



RIVAGE INVESTMENT'S CLIMATE RELATED  
FINANCIAL DISCLOSURES (TCFD)

2022

RIVAGE  
INVESTMENT

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# 1. Introduction

The Intergovernmental Panel on Climate Change (IPCC) published on March 2023 the Synthesis Report (SYR) of its Sixth Assessment Report (thereafter “AR6”) on climate change. This report presents the most advanced and recent knowledge on global warming, while emphasizing Human activities’ unequivocal responsibility for it.

In this report, the IPCC points out that greenhouse gas emissions due to human activities have warmed the climate at an unprecedented rate: with global surface temperature reaching 1.1°C above 1850–1900 in 2011 - 2020<sup>1</sup>.

In all reference RCP scenarios, the IPCC estimates with high confidence that global warming will reach 1.5°C by the early 2030s. Limiting this warming to 1.5°C and 2°C will only be possible by accelerating the reduction in GHG emissions now, in order to:

- reduce net global CO<sub>2</sub> emissions to zero;
- sharply reduce other greenhouse gas emissions.

The IPCC's 6th Assessment Report also attests to the increase in exposure to physical climate risks (heat waves, extreme precipitation, droughts, melting of the cryosphere, changes in the behavior of many species etc.) at equivalent levels of warming compared to data presented in the 5th Assessment Report (2014).

Climatic and non-climatic risks will occur more frequently with increased intensity making them more complex and difficult to manage.

The AR6 points out that current global financial flows are insufficient to meet global climate goals. Incidentally, the European Commission estimates that an average annual investment of €1.25 trillion until 2030<sup>2</sup> will be necessary to reach EU Climate Goals as stated in the Fit-for-55 objectives<sup>3</sup> and RepowerEU<sup>4</sup>.

In this context, Infrastructure and Public sector investments play a pivotal role in achieving climate neutrality and resilience.

As one of the leading portfolio management company lender in the space of project finance on the European continent, Rivage Investment embraces the opportunities incurred by the transition to a low-carbon economy. Indeed, our position has enabled us to identify early on the emergence of climate-related financing needs within the infrastructure sector.

However, infrastructure as a physical asset is specifically exposed to climate risks (both physical and transitional): some infrastructure assets can lead to increased dependency on fossil fuels and locked-in emissions and undue exposure to physical climate risks.

That is why a dedicated governance framework is needed to identify and address climate-related risks to better allocate both private and public investments towards sustainability objectives.

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<sup>1</sup> [IPCC, 2023: Summary for Policymakers. In: Climate Change 2023: Synthesis Report \(A.1\)](#)

<sup>2</sup> [European Central Bank](#)

<sup>3</sup> [Fit-for-55 package is a set of proposals ensuring that EU policies are in line with the climate goals agreed by the Council and the European Parliament](#)

<sup>4</sup> [RepowerEU is a set of proposals to end European dependencies on fossil fuels](#)



In this sense, the Task Force on Climate-Related Financial Disclosures (TCFD) framework is an efficient tool to reflect on our climate strategies and our governance process, while transparently disclosing our efforts to align our business with the objectives set by the Paris Agreement to the company's stakeholders.

## 2. Governance

Rivage Investment is an independent asset management company created in 2010. It combines expertise in European infrastructure and French public sector debt financing. To achieve this, Rivage Investment brings together a multidisciplinary team of experienced professionals.

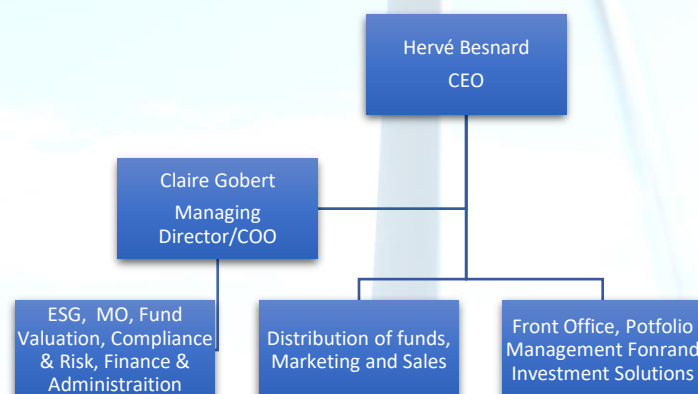
We differentiate ourselves through our agility, our integrity and our ability to structure and implement innovative financing in order to build high performing portfolios while accounting for double materiality through management of both impact and vulnerability of our investments linked to environmental social and governance factors.

Rivage Investment counts in its clientele many of Europe's leading institutional investors, particularly in the insurance, pension and retirement sectors. Our priority is to meet the expectations of our investors and the challenges of sustainability.

Rivage Investment is fully owned by the CEO (Hervé Besnard) and its employees, creating a common alignment with our investors. Rivage Investment is managed by the CEO and the General Manager/COO (Claire Gobert). Their role is to design and oversee the implementation of the company's operating strategy. They sit on several committees (investment committee, compliance & control committee, risk committee, valuation committee, etc.) which are held regularly and whenever necessary, along with other relevant senior staff members.

The Company is organized into 3 departments:

- ❖ Front Office, Portfolio Management and Investment Solutions
- ❖ Marketing & Sales
- ❖ Support functions: Middle-Office, Fund Valuation, ESG, Compliance & Risk, Finance & Administration



Rivage Investment's responsible investment values and strategy are expressed through the leadership

and sponsorship of Claire Gobert, General Manager. With the CEO, she forms Rivage Investment's Executive Management body, which is responsible for the Company's ESG framework. Executive management defines and oversees the company's climate objectives while implementing climate-related risks and opportunities into Rivage's strategy. It allocates adequate monetary and human resources to achieve Rivage's climate objectives and targets.

The Risk Committee is the body responsible for Risk monitoring, including climate-related risks. It meets on an ad hoc basis (at least once a year) to review the status of the systems, risk policies and related documentation (models, procedures) as well as risk measures over the past period. Risk Committee members include heads of Fund management (at least one), the COO, the Head of IT, the Head of Fund Accounting and Valuation, and the Head of Compliance and Risk. Compliance with both internal (procedures, policies, clients) and external (regulatory) requirements regarding climate-related data implementation is assessed by the Risk Committee. The Head of Compliance and Risk Control, a standing member of the Investment Committee, holds a right of veto for all risks related matters, climate-related risks included.

The identification of potential systemic risks to which the Company and its portfolios are exposed is carried out jointly with the Front Office and the ESG teams. This analysis is renewed at least annually as part of the review of the risk management policy, subject to validation by the Risk Committee. With regards to its activities, the management company is generally exposed to both financial and extra financial risks, including transition and physical climate risks.

The ESG team, currently composed of 5 people (including 4 analysts and one manager) is responsible for assessing and monitoring climate related KPIs at fund and company level (carbon footprint, alignment to the Paris Agreement targets, exposure to fossil fuels, etc.). The ESG Manager reports to the Executive Management and/or the Risk Committee on responsible investment initiatives and actions, as well as any potential critical indicator for discussion prior to each investment committee to facilitate informed decision-making.

Performance against climate-related targets is reviewed at least annually (or on an ad hoc basis when necessary) by the ESG team and presented to all relevant internal stakeholders (in particular the executive management, the risk committee and the Investment team) to define together key strategic guidelines regarding climate data integration and related targets both at fund and company-level.

### 3. Strategy

All infrastructure assets financed by investment funds managed by Rivage Investment are in Europe (or French overseas territories). Besides, since these real assets generally have on average a minimum life expectancy of 20 to 30 years, our standard planning horizon is 2050. Any risks that could materialize before 2030 is considered as short term, while beyond 2050 is considered as long term.

Some of our infrastructure projects are directly and indirectly exposed to physical and transitional climate risks. The direct climate risks identified in our portfolio, if not mitigated, will result in reduced project operation and financial performance, increased costs and, potentially, asset depreciation. However, we also expect opportunities to arise from climate change, as significant financial amounts will be required to fund the transition and adaptation plans of our current and future investees.

### 3.1. Transition Risks

We have identified that our most carbon intensive infrastructure projects are the most exposed to transitional risks through increased fossil fuel dependency in their value chain (be it directly, or via upstream/downstream activities):

- ❖ in the energy sector: natural-gas powered plants and waste-to-energy plants;
- ❖ in the transportation sector: airport, motorways, and fossil-fuel powered rolling stocks.

Transitional risks are embodied in the concept of stranded assets and locked-in emissions. We believe that exposure to these assets will become increasingly risky as their positive cash flows erode, particularly over the medium to long term, due to:

Risk type	Climate-Related Risks	Potential Financial Impacts
<b>Policy and Legal:</b> significant changes (at both EU and country-level) in regulatory factors will negatively impacts the value of carbon-intensive assets	<ul style="list-style-type: none"> <li>• Increased pricing of GHG emissions due to the capping of GHG emissions and the gradual phasing-out of free allowances on the EU Emissions Trading System Market</li> <li>• Changes in tax policies and/or subsidies to favour specific sectors and/or technologies...</li> <li>• Higher reporting and transparency requirements (CSDR)</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing financial costs (higher cost of capital...)</li> <li>• Write-offs, asset impairment and early retirement of existing assets due to policy changes</li> <li>• Increasing operating costs (carbon tax, compliance and data provider expenses to meet new reporting expectations...)</li> <li>• Decline in investment opportunities (shrinkage of Rivage’s investment universe)</li> </ul>
<b>Technology:</b> significant technological breakthroughs in cost effective and less emissive alternatives will put our carbon intensive assets at risk	<ul style="list-style-type: none"> <li>• Constant improvement in costs/production of renewable energies (solar and wind) as well as energy storage technologies will accelerate renewables adoption in Europe</li> <li>• Emergence of new market trends (electrification, hydrogen-based mobility, CCS...) ...)</li> </ul>	<ul style="list-style-type: none"> <li>• Stranded assets (write-offs, early retirement of existing assets, significant alteration of initial financial revenue models ...)</li> <li>• Increased costs for borrowers (R&amp;D expenditures in new and alternative technologies, higher capital costs...)</li> <li>• Lower revenues for borrowers (pricing competition, reduced demand, loss of market shares...)</li> </ul>
<b>Market:</b> shifts in customer behavior toward less emissive alternatives	<ul style="list-style-type: none"> <li>• Radical shifts in consumer’s habits due to stigmatization of high-emitting assets (airports, fossil fuel powered rolling stocks...)</li> </ul>	<ul style="list-style-type: none"> <li>• Lower revenues (reduced demand, loss of market shares...)</li> <li>• Increased financial costs (higher capital costs, ...)</li> <li>• Stranded assets (write-offs, early retirement...)</li> </ul>
<b>Reputation:</b> shifts in consumer preferences toward less carbon intensive portfolios	<ul style="list-style-type: none"> <li>• Higher reporting and transparency requirements (SFDR, EU Taxonomy, UNPRI, Article 29...) should</li> </ul>	<ul style="list-style-type: none"> <li>• Decline in investment opportunities (shrinkage of Rivage’s investment universe)</li> </ul>

	<p>increase pressures from our stakeholders (customers, competition, policymakers, civil society...) to drive us to reduce the carbon-intensity of our investments at a faster pace than anticipated.</p>	
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In addition, as we approach 2050 (and beyond), we anticipate significant policy interventions aimed at limiting demand or preemptively reducing the use of energy-inefficient assets. For critical assets, we foresee a growing reliance on new carbon capture technologies to mitigate residual greenhouse gas emissions.

### 3.2. Physical Risks

Since our infrastructure projects are near impossible to relocate while being built for decades, acute and chronic physical climate risks constitute also major risks and opportunities for the assets we finance.

Acute risks are already materializing, and we expect them to intensify in the medium and long term, while chronic physical climate risks identified in our portfolios are likely to be significant in the long run (except for the increase in average temperature, which is short term).

Type	Climate-Related Risks	Potential Financial Impacts
<b>Acute</b>	<p>Increased frequency and severity of the following extreme events:</p> <ul style="list-style-type: none"> <li>• heatwaves (roads, rail)</li> <li>• droughts (biomass)</li> <li>• floods (roads, power plants...)</li> <li>• wildfires (particularly assets located in Southern Europe)</li> <li>• storms (particularly assets located in Northern Europe and offshore wind turbines)</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in expected revenues (e.g., interruption or slowdown of operations following a climate event i.e. forest fires, floods or heat waves, lower biomass and CSP productivity due to heatwaves and growing water stress)</li> <li>• Higher costs (the restoration of infrastructure operations following damage caused by extreme weather events may lead to unplanned maintenance expenditures, high resilience/adaptation costs, high insurance premiums and/or reduced insurance availability in high risk locations...)</li> </ul>
<b>Chronic</b>	<ul style="list-style-type: none"> <li>• Increase in average temperature (water utilities, social housings)</li> <li>• Water stress (traditional energy sector, biomass and concentrated solar power (CSP) plants)</li> <li>• Sea level rise: social housings and oil &amp; gas facilities located on coastal areas</li> <li>• Clay swelling/shrinkage (social housing)</li> </ul>	<ul style="list-style-type: none"> <li>• Write offs and/or early retirement due to damages...</li> <li>• Decline in investment opportunities (reduction in Rivage’s investment universe)</li> </ul>



### 3.3. Opportunities

Although we anticipate a decline in investment opportunities, we believe it could largely be offset in the short, medium and long run by:

- rising funding needs in Europe but also globally in the field of infrastructure and public sector to finance the low-carbon transition;
- the emergence and reinforcement of positive long-term structuring trends (decarbonization, resource efficiency, clean energy source, clean tech, digitalization, de-centralized energy, etc.);
- the funding of the adaptation and climate change resilience plans of existing infrastructure.

The development of new products to fill the financing gap in the fight against climate change is an significant component of the Company's strategy over time.

### 3.4. Impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning

Following the regular assessment of our climate related risks and opportunities, Rivage Investment has defined a range of targets and actions to support its transition towards a low-carbon economy:

#### ➤ **Pilar 1: Compliance with the Paris Agreement**

Rivage Investment is committed to comply with the Paris Agreement by 2050. To this end, we have progressively amended our Sustainability risk policy to exclude from our investment universe all entities that generate 5% (down from 30% previously) or more of their revenues:

- from thermal coal extraction and/or from power generation via thermal coal extraction ("High-Carbon Intensity Coal Entities");
- from deep sea drilling and/or tar sands exploitation ("Unconventional Oil & Gas Entities");
- from the development of additional capacities for conventional oil & gas entities ("Conventional Oil & Gas entities") from the year 2024 (together with Unconventional Oil & Gas Entities: the "Oil & Gas Entities")

Finally, a total exit from fossil fuels (conventional Oil & gas) shall be achieved by 2040 (there is already no Unconventional Oil & Gas investments).

With High-Carbon Intensity Coal Entities as well as Oil & Gas Entities, a phase out of coal-based energy production or extraction is a requirement for any climate scenario compliant with the Paris Agreement targets. Therefore, the Policy allows for an exception to its exclusion policy to have investments in entities presenting, as reasonably determined by the Company, a quantitative and documented phase-out of fossil-based energy (extraction or production).

The phase-out pathway shall be in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement targets (limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C).

#### ➤ **Pilar 2: Development of new products**



In addition, our position as one of the leading project finance asset manager lenders on the European continent has enabled us to early identify the emergence of climate transition themes in the infrastructure space:

- ❖ *Rivage Private Debt – Fund for Infrastructure Climate Solutions (Rivage PD-FICS)*: That fund was set up early 2023. The fund's objective is to seek out returns achieved by holding, or being exposed to debt securities relating to high yield financing infrastructure corporates and project finance companies in Europe and OECD, contributing to climate change mitigation and/or adaptation with a strong alignment with the EU Taxonomy, in view of achieving the long-term global warming objectives of the Paris Agreement. The fund complies with Article 9 of SFDR.
- ❖ *Rivage European Climate Debt Solution (EuCliDeS)*: In 2021, we conducted a comprehensive market analysis on climate themes and concluded that the existing debt offering on the market was not tailored to the financing needs of these new emerging sectors and companies. Since then, we have decided to launch a multi-investor growth & scale-up debt fund which will finance companies offering climate solutions for the decarbonization of the economy, measured by quantified avoided greenhouse gas emissions (coupled to a significant alignment with the EU Taxonomy). This fund is currently in its subscription phase. Once launched, it shall comply with Article 9 of SFDR.
- ❖ *New funds intended to comply with Article 9 SFDR*: Rivage Investment also intends to combine its interests with both its climate and social objectives by launching dedicated portfolios in the public sector. For example, appetite is now being tested to launch a thematic fund to help public sector entities, such as social housings, face their challenges, of which, the climate change adaptation.

➤ **Pillar 3: Increased human, technical and financial resources**

- ❖ Reinforcement of the ESG team by hiring 3 people. The team now consists of 5 people, including 2 senior analysts, 2 junior analysts and 1 ESG Manager (8 years' experience), i.e., circa 10% of Rivage's total workforce.
- ❖ Creation of a new climate debt solutions front office team: the EuCliDeS team is co-led by Eric Thamin (25-years' experience) and Vincent Guinaudeau (13-years' experience), who are portfolio managers and originators. The team Co-heads are members of the Investment Committee along with Hervé Besnard, CEO of Rivage, portfolio manager and originator (25-years' experience) and Gaétane Tracz, infrastructure debt team Co-head and originator (19-years' experience), to leverage on Rivage's expertise and know-how on the infrastructure space. The senior team is complemented by one investment director: Jason Bigeard (10 years industry experience) and one analyst: Onada Mece (7 years' experience) and shall welcome new joiners as this climate initiative grows.
- ❖ Creation of an in-house dedicated IT system to better monitor various ESG data.
- ❖ Significant financial expenses to strengthen climate-related awareness and knowledge to relevant staff members (including the Executive management, the Investment team, the Compliance team and the ESG team) via various training sessions with both internal and third-party experts (EU Emissions Trading System, Carbon accounting, biodiversity risks, environmental impacts of telecommunications assets...)
- ❖ Onboarding of expert data providers to assess our ESG and climate-related risks: Carbone 4 (asset's temperature, and GHG emissions) and I Care (avoided emissions) are the two main providers that contribute to ESG assessments.

#### ➤ **Pilar 4: Increased Governance and Remuneration**

Compliance with climate-related objectives has recently been added to Rivage's remuneration policy. In addition, we seek to align compliance with extra-financial criteria with our interests. Hence, the performance fees of our two impact funds are directly linked to the respect of climate-related criteria: maximum carbon intensity (*Rivage PD-FICS*) or avoided emissions (*Euclides*).

Finally, Rivage Investment is contemplating formalizing a dedicated periodic ESG steering committee. Comprising members of the Board as well as relevant managers (Investment Team, Compliance, ESG, Sales...), this committee's mission will be to monitor on a more consistent pattern, aggregated climate-related exposures and trends, and to address their potential impacts on the Company's business and strategy. In particular, this committee will oversee the execution of Rivage Investment's alignment pathway and associated commitments to meet Paris Agreement targets.

## 4. Risk Management

### 4.1. Identification of climate-related risks

Assessment of financed infrastructure assets' exposure to climate-related risks is currently carried out by Carbone 4, an expert climate data provider. This assessment relies on the basis of a methodology tailored for the infrastructure universe: *Carbon Impact Analytics for Real Assets*<sup>5</sup> (thereafter "CIARA"). This methodology uses a proprietary temperature increase scenario of +2°C by 2100 against pre-industrial levels, based on reasonable assumptions resulting from a consensus of experts for transition risks. Please refer to the annex for more details on the scenario used by this methodology.

The methodology takes into account the evolution over time of the climate performance of the assets (both current and prospective carbon emissions) and the trajectory of the scenario (carbon budget). Emissions from the entire value chain (Scopes 1, 2 and 3) are included in this assessment.

The climate performance of each of our assets is assessed following a bottom-up approach. The model feed on operational data supplied by the Borrower such as production volumes, energy consumption, supply sources... Operational data is collected from various reports either public or communicated directly by borrowers as part of the company's due diligence process. This data falls within the scope of the audit of the companies and, therefore, is considered reliable. In case physical data is not available, estimations based on financial data are used.

The methodology identifies the specific "end-uses" served by each infrastructure asset (such as domestic heating or freight transport). For each end-use identified, the CIARA methodology has assigned a specific decarbonation trajectory (carbon budget) in the 2°C scenario which takes into account several factors such as national and sectoral decarbonation objectives, market trends, regulatory framework..., Depending on the granularity of available data (and relevance), the reference pathway the asset is compared to can either be at national or EU-level. The weighting of end-uses in the asset's production ensures homogeneous comparisons between assets in different sectors fulfilling a similar societal need. This allows for consideration of all alternatives and, consequently, selection of less carbon-intensive infrastructure.

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<sup>5</sup> CIARA Methodology: <https://ciara.carbone4.com/>

Finally, it compares the climate performance of our infrastructure assets with the 2°C scenario's carbon budget. The result per asset is the "surplus" or "avoided" emissions. A "surplus" of emissions indicates that the asset generates greenhouse gas emissions in excess of the limits set by the reference scenario (asset temperature > 2°C); conversely "avoided" emissions indicate that greenhouse gas emissions generated by the asset are compatible with the trajectory of the reference scenario (1.5°C < asset temperature < 2°C). The result is then aggregated at portfolio level by our climate data provider, proportionally to our invest share in the total financing of the project or company, depending on the identification of a use of purpose for the financing (which will determine which one of project finance or business loans PCAF methodology for attribution factor shall be used). These assessments are updated every year.

Alignment of public sector entities (c. 24% of total AuM at the end of the year 2022) with the Paris Agreement (cities, regions, departments...) should in principle result from self-assessment and be subject to public disclosures. However, it is apparent that this data is currently only scarcely available with over 50% of borrowers failing to produce publicly ESG-related documents of any kind. Entities that do measure their environmental performance seldom use single aggregated KPIs, leading to a general inability to benchmark investees with one another. Rivage Investment has joined a common initiative launched in 2023 by peer asset managers investing in similar entities to assess ESG data availability on the borrower's side and which associated KPIs would be relevant to assess their performance in this regard.

A quantitative assessment of exposure to physical climate risks is also conducted for most of our infrastructure debt securities currently (or potentially) in our portfolios by our climate data provider. Physical risks are evaluated based on the specific location of assets and their exposure to a set of 10 chronic or extreme hazards such as heat waves, extreme rainfalls, sea level rise, etc. projected to 2050 according to one of the IPCC's high-emissions scenarios (+4°C - RCP 8.5). Our provider's risk scoring combines climate projections, local/predisposing context information and asset structural (CAPEX) and operational (EBITDA) vulnerability. Our provider uses various information coming from public databases, in-house research and external experts. These assessments are updated every three years but monitored for any potential substantial changes at least once a year.

Finally, qualitative transition and physical risks assessments are also performed at asset level:

- when a potential investee operates within a sector not covered by the CIARA methodology (such as irrigation or healthcare facilities);
- to contextualize our provider's risk assessment;
- or to assess the relevance of our investees' transition and/or adaptation plans.

Qualitative assessments are also carried out at sector and asset class levels to identify current and future systemic climate-related trends (limits on emissions, carbon taxes, technological breakthroughs, shift in consumer demand...) that may impact the value of our portfolios. The qualitative assessments are carried out internally by our ESG analysts and the Investment team, using public data ranging from IPCC to NGO reports, as well as public datasets on climate risk exposure, in-house research, technical datasheets.

#### 4.1.1. Assessment of climate-related risks

Both physical and transitional climate risk assessments have become a cornerstone of our ESG due diligence. Actually, climate related risks are the most scrutinized indicators during our ESG due diligence process, as a result of our main strategy relying on integration of ESG factors into risk management processes.



This process involves the assessment of twelve different ESG performance indicators (KPIs). Each indicator is given an individual score ranging from 1 to 3 reflecting the level of risk (3 = maximum risk), which may be lowered based on the appropriateness of the measures implemented by the borrower to mitigate identified risks. The score for each ESG grid indicator is then consolidated for each project to establish an equally weighted average score: ESG Risk Score (“ERS”).

In this process, climate-related risks are involved at all levels of the environmental analysis:

- ❖ *Alignment with the Paris Agreement:* The lowest risk (1) is assigned to infrastructure projects in compliance with the Paris Agreement and/or, to projects which can demonstrate substantial avoided emissions. Any project that does not comply with the Paris Agreement (“surplus emissions”) as per Carbone 4 analysis and/or is within a high-emitting sector is assigned the highest rating (3). It may be lowered to 2 (medium risk) in the presence of credible mitigation measures e.g.: i) contractual commitment to a scientifically approved trajectory (SBTIs...) compatible with the Paris Agreement; ii) decommissioning of high-emitting assets in the near future.
- ❖ *CAPEX and EBITDA exposure to physical climate risks (two independent indicators):* any project significantly vulnerable to physical climate risks is rated 3 (maximum risk). It may be lowered to 2 (medium risk) if the project has set up (or plan to implement) adequate mitigation measures. Finally, when we deem that the physical climate risks are not material and/or irrelevant, the risk score is lowered to 1.
- ❖ *Biodiversity KPI:* To assess our biodiversity risk, we carry out a qualitative assessment of the five environmental pressures on species and habitats identified by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES): Change of Land Use, Climate Change, Pollution, Exploitation of resources and Invasive species. Climate change accounts for 20% of this assessment. Whether or not the project complies with the Paris Agreement will decrease or increase the climate change risk sub KPI and, consequently, the biodiversity risk.
- ❖ *Sustainability and Principal Adverse Impacts (PAI):* Sustainable investment (as defined by SFDR) means an investment in an economic activity that contributes to 1) either an environmental objective, or a social objective, 2) provided that such investments do not significantly harm (DNSH) any of those objectives, and 3) that the investee companies follow good governance practices. According to our sustainability assessment procedure, one way of considering that a project contributes to an environmental objective is whether it is aligned with the Paris Agreement and/or can demonstrate substantial life cycle GHG emissions avoidance calculated using internationally recognized standards. Similarly, we consider that compliance with the Paris Agreement is a good proxy to demonstrate that certain DNSH objectives have been met. Finally, it should be noted that climate-related PAIs thresholds (DNSH) are set on the basis of an internal benchmark.
- ❖ *EU Taxonomy:* To assess the alignment of our projects to the EU Taxonomy, we carry out a thorough analysis to understand whether the project complies with the climate change mitigation and/or adaptation set out in the taxonomy.
- ❖ *Controversy check:* As any other risks, climate-related controversies are regularly monitored while performing our controversy checks.

#### 4.1.2. Management of climate-related risks

Rivage Investment applies several levels of control to manage climate-related risks.

Firstly, at asset level, sector level and portfolio level, the ESG team and the Investment team monitor relevant climate-related risks likely to arise due to the worsening impacts of climate change within the framework of periodic review of credit analysis. Quantitative assessments are carried out by our climate data provider in collaboration with the ESG analysts, while qualitative assessments are carried out by both the ESG team and the Investment team.

Secondly, the Investment team is primarily responsible for ensuring compliance with the Company's investment guidelines. Our climate-related investment guidelines are defined in our Sustainability policy. In particular, the Investment team must comply at all times with our exclusion list which prohibits any investment in projects or companies that generate more than 5% (down from 30%) of their revenues from high-emitting sectors.

Portfolio's compliance with the exclusion policy is monitored by the ESG and compliance teams during the due diligence process and is further monitored at least once a year. In addition, and as for any other risk, the Risk/Compliance team verifies the suitability of current and potential investments before any investment with regard to the different statutory constraints set for each fund, of which climate constraints are set as per our client's sensitivity to this specific ESG theme.

Following the assessment of climate-related Risk KPIs examined during the ESG due diligence (listed supra), any major climate-related risk highlighted by the assessment will result in extensive due diligence of potential mitigation or remediation measures that may mandate lowering the initial risk score: existence of a satisfactory transition path (SBTis...), current or future implementation of climate adaptation measures.

In the absence of adequate mitigation measures, the ESG team notifies the front office staff in charge of the project/borrower concerned, that an ESG breach or incident has been observed (with a copy sent to the Compliance/Risk department) and suggests engaging in stewardship activities. The ESG team also specifies the objectives it wishes to achieve through the engagement procedure, which can be summarized as follows:

- ❖ Supporting and improving issuer transparency regarding their exposure to sustainability factors;
- ❖ In-depth due diligence regarding exposure to specific risks;
- ❖ Compiling information regarding existing risk management procedures;
- ❖ Management awareness regarding specific climate-related risks;
- ❖ Engagement regarding the respect of contractual agreements covering these themes, etc.

In the event of an unjustified refusal or if there is no reply from the Investment team, or a disagreement between the front office and the ESG team, the latter refers to the Investment Committee, which decides on relevant follow-up actions.

If the principle of an engagement procedure has been adopted, the ESG team steers the process, in coordination with the Investment team.

If the engagement activity result is unfavorable (refusal, no reply, or insufficient receptivity/efforts by the borrower), the Investment Committee is consulted to define the methods used to deal with the issue. Our escalation process is deployed on a case-by-case basis, in collaboration with the investment management team. It ranges from more frequent direct conversations with the investees to divestment and/or litigation.

In addition, any current and potential systemic climate-related risks identified are escalated to the Board and relevant senior staff members and discussed during specific dedicated committee when deemed necessary. To better monitor these risks over the long term, Rivage Investment is currently in the process of formalizing a dedicated periodic ESG steering committee. Comprising members of the Board as well as relevant managers (Investment Team, Compliance, ESG, Sales...), this committee's mission will be to monitor on a more consistent pattern (frequency has yet to be determined), aggregated climate-related exposures and trends, and to address their potential impacts on the Company's business and strategy.

In particular, this committee will oversee the execution of Rivage Investment's transition plan and commitment towards compliance with the Paris Agreement.

## 5. Metrics and Targets

### 5.1. Transition risks

Transition risks result from the transition to a low-carbon economy. It may entail extensive policy, legal, technology, and market changes to address climate change mitigation and adaptation requirements. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organizations.

Although transition risks may pose varying levels of financial risks, the magnitude of risks can be reduced by developing a framework to identify, quantify and address these risks.

The indicators presented hereinafter are the indicators that Rivage Investment implements in its climate-related risk management framework.

#### 5.1.1. Paris Agreement Assessment

The table sets the alignment gap for each infrastructure debt fund managed by Rivage Investment. Any portfolio with an alignment gap > 0 is deemed not aligned with the Paris Agreement target (T°C > 2°C). The Coverage indicates the portion of the assets which are included in the calculation; some assets may not be included because there is no methodology for that sector, or because it would require too much time and costs regarding the infrastructure (such is notably the case of portfolio assets composed of numerous underlying projects).

Rivage Infrastructure Funds	Strategy	Alignment gap 2°C (TCO2e)	T°C	Coverage
Fund 1	Senior	-2,606	1.8	100%
Fund 2	Senior	1,202	2.3	88%
Fund 3	Senior	9,585	4.4	65%
Fund 4	Senior	16,922	4.4	84%
Fund 5	High-Yield	-24,529	1.9	71%
Fund 6	High-Yield	-39,517	1.8	100%
Fund 7	Senior	-7,854	1.9	86%
Fund 8	Senior	56,506	2.9	93%
Fund 9	Senior	77,779	2.6	91%
Fund 10	Senior	52,654	3.0	95%



Fund 11	Senior	-2,426	1.5	100%
Fund 12	Senior	-4,132	1.8	64%
Fund 13	Senior	12,805	3.2	91%
<b>Rivage Investment</b>		<b>146,387</b>	<b>2.4</b>	<b>88%</b>

Source: Rivage Investment: data as of 30/12/2022; PCAF methodology; scopes 1, 2 & 3

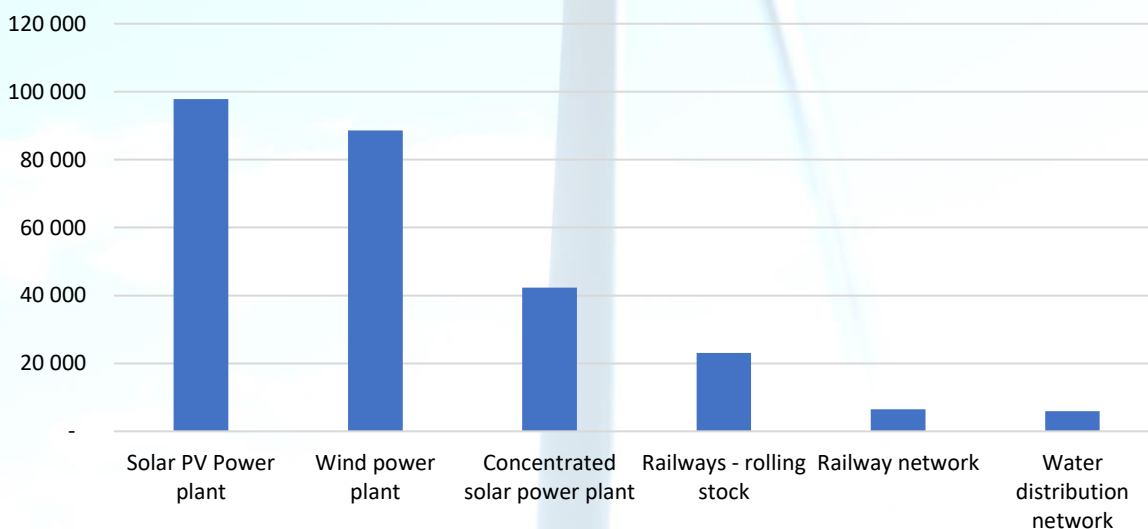
The process stipulates that the information is disclosed to the Risk Committee and the Executive Management to discuss the best strategy compatible with the fund’s criteria and the Paris Agreement. Strategies will depend on the context of the portfolio: for example, if the fund is no longer in its investment phase, we will tend to focus more on developing stewardship activities to reduce the risks. Otherwise, there may be the use of a sectoral approach to better allocate our investments depending on their potential impact on portfolio implicit temperature rise indicator.

### 5.1.2. Sector adding the biggest “surplus” emissions



Source: Rivage Investment, data as of 30/12/2022, Sum of TCO2e added, PCAF methodology, scopes 1, 2 & 3

### 5.1.3. Sector “avoiding” the most emissions



Source: Rivage Investment, data as of 30/12/2022, Sum of TCO2e avoided, PCAF methodology, scopes 1, 2 & 3

#### 5.1.4. GHG Emissions

Other relevant metrics monitored by the company also include the GHG emissions (scopes 1, 2 and 3) to easily identify where to focus our reduction efforts (at both asset and portfolio level) and the carbon footprint for comparison/benchmark between funds and peers.

Rivage Infrastructure Funds	Scope 1 (tCO2e/year)	Scope 2 (tCO2e/year)	Scope 3 (tCO2e/year)	Carbon Footprint (tCO2e/M€ invested)	Coverage
Senior 1	5,309	152	8,026	186	100%
Senior 2	12,504	5,381	63,815	1,072	88%
Senior 3	14,970	568	9,598	595	65%
Senior 4	20,115	17,156	123,413	2,707	84%
High-yield 1	97,798	34	108,422	844	71%
High-yield 2	38,166	201	71,854	554	100%
Senior 5	19,339	4,828	44,949	181	86%
Senior 6	121,557	747	342,370	741	93%
Senior 7	3,246	100,105	3,069,177	3,998	91%
Senior 8	53,612	942	1,010,413	2,275	95%
Senior 9	47	11	772	10	100%
Senior 10	11,591	67	212,685	1,239	64%
Senior 11	30,589	1,665	39,835	316	91%
<b>Rivage Investment</b>	<b>428,843</b>	<b>131,865</b>	<b>5,106,591</b>	<b>1,639</b>	<b>88%</b>

Source: Rivage Investment, data as of 30/12/2022, PCAF methodology, scopes 1, 2 & 3

#### 5.1.5. Sectoral Approach & Exclusion criteria

Finally, we also monitor our portfolio's exposure to sectors that we have previously identified as particularly exposed to transition risks ( $T^{\circ}C > 2$ ):

- ❖ Traditional energy sectors: particularly Oil & Gas logistics & natural gas-powered plants, and waste-to-energy plants
- ❖ Traditional mobility assets

Rivage Infrastructure Funds	Strategy	% fossil fuel exposure (revenues > 5%)	% waste-to-energy exposure	% Airports, roads, fossil fuel vehicles	% Total Transition Risks Exposure
Fund 1	Senior	0%	14%	0%	14%
Fund 2	Senior	0%	6%	16%	22%
Fund 3	Senior	0%	12%	0%	12%
Fund 4	Senior	19%	27%	10%	56%
Fund 5	High-Yield	9%	0%	23%	32%
Fund 6	High-Yield	21%	0%	0%	21%
Fund 7	Senior	0%	11%	26%	37%
Fund 8	Senior	16%	10%	28%	54%
Fund 9	Senior	11%	0%	14%	25%

Fund 10	Senior	17%	11%	26%	54%
Fund 11	Senior	0%	0%	0%	0%
Fund 12	Senior	0%	4%	19%	23%
Fund 13	Senior	4%	13%	13%	30%
<b>Rivage Investment</b>		<b>10%</b>	<b>7%</b>	<b>19%</b>	<b>36%</b>

Source: Rivage Investment, as of 30/12/2022

## 5.2. Physical climate risks

Physical climate risks result from dynamic interactions between climate-related hazards with the exposure and vulnerability of the affected infrastructures to the hazards. Hazards, exposure and vulnerability may each be subject to uncertainty in terms of magnitude and likelihood of occurrence, and each may change over time and space due to socio-economic changes and human decision-making (*IPCC Sixth Assessment report*).

A quantitative assessment is conducted for most of our infrastructure projects. Physical risks are evaluated based on the specific location of assets and their exposure to a set of 10 chronic or extreme hazards such as heat waves, extreme rainfalls, sea level rise, etc. projected to 2050 according to one of the IPCC's high-emissions scenarios (+4°C - RCP 8.5).

Depending on the specific vulnerability profile of each infrastructure asset to climate hazards, Carbone 4 will assign to the project a score ranging from 0 to 1 (1 = maximum risk). Infrastructure assets with a score above 0.8 are considered as critical in terms of physical climate risks. In the absence of adequate mitigation measures, the asset will be assigned the maximum risk rating (3). These assets are monitored at least once a year.

Details of our exposure to assets critically exposed to physical climate risks without evidence of mitigation measures are presented below (at portfolio and sector level).

Three portfolios are more significantly exposed to physical climate-related risks.

Rivage Infrastructure Funds	Exposure to unmitigated Physical climate risks	Unmitigated physical climate risks identified
Senior 1	0%	
Senior 2	12%	Storms and strong winds & Sea level rise
Senior 3	0%	
Senior 4	19%	Storms and strong winds & Sea level rise
High-yield 1	9%	
High-yield 2	0%	
Senior 5	0%	
Senior 6	29%	Sea level rise; storms and strong winds; heatwaves
Senior 7	9%	
Senior 8	32%	Sea level rise; storms and strong winds; heatwaves, wildfires
Senior 9	33%	Wildfires
Senior 10	14%	Heatwaves & Sea level rise
Senior 11	3%	Heatwaves



<b>Rivage Investment</b>	<b>14%</b>	
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Source Rivage Investment: data as of 30/12/2022. % of AuM substantially exposed i) to physical climate risk; and without evidence that mitigation measures have been implemented (3 = maximum risk)

At the sector level, assets located near coastal areas, long linear assets or multi-assets infrastructure projects are the assets most at risk.

Asset Type	Critical physical climate risks	Potential damage
<b>Oil &amp; Gas</b>	Sea level rise Storms and strong winds	Floods and corrosion risks, affecting the integrity of the facilities, leading to Natech incidents
<b>Roads</b>	Heatwaves and high temperature Forest fires Flash floods	Structural material degradation of roads (melting, thermal expansion...) Inability to operate the asset for long periods of time (remediation)
<b>Social Housings</b>	Sea level rise Heatwaves and high temperature Clay shrinkage	Degradation of the structural materials of buildings (fissuring due to heat, accelerated aging of reinforced concrete structures and constructions, etc.) and increasing discomfort for residents during heat waves.
<b>Solar PV</b>	Wildfires	Direct damage to the infrastructure and/or power systems

Some of these risks are probably overestimated, mostly due to:

- ❖ **Methodology limitation:** the methodology developed by the main provider delivers results as granular as the input data provided. In the case of multi-assets infrastructure investments (portfolio of solar PV plants, telecom towers, ...), providing GPS location of each sub-asset might prove difficult and time-consuming... In the spirit of operational efficiency, we provide our climate data provider with a broader geographical perimeter to assess, leading to an averaging of risk exposure which might be overestimated at asset level in some instances. This is especially true for the sea level rise risk exposure (motorway stations and social housings) which decreases steeply as you move away from the coast.
- ❖ **Insufficient data:** failure to access relevant data is a significant hurdle. Without accurate and relevant data, it is impossible to make informed decisions about whether mitigation measures are adequate or not and result in the maximum risk rating (3). We will require borrowers where we encounter these difficulties to improve their transparency reports to better assess their vulnerability, and, where appropriate, lower their risk to 2.

Physical climate risks identified could also be irrelevant, not material or mitigated for several reasons:

Type of risk	Examples
<b>Irrelevant:</b> the asset's context makes it immune to some physical climate risks: the probability of occurrence and damage is virtually nil	<ul style="list-style-type: none"> <li>• underground assets (fiber, metro stations, ...) are immune to most overground physical climate risks (wildfires, droughts, changes in precipitations patterns...)</li> <li>• wind turbines are immune to water-related risks</li> </ul>
<b>Not material:</b> the asset is exposed to a material risk, that can easily be avoided in the event of its occurrence	Solar PV: as access to water will become increasingly restricted and expensive (water

	stress), these assets could easily switch to efficient dry-cleaning technologies
<b>Mitigated:</b> the asset is exposed to material risks. Adequate mitigation measures have been implemented	It should be noted, however, that for ESG analysis, the insurance program is not taken into account, in order to consider a risk as mitigated.

### 5.3. Targets

After 2 years spent measuring and analyzing climate-related data in the company's risk management framework, it is envisaged that Rivage Investment reach a sufficient level of maturity to envision setting quantitative targets in line with global climate goals, starting in 2023. In accordance with the regulation in force<sup>6</sup>, the first objective will be set for 2030, and then reviewed every five years until 2050.

Reaching those targets will require continuing to develop new investment products with an climate objectives, an alignment of Rivage interests with climate criteria (climate-based performance fees), the gradual phase-out of investments in fossil fuels and a the implementation of a dedicated ESG committee to steer company-level climate objectives.

## 6. Annex

### Transition Risks Methodology

#### ❖ Scenario

Carbone 4, our climate data provider, uses the CIARA methodology, dedicated to assessing the temperature of infrastructure projects in Europe. The CIARA scenario has been jointly developed by Carbone 4 and Enerdata. The scenario is the synthesis of Carbone 4's optimistic techno scenarios (transition based primarily on technological innovations) and sobriety scenarios (transition based on resilience, through social and societal changes focused on new prosperity objectives, including the growth of social capital and trust).

The IEA (SDS) and CIARA scenarios are similar: many assumptions are shared or very similar. Carbon budgets are the same in both scenarios. However, there are two related differences:

- ❖ The CIARA scenarios are less 'techno-optimistic' than the IEA's: energy efficiency assumptions are less drastic (and therefore less reliant on disruptive technologies, which are currently struggling to emerge, such as the Carbon Capture and Storage (CCS) deployment assumptions).
- ❖ In order to remain within the carbon budget in spite of everything, the CIARA scenario is more sober than the IEA's: the latter assumes global growth of 3% p.a., irrespective of the underlying physical flows. In the Carbone 4 scenario, growth is no longer a scenario-independent input, but

<sup>6</sup> Article 29 LEC: <https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000039355955>

is linked to the scenario, and therefore more nuanced according to the sector (less growth in the highest-emitting sectors).

**Limitation:** only one scenario is used. The best practice is to use different climate scenarios, including one in which the average temperature is held to below 2 degrees Celsius (preferably to 1.5 degrees Celsius) above pre-industrial levels. However, the objectives of a strategic analysis and a CIARA analysis are different.

For CIARA, it was decided to develop a single 2°C scenario to facilitate comparability and readability of the analyses. Furthermore, as no one knows in which direction the world is heading, CIARA considers it more appropriate to refer to a 'central' scenario, a synthesis of over-optimistic scenarios and more sober scenarios.

## Temperature Assessment

The climate performance (forward-looking GHG emissions scopes 1, 2 and 3) of each of our assets is based on operational, company-specific data, i.e physical data. Examples of data include:

- ❖ Energy sector: energy output, capacity (MW), CAGR, length of the distribution network...
- ❖ Transportation sector: length of the network, number of locomotives, number of passengers/freights shipped, %diesel/electric vehicles...
- ❖ Telecommunications: number of households connected, number of telecom towers...
- ❖ Social housings: habitable surface area, energy performance of the building...

Operational data is collected directly from reports published by the company (operating reports, annual reports, sustainability report...). This data falls within the scope of the audit of the companies and, therefore, is considered reliable. In case physical data is not available, estimations based on financial data are used.

Carbone 4 then identifies the specific "end-uses" served by each asset, based on their locations.

For example, a power plant in a specific location could be assigned two different end-uses and corresponding weightings:

- ❖ specific electricity (for lightning): 50%
- ❖ heat for buildings: 50%

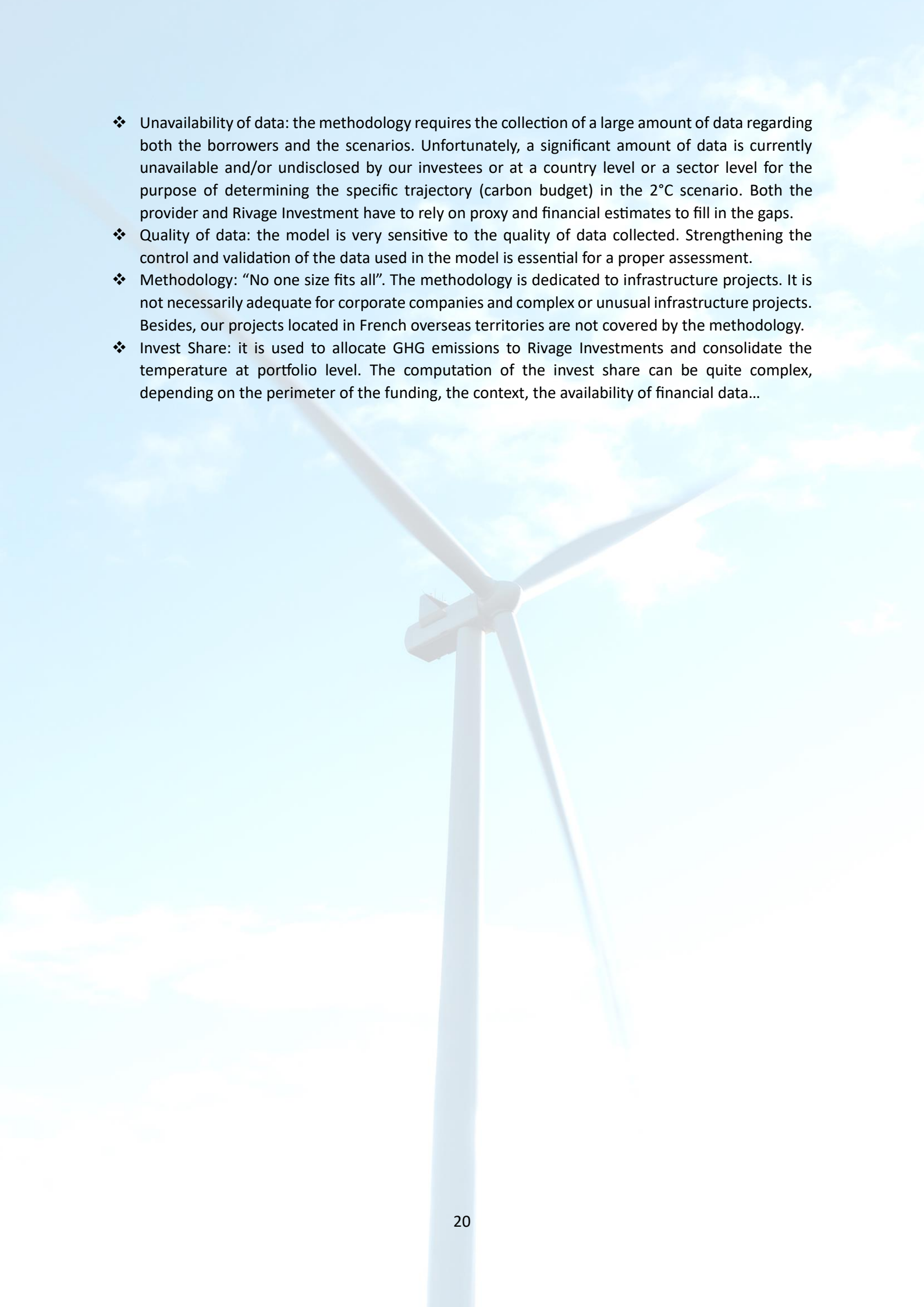
Then, for each end-use identified, the CIARA methodology has assigned a specific trajectory (carbon budget) in the 2°C scenario, depending on whether the project is greenfield or brownfield.

Finally, Carbone 4 compares the climate performance of our infrastructure asset's with the 2°C scenario's carbon budget. The output per asset is the "surplus" or "avoided" emissions. A "surplus" emissions indicates that the asset generates greenhouse gas emissions in excess of the limits set by the reference scenario (asset temperature > 2°C); conversely "avoided" emissions indicate that greenhouse gas emissions generated by the asset are compatible with the trajectory of the reference scenario (1.5°C < asset temperature < 2°C). The result is then aggregated at portfolio, prorated of our invest share. These assessments are updated every year.

## Limitations

- ❖ Forward-looking GHG emissions are dependent on various external and internal factors, and are therefore, not necessarily accurate.



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- ❖ Unavailability of data: the methodology requires the collection of a large amount of data regarding both the borrowers and the scenarios. Unfortunately, a significant amount of data is currently unavailable and/or undisclosed by our investees or at a country level or a sector level for the purpose of determining the specific trajectory (carbon budget) in the 2°C scenario. Both the provider and Rivage Investment have to rely on proxy and financial estimates to fill in the gaps.
  - ❖ Quality of data: the model is very sensitive to the quality of data collected. Strengthening the control and validation of the data used in the model is essential for a proper assessment.
  - ❖ Methodology: “No one size fits all”. The methodology is dedicated to infrastructure projects. It is not necessarily adequate for corporate companies and complex or unusual infrastructure projects. Besides, our projects located in French overseas territories are not covered by the methodology.
  - ❖ Invest Share: it is used to allocate GHG emissions to Rivage Investments and consolidate the temperature at portfolio level. The computation of the invest share can be quite complex, depending on the perimeter of the funding, the context, the availability of financial data...