable impact on companies. In practice, various topics are discussed with the management of the companies, such as climate change, corporate governance, requirements regarding sustainability reports,

"FDC's asset managers are specialised to assess and evaluate financial and extra-financial risks deemed relevant, including climate risks. In this way, environmental, social and good corporate governance aspects and criteria are incorporated into the portfolio construction process."

working conditions as well as compliance with human rights. Proprietary exclusions are for instance based on low ESG ratings as well as normative or product-specific exclusions such as tobacco, gambling, nuclear power, shale drilling, fur and leather, thermal coal, oil sands or adult entertainment.

**Although the implemented sustainable approaches may vary, FDC endeavours to implement overarching criteria** such as the LuxFLAG label eligibility criteria as well as the article 8 or 9 classification criteria of the SFDR regulation.

## What does LuxFLAG mean?

**LuxFLAG is an independent and international non-profit association** created in Luxembourg in July 2006 **aiming to promote the raising of capital for sustainable investments by awarding a recognisable, independent and transparent label to eligible investment vehicles.** LuxFLAG awards a label in the areas of microfinance, environment, ESG, climate finance and green bonds in order to reassure that assets are invested following responsible criteria.

FDC's LuxFLAG labels can be accessed via following link: <https://fdc.public.lu/en/investissement-responsable/certifications-fdc.html>

## What does the SFDR regulation mean?

The Sustainable Finance Disclosure Regulation (SFDR) imposes mandatory ESG disclosure obligations for asset managers and other financial markets participants. According to the SFDR classification system, a fund will either be classified as an article 6, 8 or 9 fund depending on their characteristics and level of sustainability:

- **Article 6:** funds without a sustainability scope;
- **Article 8:** funds that promote environmental or social characteristics;
- **Article 9:** funds that have sustainable investment as their objective.

In essence, article 6 requires to disclose the integration of sustainability risks in a fund, regardless if the fund is promoted as ESG or not. Article 8 applies to funds promoting environmental and social objectives, having good governance practices and which take more into account than just sustainability risks as required by article 6. Compared to article 8 funds, article 9 funds should make a positive impact on society or the environment through sustainable investment and have a clear non-financial objective.

**Although FDC's SICAV is not subject to given regulation, FDC has decided to voluntarily comply with the SFDR regulation in the interests of transparency.**

FDC's sustainability disclosures can be accessed via following link: <https://fdc.public.lu/en/investissement-responsable/approches-durables-gerants-fdc.html>

## How does FDC exclude companies? What areas are covered? What does it mean if a company is under observation?

FDC proceeds to a normative exclusion of companies that do not comply with international standards as enshrined in the ten principles of the United Nations Global Compact covering human rights, the environment, international labour standards and the fight against corruption, its complementary standards being the United Nations Guiding Principles on Business and Human Rights as well as the OECD Guidelines for Multinational Enterprises as well as their underlying conventions and treaties.<sup>11</sup> Also excluded are companies involved in activities related to controversial weapons, including anti-personnel mines, cluster bombs, nuclear weapons, depleted uranium weapons, white phosphorous weapons as well as chemical and biological weapons.

The exclusion list is periodically reviewed and updated on the basis of a systematic process in collaboration with Sustainalytics, a specialised, recognised and independent external service provider.

In addition to the excluded companies, various companies are under observation. This status is in principle granted to companies for which investigations are not yet completed or for which engagement by FDC's service provider is still ongoing in order to put an end to the litigious facts. Depending on the progress of these investigations, these companies may be later classified as either compliant or

non-compliant. In this way, FDC supports an engagement process with the aim to change the policy and governance mode of the companies in question.

## What are the UNPRIs?

The United Nations Principles for Responsible Investment (PRI) is an international organization that works to promote the incorporation of environmental, social, and corporate governance factors (ESG) into investment practice and decision-making. The PRI put forward six core principles, to which signatory companies must agree to commit themselves. As expressed on the organisation's website, these six principles are as follows:

- **Principle 1:** We will incorporate ESG issues into investment analysis and decision-making processes.
- **Principle 2:** We will be active owners and incorporate ESG issues into our ownership policies and practices.
- **Principle 3:** We will seek appropriate disclosure on ESG issues by the entities in which we invest.
- **Principle 4:** We will promote acceptance and implementation of the Principles within the investment industry.
- **Principle 5:** We will work together to enhance our effectiveness in implementing the Principles.
- **Principle 6:** We will each report on our activities and progress towards implementing the Principles.

At year end, FDC's asset managers were all signatories of the PRIs.

"At year end, FDC's asset managers were all signatories of the PRIs".

<sup>11</sup> As of 2022, related international conventions and instruments englobed 52 United Nations instruments, 25 International Labour Organisation (ILO) instruments as well as 21 other instruments.

## How does FDC assess sustainability within its real estate funds?

**FDC reports on the Global Real Estate Sustainability Benchmark (GRESB) score. GRESB is an organisation that assesses and benchmarks the ESG performance of real assets** and has become the leading ESG benchmark for real estate across the world. GRESB is aligned with other international reporting frameworks including the Task Force on Climate-related Financial Disclosures (TCFD) recommendations, the Paris Climate Agreement and the United Nations Sustainability Development Goals. In 2022, over 1,820 property actors participated in the GRESB Real Estate Assessment generating a benchmark that covers 6.9 trillion dollars of assets under management. **The data combines high-level overall scores with in-depth information across hundreds of ESG data points, including performance indicators such as GHG emissions as well as waste, energy and water consumption.**

## How does FDC calculate carbon footprints?

FDC mandated Trucost to carry out an analysis of its equity and fixed income portfolios. As a leader in carbon and environmental data and risk analysis, Trucost assesses risks relating to climate change, natural resource constraints and broader environmental, social, and governance factors. Specific **carbon audits offer a systematic assessment of the carbon risks and opportunities within a portfolio** at a given point in time.

## Carbon footprint of FDC's aggregated equity and fixed income portfolio

At year end, given portfolio amounted to 12.435 billion euros of which almost 99% were covered by Trucost's analysis. Green bonds<sup>12</sup> and sustainable impact equities have been excluded from the analysis.

The first step of beginning an audit is to decide on the scope of the analysis. While limiting a carbon audit to Scope 1 emissions would avoid the risk of double-counting and thus also an unjustified swelling of carbon balances, FDC decided nevertheless to report on Scope 1 and Scope 2 emissions as well as Direct and First Tier Indirect (D&FTI) emissions which englobe Scope 1 emissions, direct emissions from four additional sources<sup>13</sup>, Scope 2 emissions as well as upstream Scope 3 emissions. The aim is to give a more complete picture as emissions throughout the entire supply chain are considered. The TCFD recommends metrics based on Scope 1 and Scope 2 emissions only.<sup>14</sup>

Portfolios with larger assets under management will typically also have larger absolute carbon footprints than smaller portfolios due to their size. In order to facilitate fair comparison, it is therefore important to normalise the totals. The three most common approaches to normalisation are:

- Carbon to Revenue (C/R)
- Carbon to Value Invested (C/V)
- Weighted Average Carbon Intensity (WACI)

FDC reports following the C/R approach as well as the WACI approach whilst the TCFD recommends that asset owners should focus on the WACI metric.<sup>15</sup>

<sup>12</sup> As classified by Trucost.

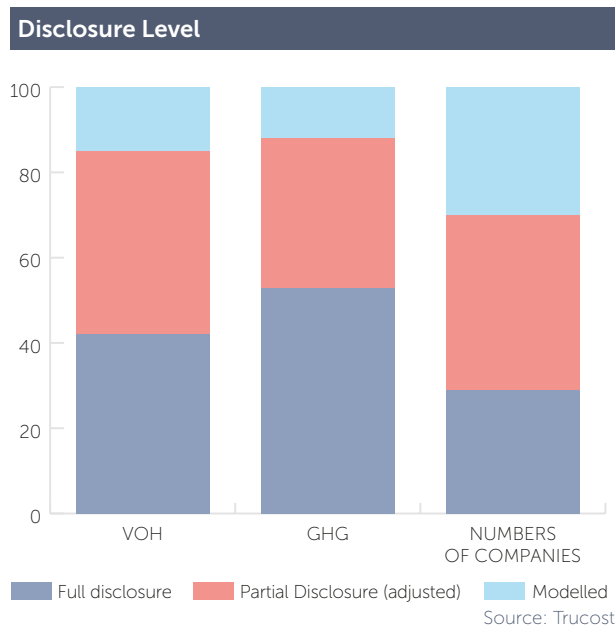
<sup>13</sup> CCl<sub>4</sub>, C<sub>2</sub>H<sub>3</sub>Cl<sub>3</sub>, CBrF<sub>3</sub> and CO<sub>2</sub> from Biomass.

<sup>14</sup> TCFD, Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures, October 21, page 52.

<sup>15</sup> Ibid., page 42.

With regard to carbon data, Trucost allocates to FDC's portfolios a proportion of a company's total emissions by using a specific apportioning factor.

In order to provide an overview of the transparency of the data at company level used for the 2022 carbon audit, the following graph shows the disclosure rate based on value of holdings (VOH), apportioned greenhouse gas emissions (GHG Scope 1 emissions only) and number of companies. Roughly 47% to 70% of the data still needs to be adjusted or modelled by Trucost.



Please refer to the Appendix for more information on metrics calculation, normalisation, emission categories and disclosure rates.

## Carbon footprint of FDC's aggregated sovereign portfolio

At year end, given portfolio amounted to 6.245 billion euros of which almost 94% were covered by Trucost's analysis. Green bonds<sup>16</sup> have been excluded from the analysis.

**Trucost's analysis aims to consider the emissions of a country's entire economy. In order to provide a most accurate picture of the contributions to climate change, the impacts related to production and consumption behaviour have been taken into account for each country. The perimeters used therefore include domestic emissions, imported emissions as well as exported emissions.** Again, three metrics can be used:

- Carbon to Economic Output (C/EO)
- Carbon to Value (C/V)
- Weighted Average Carbon Intensity (WACI)

The proportion of emissions apportioned to FDC's sovereign portfolio is based on the level of financing of a country's government. Similar to FDC's aggregated equity and fixed income portfolios, the sovereign carbon footprint is reported according to the C/EO and WACI metric.

Please refer to the Appendix for more information on metrics calculation, metrics and emission categories.

"Roughly 47% to 70% of the data still needs to be adjusted or modelled."

<sup>16</sup> As classified by Trucost.

## Why does FDC exclude green bonds and sustainable impact equities from the carbon footprint audit?

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Although Trucost is applying recognised market standards, some constraints and limits remain within carbon audits. **Next to concerns such as double counting, lack of data or poor data quality, another matter is that apportioned emissions and avoided and/or negative emissions are not aggregated.**<sup>17</sup> For example, a green bond issuer might have a rather substantial carbon footprint while at the same time financing green projects that will considerably reduce the global carbon footprint. As a carbon audit is solely based on issuer carbon data, only the negative impact will be taken into consideration.

This also affects companies of FDC's sustainable impact equities portfolio. While offering products that contribute favourably to the reduction of the global carbon footprint, given products might necessitate a rather carbon intensive production.

**FDC considers that the objective of its investments in green bonds and sustainable impact equities is to generate a positive impact and notably to report on these.** In this context and due to their biasing effect, such investments are excluded from the carbon audit.

## Benchmarks used and relative performance assessment

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In an ideal scenario, Trucost's carbon audit would also cover FDC benchmarks. However, due to licence constraints, **Trucost can cover FDC's equities benchmarks only.** During the data collection phase, FDC and Trucost thus agree on alternative benchmarks to be used for the fixed income and sovereign portfolios while trying to ensure maximum representativeness with regard to FDC's benchmarks. Given that last year's audit revealed significant discrepancies, it was necessary to re-analyse the available alternative benchmarks for the carbon audit 2022.

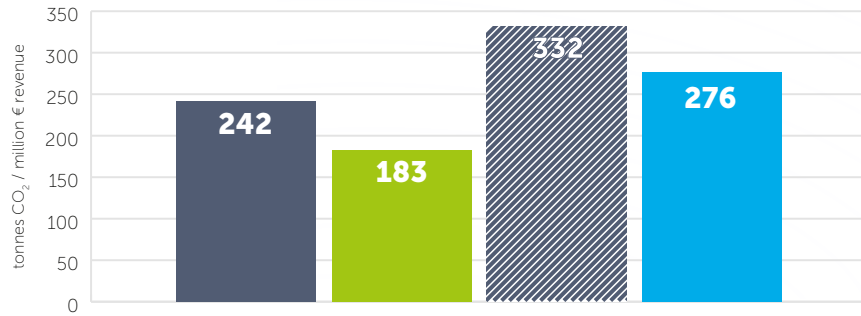
As a result, current fixed income and sovereign benchmarks do differ from the ones used in the 2021 carbon audit, change hindering a consistent year-on-year benchmark comparison. Furthermore and **although benchmark representativeness has been increased, differences still exist biasing the relative carbon performance assessment of FDC's aggregated, fixed income and sovereign portfolios.**

Consequently, the next page does only give further details with regard to FDC's equities portfolio's relative performance versus the benchmark and year-on-year variation.

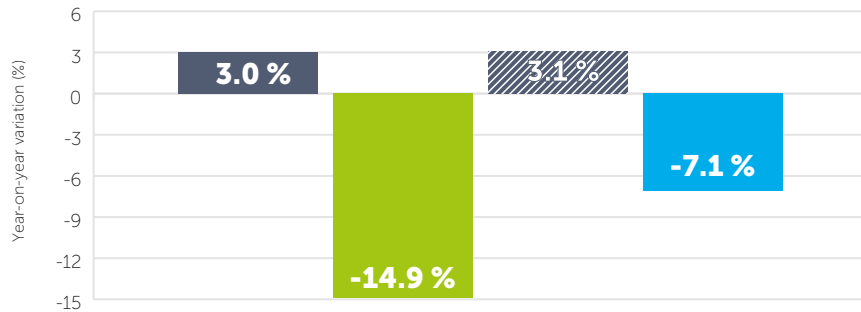
<sup>17</sup> Emissions can be avoided by financing environmentally friendly projects, such as the production of renewable electricity, heat or energy or buildings with zero net carbon emissions. Negative emissions permanently remove CO<sub>2</sub> already emitted into the atmosphere.

As per the below graphs, FDC's aggregated equities portfolio showed for 2022 a respectively 24% and 17% lower carbon footprint with regard to the benchmark. Compared to previous year, FDC's aggregated equities portfolio's footprint showed a decrease of respectively 15% and 7%, while the benchmark even showed a slight increase.

### Carbon footprint (C/R): relative performance 2022



### Carbon footprint (C/R): YoY



■ BENCHMARK (Scope 1&2)

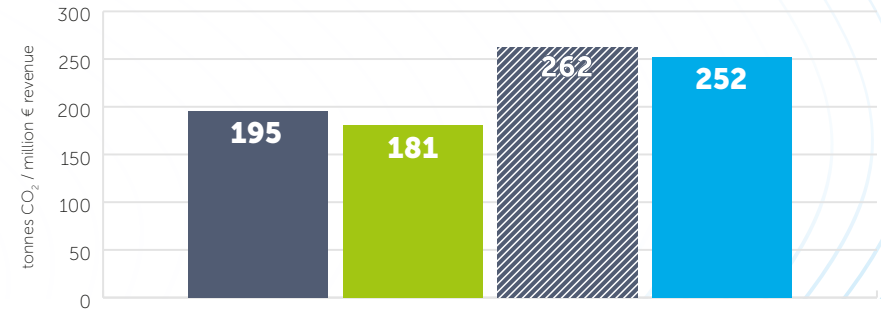
■ FDC EQUITIES PORTFOLIO (Scope 1&2)

▨ BENCHMARK (D&FTI)

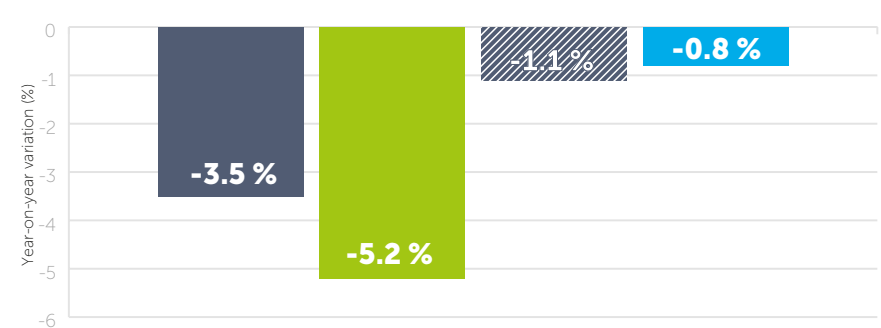
■ FDC EQUITIES PORTFOLIO (D&FTI)

With regard to carbon intensity, the below graphs highlight that FDC's aggregated equities portfolio showed for 2022 a respectively 7% and 4% lower intensity compared to the benchmark. Compared to the previous year, FDC's aggregated equities portfolio showed an intensity decrease of respectively 5% and 1%, decrease more or less in line with the benchmark.

### Carbon intensity (WACI): relative performance 2022



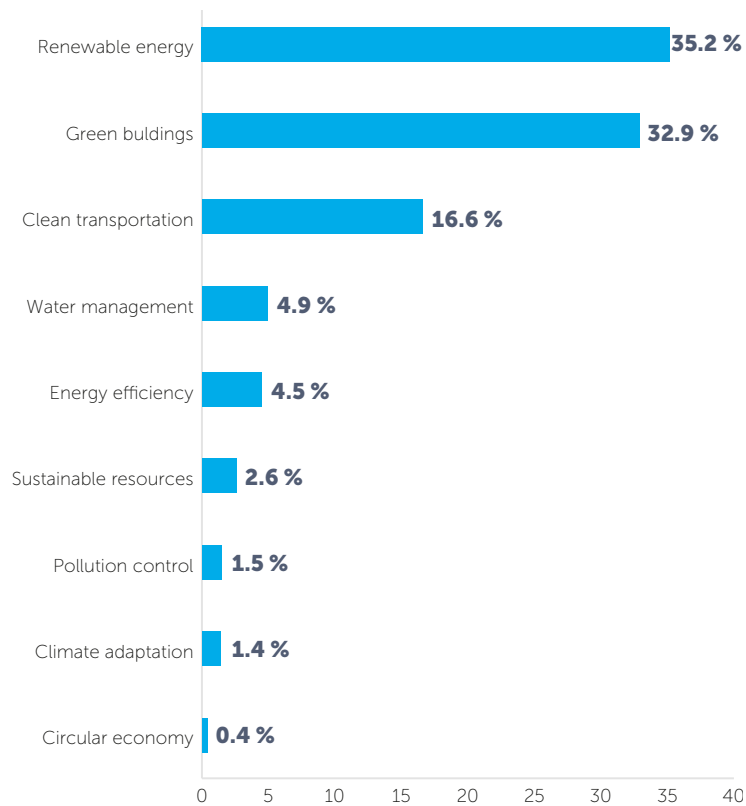
### Carbon intensity (WACI): YoY



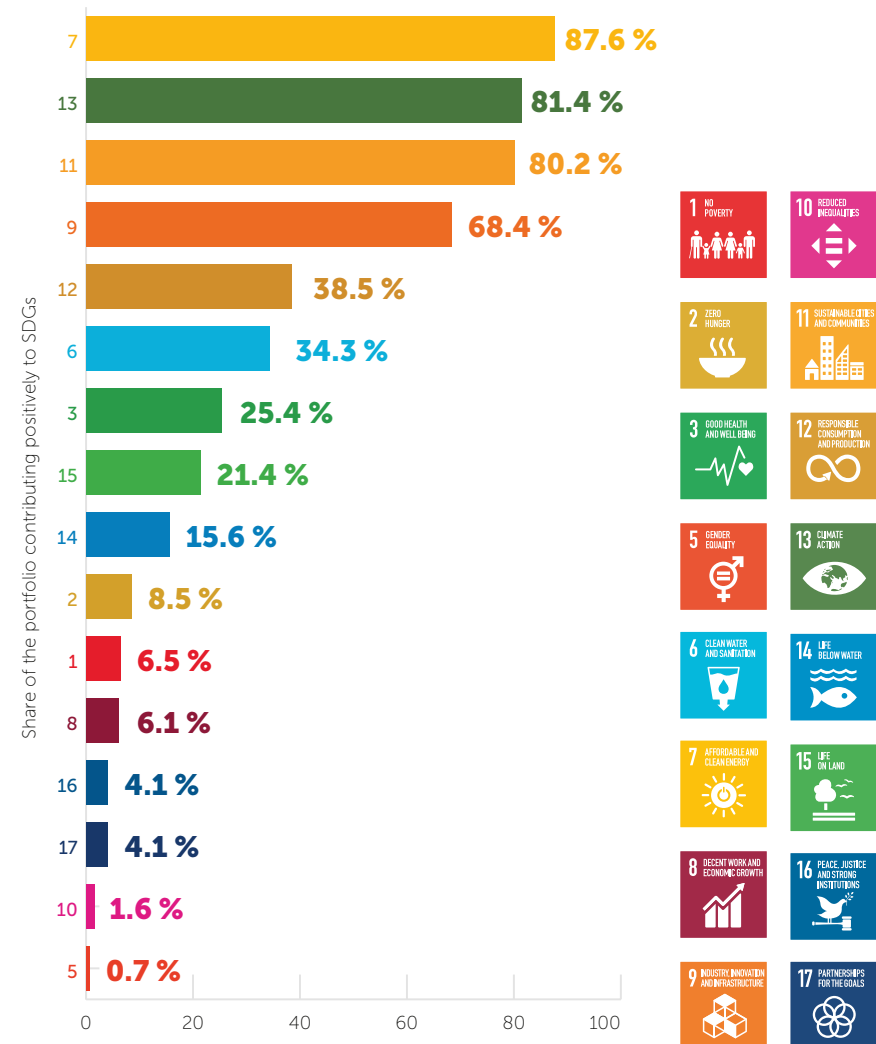
Source: Trucost

# What was the impact of FDC's dedicated green bond portfolio in 2022?

## Types of projects financed<sup>18</sup>



## Impact on SDGs<sup>19</sup>

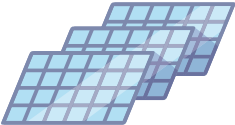


<sup>18</sup> Source: AGI. Portfolio with annual average net asset value of 200 million euros. Data as of 20/09/2023 for year 2022. Data for 100% of the bonds held during the year. 90.7% of the bonds have reported allocation data of funded projects while an additional component of 9.3% has been estimated.

<sup>19</sup> Source: AGI. Portfolio with annual average net asset value of 200 million euros. Data as of 20/09/2023 for year 2022. Contribution to each of the 17 SDGs is determined by reference to the bond's use of proceeds and how it promotes various targets associated with each SDG. By aggregating the data it is possible to determine how many green bonds in the portfolio are positively contributing to each SDG. Data for 100% of the bonds held during the year. 75.2% of the bonds have reported SDG contribution data of funded projects while an additional component of 24.8% has been estimated.



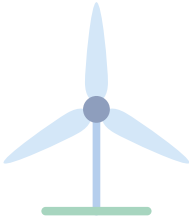
Impact on energy and CO<sub>2</sub> emissions<sup>20</sup>



**84**

**MW**

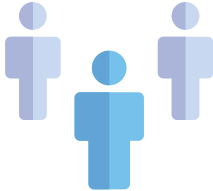
Renewable energy capacity added



**115,165**

**MW/h**

Renewable energy produced



**7,244**

**MW/h**

Energy saved



**107,183**

**Tons**

CO<sub>2</sub> equivalent avoided



**132,173,800**

**Litres**

Water saved/purified



**3,302**





**Tons**

Waste treated/prevented

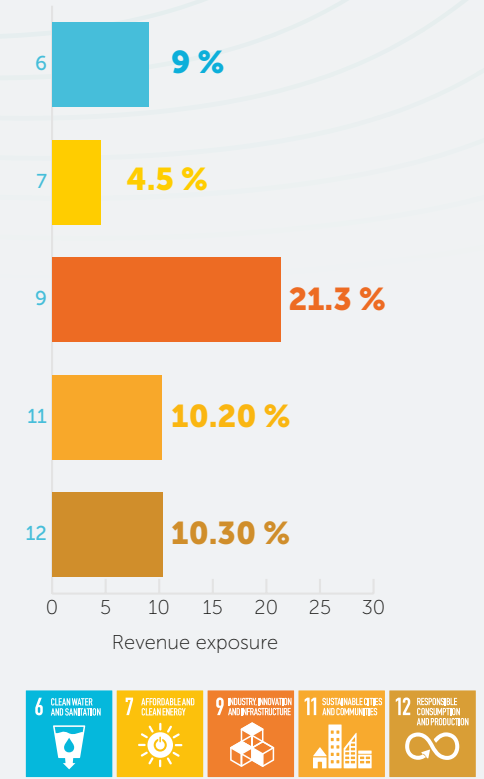
<sup>20</sup> Source: AGI. Portfolio with annual average net asset value of 200 million euros. Data for 94.9% of the bonds held during the year. 83.3% of the bonds have reported data related to the social and environmental impact of funded projects while an additional component of 11.6% has been estimated. Impact results are calculated based on the amount invested in each green bond in relation to the nominal amount issued together with the holding period of the investment.

# What was the impact of FDC's dedicated sustainable impact equity portfolio in 2022?

## Environmental impact<sup>21</sup>

<b>Avoided GHG emissions</b>	<b>81,910</b> tCO <sub>2</sub> e		avoided GHG emissions were equivalent to: <b>52,690</b> cars off the road
<b>Water provided / saved / treated</b>	<b>8,240</b> megalitres		<b>61,080</b> households' water consumption
<b>Renewable energy generated</b>	<b>21,360</b> MWh		<b>5,930</b> households' electricity consumption
<b>Materials recovered / waste treated</b>	<b>55,590</b> tonnes		<b>56,630</b> households' waste output

## Impact on SDGs<sup>22</sup>



<sup>21</sup> Source: Impax Asset Management. Portfolio with annual average net asset value of 385 million euros. Avoided GHG emissions arising from the portfolio companies' products and services.

<sup>22</sup> Source: Impax Asset Management. Impax has mapped the portfolio to show how companies' eligible activities align with the goals based on environmental market revenue exposure.

## What does SNHBM mean?

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The Société Nationale des Habitations à Bon Marché (SNHBM) is a social property developer specialised in constructing single-family homes and apartment buildings via the acquisition of construction land which is rented via a long-term lease. **The SNHBM aims to provide affordable housing of excellent quality.** SNHBM's selection criteria are for example based on income thresholds and state construction subsidy eligibility.

## What does Fonds du Logement mean ?

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The autonomous public entity **Fonds du Logement objective is to contribute to housing development through the construction of housing accessible to all households** according to their needs and means.

## What does the BREEAM certification mean?

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**The BREEAM label is the most widely used method for assessing and improving the environmental performance of buildings.** It evaluates the performance of buildings on management system, energy, health, well-being, pollution, transport, land use, biodiversity, materials and water. Points are awarded on each of these aspects according to the performance achieved. A weighting system allows these scores to be aggregated and an overall score awarded in the form of a label.

FDC's BREEAM certifications can be accessed via following link: <https://fdc.public.lu/en/investissement-responsable/certifications-fdc.html>

## What does the PEFC certification mean?

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**The PEFC certification is a forest certification guaranteeing sustainable forest management** that is environmentally friendly, socially beneficial and economically viable.

FDC's PEFC certification can be accessed via following link: <https://fdc.public.lu/en/investissement-responsable/certifications-fdc.html>

## Why did some key figures within the "Responsible investment" section decrease compared to 2021?

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Decreases are essentially linked to market fluctuations and not related to any active decisions taken by FDC with regard to its sustainable investor policy. In 2022, most financial markets and FDC had to post negative rates of return. FDC's assets, being ESG labelled, classified SFDR Article 8 or 9 or categorised as green bonds or Paris aligned, suffered particularly.

## How often will the sustainable investor factsheet be published? Why does the factsheet not include a full Paris Agreement alignment analysis?

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Following a first detailed climate and Paris alignment analysis published in 2019, the FDC decided to proceed every three years to such an analysis and for the next time in 2024. The sustainable investor factsheet is published on an annual basis.

# 3. APPENDIX<sup>23</sup>

## APPORTIONING

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

Trucost selects apportioning denominators in line with the recommendations of the Partnership for Carbon Accounting Financials (PCAF). For listed companies Enterprise Value including Cash (EVIC) is in general used. The company level emissions are then multiplied by the apportioning factor to arrive at emissions quantities specific to each holding. The portfolio level emissions are the sum of all of these quantities.

The proportion of emissions apportioned to FDC’s sovereign portfolio is based on the level of financing of a country’s government. That can be calculated using the value invested in each bond and the corresponding country’s Gross General Debt (GDP). Once this ratio is calculated, it can be multiplied by a country’s emissions to derive the apportioned emissions:

$$\frac{\text{Sovereign Bond Investment}}{\text{Gross General Debt}} \times \text{Country Emissions (tCO}_2\text{)}$$

## CARBON FOOTPRINT METRICS

### Carbon metrics for equities and corporate bonds portfolios:

#### Carbon to Revenue

The Carbon to Revenue (C/R) intensity per million euros of revenue generated is obtained by dividing the apportioned emissions of the companies in the portfolio by their respective apportioned revenues:

$$\text{Carbon intensity} = \frac{\sum_1^n \text{apportioned emissions company}_i}{\sum_1^n \text{apportioned total value company}_i}$$

- n = number of companies in the portfolio
- i = specific company “i” in the portfolio

The main benefits of this metric are:

- Indicates how operationally efficient companies are in terms of carbon emitted per unit of “output”.
- It can identify which companies have improved their efficiency over time.
- Is consistent with GHG Protocol<sup>24</sup> and comparable across portfolios of all sizes.

<sup>23</sup> Source: Trucost.

<sup>24</sup> Scopes are defined by the GHG Protocol. Explanations and more specific information on the various scopes and carbon accounting are available at: <http://www.ghgprotocol.org>.

On the opposite, the main limitations are:

- Sensitiveness to market dynamics with changes in supply and demand creating pricing swings.
- Sensitiveness to currency exchange rates.

## Carbon to Value

The Carbon to Value (C/V) intensity per million euros invested is calculated by dividing the apportioned emissions of the companies in the portfolio by their total respective value:

$$\text{Carbon intensity} = \frac{\sum_i^n \text{apportioned emissions company}_i}{\sum_i^n \text{apportioned total value company}_i}$$

- n = number of companies in the portfolio
- i = specific company "i" in the portfolio

The main benefits of this approach are:

- Portfolios of any size can be compared.
- Consistent with the GHG Protocol.

Limitations englobe:

- Application across all asset classes is not possible.
- Sensitiveness to swings in enterprise value (typically driven by market capitalisation); it can therefore be difficult to compare year-on-year performance.

## Weighted Average Carbon Intensity

The Weighted Average Carbon Intensity (WACI) per million euros of revenues generated is calculated by summing the product of each company's weight in the portfolio with the company level carbon revenue intensity:

$$\text{Carbon intensity} = \sum_i^n \left[ \frac{\text{emissions company}_i}{\text{revenues company}_i} \times \text{weight}_i \right]$$

- n = number of companies in the portfolio
- i = specific company "i" in the portfolio

Main benefits of this metric are:

- Recommended by TCFD.
- Straight forward in terms of data collection as there is no need for enterprise value data.

Following limitations should be considered:

- From a macro accounting perspective, the WACI metric is not intuitive if trying to calculate the total emissions owned or financed by the capital markets. Total emissions may be restated several times over for a given company as no ownership measure is applied. This is inconsistent with the GHG Protocol accounting standard for measuring and reporting emissions.
- At portfolio level, the approach is sensitive to outliers.
- Using revenue to normalise carbon emissions favours companies that price their goods and services higher than their peers.

To summarise, the first two approaches serve as indicators of an investor's contribution to climate change or ecosystem degradation. The WACI method provides an indication of an investor's exposure to carbon-intensive companies.

## Carbon metrics for sovereign portfolios

### Carbon to Economic Output

The Carbon to Economic Output metric describes the relationship between the average amount of tonnes (t) of carbon dioxide (CO<sub>2</sub>) equivalent (e) generated per million euros GDP generated. This metric is calculated by dividing the sum of all portfolio-apportioned emissions by the sum of all portfolio-apportioned GDP:

$$\frac{tCO_2e'}{GDP'} = \frac{\sum_i^n tCO_2e'_{i,c}}{\sum_i^n GDP'_{i,c}}$$

- n = number of bonds in the portfolio
- i = specific bond "i" in the portfolio
- c = specific issuer country "c" of bond "i"

### Carbon to Value

The Carbon to Value method describes the relationship between the average amount of tCO<sub>2</sub>e generated per million euros of investments made in the portfolio. This metric is calculated by dividing the sum of all portfolio-apportioned emissions by the sum of millions of euros invested:

$$\frac{tCO_2e'}{Inv (\text{€mn})} = \frac{\sum_i^n tCO_2e'_i}{\sum_i^n Inv (\text{€mn})_i}$$

- n = number of bonds in the portfolio
- i = specific bond "i" in the portfolio
- c = specific issuer country "c" of bond "i"
- Inv (€ mn) = invested amount in million euros

### Weighted Average Carbon Intensity

The Weighted Average Carbon Intensity (WACI) method describes the portfolio exposure to specific countries' carbon intensities on portfolio weight basis. Portfolio weight is determined by value invested, which means the portfolio's overall carbon intensity is determined by individual country-level carbon intensities depending on how much is invested in the bonds of each country. This metric is calculated by performing a weighted-average of the portfolio weight of each bond and the carbon intensity of the bond's mapped country:

$$\sum_i^n W_i = \left( \frac{\text{Country Emissions (tCO}_2\text{e)}_c}{\text{Real GDP}_c} \right)$$

- n = number of bonds in the portfolio
- i = specific bond "i" in the portfolio
- c = specific issuer country "c" of bond "i"
- w = portfolio weight (%) of sovereign bond "i"

# EMISSION SCOPES

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## Scopes for equities and corporate bonds portfolios

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

- **Direct (Scope 1)** = CO<sub>2</sub> emissions based on the Kyoto Protocol greenhouse gases generated by direct company operations.
- **Direct (Other)** = Additional direct emissions, including those from CCl<sub>4</sub>, C<sub>2</sub>H<sub>3</sub>Cl<sub>3</sub>, CBrF<sub>3</sub>, and CO<sub>2</sub> from Biomass.
- **Purchased Electricity (Scope 2)** = CO<sub>2</sub> emissions generated by purchased electricity, heat or steam.
- **Non-Electricity First Tier Supply Chain (Scope 3)** = CO<sub>2</sub> emissions generated by companies providing goods and services in the first tier of the supply chain.
- **Other Supply Chain (Scope 3)** = CO<sub>2</sub> emissions generated by companies providing goods and services in the second to final tier of the supply chain.
- **Downstream (Scope 3)** = CO<sub>2</sub> emissions generated by the distribution, processing and use of the goods and services provided by a company.

## Scopes for sovereign portfolios

- **Domestic emissions** = emissions embodied in all goods and services produced and consumed within a given territory.
- **Direct imports** = emissions embodied in goods and services directly imported by a country.
- **Indirect imports** = emissions embodied in goods and services indirectly imported by a country, meaning they originated in another country than the one from which the goods and services are imported.
- **Direct exports** = emissions embodied in goods and services produced in a country and exported to a foreign economy.

# DISCLOSURE LEVELS

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All data collected as part of the process described above will be assigned a "disclosure flag", indicating the source of each specific data point. These flags will fall into one of three possible "disclosure categories" as described below:

- **Full disclosure** = data disclosed by a company is used in an unedited form as it matches the reporting scope and accuracy required by the research process.
- **Partial disclosure** = data disclosed by a company is used but has been adjusted to match the reporting scope required by the research process (e.g. where a company discloses its emissions deriving from 85% of its operational sites, this data is used to model 100% of its emissions). Values may also be derived from a previous year's disclosed data using changes in business activities and consolidated revenues.
- **Modelled** = absence of usable disclosures. In that case, data has been modelled using Trucost's internal model.





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