



Sustainability report

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1



Presentation of the Scheme

Foreword

Christophe Iacobbi, Chairman of the Board of Trustees of Ircantec

After signing the Objectives and Management Agreement (OMA) in March 2022, the Ircantec Board of Trustees set out the new 4-year asset allocation strategy for Ircantec, in full observance of commitments already made or strengthened in terms of socially responsible investment.

I would like to acknowledge the work done by the financial and non-financial management team from the Caisse des Dépôts social policy division which manages our reserves, and which since 2009 has advised and supported us in defining, implementing, improving and developing our responsible investment policy. It aims to be demanding, innovative, forward-looking and inspiring. Their help was invaluable in designing the first SRI Charter for our Scheme, in drafting the voting policy and shareholder engagement policy, in divesting from securities overly involved in fossil energies with respect to the Paris Agreement, ending in late 2021 with the definition of our new climate policy for the Glasgow COP.

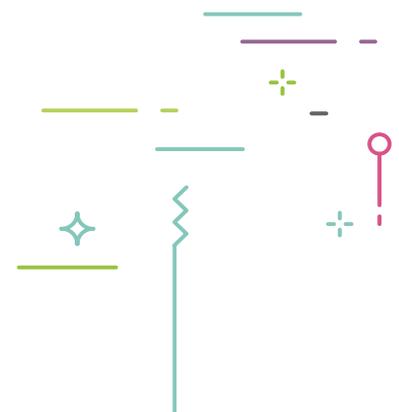
At the end of 2022, the Ircantec reserves portfolio stands at a value of almost 14 billion euros and is managed in accordance with the Scheme's Socially Responsible Investment (SRI) Charter. Today, it is positioned on a trajectory below 2°C with a target of 1.5°C (to comply with the 2015 Paris Climate Agreement). Over 16% of reserves are invested in the environmental transition. I would like this percentage to grow significantly in the next asset allocation strategy, which will be defined by the new leadership. The conference organized by the Institution in September 2022 on "The need for responsible finance: rethinking the how and why" was the opportunity to affirm the four levels of responsibility of an investor such as Ircantec, namely:

- Responsibility towards its affiliates: ensure their purchasing power during their retirement.
- Responsibility towards businesses in which the Scheme has invested: support the decarbonization of the transformation and production of goods and services (e.g. support the development of the green hydrogen sector to reduce greenhouse gas emissions across heavy industry), foster environmental and technological innovations through financing opportunities and the application of a demanding voting and engagement policy.

- Responsibility towards service providers, especially asset management companies: protect and maintain the diversity of players to foster the proliferation of investment solutions, drive healthy competition and contribute to a better alignment between the CSR policy of service providers and the responsibility profile of their products (alignment recently became a new criterion in our calls for tenders).
- Responsibility towards society and the environment (climate and biodiversity), limit the negative impacts of our investments, strive to generate positive impacts.

As the Chairman of the Ircantec Board of Trustees, representing the affiliates who have devoted a part or all of their working life to serving the public interest and well-being, I am convinced that a genuinely responsible approach firstly implies understanding and respecting the stakeholders involved. Having a holistic vision of the social and environmental issues is to understand that the result of collective effort is greater than the sum of individual efforts. Each part has its role in the social value chain. The objective of my term of office is that as a responsible and engaged investor, Ircantec contributes in small ways to creating the world of tomorrow. As I ended our presentation in September 2022: "making a declaration is easy, taking action is hard, being efficient about it is even harder".

Lastly, I'd like to quote Creon, King of Thebes in the Greek tragedy Antigone by Jean Anouilh, "I'm determined [...] to simply return order to this absurd little world, if it's possible."



2 - Executive Summary

In light of the climate crisis, Ircantec strengthened its commitments in October 2021. The goal is to ensure that its reserves are on course to ensure emissions reductions compatible with a 1.5°C scenario, in line with the projections of the Intergovernmental Panel on Climate Change (IPCC - August 2021 report). The IPCC and International Energy Agency (IEA) drew attention to the urgent need for a significant and sustained reduction in greenhouse gas emissions to limit global warming, and stressed the importance of halting the development of fossil fuel used to meet the 1.5°C scenario.

A new roadmap for the investment of Ircantec reserves over the 2022-2025 period was approved by the Ircantec Board of Trustees in March 2022. Ircantec's new climate policy which came into effect in 2022 is an integral part of this new roadmap. It remains in line with the long-term objectives of the previous roadmap and incorporates the major themes of the future. The 3 main directions that structure it are all marked by the Scheme's long-term commitments. Ircantec took the decision to finance the energy transition with an objective of allocating at least 20% of its reserves by 2024, corresponding to additional funding of over 1 billion euros to support businesses which contribute to mitigating climate change. At the end of 2022, Ircantec has committed 16.5% of its reserves to finance the energy and ecological transition (EET).

Against this backdrop, Ircantec hopes to adopt the best practices and is committed to adopting the most demanding standards in order to reduce emissions from its client portfolio. Ircantec has therefore developed a strategy for phasing out fossil fuels by 2030 and has set a target of reducing emissions from its client portfolio by an average of 7% a year until 2050. These new efforts also affect the Scheme's commitment and voting policy. The SRI Charter was also updated to include exclusions concerning controversial weapons and tobacco.

In 2022, Ircantec worked in collaboration with portfolio management companies to implement its new climate policy, as well as to monitor and improve the ESG performance of its funds. For the second year running, Ircantec has two service providers at its disposal for its extra-financial analysis: Sustainalytics for extra-financial and risk ratings, and Trucost for measuring carbon emissions from portfolios and other types of footprints. As of December 2022, Ircantec's ESG risk score is in the 'low' risk category, outperforming its benchmark on its consolidated portfolio. In terms of carbon intensity, Ircantec remains below its benchmark and has reduced its carbon footprint by 39% between 2021 and 2022. In addition, Ircantec's portfolios are more exposed to high-impact sectors than the benchmark index.

Snapshot of main indicators 2021-2022

ESG¹ risk scores Consolidated scope

17.3



Benchmark index

Total carbon emissions (tCO2e) Scope 1, 2, 3 Corporate scope

3 152 437



Benchmark index

Carbon emissions financed (tCO2e/€M invested) Scopes 1, 2, 3

389



565 Benchmark index

Carbon exposure (tCO2e/€M GDP) Sovereign scope

323



336 Benchmark index

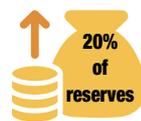


Objective to reduce corporate portfolio emissions by **7%** (annually, on average)



By 2030

exit from fossil fuels



To finance the energy and ecological transition **by 2024**



Alignment trajectory with the Paris Agreement Corporate scope

1.5°C – 2°C

Voting policy

Opposition rate to main categories



¹ See specific methodology. The ESG risk level represents an unmanaged residual risk level (0 to 100); thus, a score close to 0 corresponds to a lower level of ESG risk than a high score.

3 – Governance of the Scheme

The Board of Trustees

Since the 2008 reform, the Board of Trustees has been in charge of the Pension Scheme's long-term management. As part of a four-year plan and based on preparatory work by Technical and Financial Steering Committee (TFSC), it is responsible for securing the conditions that will achieve the long-term balance of the Scheme. As such, the Trustees, with the technical and operational support of Caisse des Dépôts, are responsible for making decisions concerning Ircantec's responsible investment strategy and monitoring all financial, operational and non-financial risks, including risks and opportunities related to climate change.

The Technical and Financial Steering Committee (TFSC)

The TFSC is responsible for preparing the Board of Trustees' work concerning the investment policy, actuarial management and the long-term solvency of the Pension Scheme. The TFSC's remit includes preparing:

- the annual technical and financial report of the Board of Trustees;
- the internal control report concerning the previous financial year, including an assessment of all technical, financial and operational risks.

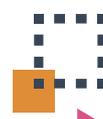
This work therefore includes matters concerning financial and non-financial management. The topics are debated at meetings of the TFSC, which issues an opinion. All the work presented during meetings of the TFSC is submitted to the Board of Trustees for approval. Within the TFSC, two Trustees are appointed leads on issues related to voting and shareholder engagement.

Caisse des Dépôts, Manager of the Scheme

The CDC's Social Policy division manages the Institution's assets by delegation. As such, it draws up proposals regarding the investment strategy, supports the Trustees in their strategic thinking and is responsible for implementing the investment policy in accordance with the general policy decisions issued by the Board of Trustees. The CDC also assists the Board of Trustees in developing its SRI policy and monitors all contracts (with voting, ESG and climate service providers) and mandates (with asset management companies). It periodically reports to the Board of Trustees on the application of SRI principles in investment strategies and ensures that the Trustees have all the information they need to carry out their duties. In 2021, on behalf of Ircantec, the CDC management service assigned three people out of a total delegated management team of 10 full-time people to take exclusive and entire charge of ESG issues.

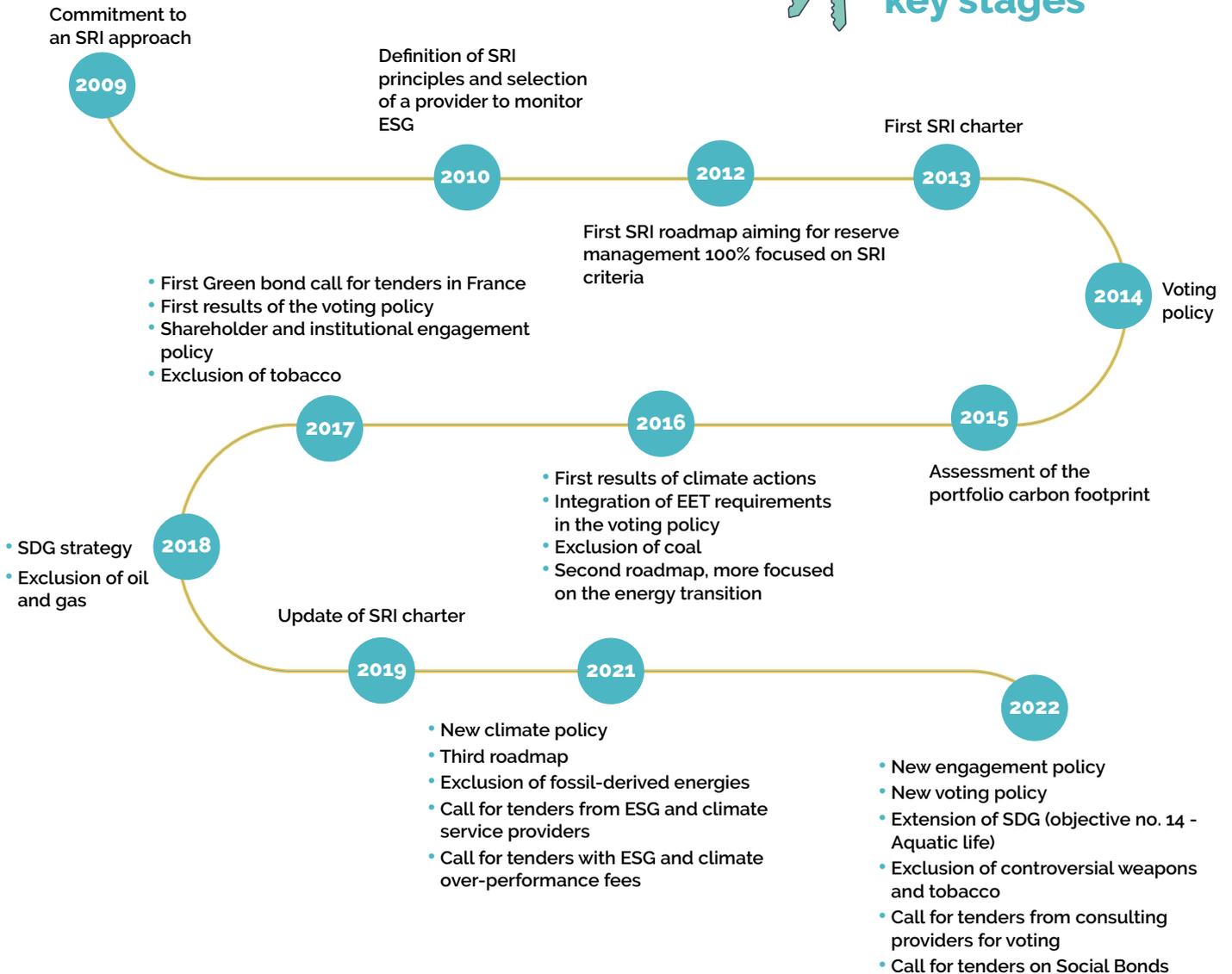
Asset management companies

Asset management companies are selected via calls for tenders, both regarding their financial capabilities and their abilities to meet Ircantec's requirements on SRI subjects. They incorporate Ircantec's SRI principles into their methodology and their investment processes, conduct investments in line with the strategy and principles defined by the Board of Trustees, provide information on the methods used in their management of SRI principles and provide alerts on application difficulties. They also identify and monitor the risks the financial investments may have on the Scheme's image and reputation.





Ircantec's key stages



AWARDS

2013 • IPE Awards – Environment, Social, Governance

2015 • IPE Awards – best pension provider for France

2016 • International Award for Best Investor Climate Reporting

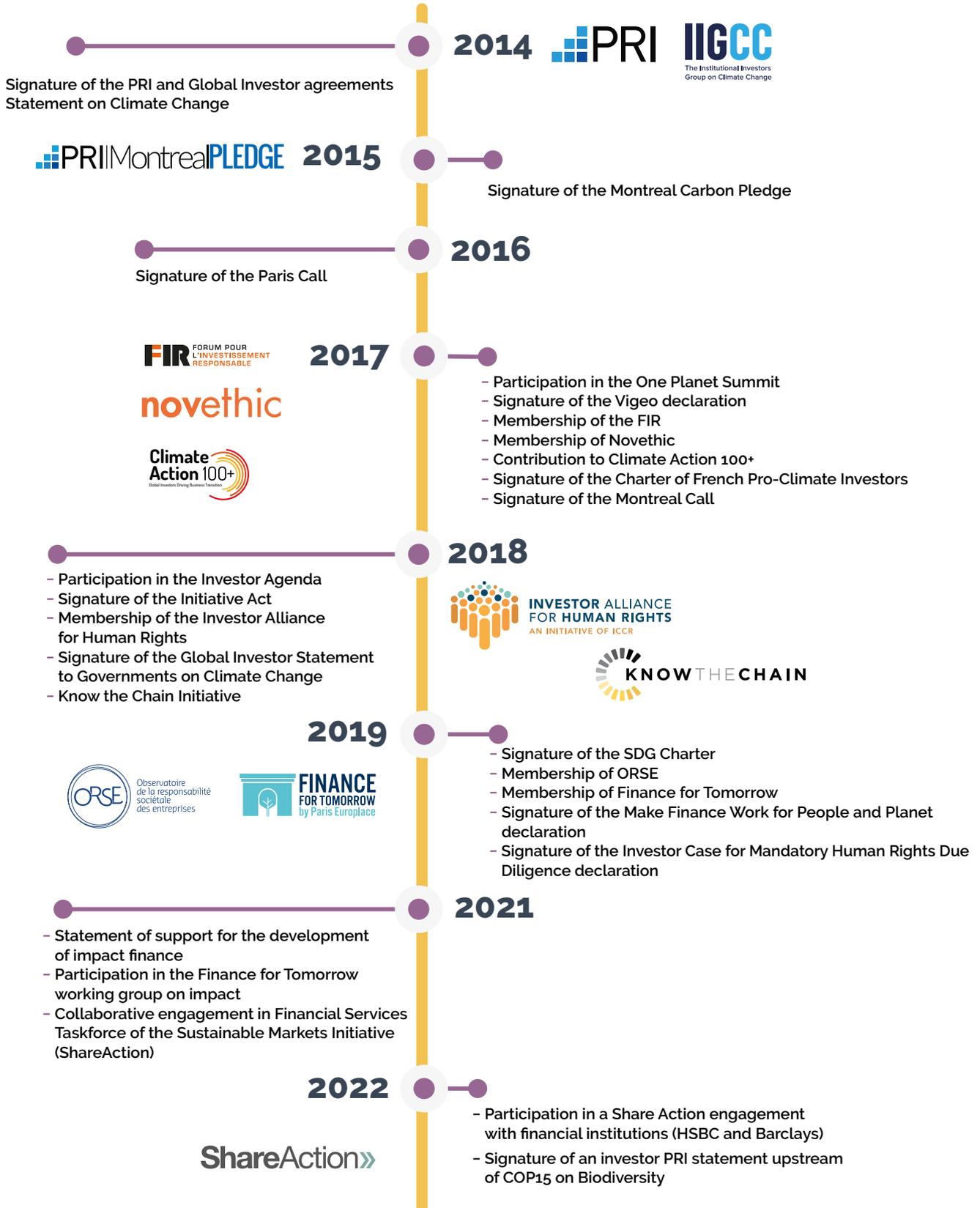
2019 • Couronnes Instit Invest award – best initiative to incorporate SDGs in the responsible investment policy
• Climate International award for climate-related disclosures

2020 • IPE Real Estate award – France-Belgium
• Couronnes Instit Invest – best initiative to incorporate SDGs in the responsible investment policy

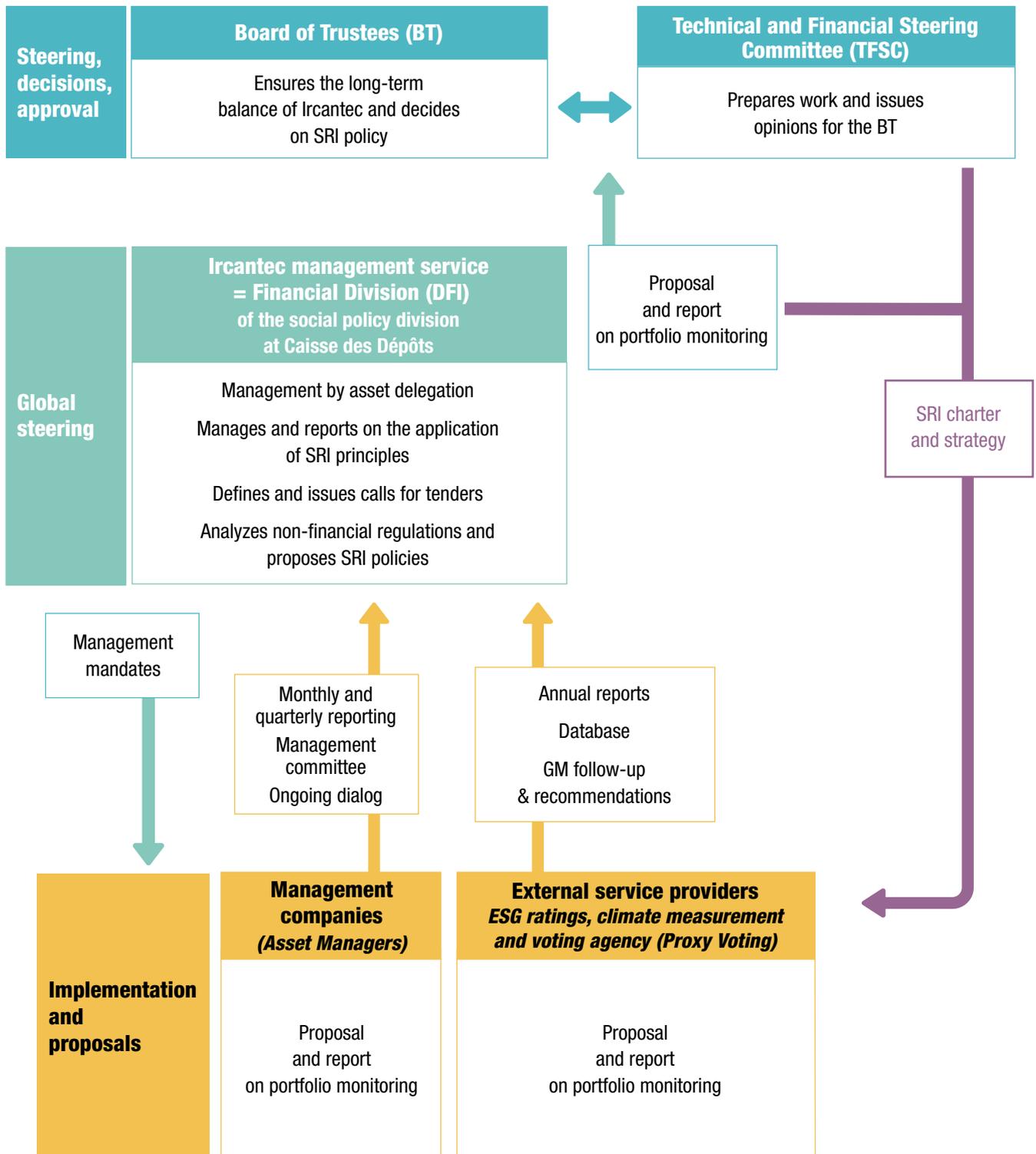
2021 • Couronnes Instit Invest award – best initiative to incorporate SDGs in the responsible investment policy
• IPE Real Estate award – Alternative Strategy



Ircantec engagements



Ircantec governance structure



Handling of framework documents concerning the Ircantec SRI policy



SRI Charter²

- ◆ ISR general investment policy, incorporation of ESG criteria in the investment policy and climate policy
- ◆ Application within Ircantec's portfolios
- ◆ Overview in the Sustainability Report (formerly the Climate Action Report)



Voting policy³

- ◆ Improving the governance of companies in which Ircantec is a shareholder
- ◆ Implementation in the voting rules reviewed annually
- ◆ Voting report



Engagement policy⁴

- ◆ Dialog with issuers and participation in collective marketplace initiatives
- ◆ Definition of the main engagement themes
- ◆ Engagement report

4 - Importance of sustainability in the roadmap

The Ircantec investment roadmap for 2022-2025 adopted by the Board of Trustees in March 2022 is the continuation of the previous 2016-2021 roadmap, as our objectives are long-term. It extends SRI commitments with a portfolio temperature management target of 1.5°C (instead of 2°C previously), an update to the SRI Charter, which incorporates the tobacco and controversial weapons policy, and the introduction of a biodiversity policy. In line with the objectives set out in this roadmap, a new asset allocation was also adopted in December 2022. This aims to secure the yield of the medium and long-term reserves portfolio, while ensuring observance with prudential solvability restrictions.

Our three main guidelines

In the continuity of the long-term objectives of the previous roadmap and by incorporating the major topics of tomorrow, these three guidelines structure the investment of Ircantec reserves for the 2022-2025 period:



1. Optimize the yield to risk ratio as a long-term investor, in a backdrop of growing reserves and to the limit of risks accepted by the Institution, in line with its responsible investment charter;

- a. Diversify the investment vehicles in line with the investment horizon and the accepted level of risk
- b. Strengthen the financial and non-financial management of portfolios: regularly monitor portfolios; actively manage risks and develop risk indicators; in accordance with the commitments of the climate policy, continue the dynamics of financing companies or projects that are developing solutions in favor of the EET and

contributing to a just transition; strengthen non-financial requirements in the selection of funds



2. Strengthen the responsible investor approach by consolidating the Scheme's SRI policy and ensuring its effectiveness in the management of reserves;

- a. Expand the SRI approach across all asset classes: regularly update the 3 key SRI documents (SRI charter, voting policy, engagement policy) to incorporate new emerging topics (biodiversity, themes arising from the social impact of the health crisis, etc.). Ircantec's sectoral exclusion policies that apply to all asset classes will be regularly updated to sustainably support Ircantec's SRI approach and ensure that Ircantec's policy is relevant to the issues of the future.
- b. Integrate and reinforce the issues of tomorrow: strengthen our efforts by adopting an investment strategy that is compatible with a 1.5°C scenario given the climate emergency, while ensuring

² <https://www.ircantec.retraites.fr/sites/default/files/SRI%20Charter%202022.pdf>

³ https://www.ircantec.retraites.fr/sites/default/files/VotingPolicy22-11%28V3%29_0.pdf

⁴ https://www.ircantec.retraites.fr/sites/default/files/Engagement_Policy_22-12%28v2%29_0.pdf

the social dimension of the transition, integrate biodiversity issues into portfolios using an approach similar to our climate approach already implemented, create a doctrine for impact investment (definition of eligibility criteria), handle delegated management for the priority SDGs for Ircantec, implement an active institutional and shareholder engagement policy according to the engagement pathways defined by the Institution



3. Strengthen its position as a reference investor in the private pension field by communicating transparently on the achievements of the Scheme and on its responsible investor policy.

- a. Report and monitor on progress: draft and communicate annual ESG analysis and Engagement Reports in a sustainable transformation report developed with its service providers which takes into account the latest regulations; promote the results in terms of financial and non-financial performance; represent the Scheme in marketplace bodies to influence its ecosystem and increase its visibility
- b. Inform stakeholders: communicate externally on the Scheme's achievements to target audiences (affiliates, beneficiaries, other pension schemes, institutional investors), train decision-makers (trustees) and the management service

Following the adoption of its new roadmap, the management service monitors the annual decarbonization objectives of each Ircantec fund to arrive at an overall target of 7% per year. With the new service contracts (ESG and climate) and access to ESG and climate databases, the management service is able to regularly and precisely monitor the SRI performance of each dedicated fund.

5 - Trustee training

New trustees complete several training modules specifically developed for the Scheme over a period of three days, addressing technical and financial management, financial management styles, as well as the integration of SRI and Climate dimensions. The training is given by the Caisse des Dépôts management team. All Trustees also receive support to understand the regulatory changes impacting the financial and non-financial management of the Institution as necessary. Furthermore, they have the opportunity to participate in numerous conferences given by peers or experts on financial and non-financial topics, such as the conferences accessible online held by Novethic (Caisse des Dépôts Group) on SRI topics. Ircantec's membership in several organizations also gives it the opportunity to participate in technical and training-related discussions as part of small committees (Novethic Investors circle, Forum pour l'Investissement Responsable (FIR).

To support administrators, the staff of the management service can also receive training (biodiversity, impact investment) and participate in peer or expert conferences to remain informed of the latest market developments.

6 - Alignment of compensation with sustainability risks

The Trustees of Ircantec do not receive any compensation. Discussions were initiated on how sustainability risks could be better integrated into the compensation components of other stakeholders (management service, asset management companies). It should be noted that asset management companies are also concerned by the SFDR directive (Sustainable Finance Disclosure Regulation) and that most of them are also working to better align the compensation of their staff with sustainability objectives.

7 - Transparency, communication, and education for stakeholders

Since the end of 2015, Ircantec has bolstered its SRI communication with its peers and affiliates using a variety of communication methods: leaflets, electronic media, Internet and events. The message is intended to convey the idea that choosing a socially responsible financial management policy actively contributes to protecting the Institution's reserves, in line with its objective of intergenerational solidarity. The idea is to present the Institution's actions in an educational and tangible way.

As part of its new climate policy adopted in October 2021, Ircantec sought to reinforce this transparency to demonstrate the effectiveness of its engagements, by committing to the annual publication of all securities held in dedicated fund portfolios on its website. Since 2022, portfolio positions as at December 31 are published on the Ircantec website, along with the list of company stocks it has exited following the implementation of the exclusion policy.

Ircantec has adopted a strategy on communicating with all of its stakeholders:

- Its retirement affiliates: through the publications of *Nouvelles de l'Ircantec* (a half-yearly paper magazine and monthly webzine including a bimonthly e-letter). An update and new information on the climate strategy and the actions of the Scheme have been published in the paper versions of these media since 2016.

- Its contributors in active employment: thanks to a YouTube channel offering tutorials as well as practical videos simplifying the procedures and institutional videos (presentation of the Scheme, review of SRI events, education on SRI). Since 2019, this system has been supplemented with an annual e-letter.
- Decision-makers (key employer accounts, elected officials, institutions): production of annual activity reports and sustainability reports (namely this one), which present a variety of ESG and climate metrics and meet regulatory requirements.
- Elected officials with Ircantec's participation in the 2022 mayors and local authorities convention and in particular, a total of 275 individual interviews at the Institution's eco-friendly booth.
- Its investor peers and management companies: Ircantec organized an event in September 2022 as part of responsible finance week. The event attracted a hundred or so participants such as SRI management experts, institutional investors, etc.
- All stakeholders via its website and social networks: several pages of the website are dedicated to Ircantec's commitments in terms of socially responsible investment. Internet users can view all publications in French and English: SRI charter, Sustainability Report, summary of voting policy and new climate policy, SRI events for the Scheme.
- Our social media outlets (Ircantec Twitter account and YouTube channel) regularly publish information on the latest news concerning the Institution's non-financial management. Furthermore, Ircantec now annually publishes the positions held in the dedicated funds in the portfolio, as well as the divestments made following the introduction of the new climate policy.

8 - Presentation of the portfolio

At the end of December 2022, Ircantec's reserves portfolio comprised various asset classes:

- Listed equity incorporating fundamentals management in Europe and World regions, systematically active management in Europe and OECD countries, passive management with the aim of replicating an index aligned on the Paris Agreement objectives (*Paris Aligned Benchmark*) and topical management actions (mainly Energy Transition);
- Credit incorporates Investment Grade corporate bond management in Euro currency (active management) and green bond management including various issuer categories;
- Unlisted assets include investments in varied funds (private equity, private debt, Social and Solidarity Economy, infrastructure).

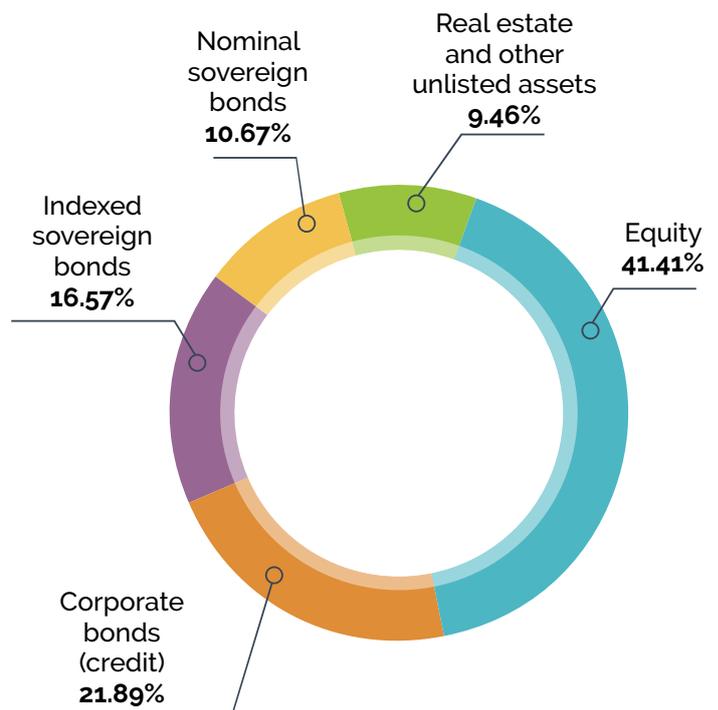
It should be noted that 100% of Ircantec's reserves incorporate ESG criteria.

In 2022, two calls for tenders were issued, the first concerning inflation-indexed bonds for the OECD region. The second concerned Green and Social Bonds, broken down into two lots:

- A first lot of green bonds under fundamentals management;
- A second lot of social bonds (also under fundamentals management).

Ircantec introduced its first Green bonds fund in 2018. As part of its new roadmap, Ircantec seeks to develop investment in Social bonds, by introducing a new dedicated Social Bonds fund.

Following the validation of the nine managers selected by the Board of Trustees in December 2022 and March 2023, the funds selected through these calls for tenders will become operational in 2023.



2



Protection of financial reserves against climate and sustainability risks

Since 2022, Ircantec has worked with S&P Global Sustainable (Trucost) to obtain climate data. The latter is a global provider of environmental data and analysis, including on corporate emissions and the use of natural resources to help identify how environmental issues could affect future corporate profits. This information is used to assess the carbon or environmental footprint of funds, address environmental risks and create investment strategies with low carbon or environmental impact.

Ircantec approaches the climate issue from the perspective of double materiality (as envisaged by the European regulations), making it possible to verify how the Scheme integrates climate risks to manage its reserves sustainably, and how its investments impact climate and sustainability factors in the future.

Investors face two categories of climate risks: transition risks (changes in markets, legislation, technologies or consumer perception of a low-carbon economy that negatively affect the value of a company's assets) and physical risks (resulting from damage directly caused by meteorological and climatic phenomena on goods, financial or physical assets or operational processes). Events related to this last type of risk can be acute (example of a natural disaster impacting real estate in a region and locking up the local economy) or chronic (decline in cereal yields resulting from a fall in average rainfall levels). It is the role of investors to identify and measure these risks to ensure the proper management of reserves. The management service therefore maintains ongoing, regular dialog with asset managers (dedicated mandates) to ensure that Ircantec's SRI constraints are respected at all times and to discuss the management and control of sustainability risks (including climate change).

1 - Climate risk reduction strategy

Ircantec strives to adapt the management of its reserves to its climate risks and to limit their scope. This involves divestment decisions that have been taken and refined over the years and the use of investment strategies that integrate carbon risk.

Fossil fuel exclusions

Thermal coal

According to the IEA, coal is the fossil fuel that has contributed the most to global warming: at the end of 2018, cumulative CO₂ emissions from coal combustion are responsible for the equivalent of 0.3°C of the total 1°C increase in mean annual earth surface temperatures above pre-industrial levels. Although coal has been supplanted by oil as the primary source of energy since the 1960s, it remains today the main cause of greenhouse gas emissions in the world through the activities of its value chain.

The exclusions relating to coal apply to the use of coal as a source of energy, i.e. essentially in the generation of electricity and the co-generation of electricity and heat, and not as a material.

In 2016, the Board of Trustees decided to exit coal stocks in all asset classes according to the following criteria:

- For mining companies, exclusion of any company with coal-related revenue accounting for over 1% of the total market share;
- For energy companies, exclusion of any company whose coal-related energy mix is higher than 30% or whose carbon intensity exceeds 500 gCO₂/kWh;
- For the two sectors considered, coal-related revenue must not exceed 20% of the overall turnover (this number was subsequently reduced to 10%);
- Except on a case-by-case basis if the company demonstrates a strong commitment to the energy transition. For example, an investment can be made in a green bond issued by a company that meets the divestment criteria if it improves the energy mix of the business.

In the fall of 2021, the Board of Trustees enhanced these exclusions, which were applied to the portfolio starting in Q1 of 2022:

- Relative threshold: exclusion of any company whose turnover linked to thermal coal is greater than 5% of overall turnover (mining companies and energy-producing companies);
- Absolute thresholds: exclusion of companies whose annual coal production is greater than 10 Mt per year and companies whose coal-fired electricity production capacity is greater than 5 GW.
- However, these exclusions will not be applied to companies presenting a credible⁵ exit plan from coal by 2030 for all operations around the world.

These thresholds are supplemented by the exclusion:

- Of all companies that develop or contribute to new projects in the thermal coal sector (mines or coal-fired power plants);
- Partners in this industry (particularly infrastructure such as port terminals, railways dedicated to the transport of coal) if more than 5% of their turnover is linked to thermal coal or contributes to new projects⁶.

By 2024, Ircantec has also committed to apply the exclusion thresholds for European indexes aligned with the Paris Agreement, the "*Paris Aligned Benchmark - PAB*", i.e. the exclusion of all companies whose thermal coal (exploration or processing activities) represents more than 1% of turnover, with the exception of companies that have adopted a credible exit plan by 2030. Absolute exclusion thresholds may also be reviewed. An exception will also be applied for green bonds issued by a company meeting the divestment criteria on the condition that the company has committed to phasing out thermal coal by 2030, all geographical areas combined.

Ircantec is committed to achieving zero exposure to thermal coal in its portfolio by 2030, all geographical areas combined.

Oil and gas

The special report published by the IPCC in 2018 on global warming of 1.5°C points out that between 2020 and 2050, the primary energy provided by oil must decrease in most scenarios, between -39% to -77%, while the energy provided by natural gas should decrease by around -13% to -62%. In the four mitigation strategies supported by the IPCC to reduce net emissions to achieve a trajectory limiting warming to 1.5°C (with no or minimal overshoot), the share of fossil fuels must be greatly reduced. Moreover, in its report "Net Zero by 2050 A Roadmap for the Global Energy Sector" published in May 2021, the IEA concludes that investment should be limited to maintaining production from existing oil and

natural gas fields without bringing new deposits into production.

A sector-based divestment policy was implemented in 2018:

- Divestment from bonds issued by companies specializing in the oil and gas sector in terms of market indexes (this mainly concerns companies whose main activities are oriented towards the exploration of new oil fields or the construction of pipelines);
- Divestment from "integrated" companies (which have activities upstream as well as downstream of energy operations, such as product distribution) when their investment expenditure is not compatible with a 2°C scenario;
- Divestment from the equity of specialist companies;
- Divestment from the equity of non-European integrated companies when their investment expenditure is not compatible with a 2°C scenario;
- Exception made for labeled bonds, which may be subscribed to when they help improve the alignment of the company to a 2°C scenario.

Sector definitions can sometimes lack clarity in terms of the company's position within the energy and ecological transition, and certain stocks that have a positive impact at this level might be potentially eligible for investment.

The growth of the unconventional energy sector (notably due to the supply of shale oil from the United States), which has a greater impact in terms of greenhouse gas emissions, jeopardizes the achievement of the temperature objectives of the Paris Agreement. Following these scientific recommendations, the Board of Trustees decided in the fall of 2021 on new exclusion thresholds, which were applied from the first half of 2022:

⁵ Particular attention will be paid to company engagement plans involving an exit from coal. These exit plans must feature engagements to close sites and not just sell off activities related to thermal coal. Ircantec will fully integrate these criteria into its shareholder engagement policy to ensure support and redeployment for employees in this sector hit by the EET.

⁶ [Global Coal Exit List \(GCEL\)](#) – published by NGO Urgewald (latest version from October 2021).

- Exclusion of companies that develop new projects in unconventional energy resources or that increase their capacity in unconventional (shale oil and gas, extra-heavy oil, coal gas, oil sands, deposits in the Arctic and/or in deep waters);
- Exclusion of companies whose production related to shale oil and gas, extra-heavy oil, coal gas, oil sands, deposits in the Arctic or deep waters exceeds 10 mmbœ⁷ in aggregate. The exclusion also concerns companies in which more than 30% of production is linked to an unconventional activity.
- These exclusions do not apply to companies that have adopted a credible and detailed plan to exit unconventional energy by 2030.

Pending access to data on the financing of unconventional products enabling it to define an exclusion policy, Ircantec wishes to engage financial players and insurers in the portfolio via shareholder dialog on the adoption of credible, detailed plans to exit unconventional energy.

Following the implementation of this climate policy on the Ircantec portfolio, a certain number of securities were divested, as they did not respect the thresholds and criteria set by the policy. The overall total of divestments by the end of March 2022 amounted to €61.9M.

By 2024, Ircantec is also committed to applying the exclusion thresholds for European indexes aligned with the Paris Agreement, the "Paris Aligned Benchmark - PAB", i.e. the exclusion of all companies for which oil represents more than 10% of turnover or 50% for gas; all companies initiating new conventional projects (exploration, production, transport) or contributing (equipment, services) to the development of new projects; any company whose production is linked to shale oil and gas, extra-heavy oil, coal gas, oil sands, deposits in the Arctic or in deep waters and which has not committed to a credible exit plan. However, these exclusions will not be applied to companies that have adopted a credible plan to reduce their emissions, compatible with a 1.5°C scenario.

Ircantec is committed to achieving zero exposure by 2030 to any company in the oil and gas sector that has not adopted a credible emissions reduction plan that is compatible with a 1.5°C scenario.

Integration of climate risk into the fund strategy

The dedicated mandates are managed externally by more than ten different management companies and are selected following 2-stage calls for tenders (pre-qualification phase then bidding phase for successful candidates). Calls for tenders issued in recent years incorporate this requirement to integrate the climate and environment dimensions into fund management at various levels: investment philosophy, ideas generation, portfolio construction, composition of dedicated teams, reporting. In

particular, bidders are asked to explain how securities are identified, evaluated and selected with regard to their alignment with trajectories resulting from the Paris Agreement, but also how managers and analysts are trained in climate issues and whether a non-financial filter exceeding the restrictions of the Ircantec SRI Charter has been put in place. Managers have significant leeway to meet these needs: some perform analysis of the company's climate positioning after the financial and stock market selection process has taken place; others greatly reduce the investment universe by focusing on companies that offer adequate solutions to the EET. The management agreements for all funds incorporate compliance with the SRI charter and observance of all engagements made by Ircantec, especially in terms of annual emissions reductions for companies. The management agreements also include reporting requirements through assessments of negative contributing factors to the EET within the portfolio and updates of the TCFD policy (Task force on Climate-related Financial Disclosure) within the management company.

2 - Identification and rating of transition risk

Listed companies

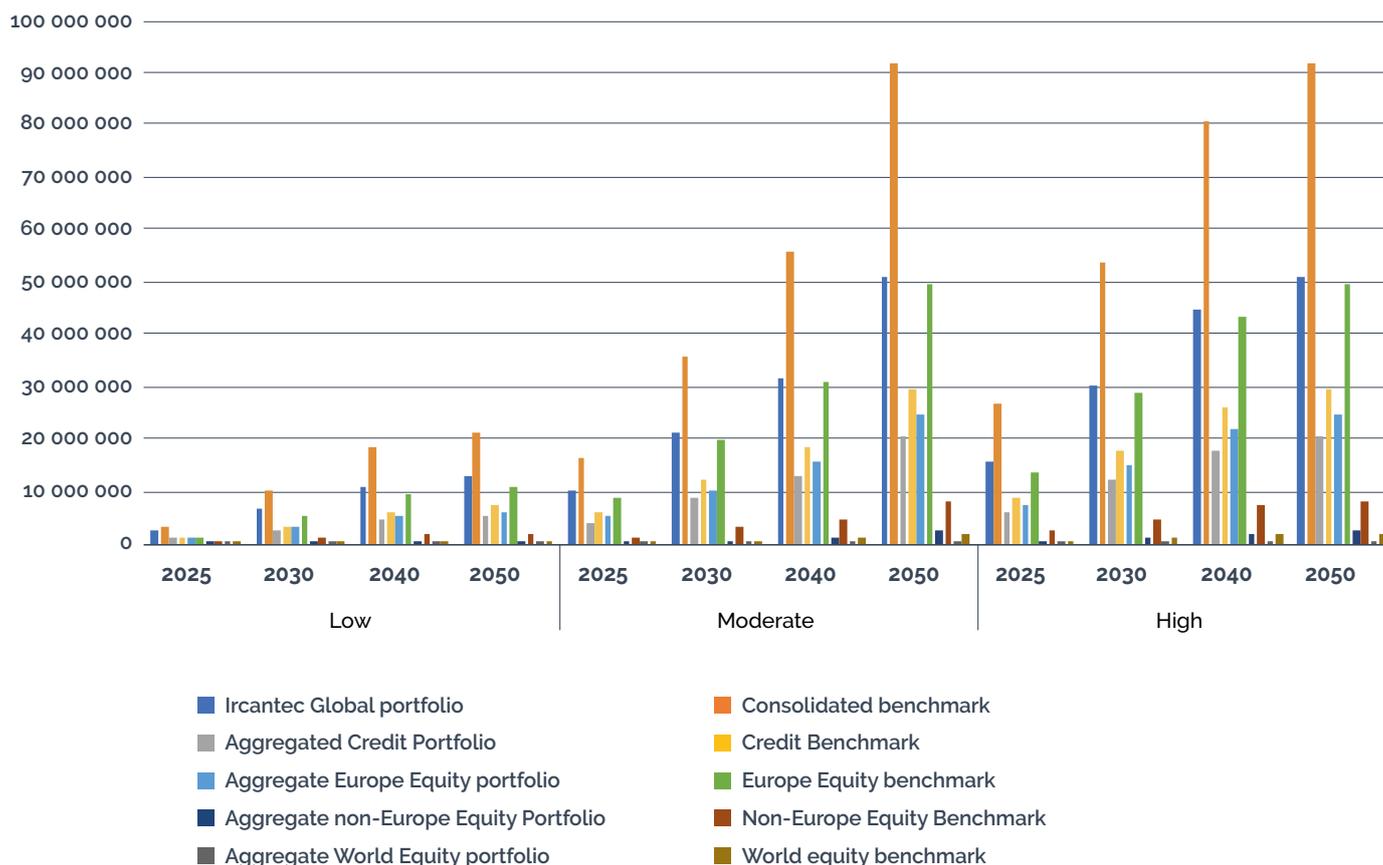
Ircantec has used carbon pricing to measure this risk. These pricing mechanisms are a tool that can reduce greenhouse gas (GHG) emissions and redirect capital towards renewable energies and low-carbon solutions. There are currently 52 carbon pricing systems in place or planned for implementation at regional, national or sub-national levels, covering approximately 20% of global GHG emissions. Other schemes are likely to appear to achieve the *National Determined Contributions* (NDCs), commitments made by countries that have ratified the 2015 Paris Agreement. To manage carbon price risk, Trucost compiles a data set of possible future carbon prices to test each issuer's current ability to absorb future costs. Quantifying an *Unpriced Carbon Cost* (UCC) is integral to this analysis – the difference between what a company pays to emit carbon today and what it might pay in the future. The UCC will vary

⁷ Mmboe: millions of barrels of oil equivalent.

depending on the industry in which a company operates and the regions in which it emits GHGs. It also depends on the scenario and the reference year chosen. By 2050, both the “High” and “Moderate” scenarios arrive at a price that is deemed sufficient to keep global warming to less than 2°C above pre-

industrial levels (in the second case, the action is delayed in the short term). The “Low” scenario is not aligned with a 2°C trajectory but assumes the implementation of NDCs.

Allocated unpriced carbon costs (Euros)



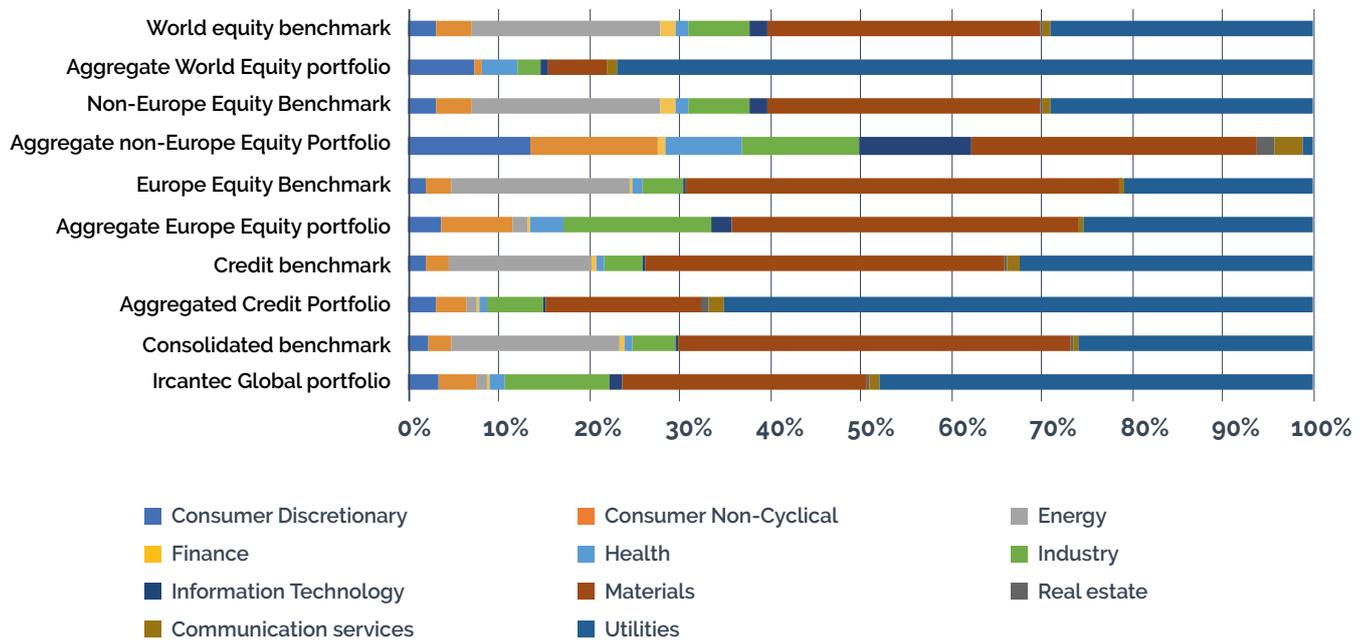
The global portfolio⁸ is exposed to a lower unpriced carbon cost than its benchmark, especially if the scenario considers the immediate application of measures to limit global warming to 2°C. The Utilities and Materials sectors have the highest UCCs. Utilities still have a strong dependence on fossil fuels and in particular on gas, which is considered as a transitional energy. These two highly emitting sectors are therefore very sensitive to increases in the price of carbon. For example, TenneT Holding B.V or OCI N.V have unpriced carbon costs 3 to 4 times higher than their EBITDA⁹. Moreover, the portfolio has a geographical investment bias for Europe and the USA. Yet these regions have a high carbon premium. In Europe, we have observed an almost constant increase in the carbon price with a strong jump in early 2022. Carbon prices in Europe are driven higher mainly due to the objectives of

the European Green Deal which aims to reduce EU carbon emissions by 55% by 2030. The 100% reduction in CO2 emissions by 2035 approved on June 22, 2022 should mean that this carbon price remains high for the coming years.

⁸ Throughout the report, in the “listed companies” subsections, the global portfolio refers to all corporate issuers in dedicated Ircantec funds (equity and bonds).

⁹ “Earnings Before Interest, Taxes, Depreciation, Amortization” (standard measurement of company performance).

Unpriced carbon cost broken down by sector (moderate 2030 scenario)



This means that the portfolio's EBITDA is at lower risk¹⁰ than its benchmark. Therefore, the profits of the companies in which Ircantec's reserves are invested will be less vulnerable to a rise in the carbon price than those of its benchmark index. Companies whose earnings are considered the most "at risk" may potentially face multiple valuation changes and a more severe fall in returns for investors. The companies with the most at risk EBITDA within the portfolio are companies in the Utilities or

Materials sectors that have started transitioning to a low carbon economy. Amongst them, in particular TenneT Holding B.V which is speeding up its investment in renewable energies or OCI N.V, which is aiming to decarbonize conventional maritime fuels by replacing them with low-carbon solutions.

2030 moderate scenario	Allocated unpriced carbon cost (EUR)	EBITDA at risk (%)	EBITDA reduction of profit (% points)	Value of assets with > 10% at risk	Value of assets with a negative margin (%)
Ircantec Global portfolio	30,167,749	4.56%	-0.30%	7.67%	0.32%
Consolidated benchmark	53,539,008	5.74%	-0.57%	11.61%	0.93%

To assess transition risks, it is also possible to identify companies that are considered to have the highest risk in terms of stranded assets on their balance sheet. Stranded assets from a climate point of view are those that may be devalued due to a climate-related constraint (new legislation, legal risk, downturn in the market, etc.). The exploitation of non-renewable energy and in particular energy from unconventional resources (shale gas,

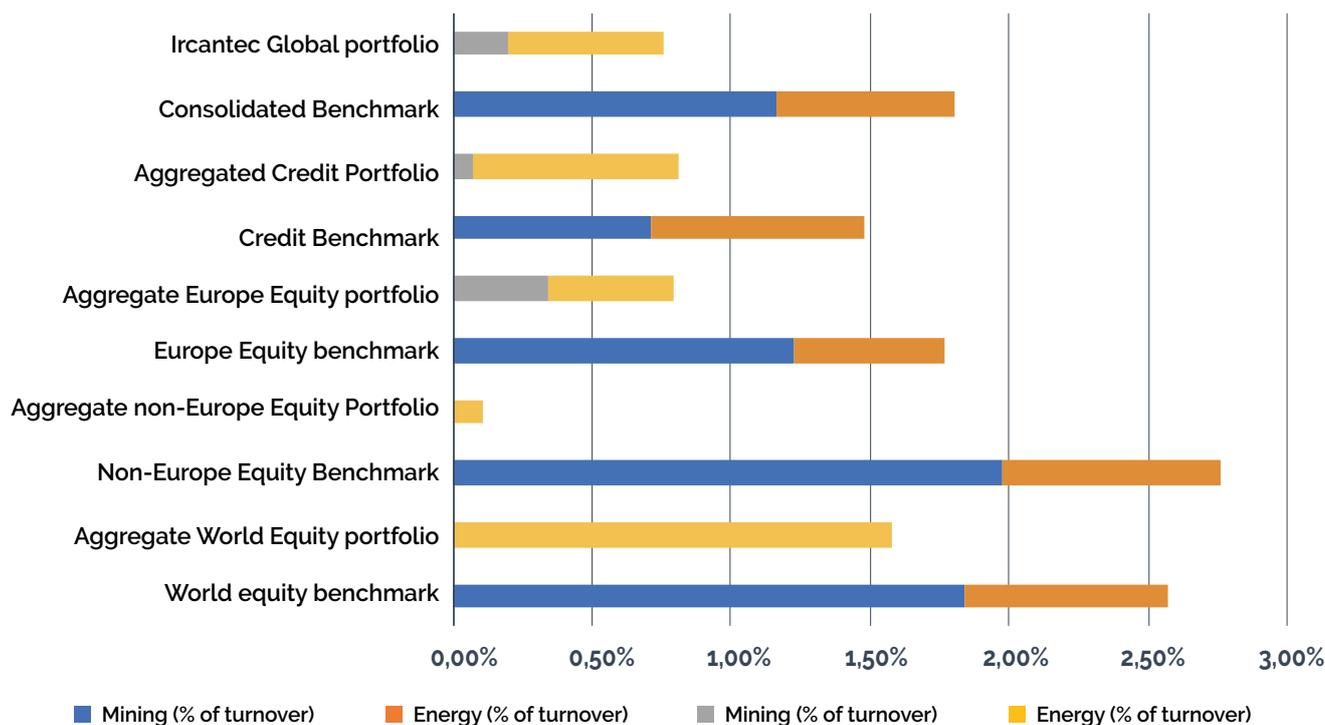
oil sands, etc.) is considered an activity par excellence that relies on stranded assets, but the limited knowledge of the shape that a carbon-free economy would take means that a significant number of other companies and sectors of activity will be affected as the transition progresses.

¹⁰ See methodology.

Within the portfolios, active monitoring is carried out on the portion of activities dedicated to the exploitation of coal, the fossil fuel energy with the highest emission factor¹¹ per tonne of oil-equivalent. Most transition policies and plans aim to exit this type of energy in the mid to long-term. Companies remaining within the portfolio and exposed to this activity in 2022 were below a 5% limit on coal-related turnover, annual production below 10 Mt or a coal-fired electricity production capacity below 5 GW. For example, these include diversified energy companies following a major development strategy on renewable energies, simultaneously with a policy of divestment from excessively carbon-intensive assets: these include Enel, Energias de Portugal or Orsted. A company with over 5% of coal-related turnover is present in the portfolio with a policy to exit coal accelerated to 2028 and objectives approved by the Science Based Targets initiative (SBTi). With an exit from coal considered credible, this company respects Ircantec's climate policy due to its commitment to exit coal by 2030. Ircantec's reserves thus provide it with funding earmarked for green activities, contributing to the transition of EnBW to a low-carbon economy.

Moreover, concerning the oil and gas sector, the portfolio held four securities from the utilities sector, which are historically active in gas. Today their investment is focused on adapting their infrastructures to transporting hydrogen. Portfolio exposure to fossil fuel-related revenue grew slightly between 2021 and 2022, amounting to 0.76% in 2022 (compared to 0.5% in 2021), with an increased exposure to oil and gas well drilling activities, which is explained by the inclusion in the portfolio of securities such as Subsea 7, Aker or Technip Energies. Trucost classifies these securities as generating 100% of their revenue from fossil resource activities and in particular oil drilling, even if this activity is conducted by a subsidiary, as is the case of Technip Energie. These securities were integrated into the portfolio as they focus on energy transition solutions, such as Technip which provides CO2 capture and storage management solutions. The Subsea security is the main contributor to the weighted average exposure of the portfolio to fossil fuel-related revenue. Although the company remains active in conventional O&G, its investments are oriented to the energy transition. Lastly, Aker BP was included in the portfolio following poor understanding of the investment rules, this security was sold rapidly and removed from the portfolio as it was on the Ircantec exclusion list.

Exposure to activities involving fossil fuels

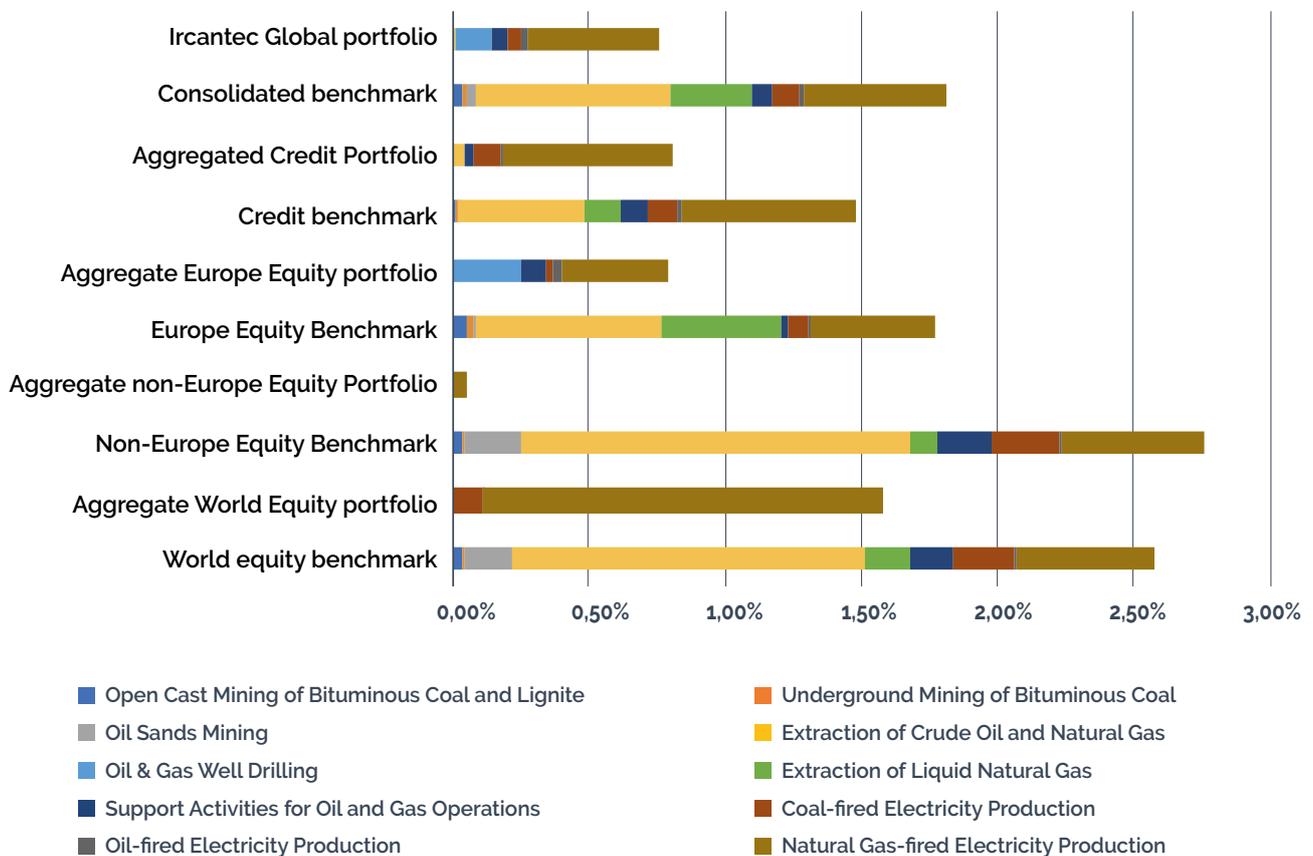


¹¹ An emission factor is a coefficient used to convert activity data into GHG emissions.

Looking at fossil fuel-related revenue by industry (shown in the first graph below), we can see that the portfolio is not invested in mining of oil sands or LNG extraction. This reduced oil and gas exposure explains why the portfolio is less exposed to stranded assets than its benchmark. The greatest exposure to fossil fuel revenues is found in the production of energy via natural gas. This is mainly due to the utilities in the portfolio which remain partly dependent on fossil fuels, for example Iberdrola, ENEL or ENGIE, because of their dependency on gas which is required enable their transition to renewable energies. It is important that all these companies

have a transition plan and substantial investments towards a low-carbon economy. This is reinforced by the third chart below, which shows that capital expenditures set aside for future fossil fuel-related activities, such as exploration and extraction, are significantly lower for companies within Ircantec's portfolio than for its benchmark.

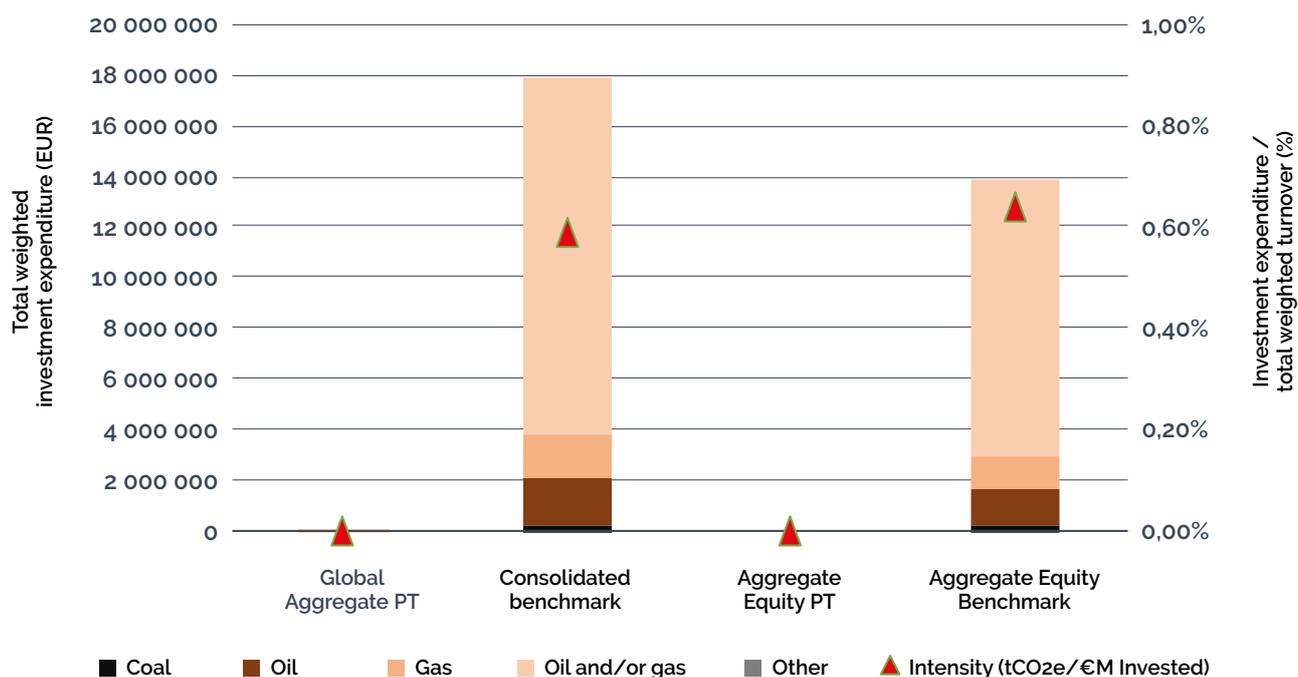
Exposure to activities related to fossil fuels by industry



Main contributors to turnover derived from fossil fuels - Ircantec Global Portfolio

Name	Sector	Weight	Turnover from fossil fuel mining/ extraction	Turnover from fossil fuel production	Total turnover	Weighted average	Climate Action 100+
Subsea 7 S.A.	Energy	0.18%	100%		100%	0.180%	No
Veolia Environnement S.A.	Utilities	1.01%		16%	16%	0.158%	No
Iberdrola S.A.	Utilities	1.05%		5%	5%	0.054%	Yes
Enel SpA	Utilities	0.33%		14%	14%	0.045%	Yes
Naturgy Energy Group S.A.	Utilities	0.18%		21%	21%	0.037%	Yes
EDP - Energias de Portugal S.A.	Utilities	0.30%		12%	12%	0.036%	No
NextEra Energy, Inc.	Utilities	0.07%		46%	46%	0.034%	Yes
Endesa, S.A.	Utilities	0.14%		24%	24%	0.033%	No
Air Liquide S.A.	Materials	0.97%		3%	3%	0.032%	Yes
ENGIE SA	Utilities	0.34%		7%	7%	0.024%	Yes

Weighted capital expenditure related to fossil fuels by type of reserve



Sovereign funds and similar

In accordance with the decree of application of Article 29 of the French Law on Energy and Climate and in line with its engagement to invest its reserves in a trajectory compatible with a 1.5°C scenario, Ircantec has committed to reducing the temperature of its portfolio of sovereign bonds, by using an allocation most favorable to States that are best aligned with the Paris Agreement. Particular attention in terms of allocation is paid to countries aiming to expand their ambitions.

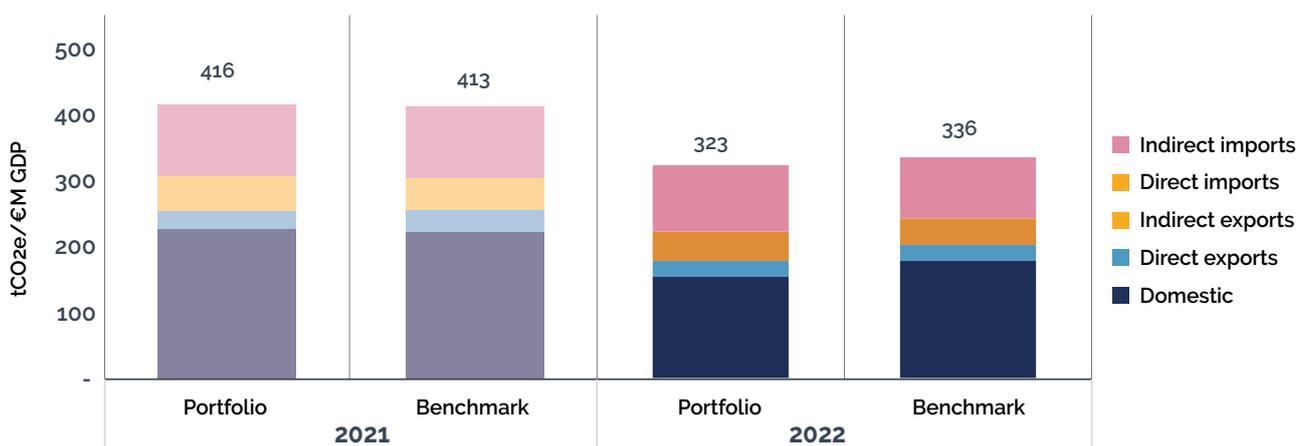
In the carbon footprint analysis of Sovereign states, the scope used varies according to whether governments are considered to be "economic agents" or "regulators". The first definition is the narrowest possible and considers the government as an enterprise, with Scope 1 and 2 emissions being generated by the delivery of public services and defense. The second approach aims to focus more broadly on emissions on a national scale, with the whole economy being the unit of analysis. This approach is consistent with the role and impact of governments which are not limited to just government activities and public services. Emissions related to production and consumption have been considered for each country.

The definitions of the scopes used are presented below:

- Domestic emissions: Emissions generated by goods and services produced and consumed on a given territory;
- Direct imports: Emissions generated in the importing country by goods and services it imports;
- Indirect imports: Emissions generated further upstream in the value chain by goods and services imported by a country;
- Direct exports: Emissions generated in the exporting country by goods and services it produces and which are then exported to another country.

At the end of 2022, the carbon footprint of the sovereign portfolio has significantly fallen on the three carbon intensity measures - carbon footprint per million Euro of GDP allocated, per million Euro invested (tCO_{2e}/€M) and the weighted average carbon intensity (tCO_{2e}/€M GDP) - in relation to the end of 2021. The graph below shows the fall in carbon intensity (weighted average of carbon intensities tCO_{2e}/€M GDP) of the sovereign portfolio between the end of December 2021 and December 2022. The carbon footprint of the benchmark also moved positively. However, the fall is clearly more significant on the portfolio (-22.4% vs -18.6%). The carbon footprint of the Sovereign portfolio remains below that of its benchmark.

Weighted average carbon footprint (tCO_{2e}/€M GDP)



In terms of allocation, the portfolio is over-weighted on countries which have bolstered their climate ambitions or have aligned with the objectives of the Paris Agreement. In these terms, Europe represents 80% of portfolio investments with countries such as France, Italy, Germany or Spain. According to the last report on G7 countries and climate change published by the CDP in September 2022¹², the two best-placed countries of the G7, namely Germany and Italy, are on a +2.2°C trajectory. Then comes France (+2.3°C based on current trends), the United

Kingdom (+2.6°C) and the USA (+2.8°C). By far, Canadian companies have the worst performance with GHG emissions on a +3.1°C temperature trajectory. As the under-performers, Canada and Australia are under-weighted in the portfolio.

¹² <https://www.actu-environnement.com/media/pdf/news-40248-CDP-rapport-climat-engagement-entreprises-G7.pdf>.

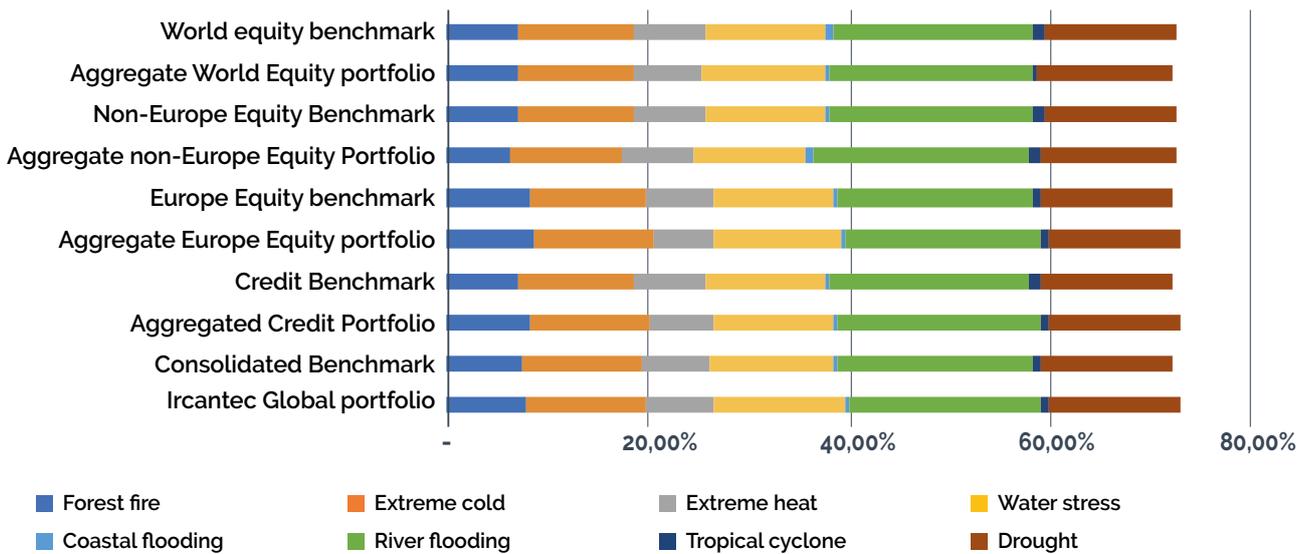
3 - Identification and rating of physical risk

Listed companies

Company assets are assessed based on their exposure and sensitivity to eight types of key hazards: forest fire, extreme cold, extreme heat, water stress, coastal flooding, river flooding, tropical cyclone, and drought. The eighth hazard is a new indicator added by Trucost. We should underline that Trucost has amended its methodology concerning physical risk scores in relation to 2021¹³ which significantly impacts the overall portfolio score, without fundamentally increasing the vulnerability of the portfolio to this type of risk.

The two main results of these assessments are the exposure ratings and financial impacts. The first is a one-off assessment of exposure to climate risks in relation to world conditions, independent of the nature of the asset at a given location. It is noted on a scale of 1 to 100, where 100 is the highest risk possible and 1 the lowest. In parallel to this physical risk exposure rating, Trucost measures the financial impact of these physical risks, which reflect the financial consequence of the modification of exposure to climate risks in relation to a baseline specific to the asset at a given location. The financial impacts are presented as losses potentially related to the climate (e.g. in case of investment spending, operational spending, interruption of activities), as a percentage of the asset value.

Gross exposure score by type of physical risk

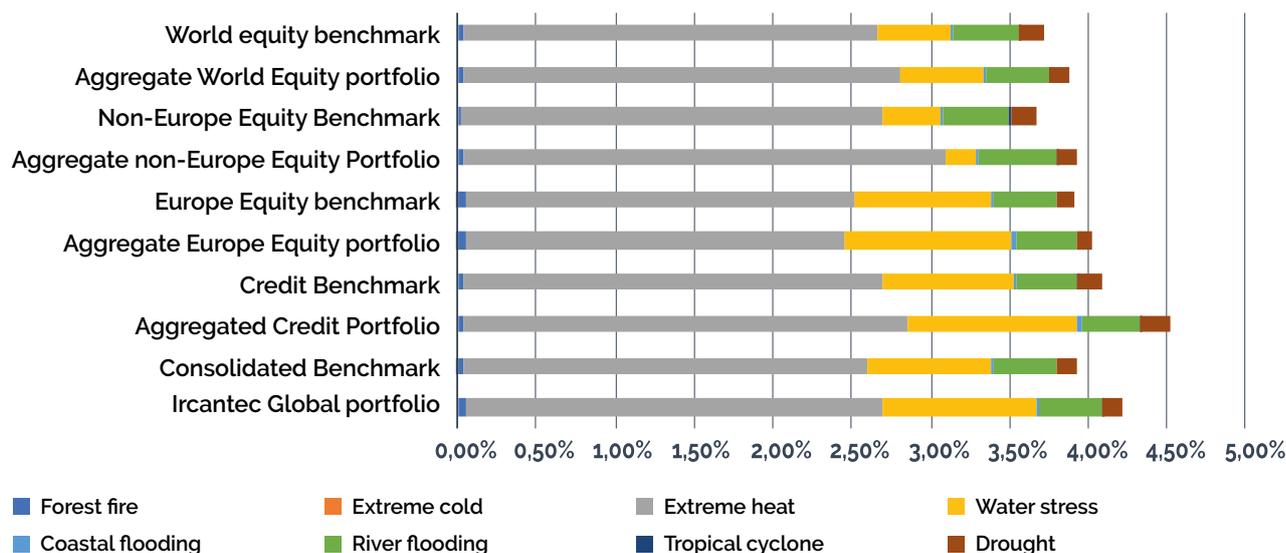


Within the portfolio, an exposure rating over 50 exists for the risk of river flooding. The risk of flooding generates a higher score for all sectors, in particular for the health care sector (highest sector score). This high phenomenon is explained by the increase frequency of flooding events, which have doubled in 20 years across France and Europe. The financial impact analysis reveals that the risk of extreme heat

followed by water stress that are the most significant for the issuer assets in the portfolio. Vulnerability to extreme heat mainly affects the Communication services sector but also Finance and Health care.

¹³ See Appendix 6 on physical risk methodology.

Financial impact by type of physical risk



Exposure score by sector and type of physical risk - High scenario for 2050

	Forest fire	Extreme cold	Extreme heat	Water stress	Coastal flooding	River flooding	Tropical cyclone	Drought
Communication services	12.1	30.7	19.7	31.3	1.2	54.6	2.5	37.5
Consumer Discretionary	20.0	33.1	18.2	28.7	1.4	53.8	1.8	36.6
Consumer Non-Cyclical	23.4	33.4	18.1	32.9	1.5	54.8	1.9	35.3
Energy	29.6	27.1	15.5	17.5	1.5	52.1	1.1	39.6
Finance	17.9	32.0	18.6	38.9	1.2	54.9	1.9	36.6
Health	21.7	31.7	17.1	27.2	1.1	58.7	1.9	36.7
Industry	27.3	32.5	17.5	33.2	1.2	54.3	1.7	35.6
Information Technology	20.6	32.2	18.8	42.5	1.1	56.7	2.8	36.1
Materials	25.7	32.7	16.3	29.8	1.4	55.2	2.3	36.3
Real estate	18.5	34.9	16.3	31.6	1.2	53.4	1.2	38.6
Utilities	28.9	33.9	18.0	47.7	1.1	46.9	1.7	34.5

Financial impact by sector and type of physical risk - High scenario for 2050

	Forest fire	Extreme cold	Extreme heat	Water stress	Coastal flooding	Flood	Hurricane	Drought
Communication services	0.02%		4.96%	1.66%	0.05%	0.43%	0.00%	0.73%
Consumer Discretionary	0.04%		2.57%	-0.27%	0.00%	0.41%	0.00%	0.07%
Consumer Non-Cyclical	0.05%		1.84%	1.21%	0.09%	0.38%	-0.01%	0.09%
Energy	0.03%		1.87%	-0.02%	0.05%	0.48%	0.00%	0.01%
Finance	0.04%		3.52%	0.88%	0.01%	0.42%	0.00%	0.10%
Health	0.05%		3.23%	0.11%	0.00%	0.45%	0.00%	0.09%
Industry	0.06%		2.18%	0.86%	0.01%	0.39%	0.00%	0.08%
Information Technology	0.04%		2.68%	1.23%	0.01%	0.43%	0.01%	0.06%
Materials	0.07%		1.74%	0.14%	0.02%	0.36%	0.00%	0.07%
Real estate	0.04%		2.12%	2.12%	0.00%	0.33%	0.00%	0.15%
Utilities	0.03%		1.22%	4.14%	0.02%	0.27%	0.00%	0.35%

Sovereign funds and similar

The physical risk of sovereigns is not yet analyzed by Trucost. These indicators are being developed and will be included as soon as possible in future communications from Ircantec.

3



Impacts of Ircantec's investments on climate and biodiversity

Ircantec's goal is, on the one hand, to steer the economy through investment choices that favor responsible companies and, on the other hand, to directly finance innovations and infrastructures that support the energy and ecological transition through specific investments (unlisted, green bonds, funds focused on so-called "solution" companies). This does not diminish the fact that, as an institutional investor present in the liabilities of several hundred French, European and global companies, the economic scope of its investments is significant, and as a result its carbon footprint is far from negligible. The new pension scheme regulations (SFDR and in particular Article 29 of the 2019 French Law on Energy and Climate) highlight the need for greater consideration of long-term biodiversity objectives in the strategy.

1 - Carbon footprint

Ircantec's mobilization for the climate is in line with its values of generational solidarity, with the aim of preserving the environment for current and future generations while contributing to supporting the energy and ecological transition by facilitating job creation in the "green economy". Begun in 2009, Ircantec's responsible investor approach (known as its "SRI approach") was strengthened firstly in 2016 in connection with its signature of the Paris call following COP21.

As a result of the climate emergency, Ircantec reinforced its commitments in 2021 to manage its reserves on an emissions reduction trajectory compatible with a 1.5°C scenario. In this context, Ircantec wishes to retain the best practices and adopt the most demanding standards that will enable it to reduce the emissions of its client portfolio. The pension scheme has thus committed to reduce the emissions of its corporate portfolio (equities and bonds) by 7% per year on average until 2050 (the reference year being 2021). The 7% reduction target, with zero or limited overshoot, is derived from the decarbonization trajectory of the IPCC's 1.5°C scenario. To support companies in the energy transition and in accordance with the "Paris Aligned Benchmark – PAB", the exposure of Ircantec's portfolio to high-impact¹⁴ sectors must be at least equivalent to that of its benchmark index. This commitment aims to support the transition by limiting a reorientation of the portfolio towards low-emission sectors only.

Listed companies

The main indicator for assessing the negative impact of investments on the climate is the carbon footprint, in its various metrics. This monitoring is based on the carbon reporting table published by other institutional investors (in particular several Swedish pension funds), which gives a complete view of the carbon profile of the portfolio. It includes an intensity indicator (weighted average carbon intensity), an absolute indicator (total carbon emissions for which Ircantec is responsible), as well as normalized emissions by assets under management (financed carbon emissions). Regarding the scope of carbon emissions, all Scopes have been integrated:

- Direct emissions (Scope 1): CO₂e emissions generated by the company's direct activities according to the definition of greenhouse gases in the Kyoto Protocol.
- Direct emissions (other): Additional direct emissions including those from the following four sources: CCl₄, C₂H₃Cl₃, CBrF₃ and CO₂ from biomass.
- Indirect emissions related to energy purchasing (Scope 2): CO₂e emissions generated by the consumption of electricity, heat or steam.
- First level of supply chain excluding electricity (Scope 3): CO₂e emissions generated by companies supplying goods and services at the first level of the supply chain.
- Other levels of supply chain (Scope 3): CO₂e emissions generated by companies supplying goods and services at the second to the last levels of the supply chain.
- Downstream (Scope 3): CO₂e emissions generated by the distribution, transformation and use of goods and services supplied by a company.

¹⁴ The following are defined as high-impact sectors (NACE classification): Agriculture, Forestry and Fishing, Mining and Extraction, Industrial production, Generation and distribution of electricity, gas, air conditioning, Production and Distribution of water, Sewage treatment, Waste management and pollution removal, Construction, Wholesale and retail, Motor vehicle and Motorcycle repairs, Transport and Storage, Real estate activities.

Table of carbon measures (Scopes 1, 2 and 3 of corporate investments)

	Portfolio		Benchmark	
	2022	2021	2022	2021
Weighted Average Carbon Intensity(tCO ₂ e/€M)	921	1,168	1,106	1,300
Evolution of carbon intensity in relation to previous year (%)	-21.1%		-14.9%	
Total carbon emissions (tCO ₂ e allocated based on corporate securities including cash)	3,152,437	4,163,136	4,525,671	5,021,740
Carbon intensity per million Euros of turnover generated (tCO ₂ e/€M turnover)	1,080	1,422	1,452	1,635
Carbon intensity per million Euros invested (tCO ₂ e/€M invested)	389	424	565	514
Equity segment				
Weighted Average Carbon Intensity(tCO ₂ e/€M)	838	1,327	1,123	1,358
Total carbon emissions (tCO ₂ e allocated based on corporate securities including cash)	2,091,141	3,120,730	3,126,860	3,116,410
Carbon intensity per million Euros invested (tCO ₂ e/€M invested)	349	521	589	516
Corporate bond segment				
Weighted Average Carbon Intensity(tCO ₂ e/€M)	1,027	974	1,070	1,193
Carbon intensity per million Euros invested (tCO ₂ e/€M invested)	410	298	514	351

Concerning the target of a 7% reduction in the emissions of the corporate portfolio, this will be expressed in terms of intensity and will integrate direct and indirect greenhouse gas emissions. In accordance with European indexes aligned with the Paris Agreement, the Paris Aligned Benchmark - PAB, scope 3 will be progressively integrated based on the following time scale:

- From the start of the commitment (2022): Energy (oil and gas) and Mining sectors
- After 2 years: integration of the Transport, Construction, Materials and Industrial activities
- After 4 years: all sectors

Table of carbon measurements (Scopes 1, 2 and 3 only on mining and energy sectors)

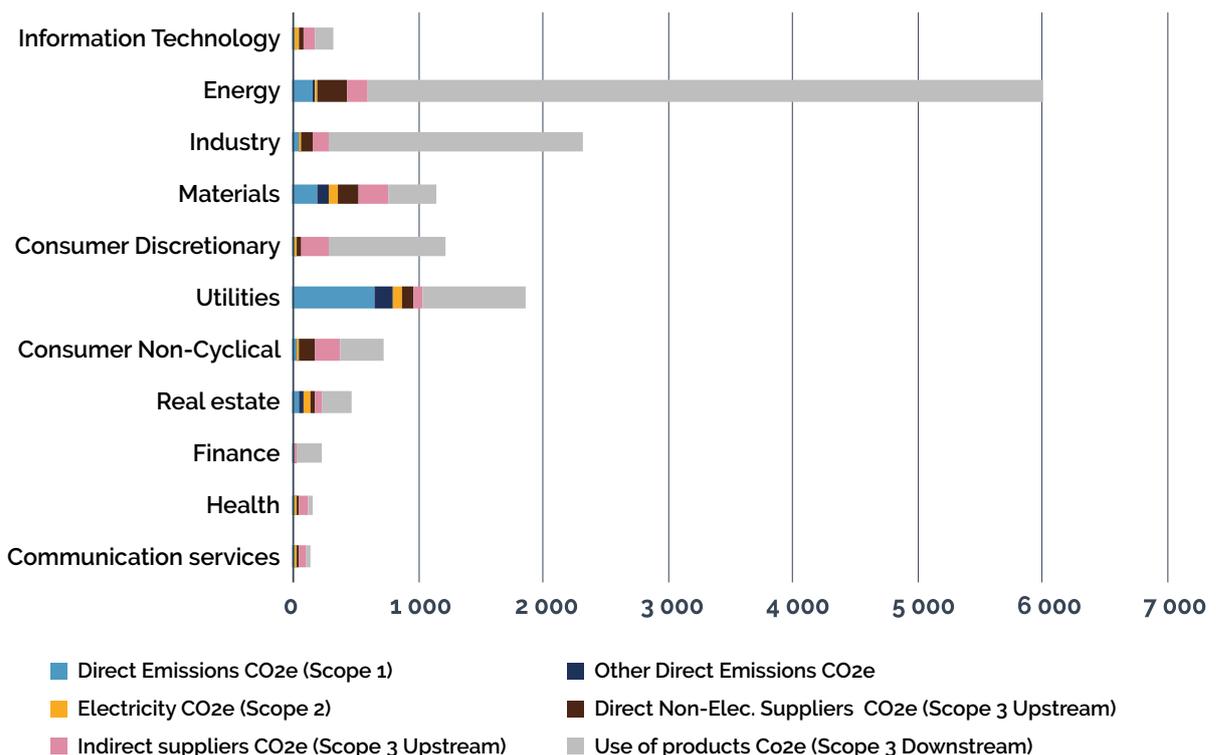
	Portfolio	Benchmark
	2022	2022
Weighted Average Carbon Intensity(tCO ₂ e/€M)	144	456
Carbon intensity per million Euros of turnover generated (tCO ₂ e/€M turnover)	171	772
Carbon intensity per million Euros invested (tCO ₂ e/€M invested)	62	300
Equity segment		
Weighted Average Carbon Intensity(tCO ₂ e/€M)	117	515
Carbon intensity per million Euros invested (tCO ₂ e/€M invested)	38	331
Corporate bond segment		
Weighted Average Carbon Intensity(tCO ₂ e/€M)	225	337
Carbon intensity per million Euros invested (tCO ₂ e/€M invested)	113	237

At the end of 2022, the weighted average carbon intensity of the equity and bonds portfolio for scopes 1, 2 and 3 (energy and mining industry sectors) amounts to 144 compared to 237 at the end of 2021, representing a -39% reduction in carbon intensity. In the end of year portfolio analysis for 2022 produced by Trucost at the end of 2022, the weighted average carbon intensity (scopes 1, 2 and 3, all sectors), amounts to 921 compared to 1168 at the end of 2021, a -21.1% reduction in the portfolio's carbon intensity. Although most benchmarks have succeeded in lowering their carbon intensity, the portfolio managed to reduce its carbon more than the reference benchmark. Ircantec fully rose to the 7% decarbonization target by investing more in companies active in the energy transition which are sustainably transforming their production activities with low-carbon solutions.

The global portfolio reported better performance than its benchmark. This is partly explained by the portfolio's sector weightings, in particular the under-weighting of the energy sector and the over-weighting of financials, but also by a good selection of stocks within each sector, and particularly within the materials sector. Exposure to high-impact sectors amounts to 64.54% compared to 61.41% for its benchmark index with over-exposure to the sectors of industry, materials and real estate. Ircantec fulfills its obligation of financing sectors which support the energy transition.

The equity and bond segments have total carbon emissions below their benchmark. This can partly be explained by the portfolio's under-weighting of the energy and communication services sectors, which have larger carbon footprints. The sector with the highest carbon intensity is the Energy sector. This sector incorporates the oil & gas majors. However, due to its under-weighting, it is not the sector that has the strongest negative impact on the relative carbon intensity of the portfolio compared to its benchmark. In fact this is the case of the Industry and Materials sectors, which require extensive supply chains, leading to high scope 3 downstream emissions. The Materials sector was over-weighted but had a positive allocation on the portfolio with the selection of well-positioned securities from the sector, generating a positive effect in relation to the benchmark. In this sector, companies engaged in reducing their emissions have been over-weighted, such as Fortescue Metals for example, which will invest 6.2 billion US dollars over the next decade in decarbonizing the mining of iron. The group promises that it will reach net zero emissions by 2030 and that it will decarbonize its whole value chain.

Breakdown of Carbon intensity tCO2e/€M turnover of the portfolio according to different scopes and GICS sectors



Ircantec Global Portfolio - Emissions from all scopes (1+2+3)

	Sector weight		Carbon Intensity		Allocation of carbon footprint		Total
	Portfolio	Benchmark	Sector	Security	Sectoral allocation	Security allocation	
Communication services	4%	5%	133	147	-0.8%	0.0%	-0.7%
Consumer Discretionary	13%	12%	1,224	1,252	0.1%	0.3%	0.4%
Consumer Non-Cyclical	12%	11%	715	723	0.5%	0.1%	0.6%
Energy	1%	11%	6,010	4,606	22.3%	-0.9%	21.4%
Finance	17%	16%	237	236	0.6%	0.0%	0.5%
Health	9%	8%	147	236	0.7%	0.5%	1.2%
Industry	19%	16%	320	1,641	-0.5%	-9.1%	-9.6%
Information Technology	5%	4%	327	526	0.6%	0.7%	1.3%
Materials	12%	10%	1,061	2,461	-1.4%	11.7%	10.3%
Real estate	1%	0%	428	987	0.0%	0.2%	0.2%
Utilities	7%	6%	1,721	1,741	-0.2%	0.1%	-0.1%
TOTAL	100%	100%	1,080	1,452	22.0%	3.6%	25.6%

According to the current carbon accounting methodology, which includes all of the scopes, the exclusion of the following ten stocks would reduce the carbon intensity of the global portfolio 35% (per million of revenue generated). It is a measure of contribution. In other words, the weight of a security in the portfolio has a strong influence on the final

result, as does its carbon intensity expressed as a GHG/revenue ratio. Thus, Compagnie de Saint-Gobain makes a greater contribution to the portfolio intensity than Equinor due to its greater weighting, while generating lower carbon intensity than the Norwegian oil company.

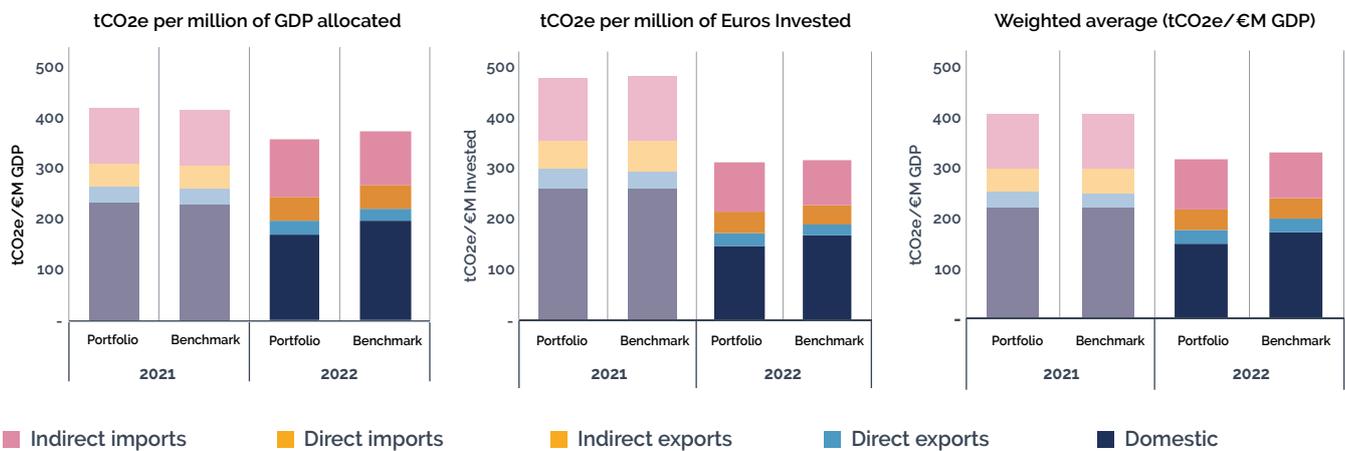
Name	Carbon footprint scopes 1-2-3 (% of portfolio)	Contribution of scopes 1+2+3 (Carbon Intensity/Turnover)
Signify N.V	3.06%	-15.15%
Compagnie de Saint Gobain SA	1.44%	-5.29%
Orano SA	1.34%	-3.78%
Michelin CGDE A Beiges	1.78%	-3.13%
Fortescue Metals Group Limited	2.69%	-1.85%
Schneider Electric S.E	0.70%	-1.77%
ASSA ABLOY AB	0.48	-1.65%
Naturgy Energy Group	1.22%	-0.97%
ENGIE SA	1.58%	-0.92%
Alstom SA	0.24	-0.84%

Sovereign funds and similar

The calculation of the carbon footprint at the portfolio level is based on the average carbon exposure (domestic, imported and exported emissions compared to GDP in millions of euros) of each country weighted according to their weight in the portfolio. It should be noted that supranational organizations and development banks (EIB, IBRD for example) are included in the analysis of listed companies for methodological issues, not in the sovereign analysis as they cannot be attached to a particular country.

GHG/GDP exposure (domestic GHG + imported + exported) for the sovereign portfolio and its benchmark

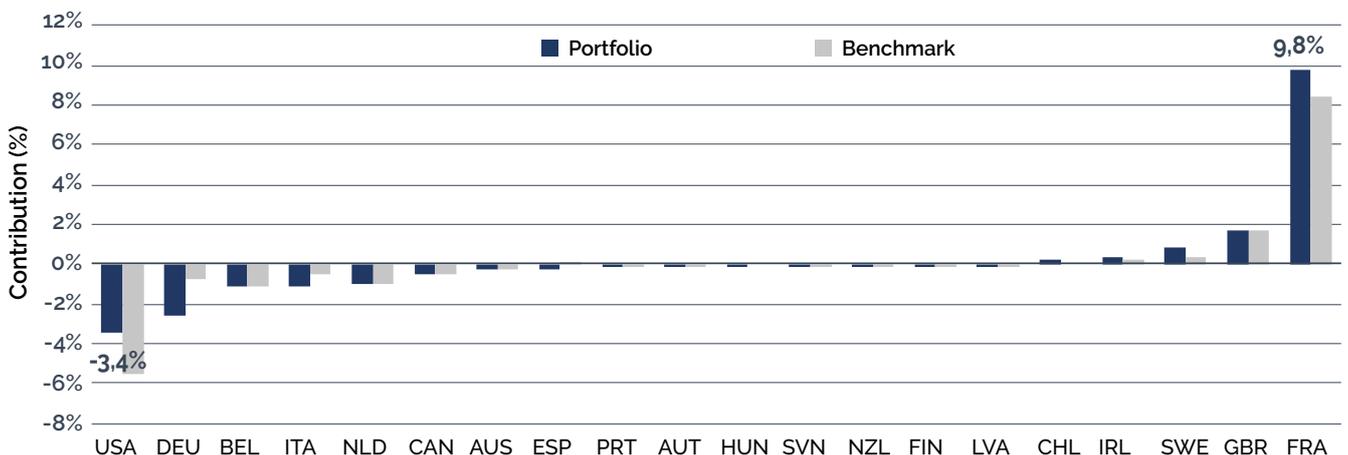
GHG (domestic + imported + exported)	2022	2021
Portfolio	322.79	415.90
Index	336.46	413.19



The carbon footprint of the sovereign portfolio has decreased by almost 22% since the end of 2021 as illustrated in the table above. It is essentially related to domestic and imported emissions. Nevertheless, the benchmark has followed the same progression: the reduction in the carbon intensities of European countries and the United States largely explains this development.

French and UK bonds are the lowest contributors to the carbon footprint per million of GDP allocated, due to their weight and relatively low intensities. If the USA were excluded from the Sovereign portfolio, its footprint would be almost 3.4% lower. Inversely, the same footprint would be 9.8% higher if France was not represented. However, Germany and US bonds make the highest contribution to raising the carbon intensity of the portfolio.

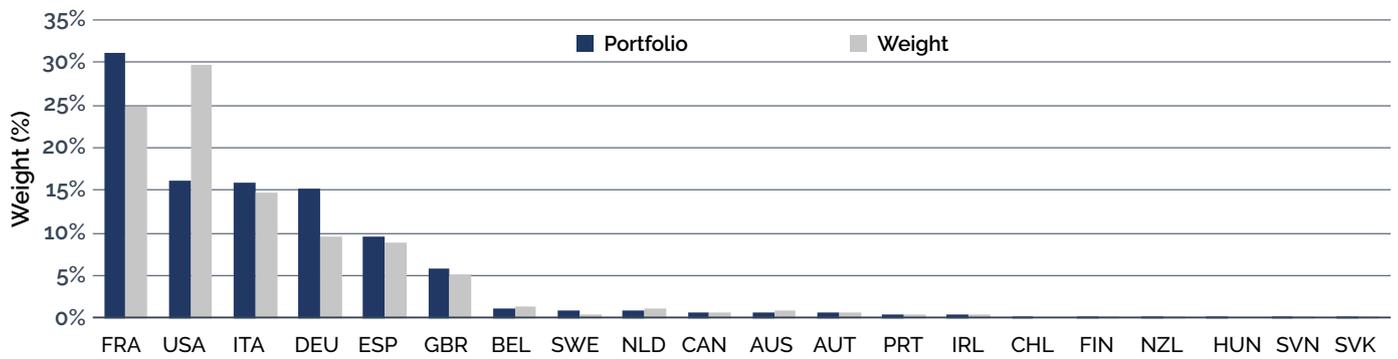
Performance Analysis - Carbon Footprint per million GDP Allocated



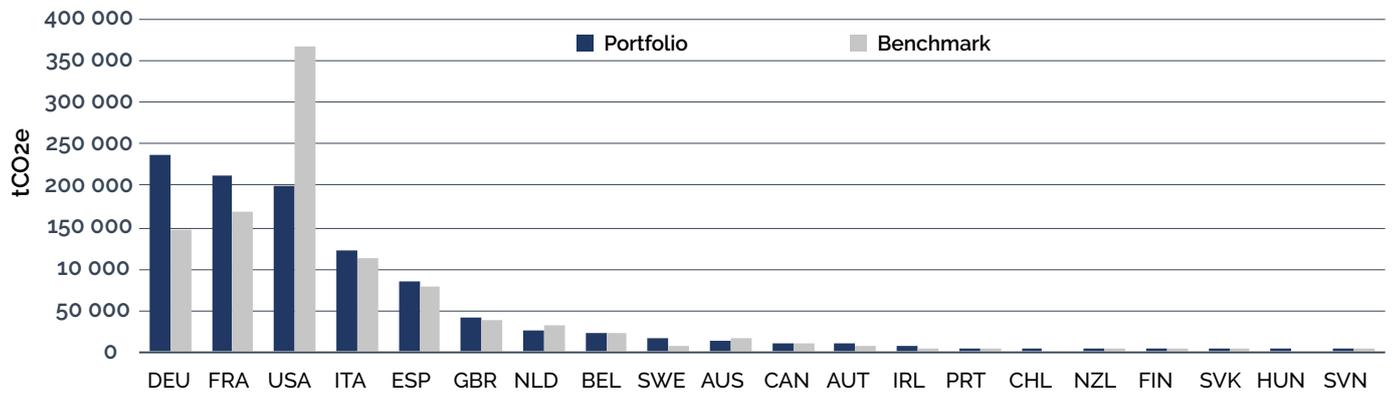
The graphs below compare the carbon intensities of issuers according to their weight in the portfolio and their absolute footprint. In tCO₂e absolute, the carbon footprint of the US in the portfolio is much higher than that of Slovakia. On the other hand, once emissions are compared against GDP, it is clear that Slovakia's emissions are very high compared to the size of its economy. Insofar that the absolute footprints of the portfolio are influenced by the issuer debt levels, it is also useful to analyze country intensities independently from their weightings. The graph below proposes such an analysis, showing

the 10 largest intensities and the 10 lowest per million Euros of GDP. It is important to note that less well developed countries such as Slovakia, Hungary or Slovenia are penalized by this monetary indicator, without forcibly having a very high absolute footprint, due to the non-parity of currencies and much lower levels of wealth.

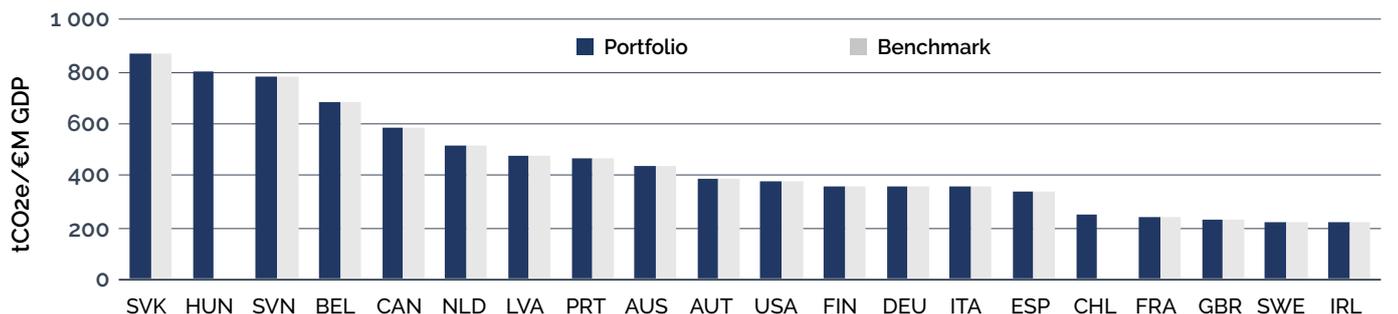
Composition of portfolio - Weight (%)



Primary contributors - Absolute footprint (tCO₂e)



Breakdown of intensities by country (tCO₂e/€M GDP)

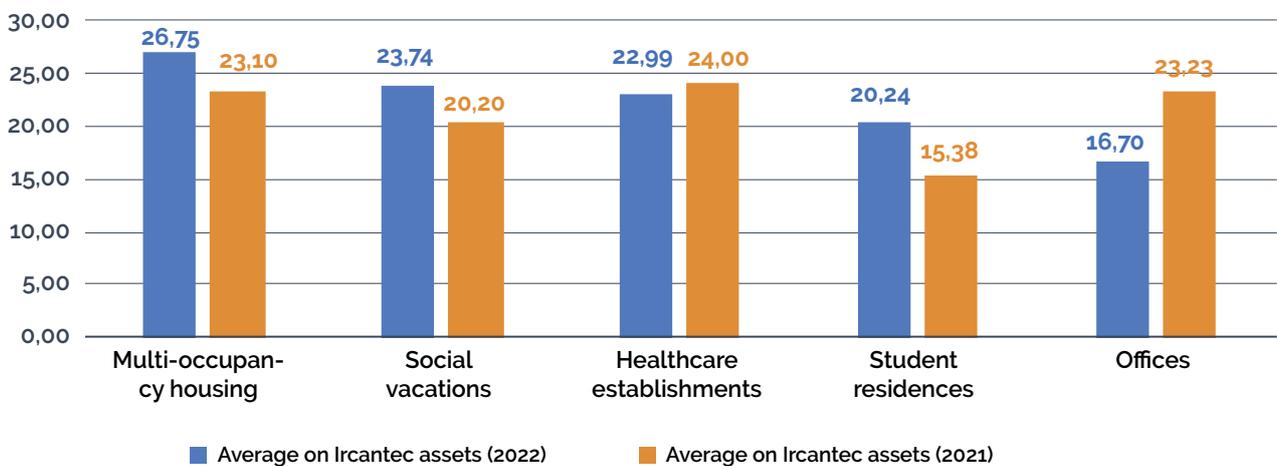


Real estate

As in previous years, the carbon footprint of some of the real estate assets present in the unlisted portion of Ircantec's portfolio was measured. A carbon intensity was therefore calculated from the CO₂ emissions (Scopes 1 & 2) of each building in relation to their surface area (m²). With regard to the OPPCI (Organisme Professionnel de Placement Collectif Immobilier) - undertaking for collective investment in real estate) segment, the Scheme has invested in assets held directly and in equity investments with a diversified allocation strategy that combines offices, housing, student residences, health establishments

and social tourism. Thus, 24 assets were studied for a total carbon footprint of 4,156 tonnes of CO₂ per year and an overall surface area of 180,236 m² TNFA (Total Net Floor Area), which represents an average of approximately 23,06 kgCO₂/m²/year (compared to 21.75 kgCO₂/m²/year with 3,900 tonnes of CO₂ emissions in 2021). This slight upturn of the absolute carbon footprint is explained by an improvement in the qualification of data for fiscal year 2022. Moreover, on certain assets, the increased occupation rate resulted in increased consumption.

Average carbon intensity by asset class (kgCO₂/m²) - OPPCI scope (real estate)



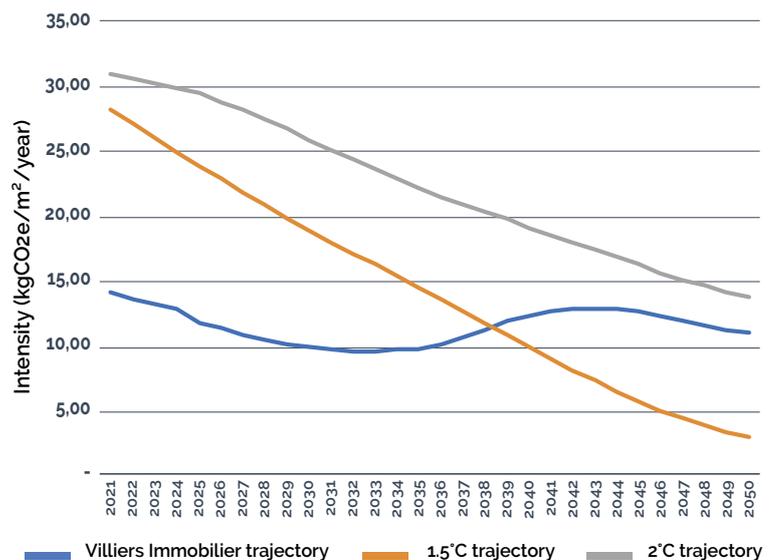
Carbon trajectory

Swiss Life France worked with consulting firm CBRE (previously GreenSoluce) to produce an analysis of the carbon trajectory of Ircantec's real estate assets. For this analysis, the CRREM¹⁵ tool (Carbon Risk Real Estate Monitor) was used, with the objective of risk assessment of a real estate stock in light of decarbonization needs.

In terms of the scope of the study, this applies to assets built and in VEFA mode (off-plan construction) mainly held by the OPPCI (which represents over 74% of the assets in this real estate segment).

The portfolio analyzed is below a 2°C trajectory by 2050. In terms of the 1.5°C trajectory, this is maintained beyond 2030 (2038-2039) until the rise induced by the changes to the energy mix (lower nuclear energy in the scenario analyzed).

Average intensity of GHG emissions of the portfolio in relation to the Paris Agreement



¹⁵ This tool plots a trajectory (2018-2050) taking into account GHG emissions and the energy consumption of real estate assets. Note that this trajectory has been defined for all EU countries as per the recommendations of the Paris Agreement (two possible scenarios: 1.5°C and 2°C) and for each type of building (offices, residential, hotel, healthcare, retail business, etc.).

2 - Green share

Listed companies

The positive impacts of companies on the climate remain difficult to quantify for most companies. The most common approach is to break down the activities carried out by a company and to estimate whether or not each component is virtuous. The European Union's green taxonomy provides a common framework for classifying activities. Each economic activity covered has performance thresholds that measure its contribution to environmental objectives (climate change adaptation and mitigation, for the time being). The taxonomy describes 96 business activities - linked to the 13 macro-sectors of the NACE (Statistical Classification of Economic Activities in the European Community) classification - which can be classified as "transitional" or "enabling". General activities are those with a direct potential to attenuate carbon emissions (e.g. renewable energies). Transitional activities are those that may have a relatively high carbon intensity but which have high potential to reduce their carbon emissions over time (e.g. steel production). Enabling activities are those that could support the reduction of carbon emissions in other sectors (e.g. wind turbine manufacturing). The graph below displays the eligible revenue of the portfolios and benchmark indexes, broken down by objective (e.g. mitigation or adaptation) and by type of corresponding activity if they were classified as aligned. Methodologies are being refined to delineate the green share of companies while avoiding estimates. Trucost "EU Taxonomy Revenue Share" data provide an assessment of the proportion of company revenue eligible for alignment with the taxonomy, using a proprietary Trucost mapping of the taxonomy system classification of sectors and the business activities described in the taxonomy. Trucost now provides an assessment of the final proportion aligned on the two criteria published to date by delegated acts: climate change mitigation or adaptation. A distinction must be made between eligibility and alignment, which requires that all four conditions must be met:

- Make a substantial contribution to at least one of the six environmental objectives: climate change mitigation; climate change adaptation (published in June 2021); sustainable use and protection of water and marine resources; transition to a circular economy; pollution prevention and control; protection and restoration of biodiversity and ecosystems.
- For each economic activity, comply with a certain number of technical screening criteria (TSC).
- Do no significant harm to any of the five remaining objectives - (DNSH).

- Conform to a certain number of minimum social safeguards: meet OECD guidelines, UN guiding principles and ILO requirements on fundamental rights.

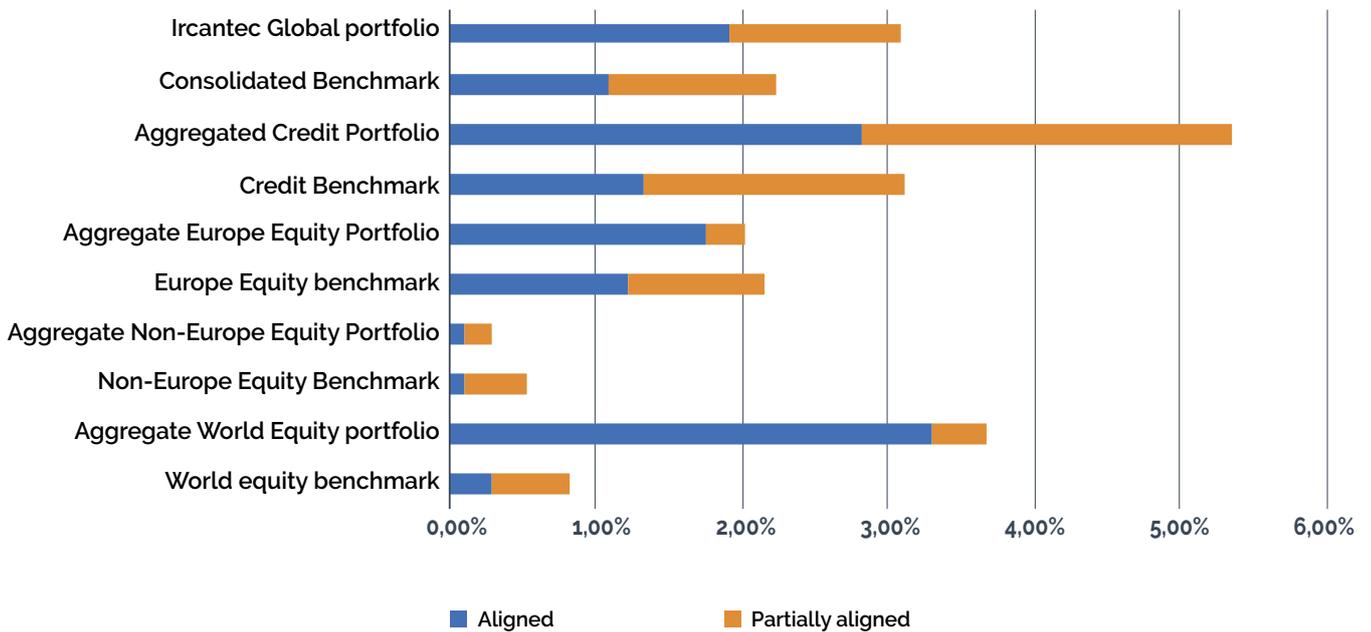
In accordance with the EU Taxonomy disclosure directives, Institutional investors are required to declare the share of their aligned revenue generated with companies subject to the EU Non-Financial Reporting Directive (NFRD). This may be supplemented by voluntary disclosure of the alignment of companies not subject to the NFRD.

The green share of the thirteen eligible macro-sectors (weighted average of the green shares of companies) amounts to 37.87% in 2022 compared to 30.76% for the benchmark index. 7.12% of the portfolio's eligible income is associated with enabling activities and 4.2% with transitional activities. The eligibility of business income for the European taxonomy grew slightly compared to 2021. A particularly strong contribution came from the industry sector, for example specialized chemistry or electrical components and equipment.

The graphs below show the total amount of aligned or partially aligned turnover broken down by potential objective and type of activity. Given the lack of available data to assess the substantial contribution of each activity, Trucost uses a Taxonomy Alignment Coefficient (TAC) to define the portion of eligible turnover aligned with the Taxonomy. For example, 15% of turnover from construction and real estate can be classified as meeting the substantial contribution requirement by using the TAC. The difference between aligned turnover using the TAC and that not using it provides an indication of the extent to which industry estimates are used instead of company performance. We note a clear difference between the share of Taxonomy-eligible turnover and aligned turnover, which is normal considering the many cumulative criteria that must be satisfied. Taxonomy-aligned turnover of the portfolio amounts to 1.91% compared to 1.09% for the benchmark¹⁶. The energy sector generates the most Taxonomy-aligned turnover due to companies invested in renewable energies.

¹⁶ Note that the calculation was also produced by Sustainalytics. The result is a portfolio eligibility level of 11.44% and a Taxonomy alignment of 5.24%. This variation in results is explained by the use of different accounting methods by the two providers.

All objectives and types - With TAC



Note that in the absence of a provider on the unlisted segment, we are as yet unable to calculate the Taxonomy alignment of these assets.

Sovereign funds and similar

In terms of the sovereign portfolio, we analyzed the energy mix. In 2022, the mix comprised 37% of brown energies, 31% of green energies and 31% nuclear. These results are stable compared to 2021.

3 - Climate impact investments

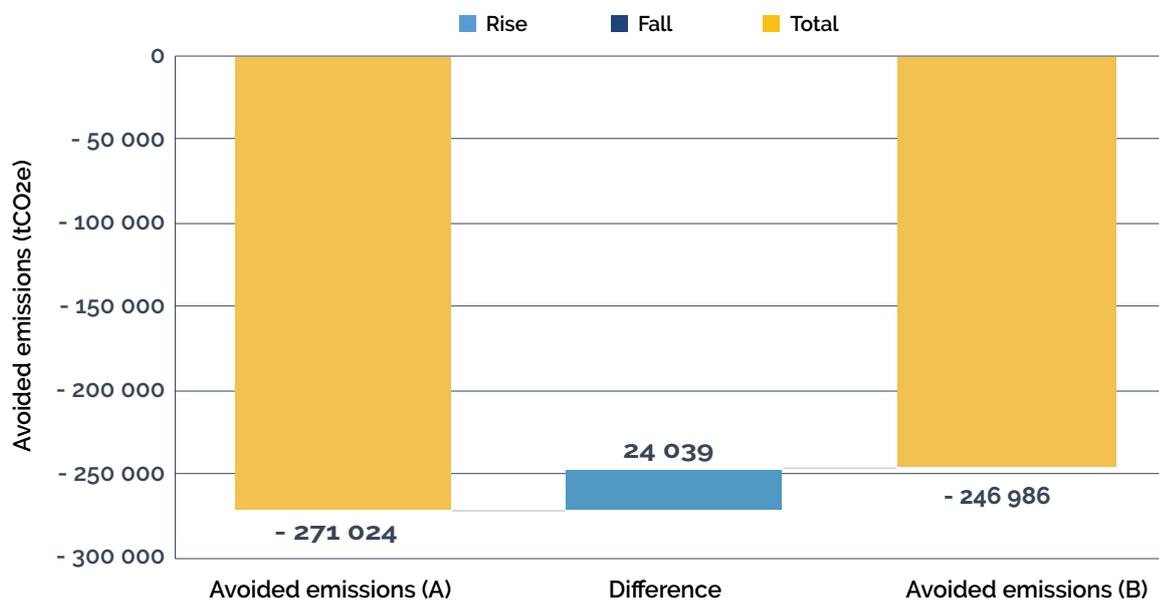
Green bonds

Green bonds are specifically used to raise fund for projects offering environmental benefits such as renewable energies, energy efficiency, reduction of water use and adaptation to climate change. They are grouped together in a single dedicated fund which was created to accommodate the specific aspects of these assets in terms of market depth, issuer profile, audit, and labeling in particular. To systematically assess and quantify the positive impacts of green bonds, 324 such green bonds from across the portfolio and spread across various credit funds, were aggregated together. Trucost estimated the quantification of absolute and avoided carbon emissions as well as the potential positive environmental impacts of 141 bonds, making a value of the portfolio covered of €479 million.

The graph below shows the potential reductions in carbon emissions achieved by the green bond

portfolio on an annualized basis. Avoided emissions are calculated by comparing the emissions over the life cycle of each projects - including the phases of construction, operation, and end-of-life of financed assets - to the emissions of a Business as Usual baseline scenario. The left hand measurement Avoided Emissions (A) gives priority to published data and only uses calculated data if no disclosures are available. The right hand measurement Avoided Emissions (B) gives priority to calculated data rather than disclosures. Lastly, the "difference" measure shows the net difference in the event that both disclosed and calculated data are available. According to published data, avoided emissions amount to 271,024 tCO₂e compared to 246,986 tCO₂e for calculated data, with a difference of 24,039 tCO₂e between the two methodologies. Renewable electricity and heat production, transport and buildings represent the categories with the highest annualized avoided emissions.

Annualized avoided emissions



Main contributors (avoided emissions per million invested)

Issuer	Weight	CBI category	Green projects	Avoided emissions (B)	Avoided emissions (B)
E.ON SE	1.03%	Transmission, distribution, and storage	100%	-9.752	-11,273
SNCF Réseau	0.49%	Transport	100%	-2.515	-2,921
Intesa Sanpaolo S.p.A.	0.22%	Other Green Funds	100%	-2.090	-2,443
Naturgy Finance B.V.	0.94%	Production of Renewable Electricity & Heat	100%	-1.690	-1,827
Terna - Rete Elettrica Nazionale Società per Azioni	0.15%	Transmission, distribution, and storage	76%	-0.920	-1,614
Électricité de France S.A.	1.43%	Production of Renewable Electricity & Heat	100%	-1.830	-1,464
International Finance Corporation	0.37%	Other Green Funds	100%	-1.009	-1,442
EDP Finance B.V.	1.46%	Production of Renewable Electricity & Heat	100%	-0.974	-1,415
EDP Finance B.V.	0.74%	Production of Renewable Electricity & Heat	100%	-0.957	-1,395
Iren SpA	0.38%	Production of Renewable Electricity & Heat	100%	-0.798	-1,391

Financing the energy transition

Ircantec supports the energy transition of the territories by financing local authorities, public institutions, small infrastructure projects, mainly French, in the fields of renewable energies, energy transition and the environment. This financed green infrastructure directly contributes to SDGs 7 and 9 (Affordable and Clean Energy & Industry, Innovation and Infrastructure). These investments are made through:



- A dedicated multi-asset fund that invests directly in projects or unlisted companies compatible with these objectives and 13 funds (infrastructure funds and thematic private equity) that contribute to this objective: BTP Impact Local, CapEnergie 3, Demeter 4 Infra, Paris Fonds Vert, Infragreen II, Eurofideme 3, Eurofideme 4, Effithermie, EnRciT, Infragreen IV, Pearl Infrastructure Capital, Swen Impact Fund for Transition and its successor SWIFT 2. Nine of these funds are GreenFin labeled (CapEnergie 3, Infragreen II, Demeter 4 Infra, Eurofideme 3, Eurofideme 4, Paris Fonds Vert, Infragreen IV, Pear Infrastructure Capital and SWIFT 2). Ircantec has invested €270 million in these green infrastructures; at December 31, 2022, the market value of these funds amounted to €168.95 million.
- The dedicated "green bonds" fund: the amount of its investments in green bonds is €800.58 million, or 6% of its reserves;
- A dedicated European equity fund managed by Mirova whose investment strategy focuses on environmental issues and more particularly environmental innovation in the following areas: Renewable Energy, Clean Transport, Energy Efficiency, Sustainable Waste and Water Management, Sustainable Agriculture and Green Building. These investments amount to €978.19 million, or 7.34% of the reserves.

These last two dedicated funds received the Greenfin label in 2021.

- Seven open funds invested in the stock of companies contributing to the EET (renewable energies, energy efficiency, buildings, industry, transport) for a total amount of €207.32 million, one of which holds Greenfin certification (Sycomore Éco-solutions).
- A fund launched in 2022 invested in Global stock, with a value of €184.8 million and where 33% of companies invested in by the fund make a positive contribution to climate stability by limiting greenhouse gas emissions to limit the global temperature rise to below 2°C.

Ircantec has strengthened its commitment and set itself a target EET financing objective of at least 20% of its reserves by 2024 (16.5% of reserves were dedicated to this goal at the end of December 2022).

4 - Exposure to other environmental factors (excluding climate)

Forests have three functions: economic, social and environmental. Forest managers seek to reconcile these three functions, although the production function has historically taken precedence. In recent years, the other two functions have been gaining in importance, particularly due to better visibility of forestry activities by the general public. Thus, forests have a special role to play in mitigating the effects of climate change (carbon sequestration in forests and carbon storage in wood), preserving biodiversity and supplying many ecosystem services (preservation of landscapes, water quality, etc.).

Consequently, forestry management must in particular ensure it is possible to continuously produce wood, a material with many uses and an intrinsically renewable resource that combines performance, durability and adaptability, while integrating environmental issues into silviculture (preservation of biodiversity, quality of soil, water, etc.) or taking into account stakeholder expectations.

As of December 31, 2022, the Ircantec group owns almost 4,168 hectares (16 sq. miles) of forest land in France through the forestry investment vehicle Gestion Forestière de Brèves. As part of these management activities, the Forestry Company has a socially responsible and eco-friendly forest management , policy, in particular:

- By ensuring the multi-functional use of forests to pursue an objective of wood resource production to meet the growing needs of the industry, indispensable to achieving France's climate objectives; this also contributes to reducing the effects of imported deforestation;

- By ensuring the renewal of forests after each parcel is felled, using the most suitable solution for the local context (plantation or natural regeneration) as part of sustainable land management;
- By seeking to ensure the diversity of species, especially when renewing mature populations to improve their resilience and land biodiversity; their selection is subject to lengthy examination to ensure their suitability for the land plot;
- With sustainable forest management certification (PEFC) audited according to processes defined by the applicable standard; and
- By respecting the engagements in the European Green Deal which will be addressed in an annual report.

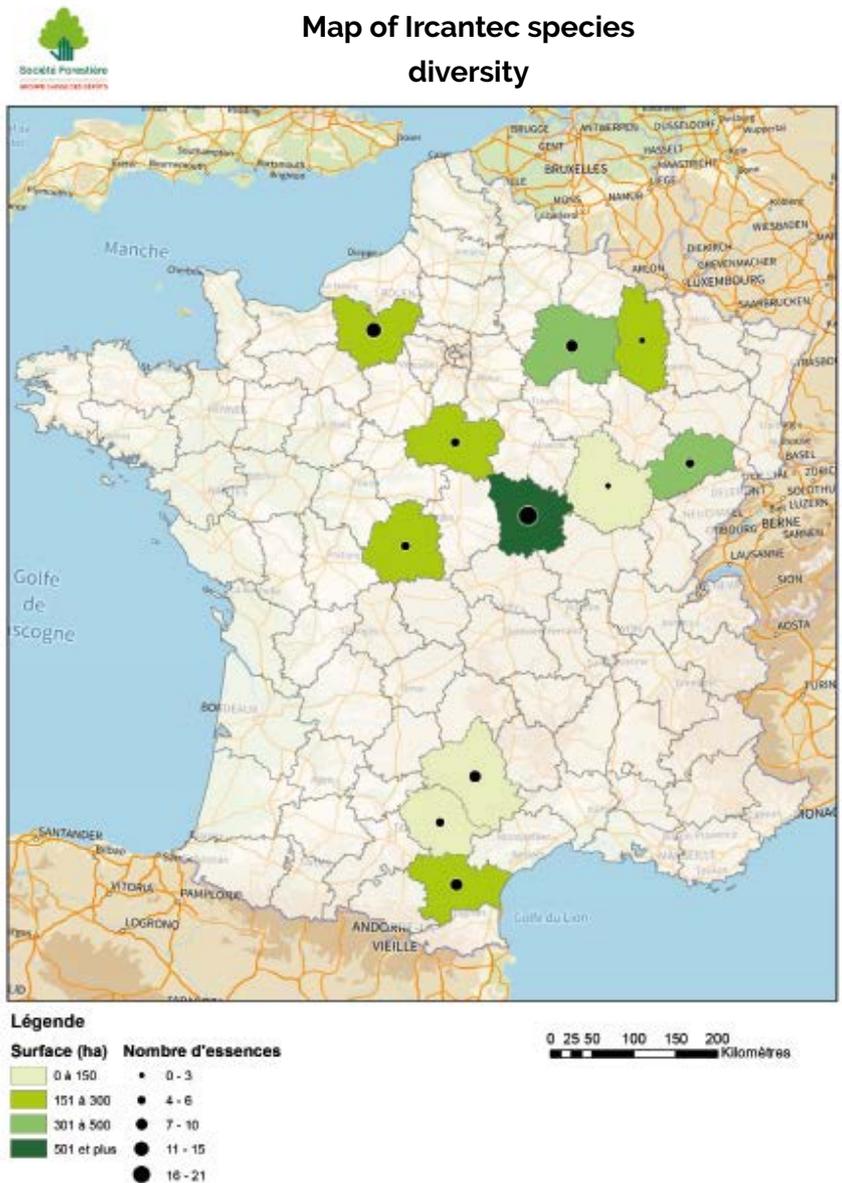
As part of its sustainable forestry management strategy and the renewal of its mandate, in 2022 the Ircantec group sought to promote new missions and define indicators that would provide a long-term goal to its objectives of meeting social, environmental and economic issues which define the multi-functional nature of forests.

Therefore, the following ESG monitoring indicators were determined (with objectives if they exist):

- Organize the resilience of the forest (target of 100% sites planted with at least two species by 2026);
- Act with respect for stakeholders (target to deploy all opportunities for dialog across all territories by 2026);
- Environmental certification (target to maintain PEFC certification across 100% of assets);
- Protect biodiversity (target of inventorying 100% of assets under the Index of Biodiversity Potential by 2026; identify 1% of assets in natural development zones by 2026);
- Protect the quality of water;

- Protect soils and prevent erosion (target to assess 100% of land areas to replant (excluding Landes de Gascogne by 2026);
- Increase carbon sinks: in 2022, forestry activities enabled the capture of 28,562 tonnes eq. CO₂; and
- Support non-financial reporting practices.

In addition to silviculture, which aims to produce quality wood, forest management offers the ability to optimize carbon stock, biodiversity, resilience to climate change and all the benefits linked to ecosystem services.



5 - Biodiversity analysis of the portfolio

An environmental footprint is calculated at the corporate portfolio level. The latter quantifies the environmental impact of greenhouse gas emissions, water use, waste, air, soil and water pollutants, as well as the use of natural resources. The analysis focuses on the impacts associated with the company's own activities but also those of its suppliers upstream, all the way back to the extraction of the raw materials. Environmental impacts are often hidden in global supply chains, which is why Trucost uses

an Environmental Extended Input-Output (EEIO) model to isolate responsibilities at each level of the value chain. An environmental cost is attributed to each resource and pollutant in order to compare the different environmental impacts. The environmental footprint ratio of carbon emissions per million Euros of turnover (CE/Turnover), carbon emissions per million Euros invested (CE/I) and the weighted average (WA) of environmental intensities are the three indicators discussed below.

The overall portfolio generates fewer environmental costs than its benchmark, and it has generally succeeded in reducing them between 2021 and

Direct and indirect costs	2022		2021	
	Portfolio	Index	Portfolio	Index
Environmental intensity by amount invested (CE/I)	1.14%	1.51%	1.1%	1.2%
Environmental intensity by million of turnover (CE/ Turnover)	3.13%	3.86%	3.6%	4.0%
Weighted Average Environmental Intensity (tCO ₂ /€M Turnover)	2.76%	3.34%	3.1%	3.4%

2022. Indeed, the environmental costs per million Euros of turnover fell from 3.6% to 3.13% between 2021 and 2022. The environmental footprint of the Ircantec Global Portfolio indicates that each million Euros of turnover generated by the portfolio will destroy on average 19% less natural capital than the index.

Analysis indicates that the weighting of the Energy sector in the global portfolio improves the environmental footprint by 2.66%. Furthermore, for the same sector, a selection of less harmful stocks than the index improves the overall portfolio performance for an aggregated sector effect of 2.78%.

Trucost also proposes a biodiversity rating. The primary objective of the biodiversity criterion is to verify whether companies are aware of risks relating to biodiversity, if they include stakeholders in the development and implementation of their biodiversity strategy, and if the implementation is incorporated in an internal or external assurance process. Biodiversity scores are generated by the annual Corporate Sustainability Assessment (CSA) which analyzes the engagements of multiple companies.

The Biodiversity Score for each Portfolio/Benchmark or even for each sector, is the weighted average of the scores of individual constituent companies.

	2022	
	Portfolio	Index
Biodiversity score	17.6	18.4

The table below highlights the sector variations of portfolios in relation to their respective benchmarks, in terms of weighting within the portfolio and of Biodiversity score.

Ircantec Global portfolio

Sectors	Sector weight (%)		Weighted average of Biodiversity scores		Allocation of Biodiversity score		Total Effect
	Portfolio	Benchmark	Portfolio	Benchmark	Sectoral allocation	Security allocation	
Finance	0%	0%					
Consumer Discretionary	13%	14%	17.33	15.62	0.17%	1.17%	1.34%
Communication services	4%	5%	11.80	10.66	0.32%	0.24%	0.56%
Industry	19%	15%	14.11	8.52	-2.57%	5.87%	3.30%
Health	14%	17%	5.62	5.60	2.60%	0.01%	2.61%
Materials	14%	9%	14.42	23.15	1.27%	-6.50%	-5.23%
Information Technology	10%	7%	0.20	0.44	-2.68%	0.40%	-2.29%
Consumer Non-Cyclical	14%	16%	29.70	32.37	-1.86%	-1.98%	-3.84%
Real estate	3%	3%	14.62	11.92	-0.09%	0.50%	0.41%
Energy	1%	8%	32.69	31.91	-5.61%	0.03%	-5.59%
Utilities	10%	7%	47.67	48.81	4.98%	-0.60%	4.37%
TOTAL	100%	100%	17.61	18.41	-3.48%	-0.87%	-4.35%

We can see that the sectors with the greatest overall effect are materials and energy.

The topic of biodiversity is also taken into account in the ESG analysis of Ircantec's corporate portfolio by Sustainalytics. The exposure score to the "land use and biodiversity" ESG issue is considered significant for 10 industries out of 42: commercial services, food products, consumer services, chemical products, diversified metals, oil and gas producers, paper and forestry, precious metals, refiners and pipelines, steel, traders and distributors, public services and transport infrastructure.

In Ircantec's corporate portfolio, 95% of issuers are in a negligible risk category (level 0 on a scale of 0-5) and 5% are low risk (level 1 out of 5): most companies with negligible or low risk can mitigate this ESG risk by implementing existing best practices in their sub-sectors (specific programs, certification, transparency, dialog with local communities).

Regarding the management of the biodiversity issue, 91% of companies in the portfolio have a high level of management (level 1 on a scale of 1-3), 6% an average level and 3% have weak management. The biodiversity risk analysis carried out by

Sustainalytics highlights the companies with the best management practices and those that are the least efficient, which makes it possible to focus attention and dialog on the issuers that are most at risk.

To better comply with the regulations (Article 29), Ircantec plans to set itself a biodiversity conservation objective. A working group within Ircantec will study the exposure of the portfolio to a range of biodiversity issues and define the Scheme's biodiversity approach in 2023, thus following the same process as in 2021 for the climate, which had been a strong theme in the Ircantec Roadmap. This will lead to a more complete integration of biodiversity into the management of Ircantec's reserves, in particular via exclusions and shareholder engagement, and will enable the Scheme to ensure compliance with the regulations by 2023.

4



Alignment of investments with climate objectives and the Paris Agreement

The Transition Pathway Assessment enables investors to monitor their portfolios in relation to the objective of limiting the global temperature rise to 2°C above pre-industrial levels. This approach can be described as an analysis of the suitability of emissions reductions achieved over time in relation to the actual needs that would satisfy the objectives of the Paris Agreement. The analysis takes into account historical carbon data (since 2012) and projects future emissions (up to 2030), based mainly on the company's activity levels.

The approach adopted by Trucost is based on two methodologies recommended by the Science-Based Targets initiative (SBTi). The SBTi is a joint project by the Carbon Disclosure Project (CDP), the United Nations Global Compact, the World Resources Institute and the World Wildlife Fund for Nature (WWF). Specifically, Trucost uses the following two approaches derived from the SBTi, to enable the assessment of portfolio alignment with the 2°C objective:

- The sectoral approach or Sectoral Decarbonization Approach (SDA);
- The economic approach or Greenhouse Gas Emissions per unit of Value Added (GEVA) approach.

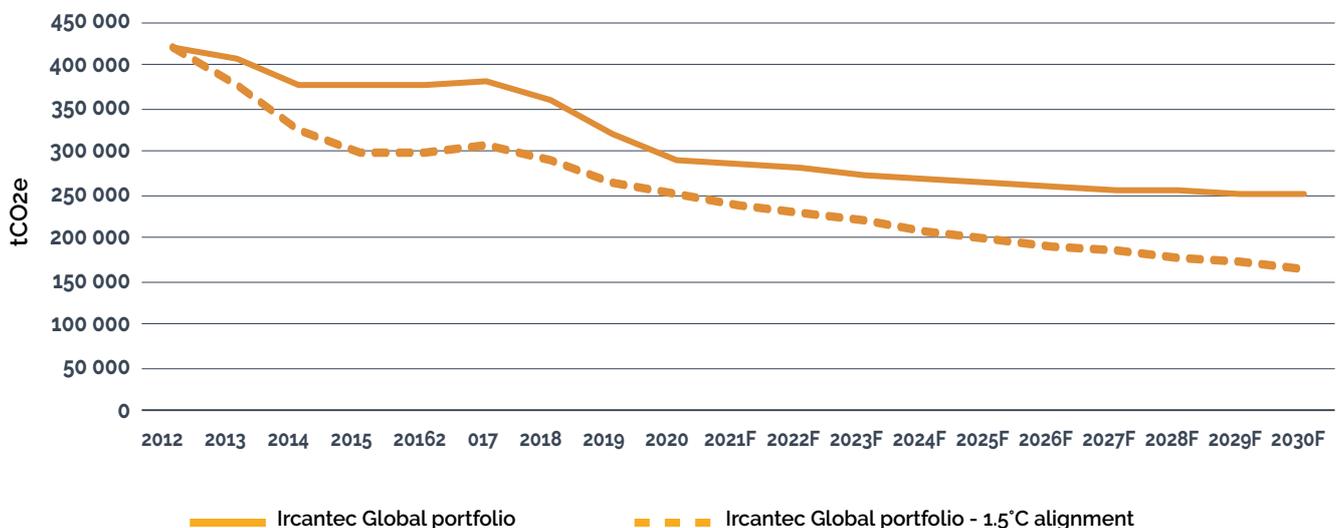
These approaches are recommended by the SBTi and are used by companies to define emissions reduction targets or transitional trajectories, in accordance with the Paris Agreement. Over 400 companies around the world have set verified targets with the SBTi, or are formally committed to defining such objectives in the future, compatible with maintaining global temperature rise below 2°C, using these methods or other similar approaches.

Listed companies

The carbon budget for the global listed portfolio is valued at - 900,151 tCO_{2e}, the portfolio being under its carbon budget to ensure alignment with a 2°C trajectory. The benchmark also has a carbon footprint of 190,859 Co_{2e}, below the alignment budget but clearly less than that of the Ircantec portfolio. The listed reserves of Ircantec are aligned on an average temperature trajectory of 1.5°C to 2°C by 2030. The credit portfolio is aligned with the objectives of the Paris Agreement with an alignment trajectory below 1.75°C, thanks in particular to the utilities sector. This is not the case for the equity portfolio, which is penalized by its investments in the consumer discretionary and energy sectors. The significant contribution from these sectors is explained by the quantity of emissions above the 2°C budget for securities.

The Ircantec portfolio therefore maintains its alignment with a scenario below 2°C. At the sector level, the Energy, Consumer Discretionary and Cement sectors have the highest temperature, with companies in these sectors being very poorly aligned with the objectives of the Paris Agreement. The significant contributions from these sectors are explained by the quantity of emissions being considerably above their 1.5°C budget and not by their weight in the portfolio.

Portfolio temperature - Emissions Trajectory, 2012-2030



Equivalent portfolio temperature per sector of activity

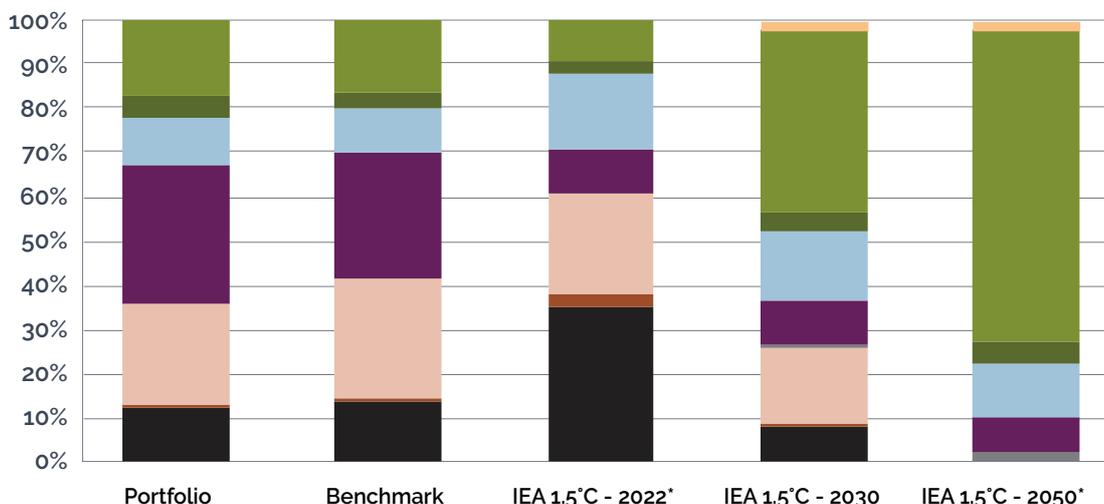
Method	Sector	Ircantec Global portfolio	
		Contribution 1.5°C (tCO _{2e})	Trajectory (°C)
SDA	Electricity production	39,075	1.5-2°C
	Cement	68,944	>2.7°C
	Steel	0	
	Air transport	24,323	2-2.7°C
	Aluminum	4,004	2-2.7°C
GEVA	Communications services	21,344	2-3°C
	Consumer Discretionary	72,980	3-4°C
	Consumer staples	98,084	2-3°C
	Energy	27,692	>5°C
	Finance	4,404	1.5-2°C
	Health	16,730	1.5-2°C
	Industry	150,918	1.5-2°C
	Information Technology	20,239	1.5-2°C
	Materials	436,589	2-3°C
	Real estate	6,839	1.5-2°C
	Utilities	108,770	1.5-2°C

Sovereign funds and similar

Because energy generation is critical for the transition to a low-carbon economy and alignment with the objectives of the Paris Agreement, it is interesting to look at the average electricity mix produced by the different energy sources of each country, including low-carbon sources (hydroelectricity, wind, solar, geothermal, tidal energy, nuclear), weighted by the weight of each country in the portfolio. Ircantec's reserves are slightly less exposed to coal and natural gas than its benchmark. The evolution of the energy mix to respect a 2°C trajectory is also presented in order to position the portfolio on this objective. It is then possible to see that the portfolio

is overexposed to nuclear power compared to the 2°C - 2025 scenario due to its high exposure to France, as well as to natural gas. This strong presence of natural gas is explained by the position of most States on its contribution to the energy transition. We note that for a 1.5°C scenario by 2050, the energy mix is only oriented towards renewable energies - exposure to coal and oil disappear - with over-exposure to renewable energies in the majority. Ircantec anticipates this trajectory by progressively reducing its exposure to fossil fuels, including gas.

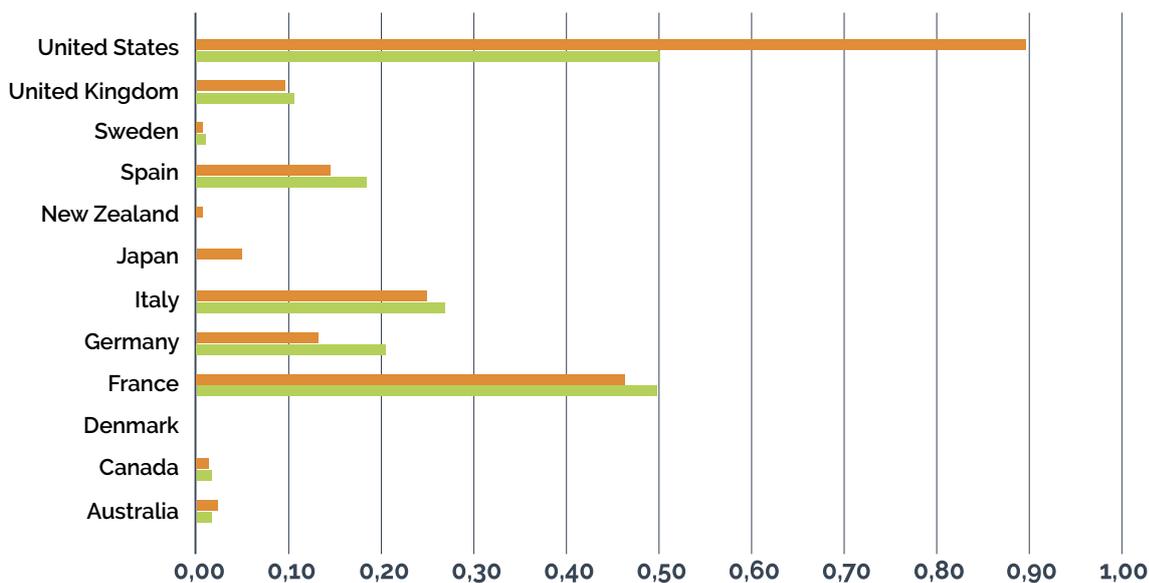
Analysis of energy mixes of sovereign portfolio



	Portfolio	Benchmark	IEA 1.5°C - 2022*	IEA 1.5°C - 2030	IEA 1.5°C - 2050*
Other Sources	0%	0%	0%	2%	2%
Other Renewables	17%	17%	9%	42%	71%
Biomass	4%	4%	3%	4%	5%
Hydroelectric	11%	10%	17%	16%	12%
Nuclear	31%	28%	10%	10%	8%
Fossil energy with CCS	0%	0%	0%	1%	2%
Natural Gas	23%	27%	23%	17%	0%
Oil	1%	1%	3%	1%	0%
Coal	13%	14%	35%	8%	0%

The inflation-indexed fund is aligned to a temperature of 1.8°C, versus a benchmark index at 2.2°C (as calculated by the asset management company).

Contribution by country



Source: Beyond Ratings

Benchmark index

Portfolio

5

Integrating ESG and sustainability logic in the management of reserves



1 - Fund-level ESG strategy

ESG integration

In addition to climate issues, Ircantec is interested in all of the ESG issues its portfolio faces. Like the climate and the environment, social issues (human rights, freedom of association, health & safety of products and services, accessibility of products and services, etc.) and governance (shareholders' rights, organization of the Board of Trustees, compensation of executive management, etc.) are a major materiality for security issuers in the portfolios.

ESG considerations are integrated throughout the management process, and Ircantec strives to integrate SRI holistically and pragmatically. ESG issues are therefore taken into account from the selection phase of new asset management companies before assigning mandates.

Thereafter, integration is ensured through regular dialog with asset management companies (particularly through management committees) and careful monitoring of the portfolio. The crossing of a threshold or the occurrence of a controversy systematically triggers a dialog phase with the asset management companies to receive their opinion and their analysis and possibly request a reduction or sale of the positions.

Ircantec is currently working with Sustainalytics, a company from the Morningstar group. It delivers research, assessments, data, as well as environmental, social and governance (ESG) analyses. These elements make it possible to identify, understand and manage the ESG-related risks and opportunities of different asset classes, at the company and fund level.

Furthermore, Ircantec also subscribes to an ESG database provided by Sustainalytics, accessible at any time, which allows it to monitor the portfolio if a controversy arises or thresholds are crossed on its invested issuers, as well as an additional dialog tool with asset management companies to be able to compare the ESG assessments of issuers in the portfolio.

Note that Sustainalytics gives priority to a global ESG risk assessment, scaled from 0 to 100 (where 0 is the level of least risk). The risk-based approach combines exposure to ESG risks, as well as their management by the issuer (see methodological annex), and applies to the measurement of the overall level of risk without necessarily breaking it down into each E/S/G pillar.

Each mandate entrusted to a management company applies an SRI methodology specific to this manager, which is based on a selection strategy (positive filter), which can be best-in-class, best effort, best progress or best-in-universe. Unlisted funds focus more on an impact strategy and thematic investments. The new climate policy (including exclusions and reduction targets) applies to all dedicated funds in the portfolio. For all the funds in the portfolio, the management service ensures that it carefully

monitors the most significant controversies that could have a critical financial or reputational impact on issuers. All management companies mandated by Ircantec report on the major controversies to which the companies in the portfolio are exposed, and the management service monitors the entire portfolio through its external ESG service provider for the main controversies requiring monitoring.

Non-climate exclusions (tobacco, arms, controversies)

The Ircantec policy was strengthened in 2022 to clearly and transparently exclude sectors presenting negative direct or indirect impacts on environmental, social and governance matters with total exclusions (controversial weapons) and materiality thresholds (tobacco).

- Controversial weapons:

Ircantec defines controversial weapons as follows: anti-personnel mines, cluster bombs, depleted uranium weapons, chemical and biological weapons, incendiary weapons (including white phosphorus), blinding laser weapons and fragmentation bombs. Issuers involved in the production, storage, distribution, marketing, acquisition, conservation, supply, sale, importation, exportation or supplying assistance, technologies, essential services or components for weapons referred to above, as defined in international conventions.

Furthermore, issuers involved in the brokering and trade of nuclear weapons, as well as those trading components to non-signatories of the Nuclear Non-Proliferation Treaty are also excluded.

Also, issuers owning a stake above 10% in companies involved in the activities referred to above are also excluded.

- Tobacco:

In line with the World Health Organization (WHO), Ircantec considers tobacco to be a recognized threat to public health. Moreover, this industry generates a considerable social and environmental cost.

Ircantec distinguishes between four exclusion scopes for tobacco:

- Tobacco sector companies involved in the production, manufacture and storage of tobacco or tobacco alternatives;

- Issuers who generate 5% of their turnover from bulk or retail sales of tobacco products, goods/services related to tobacco or tobacco alternatives;
- Issuers holding a stake above 5% in companies that produce tobacco, goods/services related to tobacco or tobacco alternatives;
- Issuers holding a stake above 5% in companies who generate more than 5% of their turnover from bulk or retail sales of tobacco products, goods/services related to tobacco or tobacco alternatives.

Lastly, Ircantec also applies exclusions when there are proven breaches of fundamental conventions and principles (Universal Declaration of Human Rights, the International Labor Organization Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development, United Nations Convention).

These exclusion filters are updated and monitored regularly and enable Ircantec to avoid investing in dangerous activities.

SFDR classification (Art. 8-9)

Within the framework of the European SFDR, the dedicated funds and open funds held by Ircantec are classified according to their consideration of ESG issues:

- Art. 8 brings together funds that have environmental and social characteristics. All of Ircantec's listed dedicated funds (with the exception of Art. 9 funds) fall into this category, i.e. 75.19% of total reserves, as well as several open-ended and unlisted funds (Villiers Multi-Actifs, Access Capital Investissement, Access Dette Privée, Access Infrastructure).

- Art. 9 (24.81%) is the highest requirement level because it is specific to funds with a stated sustainability objective. Five dedicated Ircantec funds (green bonds fund, European equity and credit fund managed by Candriam and European / World equity funds managed by Mirova) are in this category alongside several open and unlisted funds (Mirova Women Leaders, Mirova Eurofideme 3, Mirova Eurofideme 4, Infragreen IV, Meeschaert Eurofideme 4, SWIFT 1, SWIFT 2, etc.).

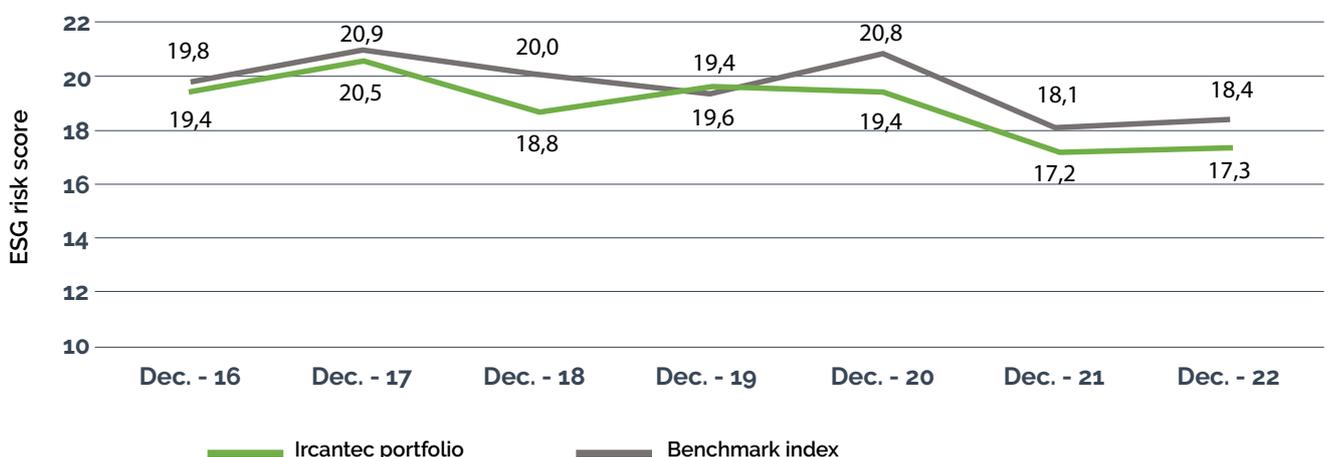
Since March 2021, the SFDR requires that asset management companies classify their sustainable funds between Articles 8 and 9 according to their characteristics and foresees that from January 1, 2023, Article 9 funds must comply with new technical requirements published in 2022. A large number of asset management companies have therefore reclassified their Article 9 funds. Note that no fund has been downgraded from Article 9 to article 8 within the Ircantec portfolio.

2 - Results of the non-financial assessment

Consolidated portfolio (sovereigns and corporate issuers)

The analysis of the level of ESG risk of the consolidated portfolio since the end of 2016 shows a strong correlation between the portfolio and its consolidated benchmark, with a lower level of ESG risk for the portfolio over the period. The only exception to this global trend occurred in late 2019 with the arrival of new dedicated mandates for European and ex-Europe World equity funds, resulting in an extensive change in how the most represented companies in the portfolio are broken down.

History of ESG risk score of consolidated Ircantec portfolio vs. Benchmark



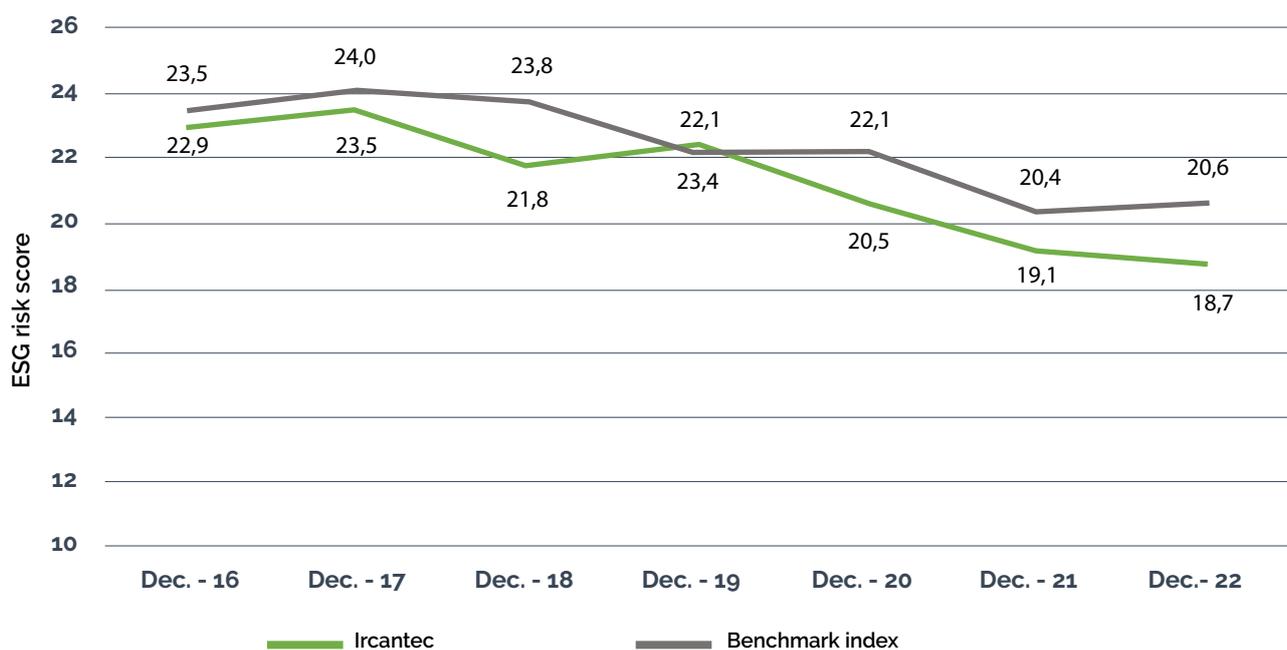
The portfolio's ESG risk level for the end of 2022 therefore stands at 17.3, a better result than its consolidated benchmark (18.4) and an improvement compared to December 2022 (17.2). This can mainly be explained by an increase in the risk related to sovereign assets and developments in the geopolitical and economic context. For the year ended, the ESG risk level of the Ircantec corporate portfolio fell by 0.4 points from 19.1 to 18.7, while the score for sovereign investments rose slightly from 13.5 in 2021 to 13.7 in 2022. Nonetheless, this good result illustrates that the Ircantec portfolio is regularly monitored by the management service (management committee, dialog with asset management companies) to ensure that they comply with all specific requirements of the SRI charter and seek to improve over time and in relation to their benchmark index.

In terms of fund analysis, all FCP mutual investment funds are less risky than their respective benchmark index.

Corporate portfolio

With a score of 18.7 (low risk category), the corporate portfolio (equities and bonds) presents a lower level of risk than its benchmark index (20.6). The portfolio is less risky than its benchmark over the period, except at the end of 2019, which shows a trend reversal due to a rotation of the most represented companies in the portfolio (replacement of low-risk companies by higher-risk companies when changing mandates), as highlighted for the consolidated portfolio. At the end of 2022, the difference between the risk of the portfolio and the benchmark (-1.9 points) illustrates Ircantec's ongoing effort to ensure a portfolio less exposed to risk.

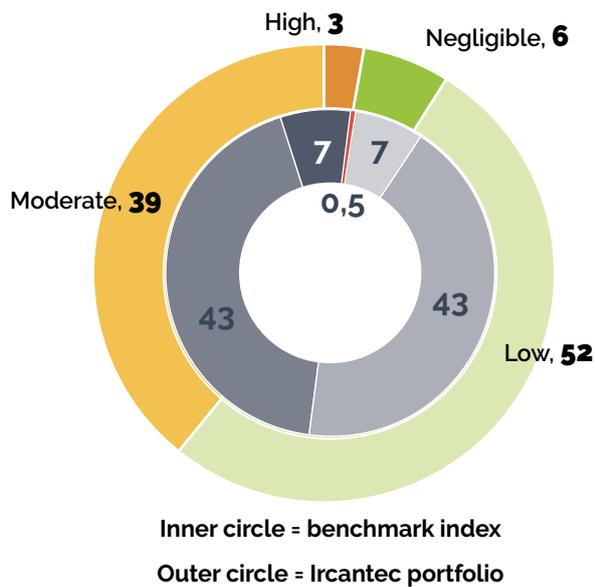
History of ESG risk score of Ircantec corporate portfolio vs. benchmark index



This portfolio performance is explained by a significant over-weighting of issuers with low levels of risk and an under-weighting of issuers with a moderate level of risk. Note that in 2022, the

Ircantec portfolio did not contain investments with a risk considered severe (compared to 0.3% in 2021).

Breakdown of investment by risk class (%)



Via an analysis of ESG risk by geography, Ircantec has an over-weighting in Europe and an under-weighting in North America but invests in issuers that are generally less risky than the benchmark. Ircantec's geographic allocation, with a very high proportion of issuers in the Europe region, is favorable to the overall level of risk of the corporate portfolio: Europe makes the most significant contribution to reducing the level of portfolio risk by exhibiting a lower level of risk than its benchmark index. This performance of the region is explained by a more restrictive legislative framework in ESG matters, which obliges companies to apply best practices on these subjects: their ESG risk management score is thus higher overall than that of companies located in other geographic areas.

ESG risk score by geographical region

Zones	Portfolio		Benchmark		Delta Score	
	Weight	Risk Score	Weight	Risk Score	PTF vs. Benchmark	PTF vs. Global
Africa/Middle East ¹⁷	0.1%	24.6	0.04%	25.2	-0.5	5.9
Asia/Pacific	2.7%	20.0	2.8%	22.7	-2.7	1.3
Europe	82.4%	18.4	80.2%	20.2	-1.8	-0.3
Latin America	0.1%	20.8	0.1%	25.6	-4.8	2.1
North America	14.5%	19.9	16.8%	22.0	-2.1	1.2
Global	100%	18.7	100%	20.6	-1.9	

The over-performance of the corporate portfolio compared to its benchmark index is explained by the effects of:

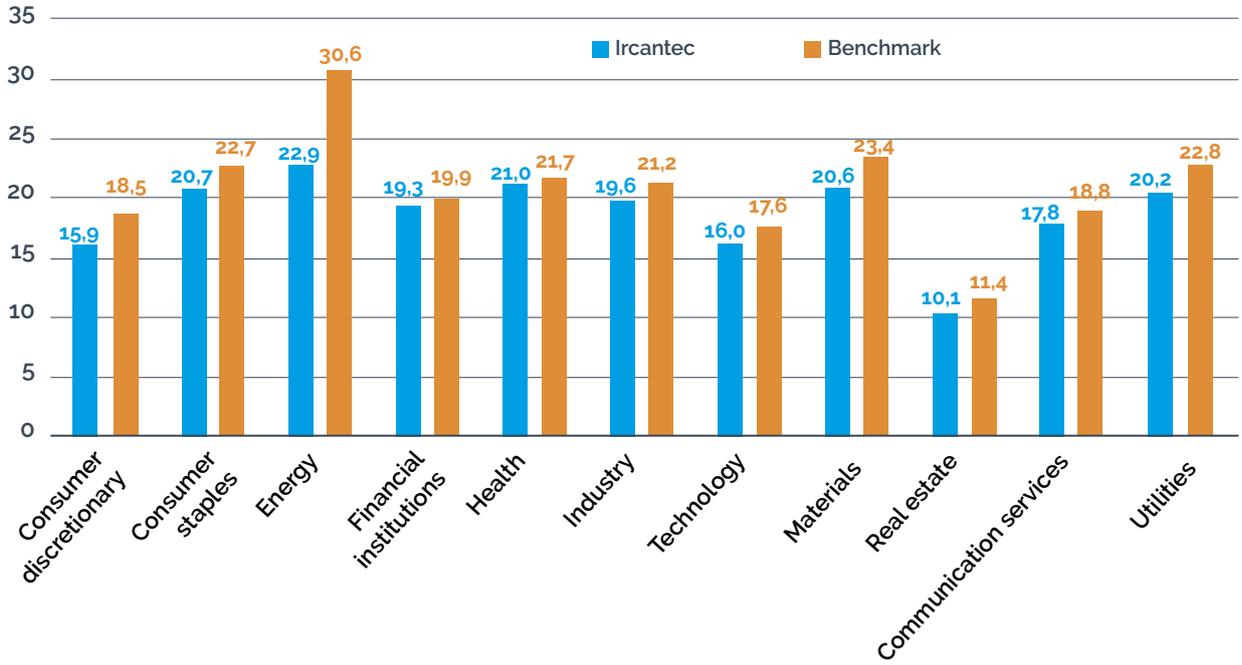
- Allocation: Ircantec's portfolio is over-weighted in financial institutions, industry and utilities and is under-weighted in the consumer discretionary and consumer staples sectors – this allocation to less risky sectors in terms of ESG partly explains the over-performance of Ircantec's portfolio. Note that none of Ircantec's investment sectors contains companies in the severe risk category, in contrast to the benchmark index. As such, the highest-risk companies in the Ircantec portfolio are in the high-risk category and are represented across all sectors except communication services, real estate and consumer staples. The energy sector is where Ircantec's investment allocation is the most exposed to the high ESG risk category, with 16.7% of the investment in the sector. But given the very low allocation of

the Ircantec portfolio in this sector (0.4%), this exposure to the high ESG risk category is due to a small number of investments.

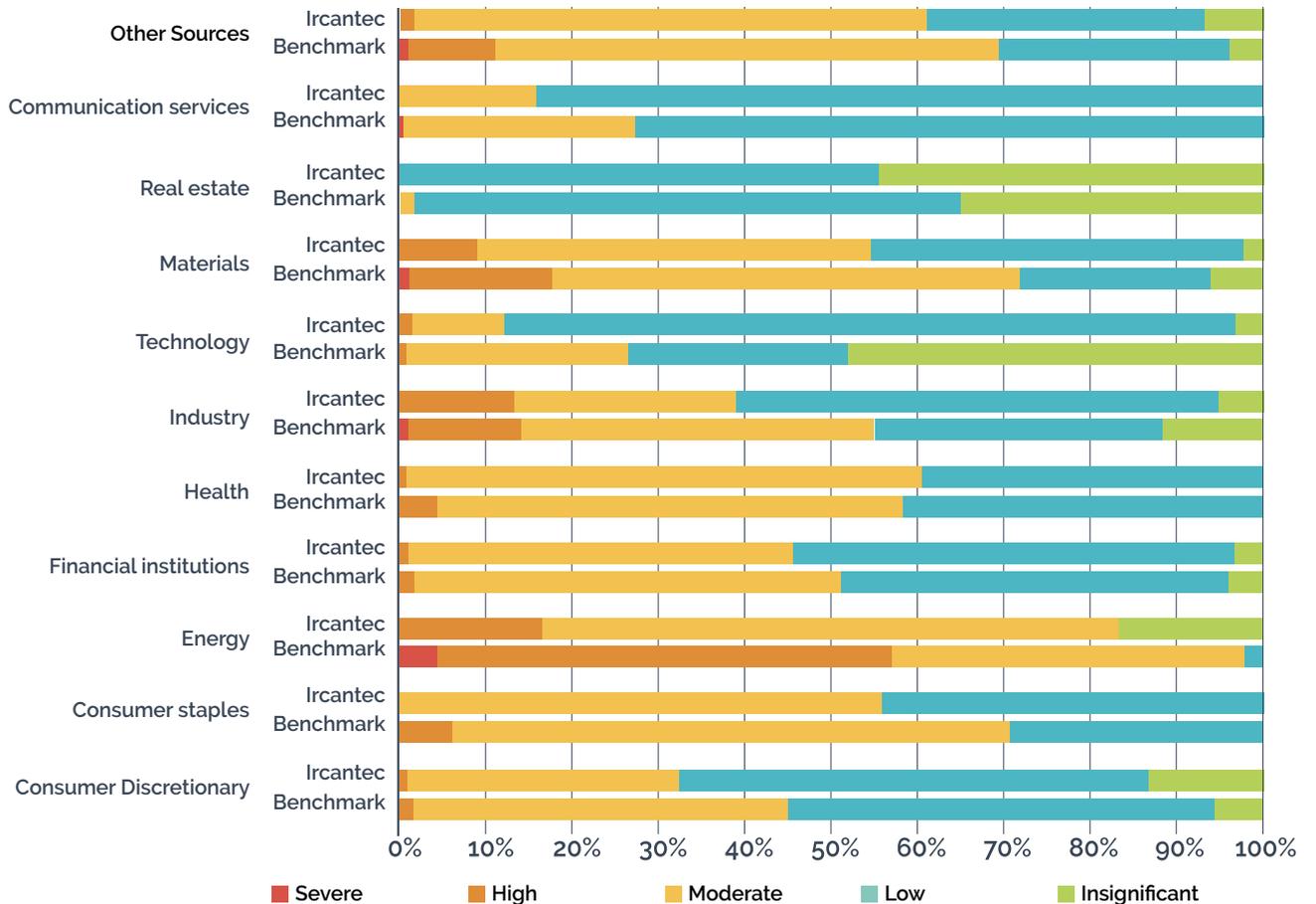
- Selection: the issuers selected within each industry show that the least risky companies are over-represented to the detriment of the riskiest, which allows Ircantec's corporate portfolio to present ESG risk scores that are lower than its index benchmark for all sectors.

¹⁷ One single company (Solaredge) is located in the Africa/Middle East region (Israel) but listed in the USA, hence its permitted presence in the portfolio.

ESG risk scores (corporate portfolio)



Breakdown of investments by ESG risk class (corporate portfolio)



Companies with the greatest impact on the portfolio

By taking into account the weight of the issuers in the portfolio and their ESG risk score, it is possible to highlight the issuers that contribute positively and negatively to the overall risk level of the portfolio.

ASML, KBC Group, KfWAllianz and Air Liquide (cumulative weight in the portfolio, 6%) have a weighted risk score of 11.4, i.e. a delta of -7.3 compared to the rest of the portfolio. This means they contribute favorably to reducing the overall risk level of the portfolio.

Conversely, Siemens, Tomra Systems, Bouygues, FMS Wertmanagement and Beiersdorf (cumulative weight 2.2%) have a weighted risk score of 30.6, i.e. a delta of +11.9 compared to the rest of the portfolio. The controversies over these issuers (except Tomra Systems FMS) partly explain the high level of risk of these companies.

Compliance with international norms and standards

No company present in Ircantec's portfolio is suspected of violating international standards as defined by the United Nations Global Compact¹⁸. However, 15 are considered as requiring monitoring, including most companies in the healthcare and finance sectors. These are potentially at risk on matters such as non-observance of human rights or business ethics (market manipulation, money laundering).

Controversial weapons

Concerning controversial weapons, Sustainalytics does not note any presence in the portfolio of companies producing essential or tailor-made components for cluster munitions (CM), anti-personnel mines (APM) or other controversial weapons. Last year, they represented 0.05% of the Ircantec portfolio through a single company, BlackRock, which held substantial stakes (above 10%) in several companies involved in controversial weapons: Aerojet Rocketdyne, Moog Inc., Oceaneering International and ManTech Corporation.

Controversies

Sustainalytics rates controversies impacting portfolio companies on a severity scale of 1 (low) to 5 (severe). In December 2022, the number of serious and severe controversies (level 5 and level 4) is much lower for Ircantec's portfolio than for the benchmark, and no company in the portfolio is exposed to level 5 controversies. Globally, the number of issuers in the Ircantec portfolio exposed to controversies fell between December 2021 and 2022 by 4.5%. This analysis of controversies is consistent with the overall ESG analysis of the portfolio: the management of ESG risks is incorporated in the rating of ESG risk scores.

¹⁸ The Global Compact (Global Compact, 2000) is a set of 10 fundamental principles enacted by the UN for companies and non-profit organizations based around 4 themes:

Human rights

1. Support and respect the protection of internationally proclaimed human rights
2. Make sure that companies are not complicit in human rights abuses

International labor standards

3. Uphold the freedom of association and the effective recognition of the right to collective bargaining
4. Contribute to the elimination of all forms of forced and compulsory labor
5. Contribute to the effective abolition of child labor
6. Contribute to the elimination of discrimination in respect of employment and occupation

Environment

7. Support a precautionary approach to environmental challenges
8. Undertake initiatives to promote greater environmental responsibility
9. Encourage the development and diffusion of environmentally friendly technologies

Anti-corruption

10. Work against corruption in all its forms, including extortion and bribery

Involvement in sustainable activities and products

Via its corporate portfolio, Ircantec is exposed to several sustainable investment themes (responding to environmental or social challenges, or products that meet fundamental social needs and are designed in a sustainable manner) in connection with the SDGs:



In total, 10 companies (2.4% of the portfolio) generate turnover that is between 85% and 100% dependent on access to health by treating major and/or neglected diseases as defined by the World Health Organization.

Companies	% aligned turnover	Weight
Edwards Lifesciences Corp.	100%	0.02%
Swedish Orphan Biovitrum	100%	0.04%
Vertex Pharmaceuticals	100%	0.1%
Takeda Pharmaceutical	97%	0.2%
Bristol Myers Squibb	96%	0.2%
Moderna	96%	0.8%
Astrazeneca	90%	1%
Novo Nordisk	88%	0.7%
Eli Lilly & Co.	88%	0.1%
Grifols	85%	0.04%



The turnover of the 10 most involved companies (3.1% of the portfolio) is between 59% and 100% dependent on renewable and clean energies

Companies	% aligned turnover	Weight
Solaria Energia y Medio Ambiente	100%	0.3%
Vestas Wind Systems	99%	0.9%
Voltaia	99%	0.2%
Microchip Technology	98%	0.1%
EDP Renovaveis	97%	0.4%
Neon	89%	0.03%
Apple	81%	0.4%
Corporacion Acciona Energias Renovables	78%	0.4%
Alfen	71%	0.3%
ERG SpA	59%	0.1%



10 issuers (0.93% of the portfolio) have a turnover that is between 82.5% and 100% aligned with this theme which supports a circular economy by increasing the efficiency of the use of resources, and by enabling recycling and resource recovery.

Companies	% aligned turnover	Weight
DS Smith Plc	100%	0.08%
Altarea SCA	98.6%	0.04%
Kingspan Group	98%	0.2%
Smurfit Kappa Acquisitions Unlimited	93.4%	0.28%
Immobiliaria Colonial SOCIMI	91.1%	0.02%
Covivio	91%	0.08%
Xylem	87.6%	0.05%
Kone	86.4%	0.08%
American Water Work Co.	84.4%	0.05%
Vicinity Centres Re.	82.8%	0.06%

Sovereign portfolio

The analysis of the level of ESG risk of sovereign issuers is based on an equal weighting of an ESG wealth score (based on 3 capitals: natural & product, human, institutional) and an ESG factor score (capacity of a State to manage its various assets in a sustainable and responsible way). Development trends over the last 5 years and major events affecting a State (natural disaster, pandemic) also influence the ESG score.

Since 2020, Ircantec has maintained a lower level of risk within its sovereign portfolio compared to its benchmark index. The sharp increase in the ESG risk of the portfolio and its benchmark index is a consequence of the Covid-19 health crisis. As a major event, the Covid pandemic was assessed by its impact (number of deaths due to infection in a country), vulnerability (ease of circulation of the virus) and response (responsiveness of each State) to increase the ESG risk differently according to each State (for example, the impact was evaluated at 1 for Japan or New Zealand and at 5 for Brazil or the United Kingdom, on a scale of severity from 1 to 5). Since the eruption of the pandemic, the response of the governments of each impacted country has made it possible to significantly reduce the ESG risk to a level almost similar to a pre-crisis level.

History of ESG risk score of sovereign portfolio



For the Ircantec portfolio, this meant the difference with its index rose to -0.4 pts, compared to -0.2 pts at the end of 2021. This difference is partly explained by the increasing weight of supranational issuers (regional development banks) in Ircantec's sovereign portfolio (from 5.7% to 7% of the sovereign portfolio). The breakdown by country and the ESG risk scores by country illustrate the changes in scores between December 2021 and 2022, as well as changes in

weightings, in particular the decline of supranational issuers.

Amongst countries where the weight of investment is the highest, we see that the risk ratings of the USA and Spain have risen by 1.1 and 0.7 points respectively, which is favorable to an increase of the global sovereign risk of the Ircantec portfolio. Nonetheless, the increased weight of supranationals of slightly more than 1% limited this increase.

Country	Country Risk Ratings - Score 12.2022	Country Risk Ratings - Score 12.2021	Change	Weight 12.2022	Weight 12.2021	Change in weight between December 2021 and 2022	Benchmark weight
France	13.6	13.5	0.1	27%	26%	1%	25%
Italy	16.5	16.4	0.1	16%	19%	-3%	15%
USA	13.6	12.5	1.1	16%	16%	-0.2%	30%
Germany	12.5	12.4	0.1	13%	14%	-1%	10%
Spain	16.6	15.9	0.7	11%	10%	1%	9%
United Kingdom	12.8	12.8	0	6%	5%	1%	5%
Belgium	13.9	13.9	0	1%	1%	0.2%	1%
Australia	10.6	10.7	-0.1	1%	1%	-0.3%	0.8%
Canada	12.0	11.6	0.4	1%	1%	-0.3%	0.7%
Netherlands	12.5	12.4	0.1	1%	0%	1%	1%
Austria	12.5	12.2	0.3	0.4%	0.4%	0%	0.6%
Chile	17.8	17.3	0.5	0.3%	0.4%	-0.1%	n/a
Sweden	10.9	10.5	0.4	0.3%	0.3%	0%	0.4%
Portugal	16.4	16.6	-0.2	0.5%	0.3%	0.2%	0.4%
Ireland	13.0	12.5	0.5	0.5%	0.1%	0.4%	0.3%
Hungary	20.2	20.1	0.1	0.1%	0.1%	0%	n/a
Finland	11.7	12	-0.3	0.2%	0.1%	0.1%	0.2%
New Zealand	12.5	12.4	0.1	0.1%	0.1%	0%	0.1%
Slovakia	19.8	19	0.8	0.1%	0.1%	0%	0.1%
Slovenia	15.9	15.4	0.5	0.1%	0.1%	0%	0.1%
South Korea	n/a	16.6	n/a	n/a	0.1%	n/a	n/a
Latvia	17.2	17.3	-0.1	0.02%	0.0%	0%	0.03%
Supranationals	7.0	6.3	0.7	7%	6%	1%	n/a
Others*	n/a	n/a	n/a	n/a	n/a	n/a	1.5%
TOTAL	13.7	13.5	5.5	100%	100%	n/a	100%

3 - Thematic investments and impact investments

Support for employment and territorial development



Through its thematic and impact financing, Ircantec aims to strengthen and consolidate its societal engagement by fostering the inclusive development of regions and innovative companies, which are part of a growth dynamic that generates business and creates jobs.

1.10% of Ircantec reserves are earmarked for financing French and/or European SMEs/mid-caps. The target investments are companies that generate less than €500 million in revenue for the debt segment and less than €250 million in revenue for the private equity segment.

One of the main investment vehicles is a dedicated fund managed by Access Capital Partners. As of December 31, 2022, €93.9 million had been invested in connection with this fund, representing 77% of the commitment. Investments will be ramped up over several years.

Supplementary funds provide diversification in this segment and exposure to supplementary underlying vehicles: Meeschaert Capital Partners, Alter Equity 3P, Omnes Croissance 4, Alter Equity 3P II, Paris Fonds Vert and Meanings Private Equity Fund IV. The last fund has made engagements with the SBTi so that the assets in its portfolio satisfy the objectives of the Paris Agreement and a 1.5°C trajectory.

In total, Ircantec has committed €259.8 million to financing SMEs/mid-caps. As of December 31, 2022, €181.4 million had been invested, representing 69.4% of the commitment.

In addition, Ircantec is invested in two funds dedicated to the Social and Solidarity Economy (SSE): up to €5 million in the NovESS fund launched by Caisse des Dépôts and for the same amount in the Finance et Solidarité fund from Amundi.

Lastly, Ircantec financially supports local organizations running projects that develop local areas and ultimately stimulate their growth, through two funds:

- A disintermediated loan fund for local authorities with more than 10,000 inhabitants, managed by Arkea, whose objective is to enable these authorities to finance responsible and long-term investment projects. The fund was created in 2012, when the banking sector was withdrawing from the funding of local authorities. This fund is fully invested, for a maximum commitment of €14.7 million.

- Ircantec is invested in the Tourisme Social Investissement (TSI) fund (€10.0 million at the end of December 2022, out of a term commitment of €22.5 million). This fund aims to provide funds to social tourism structures (defined by an affordable price level) so that they can carry out renovations or upgrades (renovation/reconfiguration of equipment) in order to maintain a significant inventory of beds. This long-term support from Ircantec for the tourism sector is appreciated by accommodation structures, particularly during the difficult period of economic and health crisis over 2020-2021: even in phases of low activity and strained financial equilibrium, Ircantec remains a local investor committed to tourist accommodation structures.

A commitment to decent work and gender equality



In 2019, Ircantec invested €2 million in the "Mirova Women Leaders" fund. Due to the limited size of the fund, specific authorization has been given to increase the ownership ratio to 20%, thus making it possible to support the fund's development. The size of this investment will increase in line with the future subscription flows observed on this fund. As part of this support, the position in the Mirova Women Leaders fund was increased by €3 million in 2021.

The investment theme of this fund is the empowerment of women to strengthen gender equality, particularly in management positions. Through this fund, Mirova hopes to have an impact on diversity through two channels:

- Shareholder engagement: the management company proposes an engagement policy to disseminate best practices in terms of gender equality within the companies in which the fund invests;
- A donation to UN Women France: Mirova has set up a partnership with the UN Women France Committee. The company undertakes to pay back 5% of their management fees to finance actions in support of the empowerment of women.

Support for inclusive and socially-aware growth



Ircantec invests to achieve responsible real estate. The real estate investment scheme (OPPCI) Villiers Immobilier respects Ircantec's social policy on this topic according to four priorities, which have been renewed: intermediate housing, social tourism, student residences, healthcare facilities and nursing / care homes. Ircantec is especially committed to ensuring that the existing assets fits into the sustainable development approach aimed in particular at improving the environmental quality of buildings and tenants' quality of life. In 2020, the real estate investment scheme received the SRI label.

Ircantec is also committed to the tune of €30 million in the Immobilier Impact Investing fund, whose strategy is based on a portfolio of high-yield assets and social real estate assets. This fund received the SRI label in 2021.

In addition, Ircantec is committed to two "life annuity" funds - Certivia (€15 million) and Certivia 2 (€15.4 million) - to provide a solution to the structural decline in the income of the elderly and improve their daily lives.

Protection of terrestrial flora and fauna



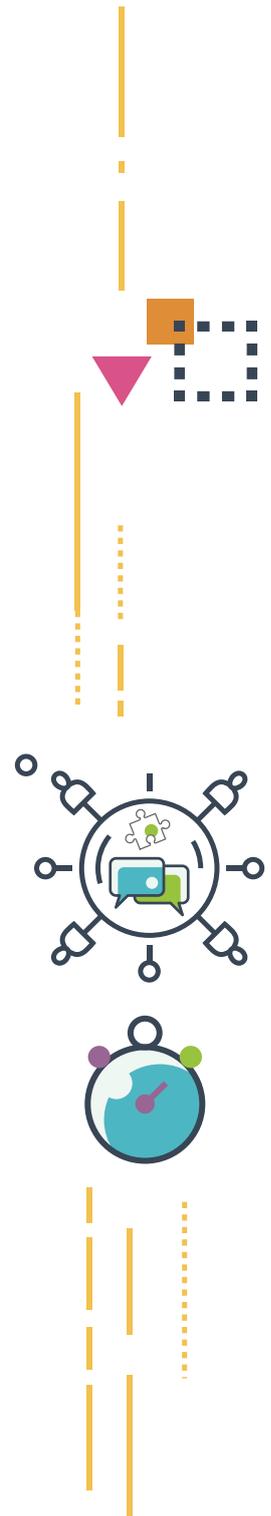
Ircantec places special importance on the protection of terrestrial flora and fauna, paying particular attention to the preservation of terrestrial ecosystems through its investments.

Ircantec is therefore invested in the dedicated "Groupement Forestier de Brèves" fund, in which €55.27 million has already been invested. More information is provided in the paragraph "Exposure to other environmental factors (excluding climate)" on forest management.

Pursuant to Art. 29, Ircantec continues to work with its ESG and carbon data providers to be able to set biodiversity protection objectives.

In 2022, Ircantec featured in several ESG awards for institutional investors. Amongst others, Ircantec was nominated in the "Best initiative award for financing companies contributing to the ecological transition" at the Couronnes Instit Invest held by financial

media firm AGEFI. The Pension Scheme was also highly commended at the IPE Awards in the "France" regional category and at the IPE Real Estate Awards, in the "Silver regional awards – France" and "Silver themed awards - Social impact", and as the "Medium Real Estate Investor of the year".



6



Review of engagement and voting policies

1 - Engagement report

Since the formal definition of its engagement policy in 2017, Ircantec has structured its shareholder engagement actions around three main themes with a long-term outlook:

- energy and ecological transition;
- respect for human rights in business;
- corporate tax responsibility in France.

Around these three main themes, Ircantec chooses priority topics for a period of 2 to 3 years. For the current period, the priority topics for each of the main themes indicated are:

- support for employees in the evolution of their careers (just transition);
- protection and support for trade union rights, extended to the whole value chain;
- promotion of taxation of value creation in the country where it is carried out.

In 2023, the Ircantec engagement policy has been extended to integrate a fourth main theme: preservation of biodiversity, a core purpose of the marketplace work and the basis of Article 29 of the French Law on Energy and Climate. The aim of this new theme of engagement is to promote a measurement of company biodiversity footprints, while working to preserve and restore biodiversity.

The Ircantec engagement policy lists the avenues of engagement preferred by Ircantec: shareholder dialog (individual engagement), cooperation with other institutional investors and marketplace organizations (joint engagement), and voting at general meetings.

Ircantec maintains its commitment via various marketplace organizations:

- Member of the [PRI](#) (Principles for Responsible Investment);
- Member of the [FIR](#) (Forum pour l'Investissement Responsable) and active in several working groups and committees.

Energy and Ecological Transition (EET)

Ircantec has long been committed to promoting the energy and ecological transition of the economy. The climate emergency is accompanied by physical and transitional risks that weigh on all economies and all terrestrial and marine ecosystems.

The Climate Action 100+ initiative (in conjunction with the PRI), for which Ircantec is a member of the Supervisory Committee and co-lead with an energy company (Engie). This initiative questions the world's largest emitters on their governance and their strategy with regard to climate-related risks and opportunities, in particular by integrating the social aspects of the ecological and energy transition (just transition).

increased its forecast imports of liquefied natural gas (LNG) and above all American shale gas through three contracts with US firms Cheniers, Next Decade and Sempra signed in December 2022. These contracts secure a large volume of LNG mainly from US shale gas until 2042, generating the risk of a carbon lock-in for the group, or in other words dependency on fossil gas and new emissions, for which the impact and quantification have not been officially audited or measured to date. For this reason, and as co-lead, Ircantec and 26 other investors signed a private letter to ENGIE in December 2022 to encourage the group to offer greater transparency of its climate trajectory.

- To ensure full transparency which Ircantec aims to uphold, we wish to point out that ENGIE has been placed under surveillance. Indeed, ENGIE is not fully aligned with the limits and objectives of Ircantec's new climate policy approved in 2021. As the co-lead on the Climate Action 100+ initiative, Ircantec has pursued a constructive engagement with ENGIE since 2018, for the company to aim for a 1.5°C alignment (compared to well below 2°C currently). Ircantec continues this dialog to ensure greater transparency on the company's climate trajectory and achievement of net zero targets for 2045.



Ircantec is also involved in the [Global Investor Statement to Governments on Climate Change](#) (proposal made by the [Investor Agenda](#), signed in 2014 then renewed in 2018) asks governments to reiterate their commitment to pursue the objectives of the Paris Agreement and to support private investments towards the low-carbon transition.

ShareAction»

The engagement of financial institutions is one of the four fundamental pillars of Ircantec's climate strategy within the Scheme's climate policy. In 2022, Ircantec took part in cooperative engagements with ShareAction; this NGO works in responsible financing to promote demanding market standards and to encourage joint work between private issuers and investors through targeted campaigns. The engagement concerned two financial institutions:

- **Barclays:** in 2022, the Barclays Say on Climate was rejected by 19.2% of shareholders at the GM, including Ircantec. Amongst others, the reasons cited were that the 1.5°C strategy had not been approved by an external body, that they had not decided to make an engagement against new O&G or oil sands projects, and inadequate fossil fuel policies in general. Consequently, Ircantec and other investors turned to ShareAction to organize dialog with Barclays, to enable the bank to explain its climate policy in greater detail, address the high level of opposition and the manner in which they intend to integrate the comments on climate issues raised at the general meeting. Following the engagement of investors and ShareAction, the bank proposed to bring the date of the coal phase-out in the USA forward by five years (currently 2035).
- **HSBC:** in 2022, Ircantec was also part of an investor group organized by ShareAction, which made an engagement with HSBC to improve its climate and energy policy. Following this engagement, the bank took additional measures and amongst others, decided to publish a transition plan in 2023 and to progressively reduce its financing of fossil fuels to what is necessary to limit the global temperature rise to 1.5°C.

Each year, as part of its voting policy, Ircantec sends letters to a selection of companies whose transition policy the Institution feels is not sufficiently convincing.

In 2022, EET letters were sent to three companies whose efforts were deemed insufficient: Barclays, Crédit Agricole and Société Générale.

A detailed analysis of their investment and development plan has highlighted a lack of resources and ambition in the pursuit of an ecological and environmental transition. These EET letters are a means of initiating and expanding shareholder dialog with these issuers.

Respect for Human Rights in business



The interconnection of economies and globalization are accompanied by increased social risks on increasingly long, complex and physically distant value chains. The distance between the principal and its many subcontractors prevents accurate and reliable monitoring of working conditions in the first links of the chain.

Ircantec is engaged in particular through declarations:

As part of its commitment to the [Investors Alliance for Human Rights](#) (IAHR), Ircantec has signed several declarations on this issue:

- The [Make Finance Work for People and Planet](#) declaration (February 2019) invites the members of the European Commission to require investors to put in place a systematic due diligence approach throughout the value chain. This declaration is part of the European Commission's Action Plan for financing green growth.
- The [Investor Case for Mandatory Human Rights Due Diligence](#) declaration (September 2019) calls on governments to establish and enforce mandatory human rights due diligence for all companies based in or operating within their jurisdiction, or to strengthen their regulatory systems where they already exist.

In 2018, Ircantec joined the [Know The Chain](#) initiative (partnership between NGOs, research centers and non-financial audit firms), which produces [benchmarks](#) on respect for Human Rights within the subcontracting companies of major contractors.

Corporate tax responsibility in France

In a context of globalization in which multinationals need to make decisions based on strategies and tax incentives that differ from country to country, tax responsibility aims to promote the taxation of value creation in the country in which it is actually generated, to ensure that the company contributes to the budget of the community and of the State in which its activities are located. The PRI initiated a program on tax responsibility in 2015 by implementing a [dedicated task force](#), and subsequently launching an engagement group that Ircantec joined. The goal is to gain a better understanding of the internal functioning of tax operations to more effectively encourage tax transparency and the improvement of governance and risk management in this area.

- Initially, the FIR initiative, to which the Scheme has made a significant contribution, consisted of assessing the maturity of companies in terms of their tax responsibility strategy. An engagement campaign on the tax practices of CAC 40 index companies was then introduced to encourage discussions with French multinationals on the concept of tax responsibility, and to publish an [Engagement Report](#). The objective is to encourage companies to deal with the tax issue no longer exclusively from the angle of regulatory and administrative compliance but as an integral part of their sustainable development policy.
- In May 2021, Ircantec joined 34 other investors (\$5.6 trillion in assets under management) coordinated by the PRI to encourage tax transparency for companies listed in the European Union. In particular, the coalition sent an open letter to the attention of the European Commission concerning the proposed Corporate Sustainability Reporting Directive ([CSRD](#)).

The PRI insist on the importance of demanding transparency on tax practices and in particular country-by-country tax reporting so that investors:

- Have better information on the issuers in their portfolios and can better understand the risks;
- Examine the extent of economic operations of multinational corporations by country and by jurisdiction and can estimate the actual engagement of companies concerning tax evasion;
- Raise questions and engage in dialog with companies where tax structures and tax strategies do not align with economic value creation to encourage more responsible corporate behavior.

The PRI open letter proposed points for improvement for the European Commission to take into account so that the objective of the law remains fiscal transparency.

These commitments were in line with the May 2019 open letter to the [FASB](#) (*Financial Accounting Stability Board*) to encourage country-by-country reporting.

In the continuity of this coalition, in 2022 Ircantec took part in a PRI information group on taxation, on how it can be more fully integrated in the investment process and how to engage with companies on the matter of taxation. The engagement is ongoing in 2023.

Commitments beyond priority themes



Ircantec's commitment is not limited to the main themes identified and other commitments are broader than the Pension Scheme's priority areas of interest.

As an example, Ircantec signed the Charter of French investors in favor of the Sustainable Development Goals. Since 2014, Ircantec has also been a signatory to the PRI established by the United Nations. It files an annual report on its commitment to respecting the founding principles.

Through its participation in market organizations nationally (FIR, since 2017) and internationally (PRI, since 2014), Ircantec is led to participate in broader commitments than those defined by its main themes. In 2020, as part of its participation in the Dialog and Engagement Commission alongside other French investors, Ircantec undertook to formulate and send ESG questions to all CAC 40 companies. The topics covered were varied, and the responses highlighted the most responsible and transparent players who seized this opportunity to exhibit the best practices in place. However, this first exercise also underlined the lack of seriousness of certain companies in terms of the answers given to pressing ESG issues. These marketplace bodies are also an opportunity to participate in working groups.

- In 2021, Ircantec co-led a working group on impact, mandated by the Secretary of State for the Social, Solidarity and Responsible Economy, Olivia Grégoire. This working group, coordinated by [Finance for Tomorrow](#) (F4T, Paris Europlace), aims to contribute to the acceleration of impact finance in France and its international development. In 2022, Ircantec was thus able to co-lead working sub-group no. 2 on the development of a grid for measuring the contribution to sustainable transformation. Subsequently, the objective was to leverage the feedback on this grid, stabilize its content and make it operational.
- As a partner of *F4T*, Ircantec signed the "Declaration to support the development of impact finance" in October 2021. This public declaration reaffirmed F4T's ambitions to:
 - Implement a structured and demanding definition of impact Finance (based in particular on the 3 pillars of impact: intentionality, additionality, impact measurement);

- Promote an integrated impact approach, clear and transparent communication, as well as appropriate measurement and reporting tools;
- Integrate impact Finance into regulatory and market frameworks.

In 2022, Ircantec took part in the *Finance for Tomorrow* working group to develop an assessment grid for the potential contribution of a fund to sustainable transformation. The engagement is ongoing in 2023.

Ircantec is an investor in the Phitrust Active Investors fund. Created in 2003, Phitrust invests in large listed companies to engage with them so that they develop their ESG practices. In 2022, 40 letters were sent by Phitrust to executives and Chairmen of Boards of Trustees or Supervisory Boards and Senior Directors, prior to General Meetings covering all ESG issues, representing a total of 419 questions asked. The main topics addressed included shareholder rights, consulting, compensation, environmental impact, social impact, human rights and business ethics.

Following these questions, Phitrust conducted 23 interviews with executives and received 16 written responses prior to the General Meetings, while 5 companies did not formally provide a response (one less than the previous year). Phitrust also participated in four public initiatives, including:

- Danone (governance - proposed resolution): on April 26, 2022, alongside Mirova, Ircantec, CAVP (Pharmacists pension scheme), OFI AM and ERAFP, Phitrust obtained the inclusion on the agenda of the mixed general meeting a draft resolution concerning a statutory modification to the role of honorary president, by incorporating the conditions of their presence on the Board in the company articles. The internal regulations of the Board foresaw that the honorary president, not elected by shareholders, could attend all Board meetings, which raised the issue of governance of the Board. The resolution received 59.33% of votes in favor, which is a success although below the qualified majority of 66%.
- Stellantis (social - written questions): written questions on the total compensation paid to the Chief Executive in respect of 2021, amounting to €66 million and the accumulated functions of Chairman and Executive Director held by John Elkann, which is contrary to Dutch law. Such a level of compensation did not seem justified despite the high results in 2021 as the group is likely to need to make massive reorganizations following the merger of PSA and FCA.
- Téléperformance (social - written questions): written questions on the very high staff churn level (78% in 2021), on the link between the CEO's variable compensation condition and an employee engagement criterion, and the CEO's level of compensation (+15% in 2021 and leading earnings in the CAC 40 index, yet the market valuation of the group put it no higher than 30th place).

In addition to its individual commitments, Phitrust also participates in collaborative commitments with a network of partners to advance ESG themes (PRI, ICGN, Carbon4Finance, FIR, AF2i, AFG, community of B Corp companies, etc.).

By supporting Phitrust through its investment, Ircantec contributes to a better consideration of ESG issues within French CAC40 companies through long-term shareholder dialog.

Lastly, in 2022, Ircantec also signed an [Investor statement](#) ahead of the COP15 conference on Biodiversity to establish a global framework to halt and reverse biodiversity loss.

2 - Voting Report

Being an active shareholder is a way to encourage companies to be more transparent, adopt better governance, and integrate social and environmental impacts more effectively. As part of its Voting Policy adopted in 2013, Ircantec decided to make a commitment, among other things, to socially acceptable compensation of directors, the independence of Boards of Trustees and inclusion of female trustees, support for the EET and company climate strategies, or the implementation of responsible dividends.

Note that the exercise of voting rights associated with the securities held by Ircantec is carried out by the asset management companies in accordance with Ircantec's Voting Policy and Voting Rules on all of the equity stocks present in Ircantec's portfolio.

Furthermore, since 2015, Ircantec has also organized specific monitoring of 30 companies in its portfolio with the support of a voting consulting firm. Each of the resolutions proposed during these thirty general meetings is individually managed to ensure that the voting rules are uniformly and consistently applied.

Very active voting to support the EET and climate

Initially, the companies subject to this enhanced monitoring were the thirty most represented in the portfolio in terms of market value. In 2018, with a view to better integrating aspects of the energy and ecological transition, this list was updated to incorporate the twenty largest stakes held by Ircantec, the five largest emitters of CO₂ and the five largest holders of stranded assets. Since 2022, new changes have been made to reflect the Scheme's new climate policy.

To respond to the climate emergency, Ircantec strengthened its engagement to ensure its reserves are on a trajectory compatible with a 1.5°C scenario as defined by the Paris Agreement. Amongst others, these decisions impact stricter exclusions on the operation and development of thermal coal-related activities or non-conventional activities (shale gas and oil, oil sands, extra-heavy oil, etc.).

The list now includes the main stakes in financial institutions involved in controversial practices such as thermal coal or non-conventional energies without a credible exit plan. An engagement will also be formed with these financial institutions. Note that these securities are intended to replace stranded assets that have progressively disappeared from Ircantec portfolios following the implementation of the new climate policy.

Furthermore, to remain consistent with these new engagements, Ircantec will expect the following from companies whose stock it owns:

- The adoption of a strategy to achieve a 1.5°C global warming scenario with validation by a scientific body such as SBTi, or to align with an annual decarbonization trajectory of greenhouse gas emissions of 7% on average in terms of intensity;
- The implementation of quantitative targets to reduce CO₂ emissions for all Scopes for companies in high impact¹⁹ sectors;
- The establishment of intermediate targets (short, medium and long term) to ensure a sufficient reduction in greenhouse gas emissions in order to comply with the 1.5°C global warming scenarios;
- For companies involved in the mining, production and use of coal, the implementation of a plan to exit coal before 2030, alongside a conversion plan for activities and employees (just transition).

Ircantec will also ensure the establishment of regular voting on the implementation of the climate strategy and the regular publication of a climate strategy update in accordance with the recommendations of the TCFD.

In addition, prior to the general meeting campaign, the management service carries out an analysis of the EET strategy of several companies considered critical. This year, this preliminary work was carried out with 12 companies. The EET strategy was assessed favorably for three of these 12 companies, while the strategies of four were found to be insufficient (five "neutral" judgments were also issued).

A letter signed by the Chairman of the Ircantec Board of Trustees was sent to the executives of companies whose transition policies are considered insufficiently developed by Ircantec, whether in terms of the strategy presented or the expected results. The purpose of this approach is above all to inform companies on the assumption that it may be useful to them in their current and future efforts on these issues. In 2022, the EET contribution of these 30 companies ("Focus List") was assessed based on 196 resolutions. Ircantec voted against 46 of them:

- Resolutions approving the financial statements were rejected where the EET strategy was not sufficiently restrictive;
- Some dividend payment resolutions were rejected where the EET and R&D investments were insufficient;
- Some resolutions concerning executives' compensation were rejected where the structuring of the variable portion did not involve ESG criteria and KPIs;
- Some resolutions concerning the re-election of Trustees were not approved where the EET strategy was assessed as insufficient.

"Say on climate"

Within the Focus List, several resolutions concerned climate topics. In particular, the question arose of voting on the "Say on Climate" results of Barclays and Engie. For the first, the fact that the group has not made an engagement to exclude financing new oil and gas projects or that not all Scope 3 targets are in absolute terms (but intensity of carbon emissions) were reasons leading to a vote against. For the Engie group, although it revealed a positive desire to reduce its GHG emissions and be "Net Zero" by 2045, Ircantec voted against because the group is not aligned with Ircantec's climate policy (especially its non-alignment with a 1.5°C scenario under the Paris Agreement). Similarly, concerns also arose on the hope placed on "low carbon" gases, and the increased use of LNG from shale gas.

¹⁹ Sectors with high climate impact are defined using the NACE classification which is recommended for the Paris Aligned Benchmark (PAB).

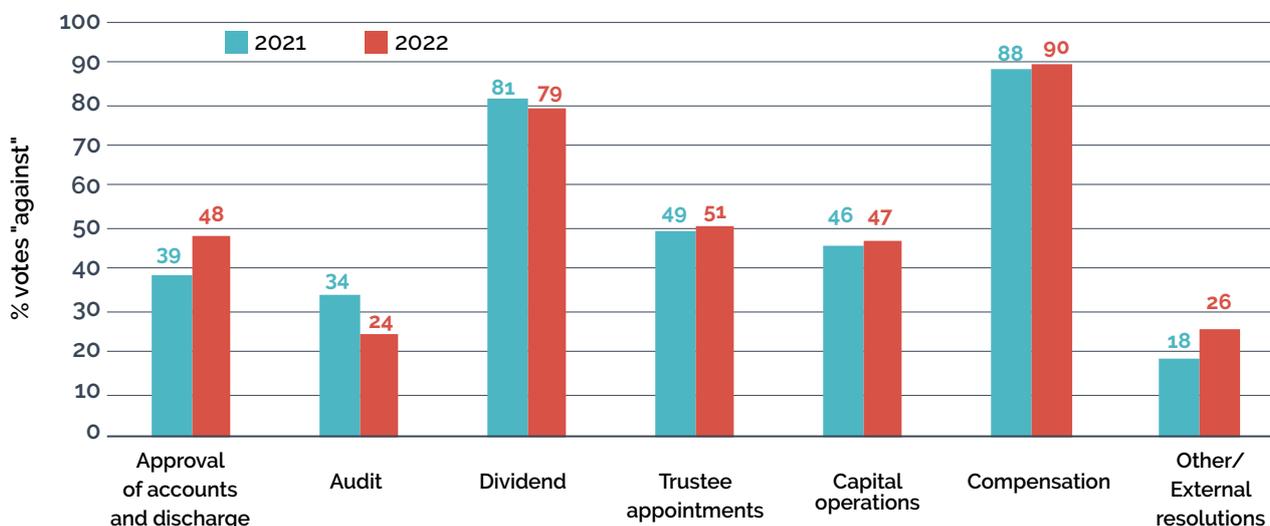
Engagement in favor of more equitable corporate taxation

One of the main impacts of this voting campaign was to observe an increased opposition to the extent of approval of accounts. Indeed, the opposition rate was 39% in 2021 but rose to 48% a year later. This is mainly due to the introduction of a new voting rule concerning the effective tax rate on companies. In this way, opposition may now be expressed if the

company taxation rate is below 20% (except in case of a loss-making year) and if it is not able to present financial reports for each country where it operates or has subsidiaries.

The voting report is published annually and is posted on Ircantec's website²⁰.

Focus List: changes in opposition rate between 2021 and 2022



²⁰ <https://www.ircantec.retraites.fr/sites/default/files/VotingPolicy22-12.pdf>

7



APPENDICES

Appendix 1

Progressive reinforcement of Ircantec climate exclusions

	Starting in 2022	Starting in 2024	Starting in 2030
Thermal coal	<p>Exclusion from the portfolio of companies:</p> <ul style="list-style-type: none"> ◆ where the share of thermal coal in overall turnover is above 5% (mining companies and energy producers); ◆ whose annual production of coal is greater than 10 Mt; ◆ whose electricity production capacity from coal is greater than 5 GW. <p><i>However, these exclusion thresholds do not apply to companies with a credible coal phase-out plan by 2030.</i></p> <ul style="list-style-type: none"> ◆ companies that develop or contribute to new projects. ◆ partners in this industry (for whom 5% of their turnover is linked to thermal coal or who take part in new projects) <p>Investments in green bonds will be maintained if a company has committed to phasing out thermal coal by 2030.</p>	<p>Reinforced exclusion criteria</p> <ul style="list-style-type: none"> ◆ the exclusion threshold will change from 5% to 1% of turnover, in accordance with the "Paris Aligned Benchmark - PAB" European indexes; ◆ absolute thresholds (annual production of thermal coal and electricity production capacity) will be reviewed <p><i>These exclusion thresholds will not concern companies that present a credible plan to phase out coal by 2030.</i></p>	<p>Commitment to ensure zero exposure to thermal coal in the portfolio across all geographical areas.</p>
Oil and gas	<p>Exclusion of companies from the portfolio due to their non-conventional production:</p> <ul style="list-style-type: none"> ◆ which develop new projects in non-conventional energies or which increase their capacity in non conventional energy production; ◆ which produce over 10 mmbœ in non-conventional energy; ◆ for which over 30% of production is associated with a non-conventional activity. <p><i>These exclusion limits do not concern companies that present a credible plan to phase out non-conventional energies by 2030.</i></p> <p>Investment in green bonds will be maintained if the company has committed to phasing out non-conventional fossil energies by 2030.</p>	<p>Stronger exclusions</p> <p>Application of Paris Aligned Benchmark - PAB thresholds:</p> <ul style="list-style-type: none"> ◆ oil represents over 10% of turnover ◆ gas represents over 50% of turnover <p><i>These thresholds do not apply to companies that have adopted a credible plan to reduce their emissions, compatible with a 1.5°C scenario.</i></p> <p>Exclusion of:</p> <ul style="list-style-type: none"> ◆ any company initiating new projects in conventional energies or contributing to the development of new projects. ◆ any company whose production is related to non-conventional activities and which is not engaged in a credible exit plan. 	<p>Commitment to ensure zero exposure to any company in the oil and gas sector that has not adopted a credible emissions reduction plan compatible with a 1.5°C scenario.</p>
Financial sector	<p>Engagement of companies that finance or insure</p> <ul style="list-style-type: none"> ◆ companies operating in the thermal coal sector, ◆ companies engaged in non-conventional activities <p>so that they develop credible plans to phase out coal and non-conventional energies by 2030.</p>	<p>Definition of exclusion threshold for thermal coal and non-conventional energies</p> <p><i>These exclusions will not be applied to financial institutions with a credible plan to phase out coal and non-conventional energies.</i></p>	

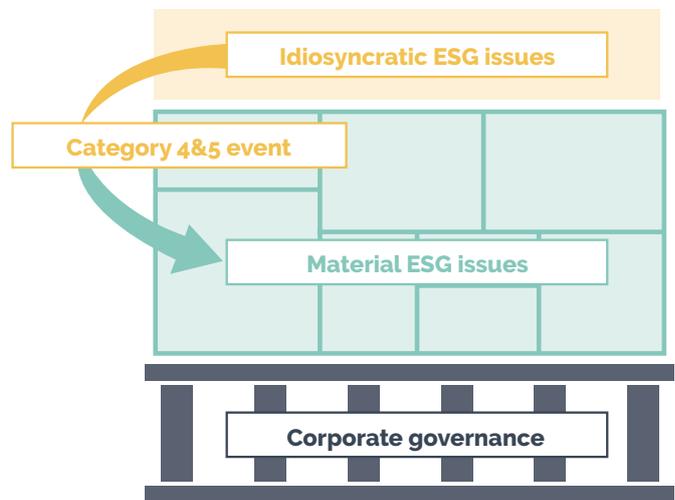
Appendix 2

ESG methodology

For listed and quasi-sovereign companies

The ESG *Risk Rating* assesses the residual ESG risk of an issuer, namely any risk they do not control. The aim is to analyze the issues that have an impact now and in the medium / long term financial performance of the issuer. These issues are selected on a financial materiality basis.

The ESG risk ratings comprise three components that contribute to the overall company rating. These components are corporate governance, *Material ESG Issues* (MEI) and idiosyncratic ESG questions.



Component no.1: Corporate governance

Corporate governance is a fundamental element of ESG risk ratings and reflects our belief that poor corporate governance poses significant risks to companies. It applies to all companies in our research universe, regardless of their sector of activity. Exposure to corporate governance is similar across all sectors. Only category 4 or 5 events result in an adjustment to a company's exposure score. On average, unmanaged corporate governance risk contributes approximately 20% to a company's overall unmanaged risk score. The final weighting varies depending on the individual selection of material ESG issues for that specific company.

Component no. 2: material ESG issues

Material ESG issues focus on a set of related topics that pose a risk to the financial stability of the company. These require good management in terms of internal policies, programs for implementing these policies and communication with the public. For example, the themes of recruitment, development, diversity, engagement and labor relations are all encompassed under the material ESG topic of human capital, as they relate to employees and require initiatives and human resource monitoring. The common thread running through all human capital topics is attracting and retaining skilled employees. The assessment of material ESG issues takes place at the sub-sector level and is reviewed annually as part of a comprehensive and structured process. At the company level, material ESG issues can be removed from the assessment if they are no longer relevant to the company's business model.

Component no. 3: idiosyncratic events

Idiosyncratic events are "unpredictable" or unexpected. For example, an accounting scandal is certainly not a more predictable event in some industries than in others. It can occur in any company across all industries and therefore falls outside the logic with which we capture material sub-industry specific ESG issues. Idiosyncratic events therefore become material ESG issues if the assessment of the associated event exceeds a materiality threshold. This threshold has been set at a category 4 or 5.

Rating scale

The ESG risk rating is classified on a scale of 0 to 100 with 5 levels of severity, from negligible to severe. This scale makes it possible to define categories of residual risk.

For the assessment of controversies, Sustainability assesses the involvement of companies in incidents resulting in negative environmental, social and governance (ESG) consequences. Involvement in controversy is a key measure of ESG performance that can inform the investment decisions of our clients. The controversy rating reflects the level of a company's involvement in issues and how it handles those issues.

- Incident

An incident is the core component of the controversy rating. It is a business activity that has unintended and/or undesirable negative environmental and/or social impacts on stakeholders. Incidents are mainly assessed according to the negative environmental and/or social impact of the company's activity, as well as the reputational risk that this activity represents for the company. The incidents are tracked by various media and NGOs, and usually fuel the controversy rating for a period of three years.

In exceptional cases, long-lasting, high-impact incidents continue to fuel the controversy rating for more than three years, until they no longer pose a risk to the business.

- Events

Events are series of isolated or related incidents that pertain to the same ESG issues. Events are classified into 40 event indicators that relate to these ESG issues. For example, a series of strikes by employees at a company's operational locations constitutes an event under one of the event indicators, "Labor Relations". To assess an event, an analyst looks at the underlying series of incidents holistically and rates it based on the following factors:

- Impact: negative impact of incidents on the environment and society;
- Risk: business risk for the company due to the incidents;
- Management: enterprise management systems and incident response.

An event is assessed on a scale of 5 levels:

○ Category 5 - Severe

The event has a severe impact on the environment and society, posing serious business risks for the company. This category corresponds to exceptional behavior by the company, a high frequency of recurrence of incidents, very poor management of ESG risks and a manifest lack of will on the part of the company to deal with these risks.

○ Category 4 - High

The event has a high impact on the environment and society and presents high business risks for the company. This rating level represents systemic and/or structural issues within the business, weak management systems and business response, and recurrence of incidents.

○ Category 3 - Significant

The event has a significant impact on the environment and society, posing significant business risks for the company. This rating level represents evidence of structural problems in the business due to recurrence of incidents and inadequate implementation of management systems or lack thereof.

○ Category 2 - Moderate

The event has a moderate impact on the environment and society and presents moderate risks for the company. This rating level represents a low frequency of incident recurrence and adequate or robust management systems and/or business response that mitigate additional risks.

○ Category 1 - Low

The event has a low impact on the environment and society, and the risks for the company are minimal or negligible.

For sovereigns

The country risk ranking assesses the ESG risks to a country's long-term prosperity and economic development by looking at its three types of "capital":

- Natural capital and produced capital: natural capital includes energy, mineral, agricultural and forestry assets. Produced capital includes assets such as machinery, buildings, equipment, residential and non-residential urban land;
- Human capital: includes the value of the skills and efforts of the working population over their lifetime;
- Institutional capital: measures the quality of a country's institutions. The table below shows how the three types of capital are assessed based on a set of metrics that are scored and summarized in ESG Factor Scores.

A country's ability to leverage and manage this capital effectively and sustainably is determined in the model by aggregating three ESG factor scores into an overall ESG factor score.

Natural capital and produced capital		Human capital		Institutional capital	
Energy & climate change	Energy intensity	Essential needs	Access to water and sanitation	Institutional robustness	Government efficiency
	Carbon intensity		Food safety		Quality of legislation
	Renewable energy consumption		Access to electricity		Compliance with laws
	Energy independence				Competition regulation
	Land area below 5 meters of elevation				Ease of doing business
Use of resources	Water intensity	Health & well-being	Life expectancy at birth	Rights & freedoms	Political rights
	Water stress		Number of doctors per 1,000 resid.		Civil liberties
	Habitat protection		Air pollution		Voice & representativeness
Governance	Corruption	Equity & opportunities	Gender equality	Peace & safety	Political stability
	Compliance with laws		Education		Level of peace
			Proportion of individuals using the Internet		

Source: Sustainalytics

These three individual factors are:

- **ESG performance:** It assesses how a country manages its three types of capital based on a set of ESG metrics.
- **ESG trends:** They captures the dynamics of a country's ESG performance based on a 5-year moving average for each of the three types of capital.
- **ESG events:** They systematically capture incidents / events based on the news flow that can affect a country's prosperity and economic development and measures its ability to manage the impact of these incidents/events on its three types of capital in an efficient and sustainable manner.

Finally, the overall ESG factor score is combined with a wealth score for each of the three types of capital,

which measures a country's wealth and is based on World Bank estimates to form our final country risk rating score.

This final score ranges from 0 to 100, reflecting a country's ESG risk in an ascending fashion (low score = "good", high score = "bad"). As part of our rating, all countries are assigned to five risk categories, ranging from negligible risk (risk score is ≤ 10) to severe risk (risk score is > 40). This approach allows for a comparison with the ESG risk score of companies and a precise calculation of the ESG risk score of a diversified investment portfolio including sovereign securities and private issuers.



Appendix 3 Carbon Cost Methodology

Trucost has compiled a database of public information on current carbon prices in over 44 jurisdictions as of January 2017. The Unpriced Carbon Cost (UCC) is the estimated additional financial cost per tonne of greenhouse gas emissions in a future year. It is the difference between current carbon prices and possible future carbon prices for a given sector, geographical area and year.

Rising carbon prices have direct financial implications for businesses where regulations impose a higher price on greenhouse gas emissions from direct business operations. Businesses also face indirect financial risks associated with the repercussions of higher carbon prices on emissions from suppliers, which, in turn, seek to partially or fully recover additional regulatory costs through price rises. Repercussion factors are used to estimate the proportion of carbon price increases on Scope 2 emissions that are passed on from suppliers to businesses.

The carbon price risk premium varies by geography due to differences in government policies and by sector due to the differentiated treatment of sectors within many climate change policies. The sectors are based on OECD research and include:

1. Agriculture and fishing
2. Electricity
3. Industry
4. Air transport
5. Off-road transport
6. Residential and commercial real estate
7. Truck transport

Each of Trucost's 464 business activities were then classified into one of these seven sectors, based on the Carbon Disclosure Project (CDP) framework. If companies do not report to CDP, Trucost uses the geographic revenue distribution of companies as an approximation of their emissions distribution.

High Carbon Price Scenario

This scenario represents the implementation of policies considered sufficient to reduce greenhouse gas emissions in accordance with the objective of limiting the global temperature rise to 2°C by 2100 (Paris Agreement). This scenario is based on research by the OECD and the IEA.

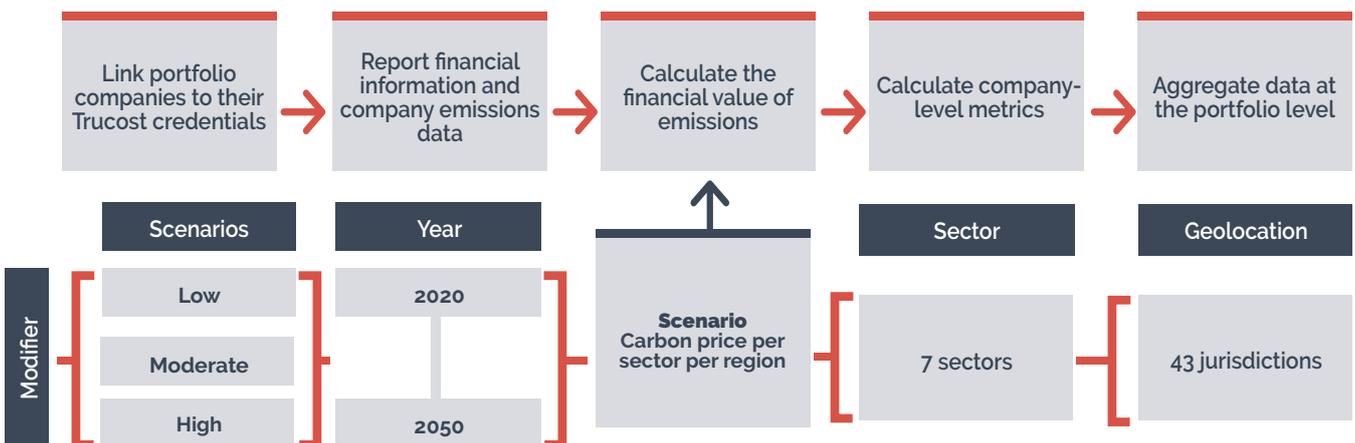
Moderate Carbon Price Scenario

This scenario assumes that policies will be implemented to reduce greenhouse gas emissions and limit the temperature rise to 2°C in the long term, but with delayed measures in the short term. This scenario is based on research from the OECD and IEA as well as NDC assessments by Climate Action Tracker, Ecofys, Climate Analytics and New Climate Team. Countries whose nationally determined contributions are not aligned with the short-term 2°C goal are expected to increase their climate change mitigation efforts in the medium to long term.

Low Carbon Price Scenario

This scenario represents the full implementation of NDCs, based on OECD and IEA research

Application of the Unpriced Carbon Cost (UCC)



Appendix 4

Methodology for alignment with the objectives of the Paris Agreement

Trucost's approach to assessing transition trajectories is adapted from two methodologies put forward by the SBTi, namely the *Sectoral Decarbonization Approach* (SDA) and the *Greenhouse Gas Emissions per unit of Value Added* (GEVA).

SDA approach

The first methodology (SDA) applies to companies whose commercial activities are homogeneous and have high carbon emissions. It is based on the idea that all the companies in a portfolio, regardless of the sector, must converge towards emission intensities in line with a 2°C scenario by 2050. The method uses 2°C transition scenarios that are specific to each industry, and the performance of companies is measured according to their emission intensity and their production level (for example in tCO_{2e} per GWh or per tonne of steel). Indeed, trajectories may vary from one sector to another (i.e. faster for energy and slower for cement), depending on available technologies, mitigation potential and mitigation costs. Thus, companies with low reference year emissions and low production growth can reduce their emissions at a gradual pace. Conversely, companies with high emissions or high growth must achieve faster reductions.

The scenarios used in the SDA approach are the International Energy Agency's (IEA) scenarios taken from the 2017 *Energy Technology Perspectives* (ETP) providing compliant SDA assessment parameters with a global warming of 1.75°C, 2°C and 2.7°C. The integration of a 1.5°C scenario is in progress.

GEVA approach

The second methodology (GEVA) applies to companies whose activities are more heterogeneous or characterized by low carbon emissions. This approach assumes that many companies have diverse business activities for which specific trajectories are not available at the scale of physical production. For these companies, the GEVA method assumes that all the heterogeneous sectors of the economy must reduce their emissions at the same rate. Thus, if the global economy must reduce its emissions by X% per year until 2050, then according to the GEVA approach, each company must also reduce its emissions at the same rate of X% per year, regardless of the starting intensity. In absolute terms, this condition implies that the companies that emit the most must reduce their emissions much faster than those that emit the least. Unlike the first methodology, the value-added unit approach is based on an economy-wide scenario, and emissions intensity is measured against a financial denominator, not a physical one. Each

company's transition trajectories are measured in terms of carbon per unit of value added, adjusted for inflation, which represents their contribution to total global emissions. These results are then compared to global decarbonization trajectories satisfying a given temperature rise scenario.

The scenarios used in the GEVA approach are the Representative Concentration Pathways scenarios used in the IPCC's AR5 report, providing GEVA assessment parameters consistent with 1.5°C, 2°C, 3°C, 4°C and 5°C warming scenarios.

Evaluation period and data sources

The transition trajectories analyzed incorporate both historical and prospective data to provide a medium-term assessment. This minimizes the uncertainties of using only forward-looking data and provides sufficient time to minimize the effect of any year-to-year volatility. Historical data on greenhouse gas emissions and business activity levels are incorporated from a reference year of 2012. Forward-looking data sources are used to track likely future transition trajectories from the most recent year of disclosed data through 2025. Forward-looking data are used based on an established data hierarchy, consisting of the following sources:

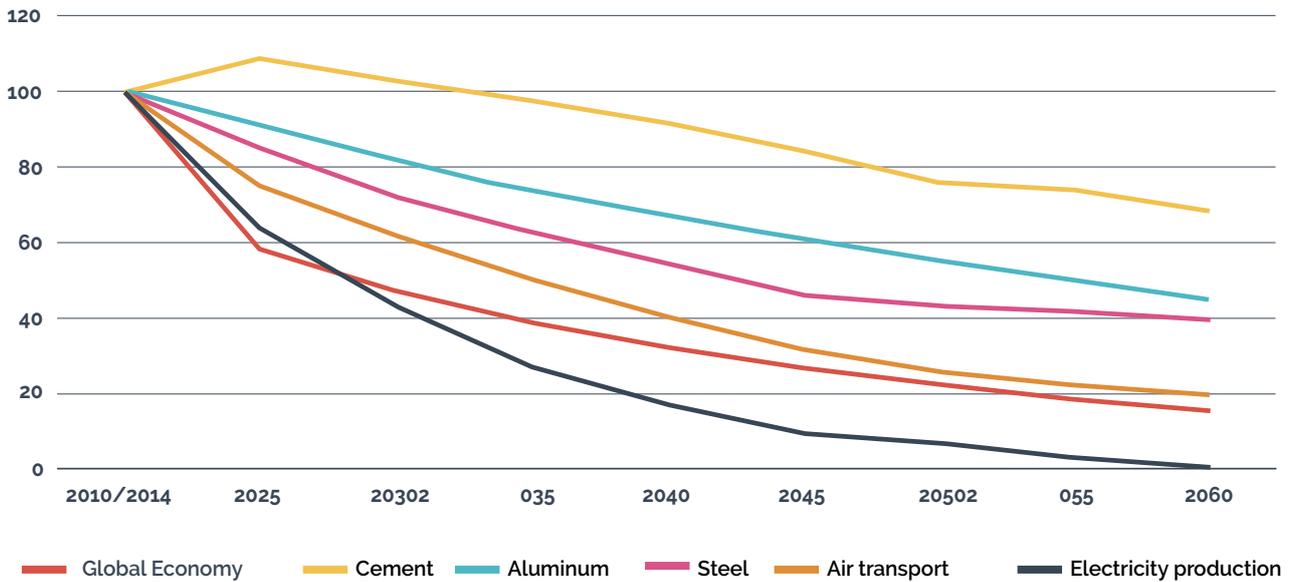
1. Emission reduction targets disclosed by the company
2. Asset-level data sources that provide signals about potential future changes in production from high-emitting sources.
3. Historical trends in company-specific emissions for companies assessed on the basis of homogeneous business activities.
4. Average historical trends in emissions by sub-sector for companies assessed on the basis of heterogeneous business activities.
5. No change in emissions intensity beyond the last year.

Evaluations of the portfolio use the combined Scopes 1 and 2 emissions as the evaluation limit.

The graph below illustrates the decarbonization trajectories for the five sectors covered in the SDA approach, as well as the trajectory used for the remaining sectors in the GEVA approach ("Global Economy" in the key). Each sector's unique intensity unit has been indexed out of 100 for ease of comparison. Sectors where carbon-saving

technologies and/or processes are most profitable are expected to decarbonize faster and end at a lower overall intensity than sectors where these measures are not profitable. For example, carbon intensity reductions are expected to be greater in power generation than in cement production.

Decarbonization trajectories aligned with 2°C by sector



Appendix 5 Environmental Footprint Methodology

Traditional approaches to measuring environmental impact provide a variety of different metrics. For example, carbon and other pollutants are measured in tonnes and water is measured in cubic meters. This makes it difficult to compare the relative contribution of each impact and therefore to prioritize the risks. Trucost solves this problem by applying monetary assessments to each impact, providing a common global metric to assess risk and opportunity across companies and portfolios.

The analysis quantifies the impacts associated with the company's own activities and those of its upstream suppliers, up to the extraction of raw materials. Environmental impacts are often hidden in

global supply chains, so we use an Extended Environmental Input-Output (EEIO) model to isolate responsibilities at each level of the value chain for a holistic analysis of risks and opportunities.

Environmental indicators:

- Greenhouse gases: carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, perfluorocarbons, hydrofluorocarbons and nitrogen trifluoride.
- Water abstraction: direct cooling and direct process water but also purchased water (i.e. water acquired from utility companies).

- Waste generation: waste incineration, landfill waste, nuclear waste (e.g. from product manufacturing, nuclear fuel combustion or other industrial and medical processes) and recycled waste.
- Air pollutants: all emissions released into the air from fossil fuel consumption and company-owned or controlled production processes. This includes acid rain precursors (nitrogen oxide, sulfur dioxide, sulfuric acid, ammonia), ozone depleting substances (HFCs and CFCs), dust and particulates, metal emissions, smog precursors and volatile organic compounds (VOCs). Each has a set of impacts on human health, buildings and/or crop and forest yields.
- Terrestrial and aquatic pollutants: pollution from fertilizers and pesticides, metal emissions into the soil and water, acid emissions in water, pollution of nutrients and acids.
- Use of natural resources: mining and extraction of minerals, metals, natural gas, oil, coal, forestry, agriculture and aggregates.

Appendix 6

Physical Risk Methodology

The publication of the TCFD recommendations has highlighted the importance of climate change as a significant financial risk driver for businesses and investors and the fact that these risks need to be assessed, disclosed and managed. The task force divided these risks into two broad categories, the first being transition risks (including political and legal risk, technology risk, market risk and reputational risk), and the second being physical risks. Trucost has developed physical risk assessment data and analytics to complement the existing suite of transition-focused products. Key features include:

- A robust and scientific methodology for characterizing physical risks related to climate change based on public and private datasets.
- Coverage of seven key indicators: water stress, forest fires, floods, heat waves, cold waves, hurricanes and sea level rise.
- Coverage of three climate change scenarios (high, moderate, low) and three reference years (2020 (baseline), 2030 and 2050).
- Built on a proprietary database of nearly 2.8 million physical assets linked to corporate entities and ultimate parent entities - based on S&P Market Intelligence and all data gathered by Trucost.
- An estimation methodology for businesses without asset information, covering Trucost's CorePlus universe of over 15,000 companies.

Companies are scored from 1 to 100 for all individual risk types, in addition to a composite score that provides an assessment of each company's overall risk level. The scoring framework is based on four key analytical steps:

1. Mapping of climate risks
2. Allocation of asset locations and risk assessment
3. Physical risk exposure rating
4. Adjustment by a vulnerability study

The details of each of these steps are described below.

1. Mapping of climate risks

Trucost assembled models and data representing the estimated absolute risk of seven climate change-related hazards for three climate change scenarios and three time horizons to produce hazard-specific global hazard maps. These maps form the basis of the Trucost Physical Risk Assessment Framework and are based on climate change models from leading research groups, data providers, academic research papers and Trucost data. The three scenarios

used are based on the IPCC's Representative Concentration Pathways (RCPs) and informed by the TCFD's Technical Guidelines. They include:

- **High (RCP 8.5):** Continuation of "business as usual" with emissions at current rates. This scenario is expected to lead to a temperature rise of more than 4°C by 2100.
- **Moderate (RCP 4.5):** Strong mitigation measures to cut current emissions in half by 2080. This scenario will likely lead to a temperature rise of more than 2°C by 2100.

- **Low (RCP 2.6):** Aggressive mitigation measures to halve emissions by 2050. This scenario will likely lead to a temperature rise of less than 2°C by 2100.

Input data for all indicators for each scenario and all years were not always available. The table below highlights the current status of data availability:

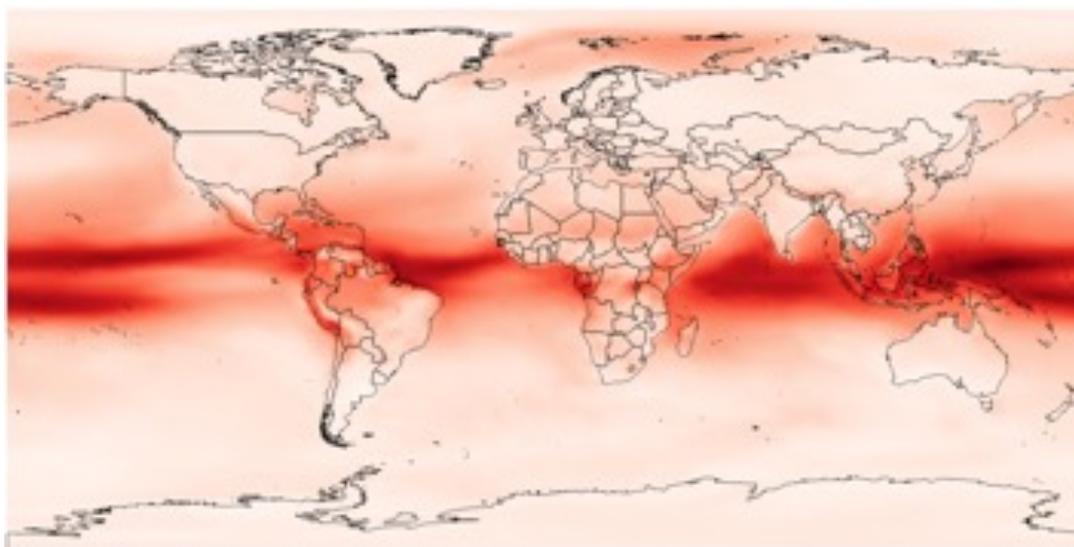
The data used to complete the assessments were taken from the General Circulation Models (GCMs) of the CMIP5 project. The table below shows the sources and models used by Trucost for each of the individual risk types.

Indicator	Low: RCP 2.6			Moderate: RCP 4.5			High: RCP 8.5			Historically only	Notes
	Base	2030	2050	Base	2030	2050	Base	2030	2050		
Water stress											Reference year = 2020, 2040 (not 2050)
Flood											Reference year = 2020, 2040 (not 2050)
Heat wave											Reference year = 2010-2020
Cold wave											Reference year = 2010-2020
Hurricane											Historically only
Forest fire											Reference year = 2010-2020
Sea level rise											Reference year = 2020

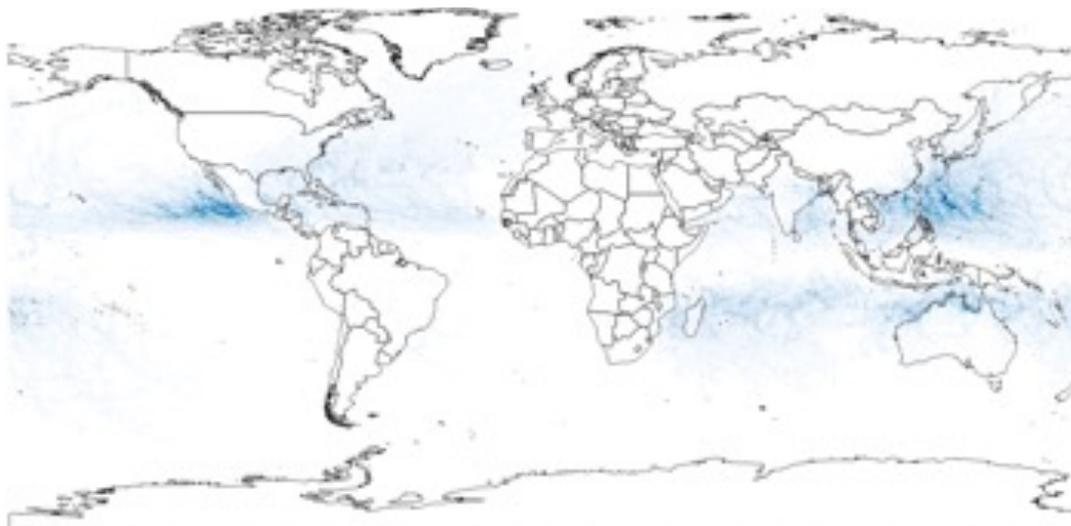
Type of risk	Risk description	Risk indicator	Indicator description	Author of model used	Spatial resolution
Water stress	Foreseeable future portion of water abstraction in relation to total supply of renewable water in a given area.	Water stress benchmark index	Basic water stress is the ratio between total water abstraction in an area and available ground water / underground water. Analysis covers water abstraction with and without consumption for domestic and industrial purposes, irrigation and livestock. Higher values indicate higher competition between users for available water resources.	"World Resources Institute Trucost Analysis"	River basin
Flood	Index representing the weighted exposure of the population to river flooding in the water catchment area.	Risk of river flooding	The risk of river flooding indicates the proportion of the population of each river basin that should be affected by a river flood in an average year. The measurement focuses on floods caused by river flooding and takes into account protective measures against existing floods.	"World Resources Institute Trucost Analysis"	1x1 km
Heat wave	The frequency and severity of extreme heat periods in relation to local climate conditions, measured based on the excessive heat factor.	Excessive Heat Factor (EHF)	The EHF index measures the frequency and intensity of heat waves based on two factors: 1) if the daily average temperature over a 3-day period is higher than the historical 95th centile, and 2) to what extent the daily average temperature is higher than the 30 previous days.	1. NOAA 2. Met Office Hadley Centre 3. Institut Pierre-Simon Laplace 4. Max Planck Institute for Meteorology 5. Meteorological Research Institute	100x100km to 200x200km
Cold wave	The frequency and severity of extreme cold periods in relation to local climate conditions, measured based on the excessive cold factor.	Excessive Cold Factor (ECF)	The ECF index measures the frequency and intensity of cold waves based on two factors: 1) if the daily average temperature over a 3-day period is lower than the historical 5th centile and 2) the cold degree of the daily average temperature in relation to the 30 previous days.	1. NOAA 2. Met Office Hadley Centre 3. Institut Pierre-Simon Laplace 4. Max Planck Institute for Meteorology 5. Meteorological Research Institute	100x100km to 200x200km
Hurricane	Composite index representing the historical frequency and severity/force of hurricane, typhoon or cyclone activity in a given location.	Hurricane index	The index is based on historical hurricane data compiled by the NOAA between 2000 and 2019. It is calculated by multiplying the number of hurricanes transiting via a given location of the planet by the intensity (category) of each hurricane. A weight adjustment based on the date of occurrence is also applied to over-weight the importance of the most recent hurricanes.	Trucost	Approx. 110x110km
Forest fire	Risk of occurrence of forest fire per modeled area based on the location of burnt vegetation.	Burnt area	The fraction of whole grid cells covered by burnt vegetation.	Max Planck Institute for Meteorology	100x100km to 200x200km
Sea level rise	This metric offers a measurement of expected coastal flooding associated with sea level rises, combining CMIP5 modeled forecasts of sea level rise and the CoastalDEM world bare earth elevation model.	Depth of flooding	The extent and depth of coastal flooding due to sea level rise at a given location over a given year	Climate Central	30x30m

The result is a set of climate hazard maps such as those shown below.

Map of heat wave risks according to a “high” scenario in 2050



Map of hurricane risks according to a “high” scenario in 2050



2. Allocation of asset locations

Trucost has established a database of nearly 2.8 million physical asset locations – including asset descriptions – which have been mapped to a universe of over 15,000 listed and private entities. The assets are superimposed on the climate hazard maps to characterize the level of risk at each period in each scenario. The data sources used include S&P MI Real Estate, S&P MI Metals & Mining, S&P MI Power Plants, S&P MI Bank Branches, as well as data compiled by Trucost from government regulatory databases.

3. Physical risk exposure rating

At the asset level: Each asset in the database is assigned a physical risk score from 1 (lowest risk) to 100 (highest risk) for each of seven risk categories,

based on its location on the climate risk maps. The score is intended to represent the relative level of risk for each indicator at each location compared to the overall conditions for all scenarios and time horizons.

At the company level: If asset data are available for the company, the company-level score for each risk type represents the average of the asset scores. If only the head office location is available, the company level score is a combination of the physical risk score for the company head office and a weighted average of the average physical risk scores across the countries in which the company generates income. The latter is calculated by multiplying the company's revenue share by country (as a percentage of total revenue) with the average physical risk score for each country. The physical risk score of the head office is weighted at 20%, and

the revenue-based score is weighted at 80% of the final company score.

At the portfolio level: Portfolio level scores are calculated based on a weighted average. This is calculated by adding up the physical risk score of each company multiplied by their weight in the portfolio.

4. Adjustment by a vulnerability study

The “gross” physical risk exposure score described above indicates the relative exposure of an asset, company or portfolio to each risk indicator compared to global conditions, but does not indicate to what extent the manifestation of each risk may be detrimental to the operation of the asset by the company. Along with these scores, Trucost also provides a “vulnerability-adjusted” physical risk score that takes into account the potential

significance of events for asset owners' activities.

Gross scores were adjusted using “vulnerability factors” calculated by Trucost by linking each physical risk indicator to a set of tangible business impacts and a metric that can be measured at the company level to reflect each company's relative vulnerability to each risk indicator and its impact. The table below outlines the three company-level vulnerability factors included in the calculation of the vulnerability-adjusted physical risk score.

Vulnerability indicator	Type of risk	Business impact	Rationale
Water intensity (direct or indirect)	• Drought	• Scarcity of raw materials • Higher operating costs • Stranded assets	Water-intensive companies are more likely to be affected by water stress
Capital intensity	• Flooding • Sea level rise • Forest fire • Hurricane	• Asset impairment • Loss of inventory • Production disruptions • Infrastructure damage	Capital-intensive companies are more likely to be affected by climate events causing physical damage
Labor intensity	• Heat wave • Cold wave	• Productivity losses	Companies requiring a lot of labor are more likely to be affected by a deterioration in working conditions

In addition to individual risk scores, Trucost provides company-level composite risk scores that are intended to provide a combined measure of exposure to the seven risk indicators. The final composite score is calculated based on a logarithmic curve, designed to highlight companies with high exposure or sensitivity on a single indicator, which might otherwise be masked when averaging the seven physical risk indicators.

The main limitations of Trucost's physical risk analysis include:

- **Modeling uncertainty:** The climate models that underpin physical risk analysis are complex and subject to uncertainty. Trucost sought to mitigate this uncertainty by basing the physical risk assessment on the averages of the results of multiple CMIP5 GCMs.

- **Uncertainty regarding the location of assets:** Trucost's physical risk assessment incorporates a range of asset location datasets, some of which are actively managed and updated regularly, while others are updated less frequently. Therefore, the database may not reflect recent changes in asset ownership and activity. Trucost has sought to mitigate this uncertainty by limiting data from historical datasets to the past three years.

- **Spatial resolution:** Trucost has sought to integrate climate modeling at a sufficient spatial resolution to allow robust estimation of exposure to physical hazards, but this analysis could be improved in the future through the integration of regional climate models on a smaller scale.

- **Aggregation of the company score:** Due to data limitations, it is currently not possible to reliably assign weights to each asset based on the economic value or activity level of each asset when calculating the average physical risk score of the company. Therefore, all assets held by a company are equally weighted in the calculation of the company's physical risk score. This can result in over-weighting or under-weighting assets within a company's portfolio relative to the true value or importance of each asset to the company's operations.
- **Relative vulnerability analytical framework:** The vulnerability weighting analytical framework is designed to weight the seven physical risk indicators based on the expected vulnerability of individual companies to each indicator. The framework will be upgraded in the future to better reflect the financial importance of different forms of physical risk for companies in all sectors and regions.

Appendix 7

Exposure to the European taxonomy methodology

Analytical approach

The taxonomy describes around 70 business activities related to 7 NACE macro-sectors. Business activities include those that have direct carbon mitigation potential (e.g. renewable energy) as well as those that are relatively carbon intensive but have significant potential to reduce their carbon emissions (e.g. steel manufacturing).

At this stage, Trucost only looks at revenue exposure. It does not look at performance thresholds (e.g. tCO₂e/unit of production) or the "Do No Significant Harm" principle (DNSH). The dataset covers over 15,000 listed companies in Trucost's Core Plus universe. Trucost also offers historical data for each company.

Trucost uses a blended approach to assess a company's revenue eligibility for the taxonomy. First, Trucost performed a direct mapping between the 464 business activities of its proprietary sector classification system with the Taxonomy activities mentioned above. All business activities that are not mapped directly by this process are reviewed using a bottom-up assessment of their alignment with the taxonomy goals. During this stage, Trucost reviewed the company's revenue and emissions data in its Core Plus universe. Any remaining business activities after this step are considered not taxonomy-aligned.

Transitional and enabling activities

This component assesses the share of turnover from products, services and technologies that contribute more directly to climate change mitigation ("Transitional Activities") and activities that are more

indirectly related that involve providing services and products to transition activities ("Enabling Activities").

The portfolio's exposure to these two types of activities is evaluated as a weighted average as well as in terms of the value of the holdings (VOH). The taxonomy defines most activities as transitional or enabling. However, on occasions where this distinction is not explicitly made, Trucost uses indirect references from the taxonomy to decide which activities are transitional and which are enabling.

The 'multiple' sector category

During the business activity mapping process, three Trucost business activities were mapped to several specific NACE business activities in the EU taxonomy. These are summarized below:

- **"Water, sewage and other systems"** was mapped to the "Generation and distribution of electricity, gas, steam and air conditioning" and "Generation and distribution of water, sewage, waste management and pollution removal" activities

- "Non-residential maintenance and repair" was mapped to "Transport & warehousing (low carbon emission infrastructure construction)" and "Construction & real estate" activities
- "Other non-residential structures" was mapped to "Transport & warehousing (low carbon emission infrastructure construction)" and "Construction & real estate" activities

Appendix 8 Data Collection Methodology

Trucost's unique approach to environmental data collection and modeling allows for near-complete coverage of most investment universes, despite often low levels of reporting amongst companies. A four-step process is used in our data collection exercise:

- **1. Analyze financial and sectoral data** - A company's financial statements are analyzed by collecting consolidated revenues from all companies and specifying their reporting scopes and operational limits.
- **2. Map activities on Trucost's Environmentally Extended Input-Output model** - Trucost's EE-IO model uses over 450 business activities (largely aligned with NAICS, with some additional sectors included to distinguish key activities with significantly different physical impacts) to model the environmental impacts of a company by allocating a portion of each company's revenue to one or more of these activities. The EE-IO model then estimates the pollutant emissions and resource use associated with each business activity, both directly (for a company's own operations) and through the supply chain, using a breakdown by income sector.
- **3. Incorporated disclosures and public registry data** - Trucost searches all publicly disclosed company data sources to find usable environmental data that will be used to make modeled estimates. Trucost verifies that the scope and time horizon of all environmental data found matches that of its financial statements.
- **4. Engage with the company and verify data** - Trucost analysts verify the quality of the entire research process internally, then share the results with each company directly through a secure online portal. Companies have one month to respond to Trucost to verify its data or directly commit to providing additional or non-public information. If appropriate and applicable data are provided, Trucost will incorporate the data into its analysis before publishing the data.

Appendix 9 Previous & terminated commitments

- Ircantec joined the [Assessing Low Carbon Transition](#) initiative in 2018 (led by the [Carbon Disclosure Project](#) and [Ademe](#)) to encourage companies to take appropriate action in terms of climate strategy.
- Between March 2018 and October 2020, the commitment group [Climate Change Transition for Oil and Gas](#) spoke with 25 companies in the energy sector about the evaluation of their exposure to climate risks, the implementation of the TCFD recommendations, the adaptation to the climate regulations, as well as the structure of their future investment expenses. Ircantec was the leader of the initiative to engage with Total.

Appendix 10

Concordance tables TCFD/article 29 of Climate-Energy law

TCFD Recommendations	Page number of corresponding chapter
Governance	
Describe how the Board of Trustees supervises the risks and opportunities of climate change	7
Describe the role of management in the assessment and management of climate change risks	10
Strategy	
Describe the risks and opportunities identified by the company for the short, medium and long term	17-24
Describe the impact of these risks and opportunities on company strategy, policies and financial planning	26-39
Describe the resilience of organizational strategy in the range of scenarios, including a 2°C or lower scenario	42-45
Risk Management	
Describe the process of identifying and assessing climate risks	17-39
Describe the process of managing climate risks	15 and 46
Describe how the climate risk identification, assessment and management processes are incorporated into the risk management system	11
Indicators and objectives	
Publish indicators tracked by the company to measure and quantify climate change risks and opportunities	26-44
Publish Scope 1, Scope 2 and where appropriate Scope 3 GHG emissions data and the associated risks	28
Describe the objectives set by the company to manage risks and opportunities, and how their achievement is monitored	6

Article 29 of Energy-Climate Law (resulting from the draft decree of Feb. 2021)	Page number of corresponding chapter
Summary presentation of the entity's general approach to the integration of environmental, social and quality of governance criteria, particularly in the financing and investment policy and strategy	11
Content, frequency and means used by the entity to inform subscribers, affiliates, contributors, beneficiaries or customers regarding criteria on the environmental, social and quality of governance objectives incorporated in the financing and investment policy and strategy	12
Global share of assets integrating environmental, social and quality of governance criteria in the total amount of assets managed by the entity, as a percentage	26-39
Adherence of the entity or of certain financial products to a charter, code, initiative or label on the consideration of environmental, social and quality of governance criteria, as well as a brief description thereof	35
Description of the financial, human and technical resources dedicated to taking into account environmental, social and quality of governance criteria in the investment strategy by comparing them to the total resources of the entity.	46
Means of informing holders and subscribers on how the entity meets regulatory requirements in terms of non-financial reporting.	12
Actions taken to strengthen the entity's internal capacities.	7
The knowledge, skills and experience of governance bodies, in particular administrative, supervisory and management bodies, in terms of decision-making relating to the integration of environmental, social and governance quality criteria into the entity's policy and investment strategy	7
The integration, where appropriate, of sustainability risks in compensation policies	12
The integration of environmental, social and quality of governance criteria in the operation of internal committees.	10
Information on the entity's engagement strategy with issuers or asset management companies	57
Presentation of the voting policy, filing of resolutions, voting instructions and voting on resolutions on environmental, social and quality of governance issues at general meetings	60
Consideration of environmental, social and quality of governance criteria in the decision-making process for the allocation of new management mandates	46
Decisions taken in terms of sector disengagement policy	15
Information concerning the portion of assets managed for activities dependent on the exploration, production, transformation, transport, refining and sale of fossil fuels.	20-22
Information on the strategy for alignment with the international objectives for limiting global warming defined by the Paris Agreement	15
Information on the strategy for alignment with long-term objectives related to biodiversity	40
The process of identifying, evaluating, prioritizing and managing risks related to the consideration of environmental, social and quality of governance criteria	46
A description of the main environmental, social and quality of governance risks incorporated and analyzed (including physical risks, transition risks)	14-24
An indication of the review frequency of the risk management framework	
An action plan aimed at reducing the entity's exposure to the main environmental, social and quality of governance risks taken into account	14-24
A clear distinction between the risks emanating from impacts caused by the investment strategy and the risks emanating from the biodiversity dependencies of the assets and activities in which the entity has invested	26-39

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