

Paris,
May, 2021

Taking climate-related disclosure to the next level

Minimum requirements for financial institutions

Authors: Anuschka **Hilke** | Romain **Hubert** | Alice **Pauthier** | Julie **Raynaud**

In partnership with:



AUTHORS

This report was completed by Anuschka Hilke, Romain Hubert and Alice Pauthier (I4CE) and Julie Raynaud (ILB).

Corresponding author: Anuschka Hilke – anuschka.hilke@i4ce.org

Full reference: Hilke, A., Hubert, R., Pauthier, A., Raynaud, J. 2021. Taking climate-related disclosure to the next level – Minimum requirements for financial institutions. I4CE - Institute for Climate Economics and Institut Louis Bachelier.

ACKNOWLEDGEMENTS

This publication received co-funding by WWF France. Its elaboration was part of a collaborative research project with the Institut Louis Bachelier (ILB) and the French Ministry for the Ecological Transition (MTE) and WWF France. It is part of a series of reports to review the range of climate-related methods and metrics available to investors, on the topics of 2°C alignment, temperature, transition and physical risks. Responsibility for the information and views set out in this report lies with the authors.

The authors are thankful for inputs and review from: Michel Cardona, Ian Cochran, Damien Demailly and Rachel Paya (I4CE), Stephane Voisin and Peter Tankov (ILB), Jan Vandermosten (WWF), Clément Bultheel and Aurélien Girault (General Commission for Sustainable Development - French Ministry for the Ecological Transition), Charlotte Gardes (French Treasury, Ministry for the Economy, Finance and Recovery), Soline Ralite and Klaus Hagedorn (2° Investing Initiative).

The report also benefitted indirectly from over 35 interviews with service providers offering dedicated assessment methodologies as well as 20 interviews with financial institutions using such methods.

I4CE - The Institute for Climate Economics is a think tank with expertise in economics and finance whose mission is to support action against climate change. Through its applied research, the Institute contributes to the debate on climate-related policies. It also publicizes research to facilitate the analysis of financial institutions, businesses and territories and assists with the practical incorporation of climate issues into their activities.



www.i4ce.org

Table of contents

EXECUTIVE SUMMARY	2	2.2. Communicating on contributions and the role of positive impact of financial institutions	21
LIST OF ACRONYMS AND ABBREVIATIONS	6	2.2.1. State of play of the methodology market	21
INTRODUCTION	7	2.2.2. Distinguishing impact of financial institutions from company impact	22
1. CLARIFYING “WHAT”: TOWARDS A SHARED UNDERSTANDING OF KEY CONCEPTS	10	2.2.3. Clarifying the link between stated impact targets and actions put in place	22
1.1. Alignment with the objectives of the Paris Agreement: overall strategy at entity level	10	2.2.4. Clarifying how the financial institution evaluates the effectiveness of its actions	23
1.2. Portfolio alignment: limited today mainly to consistency with a low-carbon trajectory	10	2.2.5. Clarifying how contributions relate to the overall business activity	23
1.2.1. Alignment “of what”: both financial flows and the stock of capitals	11	2.3. Communicating on portfolio alignment assessments with a low-carbon trajectory	24
1.2.2. Alignment “with what”: mitigation pathways, resilience and SDGs at national and international levels	11	2.3.1. State of play of the methodology market	25
1.2.3. Limited overlap with what assessment methodologies cover today	11	2.3.2. Clarifying the objective of alignment assessments and being transparent on their coverage	25
1.3. Defining financial institutions’ positive climate impact in the real economy and their contributions to climate objectives	12	2.3.3. Clarifying the linkages between assessments and strategy and actions	26
1.3.1. The French disclosure framework already asks financial actors to explain their “contributions” to climate objectives	12	2.3.4. Improving transparency on underlying methodological choices and their implications	26
1.3.2. European disclosure frameworks focus essentially on economic activities’ contributions to environmental objectives	12	2.3.5. Encouraging minimum technical requirements that foster comparability and quality of the analysis	27
1.3.3. Distinguishing company impact from financial institutions’ impact	12	2.3.6. Ensuring decision-relevance of the output information on portfolio alignment	28
1.3.4. Differentiating levels of contributions: from doing no harm to incremental to transformational impacts	13	2.3.7. Facilitating monitoring of the disclosed results over years	28
1.3.5. Differentiating contribution and impact: means and result	13	2.3.8. Further issues for consideration	29
1.4. Identifying activities with negative impact and avoiding negative side-effects, a prerequisite for consistency	14	2.4. Communicating on portfolio assessments of physical and transition risks	31
1.4.1. Adverse climate impact: financial actor’s behaviors that are counterproductive to climate action	14	2.5. Transition risk assessments in portfolios	32
1.4.2. Do no (significant) harm: avoid negative side-effects on climate action and sustainability	15	2.5.1. State of play of the methodology market	32
1.5. Climate-related risk management and climate action in financial institutions	16	2.5.2. Clarifying the framing of the analysis and links with the governance of climate action in the institution	32
1.5.1. The financial approach to “climate-related risks” in context of the “double materiality” framework	16	2.5.3. Demonstrating the relevance of the perimeter of analysis	33
1.5.2. Uncertainty: a key aspect of climate-related “risks” and a challenge for traditional financial risk management practices	17	2.5.4. Demonstrating proper exploration of uncertainties about future transition impacts	34
1.5.3. Alignment analyses are not sufficient to measure a portfolio exposure to financially material transition risks	17	2.5.5. Clarifying the relevance of indicators and other data choices	34
1.5.4. Climate-related risk management and alignment/ impact strategies are not necessarily reinforcing each other	17	2.5.6. Facilitating monitoring of the disclosed results over years	35
2. CLARIFYING “HOW”: INTRODUCING MINIMUM REQUIREMENTS FOR DISCLOSURE	19	2.6. Physical climate risk assessments	36
2.1. Research context for setting ambitious and realistic requirements	19	2.6.1. State of play of the methodology market	36
1.1.1. Rationale and methodology	19	2.6.2. Clarifying the framing of the analysis and links with the governance of climate action in the institution	36
2.1.1. Some key issues about setting minimum disclosure requirements in relation to specific assessment methods	19	2.6.3. Demonstrating the relevance of the perimeter of analysis	37
		2.6.4. Demonstrating proper exploration of uncertainties about future climate impacts	38
		2.6.5. Clarifying the relevance of indicators and other data choices	38
		2.6.6. Facilitating monitoring of the disclosed results over years	40
		CONCLUDING REMARKS ON THE LINKS BETWEEN DISCLOSURE AND CLIMATE-RELATED ASSESSMENT METHODOLOGIES	41
		ANNEX	42
		LIST OF REFERENCES	44
		Legal references	44
		Other references	44

Executive Summary

Taking climate disclosure to the next level: time for minimum requirements!

Exploratory disclosure requirements have led to innovation and some confusion

In 2015, France pioneered requirements for climate-related disclosures from financial institutions. They were set in place without waiting for a clarification of main concepts and the development of dedicated assessment methodologies, but with the expectation to kickstart innovation in this area. One can say that this was a success given the development of concepts and assessment methodologies since then. However, at the same time the quality and relevance of information disclosed at financial institutions were criticized including by the regulators themselves as the information disclosed was difficult to interpret and impossible to compare among financial institutions.

This has mainly two reasons. First, there still exists confusion with regard to definitions of key concepts, e.g. what does “Alignment with the Paris Agreement” cover and how should assessments of portfolio alignment with low-carbon trajectories differ from portfolio assessments of transition risks? And secondly, assessment methodologies available on the market remain backboxes and thus their results are difficult to interpret.

Since then, the topic has gained traction far beyond France. The Task Force on Climate-related Financial Disclosures (TCFD), whilst remaining voluntary in its recommendations has pushed the issue to the global level. And European authorities are in the process of reformulating mandatory disclosure requirements in the broader field of sustainability. In 2020, France began the process of updating its requirements with the objective to keep its pioneering position in the field.

Taking climate-related disclosure to the next level: time for minimum requirements

It could be tempting at this point to propose methodological standards that could then be simply referenced in disclosure frameworks. However, this raises two issues. First, a precondition seems to be to formally agree on common definitions of key concepts. Second, methodologies are still relatively too immature to permit standardization. Continued experimentation is necessary to improve the quality as well as the coverage of the analysis. In this fast-evolving context, disclosure frameworks need to encourage financial actors to carry out state of the art analysis for their climate-related disclosure and stimulate at the same time continuous

improvements towards more satisfactory assessment methodologies. The authors therefore consider that it is not yet time for the standardization of assessment methods.

However, time is now ripe for a step change in terms of quality and readability of disclosure. The objective of the paper is to propose concrete ideas that can help regulators but also private initiatives to clarify the language and increase the readability of climate-related disclosure of financial institutions. The aim is to increase transparency by making disclosures more understandable, whilst achieving real comparability is not yet feasible.

This report proposes for discussion a number of minimum quality requirements of climate-related disclosure for financial institutions. These are supposed to provide a flexible but clear and legible framework including definitions for key terms. They are designed to setting a quality floor for disclosure practices, providing transparency on the analytical process as standardized approaches are lacking as well as identifying key issues for the improvement of existing and the development of complementary methods to provide guidance on the way forward.

Minimum requirements on the “what” and “how” of assessments employed by financial institutions

WHAT

DEFINITIONS
OF KEY CONCEPTS



HOW

TECHNICAL
SPECIFICATIONS
OF ASSESSMENT
METHODOLOGIES

GENERAL APPROACH:
OBJECTIVES, CONNECTION
WITH DECISION MAKING
AND STRATEGY



WHAT: The report proposes definitions of the main concepts used in climate-related financial disclosure discussions. The proposed definitions are based on a review of existing regulatory texts in France and the EU and aim to satisfy number of conditions:

- Ensuring coherence with pre-existing definitions of concepts used in regulatory texts,
- Reducing overlap and ensuring coherence between the different concepts, and

- Checking for intellectual coherence with concepts used in standard risk management as well as in the Paris Agreement itself.

Balancing out these three aspects is not always straightforward, therefore the definitions proposed can and need to be further debated.

HOW: The report proposes to enhance disclosure requirements on how financial actors frame their analysis. Two aspects are specifically discussed:

The first concerns the assessment methodologies used. The final quality of the disclosed information relies essentially on the quality of the underlying assessments on which the results disclosed are based. Hence, given the early state of methodology development, financial actors also need to provide information on “how” they analyzed these issues to demonstrate the appropriateness of methodologies used for the assessments, showing that they indeed provide answers to the “what”.

The second aspect covers information on the general approach of the financial institutions to integrating climate-related data into decision making. This means explaining what they seek to analyze with their climate-related assessments; the main features of the assessment; and how these assessments connect with their climate strategy as well as with their overall business model and internal decision-making processes. Such information is necessary for the users of disclosure to appreciate the vision and decision dynamics of the financial actor beyond the assessment results themselves.

The report, however, does not give guidance on the appropriateness and quality of specific climate strategies. But if the recommendations of the report are implemented, the readers of disclosed information and the financial institutions’ themselves should be in a better place to make such a judgement.

METHODOLOGY

This report is based on dedicated desk research for the part on definitions and the minimum requirements for investor impact and contributions. The proposed minimum requirements for the concepts of alignment with low-carbon trajectories, and physical and transition risk research are based each on dedicated research projects related to available assessment methodologies. Taken together, these included 35 interviews with service providers offering dedicated assessment methodologies as well as 20 interviews with financial institutions on the usability of these methods for their needs.

For more in-depth technical discussions of the state of play of these methodologies; please refer to:

- Romain Hubert *et al.*, 2018: [Getting started on physical climate risk analysis in finance](#)
- Julie Raynaud *et al.*, 2020: [The Alignment Cookbook](#)
- Romain Hubert *et al.*, forthcoming 2021: Review of transition risk methodologies, visit: https://www.i4ce.org/go_project/finance-climact/

Clarifying “What”: towards a shared understanding of key concepts

Existing work by the regulators, supervisors, financial actors and other stakeholders already provides a converging basis for key conceptual elements on climate action. Nevertheless, further clarifications are needed as some terms are used by actors for very different processes. The paper proposes for discussion definitions based on emerging use trends that could help to describe more clearly expected contents of disclosure as well as to reduce overlaps between different concepts. Agreeing on what needs to be disclosed would already be a big step forward in making disclosure more useful.

- **Alignment with the Paris Agreement (entity level):**

This term refers today to a range of overlapping concepts and practices for both financial and non-financial entities. In the case of financial institutions, “alignment” is increasingly understood to imply that across all of their activities and transactions, they should seek consistency with, as well as contribute to the achievement of all of the long-term objectives of the Paris Agreement, namely mitigation and adaptation in the context of sustainable development.

- **Alignment with a low-carbon trajectory (portfolio level):** This term refers to financial institution’s actions to assess and ensure the ‘consistency’ or ‘compatibility’ of the assets in a specific portfolio with a forward-looking low-carbon trajectory. Currently, the focus of this type of alignment is on GHG mitigation only due to the availability of assessment methods. The diverse range of methodologies to assess alignment with low-carbon trajectories typically provide a snapshot of the current portfolio and whether the underlying assets are likely to be aligned or misaligned to mitigation goals over time. This initial analysis is seen by some as sufficient to devise a strategy for aligning the portfolio in question with the mitigation goal, however further data and assessment may be necessary. Various strategies to align with a low-carbon trajectory are possible and have different levels of potential positive impact on the real economy (see below).

- **Positive impact and contributions of financial institutions to achieving climate goals:** The report supports the view to clearly distinguish between the impact of counterparties and underlying assets financed on the one hand, and the impact stemming from the financial institutions’ actions and means of intervention on the other hand. Contributions are considered all actions that intend to generate positive impact on climate goals. For example, it has not been robustly demonstrated that the act of holding shares issued by a company is actively contributing to climate objectives in the sense of permitting the company to either further grow its low-carbon activities or substantially improve the climate performance of its activities. While holding these assets may create

the potential for impact, to qualify as a contribution to climate goals, this would need to be justified by financial institutions (as discussed in the section on HOW).

- **Adverse climate impact of financial institutions:** It is suggested that the definition for adverse climate impact should be coherent with the one for positive impact, *i.e.* the act of holding assets in a portfolio does not necessarily equate to responsibility for an adverse impact. Nevertheless, given the fact that a vast majority of financial portfolios are still misaligned with low-carbon trajectories, the signaling effect of attributing responsibility for the potential of responsibility for adverse impacts can be considered to be effective. Therefore, this report proposes that all financed emissions beyond those compatible with a 1.5°C trajectory should be considered as responsible for an adverse climate impact. This would only be otherwise if the financial institution was explicitly working with the counterparty as part of an active climate engagement strategy.
- **Do no significant harm:** This concept has a double meaning. Firstly, and particularly in the context of the EU Sustainable Finance Agenda it refers to an analysis of harmful side effects both against climate goals as well as the other sustainable development goals. Secondly, activities that are classed as doing no (significant) harm are those that are considered aligned with climate-related goals but may not necessarily directly lead to a climate co-benefits, *e.g.* “grey” assets.
- **Climate-related risk management:** In general, this term refers to the active management or inclusion in financial risk assessments of “climate-related risks”, including transition risks and physical climate risks. The management of these risks is increasingly seen as necessary as they are posing material financial risks to financial institutions. In line with the concept of *double materiality* of ESG risks, the management of adverse climate impacts of financial institutions themselves (see above) is also gaining attention. However, managing financial climate-related risks does not, necessarily lead a financial institution to manage its adverse climate impacts nor align with the objectives of the Paris Agreement, and vice-versa. Furthermore, the use of low-carbon trajectory portfolio alignment assessments is not a priori sufficient to measure and manage the portfolio’s climate-related risk exposure.

Clarifying “How”: introducing minimum requirements for disclosure

NB: This part of the report proposes for discussion minimum requirements for only a subset of concepts introduced above. They are based on an in-depth analysis of the assessment methodologies available on the market at the time of writing (see box on methodology).

Different approaches to propose minimum requirements depending on the key concept

Depending on the issue under scrutiny, the research revealed large differences in the state of play of assessment methodologies, their expected use and perspectives for further development. This calls for different approaches to formulate options of minimum disclosure requirements with regard to each concept:

- **Portfolio alignment with a low-carbon trajectory:** Heterogeneous methodologies exist that can provide useful inputs for financial institutions in the implementation of their alignment strategies if complemented with other sources of information. They however need further developments, more transparency and need to be widely harmonized on some key methodological choices to ensure their robustness. As alignment strategies will vary from one financial institution to another, financial actors should be required to disclose how this analysis is relevant with regard with their own alignment strategy, clarify their key methodological choices and make use of specific best available technical choices.
- **Contributions with an investor impact:** While some methods may exist to indicate whether investors are holding assets that have the potential for contribution to climate goals, to date there exist no adapted methodologies to assess if the investor’s financing is contributing to additional impact. Nevertheless, financial actors could be required to disclose their strategy and rationale for contributing to Paris Agreement’s objectives, with a focus on expected impacts in the real economy. Furthermore, they should provide insights on whether the actions engaged to date are adequate with regard to their objectives and how they make efforts to measure real-economy impact.
- **Financial climate-related risks:** Heterogeneous methodologies exist and are likely to be used mainly for disclosure purposes. Their transparency could be increased, and the methodologies could also be enriched. Keeping a certain degree of freedom on technical choices may be still necessary to explore widely the climate-related uncertainties. Financial actors should be required to disclose their key methodological choices, with some harmonization on part of these choices, and justify their efforts towards provision of best quality information.

Methodologies: Lifting the lid of blackboxes and introducing first robustness requirements

The minimum requirements proposed in this report aim to create more transparency on key technical choices of the underlying assessment methodologies in the absence of standardization. Where appropriate, additional minimum requirements to improve the robustness of assessments are proposed in order to set a “quality floor” for such methodologies.

Providing this technical information should not become an insurmountable obstacle. Much information can be provided by service providers themselves. Moreover, if there is a uniform transparency requirement this creates a level playing field for service providers and helps overcoming intellectual property concerns.

General Approach: Assessment results are only meaningful when put into perspective

Introducing minimum requirements for disclosure relative to the general approach a financial institution is taking regarding climate issues, can help improving the readability of disclosure documents in two ways:

- First, it can permit users of disclosures to not only better interpret the results given by the assessment methodologies but also to judge the relevance of the methodology used in relation to the general approach, such as the overall climate strategies and climate actions put in place.
- Second, overtime, a positive side effect of minimum requirements related to the general approach would be, that they could contribute to harmonizing the information published in disclosure documents. This would in turn increase their readability and usefulness. Disclosure on the general approach would become to some extent comparable, while we are still striving towards making the assessment results themselves comparable.

List of acronyms and abbreviations

CSRD	Corporate Sustainability Reporting Directive
EBA	European Banking Authority
ECB	European Central Bank
ESAs	European Supervisory Authorities
ESG	Environmental, Social and Governance
ITS	Implementing Technical Standards
NFRD	Non-Financial Reporting Directive
RTS	Regulatory Technical Standards
SDGs	Sustainable Development Goals
SFDR	Sustainable Finance Disclosure Regulation
TCFD	Task-force for Climate-related Financial Disclosures

Introduction

Disclosure: a tool for building financial institutions' capacity on climate issues

In 2015, the Bank of England started to publicly declare that climate change was a threat to financial stability (Carney, 2015). And in context of the Paris Agreement, regulators more widely also realized the need for financial flows to become compatible with a low-carbon and climate-resilient development. Consequently, information was needed from financial institutions about their exposure to climate-related risks as well as their climate actions more broadly.

However, regulators and financial institutions alike were new to climate issues. The concepts were not clear, and methodologies were lacking to measure the exposure of financial portfolios to climate-related risks and the contributions of the financial sector to low-carbon and climate resilient economic development pathways.

Paving the way, the French regulators were the first to set up a mandatory disclosure framework (see Figure 1) asking financial actors to explain their exposure to climate-related risks and how they were contributing to climate action. Implicitly, they were asking financial actors to find the methodologies and data in order to measure their own exposure to climate-related risks, to measure how their portfolios were compatible with the Paris Agreement, and to build strategies that would address these issues.

This approach of setting disclosure obligations, without waiting for definitions to be set and methods to be developed, has kickstarted a dynamic and pushed French financial institutions and regulators to the front line. Not only did it create awareness with many financial institutions and financial regulators alike, it also went along with the development of methodologies to help financial actors measure their exposure to climate-related risks and their compatibility with the objectives of the Paris Agreement.

The long way towards good disclosure practices

The primary goal of disclosure frameworks remains the provision of clear information in order to increase transparency and create comparability (IFRS Foundation, 2018). This is necessary for financial market participants to ensure proper market functioning as well as to enable public stakeholders, NGOs, think tanks and the civil society in general to hold

financial actors accountable for their efforts on climate action.

Unsurprisingly, given the pioneering character of the new disclosure requirements, implementation of the new climate-related disclosure requirements by financial institutions was judged not satisfactory in the opinion of many observers including the regulators themselves (e.g. (Evain *et al.*, 2018; WWF, 2018; Novethic, 2019; DG Trésor, 2019)).

Mainly, the limited precision of initial climate-related disclosure requirements did not lead financial institutions to provide clear and reliable information on their exposure to and management of climate issues. Financial institutions have disclosed unequal quality of information based on methodologies that are heterogeneous and with limited transparency, based on concepts that were only partly clarified. In addition, it was deplored that climate disclosure was mainly implemented as a conformity exercise with little to no connection to internal decision-making processes (Evain *et al.*, 2018).

Yet, beside all the well-founded criticism that the current climate-related disclosure of financial institutions is facing, the plethora of methodologies developed through this process has the merit of making the debate much more tangible and concrete as it allows going back and clarifying basic questions around:

- “What is it exactly that should be measured and disclosed by financial institutions?”, thus defining the main concepts and expectations.
- “Are some measurement approaches/ methodological choices more convincing than others?” and “Are there ‘one size fits all’ methodologies?”, thus understanding implications of methodological choices and formulating expectations around these.

Overview of regulatory initiatives in France and Europe

At the time of writing of the present report, initiatives are underway in France to improve and clarify expectations regarding climate-related disclosure of financial institutions. At the same time mandatory disclosure requirements are being extended to the European level as shown on Figure 1.

In France, disclosure requirements for institutional investors and asset managers were initially introduced in 2015 in the article 173-VI of the Energy Transition for Green Growth Act¹². They were replaced in 2019 by the article 29-II of the Energy and Climate Act³ that covers a majority of financial actors

¹ All the legal references (including French acts and decrees, European directives, regulations, RTS, ITS, guidelines, proposals, and drafts) mentioned in text are fully detailed in the list of references at the end of this report

² Loi n°2015-992 du 17 août 2015 relative à la transition énergétique pour la croissance verte

³ Loi n°2019-1147 du 8 novembre 2019 relative à l'énergie et au climat

INTRODUCTION

including part of the banks' activities. In 2021, the ministries in charge are due to publish an implementing decree to provide more detailed guidance on how to implement the renewed and extended disclosure requirements.

On European level, the Disclosure Regulation (SFDR)⁴ entered in application in March 2021 and targets the manufacturers of financial products and financial advisers towards end-investors. The European Supervisory Authorities (ESAs) published in February 2021 draft Regulatory Technical Standards (RTS) for the application of the SFDR,⁵ followed in March with a proposition for an amended version.⁶ This document will serve as a basis for the adoption of a delegated act by the Commission.

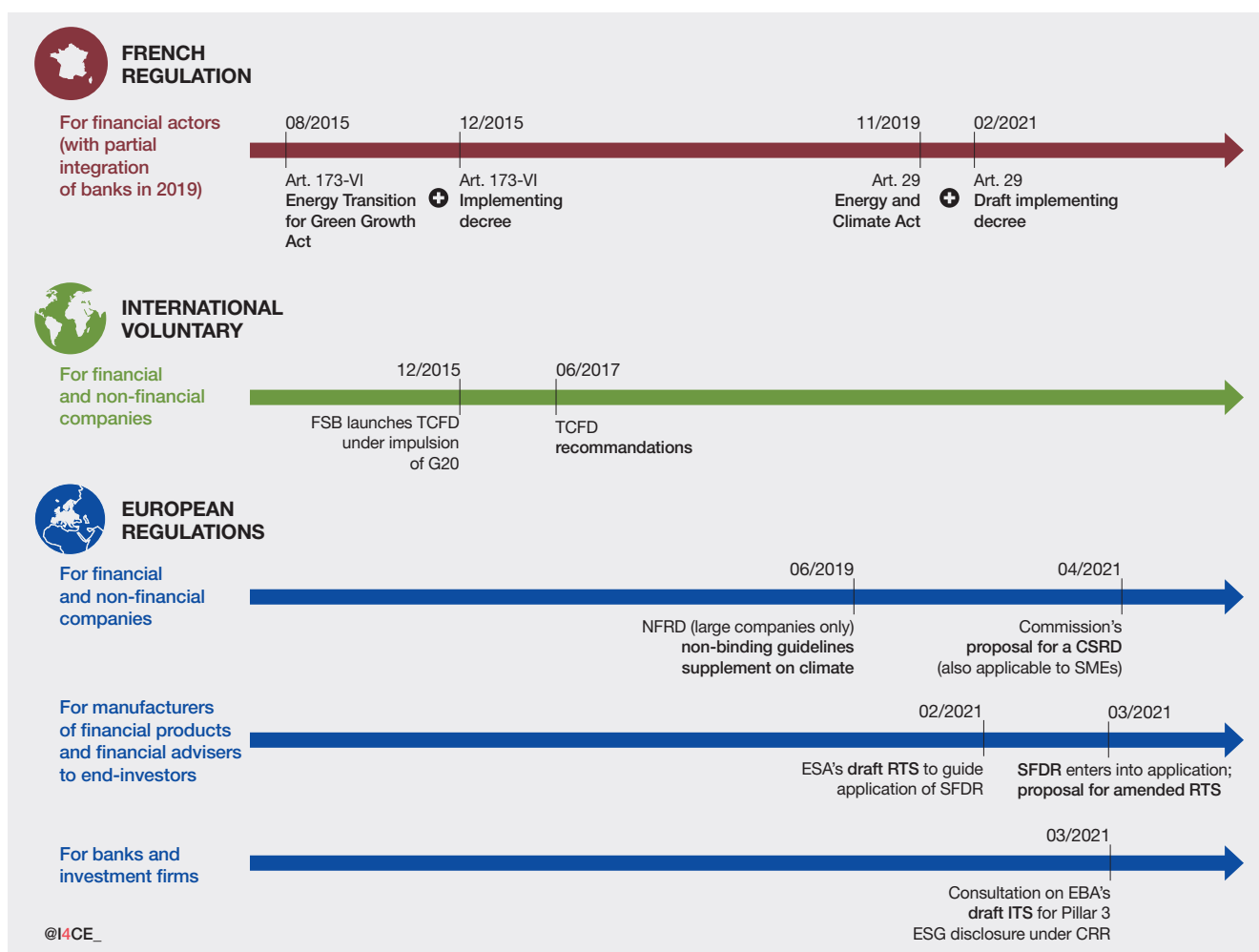
In parallel, the Commission launched a public consultation on the review of the Non-financial Reporting Directive (NFRD) applying to large companies (including financial institutions). It led to the Commission's proposal in April 2021 for a

Corporate Sustainability Reporting Directive (CSRD) that would also be applicable for SMEs.⁷

The European Banking Authority (EBA) published draft implementing technical standards (ITS) on disclosure of ESG risks under Pillar 3 of the Capital Requirements Regulation (CRR).⁸ The European Central Bank (ECB) also published in 2020 a guide on climate-related and environmental risks that sets supervisory expectations relating to risk management and disclosure.⁹

These mandatory disclosure initiatives also take inspiration from the TCFD to some extent – and concerning only climate-related risks. The international private sector-led Task Force on Climate-related Financial Disclosures (TCFD) published its voluntary recommendations on climate-related risk disclosures in 2017 (TCFD, 2017). They are already explicitly mentioned in the non-binding guidelines on reporting climate-related information under the NFRD (NFRD nbgc).¹⁰

FIGURE 1 – TIMELINE OF KEY REGULATORY AND VOLUNTARY FRAMEWORKS FOR CLIMATE-RELATED AND SUSTAINABILITY DISCLOSURE



Source: authors (Hilke et al., 2021).

4 Regulation (EU) 2019/2088 - Sustainability-related disclosures in the financial services sector (SFDR)

5 JC 2021 03

6 JC 2021 22

7 COM(2021) 189 final

8 EBA/CP/2021/06

9 ECB's 2020 'Guide on climate-related and environmental risks - Supervisory expectations relating to risk management and disclosure. European Central Bank'.

10 C/2019/4490

Objective of the paper: The case for setting minimum requirements

The objective of the paper is to propose concrete ideas that can help regulators but also private initiatives to set minimum quality requirements for climate-related disclosure of financial institutions.

It aims to clarify expectations towards climate-related disclosure and proposes an approach to clarify the language of disclosure with the aim to increase transparency and reduce the possibilities of using climate-related disclosure for green washing purposes.

The paper covers all key aspects of climate-related disclosures concerning portfolio alignment, contributions to climate objectives as well as climate physical and transition risk analysis. It aims at striking a balance between what would be perfect and what seems feasible today and where future disclosure should be headed towards.

The paper does not aim to define any kind of normative positions of what should be done in terms of portfolio alignment strategies and target setting, neither in terms of risk management. However, it can assist in understanding key issues and suggests definitions for key terms used in the debate, which can be used by actors striving to define their climate strategies.

As mentioned before, the current state of climate-related disclosure is judged as not sufficiently serving its objectives by civil society and regulators alike. There are voices that call for standardization of disclosure in order to improve on the comparability of climate-related disclosure.

However, this report argues that there is an issue not only around the comparability of disclosure but also around the quality as such of disclosure - and notably the methodologies that they are based on. The situation does not come as a surprise, given that the underlying methodologies are relatively new, have been developed without any clear terms of reference and face persisting data challenges. However,

the report argues that it should be clearly acknowledged that the existing methodologies still have some way to go in order to increase quality and relevance of their results and that it is therefore not the time yet for standardization. Mindful of these challenges, it is nevertheless possible to increase transparency on how financial institutions deal with these challenges, the choices they make and how these are consistent with their mandates or portfolio specificities.

This report therefore proposes for discussion a number of minimum quality requirements of climate-related disclosure for financial institutions, thus providing a flexible but clear and legible framework, proposing definitions for key terms, setting a quality floor for disclosure practices and identifying key issues for the improvement of existing and the development of complementary methods that can guide on the way forward.

The report is structured into two main parts. The first provides a discussion on “what” should be disclosed, aiming to clarify expectations and support the development of clear definitions of terms. The second part discusses “how” information should be disclosed and provides suggestions for minimum requirements for disclosure on alignment with low-carbon trajectories, financial institutions’ contributions to climate goals and positive impact claims as well as on transition and physical risks.

The report is based on dedicated desk research for the part on definitions and the minimum requirements for investor impact and contributions. The proposed minimum requirements for the concepts of alignment with low-carbon trajectories, and transition and physical risk research are based each on dedicated research projects related to available assessment methodologies (Romain Hubert *et al.*, 2018. Julie Raynaud *et al.*, 2020; Romain Hubert *et al.*, forthcoming 2021). Taken together, these included 35 interviews with service providers offering dedicated assessment methodologies as well as 20 interviews with financial institutions on the usability of these methods for their needs.

1. Clarifying “What”: towards a shared understanding of key concepts

There are a number of terms in the broader climate disclosure debate and also in the relevant regulatory texts that need clarification. Various terms exist, such as “portfolio alignment”, “financial institutions’ impact”, “financial institutions’ contributions to climate goals”, “adverse climate impact”, “do no (significant) harm” and “climate-related risk management”.

Existing work by the regulators, supervisors, financial actors and other stakeholders already provide a converging basis. Nevertheless, further clarifications appear to be needed as some terms are used by actors for very different processes. The paper proposes for discussion definitions based on emerging use trends that could help to describe more clearly expected contents of disclosure for each concept as well as to reduce overlaps between different concepts. Agreeing on what needs to be disclosed would already be a big step forward in making disclosure more useful.

1.1. Alignment with the objectives of the Paris Agreement: overall strategy at entity level

The notion of “alignment” has been coined in relation to the third objective of the Paris Agreement as formulated in its article 2.1.¹¹ It calls on all country Parties to “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development”¹² while accounting for “the context of sustainable development and efforts to eradicate poverty”¹³. This term has rapidly been taken up with the recent European Disclosure Regulation (SFDR) requiring financial entities to publish at entity level “where relevant, the degree of their alignment with the objectives of the Paris Agreement”.¹⁴

However, the concept of alignment has not been clearly defined and questions remain on what it means for a financial institution to “align with the objectives of the Paris Agreement”. Since 2015, both financial institutions and civil society have worked to answer these questions (Rydge, 2020).

In its 2019 paper, I4CE proposed a framework for a financial institution’s alignment based on the levels of ambition that financial actors may seek for their strategy to contribute to the achievement of the objectives of the Paris Agreement (Cochran and Pauthier, 2019). At the core of any financial

institution’s alignment strategy should be a strategy and concrete steps to make all of its activities “consistent” or “compatible” with the Paris Agreement objectives in as short a timeframe as possible. This implies that financial institutions who are committing to align their activities must, as soon as possible, strive to ‘do no harm’ and scale down support for activities that are inconsistent with low-carbon and climate-resilient development.

In addition, I4CE posits that financial institutions seeking to align with the Paris Agreement must also whenever possible aim to pro-actively support the transition to a low-carbon and climate-resilient economy in the broader context of sustainable development. Taking into account their mandates, financial institutions that have committed to alignment should whenever possible prioritize support for activities with incremental or transformative co-benefits for the low-carbon and climate-resilient development, while making sure that it does not undermine the attainment of other aspects of a sustainable development as detailed by the UN Sustainable Development Goals (SDGs) (Cochran and Pauthier, 2019). This concept is reflected in the discussion further below of positive impacts and contributions of financial institutions to climate goals.

Both research and practice appear to demonstrate that there is however no “one size fits all” approach to alignment (Pauthier and Cochran, 2020). Nevertheless, I4CE’s work as well as the recent experience of financial institutions themselves indicates that implementing “Paris alignment strategy” implies ‘transformational’ changes within financial institutions themselves – including the adaptation of strategies and operations.

1.2. Portfolio alignment: limited today mainly to consistency with a low-carbon trajectory

“Portfolio alignment” is increasingly defined as a process in which financial institutions aim to make all of their activities “compatible” or “consistent” with the objectives of the Paris Agreement. The following section further details what portfolio alignment should cover (see “alignment of what”, “with what”). It also raises attention about the current limitations in the scope of “portfolio alignment assessments” and their role in the broader “portfolio alignment strategies”.

¹¹ United Nations 2015 – Paris Agreement.

¹² Paris Agreement, Art. 2.1c

¹³ Paris Agreement, Art. 2.1

¹⁴ SFDR, Art. 4.2d

1.2.1. Alignment “of what”: both financial flows and the stock of capitals

The Paris Agreement refers to the *consistency of financial flows*¹⁵ which could be interpreted as excluding “stocks of capital” or those existing assets in portfolios resulting from past investment and financing decisions – and focusing only on current or future transaction. However, to be considered useful, portfolio alignment should cover entire investment and credit portfolios – both historical stocks and flows.

This stems from two increasingly accepted lines of thinking. Firstly, the line between stocks and flows is relatively blurred as even long-only investment funds turn over their entire portfolio on average in less than 2 years (2dii and Mercer, 2017). Thus, a larger portion of all existing financial assets held in portfolios will likely be part of next transactions on secondary markets in the near future. Secondly, both financial institutions and experts have posited that the high level of ambition of the Paris Agreement implies that as part of “Paris alignment strategies” (see above) financial institutions should focus initially on new transactions but should seize any opportunity they have to align existing portfolios in a manner that produces real impacts on emissions or resilience (Cochran and Pauthier, 2019).

1.2.2. Alignment “with what”: mitigation pathways, resilience and SDGs at national and international levels

The Paris Agreement mandates consistency “with a pathway towards low greenhouse gas emissions and climate-resilient development” and accounting for “the context of sustainable development and efforts to eradicate poverty”.¹⁶ Therefore, the notion of portfolio “consistency” with the objectives of the Paris Agreement should assess the consistency of portfolios with:

1. An emission mitigation pathway that leads to below 2°C and if possible, below 1.5°C global atmospheric warming,
2. Forward-looking assessments of appropriate levels of climate resilience of investments as well as contribution to adaptation needs,
3. The impact of activities on the transition of broader systems and value chains to achieve the SDGs.¹⁷

Furthermore, both the Paris Agreement as well as the 2030 UN Sustainable Development Agenda focus on a bottom-up and country-driven approach. As such, taking into account the specificities of national contexts compared and using national forward-looking pathways for these different aspects should be supported and occur whenever possible. Nevertheless, it is important to ensure that the

level of ambition of national pathways is commensurate with international goals – and it may be necessary to use international pathways when robust national references are not available.

1.2.3. Limited overlap with what assessment methodologies cover today

The methodologies for assessing portfolio alignment available to date cover aspects around the consistency with a low-greenhouse gas trajectory. These assessments provide a snapshot of how the composition of a given portfolio and the potential future evolution of its current assets compare with a low-carbon economic development scenario, often defined/described at the international level that does not account for the specificities of national trajectories.

However, existing alignment assessments do not cover to date issues around adaption even though the Paris Agreement also set an objective for the resilience and adaptation of economies and societies to a changing climate.¹⁸ The resilience of investments portfolios are currently only assessed from a risk perspective in the framework of physical risk assessments. It is yet unclear, if and to what extent co-benefits can be expected for adaptation from physical risk management approaches.

Furthermore, while the Paris Agreement also embeds climate action in the broader sustainable development agenda, this is currently not addressed in the methodologies flagged as “Paris Alignment portfolio assessment methodologies”. In practice, a separate family of methodologies and indicators is currently being developed covering broader SDG alignment of companies (e.g. MSCI¹⁹ or GRI/UN Global Compact/WBCSD²⁰) or investments (e.g. Sopact²¹). These methodologies have not been studied in detail in the framework of this report and their appropriateness to respond to the issue at hand is therefore not discussed in further detail in this report. However, it should be clear that portfolio alignment with the Paris Agreement or specifically with article 2.1c would have to cover such approaches as well.

While results from alignment assessment methods to date are potentially a useful input into the definition of portfolio alignment strategies, this depends much on the method at hand and on the overall strategy approach chosen. On top, despite this potential, it is essential to note that in current disclosure documents there is often no clear link made between portfolio alignment assessment results and the implementation and improvement of alignment strategies be it at portfolio level or at the overall entity level.

15 Paris Agreement, Art. 2.1c

16 Paris Agreement, Art. 2.1

17 See Cochran and Pauthier (2019) for a more in depth discussion.

18 Paris Agreement, Art. 2.1

19 <https://www.msci.com/blog-posts/assessing-company-alignment/02085389620>

20 <https://sdgcompass.org/>

21 <https://www.sopact.com/sdg-indicators>

1.3. Defining financial institutions’ positive climate impact in the real economy and their contributions to climate objectives

Beyond “portfolio alignment” in terms of the “consistency” or “compatibility” with a low-carbon climate resilient trajectory, there is a need to clarify other key concepts and aspects related to Paris Alignment: how can financial institutions further contribute to the Paris Agreement objectives, how can their positive impact on climate goals be defined. These further clarifications will be useful for guiding financial actors towards meaningful climate-related disclosures.

1.3.1. The French disclosure framework already asks financial actors to explain their “contributions” to climate objectives

In France, article 29 of the Energy and Climate Act requires financial institutions to disclose information about the level of investments favorable to climate as well as their specific contribution towards the international objective of limiting global warming and the French objectives related to the national energy and ecologic transition. It also states that this contribution is appreciated in comparison with indicative targets that are defined depending on the nature of their activities and type of investments, consistently with the French national low-carbon strategy.²²

This law article can be seen as an invitation for all stakeholders to go beyond being consistent or compatible with a low-GHG climate-resilient trajectory, and to proactively support across all business lines the activities that have for principal objective the mitigation of or adaptation to climate change or indirect climate co-benefits (Cochran and Pauthier, 2019).

1.3.2. European disclosure frameworks focus essentially on economic activities’ contributions to environmental objectives

The Disclosure Regulation (SFDR) defines “sustainable investment” as “an investment in an **economic activity that contributes to an environmental objective** (...) or an investment in an economic activity that contributes to a social objective (...) or an investment in human capital or economically or socially disadvantaged communities, provided that such investments do not significantly harm any of those objectives and that the investee companies follow good governance practices, in particular with respect to sound management structures, employee relations, remuneration of staff and tax compliance”.²³

The Taxonomy Regulation²⁴ defines substantial **contributions of economic activities**: “An economic activity shall qualify as contributing substantially to climate change mitigation where that activity contributes substantially to the stabilization of greenhouse gas concentrations in the atmosphere at a level which prevents dangerous anthropogenic interference with the climate system consistent with the long-term temperature goal of the Paris Agreement through the avoidance or reduction of greenhouse gas emissions or the increase of greenhouse gas removals, including through process innovations or product innovations (...)”.²⁵

Both Regulations specifically mention the contribution of the economic activity itself but do not make reference to the contributions of financial institutions such as the obligations introduced in France.

1.3.3. Distinguishing company impact from financial institutions’ impact

In this context, it is useful to distinguish between the impact of financial institutions and the impact of companies in the real economy. Kölbel *et al.* (2019) underline that the financial institutions’ impact is defined through the concept of “additionality” or the idea that an investor can provoke either an increase of the company impact or a qualitative improvement of the company impact, as illustrated on Figure 2 below. The concept is valid for financial institutions more generally.

Such a vision is coherent with current regulations if “sustainable investments” as defined by the Disclosure Regulation are not meant to be equivalent to additional impact of financial institutions as defined by Kölbel *et al.* (2019). It is worth noting that such a distinction has been integrated by the UN convened Net Zero Asset Owner Alliance in its Draft 2025 Target Setting Protocol (NZAOA, 2020). It can therefore be considered non-controversial at least among the leading asset owners with regards to the integration of climate change in their business.

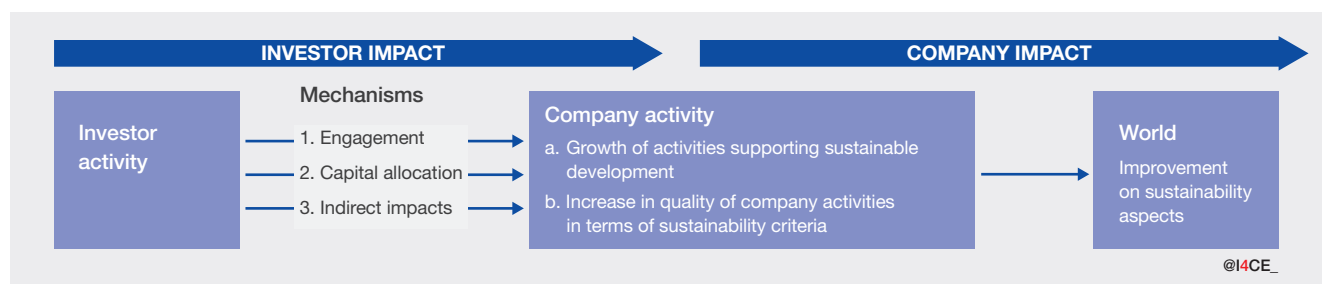
²² Translated from French by the authors of this report.

²³ SFDR, Art. 2.17

²⁴ Regulation (EU) 2020/852 - on the establishment of a framework to facilitate sustainable investment (EU Taxonomy Regulation)

²⁵ EU Taxonomy Regulation, Art. 10

FIGURE 2 – KEY CONCEPTS AND MECHANISMS OF POSITIVE INVESTOR IMPACT



Source: adapted from Kölbel et al. 2019.

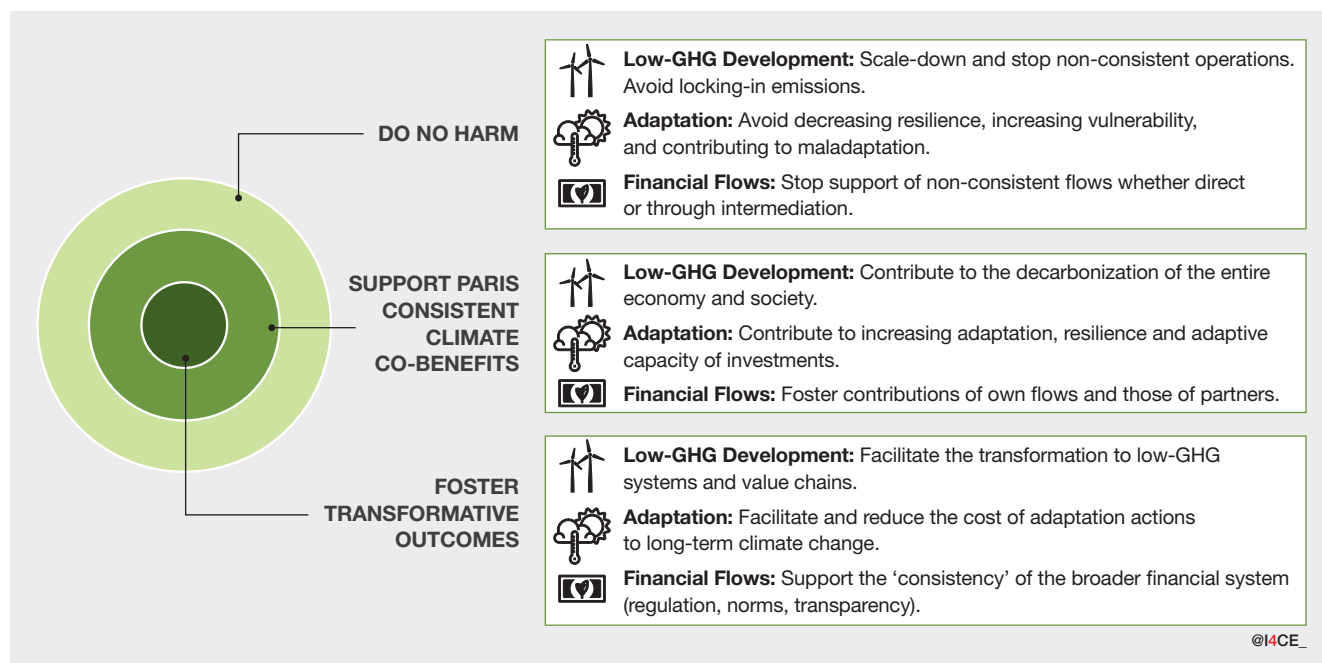
1.3.4. Differentiating levels of contributions: from doing no harm to incremental to transformational impacts

Beyond differentiating between financial institution vs company impact, it is also increasingly important for financial institutions to differentiate between different levels of impacts. As discussed, portfolio alignment implies at a minimum that financial institutions scale-down and stop activities that are deemed as ‘harmful’ or misaligned across their entire portfolio. In turn, it could be tempting to aim for an ambitious definition of “contribution” beyond this

scaling-down, with a specific focus on the means to achieve a positive impact.

While there is a growing consensus that a commitment to align does imply a positive contribution beyond scaling down misaligned activities, there is an open question about whether all types of financial actors should be expected to aim to have an additional positive impact via proactive contribution. This may much depend on their specific mandate and business model. Additionally, approaches or methodologies to assess the impact of a financial institutions’ planned or past contribution are only starting to emerge and are even less mature than alignment assessments.

FIGURE 3 – THE PARIS ALIGNMENT ‘BULL’S EYE’: ACTIVELY SUPPORT NATIONAL AND INTERNATIONAL TRANSFORMATIONS ACROSS ALL ACTIVITIES



Source: Cochran and Pauthier, 2019

1.3.5. Differentiating contribution and impact: means and result

The distinction between contribution and impact is however less clear to date. One option is to define contribution as the activities of investors that have the aim to create investor impact. To describe the contribution, financial institutions would then need to describe the actions and the intended

result, *i.e.* the role they seek to play in a low-carbon, climate-resilient and sustainable development, as well as the associated level of ambition and key features of their “Paris alignment” strategy to do so. In addition, they would need to explain why the actions are deemed appropriate in relation to the intended result, and finally describe the impact chain that relates the action to the intended result (theory of

1. CLARIFYING “WHAT”: TOWARDS A SHARED UNDERSTANDING OF KEY CONCEPTS

1.4. Identifying activities with negative impact and avoiding negative side-effects, a prerequisite for consistency

change) and mechanisms to monitor the appropriateness of the measures and their effectiveness.

Contribution would thus correspond to the means, whereas investor impact would correspond to a measurable result. Any impact claim should go with explanation of efforts to measure and monitor progress towards attaining impact, and perspectives to address difficulties. This is discussed in more detail in the corresponding section on proposed minimum requirements for disclosure further below.

Such a distinction is also broadly in line with how the different terms are used by the Impact Management Project (2018) in their “Guide for classifying the impact of an investment”.

1.4. Identifying activities with negative impact and avoiding negative side-effects, a prerequisite for consistency

As a basic component of portfolio alignment and ensuring the “consistency” or “compatibility” of an investment portfolio, it is necessary to identify all activities which are or may be counterproductive with the achievement of climate and sustainable development objectives. The European regulators are working on the concepts of “adverse climate impact” and “do no significant harm” that help clarify these aspects, as explained below.

1.4.1. Adverse climate impact: financial actor’s behaviors that are counterproductive to climate action

European disclosure frameworks are developing the concept of “adverse climate impact”

The Disclosure Regulation (SFDR) provides a general definition of adverse impacts stating that “Principal adverse impacts should be understood as those impacts of investment decisions and advice that result in negative effects on sustainability factors”.²⁶

The Disclosure Regulation empowers European Supervisory Authorities to develop draft regulatory technical standards (RTS) “on the content, methodologies and presentation of information [...] in respect of the sustainability indicators in relation to adverse impacts on the climate and other environment-related adverse impacts”.²⁷ A clearer definition of adverse climate impact and the type of information that needs to be disclosed is therefore likely to be available in 2021 following the publication of the ESA draft.

In addition the Disclosure Regulation specifies : “Where financial market participants (...) consider principal adverse impacts, whether material or likely to be material, of

investment decisions on sustainability factors, they should integrate in their processes, including in their due diligence processes, the procedures for considering the principal adverse impacts alongside the relevant financial risks and relevant sustainability risks.”²⁸ Three things are interesting to pick up from this citation:

First, there is a clear distinction made between adverse impacts and sustainability risks.²⁹ This distinction will be discussed in the following subsection on climate-related risk management. Second, the recital makes it clear that materiality of adverse impact needs to be disclosed even if it is not certain but only deemed “likely”. And third, the recital speaks of “principal adverse impacts of investment decisions”, which would call for a definition of the term in line with the definition of positive investor impact as discussed above.

Proposals to clarify the definition, mechanisms and proxy for investor adverse climate impact

This report proposes that “adverse climate impact of investment decisions” can be defined as the effect of investor decisions on either maintaining company activities at levels inconsistent with low-carbon trajectories or even supporting a decline of the alignment of company activities with low-carbon trajectories. The same would also count for adaptation issues, *i.e.* supporting planned company activities that are not resilient with respect to future physical climate impacts or that are worsening the climate resilience of a company.

The mechanisms of investors adverse impact could be similarly defined as for positive impact:

- **Engagement:** covering not only active engagement against improvements of company climate alignment and resilience but also for example the passive validation of company strategies at general assemblies which are clearly incompatible with low-carbon trajectories or non-resilient.
- **Capital allocation:** allowing to maintain or increase company activities incompatible with low-carbon trajectories or non-resilient activities.
- **Indirect impacts:** as with positive impacts, signaling only has an impact on company activities if the same signals are sent by a sufficient number of investors or creditors. The exact threshold starting from which signaling starts having an impact remains unknown. However, given that the majority of investments is still invested in assets which are non-aligned, it can be assumed that investments in activities incompatible with the low-carbon transition and which are not combined with active climate engagement strategies by investors currently still create an adverse climate impact.

²⁶ SFDR, Recital 20

²⁷ SFDR, Art. 4.6

²⁸ SFDR, Recital 18

²⁹ A sustainability risk means an environmental, social or governance event or condition that, if it occurs, could cause a negative material impact on the value of the investment. Source: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R2088&from=EN>

As a result of the importance of the signaling effect, this report argues that the GHG emissions related to the assets invested in and covering all scopes could be used as a proxy for adverse climate impact. The notion of “principal adverse impacts” may in this case refer to “material or likely to be material” GHG emissions. Materiality refers to the environmental materiality as defined by the NFRD supplemental guidelines on climate change: “Climate-related information should be reported if it is necessary for an understanding of the external impacts of the company”.³⁰ A clear threshold would have to be defined to make this principle more operational, especially if the currently non-binding guidelines would become binding through a potential integration into the RTS of the Disclosure Regulation (SFDR). A possible threshold could be that all financed emissions beyond those compatible with a 1.5°C trajectory are to be considered material or likely to be material. Companies which are covered by active climate engagement strategies should be excluded, provided that there is tangible proof of engagement and monitoring the credibility of expected outcomes of this engagement strategy.

1.4.2. Do no (significant) harm: avoid negative side-effects on climate action and sustainability

The general clarification of the “do no harm” concept is underway

A fundamental consideration of whether an actor is ‘Paris Aligned’ is that across all its operations it does not support activities that are counterproductive to achieving the three main climate-related objectives of the Agreement – as well as SDGs (Cochran and Pauthier, 2019). However, there is a need to reach a clear terminology to clarify how it can be considered that activities of the financial sector are “doing no harm” to this set of climate-related and sustainability goals. The European frameworks use a similar “do no significant harm” concept to explain that a specific activity cannot be considered as contributing to one or several sustainability objective(s) if it is detrimental to any other aspect of sustainable development. The concept of “do no significant harm” is mentioned in the Disclosure Regulation³¹ as well as multiple times in the Taxonomy Regulation, with further explanation of the different aspects of sustainability that they target.

According to the Taxonomy Regulation, ESAs shall “develop regulatory technical standards to further specify the details of the content and presentation of the information in relation to the principle of ‘do no significant harm’”.³² While the ESAs have the task to define this principle across all aspects of sustainable development (environmental, social and governance), the present report concentrates on a possible definition in relation to Paris alignment strategies.

Proposal for a definition of the “do no harm” concept applied to climate issues

In general terms, as part of Paris alignment approaches actors need to take into account the direct and indirect impacts of their actions on systems and value chains in a given country.

More specifically, applying the “do no harm” concept to the temperature goal of the Paris Agreement³³ means that actors should scale-down and halt activities that result in punctual increases or the lock-in of GHG emissions at levels inconsistent with national and international objectives (*i.e.* insufficiently ambitious energy efficiency projects or less-emissive forms of fossil fuels), as well as activities that support systems and value chains counterproductive to long-term climate goals (such as energy transport networks that indirectly support continued fossil fuel use).

“Do no harm” applied to the adaptation and resilience objective of the Paris Agreement³⁴ would require institutions to identify and scale-down or adapt their actions that: 1) could decrease resilience or increase vulnerability of people, assets and economies; or 2) could lock-in economic development which would not be able to cope with ongoing and coming climate changes (such as economic development in flood-prone areas or growth of water intensive industries in a drought prone area). Finally, they should seek to identify and avoid maladaptation.

In addition, as the Paris Agreement is embedded in the Sustainable Development Agenda, actors should also ensure that all of their activities “do no harm” on other aspects of sustainable development.

Technical issues for a financial institution to measure how it does no harm in the field of climate issues

The application of the “do no harm” concept to the temperature goal of the Paris Agreement raises technical questions. While in theory alignment assessments with a low-carbon trajectory could be taken as a proxy, there is a fundamental problem with such assessments as they are constructed to date: none of them allows to ensure that lock-in effects are avoided. This problem, amongst other methodological issues (discussed in the section on alignment methodologies), would have to be solved before making them usable in the context of a “do no significant harm” approach.

Besides, it remains to be confirmed if assessment methodologies for physical climate risks can be used as a steppingstone to ensure a “do no significant harm” approach on the adaptation and resilience objective of the Paris Agreement.

30 NFRD nbgc, 2.2

31 SFDR, Art.2.17

32 EU Taxonomy Regulation, Recital 36

33 Paris Agreement, Art. 2.1a

34 Paris Agreement, Art. 2.1b

1.5. Climate-related risk management and climate action in financial institutions

1.5.1. The financial approach to “climate-related risks” in context of the “double materiality” framework

Climate-related risks can be considered as important issues from two perspectives that are explained in the European Commission’s “double materiality” framework. This report discusses climate-related risk analysis and management more essentially from a “financial materiality” perspective.

Financial materiality of climate-related risks

The present report discusses “climate-related risks” in terms of financial risks as defined in context of the TCFD. This comprises “transition risks”, “physical climate risks” and “liability risks” (the last category being sometimes considered as a specific case of the two first categories). Climate-related risk analysis looks at how climate and transition impacts in the real economy may significantly amplify the financial risks that are typically managed in financial institutions (e.g. credit risk). In the terms of the

European disclosure frameworks, the TCFD approach focuses on the “financial materiality” of climate issues (see Figure 4 below). This approach is also called an “outside-in” approach as it looks at how some changes in the climate and society might affect financial institutions.

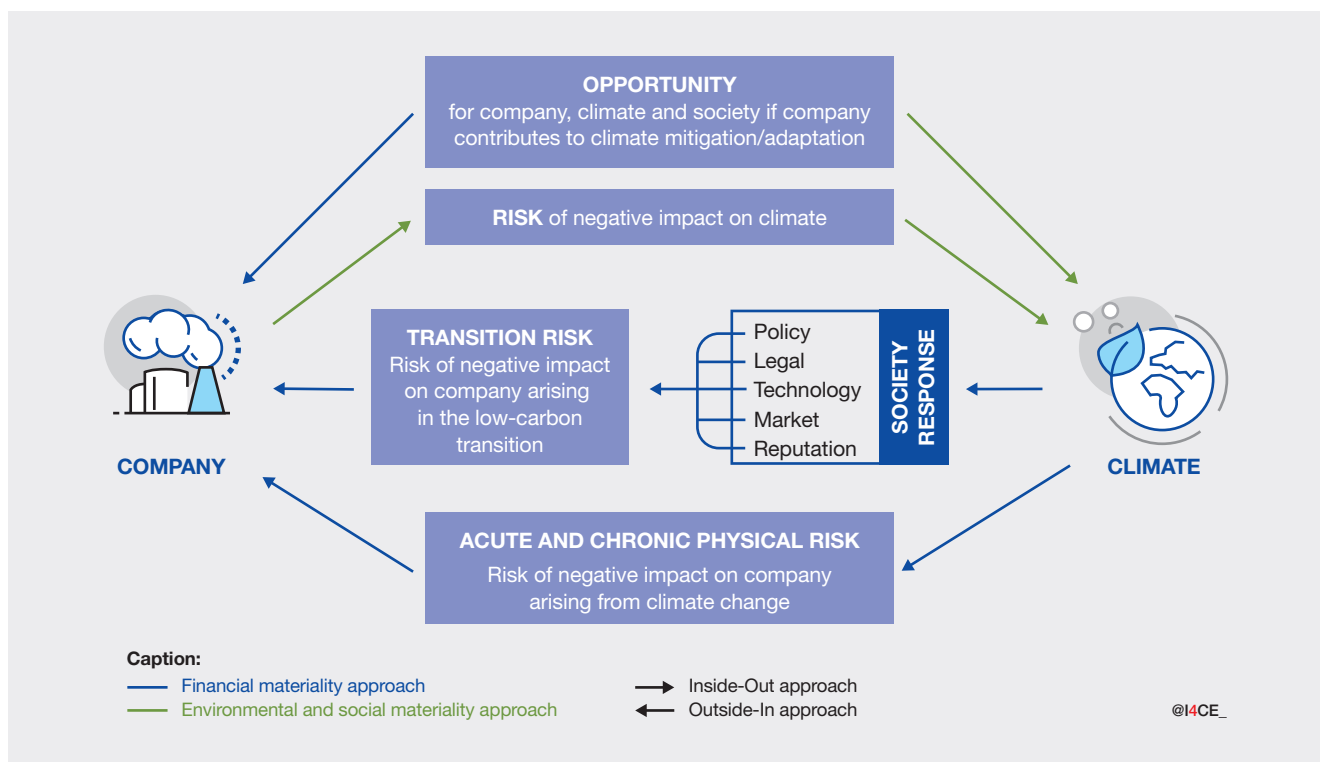
Environmental and social materiality of climate-related risks

It is also important to note that “climate-related risks” can be understood also as the risk of negative impacts on the society and climate. In the terms of the European disclosure frameworks, this is called the “social and environmental materiality” approach of climate-related risks (see Figure 4 below). This is also called an “inside-out” approach as it looks at how companies in general (financial and non-financial) impact on the society and the environment.

In financial institutions, such an approach has historically received more attention from ESG divisions and other teams involved in alignment and impact strategies, while the financial materiality approach has received more attention from the teams in charge of financial risk management.

The European Commission mentions that “these two risk perspectives already overlap in some cases and are increasingly likely to do so in the future”.³⁴

FIGURE 4 – CLIMATE-RELATED RISKS AND OPPORTUNITIES IN THE DOUBLE MATERIALITY FRAMEWORK*



Source: authors (Hilke et al., 2021). Adapted from EC NFRD Non-binding guidelines supplement on climate-related information (C/2019/4490).

*Note: this representation does not exclude further links between the financial materiality and the environmental and social materiality.

1.5.2. Uncertainty: a key aspect of climate-related “risks” and a challenge for traditional financial risk management practices

The financial materiality approach to climate-related risks should be talking to the teams in charge of managing financial risks in financial institutions. However, one of the key defining characteristics of climate-related risks is their uncertainty. This makes “climate-related risks” sound like an oxymoron from the technical stand of risk management teams at financial institutions.

Risk – as understood by an insurance company for example – refers to situations where the range of potential future situations is precisely identified and understood prior to taking a decision. Risk information is typically based on probability distribution of losses observed in the past. This approach is not appropriate to analyze climate-related issues, which are characterized by radical uncertainty about the future (cf. Bolton *et al.*, 2020). This means that the actual future evolution of physical climate impacts is – and will remain to a large extent – unpredictable. The same is true for the question of how exactly the transition to a low-carbon economy will be shaped, which technologies will drive the transition and what role will be played by energy efficiency and energy sobriety.

However, it is possible to take decisions even under high levels of uncertainty. For example, analytical approaches that recognize this inherent uncertainty include the use of exploratory scenarios that propose representations of plausible alternative futures – even if the probability of each scenario materializing remains unknown. Uncertainties may also call for different decision criteria that could account better for this non probabilistic range of potential futures (Depoues *et al.*, 2019).

1.5.3. Alignment analyses are not sufficient to measure a portfolio exposure to financially material transition risks

Alignment analyses have put much emphasis on portfolio consistency with a low-carbon trajectory and they include GHG emission metrics among other metrics. These could be useful inputs to understand also how a counterparty is misaligned with a low-carbon trajectory. However, in theory such measures may generally not be a good proxy for transition risk exposure due to multiple reasons, as illustrated below (see also Lucas-Leclin *et al.*, 2015).

First, alignment analyses do not cover financial impact analysis. Two counterparties with the same misalignment may have different net exposures to financial transition risks. Other factors need to be integrated in the assessment in order to reflect financial impacts from the transition. For instance, in the case of a corporate counterparty exposed to transition risks over its value chain, the net impacts on the company’s financial statements may depend on the bargaining power of the company with suppliers, customers

and regulators, or also depending on the company’s plans to adapt and seize opportunities of the low-carbon trajectory.

Second, transition risk analysis requires to look at the financial robustness of counterparties in a range of low-carbon transition scenarios. This is necessary in order to account for uncertainties about which low-carbon trajectory may materialize. For instance, a car company can be compatible with a low-carbon trajectory where hydrogen car technology dominates the market. However, it says very little about its strategic resilience in front of other transition scenarios where other car technologies prevail, or where other types of mobility prevail. Hence, transition risk analysis requires to explore different pathways to a low carbon economy, and how the counterparty’s strategy accounts for these different pathways.

Nonetheless, alignment measures can be a relevant proxy for financial climate-related risks in such specific cases as reputational risk. For example, if a company or a financial institution is known to be misaligned with a low-carbon trajectory, this might damage its goodwill and capacity to attract clients, staff or funding sources and its overall profitability.

1.5.4. Climate-related risk management and alignment/impact strategies are not necessarily reinforcing each other

In the current state of practices, it is important to note that portfolio climate-related risk management does not necessarily lead to portfolio alignment with a low-carbon trajectory, nor to a proactive contribution to achieving the Paris Agreement goals and vice versa.

An alignment strategy may include an objective of engaging with counterparties that are vulnerable to the physical impacts of climate change in order to help these counterparties become resilient to climate impacts. On the opposite, a financial risk management strategy could consist in avoiding those counterparties and result in making their access to capitals more difficult.

Further, an alignment strategy may include support to some low-carbon activities. On the opposite, a low-carbon activity may be winning in one transition scenario but lack resilience in other scenarios. Or this same low-carbon activity may be held by a company with an immature business and little financial robustness overall. Hence, a financial risk management strategy may end up avoiding such low-carbon asset.

The same issue exists with high-carbon assets. A portfolio alignment strategy could include an engagement strategy with high-carbon assets in sectors that need to decarbonize to ensure that a low-carbon transition materializes successfully in the real economy. On the opposite, if these high-carbon assets are considered already too much risky in financial terms, one risk management strategy could simply consist in avoiding or divesting from such assets. By doing

1. CLARIFYING “WHAT”: TOWARDS A SHARED UNDERSTANDING OF KEY CONCEPTS

1.5. Climate-related risk management and climate action in financial institutions

so, the financial institution would miss the opportunity to drive the transition in these assets.

However, it does not mean that alignment and financial risk management strategies are incompatible. As part of its financial risk management strategy, the financial institution could also decide to engage dialogue with the same high-carbon counterparty on building a credible transition strategy. If the financial institution concludes that it has no chance to obtain positive results with engagement, it may then decide to divest in order to manage its portfolio risk. When doing so, the financial institution may also explain to the market participants why they should not invest in this counterparty. That way, the financial actor not only manages its financial risk; it also uses its last opportunity to make a positive impact for climate action by an attempt to reducing the company's access to capital. There may be some further overlapping between financial climate-related risk management and alignment/impact strategies to be investigated.

2. Clarifying “How”: introducing minimum requirements for disclosure

2.1. Research context for setting ambitious and realistic requirements

2.1.1. Rationale and methodology

Section 1 of the report discussed the state-of-the-art understanding of the main concepts related to climate action in the financial sector that financial institutions should strive to explain in their disclosure. Ensuring a common understanding of these key concepts is a first step towards improving the comparability and readability of disclosure documents.

In practice, the quality of climate disclosure also depends on the underlying assessment methodologies that financial actors use to analyze their exposure to climate-related risks, their alignment with climate action objectives and how impactful their climate action is. The disclosure of many financial institutions relies on assessment tools that were developed by external service providers. In the absence of a standard, the service providers and financial institutions have developed their own frameworks and made heterogeneous methodological choices. The landscape of these assessment tools is continuously improving, with different levels of maturity depending on the type of climate issue under scrutiny. Yet it seems far too early for proposing methodological standards (see introduction).

Instead, this report seeks to provide minimum disclosure requirements that account for existing good practices in current assessment methodologies, but also for further development needs specific to each climate issue.

They are based on dedicated research projects related to available assessment methodologies. Only exception is the section on contribution and impact, for which dedicated assessment methods are still broadly under development. Taken together, the research projects included 35 interviews with service providers offering dedicated assessment methodologies as well as 20 interviews with financial institutions on the usability of these methods for their needs. For more in-depth technical discussions of the state of play of these methodologies; please refer to:

- Hubert *et al.*, 2018: [Getting started on physical climate risk analysis in finance](#)
- Raynaud *et al.*, 2020: [The Alignment Cookbook](#)
- Hubert *et al.*, forthcoming 2021: Review of transition risk methodologies, visit: [i4ce.org](https://www.i4ce.org)

This section of the report proposes **several types of minimum disclosure requirements that serve specific objectives**:

- **Increased transparency about key methodological choices** shall increase the capacity of readers to interpret the disclosed information and appreciate its quality. This may also be a first step towards more comparability.
- **Justifications on key analytical choices and requirements for some specific technical choices** shall help encourage the use and development of most relevant analytical practices. To some extent this may also help towards more comparability of the results.
- **Improved information on the link with the overall climate strategy** of financial institutions shall help readers to understand the relevance of the assessment results disclosed. It shall therefore improve the readability of disclosure documents.

The suggested minimum requirements in the following section of this report apply to climate-related disclosure in general, both using the approaches developed in-house and by external service providers.

They are to be understood as a basis for further discussion and may need to be adapted in order to be used in different contexts, such as voluntary best practices or regulatory frameworks.

2.1.2. Some key issues about setting minimum disclosure requirements in relation to specific assessment methods

Issues about making connections with decision-making in financial institutions

There are key issues about suggesting minimum technical requirements that would directly impact the decision-making processes at financial institutions.

This is particularly the case for technical requirements in relation to financial risk management, for several reasons. Dedicated regulatory requirements for risk management exist for example in the European CRR and CRD regulations. Optimally, qualitative requirements related to how to best integrate climate-related risks into general risk management procedures should first be included directly there. Requirements related to the disclosure of how climate-related risk is managed would then pick from there the aspects that need to be published for stakeholders. It seems not desirable to include qualitative aspects into disclosure requirements that are not covered by regulations on risk management in the first place. Secondly, the methodologies

2. CLARIFYING “HOW”: INTRODUCING MINIMUM REQUIREMENTS FOR DISCLOSURE

2.1. Research context for setting ambitious and realistic requirements

for climate-related risk assessments that were reviewed for this report are particularly adapted for disclosure exercises. However, risk management at financial institutions may mobilize in practice more granular processes and inputs going beyond the methodologies that were part of the reviewed methodologies.

This difficulty seems less salient in the field of alignment as no issue of potential regulatory overlap was identified in this context. However, the assessment methodologies that were reviewed are not considered sufficient for decision making when used alone and, in some cases, may not be relevant as inputs for framing alignment strategies.

The proposed minimum requirements try to best consider these challenges, but obviously, adaptations may be needed regarding the specific context when aiming to put these recommendations into practice.

Issues about full and public transparency on some key methodological choices

Some aspects of disclosure on transition risk might face potential confidentiality challenges for certain types of financial institutions.

For instance, climate change is one of the megatrends that all asset managers may want to investigate when managing their portfolio. Their capacity to frame the issue and techniques to integrate climate-related risks and opportunities are expected to become part of their core business activities and of their added value as asset managers. Hence it can be complicated for them to disclose in too many details the risk propagation channels that are analyzed, the criteria for assessing materiality, the indicators and datasets. Such information might be a large clue about their keys for investment decisions on climate change.

The recommendations are aimed at limiting transparency to the strict necessary, with the aim to allow notably the identification of practices with little relevance, as opposed to identifying best practices. Furthermore, disclosure obligations seem to be more adapted in this regard than voluntary initiatives, as obligations create a level playing field for all and do not penalize voluntary first movers.

2.2. Communicating on contributions and the role of positive impact of financial institutions

This section proposes minimum disclosure requirements related to contributions of financial institutions to climate goals with a specific focus on positive impact, as summarized on Figure 5 below. It should be noted that these options for minimum requirements as discussed are not prescriptive in relation to the ambition expected of financial institutions.

They would only apply where financial institutions are themselves claiming to contribute to climate goals and to generate through their actions a specific “positive impact”.

As discussed in part one, regulators could consider setting clear definitions for the terms “positive impact” and “contributions” of financial institutions. While specific impact assessment methodologies are only emerging, the disclosure requirements may also seek to clarify expectations regarding future methodology developments for impact assessments for financial institutions as well as for disclosure on contributions.

FIGURE 5 – OVERVIEW OF SUGGESTED MINIMUM REQUIREMENTS FOR DISCLOSURE RELATED TO CONTRIBUTIONS AND POSITIVE IMPACT CLAIMS



Source: authors (Hilke et al., 2021).

2.2.1. State of play of the methodology market

Following the definition proposed in the first section of this report, a financial actor's contribution can be achieved through an alignment strategy and/or a dedicated impact strategy.

While the following section of this report discusses portfolio alignment methodologies, the present section specifically discusses the case of investor impact assessment methodologies. No in-depth analysis of the methodology market has been undertaken as part of the research done in preparation of this report. Yet, it is relatively evident that there are not many (if any) methodologies readily available to financial institutions to date which would cover the question of additionality of investor impact in terms of increasing a company's positive climate impact in the real economy.

However, research is underway to fill this gap. The Impact Management Project,³⁵ which is building on a practitioners' community of over 2,000 organizations, has developed a “Guide for classifying the impact of an investment” (Impact Management Project, 2018). This guide supports the differentiation between company impact and investor impact and has categorized investor impact mechanisms (growing new/undersupplied markets, providing flexible capital, engagement, signaling).

Building on this work, the 2° Investing initiative launched in early 2020 the “Evidence for Impact” Working Group³⁶ in collaboration with financial institutions. The Working Group aims to develop the tools to understand and operationalize positive climate impact of financial institutions. Acknowledging that the systematic quantification of financial

³⁵ <https://impactmanagementproject.com/>

³⁶ <https://2degrees-investing.org/resource/impact-measurement-target-setting/>

2. CLARIFYING “HOW”: INTRODUCING MINIMUM REQUIREMENTS FOR DISCLOSURE

2.2 Communicating on contributions and the role of positive impact of financial institutions

institutions impact may remain out of reach, the working group aims at partly filling this methodology gap by:

1. Creating a tool to set and track climate actions of financial institution's as well as to track changes in the real economy.

2. Providing the most recent scientific knowledge about effectiveness of climate actions to financial institutions building on latest academic findings such as by Kölbel *et al.* (see Figure 6 below).

FIGURE 6 – EXAMPLE OF A CONCEPTUAL FRAMEWORK ON INVESTOR IMPACT

Investor Impact Mechanism		Type of change	Evidence Level	Requirements	Limitations	Typical asset classes
Grow new/ undersupplied capital markets		Enabling growth	B	<ul style="list-style-type: none">Investment in companies with net positive impactCompanies growth is limited by external financing conditions	<ul style="list-style-type: none">Not suited for investments in large, established companies, which have sufficient access to external financing	Private markets
Provide flexible capital			B		<ul style="list-style-type: none">Not suited for companies that have sufficient access to philanthropic or commercial capital	
Engage actively	Provide non-financial support		B	<ul style="list-style-type: none">Investment in companies with net positive impactInvestors with know-how, reputation or network that helps companies grow faster	<ul style="list-style-type: none">Only suited for early-stage investments, where investors can directly influence the company	
	Shareholder engagement	Encouraging improvements	B	<ul style="list-style-type: none">Focus on meaningful improvements that companies can achieve at a reasonable costInvestor with strong influence on a company	<ul style="list-style-type: none">Limited to incremental improvements; unlikely to transform industries	Public markets
Signal that impact matter	Market signals		C	<ul style="list-style-type: none">Transparent ESG criteria that companies can meet at reasonable costSubstantial portion of the market screening out or underweighting firms that don't meet the criteria	<ul style="list-style-type: none">Only suited for early-stage investments, where investors can directly influence the company	
	Non-market signals	Growth or improvement	D	<ul style="list-style-type: none">High level of public visibility of the signal	<ul style="list-style-type: none">Impact is difficult to evaluate as it is indirect and depends on political action or cultural change	

Source: Driouich *et al.*, 2021 building on research from Kölbel *et al.*, 2020

A Scientific consensus; B Empirical evidence; C Model-based prediction; D Narrative.

2.2.2. Distinguishing impact of financial institutions from company impact

There is a widespread confusion between company impact and financial institutions' impact when it comes to communication around investment products and this is leading to misunderstandings by retail clients (Dupré and Felmer Roa, 2020). At the same time, leading financial institutions via the Net Zero Asset Owner Alliance are supportive of a clarification of the definitions as discussed in the dedicated section above.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT

Regulators could require the proposed definitions to be used for disclosure purposes.

By doing so this would create a new demand for methodologies focused more specifically on financial institutions' impact and provide a clear direction for future methodology development.

2.2.3. Clarifying the link between stated impact targets and actions put in place

An increasing number of financial institutions is adopting overarching climate strategies and objectives and disclose on climate actions they are taking (Novethic, 2019). However, there is generally little insight on the actual link between the climate actions reported and the institution's overall climate objectives. Based on climate disclosure it is to date very difficult to judge whether the actions can be considered adequate in relation to the institution's climate strategy and

the expected impact communicated.

This lack has been tackled in the framework of the Finance ClimAct³⁷ project and a number of assessment criteria have been integrated in the overall assessment framework³⁸ of the French Climate Transparency Hub³⁹ in order to promote and identify good practices in this regard. The following options for minimum requirements have also been inspired by the research results of the Evidence for Impact Working Group. In addition, a new ISO standard 14097 is scheduled to be published in 2021⁴⁰, that is supposed to provide more detailed guidance in this regard.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT

- **Transition beliefs:** Financial actors should describe in general terms the transition pathway to a low-carbon, climate-resilient and sustainable development that they are seeking to contribute to through their actions.
- **Objectives:** Financial actors should describe the perception of their own role in contributing to this pathway, including:
 - If or not a specific positive impact is intended (e.g. increase sustainability of counterparty activities through change in activity levels or quality).
 - The level of ambition (e.g. aiming to generate through their actions climate co-benefits or specifically targeting assets and companies with transformative/catalytic potential) and if this is part of a broader alignment strategy.
- **Theory of change:**
 - Financial actors should describe the impact mechanisms that they are targeting (if any) (Signalling, engagement, non-financial support, additional/flexible capital, litigation) and
 - Financial actors should describe the actions that they are planning to implement and if applicable the characteristics of companies targeted by the actions.
 - They should explain the adequacy of the actions put in place to achieve the objectives, including a discussion how their specific climate actions relate to their general business strategy and the scaling down of support to any investments mis-aligned with climate targets, including those already in their portfolios.
- **Conditions for success:** Financial actors should explain which external factors are increasing or decreasing the likelihood of achieving investor impact with their actions.

2.2.4. Clarifying how the financial institution evaluates the effectiveness of its actions

Given the need for rapid methodology developments, more transparency is needed on the efforts that financial actors undertake to evaluate the impacts achieved, on the success of the contribution efforts as well as how this evaluation is used to update action plans.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT

- **Efforts for impact measurement:** If financial institutions report that they are contributing to climate goals with an impact, they should describe the efforts they undertake to assess the consequences of their actions in the real economy and how they are additional to the company impact (including their participation in efforts to increase the evidence base on impact tracking).
- **Estimation of impact achieved:** Financial institutions should aim to measure changes in the real economy that they are intending to achieve through their actions and track relevant indicators that could also have caused the changes (e.g. changes in relative energy prices or in regulations). Based on such indicators, they should provide a qualitative estimation or narrative of the positive impact that they claim.
- **Feedback loops into action plan design:** Financial institutions should explain if and how impact evaluations of preceding years have been used to inform action planning in order to improve the adequacy of actions with regard to the objectives or have informed strategic revisions.

2.2.5. Clarifying how contributions relate to the overall business activity

In order to allow readers to judge the relative relevance of a financial institutions' contributions to climate goals it is necessary to be transparent on how they relate to the overall business activity and business model. Small steps may be considered important for some and irrelevant for other institutions, depending on their mandate. Also contributions in only some business areas may be counterbalanced by a strong negative impact in other business areas. In order to be credible, financial institutions therefore need to be transparent and discuss, why they think that the contribution they propose is appropriate in relation to their business model and mandate.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT

- Financial actors should explain how their contributions relate to their overall business model and mandate.

37 <https://finance-climact.fr/>

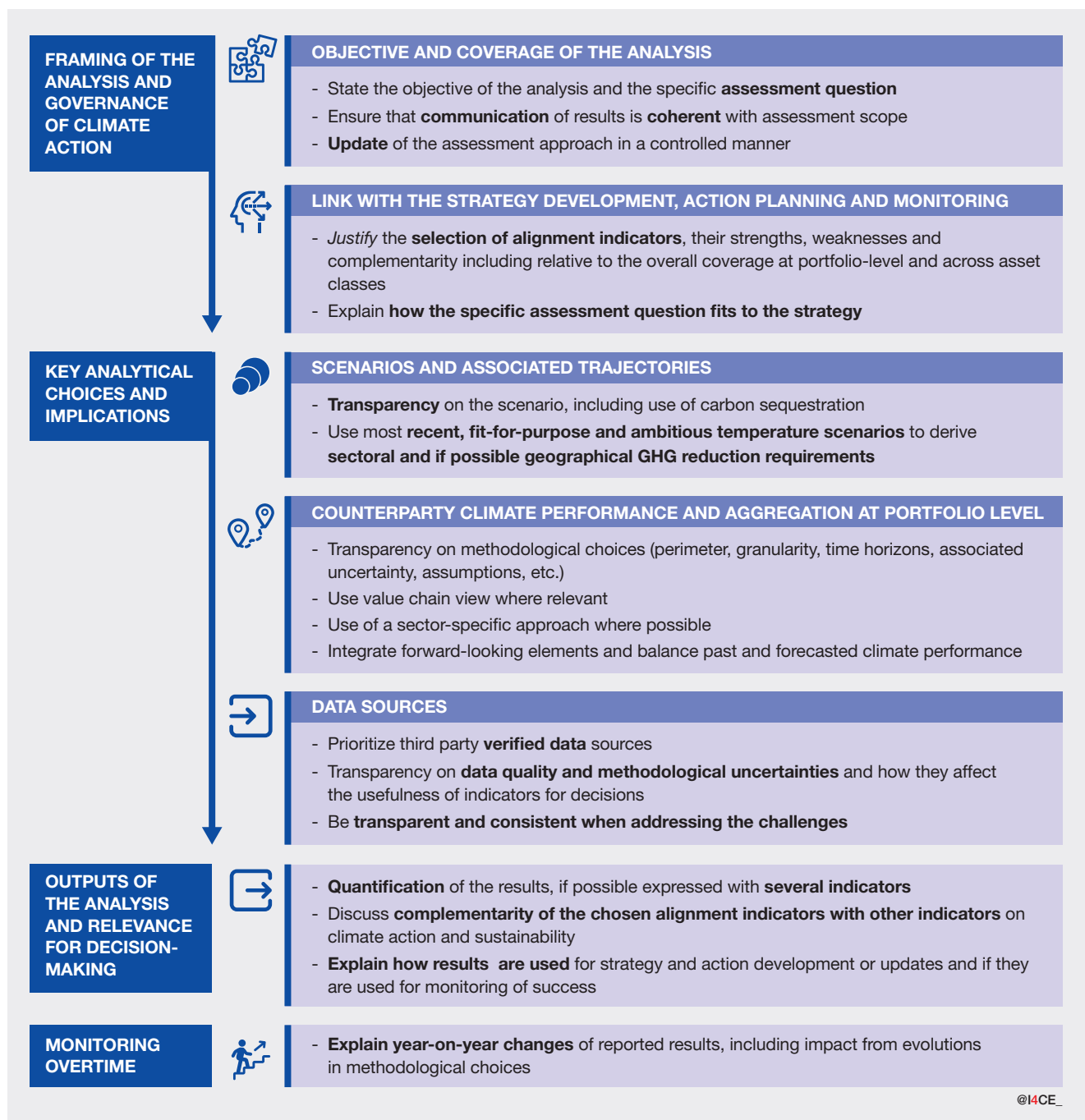
38 See criteria 3.4 and 3.5; in French at: <https://finance-climact.fr/wp-content/uploads/2020/12/Guide-du-CTH-Criteres-danalyse-2020-vFinale.pdf>

39 <https://finance-climact.fr/actualite/observatoire-de-reporting-climat/>

40 <https://www.iso.org/standard/72433.html>

2.3. Communicating on portfolio alignment assessments with a low-carbon trajectory

FIGURE 7 – OVERVIEW OF SUGGESTED MINIMUM REQUIREMENTS FOR DISCLOSURE RELATED TO THE USE OF METHODOLOGIES ASSESSING THE ALIGNMENT OF A PORTFOLIO WITH A LOW-CARBON TRAJECTORY



Source: authors (Hilke et al., 2021)

It should be noted that the proposed minimum requirements are specifically addressing the disclosure of results of these methodologies assessing a portfolio’s alignment with a low-carbon trajectory. They do not provide recommendations on how to design and implement alignment strategies, neither do they provide orientation on the relative merits of different alignment strategies. While these are important questions, they were not part of the scope of this report.

2.3.1. State of play of the methodology market

Since at least five years, there has been a strong dynamic in the development of methodologies to assess the alignment of investment portfolios with a temperature trajectory. While there was initially no formal requirement in the framework of mandatory climate disclosure in France to report on the alignment of investment portfolios with a temperature trajectory, most financial institutions have chosen to use one of the available methodologies for the purpose of their climate disclosure.

An in-depth review of methods for assessing the alignment of an investment portfolio with a temperature trajectory is available in the “Alignment Cookbook” (Raynaud *et al.*, 2020).

The “Alignment Cookbook” details the four main steps of these assessments and associated methodological choices and structuring questions:

- **Step 1: Assessing the climate performance of a portfolio**
 - What metric should be used?
 - What value-chain perimeter to use?
 - Should avoided emissions be included?
 - Should “removed” emissions be included?
 - Asset-level forward-looking data?
- **Step 2: Choosing one or several scenarios and associated trajectories**
 - What scenarios and how many?
 - How to adapt a third-party derived pathway?
- **Step 3: Deriving microlevel temperature benchmarks**
 - How to express the benchmark?
 - How to allocate the benchmark to companies/portfolio?
- **Step 4: Portfolio temperature alignment assessment**
 - Should the spread or speed be measured?
 - How to express the results?
 - Adjustments
 - Apportioning and aggregation

This review stresses the heterogeneity of the various tools that have been developed for listed equities and corporate bonds, the lack of transparency of the methods currently available in terms of processes, and the lack of consistency in terms of results - as demonstrated through empirical

tests. The outputs can hardly be compared, or added up for communication purposes, a fundamental reason to encourage a rapid convergence of the implied metrics.

Making it clear that these tools can only be part of a wider process to support investors’ alignment strategies, the review provides the intended users with a methodological framework for assessing which alignment recipe may better fit their investment constraints and strategies as well as their climate commitments and their overall disclosure goals. It defines four general steps for assessing a portfolio temperature alignment, each implying different methodological choices.

The following sections draw on these insights to propose minimum disclosure requirements on temperature alignment assessments, as summarized in Figure 7 above.

2.3.2. Clarifying the objective of alignment assessments and being transparent on their coverage

According to the “Alignment Cookbook”, available assessment methodologies for alignment with a temperature trajectory do in reality answer very diverse assessment questions and (partly as a result) are structured around very different assumptions and coverage levels. “Therefore, it is essential to highlight the specific question answered when disclosing the results of this type of assessment.” (Raynaud *et al.*, 2020).

Specific questions can include for example the following ones: “Have the companies in my portfolio set ambitious-enough **scope 1, 2 and 3 targets** and to which temperature level do they correspond, based on **sector and scope-specific precautionary temperature benchmarks** derived from IPCC?” or “Are the **revealed plans** of the companies in my portfolio sufficiently ambitious for my portfolio brown and green technology exposure to be aligned with a 2°C trajectory over **the coming 5 years**, compared to its **company and technology-specific** temperature benchmarks?”.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT

The financial institution/ methodology user must state clearly its objective(s), *i.e.* why it seeks to assess the alignment of its portfolios with pathways commensurate with the net zero emissions by 2050 or the well below 2°C temperature rise limitation objective and what is the specific angle taken by the analysis, *i.e.* the question that is answered by the assessment.

A more stringent option for implementation is for the regulator to define the specific assessment question the alignment methodology is meant to answer, in order to improve comparability of the results. This would amount to define the specific technical characteristics an alignment approach should follow (see section on comparability below) given that the assessment question answered depends on

2. CLARIFYING “HOW”: INTRODUCING MINIMUM REQUIREMENTS FOR DISCLOSURE

2.3. Communicating on portfolio alignment assessments with a low-carbon trajectory

the underlying methodological choices made. At this stage, it seems difficult and not desirable to do so given the lack of maturity in methodologies and definitions.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT

Communication around such assessments should be coherent with the scope of the analysis: e.g. avoiding to make reference to “Paris Alignment”, if only mitigation targets are covered by the assessment (see section on definitions).

2.3.3. Clarifying the linkages between assessments and strategy and actions

As highlighted in the “Alignment Cookbook”, alignment assessments can be an input into strategy development related to alignment with and contributions to climate goals. However, they need to be complemented with other tools, especially when it comes to the actual definition and monitoring of actions underpinning the strategies. Moreover, the link between actual results of the assessment and how they influence strategy development and implementation is to date rarely explained in climate-related disclosure of financial institutions. However, contrary to climate-related risk assessments, there are currently no legal requirements on how such assessments should actually be integrated into decision-making processes.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT

Financial institutions should explain how alignment assessments fit within their “theory of change” (see section on minimum requirements for contribution/impact), how and in combination with which other indicators they are used to inform general internal strategy development and investment decision-making including but not limited to climate-related strategies and target-setting, and how the outcomes of their climate-related strategy and actions are monitored.

A more stringent option for implementation includes allowing only the disclosure on the approaches that are actually used for internal strategy development and within decision-making processes. Given that a large number of financial institutions are still exploring how this may be done, it is most likely too soon to impose such an eligibility requirement.

2.3.4. Improving transparency on underlying methodological choices and their implications

According to the “Alignment Cookbook”, “many permutations of the same recipe are possible; yet there is no ideal temperature alignment methodology. In practice, service providers and financial institutions face a range of trade-offs given data availability [that arise when seeking internal methodological consistency]. What is best from a theoretical perspective may not be easily applicable.”

Each methodology is based on a unique set of assumptions and hypotheses and each methodological choice has its pros and cons. For example, a methodology that chose to cover a large perimeter in terms of emissions through the inclusion of scope 3 emissions in order to improve the relevance of the result, is likely to be confronted with data gaps, that may need to be filled through various techniques that increase the uncertainty of the result. Methodologies that chose to cover a wide range of sectors to increase portfolio coverage may need to combine different scenarios for their analysis, which makes the result less reliable when it comes to ensuring the respect of the overall carbon budget associated with a temperature trajectory (see Raynaud *et al.*, 2020 for an in-depth discussion).

Transparency is therefore key to ensure that the data users understand what is captured by the method, and that the finance industry at large understands the key areas for improvement.

Financial institutions may use one or several alignment methods, together with a range of other approaches, in order to overcome current limitations built-in within different methodologies and leverage their complementarities, as well as achieve higher portfolio coverage.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT

The general approach and methodology, and the strengths, weaknesses and complementarity of the alignment approaches and “alignment indicators” used, should be clearly explained, in particular relative to the overall coverage (at portfolio-level and across asset-classes), data quality and methodological uncertainties, and how these affect the usefulness of the indicators for strategy definition and decision-making processes.

In order to ensure adequate transparency on the different methodological elements, the minimum requirement may specify the expected information, namely:

Step of the process	Minimum requirements
Transversal	<ul style="list-style-type: none"> • A description of the overall approach(es)/ specific assessment question. • Sectoral, geographical and temporal granularity of the analysis. • Time horizon of the assessment (start and end date). • Levels of uncertainty associated with the overall method, expressed at least qualitatively and if possible, quantitatively through a confidence score, interval or other metric.
Step 1 Assessing the climate performance of a portfolio	<ul style="list-style-type: none"> • Scope of the analysis in terms of asset classes. • Coverage (at portfolio-level) – see below for more stringent options for implementation on coverage. • Value chain perimeter of the methodology: scope 1, 2 and/or 3 emissions of the financial institution; categories of scope 3 emissions (e.g. financed emissions). • Value chain perimeter of financed emissions: scope 1, 2 and/or 3. • Methodology used to estimate the future emissions associated with a company or portfolio (extrapolation, announced targets, revealed plans, others). • Assumptions made to estimate missing data, where relevant.
Step 2 Choosing one or several scenarios and associated trajectories	<ul style="list-style-type: none"> • Name and publication year of the scenario(s) used as benchmarks. • Whether carbon removal/ sequestration is taken into account.
Step 3 Deriving microlevel temperature benchmarks	<ul style="list-style-type: none"> • Methodology used to translate macro-level scenarios to micro-level benchmarks. • Whether the micro-level benchmark is expressed in absolute or intensity terms.
Step 4 Portfolio temperature alignment assessment	<ul style="list-style-type: none"> • Whether the methodology uses a cumulative or point-in-time approach. • When the analysis is done at investee-level, the portfolio-level aggregation method chosen.

The above listed items are drawn from the “Alignment Cookbook” (Raynaud *et al.* 2020) where a full discussion can be found on the rationale as well as current practices. A summary can be found in the annex and some are also further discussed in the next section.

More stringent options for implementation on coverage include:

- Requiring transparency in terms of coverage (portfolio-level and asset-classes) initially and then requiring a minimum coverage, rising to 100% after a fixed number of implementation years;
- Requiring minimum coverage at portfolio-level and/or asset-classes from the start, rising to 100% after a set number of implementation years.

2.3.5. Encouraging minimum technical requirements that foster comparability and quality of the analysis

One of the intentions of the “Alignment Cookbook” was to bring more transparency about the different issues faced and the answers that have been found to date by service providers. Yet the publication can only be a snapshot. The rapid development in the field is welcome in order to improve the relevance of the assessment results to the issues at stake. Beyond improving transparency, as highlighted in the section above, and despite a number of remaining unresolved issues, the report has revealed a set of aspects that can already be considered for the establishment of minimum quality standards from a technical perspective.

2. CLARIFYING “HOW”: INTRODUCING MINIMUM REQUIREMENTS FOR DISCLOSURE

2.3. Communicating on portfolio alignment assessments with a low-carbon trajectory

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT	
In order to be eligible for disclosure, the assessment approach chosen should:	
Step of the process	Minimum requirements
Transversal	<ul style="list-style-type: none"> • Make documentation publicly available from which the below-mentioned criteria can be verified. • The assessment approach should be updated on a yearly basis in a controlled manner.
Step 1: Assessing the climate performance of a portfolio	<ul style="list-style-type: none"> • Use a sector-specific approach where possible. • Take a value-chain view, <i>i.e.</i> include scope 1, 2 and 3 emissions of investees where relevant and possible. • Integrate forward-looking elements and balance appropriately past and forecasted climate performance (corporate and portfolio-level forward-looking elements can be based on historical extrapolations, macro-economic trends, CAPEX, green revenues, patents & R&D, green/brown share as well as public commitments to decarbonize business mix in the “real economy” for example in line with technology shifts derived from the EU taxonomy, per sector). • Use reliable (if possible third party verified) data sources, address missing data problems in a consistent and transparent manner, and highlight assumptions made to compensate for missing data.
Step 2: Choosing one or several scenarios and associated trajectories	<ul style="list-style-type: none"> • Make use of the most recent and fit-for-purpose temperature scenarios to derive the sectoral and if possible geographical GHG reduction requirements, <i>i.e.</i> priority shall be given to scenarios with a precautionary narrative, with low or limited overshoot, lower reliance on removal technology, stronger decarbonization rate and sooner emissions peak.

Because of data availability and in order to maintain internal consistency, service providers have made to date a variety of methodological choices on the items above. The table in the annex summarizes why the above recommendations are sound from a conceptual perspective as well as the current practices from providers and options for implementation given practical challenges. A full discussion can be found in the “Alignment Cookbook” (Raynaud *et al.* 2020).

2.3.6. Ensuring decision-relevance of the output information on portfolio alignment

In order to facilitate the integration of assessment results into strategies and decision-making processes, quantified results would be highly desirable, preferably expressed with several indicators for example on sectoral level. These can include the more granular underlying analysis of an Implied Temperature Rise metric, the amount of emissions above or below the temperature benchmark, or alignment scores for example.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT

Whenever possible, quantified indicators should be disclosed and on a more granular level than only the aggregated portfolio level view.

Options for implementation include requiring a quantified view from the start or phasing the requirement by starting with a qualitative view and requesting a quantified view after a given number of implementation years. For example, qualitative indicators can be used for the disclosure of alignment assessments with a low-carbon trajectory in the near term. However, 2-3 years later, the disclosure of quantified results would be required.

Given that current portfolio alignment indicators only give a very partial view analyzing the compatibility of a portfolio with a low-carbon trajectory, it seems beneficial for decision making that such indicators be complemented with other indicators (carbon footprinting, green/brown share and EU Taxonomy, environmental and biodiversity footprints, ESG scores, indicators related to adaptation and SDGs, etc.). A discussion of how different indicators are combined to provide a more holistic view, would therefore be beneficial to understand the relative importance of indicators for decision making.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT

The complementarity of “alignment indicators” with other climate, environmental and ESG indicators shall be discussed.

2.3.7. Facilitating monitoring of the disclosed results over years

The landscape of portfolio alignment assessment methodologies is continuously evolving and financial actors may also change their technical choices overtime. In this context, it is essential to disclose information that helps the disclosure users to monitor the evolution of the results and how they are influenced by change in analytical choices.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENT

Year-on-year changes of reported results must be documented and explained to ensure that they can be properly interpreted.

In order to encourage a more transparent communication around the evolutions of assessment results, a stronger option for implementation would be to ask financial institutions to *attribute* changes in year-on-year results to, where applicable:

1. Changes in the investment strategy;
2. Changes in the absolute climate performance of investees (Reported);
3. Changes in the absolute climate performance of investees (Modelled or estimated data);
4. Changes in underlying scenario data (e.g. update for a most recent version);
5. Changes in portfolio composition;
6. Changes in production, revenues (changes in pricing or sales structures) or enterprise value of investees, or portfolio value;
7. In market share of company and attribution of carbon budget (because of M&A, gain/loss at the expense of competitors, gain/loss of market share in a growing market);
8. Other relevant explanatory factors.

This would allow to understand whether an improving alignment is due to actual changes in the absolute climate performance of investees, portfolio turnover, or exogenous factors to the investors’ action.

2.3.8. Further issues for consideration

A number of technical questions are not addressed by the above suggested options for minimum technical requirements, in particular the ones that are listed below.

Minimum time horizons of assessments

Regulators could consider adding requirements on a specific minimum time horizon that should be covered by the assessment.

Dynamic/ cumulative vs static/ point-in-time approaches

To assess the (mis)alignment of a company or portfolio, its climate performance is compared to the temperature benchmark(s). The way the comparison is performed can take various shapes and forms that will ultimately drive the results and their meaning. A dynamic assessment evaluates the climate performance of a company or portfolio over a period of time – the “bad” performance in one year can be compensated by a “better” performance in another. A static assessment is performed at one point in time, captures distance (or proximity) to target and is very sensitive to the year of assessment chosen. Therefore, a portfolio may be 2°C “aligned” in 2030 – but it does not mean that its cumulative past and future performance lead to a 2°C world in the aggregate.

Approaches based on absolute vs normalized benchmarks

How to take into account company specificities, without constraining growth in portfolio value, but ensuring that the macro-level remaining carbon budget is respected? Methodologies that rely on benchmarks expressed in absolute terms ensure that the overall remaining carbon budget is respected but may be seen as restrictive as they restrict growth to zero-carbon growth. Methodologies that use relative benchmarks, *i.e.* expressed per unit of production or revenue, do not guarantee the overall respect of the carbon budget – if the production or revenue growth rate is higher than that embedded in the scenario and used to derive the normalized metric, then the overall budget is overshoot even if all portfolios and/or companies are “2°C aligned”. Given the lack of mature methodology to overcome this challenge, we suggest greater transparency in terms of change attribution analysis (see minimum criteria on transparency on underlying methodological choices).

Requiring the disclosure on an uncertainty metric

Temperature alignment metrics may give a false sense of certainty to the uninformed reader and provide misleading results, as they rely on multiple layers of assumptions that build upon each other, in particular:

1. The measurement of the climate performance of companies and portfolio;
2. The estimation of their future climate performance, when a forward-looking assessment is used;
3. Uncertainties embedded in the scenarios themselves;
4. Assumptions to disaggregate the macro trajectories to micro benchmarks;
5. Assumptions regarding the calculation of temperature alignment;
6. When an Implied temperature rise metric is used, calculation of the temperature metric itself.

It is well possible that the overall uncertainty embedded within the aggregate alignment metric is higher than the comparative result between two investment products for example. While mitigation options exist at each of these steps, no method/ approach attempts to estimate, either qualitatively or quantitatively, uncertainty level at the aggregate, *i.e.* at the level of the alignment metric itself. Research, innovation and transparency is therefore urgently needed on this theme.

Portfolio alignment with the Paris Agreement

No methods are currently built on the methodological choices that would be appropriate to capture “alignment to the Paris Agreement” from a multi-dimensional perspective and it remains to be shown whether a “trajectory alignment” type of assessment could be used to demonstrate “compatibility with the Paris Agreement objectives”, in a relevant, sound, holistic, and easily understandable way.

2. CLARIFYING “HOW”: INTRODUCING MINIMUM REQUIREMENTS FOR DISCLOSURE

2.3. Communicating on portfolio alignment assessments with a low-carbon trajectory

Indeed, this type of assessment would require a minima:

- Using nationally determined trajectories as a starting point, while achieving the objective of reaching net zero emissions at the global level in 2050. However, current nationally determined trajectories to achieve these goals are most often not available, or not ambitious enough. The UNEP Emissions gap report (2020) shows that the sum of today’s NDCs puts us on a 3.2°C trajectory.
- Using trajectories and assessing the performance of companies and portfolios taking into considerations relating to both adaptation and the SDGs - at the local, regional, national, and global level.

The link between portfolio-level and issuer-level assessments

Alignment assessment approaches are relative: the company or portfolio climate performance is compared to what it should be according to one or several temperature benchmarks. Therefore, any company or portfolio may be aligned with a 2°C trajectory regardless of whether it operates in/ finances a high stake or low stake sector in terms of achieving the transition.

In parallel, investment portfolios represent only parts of the economy. Let us take a hypothetical portfolio that is invested 100 % in media companies, all of which are aligned with their 2°C temperature benchmark. Assigning a 2°C alignment score to this portfolio assumes that, for the whole economy to be aligned with a 2°C trajectory, other investment portfolios finance in the “appropriate 2°C aligned” proportion other sectors, such as renewable energy.

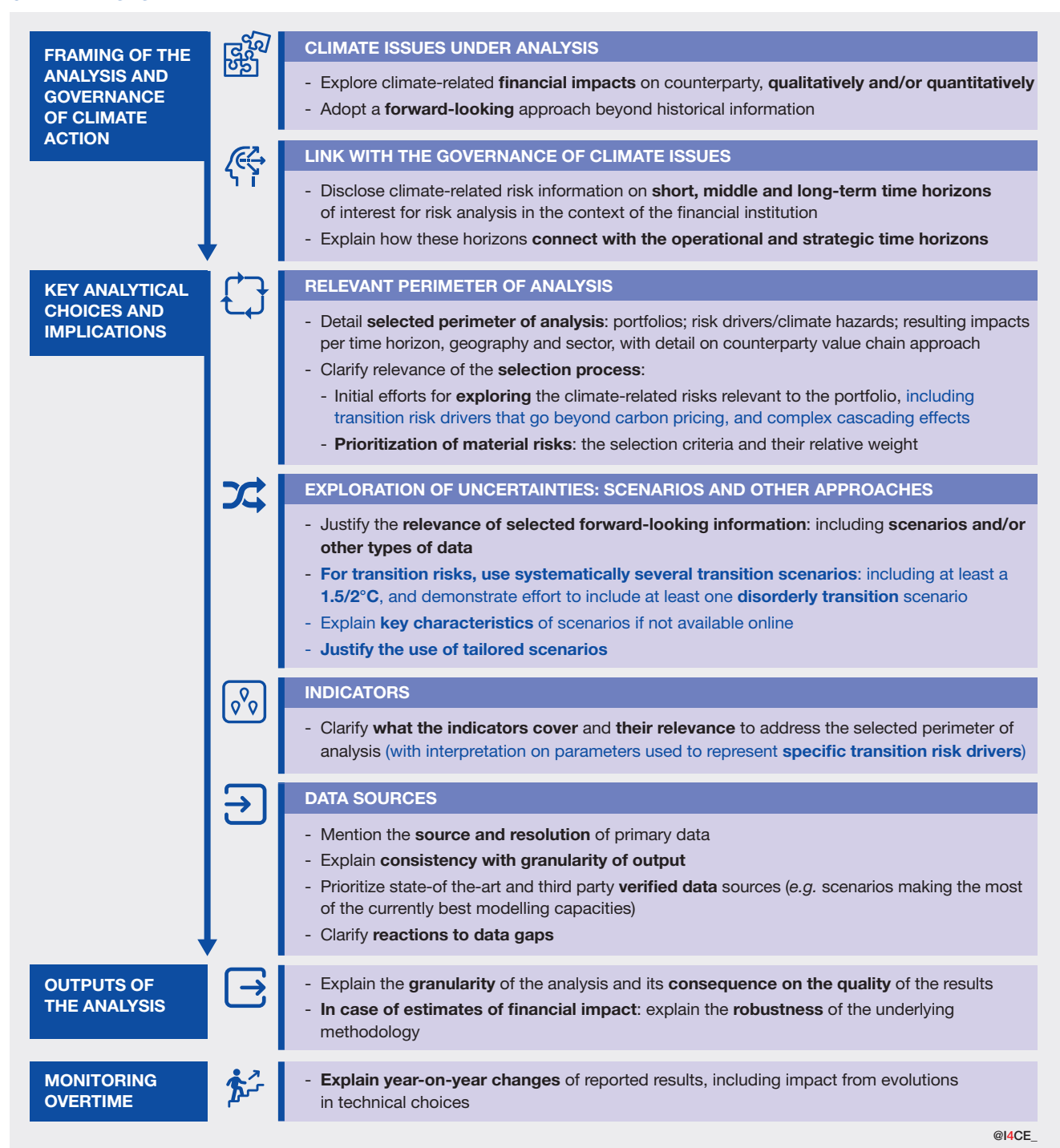
Service providers and investors have therefore introduced additional calculation protocols to reflect the relative importance of different sectors to the low-carbon transition in temperature alignment metrics and determine whether the investment portfolio finances each sector in the right proportion. However, we believe that none of these calculation protocols address adequately the interplay between portfolio-level and issuer-level assessments (yet), requiring additional research and innovations in that area.

2.4. Communicating on portfolio assessments of physical and transition risks

The analytical tools for transition risks and physical climate risks both need to follow the same overarching principles. Hence, the proposed disclosure requirements on transition risk below follow the same outline as for physical climate risk.

Nonetheless, transition risks and physical climate risks arise from very different phenomena. Methodology markets have emerged in parallel to address each risk, and they face specific needs and issues in terms of data and analytical choices. Therefore, there are differences in the proposed disclosure requirements for each type of risk. Figure 8 below summarizes in BLACK the proposed disclosure requirements COMMON TO TRANSITION AND PHYSICAL RISKS, and in BLUE the ADDITIONAL requirements that are SPECIFIC TO TRANSITION RISKS.

FIGURE 8 – OVERVIEW OF SUGGESTED REQUIREMENT DISCLOSURE RELATED TO TRANSITION AND PHYSICAL CLIMATE RISKS



Source: authors (Hilke et al., 2021)

2.5. Transition risk assessments in portfolios

2.5.1. State of play of the methodology market

Transition risks have appeared in early climate-related financial disclosure frameworks, such as the 2015's application decree for article 173 of the Energy Transition for Green Growth Act, the 2017's international market-based TCFD recommendations and the 2019's non-binding guidelines on reporting climate-related information under the NFRD. They have also received much attention in the work of financial supervisors on climate change threatening financial stability.

The minimum requirements presented in this section build on a review of transition risk assessment methodologies that I4CE carried out in 2020. I4CE researchers had direct exchanges with the service providers to clarify the key characteristics of their approaches. The research will be made publicly available in 2021 in a dedicated report as part of the Finance Climact project. This research is also compatible with the findings of the study published by ETH Zurich in 2020 (Bingler and Colesanti Senni, 2020).

The landscape of transition risk assessment methodologies by commercial and non-profit organizations demonstrates substantial expertise on the subject. They provide diverse outputs based on heterogeneous analytical choices. Some of these choices may be standardized to some extent, but complete standardization may also undermine the possibilities to explore the “radical uncertainties” of transition risks in all relevant manners, as explained below.

Transition risk assessment methodologies face other challenges. For instance, as discussed in the chapter on definitions, there has been some confusion on how methodologies should differ when analyzing the alignment of a portfolio with a low-carbon trajectory and when analyzing transition risks. As a result, certain transition risk assessment methodologies are in effect methodologies to assess rather portfolio alignment. The following section only accounts for those methodologies that are considered transition risk assessment methodologies in line with the definitions discussed above. The alignment assessment methodologies are considered and commented separately in the section of this report on alignment.⁴¹

2.5.2. Clarifying the framing of the analysis and links with the governance of climate action in the institution

Clarifying what qualifies as a transition risk analytical approach

Transition risks are a financial materiality approach to climate-related issues. It means that transition risks are defined as the financial consequences that may arise on

the financial institution as the result of their exposure to potential low-carbon transition trajectories. The low-carbon transition may affect the financial institution directly, or indirectly through its counterparties. In addition, transition risks arise from the ‘radical uncertainty’ of the low-carbon transition. This means that the transition could arise in many different forms that cannot be predicted in advance. The proper exploration of this unprecedented and unpredictable transition requires forward-looking approaches such as scenario analysis as the TCFD recommends.

Current methodologies on transition risks are not always clear about their focus on financial impacts and exploration of radical uncertainties. Some methodologies also let financial actors think that certain metrics like carbon footprint would be sufficient proxies of transition risk. However, carbon footprint is theoretically not a sufficient metric for transition risk analysis as lacks a forward-looking approach and a focus on financial impacts.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should base their disclosure on a transition risk approach that:

- Focuses on the **financial impacts** on counterparties arising from the low-carbon transition. The output of the analysis can potentially be formatted as estimates of financial impacts or other forms of information such as risk scores.
- Is **forward-looking**. It should be based on the exploration of a variety of different scenarios for the future consistent with models describing plausible socio-economic development options.

These general characteristics of transition risk analysis are not sufficient to guarantee that financial actors disclose information that is based on a satisfactory analysis. Further aspects need to be accounted for as explained below.

Providing information on appropriate range of time horizons

In order to address adequately transition risks (and physical climate risks), the TCFD has called for expanding time horizons, including usual strategic horizons. This is because the low-carbon transition requires a deep mutation of socio-economic systems that may materialize over several years.

This does not mean that transition risk analysis is relevant only for the long-term. Companies need to anticipate now the dynamics of the low-carbon transition. Companies that do not account for these long-term changes may make decisions today that already lead them to strategic dead-ends should any transition materialize over time. This could be the case for example of extractive fossil fuel industries that build their value on outlooks to exploit proven reserves (Carbon Tracker, 2018). This lack of strategic medium to

⁴¹ It is important to note that the 2020's ETH Zurich report also covers what the present report considers to be alignment methodologies.

long-term resilience might be priced in company’s financial value already in the short-term. In addition, the dynamics of the low-carbon transition are already started. The consequences of climate policies and other drivers of a low-carbon transition are materializing and can generate financial impacts now.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Explain their short and distant time horizons of interest for risk analysis and explain how this connects with their operational and strategic time horizons.
- Provide transition risk information on each of these time horizons *as much as can be* and taking into consideration that transition impacts happen in the long-term and are *also materializing in the short-term*.

This recommendation for disclosure requirements and the two following ones are consistent with TCFD’s recommended disclosure “Strategy a”).

2.5.3. Demonstrating the relevance of the perimeter of analysis

Detailing the perimeter of transition risks and their relative importance in the results

Transition risk drivers are plural and can lead to an array of financial consequences on counterparties. For the interest of understanding how the risks propagate through the economy to financial actors, this report considers three main transition risk drivers, widely overlapping with the drivers of the low-carbon transition itself: policy; market behavior and technological change.

Each of these drivers can trigger diverse impacts propagation channels in the economy. For instance, a carbon pricing tool such as a tax can target diverse aspects of a counterparty’s value chain or generate cascading effects across sectors down to the counterparty. An energy efficiency standard could either lead to abrupt consequences or leave time for counterparties to adapt.

Current methodologies do not cover the same perimeters of transition risk drivers and impact propagation channels. They are not always clear about the scope of impact channels that is covered, and which type of impact channels prevails on the economic activities. This type of information is however necessary for preparers and users of disclosure to make sense of transition risk information.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Explain the perimeter of portfolios that is covered in the analysis.

- Explain the **main transition risk drivers (policy; market behaviors; technology)** and resulting impacts that are covered and their relative importance for a given economic activity, geography and time horizon. In particular, detail the types of financial impacts that are accounted for in the analysis for each type of economic activity. This includes the financial impacts at the level of the counterparty and potentially impacts at the level of the financial institution.

Justifying the prioritization of material risks that are analyzed in the selected time horizons

The perimeter of analysis mentioned above is selected based on a “materiality assessment” that considers a large array of potential risks and prioritizes the most important ones for in-depth analysis. It is important to have information on the quality of this prioritization process as it conditions the relevance of the perimeter that is effectively analyzed.

The quality of this prioritization process depends on the exhaustiveness of the perimeter of analysis that was initially screened, and how the preparer of disclosure reaches the conclusion that some aspects of this broad initial perimeter will be excluded from the final set of material risks. For example, it is important to clarify if the limited representation of risk drivers such as market preference shifts are conceptually justified after careful investigation of sectoral vulnerabilities or if it results from limited modeling capacities.

The prioritization process can also use diverse criteria of selection (see section on physical climate risks for more details), some of which might be questionable in the case of transition risks. An example of such criteria is assigning transition scenarios with a probability of likelihood in order to sort out the relative importance of the scenarios. This is questionable due to the radical uncertainty about the materialization of one transition scenario compared with a range of others.

On the one hand, the landscape of available methodologies demonstrates some good practices that need to be generalized. For instance, the methodologies have developed significant efforts to explore the sector-specific sensitivities and adaptive capacities to transition risks. This is a good level of analysis to sort out material risks on different types of counterparties.

On the other hand, the methodologies are often not clear about the overall effort that was made to explore potential transition risks and on how they prioritize the risks. Only a few of them allow financial actors to customize materiality criteria such as sectoral weights in portfolio or scenarios.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Explain the perimeter that was initially screened in terms of: portfolios; economic sectors and geographic areas; **transition risk drivers** and categories of

2. CLARIFYING “HOW”: INTRODUCING MINIMUM REQUIREMENTS FOR DISCLOSURE

2.5 Transition risk assessments in portfolios

potential financial impacts. **In particular, explain how risk drivers are considered that go beyond a carbon pricing (including other types of climate policies; change in market behavior; technological evolutions) and how potential cascading effects in all economic sectors are considered.**

- Explain how the materiality assessment uses sector-specific sensitivities and adaptive capacities to transition risks.
- Explain the criteria that are used to select material risks and justify how these criteria are weighted relatively to each other. In particular, disclose how the relative importance of impacts is identified and selected per type of **transition risk driver**; economic activity; geography and time horizon. In addition, provide comments on the type and source of data that is used, explain whether data gaps were faced and treated on specific areas.

2.5.4. Demonstrating proper exploration of uncertainties about future transition impacts

The available methodologies already seek to explore the radical uncertainties on how a low-carbon transition might materialize. They do so by exploring different transition scenarios that can lead to limit global warming to 1.5°C or 2°C. One scenario is not enough to explore how different cases of transition drivers and cascading effects may expose the economy to financial risks.

Disorderly transition scenarios can be particularly relevant to explore transition risks, as it appears in the NGFS scenarios (NGFS, 2020). Some models can already simulate non optimal transitions with impact in the short-term and are used by a limited number of service providers. However, most of the publicly available transition scenarios are produced with integrated assessment models that were built to look for optimal climate policy pathways. Sustained efforts will be needed to increase the availability of disorderly transition scenarios and integrate them in the methodologies that are used for transition risk analysis.

A few service providers also develop in-house scenarios for running their methodology. This can be useful to make up for the limitations of most publicly available scenarios, in terms of their granularity and relevance of their outputs. However, more transparency is needed on the modeling assumptions for these in-house scenarios. Indeed, these scenarios can be produced based on a range of approaches, such as econometric simulation models that are widely used internationally or various types of expert judgments yet to be clarified.

Besides, more transparency is needed on the motivations of financial actors for using in-house scenarios in their analysis. Some of them reportedly prefer tailored scenarios in order to include transition risks that are the most relevant to test the vulnerabilities of their specific portfolios. Others want

scenarios that reflect their own belief about the most likely transition trajectory. This diversity of motivations has large implications on the scope of exploration of uncertainties and potential impacts arising from the transition.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- **Explain if the transition risk disclosure accounts for several scenarios, including: at least one 1.5 and/or 2.0°C scenario; at least one disorderly transition scenario (or explain why it is not currently possible). Explain if NDC scenarios are used when available and usable, either as a baseline when such scenarios are not compatible with a 1.5°-2°C objective or as a transition scenario otherwise.**
- **Disclose the characteristics of the transition scenarios used when the information is not publicly available otherwise (on the narrative; reference baseline scenario; timing, magnitude, the nature of sectoral and macro impacts, their timing and magnitude; the compatibility with a given climate objective; how the objective is attained (e.g. assumptions on CCS, other technological assumptions); how structural changes in the economy are considered; the comparability with other public scenarios).**
- **Disclose the rationale for using tailored scenarios when they do so.**
- Disclose if efforts were made to base the analysis on peer-reviewed material and on databases recommended by the relevant authorities.
- Provide justification (potentially through relevant third parties) on whether scenarios are aligned with state-of-the-art **modelling capacities**.

It should be noted that these minimum requirements are deliberately formulated as transparency requirements and not as minimum quality requirements. This is only due to the issue of potential regulatory overlap as discussed in the introductory section to the second part on minimum requirements. Clear quality requirements along the same lines would need to be integrated in requirements on risk management practices directly and not initially via disclosure requirements. This is however out of scope for the present report.

2.5.5. Clarifying the relevance of indicators and other data choices

Clarifying how the chosen parameters contribute to the rationale of the analysis

The clarification of the perimeter of analysis is necessary but not sufficient to make sense of transition risk information. Clarifying the choice of technical parameters is also essential to understand the rationale of the analysis, interpret the results and appreciate their robustness.

Typically, a parameter labelled “price of the ton of CO₂” can refer to the modeling of different mechanisms in the real economy. In some models it can represent a carbon tax that may be implemented effectively by policy makers among other climate policy tools. In others it can summarize a broader set of climate policies or it can summarize the cost of the decarbonization effort in different sectors (and the model may still call it a “carbon tax”). It is important that the preparers and users of disclosure have enough information to interpret correctly those parameters that play a central role in the analysis.

In addition, the parameter or indicator used to describe a risk driver, adaptive capacities of counterparties, etc. can be sometimes a default choice. It may reflect the limited availability of relevant variables from the model; limited data availability; or constraints of compatibility with the broader datasets that is used for the analysis. It is important that all stakeholders know to what extent the chosen parameters are deemed satisfactory or used by default.

While the service providers were informative about their choices when interviewed, this information is in general not publicly available.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- **Option 1:** comment on the rationale to select the set of parameters or indicators, how they provide satisfactory information over the scope of impact chains and diverse aspects of the counterparties or of the financial institution, and explain any difficulty and potential for solving the issues.
- **Option 2:** provide a stable link to publicly available documents that explain major elements on the major technical analytical choices that underpin the disclosed information.

Clarifying issues on the data and quality of the output information

To appreciate the reliability of transition risk information, the preparers and users of disclosure need to know if it was produced with an appropriate level of data granularity.

To understand the relevance of this question, it is important to note first that the output information does not provide a clue about the granularity of the underlying methodology and data. For instance, the methodologies providing financial estimates of impacts can be based on data with diverse levels of granularity. They can include a top-down sectoral ventilation of potential impacts on GDP; they can also include some level of counterparty-specific data. Some methodologies providing financial estimates of impacts are

not necessarily providing more robust information than a qualitative scoring methodology.

The data granularity is a substantial challenge. The available methodologies face important data gaps at counterparty level, to analyze for instance the exposure and strategic resilience of companies.⁴² In addition, more research would be needed to understand to what extent counterparty-specific information can make a large difference in the counterparty's net level of transition risk. It is important that preparers and users of disclosure obtain information about how the methodology addresses these issues of granular data availability and sufficiency.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Explain the granularity of the analysis and its consequences on the quality of the results.
- Explain the robustness of the underlying methodology when the output information is presented as an estimate of financial impacts.
- Describe specifically how they consider the inclusion of counterparty specific information – for instance on its adaptation/adaptive capacity and how they react to the data availability issue.

2.5.6. Facilitating monitoring of the disclosed results over years

The landscape of transition risk assessment methodologies is continuously evolving. Financial actors may also apply the analysis to an increasing array of activities and time horizons from one disclosure exercise to the other. In this context, it is essential to disclose information that helps the disclosure users to monitor the evolution of the results and how they are influenced by change in analytical choices. In parallel, it would be useful to develop external audit processes by independent third parties to check the quality of the results and of the methodologies.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Disclose explanation about the evolution of their methodological choices and their impacts on the results over years.
- Ensure availability of documents that help monitor methodological choices and results overtime (including for example past disclosure; explanation of major analytical choices – such as IAMs and other models – and their evolution overtime).

⁴² For instance, there is a lack of information about the revenue split of companies per activity and country (Vailles *et al.*, 2020). This information is however one of the keys to understand the exposure of the corporate counterparty to transition risks. Besides, as illustrated in the TCFD (2020) stock take, corporate strategic resilience to climate-related issues remains one of the least disclosed information expected from TCFD recommendations. This information is however one of the keys to improve understanding of the corporate counterparty's adaptive capacity.

2.6. Physical climate risk assessments

2.6.1. State of play of the methodology market

In the same way as transition risks, physical climate risks have been mentioned in early disclosure framework including the application decree of article 173 of the Energy Transition for Green Growth Act; TCFD recommendations and NFRD nbgc. The launch of these disclosure frameworks has come along with the development of services developed by external service providers that financial actors have used as a basis for their disclosure (Hubert *et al.*, 2018).

As part of the European ClimINVEST project, I4CE reviewed in 2018 the methodologies developed by service providers to help financial actors analyze their exposure to physical climate risks. The service providers kindly collaborated to shed light on some of their key methodological choices, in the boundaries of proprietary models. They are presented in a unified framework developed by I4CE and detailed per methodology in annex I of the report Hubert *et al.* (2018) and summarized in chapter 35 of the NGFS occasional paper (Hubert and Cardona, 2020). The proposals formulated in the following section of the present report are based on this review. They also account for updates from the review published in section 4 of UNEP FI and Acclimatise (2020) report after Phase II of their banking pilot project.

The methodologies on physical climate risk analysis have been developed by a limited number of commercial service providers that demonstrate substantial expertise in their tools. Their output is either a climate risk score or an estimate of financial impacts. Each provider has focused its efforts on different perimeters of analysis with diverse methodological choices that remain only partly explicit. Some gaps in the analyses were observed overall and the service providers face substantial data gaps, typically on the value chain of corporate and SME counterparties. The UNEP-FI report also highlights the emergence of new tools, including tools for financial actors to structure discussions with their counterparties on their adaptation plans.

As reported in the ClimINVEST project and the UNEP FI Phase II banking pilot, financial institutions are in increasingly building internal climate expertise and mobilizing their teams for the development of tailored analytical tools. Therefore, they are looking for a broader range of data and analytics to assess their exposure to physical climate risks and manage the risk (Hubert *et al.*, 2021; UNEP FI and Acclimatise, 2020). The UNEP FI and Acclimatise 2020 report provides an overview of this broader set of methodologies and data.

2.6.2. Clarifying the framing of the analysis and links with the governance of climate action in the institution

Clarifying what qualifies as a physical climate risk analytical approach

The TCFD and the other disclosure frameworks on climate-related issues frame ‘physical climate risks’ as a financial materiality issue. Physical climate risks are the potential financial consequences on the financial institution arising from climate hazards. Financial actors are exposed to physical climate risks primarily through the financial consequences of climate impacts on the real economy.

In addition, climate hazards are evolving in a non-linear way with unprecedented levels of perturbations applied to the climate system – mainly because of GHG emissions from human activities. Hence, future climate conditions cannot be inferred based on sole extrapolation of past observations in climate conditions. They require instead a forward-looking analysis.

Most of the methodologies on physical climate risk analysis developed by service providers address these two key characteristics to some extent. However, some of them are not perfectly clear on whether they integrate any type of consideration about the financial consequences of climate hazards (even qualitatively). Some methodologies also rely only on description of climate impacts observed in the past or on the assumption that they are representative of future climate conditions.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should base their disclosure on a physical climate risk analysis that:

- Includes an exploration (quantitative and/or qualitative) of the **financial impacts** on counterparties arising from their exposure to climate hazards.
- Is **forward-looking**. It should make use of relevant tools to explore uncertain future evolutions of climate change and socio-economic responses, including scenarios on relevant aspects. It should not rely solely on historical information.

These general characteristics of physical climate risk analysis are not sufficient to guarantee that financial actors disclose information that is based on a satisfactory analysis. Further aspects need to be accounted for as explained below.

Providing information on appropriate range of time horizons

Market participants need to understand how financial institutions are exposed to physical climate risks in their current portfolios, but also how these risks may affect their strategies over longer time horizons. Hence, financial institutions may provide information on all the time horizons

that are relevant for both their portfolio life cycle and their strategy.

Financial institutions may keep in mind that climate impacts can occur in distant time horizons and have strategic relevance, even though they may go beyond usual time horizons of strategic thinking. Financial institutions should also have in mind that our current climate conditions are already symptomatic of a changing climate. Hence, all economic activities are potentially exposed to climate impacts not only in the coming decades but also now.

Most of the available methodologies on physical climate risk analysis have provided information on long-term climate impacts, while only a few of them have started to provide information on the short-term. In any case, there is a need to make sure that further developments on short- and long-term horizons are technically relevant (see more detail in the section on uncertainties).

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Explain their short and distant time horizons of interest for risk analysis, and explain how this connects with their operational and strategic time horizons. Especially for longer term time horizons, financial actors should discuss what types of balance sheet adjustments they could consider for mitigating risks identified by the analysis.
- Provide climate risk information on each of these time horizons *as much as can be* and taking into consideration that climate impacts happen in the long-term and are *also materializing in the short-term*.

2.6.3. Demonstrating the relevance of the perimeter of analysis

Detailing the perimeter of physical climate risks and their relative importance in the results

Physical climate risks in finance can be seen as a set of climate impact chains. A climate impact chain describes how a climate hazard leads to a certain type of physical impact on a given aspect of a counterparty and its resulting consequences on a given aspect of a counterparty's financials. As shown in **Figure 9** below, an example of climate impact chain would be how a flood triggers damages on a company's operation buildings, the consequences in terms of OPEX and ultimately how that affects the company's market value. More generally, multiple climate impact chains can be potentially relevant to characterize fully the level of exposure of a counterparty to climate hazards.⁴³

The methodologies developed by service providers do not always provide clear explanation about the type of hazards and impacts that are considered. In addition, they are not

always fully transparent on the relative importance of the different types of hazards and types of impacts for a given activity. However, the preparers and users of disclosure need clear information about this perimeter of impact chains and their relative importance so they can make sense of the physical climate risk analysis and build capacity to use this information.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Explain the perimeter of portfolios that is covered in the analysis.
- Explain the main hazards and resulting impacts that are covered and their relative importance for a given economic activity, geography and time horizon.
- In particular, detail the types of financial impacts that are accounted for in the analysis for each type of economic activity. This includes the financial impacts at the level of the counterparty and potentially impacts at the level of the financial institution.

Justifying the prioritization of material risks that are analyzed in the selected time horizons

The perimeter of analysis mentioned above is selected based on a “materiality assessment” that considers a large array of potential risks and prioritizes the most important ones for in depth analysis. It is important to have information on the quality of this prioritization process as it conditions the relevance of the perimeter that is effectively analyzed.

Financial actors will assess the “financial materiality” of climate-related financial risks. To do so, they can use various criteria and weight them in diverse ways. It may typically include such criteria as: the characteristics of the financial institution's portfolios (e.g. weight of economic activities); time horizon issues (e.g. mismatch between expected period of climate hazard materialization and capacity to sell the exposed assets earlier); level of likelihood of climate hazards in specific geographies (be it objective or subjective likelihood); relative importance of specific types of climate vulnerabilities on a given economic activity; etc.

The financial materiality assessment requires a certain amount of data to make sure that all relevant aspects of physical climate risks were identified before proceeding to the selection of priority issues. Hence, the boundaries of the selected material risks may arise not only from the rationale of weighted criteria, but also from the limited capacity to identify and assess the importance of some climate impact chains.

The available methodologies are not always transparent about the type of criteria, weights, data and boundaries of this materiality assessment. This is however needed for the preparers and users of disclosure to understand the rationale and robustness of the methodology.

⁴³ More detail on the diversity of climate impact chains can be found in chapter 35 of NGFS occasional paper (Hubert and Cardona, 2020).

2. CLARIFYING “HOW”: INTRODUCING MINIMUM REQUIREMENTS FOR DISCLOSURE

2.6. Physical climate risk assessments

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Comment on the perimeter that was initially screened in terms of: portfolios; economic sectors and geographic areas; climate hazards (acute and chronic hazards); categories of financial impacts.
- Explain the criteria that are used to select material risks and justify how these criteria are weighted relatively to each other.
- In particular, disclose how the relative importance of impacts was decided on per type of climate hazard, economic activity, geography and time horizon. Comments should be provided on the type and source of data that is used; identified data gaps on specific areas should be explained including how they were addressed.

2.6.4. Demonstrating proper exploration of uncertainties about future climate impacts

Providing information on forward-looking analysis of climate hazards

Technical understanding of climate science is necessary to choose the right type of climate information for physical climate risk analysis. For instance, the use of several climate scenarios based on future GHG emission trajectories is relevant most of all for horizons after the next decades, but it depends also on the hazard and geography that are considered. There is also a need to monitor that up-to-date information is used for the analysis. While the representation of climate conditions in the next years remains challenging, climate scientists are undertaking developments to increase the robustness of climate information on these short-term horizons. (Hubert *et al.*, 2021).

The available methodologies on physical climate risk analysis do make relevant use of IPCC climate scenarios for exploring climate impacts beyond the next decades. While service providers are aware of the need to find appropriate climate data for analyzing climate impacts in the next decades, some improvements may still be made in this regard.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Disclose the characteristics of forward-looking information they use to analyze different types of climate hazards at different time horizons (including information on the underlying GHG emission scenarios where applicable).

- Provide justification (potentially through relevant third parties) on how this choice of information is aligned with state-of-the-art scientific recommendations.
- When the use of different climate scenarios is relevant, disclose their exposure in several climate scenarios, and among them: at least one scenario that is based on plausible worst case of future GHG emissions from human activities.

Providing information on forward-looking analysis of socio-economic dynamics

Future climate impacts not only depend on the evolution of climate conditions. They also depend on future socio-economic choices that modify the exposure, sensitivity, adaptation and capacity to adapt to climate hazards at the scale of the socio-economic systems and of the financial actors' counterparties in the real economy (Colin *et al.*, 2019). For instance, a 2015's study carried out for the French Insurance Federation shows that if socio-economic trends are extrapolated in the future, they might be responsible for an estimated 29% of future climate impacts in the selected perimeter of the study (FFA, 2016).

Such information might prove relevant for financial actors to build a strategic view on future climate impacts; to engage discussion with counterparties on their adaptation needs; and to let know the market about their approach. However, the available methodologies developed by service providers generally do not make forward-looking assumptions on socio-economic aspects.⁴⁴

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Justify how their analysis considers inclusion of forward-looking perspective on the evolution of socio-economic systems that may impact on their counterparties at a given time horizon.
- For physical climate risk analysis beyond the next five years, explain their assumptions on the adaptive strategy of their counterparties.

2.6.5. Clarifying the relevance of indicators and other data choices

Clarifying what the indicators cover

When analyzing physical climate risks, several building blocks of information (that service providers and climate scientists usually call “indicators”) are used to characterize the hazard, the exposure of the counterparty, their sensitivity, their adaptive capacity and how the counterparty may be adapted already.

⁴⁴ It is also interesting to note that specific tools are developing to help financial actors gain more information on the adaptation strategy of their counterparties, in the form of engagement tools.

The methodologies that financial actors may currently use from service providers most often do not detail the meaning and content of each indicator. However, it is important to understand which indicator is used. For example, a “flood” indicator can refer to one of several types of floods that will not have the same consequences on counterparties (ClimINVEST, 2020).

In addition, the available methodologies from service providers are not totally clear on how the combination of indicators covers the whole chain of hazard/exposure/sensitivity/adaptive capacity/adaptation. For instance, a “climate indicator” can provide information not only about climate conditions but also about the counterparty’s sensitivity. This would be the case with an indicator on drought, integrating not only hydric data but also a threshold on the level of drought where the exposed crop dies (Gallo and Lepousez, 2020). Some other climate indicators do not properly incorporate information on the counterparty but they directly correlate with the financials of the counterparty

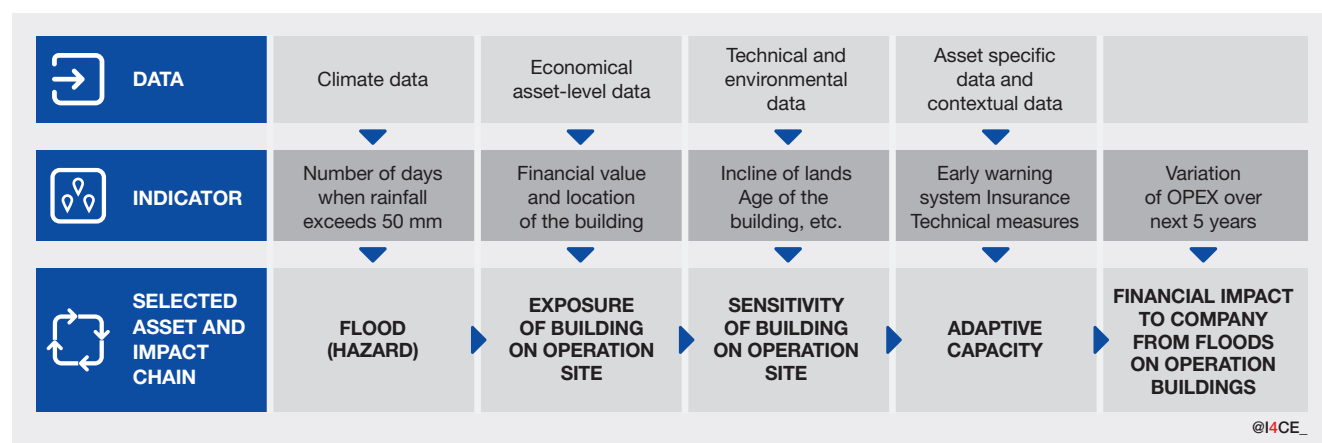
(e.g. indicator on average seasonal temperature correlated with income variations of an urban heat distribution system) and any implication of this type of approach needs to be clarified.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Option 1: comment on their rationale to select the set of indicators, how they provide satisfactory information over the scope of impact chains and diverse aspects of the counterparties or of the financial institution and explain any difficulty and potential for solving the issues.
- Option 2: provide a stable link to publicly available documents that explain major elements on the major technical analytical choices that underpin the disclosed information.

FIGURE 9 – ILLUSTRATING THE ANALYSIS OF A CLIMATE IMPACT CHAIN ON A CORPORATE COUNTERPARTY



Source: Hubert and Cardona. 2020. NGFS Occasional Paper on Case Studies of Environmental Risk Analysis Methodologies.

Clarifying issues on the data and quality of the output information

The granularity of the analysis and of the underlying data is a key aspect to appreciate the robustness of physical climate risk information.

This granularity issue applies to both climate data and the data on counterparties (including their value chain) and the broader business environment. Climate data precision can be described in terms of geographic resolution and temporal resolution (*i.e.* describing yearly vs seasonal climate conditions). Counterparty level data can be described in terms of geographic resolution and economic resolution (*e.g.* activity per country; latitude and longitude of specific company’s facilities; components of the supply chain of a specific company per country).

The appropriate level of data granularity can vary depending on the impact chain and portfolio under analysis. Sovereign risk analysis may not require as much granular data as corporate level credit risk analysis. For a company risk

analysis, some sectoral level data could be considered as a satisfying proxy on certain aspects. But some counterparty-specific data may also be necessary on other aspects. For example, the precise geographic coordinates of a facility and the topography at this location are necessary to understand the direct exposure of the facility to pluvial floods. A company’s bargaining power may also condition its capacity to pass through the costs of damages to other actors in its value chain, which is part of its capacity to adapt. It is important that financial actors and market participants be able to understand how the granularity of input data is consistent with the targeted granularity of output information on physical climate risks.

At the same time financial actors and service providers are still looking for increased availability of counterparty-specific data. Typically, information on the counterparty’s adaptation and adaptive capacity is seldom addressed due to data scarcity. The sensitivity is approached at sectoral level. The efforts to address these data gaps need to be sustained.

2. CLARIFYING “HOW”: INTRODUCING MINIMUM REQUIREMENTS FOR DISCLOSURE

2.6. Physical climate risk assessments

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Explain the granularity of the analysis and its consequences on the quality of the results.
- Explain the robustness of the underlying methodology when the output information is presented as an estimate of financial impacts.
- Describe specifically how they consider the inclusion of counterparty specific information – about the counterparty’s exposure, sensitivity, adaptation, adaptive capacity along its value chain and broader business environment – and how they react to the data availability issue.
- Demonstrate efforts to base their analysis on peer-reviewed material and on databases recommended by the relevant authorities.

2.6.6. Facilitating monitoring of the disclosed results over years

As explained in the section on transition risk, the landscape of physical climate risk assessment methodologies is continuously evolving and financial actors may also apply them on variable perimeters overtime. While there is currently no consensual audit process for climate-related disclosed information and for the underlying methodologies, financial actors should disclose information to help monitor the evolution of the results and impact of methodological choices.

PROPOSAL FOR DISCLOSURE MINIMUM REQUIREMENTS

Financial actors should:

- Provide explanation about the evolution of their methodological choices and results.
- Provide stable links to publicly available documents that help monitor methodological choices and results overtime (including for example past disclosure; explanation of major analytical choices and their evolution overtime).

Concluding remarks on the links between disclosure and climate-related assessment methodologies

It is not the time for standardizing climate-related assessment methodologies

The maturity and stakes in the development of assessment methodologies is variable depending on the targeted climate issue.

Climate-related risk and portfolio alignment have been the main focus of attention. The profusion of heterogeneous assessment methodologies has gone along with the emergence of some good assessment practices on certain aspects. However, there is a need to further explore the potentialities of analytical approaches on these subjects, and to measure how far the diversity of assessment practices is justified by any significant change in the assessment outputs. The field of positive impact assessments of financial institutions' climate action is only starting to develop.

Therefore, it is not time for standardization of any type of climate-related assessment methodology. Other actions can be undertaken to foster the development and use of good practices.

Updating disclosure frameworks is a timely solution to stimulate good analytical practices

The launch of climate-related disclosure frameworks in 2015 has stimulated the financial sector and its stakeholders to clarify the concepts of climate action and to develop assessment methodologies. Five years later, the updates of the French and European regulatory disclosure frameworks can stimulate financial actors to adopt emerging good practices in concepts and methodologies and to favor further developments.

More ambitious disclosure requirements should not be seen as a burden for financial actors

This report makes the case for setting minimum disclosure requirements on a number of aspects around disclosure. This could be seen as creating additional burden for financial institutions. However, while naturally disclosure regulation can only target financial institutions, the real target behind these requirements are service providers. Disclosure regulation can indirectly require more transparency from them if their methodologies are to be used to respond to these disclosure requirements. Thereby a level-playing field in terms of transparency is created for all providers, thus breaking the tendency to keep proprietary methodologies as blackboxes. In addition, minimum requirements on basic technical choices can push service providers towards more convergence in areas, where clear good practices have been identified. The disclosure requirements should therefore not generate substantial new burdens for financial institutions. Instead, they are designed to help them to better understand the services they are paying for and in fine improve the usability of these assessments for their internal decision making processes. This should be a step moving away from disclosure to only ensure regulatory compliance or compliance with societal expectations and towards making the exercise useful for the financial institutions' themselves.

Disclosure dynamics need to be complemented with other approaches

The quality of disclosure is only as good as the quality of the underlying analysis. Yet one cannot regulate all the required aspects around the quality of the underlying analysis with regulation on disclosure as they can call into the scope of other regulatory fields. This is especially the case for assessment methodologies that are used for risk management.

Annex

**TABLE 1 – REVIEW OF OPTIONS FOR TECHNICAL MINIMUM QUALITY CRITERIA
(BASED ON “THE ALIGNMENT COOKBOOK”, RAYNAUD ET AL. 2020)**

Minimum quality criteria recommendation	Rationale	Current practices	Options for implementation
<p>1. Use a sector-specific approach;</p> <p>2. Make use of the most-recent and fit-for-purpose temperature scenario(s) and trajectory(s).</p>	<p>Sector-specific analysis, based on sector-specific trajectories better capture the differentiated role that sectors can and should play in the transition.</p> <p>To date, IEA scenarios are the most disaggregated, comprehensive, usable and up-to-date output data, although new scenarios are being developed. However, they are biased towards a specific technological development path and do not cover all sectors. In addition, the way the remaining carbon budget is split between sectors is often an over-simplification that relies on specific hypothesis (e.g. cost-efficiency).</p> <p>If the assessment question is “alignment with the temperature objective of the Paris Agreement”, the scenario must lead to a 1.5C° temperature outcome, be as precautionary as possible, with a high-level of probability, a short-term peak, limited overshoot and low reliance on capture technologies. While IPCC scenarios are best from a conceptual perspective, they are not as easily usable from an output perspective, including sector-specific trajectories.</p>	<p>To date, service providers:</p> <ol style="list-style-type: none"> 1. Favor a “pure” sector-based approach based on IEA, in spite of the lower coverage; 2. Use sector-agnostic trajectories and put company-specific constraint; 3. Use a mix of scenarios depending on sector (e.g. IEA, IPCC); 4. Derive additional trajectories to cover additional sectors; 5. Build new trajectories on the basis of existing datasets (e.g. SR1.5); 6. Build new scenario(s) with the required criteria. 	<p>We see the following options for implementation:</p> <ol style="list-style-type: none"> 1. Require methods to be based on multiple trajectories to take into account non-linearity. If the trajectories taken from multiple scenarios, it should be made explicit why and to what extent these are complementary, or not, and whether this leads to uncertainties, in particular in limiting absolute emissions under the global carbon budget. If new trajectories have been derived, the hypotheses and uncertainties should be made explicit. 2. Option 1 + require methods and approaches to use sector-specific trajectories for all sectors and most-recent/ fit-for-purpose scenario(s) and trajectories where possible. If the scenario used is not the most fit-for-purpose from a conceptual perspective, differences should be discussed in detail. 3. Option 1 + require methods and approaches to use sector-specific trajectories for all sectors and most-recent/ fit-for-purpose scenario(s) and trajectories where relevant (even if not possible). <p>With the above options, we rule out purely sector-agnostic approaches. In addition, we do not attempt to “impose” a set of given scenarios to be used by all financial institutions and method/data providers. We believe it would be too restrictive, discourage innovation and not optimal given that no scenario today tick all the boxes.</p>

3. Take a value chain view	<p>Scope 3 emissions can represent the largest share of a company or portfolio emissions. To ensure that the temperature alignment assessment does not lead to a displacement of emissions along the value chain, these may be captured where relevant.</p> <p>Data availability and quality, although increasing, has historically been very low. It may also lead to double-counting under certain circumstances. Finally, sector-specific temperature benchmarks for a number of scope 3 categories may not (yet) be available (e.g. food & beverages, textile manufacturing, retail...).</p>	<p>To date, methodology and data providers:</p> <ol style="list-style-type: none"> 1. Only include scope 1 and 2; 2. Use most relevant scope(s) where benchmark(s) are available ; 3. Use most relevant scope(s) and derive specific benchmark(s); 4. Use most relevant scopes(s) and map them to benchmark(s) using additional data; 5. Use all scopes (1+2+3) and sector-agnostic benchmark(s) ; 6. Use all scopes and recalculate benchmark(s); 7. Do a mix of the above. 	<p>We see the following options for implementation:</p> <ul style="list-style-type: none"> • Require methods and approaches to take a full value chain view for all sectors; • Require methods and approaches to take a full value chain view for the most relevant sectors and where benchmarks are available (e.g. auto, oil & gas); • Require methods and approaches to take a full value chain view for the most relevant sectors (e.g auto, oil & gas, food & beverages, textile manufacturing, retail...); • With the above options, we exclude methods that do not take a value chain approach where possible with the data currently-available.
4. Integrate forward-looking elements and balance appropriately past and forecasted climate performance	<p>There is a disconnect between the time horizon embedded within the climate models of the scientific community, international treaties and national climate plans, the investment horizons for different asset classes and type of investors, and the disclosure of businesses.</p> <p>Temporality is therefore a central point of the concept of alignment. Indeed, a portfolio can be aligned with a 2°C trajectory when a short-term perspective is adopted, but not be aligned in the long term. However, the further the time horizon, the more uncertain the estimation of the future climatic performance of a company or portfolio.</p>	<p>To date, methodology and data providers:</p> <ol style="list-style-type: none"> 1. Do not forecast future climate performance; 2. Use one type of forward-looking metric, e.g. focus on engagements and targets or revealed plans; cut off at most relevant time; 3. Use a mixture of forward-looking metric and cut-off “arbitrarily”; 4. Use a mixture of forward-looking metric depending on company disclosure and time horizon; cut-off at the end of scenario used (2050); 5. Split the results by time period (short, medium, long); 6. Any of the above and provide an uncertainty measure, e.g. “confidence corridor”. 	<p>We see the following options for implementation:</p> <ol style="list-style-type: none"> 1. Require methods to use forward-looking data to forecast the climate performance of companies and portfolios and explicit the time horizon; 2. Require methods to use forward-looking data to forecast the climate performance of companies and portfolios and impose a specific time horizon; 3. Option 1 or 2 + explicit why a specific type of forward-looking data/ time horizon is used; 4. Option 1 or 2 + explicit why a specific type of forward-looking data/ time horizon is used and provide a qualitative view on uncertainty; 5. Option 1 or 2 + explicit why a specific type of forward-looking data/ time horizon is used and provide a quantitative view on uncertainty; <p>With the above options, we exclude methods that do not attempt to forecast the future climate performance of companies and portfolios.</p>

List of References

Legal references

All sources were accessed 27/04/2021.

French legal sources relating to disclosure requirements for financial actors arising from article 173-VI of the Act on Energy transition for green growth

Act on Energy transition for green growth. Full reference: Loi n°2015-992 du 17 août 2015 relative à la transition énergétique pour la croissance verte. JORF n°0189 du 18/08/2015, Texte n°1. <https://www.legifrance.gouv.fr/eli/loi/2015/8/17/DEVX1413992L/jo/texte>

Article L.533-22-1 of the Monetary and Financial Code as modified by article 173-VI of the Act on Energy transition for green growth. Full reference: Code monétaire et financier, art. L. 533-22-1 dans sa rédaction issue du VI de l'article 173 de la LTECV. Version en vigueur du 31/12/2016 au 08/04/2017. https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000031063369/2016-12-31

Implementing decree of article L. 533-22-1 of the Monetary and Financial Code as modified by article 173-VI of the Act on Energy transition for green growth. Full reference: Décret n°2015-1850 du 29 décembre 2015 pris en application de l'article L.533-22-1 du code monétaire et financier. JORF n°0303 du 31/12/2015, Texte n°80. <https://www.legifrance.gouv.fr/eli/decret/2015/12/29/FCPT1529597D/jo/texte>

French legal sources relating to disclosure requirements for financial actors arising from article 29 of the Energy and Climate Act

Energy and Climate Act. Full reference: Loi n°2019-1147 du 8 novembre 2019 relative à l'énergie et au climat. JORF n°0261 du 9/11/2019, Texte n°1. <https://www.legifrance.gouv.fr/eli/loi/2019/11/8/TREX1911204L/jo/texte>

Article L.533-22-1 of the Monetary and Financial Code as modified by article 29 of the Energy and Climate Act. Full reference: Code monétaire et financier, art. L. 533-22-1 dans sa rédaction issue du V de l'article 29 de la LEC. Version en vigueur au 10/03/2021. https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000039369676/2021-03-10

Consultation on draft implementing decree of article L.533-22-1 of the Monetary and Financial Code as modified by article 29 of the Energy and Climate Act. Full reference: Consultation sur le décret au titre de l'article 29 de la loi énergie-climat. Décret n°2021-xxx du xx 2021 pris en application de l'article L.533-22-1 du code monétaire et financier. Publié sur le site de la DG Trésor le 04/02/2021. <https://www.tresor.economie.gouv.fr/Articles/2021/02/04/lancement-d-une-consultation-sur-le-decret-au-titre-de-l-article-29-de-la-loi-energie-climat>

European union legal sources and other relevant sources relating to disclosure requirements for financial actors arising from the Sustainable Finance Disclosure Regulation (SFDR)

SFDR – Disclosure Regulation. Full reference: Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector (Text with EEA relevance). OJ L 317, 9.12.2019, p. 1–16. <http://data.europa.eu/eli/reg/2019/2088/oj>

Draft RTS - Joint Committee of the European supervisory authorities' final report and draft regulatory technical standards (RTS) on disclosures under SFDR. Full reference: Joint Committee of the European supervisory authorities, Final report on draft Regulatory Technical Standards with regard to the content, methodologies and presentation of disclosures pursuant to Article 2a(3), Article 4(6) and (7), Article 8(3), Article 9(5), Article 10(2) and Article 11(4) of Regulation (EU) 2019/2088. JC 2021 03. https://www.esma.europa.eu/sites/default/files/library/jc_2021_03_joint_esas_final_report_on_rts_under_sfdr.pdf

Taxonomy Regulation. Full reference: Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (Text with EEA relevance). OJ L 198, 22.6.2020, p. 13–43. <http://data.europa.eu/eli/reg/2020/852/oj>

Consultation on draft amended RTS - Joint Committee of the European supervisory authorities' consultation on taxonomy-related sustainability disclosures arising from the Taxonomy Regulations and that would

amend the draft RTS on disclosure under SFDR previously published as JC 2021 03. Full reference: Joint Committee of the European supervisory authorities, Joint Consultation Paper, Taxonomy-related sustainability disclosures, Draft regulatory technical standards with regard to the content and presentation of sustainability disclosures pursuant to Article 8(4), 9(6) and 11(5) of Regulation (EU) 2019/2088. JC 2021 22. <https://www.esma.europa.eu/press-news/consultations/joint-consultation-taxonomy-related-sustainability-disclosures>

European union legal sources and other relevant sources relating to disclosure requirements for companies arising from the Non-Financial Reporting Directive (NFRD)

NFRD – Non-Financial Reporting Directive. Full reference: Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups Text with EEA relevance. OJ L 330, 15.11.2014, p. 1–9. <http://data.europa.eu/eli/dir/2014/95/oj>

NFRD nbgc – non-binding guidelines on reporting climate-related information under the NFRD. Full reference: Communication from the Commission – Guidelines on non-financial reporting: Supplement on reporting climate-related information C/2019/4490. OJ C 209, 20.6.2019, p. 1–30. [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XC0620\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XC0620(01)&from=EN)

CSRD proposal – Commission's proposal for a Corporate Sustainability Reporting Directive (CSRD) that would replace the NFRD. Full reference: Commission Communication, Proposal for a Directive of the European Parliament and of the Council amending Directive 2013/34/EU, Directive 2004/109/EC, Directive 2006/43/EC and Regulation (EU) No 537/2014, as regards corporate sustainability reporting (Text with EEA relevance), COM(2021) 189 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021PC0189&from=EN>

European union legal sources and other relevant sources relating to risk management and disclosure

CRR – Capital Requirement Regulation. Full reference: Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 Text with EEA relevance. OJ L 176, 27.6.2013, p. 1–337. <http://data.europa.eu/eli/reg/2013/575/oj>

CRD - Capital Requirement Directive. Full reference: Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC Text with EEA relevance. OJ L 176, 27.6.2013, p. 338–436. <http://data.europa.eu/eli/dir/2013/36/oj>

EBA's consultation paper on draft ITS on Pillar 3 disclosures of ESG risks under the Capital Requirements Regulation. Full reference: EBA Consultation Paper – Draft Implementing Standards on prudential disclosures on ESG risks in accordance with Article 449a CRR. EBA/CP/2021/06. <https://www.eba.europa.eu/eba-launches-public-consultation-draft-technical-standards-pillar-3-disclosures-esg-risks>

ECB's 2020 Guide on climate-related and environmental risks - Supervisory expectations relating to risk management and disclosure. European Central Bank. <https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202011finalguideonclimate-relatedandenvironmentalrisks-58213f6564.en.pdf>

Other legal sources

United Nations 2015 - Paris Agreement. https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

Other references

2dii and Mercer. 2017. The long and winding road: how long -only equity managers turn over their portfolios every 1.7 years. 2° Investing Initiative and Mercer. <https://2degrees-investing.org/resource/the-long-and-winding-road/>

- Bingler, J. A., Colesanti Senni, C. 2020. Taming the Green Swan: How to improve climate-related financial risk assessments. CER-ETH – Center of Economic Research at ETH Zurich. Zürich. Economics Working Paper Series, 20/340. <https://www.research-collection.ethz.ch/handle/20.500.11850/428321>
- Bolton, P., Despres, M., Pereira Da Silva, L. A., Samama, F., Svartzman, R. 2020. The green swan - Central banking and financial stability in the age of climate change. Bank for International Settlements. <https://www.bis.org/pub/othp31.pdf>
- Carbon Tracker. 2018. 2 degrees of separation – Transition risk for oil and gas in a low carbon world. https://2degreesseparation.com/reports/2D-of-separation_PRI-CTI_Summary-report.pdf
- Carney, M. 2015. Speech – Breaking the Tragedy of the Horizon – climate change and financial stability. Speech given at Lloyd's of London, 29/09/2015. <https://www.bankofengland.co.uk/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability>
- ClimINVEST. 2020. Floods and physical climate risk. ClimINVEST factsheet series. <https://www.cicero.oslo.no/en/posts/single/climinvest-suite-of-scientific-factsheets-building-understanding>
- Cochran, I., Pauthier, A. 2019. A Framework for Alignment with the Paris Agreement: Why, What and How for Financial Institutions? I4CE – Institute for Climate Economics. https://www.i4ce.org/wp-core/wp-content/uploads/2019/09/I4CE%E2%80%A2Framework_Alignment_Financial_Paris_Agreement_52p.pdf
- Colin, A., Vailles, C., Hubert, R. 2020. Understanding transition scenarios - Eight steps for reading and November 2019 interpreting these scenarios. <https://www.i4ce.org/wp-core/wp-content/uploads/2019/11/I4CE-ScenariosTransition-Rapport-complet-VA.pdf>
- Depoues, V., Bouchet, V., Cardona, M., Nicol, M. 2019. Towards an alternative approach in finance to climate risks: Taking uncertainties fully into account. I4CE – Institute for Climate Economics. <https://www.i4ce.org/download/for-another-approach-to-climate-risk-in-finance-taking-uncertainties-fully-into-account/>
- DG Trésor. 2019. Bilan de l'application des dispositions du décret n°2015-1850 du 29 décembre 2015 relatives au reporting extra-financier des investisseurs (Article 173-VI de la loi de transition énergétique pour la croissance verte). <https://www.tresor.economie.gouv.fr/Articles/2019/07/02/publication-du-bilan-de-l-application-des-dispositions-du-decret-2015-1850>
- Driouch, R., Ralite, S., Stein, E., Ghirardi, T. 2021. On the road to Paris? A review of financial institutions' climate-related commitments. 2° Investing Initiative. <https://2degrees-investing.org/wp-content/uploads/2020/12/On-the-Road-to-Paris.pdf>
- Dupré, S., Felmer Roa, P. 2020. EU Retail Funds' Environmental Impact Claims Do Not Comply with Regulatory Guidance - Analysis of a sample of 230 funds against the criteria of the EU Multi-Stakeholder Dialogue on Environmental Claims. 2° Investing Initiative. <https://2degrees-investing.org/wp-content/uploads/2020/03/EU-Retail-Funds-Environmental-Impact-Claims-Do-Not-Comply-with-Regulatory-Guidance.pdf>
- EBA. 2020. EBA Discussion Paper – On management and supervision of ESG risks for credit institutions and investment firms. European Banking Authority. EBA/DP/2020/03. <https://www.eba.europa.eu/eba-launches-consultation-incorporate-esg-risks-governance-risk-management-and-supervision-credit>
- Evain, J., Cardona, M., Nicol, M. 2018. Article 173 : analyse du reporting climat des assureurs. I4CE – Institute for Climate Economics. <https://www.i4ce.org/wp-core/wp-content/uploads/2018/11/Rapport-Article173-nov18.pdf>
- FFA. 2016. Climate risks: Impact on natural hazards insurance between now and 2040. French Insurance Federation. <https://www.ffa-assurance.fr/en/publications/climate-issues/climate-risks-impact-natural-hazards-insurance-between-now-and-2040>
- Gallo, F., Lepousez, V. 2020. Assessing physical climate risks for financial decision makers: common methodologies, challenges and case studies. Carbone 4. <http://www.carbone4.com/publication-climinvest-assessingclimate-physical-risks/?lang=en>
- Hubert, R., Cardona, M. 2020. Chapter 35 - A Review of Methodologies Analyzing Physical Climate Risks. I4CE – Institute for Climate Economics. In Case Studies of Environmental Risk Analysis Methodologies. NGFS occasional paper. https://www.ngfs.net/sites/default/files/medias/documents/case_studies_of_environmental_risk_analysis_methodologies.pdf
- Hubert et al. forthcoming 2021. Review of transition risk methodologies. I4CE – Institute for Climate Economics. Visit: https://www.i4ce.org/go_project/finance-climat/
- Hubert, R., Evain, J., Nicol, M. 2018. Getting started on Physical climate risk analysis in finance – Available approaches and the way forward. I4CE – Institute for Climate Economics. <https://www.i4ce.org/download/getting-started-on-physical-climate-risk-analysis-in-finance-available-approaches-and-the-way-forward-3/>
- Hubert, R., Marginean, I., Cardona, M., Clapp, C., Sillmann, J. 2021. Addressing challenges of physical climate risk analysis in financial institutions. I4CE – Institute for Climate Economics and CICERO. <https://www.i4ce.org/download/addressing-challenges-of-physical-climate-risk-analysis-in-financial-institutions/>
- IFRS Foundation, 2018. Conceptual framework for financial reporting. <https://www.ifrs.org/issued-standards/list-of-standards/conceptual-framework/>
- Impact Management Project. 2018. A Guide to Classifying the Impact of an Investment. <https://impactmanagementproject.com/wp-content/uploads/A-Guide-to-Classifying-the-Impact-of-an-Investment-3.pdf>
- Kölbel, J. F., Heeb, F., Paetzold, F., & Busch, T. 2020. Can Sustainable Investing Save the World? Reviewing the Mechanisms of Investor Impact. Organization & Environment, 33(4), 554–574. <https://doi.org/10.1177/1086026620919202>
- Lucas-Leclin, V., Dupré, S., Hassan, F., Weber, C. 2015. Carbon intensity ≠ carbon risk exposure. 2° Investing Initiative. <https://2degrees-investing.org/wp-content/uploads/2015/11/Carbon-intensity-vs.-carbon-risk-exposure-November-2015.pdf>
- NGFS. 2020. Guide to climate scenario analysis for central banks and supervisors. Network for Greening the Financial System. Technical document. https://www.ngfs.net/sites/default/files/medias/documents/ngfs_guide_scenario_analysis_final.pdf
- Novethic. 2019. 173 shades of reporting – Climate spin-off Season III. https://www.novethic.com/fileadmin/user_upload/tx_ausynovethicetudes/pdf_complets/Novethic_2019_173-Shades-of-Reporting-Season3.pdf
- NZAOA. 2020. Draft 2025 Target Setting Protocol. U.N.-convened net-zero asset owner alliance monitoring reporting and verification track. https://www.unepfi.org/wordpress/wp-content/uploads/2020/10/Alliance-Target-Setting-Protocol_Final-Consultation-Draft.1.pdf
- Pauthier, A., Cochran, I. 2020. Connecting the dots of climate mainstreaming. 2019 Annual Report of the Climate Action in Financial Institutions Initiative. https://www.mainstreamingclimate.org/wp-content/uploads/2016/10/2019-Annual-report_final.pdf
- Raynaud, J., Voisin, S., Tankov, P., Hille, A., Pauthier, A. 2020. The alignment cookbook: a technical review of methodologies assessing a portfolio's alignment with low-carbon trajectories or temperature goal. Institut Louis Bachelier. <https://gsf.institutlouisbachelier.org/publication/the-alignment-cookbook-a-technical-review-of-methodologies-assessing-a-portfolio-alignment-with-low-carbon-trajectories-or-temperature-goal/>
- Rydge, J. 2020. Aligning finance with the Paris Agreement: An overview of concepts, approaches, progress and necessary action. London: Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science. <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2020/12/Aligning-finance-with-the-Paris-Agreement-3.pdf>
- TCFD. 2017. Recommendations of the Task Force on Climate-related Financial Disclosures. <https://assets.bbhub.io/company/sites/60/2020/10/FINAL-2017-TCFD-Report-11052018.pdf>
- TCFD. 2020. Task Force on Climate-related Financial Disclosures Status report. <https://assets.bbhub.io/company/sites/60/2020/09/2020-TCFD-Status-Report.pdf>
- UNEP. 2020. Emissions Gap Report 2020. United Nations Environment Programme. <https://www.unep.org/emissions-gap-report-2020>
- UNEP FI and Acclimatise. 2020. Charting a New Climate – State-of-the-art tools and data for banks to assess credit risks and opportunities from physical climate change impacts. TCFD Banking Pilot Project Phase II. <https://www.unepfi.org/publications/banking-publications/charting-a-new-climate/>
- Vailles, C., Hubert, R., Colin, A. 2020. Scenario analysis of the issues of the low-carbon transition. I4CE – Institute for Climate Economics. <https://www.i4ce.org/download/scenario-analysis-of-the-issues-of-the-low-carbon-transition/>
- WWF. 2018. Article 173 : message non distribué ! Reporting climatique des assureurs. https://www.wwf.fr/sites/default/files/doc-2018-11/221118_Reporting_Climatique_Des_Assureurs.pdf



www.i4ce.org