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Climate Report

Building Blocks of Mainstreaming:

A framework for integrating climate
change across financial institutions

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Disclaimer

I4CE – Institute for Climate Economics is an initiative of Caisse des Dépôts (CDC) and Agence Française de Développement (AFD). This think tank provides independent expertise and analysis when assessing economic issues relating to climate & energy policies in France and throughout the world. I4CE aims at helping public and private decision-makers to improve the way in which they understand, anticipate, and encourage the use of economic and financial resources aimed at promoting the transition to a low-carbon economy.

The research presented in this publication was carried out by I4CE on an independent basis. The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the CDC group, AFD or the IDB group, their Boards of Directors, or the countries they represent.

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Executive Summary

Following the landmark events of 2015, international development and climate agendas have become increasingly linked. The Sustainable Development Goals have identified climate action as a central piece of advancing long-term development objectives. For the first time, the Paris Accord has led to both public and private financial institutions being called by the international community to take climate change into consideration as the world focuses on achieving the ambitious goal of ‘zero-net’ emissions by the end of the century. This implies an integration or ‘mainstreaming’ of climate-related issues by development finance institutions (DFIs), as well as the broader financial community.

This report identifies the principal areas and issues to be addressed by financial institutions in the process of mainstreaming climate change and supporting the low-carbon, climate resilient (LCCR) economy. It is based principally on a desk review and the experience of public development finance institutions and in depth case studies that I4CE has conducted. This report’s focus on DFIs as they have in some cases well over a decade of experience on addressing climate-related issues in their policies and analysis of individual projects. Much of this experience has a strong potential value to support private financial sector actors in mainstreaming climate change across their activities.

Financial Institutions Increasingly Called to Mainstream Climate Change

The 2015 Paris Agreement has firmly placed national action for all countries globally at the heart of both international and domestic climate action. The wide-reaching transformations for developed, emerging and developing economies embodied by the aspirational 1.5°C climate change goal will require both a significant redirection of existing financial flows and an increase in overall investment. Scaling-up financial flows to trillions of dollars per year is necessary to achieve the ‘well below 2°C’ long-term objective. It will also demand a shift from focusing on a ‘siloeed’ vision of climate finance, to supporting all activities aligned with a LCCR transformation across the economy. This evolution solidifies the linkage between promoting economic and social development in all countries worldwide, and promoting a reduction in greenhouse gas emissions and an increasing resiliency to future climate change.

A number of questions – political, financial and technical – will need to be answered regarding how the new international commitments will be achieved in practice. It appears necessary that climate change mitigation – and the transition to a low-carbon, climate resilient economy be linked to broader national policy frameworks and the financial value chain. To do so, climate-related issues need to be addressed in discussions on financial instruments, direct and indirect support mechanism, as well as the broader policy framework impacting the risk-return profiles of individual investments.

Climate, Financial Institutions and Mainstreaming: roles and rationales

The last five years have seen a significant expansion of the rationale for financial institutions to take climate change and other sustainability concerns, into consideration. Previously, the integration of climate-related issues has been perceived as a mandate on behalf of public interest. However, it has increasingly been highlighted that climate change poses both significant risks – and opportunities – for nearly all non-financial and financial economic actors. Based on calls to take physical, policy and legal risks into consideration, both public and private financial institutions are now exploring how to reduce their exposure to climate-related risks. In some cases, they are going as far as to evaluate their contribution to the LCCR transition of the economy. Differences between ‘Common-interest’ and ‘Private-interest’ rationales for mainstreaming can influence the strategy adopted by a given financial institution depending on its focus on reducing its exposure to risks, or to maximizing the ‘transition impact’ of its activities in line with national LCCR strategies. This, in turn, can influence the mainstreaming process as presented in **Table 1**. Differences in approaches can have an impact on: overarching objectives, the time horizon taken into consideration, the information needed on underlying investments and assets, as well as how this information is integrated into economic analysis (welfare-based cost benefit) and financial analysis.

Building blocks of mainstreaming: lessons from DFIs

Public financial institutions – whether domestic development banks or international development finance institutions (DFIs) – are in a position to be key actors in aligning development and the low-carbon transition challenge. These institutions channel financial resources and often provide capacity support to recipients to support the achievement of international and national development mandates and objectives. In practice DFIs can contribute to climate action in developing countries by taking on three main responsibilities: i) facilitate access to capital, ii) assist in the development of national development strategies coherent with a low-carbon and resilient transition, and iii) work with national banking and financial industries to foster their involvement and leverage additional financing. Over the last decade, DFIs have taken significant steps to mainstream climate change which offer examples and lessons for all financial institutions.

Taken to its fullest extent, mainstreaming of climate change or the transition to a LCCR development model implies both formal and informal integration into all activities of a given DFI. Thus, climate change becomes a ‘prism’ through which all finance activities – as well as development plans, country and regional strategies, and institutional policies – is understood and analyzed.

As seen in **Figure 1**, the financing and investment decision making can be divided schematically into two overlapping parts: the ‘Upstream Governance & Policy’ level and a ‘Downstream Structuring & Appraisal’ Level. Dividing investment decision-making processes into these two broad

areas allows a better understanding of how the investment framework set at the upstream policy level, influences how activities and projects are selected and analyzed at the downstream level.

The issue of timing is important as the earlier climate change is mainstreamed into the process, the more it has the capacity to make substantive or systemic changes to projects to better take into consideration climate change concerns. Beyond the availability of tools, tracking and

accountability frameworks, there are multiple needs for ‘transversal support’ across these two levels of planning and decision-making. Some DFIs have put into place transversal support units to facilitate the uptake of climate-related issues, to improve coordination and dialogue, to provide technical capacity and support to recipients, as well as in some instances to assist in the provision of incentives and additional resources such as the channeling of concessional funding coming from international climate funds.

TABLE 1: IMPACTS OF DIFFERENCES IN MAINSTREAMING RATIONALES

	Common-Interest Rationale	Private-Interest Rationale
Objectives	<ul style="list-style-type: none"> Contribute to national and international mitigation or adaptation objectives Fulfill related political commitments (financial flows, capacity building, etc.) 	<ul style="list-style-type: none"> Reduce exposure of future cash flows to climate-related risks Identify and capitalize on climate-related opportunities
Time Horizon	<ul style="list-style-type: none"> Investment and interventions meet short term (annual) internal objectives and contribute to medium- to long-term societal objectives (10 to 50 years) 	<ul style="list-style-type: none"> Within time horizon material for investors: from short term to long-term (often no more than 5 – 7 years)
Information needed to assess individual investments	<ul style="list-style-type: none"> Identification of sectors, value chains, technologies, processes and projects that contribute to a country’s LCCR pathways Identification of actions that will improve local resiliency 	<ul style="list-style-type: none"> Vulnerability to physical risks (country, regional or other aggregated approaches) Exposure of project types (sector, tech.) to potential climate policy risks (regulations, carbon pricing)
Economic and Financial Analysis	<ul style="list-style-type: none"> Inclusion of emission data in economic analysis to assess welfare impacts Integration of a social cost of carbon into economic analysis Discount rates used in economic (welfare) and financial analysis should not ‘crush’ the future value of climate action 	<ul style="list-style-type: none"> Inclusion of quantified physical and climate risks in financial analysis Integration of a “real” or “shadow” price of carbon in financial analysis

Source: Authors

FIGURE 1: DECISION-MAKING PROCESS AND THE IMPACT WOF CLIMATE-RELATED INFORMATION



Source: Authors after (Cochran 2012; RICARDO-AEA 2013)

Why can this be challenging in practice?

A number of overarching issues and difficulties can be identified as barriers to the mainstreaming of climate change at all levels. Barriers can be loosely grouped on one hand as political and governance challenges, and on the other hand as technical and informational challenges. Political and governance challenges are related to the importance given to climate issues in the mandate of development finance institutions, how it is prioritized among other issues and the confidence that it remains a high-profile issue over time. Technical and informational challenges relate to the collection, production and inclusion of climate-related information into the decision-making process, which pose a number of challenges beyond availability and costs issues. While a proper balancing of costs vs. information precision and end usefulness for decision-making is key, technical challenges may remain to understand the short- and long-term impact of interventions on climate change and the LCCR transition. Finally, the timing of the integration of climate change into the decision-making process can impact the ability of the financial institution to make substantive or systemic changes in project design.

The Building Blocks of Mainstreaming Climate Change

Based on a literature review and analysis of current practices conducted by I4CE, this report explores the main issues and considerations to take into account for upstream and downstream mainstreaming – as well as the need for transversal support on the topic. Comparing the different roles that DFIs currently play in financing development with the challenges that may be faced in mainstreaming climate change reveals a number of questions and recommendations.

Upstream Governance & Policy Level: Key Considerations

Mainstreaming climate action at the ‘upstream’ governance and policy level is essential to ensure that these issues are included within the broader framework of DFIs’ investment strategies. It implies defining investment priorities (and exclusions) in terms of geography (regions, countries), sectors (balance across, priorities within), processes and technologies (prioritization of certain actions). Upstream decision-making is crucial to defining objectives, criteria and fostering support for low-carbon, climate-resilient projects across institutions. It is also an opportunity to identify and prioritize areas and interventions where the involvement of a DFI could significantly support the transition to a country-appropriate LCCR development model.

Overarching objectives, targets and goals

Definition of overarching climate-related objectives, targets and goals is often seen as the first step to mainstreaming climate change considerations within an institution. Furthermore, how this objective is structured and how eligible projects are defined can have a significant impact on the direct and indirect incentives given to operational teams. The definition of a climate transition

strategy and its disaggregation in sectorial, regional and technological objectives should receive special attention. Key considerations include:

- How are objectives translated in operational incentives: does it emphasize volume or end-project impact?
- Do objectives support direct emission reductions or transformative change?
- How are eligible investments classified and climate-related and transition-related benefits defined in practice?

Policies, strategic documents, and action plans

The structuring of strategic intervention frameworks to support low-carbon climate-resilient development and respect long-term transition objectives is perhaps the most important step to ensure that an institution’s activities support the mainstreaming of climate and the LCCR transition. Once ‘enshrined’ within the frameworks, different processes and tools can be used to i) screen and prioritize technological options and sectors, ii) understand the order of magnitude of impacts, or iii) set thresholds for maximum emissions or other relevant indicators. Furthermore, inclusion creates an opportunity for capacity building and knowledge sharing between operational teams and in-country counterparts to help identify the most efficient means of achieving development objectives in a manner consistent with climate goals. Key considerations include:

- *Are climate and energy issues formally and systematically defined as priority areas?*
- *Is there a dedicated action plan for the whole institution with clear definitions of responsibilities?*
- *What engagement and links with recipient country priorities and strategies to foster a ‘transition’ to a low-carbon, resilient economic model (policy, regulation)?*

Accountability, Reporting & Tracking

Getting climate change on the agenda – and keeping it there – requires that attribution of responsibilities and accountability requirements are formalized within performance indicators and reporting processes of a given institution. Indicators can focus on both institution-wide performance, as well as unit- or individual- level incentives. Key considerations regarding accountability and reporting include:

- *Is climate included in principal institution-wide key performance indicators and part of reporting and accountability priorities?*
- *Is there a mechanism to ensure political follow-up and accountability (i.e. dedicated report)?*

Downstream Identification, Structuring & Appraisal Level: Key Considerations

Moving from strategic orientation documents to concrete actions, interventions and investments is a process that can vary widely between institutions. In general, this consists of a mechanism for translating annual country, region or sector programming into a pipeline of interventions, including project finance, capacity support actions, policy dialogue and policy loans. The inclusion of climate-related criteria

that are clearly visible and applied in the identifications process is essential to ensuring that the end-impacts of a DFI's interventions match the ambition of their objectives.

Decision-making and evaluation process

The integration of climate change objectives through capacity-building, information-sharing and standards during the identification, structuring and assessment process can support improved 'climate' or 'transition' impacts on a case by case basis. However, this can require for information to be tailored to the objectives and needs of recipient teams and functions. Key considerations include:

- *Are climate change issues formally & systematically integrated into project identification, screening, structuring and assessment procedures?*
- *Does the appraisal process include an opportunity to identify climate-coherent project alternatives to achieve principal development objectives? Are additional resources available to make them feasible?*

'Tools,' Process and Criteria

The transition to low-carbon, climate-resilient development pathways requires not only increased financial flows to low-carbon projects, but equally a cap – and reduction – of investments in carbon-intensive activities. It therefore necessitates a move from a system of tools and indicators that focuses solely on tracking climate-specific investments, to a system that pursues the optimization and alignment of all activities across financial institutions with LCCR development. The mainstreaming of climate change objectives across all operations is key to both increasing flows going to climate-specific investments, and to aligning development investments with the recipient country's long-term vision to achieve the low-carbon transition. Key considerations include:

- *Have screening, eligibility and knock-out criteria been established and integrated into the upstream phases of project identification?*
- *Are climate-related criteria included in the economic/welfare analysis conducted for the project in a manner that does not overly discount future climate-related benefits?*
- *Are climate-related criteria (shadow carbon price, risk metrics) incorporated into the financial analysis of interventions?*
- *Can existing metrics and analytical tools be adapted to look both at direct climate-related impacts, as well as supporting a long-term low-carbon, resilient transition?*

Knowledge Base & Exchange

In many instances climate change mainstreaming requires 'doing development differently' and finding new – and novel applications of existing – solutions to achieve development objectives that are coherent with climate objectives and countries' long-term decarbonization pathways. This requires that both operational teams and in-country counterparties have the capacity and knowledge to identify and prioritize how to do this in practice. Furthermore, framing climate change as an opportunity in the face of existing or

future constraints – whether by focusing on short-term co-benefits such as energy security or forward-looking physical or transition risks – can help build a business case for action. This may be an ongoing process that requires new processes for information sharing, training and interaction between operational and transversal teams.

- *Do operational teams have the knowledge and familiarity with low-carbon, resilient project typologies, technologies and options to suggest and support their development and implementation?*
- *Are project teams able to use and operationally interpret the tools and criteria?*

Ensuring Climate Mainstreaming Functions Transversally: Key Considerations

The mainstreaming of climate change across a financial institution through the different actions outlined above requires substantial political and technical support. A transversal support unit can assist in getting climate change on the agenda, keeping it there, and then in turn supporting operational teams in developing the required capacity and knowledge – provided that appropriate incentives have been set. The objective of this team can be to provide support on climate change issues and help identify opportunities. To ensure efficient knowledge-sharing, this team may be composed of a network of centralized and decentralized – in country and regional offices – team members across the institution. It appears crucial that a balance is found between playing the role of an 'oversight' body, ensuring that climate-related issues have been addressed, and being a 'trusted' partner supporting operational teams to success in effective mainstreaming.

Coordination & Dialogue

Coordination and dialogue on climate-related topics is a key piece in keeping climate on the agenda, as well as ensuring that country and sectoral teams have the capacity and knowledge to integrate these issues into their daily activities. This may combine both oversight duties and day-to-day engagement with operational teams. Key considerations include:

- *Can the transversal unit support and foster further recognition of climate change across the institution, with follow-up and monitoring at highest level?*
- *Does the unit have an opportunity to support integration of climate objectives into dialogue and programming with borrowing member countries?*

Technical Capacity & Support

A transversal climate unit can support operational teams on the technical questions related to aligning climate and development priorities. This can be done directly, through in-house expert knowledge-sharing and capacity-building, or indirectly through assisting in writing projects' terms of reference and providing operational teams with external technical support. Climate change support can cover a broad number of subjects, such as project options identification, integration of climate change issues into

country modeling and technical support on renewable energy, energy efficiency and other policy frameworks for policy dialogue. Throughout this process, it is essential that the transversal climate team support the framing of climate mainstreaming and demonstrate that projects can achieve climate and development goals in an acceptable fashion. Key considerations include:

- *Is the transversal climate team able to frame the 'Business cases' to demonstrate the value of aligning climate and develop priorities and climate proofing projects to sectoral and operational teams?*
- *Can the unit support the capacity of country / project teams in technical assessment, project identification and pilots?*
- *Is the use of unit's support and consultation formalized within the project identification and appraisal process?*
- *Can the unit initiative and develop projects to demonstrate how alignment of climate and development objectives could be done in practice?*

Incentives and provision of additional resources

The mainstreaming of climate and energy concerns may be seen as an additional constraint on achieving the principal objectives of development finance institutions. To help ensure that a transversal climate team is seen as a resource beyond being an oversight body, incentives and additional resources should be made available to through the unit – at least in the short term until teams are acculturated to this new way of conducting activities. Key considerations include:

- *Are earmarked financial resources made available to cover added costs for project improvements that increase climate/transition impacts (studies, pilot project development, training and capacity building)?*
- *Can the climate change unit channel or link the concessional financing with outcomes supporting transition- or climate-related objectives?*

1. Climate & Development

Post 2015: linking international ambition and national action to achieve a ‘well below 2°C’ future

2015 was marked by a number of important events that have closely linked the climate and development agendas. For the first time, both public and private financial institutions have been called by the international community to take climate change into consideration as the world focuses on achieving the ambitious goal of ‘zero-net’ emissions by the end of the century. Furthermore, it is increasingly recognized that financing the massive investment needs worldwide is both about increasing international public climate finance – but also redirecting in-country public and private flows. This requires both direct incentives to incentivize investment, but also the creation of a regulatory and investment environment within which low-carbon, resilient projects become competitive and provide financial returns.

2016 and 2017 have seen the first steps taken towards concretizing these ambitions, including the focus on moving from commitments to action at COP22 in Marrakech. Moving forward, a broad number of questions – political, financial and technical – will need to be answered in terms of how the ambitious international commitments will be achieved in practice. The following sections explore these issues and identify how the discussion must evolve on climate finance and ensuring the compatibility and coherence of public and private financial flows with low-carbon, resilient development objectives.

1.1. Post Addis-Ababa & Paris: a Global Mandate for linking climate & development

Following the landmark events of 2015, the international development and climate agendas have become increasingly and inseparably linked. The Sustainable Development Goals have identified climate action as a central piece of advancing long-term development objectives. COP21 and the Paris Agreement have reaffirmed the internationally-accepted intention of placing development worldwide on a pathway that limits the increase in global average temperature to well below 2°C. Article 2 of the Paris Agreement lays three objectives to strengthen the “global response to the threat of climate change” and the achievement of what is increasingly seen as a low-carbon, resilient development model. Furthermore, this is increasingly being seen as a need to achieve ‘net-zero’ emission levels worldwide by the end of the century. At the same time, the Agreement makes it clear that these objectives cannot be fulfilled outside of sustainable development and poverty eradication.

- The Paris Agreement aims at containing the rise of global mean temperatures “well below 2°C above pre-industrial levels, and to pursue efforts” to limit the warming to 1.5°C.
- The Paris Agreement aims at “increasing the ability to adapt to the adverse impacts of climate change” by promoting resilience and low-carbon development.

- Finally, the Agreement aims at making financial flows consistent with a low-carbon development.

Furthermore, the Paris agreement has firmly placed national action for all countries globally at the heart of both international and domestic climate action. This evolution solidifies the linkage between promoting economic and social development in all countries worldwide, and the need for this to occur in a manner that rapidly reduces greenhouse gas emissions and increases resiliency to future climate change.

1.2. Linking international ambition and national action: NDCs

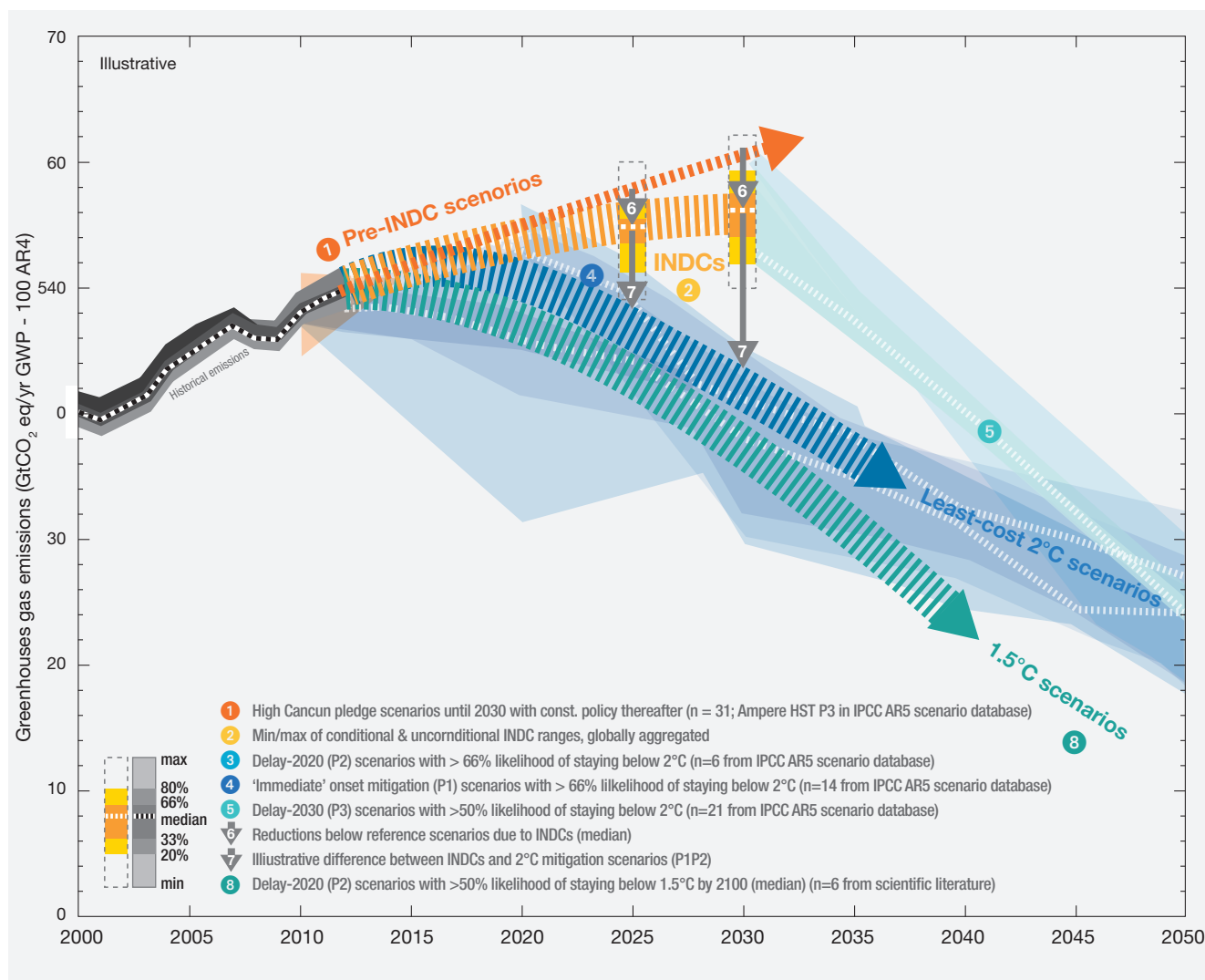
The Paris Agreement has confirmed and institutionalized the process leading to the creation of NDCs or Nationally Determined Contributions. To date, 189 Parties have submitted Intended Nationally Determined Contributions INDCs¹. These documents layout how each country plans to address climate change domestically and contribute to achieving international objectives. By 2020, all countries are to communicate NDCs containing a strategy for up to 2030; thereafter, at least every five years new and more ambitious NDCs are to be communicated. This process aims to create a ‘ratcheting up’ architecture to link national ambition, priorities and policies with overarching international goals.

The objective behind this process is to have countries successively communicating their NDC in a coordinated manner around the five-year review milestones. This would thus give momentum and encourage countries to enhance their ambition. To increase long-term visibility, the COP also invites countries willing to do so to establish mid-century long-term NDCs (Bultheel et al. 2015). The fact that all countries member to the UNFCCC are expected to produce and update NDCs every 5 years represents a significant opportunity to link the achievement of international climate objectives with national policy frameworks and objectives.

However, the challenge of “containing the increase in average global temperature well below 2°C” as laid out in the Paris Agreement presents a challenge which remains unmatched by the aggregation of current national ambitions, as represented in the analysis performed by the UNFCCC secretariat of the INDCs submitted before COP21. Schematically, the ‘well below 2°C objective’ implies an emissions trajectory that peaks around 2030; followed by a decrease of emissions that must be increasingly faster as the peak occurs later in time. Finally, aggregate emissions from countries must most likely reach before the end of the 21st century a state of ‘zero net emissions’, or a world where the minimal levels of GHG emissions of human origin are compensated by an equivalent absorption in different natural and artificial sinks. However, as seen in **Figure 2**, current estimates of emissions trajectories laid out in NDCs are insufficient compared to required trajectories to achieve least cost 1.5 or 2°C scenarios. It is thus crucial that national ambition, represented in NDCs, national climate strategies

¹ INDCs will have to be converted into Nationally Determined Contributions (NDC) by the moment each country presents its ratification instrument to the UNFCCC. In practice this means going from an Intention to a “confirmed” Contribution.

FIGURE 2: INDC EMISSIONS PATHWAYS COMPARED TO GHG MITIGATION SCENARIOS



Source: (UNFCCC 2015)

or individual policies and actions, must be increased in the aggregate and must be coherent with national and subnational policy and regulatory frameworks. There is increasing consensus that this cannot be achieved through marginal climate-specific actions, but rather requires the transformation of development models in both the developed and developing world. Achieving this 'transition' to a low-carbon, resilient development implies a number of significant changes in the types of investments that occur, as well as the national and policy frameworks that influence the economics and financial viability of projects and development models.

1.3. Broadening the financial discussion: from tracking climate finance flows to identifying means of scaling-up investment

At the UNFCCC Conference of the Parties in Cancun in 2010, the international community recognized the importance of addressing the specific mitigation and adaptation needs of developing countries, and established a goal of jointly mobilizing a total USD 100 billion per year

by 2020 towards developing countries. This is a key piece of international political negotiations as it focuses on providing financing and hence building trust between developed and developing countries. This trust is a necessary condition to reach any meaningful international agreement to tackle the climate challenge. However, as a result today the term 'climate finance' is often solely linked to this political commitment. For almost the past decade, international climate finance has focused on classifying public (and increasingly private) financial transfers between developed and developing countries as supporting 'climate-specific' or 'climate-related' projects and objectives (Falconer and Stadelmann 2014, 2014; Jan Corfee-Morlot, Bruno Guay, and Kate M. Larsen 2009; OECD and CPI 2015).

Just as developed countries must rethink and retool their economies, developing countries are at a cross-road: by adjusting to LCCR development models, they could gain significantly from adopting less fossil-fuel dependent development models with economic (reduction of fossil fuel imports and subsidies, green jobs) and environmental (local air pollution) co-benefits. Moreover, all countries worldwide

are in a position today to reduce the cost of future action by making choices that will enable mitigation of emissions both possible and less expensive. Finally, the economic burden of environmental hazards and other climate-related changes is likely to get heavier over years and delaying action is proven to be costly – but also have significant negative impacts on poverty reduction, migration, food security and political stability (UNFCCC 2015; World Bank 2016).

Addressing the issue of ‘climate finance’ at the domestic level poses a number of questions that go beyond how this subject is typically framed internationally. The increased focus on domestic action expands the issue of climate finance from the often highly politicized ‘USD 100 billion,’ to a focus on how to redirect, align and scale-up the required financial flows to achieve national climate ambitions. This is further reinforced within the Paris Agreement through the call to make financial flows ‘consistent’ with low-carbon development. Linked to the emergence of low-carbon resilient development pathways, this represents a strong signal towards governments, public financial institutions and the private sector to rethink their investment decisions in light of the climate agenda. Enacting the wide-reaching transformations for developed, emerging and developing economies that the aspirational 1.5°C goal implies will require both a significant redirection of existing financial flows paired with a total increase in overall investment (NCE 2014; OECD 2015; UNFCCC 2014; WRI 2015; OECD and CPI 2015).

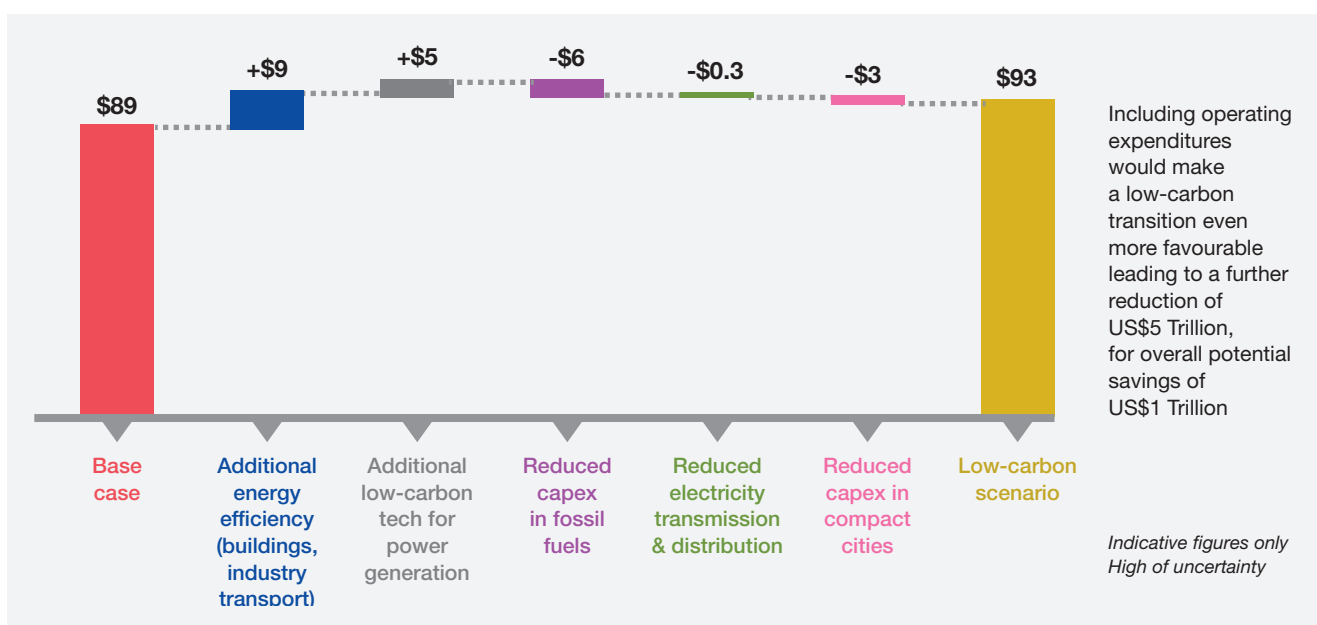
Thus, today’s challenge to scale-up the financial flows to the trillions of dollars per year necessary to achieve the ‘well below 2°C’ long-term objective necessitates a move from focusing on a ‘siloed’ vision of climate finance to supporting activities aligned with the LCCR transition across the economy.

1.4. Linking national policy frameworks and the financial value chain to reorient investments for the transition

The 2014 report of the New Climate Economy estimates that the transition to a low-carbon economy requires investments of \$93 trillion between 2015 and 2030 to be able to envision limiting average warming below 2°C. As presented in **Figure 3**, this amount, however, does not take into account the necessary investments to adapt to the impacts of climate change. While significant, their estimate indicate that this represents a relatively small increase compared to the infrastructure investment needs that must occur in both developed and developing countries in the coming years taking into account the rising population and the middle class growth. There is indeed an increasing need to renew infrastructures in developed countries – and significant needs for new infrastructures in emerging and developing countries. This amount represents a net incremental cost of 4.1 trillion dollars or a 5% increase in upfront investment between 2015-2030 compared to the required investment of USD 89 trillion to maintain or strengthen economic growth over the same period (NCE 2014).

Achieving the trillions of dollars per year of financing estimated necessary to be consistent with a good chance of keeping global average warming below 2°C will require both development and climate agendas to be linked. This objective will require not only increasing flows to low-carbon and climate resilient projects, but equally capping – and reducing – investments in carbon-intensive activities. This indicates that financing a low-carbon, resilient economic model is an issue of reorienting or shifting financial flows to investments that are able to fulfill development objectives in all countries in a manner ‘consistent’ or ‘aligned’ with climate-related objectives. Addressing climate change as a

FIGURE 3: GLOBAL INVESTMENT REQUIREMENTS 2015 TO 2030 (US\$TRILLION, CONSTANT 2010 DOLLARS)



Source: (NCE 2014)

separate, siloed consideration, flow or asset class will not be sufficient to reach the scale of investment needed.

Channeling development finance toward clean and sustainable activities as early as possible appears crucial to avoid lock-in of emission-intensive infrastructure and associated future refurbishment costs, as well as to limit the risk of building on non-resilient and “stranded” fossil fuel-dependent development models.² Furthermore, while LCCR development may imply high up-front investment costs, aligning development and climate-related objectives can reduce future costs and lead to considerable co-benefits in terms of economic growth, employment, agricultural outputs, health care, local air pollution and energy security.

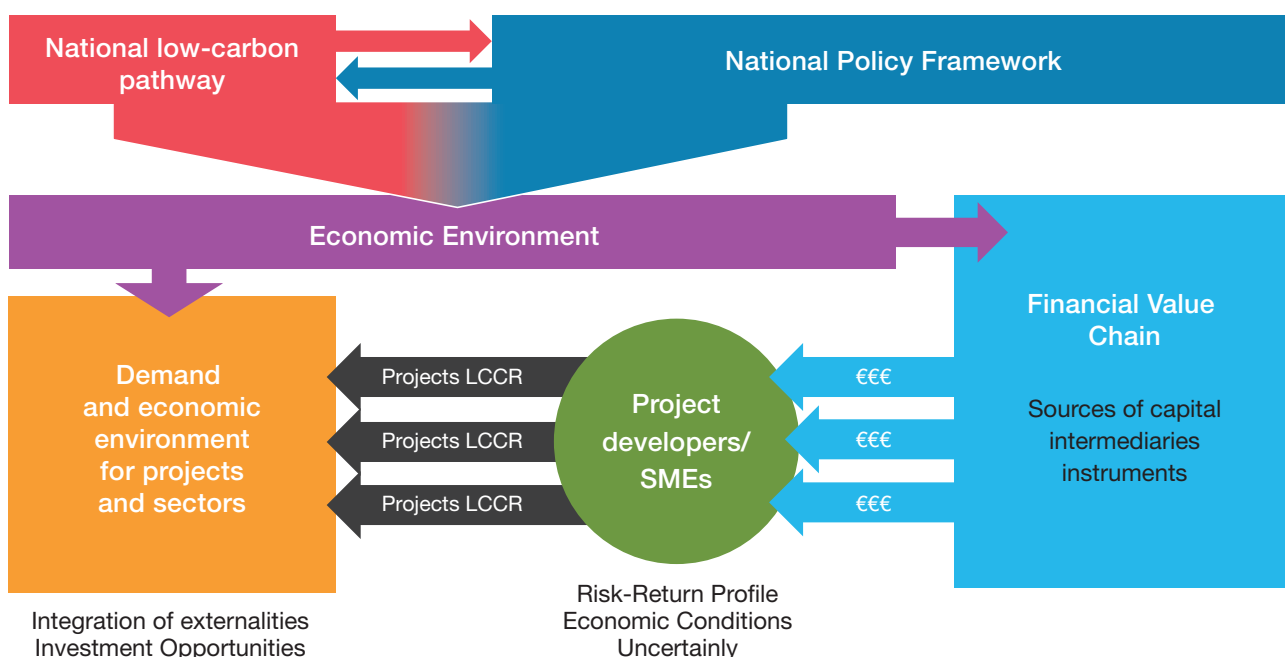
As such, it appears necessary for both climate change and the transition to a low-carbon climate resilient economy to be seen as linked to broader national policy frameworks and the financial value chain. To do so, climate-related issues need to be addressed in discussions regarding financial instruments, direct and indirect support mechanisms as well as the broader policy framework influencing risk-return profiles of individual investments.

As represented schematically in **Figure 4** and **Table 2**, a key piece of fostering the reorientation of financial flows and investments to support the transition to a LCCR economic model is ensuring that the overarching national policy frameworks make this model financially viable. This, in turn, can create an economic environment that creates demand for low-carbon projects and growth in relevant sectors – and a pipeline of projects for the financial value chain. This framework should also incentivize the involvement of project developers to invest through economic conditions that reduce uncertainty and ensure acceptable risk-return profiles for investors. Finally, this can foster the involvement of the entire financial value chain – including different sources of capital, intermediaries and instruments.

This is particularly important to reorient private investments and financial flows, given that a number of different issues, as summarized in **Table 3**, have often limited their contribution. Addressing each of these different areas appears necessary to move away from support for individual or isolated projects to supporting the reorientation of the entire economy of a given country.

² The OECD estimates that in the case of delayed or moderate mitigation action up to 2020, the pace and scale of efforts needed after 2020 would be significantly higher and the related costs could surge by up to 50% by 2050 (OECD 2011).

FIGURE 4: ECONOMIC & INVESTMENT ENVIRONMENT AND THE FINANCIAL VALUE CHAIN



Source: Authors

TABLE 2: SUPPORTING THE CLIMATE COHERENCE OF THE ECONOMIC & INVESTMENT ENVIRONMENT AND THE FINANCIAL VALUE CHAIN

<p>Economic Environment creating demand for low-carbon projects</p>	<ul style="list-style-type: none"> • Internalize externalities and other general market barriers (i.e. carbon pricing, etc.) • Regulatory & sectoral support frameworks: <ul style="list-style-type: none"> – Performance standards & regulations – Subsidies (to compensate for non-internalized externalities / other market failures) – Long-term price guarantee (feed in tariff)
<p>Incentives to project developers to build capacity and develop projects in this area</p>	<ul style="list-style-type: none"> • Reduce costs as project developers increase knowledge on the financial models and prove investment bankability • Create the network of connections and specialized market players needed to spur a shift in the economy at the needed scale
<p>Foster the involvement of the entire financial value chain</p>	<ul style="list-style-type: none"> • Signal priorities • Ensure the proper functioning and ‘greening’ of the financial value chain -> support real economy, long-term investments, leverage of different capital sources • Design targeted programs by project type which aim to: <ul style="list-style-type: none"> – Improve capacity and knowledge of financial actors relating to specific project / investment types – Reduce real and/or perceived risks to facilitate private-sector mobilization – Overcome sector- or project-specific barriers to accessing needed capital (volume, tenor, overly risk-adverse risk premium pricing, etc.)

Source: Authors

TABLE 3: BARRIERS TO PRIVATE INVESTMENT AND THE BROADER FINANCIAL VALUE CHAIN IN LOW-CARBON INVESTMENT

<p>National investment environment & risk-return of projects</p>	<ul style="list-style-type: none"> • Policies to internalize climate-related externalities • Misaligned incentives for project developers • Economies of scale (barriers to entry)
<p>Low-Carbon Project investment needs</p>	<ul style="list-style-type: none"> • High upfront capital • Relatively less known technologies / winners • Uncertainty concerning regulatory environment
<p>Engaging the financial value chain</p>	<ul style="list-style-type: none"> • Capacity to evaluate projects • Lack of high volumes of long-term capital at feasible rates • Instruments to link needs of capital sources, intermediaries and projects

Source: Authors

2. Climate, Financial Institutions and Mainstreaming: what roles and rationales?

Article 2.1c of the Paris Agreement introduced an international mandate for financial institutions to address these issues and ensure that financial flows are ‘coherent’ with climate-related objectives. This in turn has been increasingly recognized by financial institutions through the need to integrate or ‘mainstream’ climate change across their operations. This section lays out the different rationales for mainstreaming climate change into their operations. These rationales often have impacts on how climate-related issues are interpreted and whether the focus is on contributing to achieving the public good of reducing climate change impacts, or reducing the exposure of a given financial or economic actor to climate change risks.

2.1. Expanding Rationales for Climate Mainstreaming

The last five years have seen a significant expansion of the rationales for financial institutions to take climate change, and other sustainability concerns, into consideration. Previously, the integration of climate-related issues has been seen from a mandated public-interest perspective. Mainstreaming had thus principally occurred among two groups: public financial institutions mandated to support national and international policy objectives, and among a number of private funds with specific Environmental, Social and Governance (ESG) impact objectives. Increasingly, it has been made clear that climate change poses both significant risks and opportunities for both non-financial and financial economic actors. Based on calls to take physical, policy and legal risks into consideration, both public and

‘mainstream’ private financial institutions are exploring how to reduce their exposure as well as in some instance contribute to the medium- or long-term transformation of the economy. Differences between ‘Common-interest’ and ‘Private-interest’ rationales for mainstreaming can influence the mainstreaming process.

As presented in **Table 4**, this stems from differences in: overarching objectives, the time horizon taken into consideration, the information needed on underlying investments and assets, as well as how this information is integrated into economic analysis (welfare-based cost benefit) and financial analysis. The key issue in practice appears to be whether an institution focuses on reducing its exposure to risks, or to maximizing the ‘transition impact’ of its activities in line with national ‘low-carbon, climate-resilient’ strategies. It should be noted that a single institution may take into consideration directly or indirectly all or parts of these different rationales. The framing of climate mainstreaming can in practice vary between departments and individuals, depending on their core responsibilities and areas of business.

2.2. Private-Interest Rationale for Mainstreaming: Managing Risks

The framing of climate change as a private-interest issue has received increasing attention by both public and private sector financial actors over the last five years. Finance practitioners and their regulatory authorities are today saying publicly that the transition towards a low-carbon economy involves a risk for financial institutions and even for the stability of the financial system. Furthermore, there is increasing agreement that it is now urgent to prevent the occurrence of such a risk. Mark Carney, Governor of the Bank of England, has stated that “financial policy-makers do have a clear interest in ensuring the financial system is

TABLE 4: IMPACTS OF DIFFERENCES IN MAINSTREAMING RATIONALES

	Common-Interest Rationale	Private-Interest Rationale
Objectives	<ul style="list-style-type: none"> Contribute to national and international mitigation or adaptation objectives Fulfill related political commitments (financial flows, capacity building, etc.) 	<ul style="list-style-type: none"> Reduce exposure of future cash flows to climate-related risks Identify and capitalize on climate-related opportunities
Time Horizon	<ul style="list-style-type: none"> Investment and interventions meet short term (annual) internal objectives and contribute to medium- to long-term societal objectives (10 to 50 years) 	<ul style="list-style-type: none"> Within time horizon material for investors: from short term (immediate) to long-term (often no more than 5 – 7 years)
Information needed to assess individual investments	<ul style="list-style-type: none"> Identification of sectors, value chains, technologies, processes and projects that contribute to a country’s LCCR pathways Identification of actions that will improve local resiliency 	<ul style="list-style-type: none"> Vulnerability to physical risks (country, regional or other aggregated approaches) Exposure of project types (sector, tech.) to potential climate policy risks (regulations, carbon pricing)
Economic and Financial Analysis	<ul style="list-style-type: none"> Inclusion of emission data in economic analysis to assess welfare impacts Integration of a social cost of carbon into economic analysis Discount rates used in economic (welfare) and financial analysis should not ‘crush’ the future value of climate action 	<ul style="list-style-type: none"> Inclusion of quantified physical and climate risks in financial analysis Integration of a “real” or “shadow” price of carbon in financial analysis

Source: Authors

resilient to any transition [towards a low-carbon economy] hastened by [governmental decisions and private sector investments]”.³ In France, the Treasury Department has stated that it is “essential for banking institutions to develop suitable methodologies and assemble data, so as to be able to gain a better appreciation of the risks [associated with climate change] to which they are subjected”. Increasingly, this issue is being framed as a risk both at the institutional level, but also at the systemic level as a threat to financial stability (UNEP Inquiry 2015; Morel et al. 2015).⁴

Climate-related risks are typically separated into three categories: physical, transition, and litigation risks. These risks are increasingly seen as threats to returns on investment, as well as to financial sector stability – both in the short and long term. However, the forward-looking information and data on underlying assets, whether physical projects or companies, is often not available for investors and financial sector actors to appropriately evaluate, price, and manage these risks. Today, France is the only country who has taken steps to require that information to assess a given economic actor’s climate-related risks and its contribution to the transition to a low-carbon economy is disclosed in financial and extra-financial reporting⁵.

Focus on physical risks

Physical risks are the risks posed by the physical impacts of climate change – including both gradual changes as well as catastrophic events. The recognition of the potential disruptive physical impacts of climate change has increased over recent years. There is increasing evidence of significant human and economic vulnerability – and costs – even at today’s level of climate impacts (IPCC 2014). Analysis shows physical impacts of climate change represent increasing losses of dozens of billions USD a year due to natural catastrophes and extreme weather events (EC 2013; Swiss Re 2014).⁶ In some instances, financial regulators are starting to raise concerns about investors’ exposure to the physical climate risks (Clark 2014b, 2014a). At a macroeconomic level, the Global Risks Report 2015 of the World Economic Forum (WEC 2015) identified both the lack of adaptation to climate change and water shortage as the most likely and impactful risks next to interstate conflicts. This view has been reinforced by the analysis of mainstream financial institutions such as the credit rating agency Standard and Poor’s (S&P 2014) as well as the US

Department of Defense (DOD 2014)⁷, and is now the focus of a dedicated taskforce mandated by the G20 and the Financial Stability Board.⁸

Focus on transition risks

The shift to a low-carbon, climate resilient economy requires the implementation of policies and regulation to facilitate the move from high-carbon to low-carbon investments at a sufficient scale and pace. As discussed in Section 1, policies are likely to be introduced to internalize externalities and make low-carbon, resilient development economically viable. The ‘stranded assets’ concept and the idea of ‘unburnable carbon’ is typically used to illustrate these risks. As seen in **Figure 5**, achieving long-term climate goals requires respecting a total carbon budget released into the atmosphere. However, the sum of the carbon content of global fossil fuel reserves is vastly larger than the remaining carbon budget available. This, in turn, has significant implications for the fossil fuel extraction sector – as well as users – given that these assets will be ‘stranded’ if policies to limit their use are put into place (CTI 2013). High-carbon productive assets are expected to depreciate and a recent analysis estimates an expected loss of value to USD28 trillion 2012 over the next two decades for the fossil-fuel sector only (Kepler Cheuvreux 2014).

Financial actors are thus exposed to transition risks as the introduction of a new economic model exposes them to potential losses, in particular through their choice of counterparties. This Transition risk is characterized by two types of uncertainty (Hubert, Nicol, and Cochran 2017). Firstly, the ambition and speed of introduction, i.e. the “pathway”, of transition towards a low-carbon economy is uncertain. Secondly, within a possible pathway, the specific terms and conditions for achieving the objective of decarbonizing the economy also remain uncertain. It is these “radical” uncertainties related to the low-carbon pathway followed by the economy, and more “usual” on the scenarios for implementation of these pathways, which expose financial actors to “transition risks”.

In this uncertain environment, “the alignment of portfolios with a low-carbon pathway” is a solution for the management of transition risks, as described in **Box 1**. Such an alignment is a gradual process, both with regard to the counterparty (which makes itself compatible with a sector-based pathway) and with regard to the financial portfolio (the alignment of which is subject to the availability of aligned counterparties). An aligned counterparty is made less vulnerable to transition risks when it has put in place a strategy that makes it resilient not only to the occurring of a sector-based low-carbon pathway, but also to its lack of occurring. Any counterparty’s alignment strategy is therefore not automatically a perfect hedge against all hazards related to the nature of the pathway and on the methods for implementation of that pathway.

3 Speech by Mark Carney, Resolving the climate paradox, Arthur Burns Memorial Lecture, Berlin, September 2016, <http://www.bankofengland.co.uk/publications/Documents/speeches/2016/speech923.pdf>

4 I4CE has published a series of three Climate Briefs on the management of climate-related risks by financial actors focusing on three questions: Why should financial actors align their portfolios with a 2°C pathway to manage transition risks? How could financial actors manage their exposure to climate risks? How should financial actors deal with climate-related issues in their portfolios today? <http://www.i4ce.org/download/three-notes-on-the-management-of-climate-related-risks-by-financial-actors/>

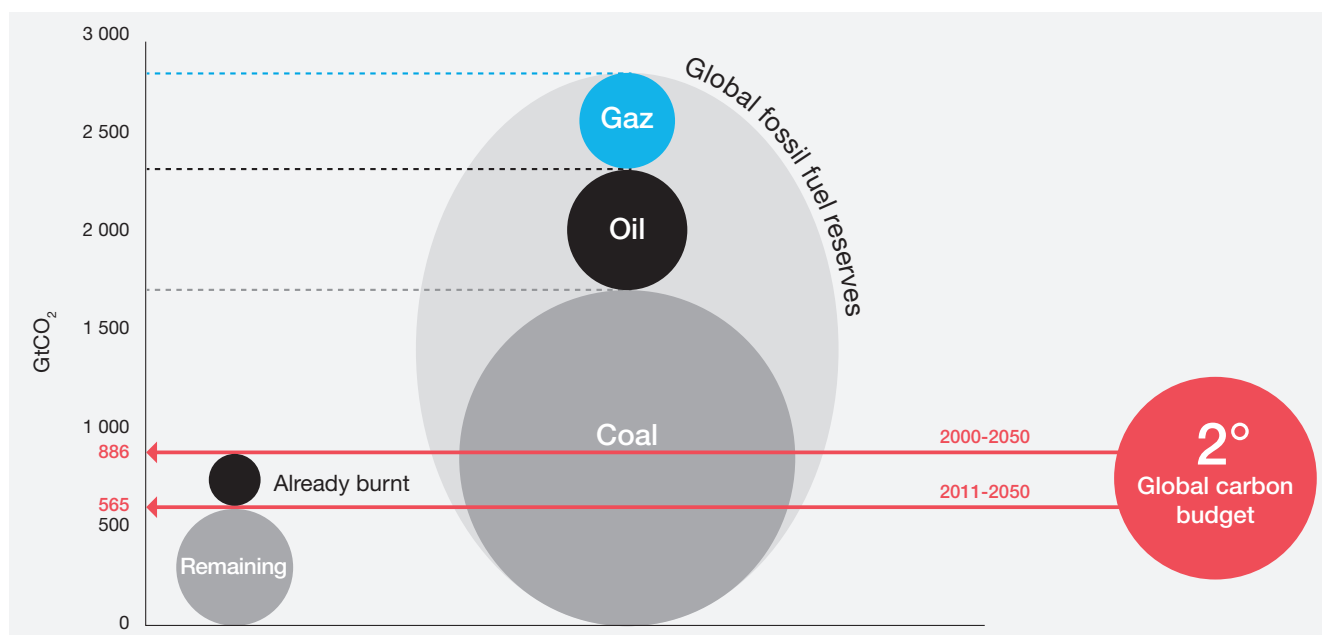
5 The French Energy Transition Law entered into force on 1 January 2016, and introduces reporting obligations for Listed companies, banks and credit providers and institutional investors. For information in English on this law and its implementations decrees see: <http://www.unepfi.org/fileadmin/documents/PRI-FrenchEnergyTransitionLaw.pdf>

6 For example, damages in the areas worst hit by the Typhoon Haiyan in the Philippines in 2013 accounted for 15 per cent of the Philippines’ GDP, according to the Economist Intelligence Unit. <http://blogs.ft.com/the-world/2013/11/the-economic-cost-of-typhoon-haiyan/>

7 The DoD states that: “These effects [of climate change] are threat multipliers that will aggravate stressors abroad such as poverty, environmental degradation, political instability, and social tensions”

8 The Task Force on Climate-related Financial Disclosures (TCFD) works on developing voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders. <https://www.fsb-tcfd.org/>

FIGURE 5: STRANDED ASSETS AND UNBURNABLE CARBON



Source: Carbon Tracker Initiative, 2014

BOX 1: WHAT IS AN ASSET ALIGNED WITH A LOW-CARBON PATHWAY?

In the context of a low-carbon pathway, each activity will see its carbon intensity progressively decrease, at a level and pace depending on its specificities and the technological breakthroughs occurring in its sector. A low-carbon pathway therefore implies a progressive process of decreasing greenhouse gas emissions, rather than requiring assets today to meet an estimated carbon intensity target corresponding to the economy as it will be in its final state of decarbonization. As such, an economic actor aligned with a low-carbon pathway is not necessarily one for which a significant proportion of revenues is drawn today from activities with a very low carbon intensity. Rather, this means an actor for which the decrease in greenhouse gas emissions associated with its activity follows the rate – specific to the activities being carried out – that corresponds to the low-carbon pathway in the process of occurring. For example a cement producer may be aligned with a 2°C pathway, if it achieves its carbon intensity reduction rate in line with a 2°C pathway and initiates enough efforts – in terms of investment and R&D – to keep itself on that pathway, since there will be a need for cement in a 2°C-compatible economy.

Even if there are different scenarios for decarbonization of the economic activities for the same low-carbon pathway, it is possible to ascertain whether an actor is more or less in line with the expected efforts on its activity, at least relatively (see Nicol and Cochran 2017b). Such analysis makes it possible to differentiate the actors who currently have the most resilience in a low-carbon economy and the actors who have not made sufficient efforts to decarbonize or redirect their activities and will therefore be impacted in the next few years by highly probably changes in regulatory, fiscal and market environments.

Source: (Nicol and Cochran 2017a)

The portfolio’s alignment as strategy for hedging transition risk must therefore rely on the forward-looking analysis of counterparties, in every sector of the economy.⁹

Furthermore, “stranded assets” can occur in other sectors where long-term investments can be impaired by structural economy-wide changes linked to the low-carbon transition. Thus, buildings, utilities and transport infrastructures are also concerned if carbon-intensive or energy inefficient characteristics are locked-in. This shift in investments and

the risks that it may imply for the financial sector are at the heart of the “stranded assets” discussions (Bast et al. 2014; Robins 2014; Dirk Schoenmaker, Rens van Tilburg, and Herman Wijffels 2015).

Focus on litigation risks

The final form of climate change related risk are linked to the possibility that litigation will be brought against economic and regulatory actors that have not sufficiently addressed the two previous forms of risks. This risk is often framed as part of the fiduciary duty of investors to ensure the best interests of end-owners of capital under management. While limited to date, a few legal actions have been explored worldwide, mostly in the United States.

⁹ See: Hubert, Romain, Morgane Nicol and Ian Cochran. “Why should financial actors align their portfolios with a 2°C pathway to manage climate risks?” Climate Brief n°44, I4CE - Institute for Climate Economics, 2017. <http://www.i4ce.org/download/three-notes-on-themanagement-of-climate-related-risks-by-financial-actors/>

While a private-interest rationale is taking hold, barriers still exist

Given the risk-focused attention, it is not surprising that private-interest rationale driven mainstreaming of climate change focuses on reduction of exposure of future cash flows to climate-related risks and identify and capitalizing on climate-related opportunities. Within this process, climate change is typically seen as material only when links can be made to variables and risks currently within time horizon material for investors: from short term (immediate) to long-term (often no more than 5-7 years). The data necessary to support his process internally is often not fully available, but focuses on the vulnerability of assets to physical risks (country, regional or other aggregated approaches) and the exposure of project types (sector, tech.) to potential climate policy risks (regulations, carbon pricing).¹⁰ Within the financial analysis conducted by institutions, mainstream may take the form of the inclusion of monetized and quantified physical and climate risks in financial analysis and the integration of a “real” or “shadow” price of carbon in financial analysis.

2.3. Common-interest mainstreaming: supporting climate and development objectives

A common-interest rationale for mainstreaming may take into consideration the private, shorter-term issues linked to addressing climate change risks. In practice to date, public financial institutions (PFIs) have been leaders in the active, common-interest focused mainstreaming of climate change to ensure the coherence of their interventions with over-arching national and international climate objectives. A number of private financial sector actors have developed and implemented investment strategies with a common-interest climate focus. This, however, has been estimated to represent less than 1% of current market share of the financial sector (FTF 2015). While an increasing portion of the financial sector, estimated at 5%, is taking a longer-term, risk aware approach, this is nevertheless often primarily linked to reduce their own exposure to loss rather than contribute to the broader public interest objectives.

This section briefly looks at the experience of PFIs in this area and the means of intervention, due diligence methods and metrics they have developed can offer insights for all financial actors looking to evaluate their contribution to commonly-held transition-focused objectives.

Public Financial Institutions: mandates and clear objectives to act in the public ‘common’ interest

Public financial institutions (PFIs) are typically created to address market failures or externalities which limit private-sector investment in some areas and to deliver financial services that help meet a public policy objective not currently addressed by the market. In some cases, these institutions hold a mandate to provide long-term financing independent of market cycles and in line with policy priorities. They are able to leverage capital at advantageous, below-market

rates for targeted investments. In some cases, these institutions serve as a catalyst for private-sector investment and innovation. These characteristics and objectives of PFIs are well-aligned with the challenge of overcoming barriers to private investment in low-carbon projects. Indeed, PFIs are currently playing an important role in facilitating the shift to and scaling-up of private investment in such projects (Cochran et al. 2014).

Given their *raison d’être*, PFIs are often first in line to drive financial resources in line with public policies and objectives. The scope of responsibilities taken by PFIs is highly dependent on the mandate set by their national government and in line with policy objectives. Increasingly, this mandate requires these institutions to take into consideration sustainability concerns, including climate change. Public financial institutions have differing levels of a “low-carbon” mandate they receive from governments. Some PFIs have an explicit mandate and authority to invest in green infrastructure – often with established guidelines on which technologies or markets to address. Others undertake ad-hoc green investment activities as one element of diverse activities to meet a much broader mandate driven by public interest. A subset of these institutions – Development Finance Institutions (DFIs)¹¹ are essential actors in channeling official development aid as well as providing capacity support to recipients on development issues.

Furthermore, given the historical dominance of fossil-fuel intensive energy in development pathways, current DFI investment portfolios may contain a significant share of activities which are incompatible with a low-carbon energy transition. Thus they may have a double motivation to reduce as an institution their exposure to more ‘private-interest’ risks, but also better understand how their interventions and support may influence the exposure of their activities in beneficiary country and the underlying development that they support.

Ensuring that assessment tools do not discount public-interest benefits

As seen in the case of PFIs, a public-interest approach to mainstreaming goes beyond focusing on an institution’s individual risks or gains. Rather, it aims attempts to understand and increase a given financial institution’s contribution to achieving societal short- and long-term climate objectives. As detailed in **Table 5**, this approach focuses on contributing to political commitments (financial flows, capacity building, etc.) with annual short-term internal objectives and a contribution towards medium- to long-term societal objectives (10 to 50 years). Beyond ensuring that exposure to risks is minimized to maximize future returns, investments attempt to support sectors, value chains, technologies, processes and projects that contribute to a given country’s LCCR pathway or improve local resiliency. In practice, this requires the inclusion of a social cost of carbon in economic analysis to assess welfare impacts. Discounts rates used in economic (welfare) and financial analysis should not ‘crush’ the future value of climate action in medium- to long-run.

¹⁰ For a discussion of what financial actors can already begin doing today, see: Nicol, Morgane, and Ian Cochran. “How should financial actors deal with climate-related issues in their portfolios today?” *Climate Brief n°46 I4CE - Institute for Climate Economics*, 2017. <http://www.i4ce.org/download/threenotes-on-the-management-of-climate-related-risks-byfinancial-actors/>

¹¹ For the purpose of this study, DFIs include Multilateral Development Banks (MDBs), Multilateral Financial Institutions, Sub-Regional Banks and Aid Coordination Groups.

3. Building blocks of mainstreaming: lessons from DFIs

This section identifies the principal areas and issues to be addressed by financial institutions in the process of mainstreaming climate change and support for the low-carbon, climate resilient economy. It is based on the emerging gray and academic literature on this topic, as well as the experience of development finance institutions (DFIs) for which I4CE has undertaken in depth case studies. As a result, it presents lessons principally related to common-interest rationale approaches to mainstreaming climate. This focus on DFIs comes from these institutions' experience with the process of 'mainstreaming' climate change into their policies and analysis of individual projects, ahead of other financial institutions. As increasingly documented in the literature, they have been active in setting objectives, creating a broad range of standards and tools to integrate climate issues into their operational procedures as well as establishing departments and institutional procedures dedicated to this process. (RICARDO-AEA 2013; Smallridge et al. 2012; Cochran et al. 2014; Cochran, Ian, Eschaliér, and Deheza 2015). Furthermore, many DFIs have come together through various channels to work collaboratively on this topic, thus setting joint international standards and shared practices. These concerted efforts address both definitions of what 'green' or 'low-carbon, climate-resilient' investment is, as well as objectives' harmonization of impact assessment methodologies.

The following section first identifies the main 'roles and needs' identified to mainstream climate issues across an institution's activities. Second, key issues of each of the mainstreaming 'building blocks' are discussed with examples from existing practice or areas currently under development. This section focuses on institutional and internal processes that appear necessary, with a number of examples of information tools and instruments these institutions have developed to foster mainstreaming internally and with partners.

3.1. Context: how DFI's support common-interest climate objectives

Development finance institutions, as a subset of public financial institutions, are in a position to help align development and low-carbon transition challenges. These institutions channel official development aid as well as provide capacity support to recipients on a number of development issues. This section briefly explores the roles, tools and means of intervention well suited to foster the needed change in development models for a transition to a low-carbon, climate-resilient economy as described in Section 1 (see Cochran, Ian, Eschaliér, and Deheza 2015; Cochran et al. 2014; Smallridge, Lorenzo, and Rattinger 2012; Smallridge et al. 2012 for a more in-depth discussion). Understanding these roles is essential to framing how institutions can better integrate climate change and provide the needed financial and capacity support to help countries move towards a low-carbon, climate-resilient development.

In practice and as seen in **Table 5**, DFIs can contribute to the climate action in developing countries by taking on three main responsibilities: i) facilitate access to capital, ii) assist in developing national development strategies coherent with a low-carbon transition, and iii) work with national banking and financial industries to leverage their action. DFIs can channel donor aid as well as raise capital at below-market rates and lend these resources to developing countries at attractive conditions. These comparative advantages can be used to promote private-sector investment and financial and technological innovation, and thus serve as demonstration investments. However, in order to do so, they develop specific tools and instruments which are tailored to their objectives and adapted to the specificities of sustainable development finance (Cochran et al. 2014).

Given the existing role these institutions play, there is an increasing recognition that PFIs and DFIs play an essential role in facilitating the shift of public and private investments towards LCCR projects, programs and fostering evolutions

TABLE 5: ROLES AND TOOLS OF DFIS IN SUPPORTING THE LOW-CARBON ENERGY TRANSITION

Role	Functions	Tools and Instruments
Facilitating access to capital	<ul style="list-style-type: none"> • Providing access to long-term capital • Identification of sectors and technologies • Prioritisation of actions in national climate action plans • Development of incentivising national policy framework to support investment • Facilities to channel financing through local banking network 	<ul style="list-style-type: none"> • Concessional and non-concessional lending • Equity investment • International climate funds • Public-private partnerships • Risk sharing instruments (guarantees, structured finance...) • Grants • Technical assistance
Assisting in developing national development strategies	<ul style="list-style-type: none"> • Capacity building • Political dialogue 	<ul style="list-style-type: none"> • Policy based loans • Technical assistance • Information tools
Support innovation	<ul style="list-style-type: none"> • Direct financing of demonstration projects • Assist in leveraging additional sources of financing (international and domestic) • Provide international expertise 	<ul style="list-style-type: none"> • Specific grant financing • Technical assistance • Risk sharing instruments • Project development facilities

Source: (Eschaliér, Cochran, and Deheza 2015)

in domestic regulatory frameworks. They are in the front line of addressing the challenge of overcoming the market failures limiting these investments, and contribute to develop new markets coherent with long-term development and climate objectives. Furthermore, beyond direct means of intervention, these institutions have developed methods and indicators to ensure that a part of their activity contributes to low-carbon objectives and track their increasing contribution to climate finance flows. Their instruments generally include long-term funding which is dedicated to the achievement of national and international policy priorities. Many DFIs are increasingly active in mainstreaming of climate change across all of their activities – from project finance to policy based loans and technical assistance operations. Thus, DFIs often lead on developing and testing means of integrating climate change issues across their operations, and can offer insights and operational lessons for private-sector financial actors.

3.2. The Three Building Blocks of the Mainstreaming Challenge

Taken to its fullest extent, the mainstreaming of climate change implies it's formal and informal integration into all of the activities a given institution. Thus, climate change becomes a 'prism' through which investment and finance activities – as well as development plans, country and regional strategies, and institutional policies – is understood and analyzed.¹² This does not necessarily indicate that radical changes must be made in all sectors and areas; rather the process should aim to identify means of achieving development objectives that support both national and international climate ambition. To facilitate this process within an institution, it is important to identify the opportunities within an institution's operational procedures, as well as the needs for information, knowledge and support.¹³

As seen in **Figure 6**, the investment decision making can be divided schematically into two overlapping parts: the 'Upstream Governance & Policy' level and a 'Downstream Structuring & Appraisal' Level. Dividing investment decision-making processes into these two broad areas allows a better understanding of how the investment framework set at the upstream policy level influences how activities and projects are selected and analyzed at the downstream level. The issue of timing is important as the earlier climate change is mainstreamed into the process, the more it can improve the capacity to make substantive or systemic changes to better take into consideration climate change concerns (RICARDO-AEA 2013; Smallridge et al. 2012; Cochran et al. 2014; Cochran, Ian, Eschaliere, and Deheza 2015):

¹² The term 'LCCR Development Model' refers to one that simultaneously tackles local development priorities and needs for resilient, low carbon growth.

¹³ For a detailed discussion and assessment of the informational tools and frameworks used by DFIs, see Cochran, Ian, Claire Eschaliere, and Mariana Deheza. 2015. "Mainstreaming Low-Carbon Climate-Resilient Growth Pathways into Investment Decision-Making – Lessons from Development Financial Institutions on Approaches and Tools." Background paper for the Climate and Development Summit - 31 March 2015. I4CE, AFD.

Upstream Governance & Policy Level

At the policy level, institutions establish the broader framework of their investment strategies, defining investment priorities (and exclusions) in terms of geography (regions, countries), sectors (balance across, priorities within), processes and technologies (prioritization of certain actions, sector and stakeholders). Within this process, both qualitative and quantitative definitions are often established to set the investment framework within which projects are screened in order to identify those that are eligible for a detailed appraisal and final financing. For instance, in some institutions multi-annual strategies are established to define priority areas that are then translated into concrete annual project-level programming.

Downstream Project Structuring & Appraisal Level

Depending on objectives and priorities established at the Policy Level, potential projects and activities go through initial assessment, followed by a detailed structuring and appraisal. The project level can be disaggregated into a number of different steps depending on the institution.

FIGURE 6: DECISION-MAKING PROCESS AND THE IMPACT OF CLIMATE-RELATED INFORMATION



Source: Authors after (Cochran 2012; RICARDO-AEA 2013)

Nevertheless, this process typically includes: economic, social and environmental impacts assessment of the project at the local level; financial analysis of a given project's return on investment; as well as a risk-based exposure analysis.

Beyond the availability of tools, tracking and accountability frameworks, there are multiple needs for 'transversal support' across these two levels of planning and decision-making. Some DFIs have put into place transversal support units to facilitate the uptake of the climate issue, trigger coordination and dialogue, provide technical capacity and support, as well as in some instances manage and assist in the provision of incentives and additional resources such as the channeling of concessional funding coming from international climate funds.

Twenty-six public and private institutions came together during COP21 to formalize their common commitments and identify steps to be taken to facilitate climate mainstreaming. This led to the signature of the Five Voluntary Principles for Mainstreaming Climate Action (see **Box 2**) and the creation of the Climate Action in Financial Institutions initiative.¹⁴ The signature of these principals by both public and private financial institutions from the developing and developed world is a clear signal that climate-change mainstreaming is becoming a real issue for the financial sector. Today, thirty financial institutions have signed on to these principals worldwide.

¹⁴ Please see <http://www.mainstreamingclimate.org> for more information on the Climate Action in Financial Institutions initiative.

3.3. Political and Technical Barriers to Mainstreaming Climate Change

A number of overarching issues and difficulties can be identified as barriers to the mainstreaming of climate change at all levels. Barriers can be loosely grouped on one hand between political and governance challenges and technical and informational challenges.

3.3.1. Political & Governance Challenges: getting and keeping climate on the agenda

Political and governance challenges are directly linked to the mandate development finance institutions have to address climate change, how it is prioritized among, and how it is able to remain a high-profile issue over time.

Need for a clear mandate and engagement

Activities of development finance institutions are generally tied to the resources and mandates from national governments and other stakeholders. They are thus dependent on the policy orientations to structure their activities. The lack of a clear mandate from the institution's stakeholders, and its translation into operational priorities can be a challenge. Furthermore, a LCCR development pathway is only one of a wide range of considerations which must be included in the development agenda. While climate change will have catastrophic consequences particularly in the developing world, it is often weighed against short-term political, economic or financial issues. As such, it is essential for a mandate to be in place requiring climate to be understood as an overarching transversal issue given the potentially catastrophic physical, economic and social impacts of climate change.

BOX 2: FIVE VOLUNTARY PRINCIPLES FOR MAINSTREAMING CLIMATE ACTION IN FINANCIAL INSTITUTIONS

1. COMMIT to climate strategies

Be strategic when addressing climate change. Institutional commitments to address climate change are demonstrated by senior management leadership, explicit strategic priorities, policy commitments and targets, which allow for the integration of climate change considerations within a financial institution's lending and advisory activities over time.

2. MANAGE climate risks

Be active in understanding and managing climate risk. Assess your portfolio, pipeline and new investments. Work with clients to determine appropriate measures for building resilience to climate impacts and improving the long-term sustainability of investments.

3. PROMOTE climate smart objectives

Promote approaches to generating instruments, tools and knowledge on how best to overcome risks and barriers to investment in low carbon and resilient investments. This may include mobilizing and catalyzing additional financing and developing specialized financing vehicles/products, such as green bonds, risk sharing mechanisms

or blended finance. Engage clients and other stakeholders (e.g. rating agencies, accounting firms) on climate change risks and resilience, and share lessons of experience to help further mainstream climate considerations into activities and investments.

4. IMPROVE climate performance

Set up operational tools to improve the climate performance of activities. Financial institutions track and monitor indicators tied to climate change priorities, including GHG reporting, lending and advisory volumes supporting green investment, climate related asset allocations, and the institution's own climate footprint.

5. ACCOUNT for your climate action

Be transparent and report, wherever possible, on the climate performance of your institution, including increases in financing of clean energy, energy efficiency, climate resilience or other climate-related activities and investments. Be transparent and report, wherever possible, the climate footprint of the institutions' own investment portfolio, and how the institution is addressing climate risk.

Source: Climate Action in Financial Institutions - <http://www.mainstreamingclimate.org>

Secondly, DFIs strongly rely on the political engagement in its regions of intervention. Beyond the macro-economic and political situation of borrowing countries, the success of climate development is also dependent on the engagement of the recipient government to embrace low-carbon, resilient economic model as a policy priority. A LCCR transition cannot be achieved by a single financial institution acting individually. Broader policy and economic regulations, incentives and policies are needed to integrate the negative externalities of a fossil-fuel based economy – particularly given the inter-generational and global nature of the challenge. Both donor and recipient countries need to demonstrate willingness to embark upon an often ambitious and long-lasting transition pathway. Development priorities and climate change objectives must be aligned and an enabling policy environment for investment must be created. If these conditions are not met, the influence of DFIs is likely to be significantly reduced, even if they can help advance the dialogue on recipient countries.

Prioritization and perception as an opportunity with added value

DFIs are confronted with priorities and objectives that span multiple time horizons. As seen in **Table 6**, DFIs are subject to short-term performance objectives (signatures, disbursement, financial performance), medium-term development objectives (such as the Sustainable Development Goals currently in discussion) or long-term objectives (such as the LCCR transition). As a result, teams involved in project and program assessment and decision-making process must juggle multiple considerations across sectors, disciplines and time-horizons. These objectives are further nuanced given explicit and implicit objectives from mandating institutions and the local policies and priorities in recipient countries.

Linking the shift to a low-carbon, resilient global economy with the other complex and rapidly-changing priorities must occur given the current tendency of short-term considerations to be prioritized over long-term objectives. Thus, it is important that means of providing technical capacity and support for teams to understand how climate change can be both a threat or an opportunity to achieving other objectives is essential.

Building a ‘business case’ for climate mainstreaming accompanied with incentives or the access to additional provision of resources can help overcome barriers at different levels, including: a) different levels of management; b) sector-specific operational teams; c) country-focused teams.

Stable leadership and ‘champions’

Finally, a stable leadership and a champion with the political commitment to the climate-change issue is crucial to get it onto the agenda and for it to remain on a solid and sustainable basis. In many instances leadership and champions will have to work on delivering solutions to help overcome institutional inertia and pushback, as mainstreaming for some sectoral and country-focused teams may require substantial changes to the types of projects and interventions they have to involve in. The implementation of processes and dynamics that focus

on increasing knowledge sharing and integrating climate change as a daily operational issue are useful to overcome inertia. Finally, institutions must however, go beyond champions at some point to institutionalize climate change into formal procedures and informal operational culture in order to ensure future prioritization and ‘weather’ changes in leadership.

TABLE 6: EXAMPLES OF DIFFERENT DFI OBJECTIVES ACROSS TIME HORIZONS

Short-Term Objectives
Annual performance objectives: <ul style="list-style-type: none"> • Volume • ESG • Climate Finance Reporting
Medium-Term Objectives
<ul style="list-style-type: none"> • Multi-year strategic plans and objectives • Formal external performance objectives from mandating institutions • National and international development aid financing objectives (0.7% of GNI, etc.)
Long-Term Objectives
<ul style="list-style-type: none"> • Low-Carbon, Climate Resilient Energy Transition • Eradication of poverty • Eradication of certain diseases • Universal literacy • Gender equality

Source : (Eschaliier, Cochran, and Deheza 2015)

3.3.2. Technical & Informational Challenges: identifying solutions and analyzing impact

A second set of challenges to mainstreaming climate change is linked to internal technical and information needs. Collection, production and inclusion of this information in the decision-making process and their costs pose a number of challenges beyond questions of information availability. While a proper balancing of cost vs. precision and end-usefulness for decision-making is key, technical challenges may remain to understand the short- and long-term impact of interventions on climate change and the LCCR transition. Finally, the timing of the integration of climate change into the decision-making process can affect the capacity of the institution to make substantive or systemic changes to projects receiving funding (Cochran 2012; RICARDO-AEA 2013). The issue of when climate-related information can be of most use for the decision making process is important to address.

Understanding and defining the direct climate-related impact of interventions. As seen in **Table 7**, assessing and understanding the climate-related impacts of a DFI’s interventions requires multiple forms of information. As presented in the case of metrics to assess individual projects, approaches used can be qualitative in nature – i.e. based on categories of project types or technologies,

quantitative – i.e. based on GHG emission levels or a combination of information to assess the exposure of projects to different climate-related risks. Current practice can vary between institutions, as multiple methods are currently used to calculate GHG emissions and ‘optimize’ projects to reduce GHG emissions or improvements in resiliency (Cochran, Eschalier, and Deheza 2015). There are nevertheless a number of initiatives underway to harmonize both definitional and methodological approaches between MDBs, BDBs and other DFIs.¹⁵

In addition to direct project finance, Development Finance Institutions also provide financial support for government programs and institutional capacity strengthening, intermediated finance through credit lines, and other technical assistance activities. In cases where a single project or activity is not the principal focus of the financial support, linking this support to direct impacts on the ground is more complicated. Evaluating these forms of activities can often be more difficult than the case of project-specific financing. When stringent conditions are applied to these activities, tools and methods described for project-specific financing may be applicable as the “object” of investment is identifiable and different causal and attribution links can

be made. However, when there are limited or no constraint on use of the funds in terms of technologies, sectoral classification, it is difficult to differentiate the financial support from the broader program-wide or institution-wide financing.

Linking individual actions with long-term emission pathways and a broader LCCR transition

Beyond understanding the direct impacts of projects and other activities, significant challenges are posed in assessing how individual interventions can contribute or at least be coherent with a given country’s long-term LCCR development objectives. Successfully linking upstream LCCR standards and objectives with downstream climate optimization tools is crucial to ensure an effective and durable mainstreaming of LCCR considerations into operations. This implies that the analysis of technical options may need to contextualize choices regarding GHG mitigation and resiliency in light of national appropriate decarbonization or resiliency pathways. Thus, it may be needed to update criteria and baselines updated as countries develop, markets and technologies evolve, and the recipient country LCCR pathways are clarified. Using this information, DFIs could identify the project-specific choices (technologies, processes, etc.) that are the most coherent with long-term transition objectives.

¹⁵ Examples include the MDBs-IDFC Common Principles for Climate Mitigation Finance Tracking and the Joint report on MDB Climate Finance.

TABLE 7: THREE FAMILIES OF CLIMATE AND LCCR METRICS FOR INVESTMENT DECISION-MAKING

	Qualitative or List-Based	Quantitative or Volumetric Impact	Exposure
Outcome of assessment	Projects, companies and/or activities are classified as contributing to, neutral or counter-productive to climate change objectives.	Impact of projects and activities on climate change (GHG emissions, other quantifiable indicators for climate change such as: hectares of protected forests, emission intensity of the energy mix, access to clean energy, etc.)	Exposure of projects and/or activities to direct and indirect: <ul style="list-style-type: none"> Physical impacts of climate change Impacts of climate policy and regulation regulatory impacts (energy-related costs, regulations standards, etc.); Market behavior evolutions
Required definitions and methodological frameworks for data collection and analysis	Qualitative definitions to classify “climate” projects Check-list criteria (such as company ESG screening methods)	Quantitative methodologies: <ul style="list-style-type: none"> GHG emissions Energy use Resource efficiency (energy savings, water use, etc) 	Methodologies to calculate: <ul style="list-style-type: none"> Country-level vulnerability Project level physical impact Exposure to climate policy and regulatory changes
Potential Data Inputs	Specifications allowing to identify: <ul style="list-style-type: none"> sectors and sub-sectors of activity involved technologies and techniques physical context company or asset-issuer descriptive information 	Data allowing to quantify: <ul style="list-style-type: none"> Energy use GHG Emissions (potentially including all scopes) Quantitative sector and country specific information 	Context related information: <ul style="list-style-type: none"> Energy data (consumption, fuel mix, price) Technologies and techniques in use (efficiency, externalities) Costs to users and consumers Cost of externalities Projected climate and economic scenarios Adaptation-related data on vulnerability and resilience

Source: After (Cochran, Eschalier, and Deheza 2015)

4. Key Questions for Implementing the Building Blocks of Mainstreaming

Based on a review of the literature and current practice conducted by I4CE and other institutions, this section explores a number of the issues and considerations for upstream and downstream mainstreaming – as well as the need for transversal support. Juxtaposing the different roles that DFIs currently play with the challenges that can be faced when mainstreaming climate change reveals a number of considerations and questions. This section aims to identify the range of issues that an institution should take into consideration when developing its own approach to mainstreaming. Examples are taken from I4CE's case studies of the AFD and the IDB, as well as from the 5 Principle on Voluntary Climate Mainstreaming's guide to emerging practice (Eschaliér, Deheza, and Cochran 2015).

4.1. Upstream Governance & Policy Level: Key Considerations to take into account

Mainstreaming climate action at the 'upstream' governance and policy level is essential to ensure that these issues are included within the broader framework of their investment strategies. Upstream decision-making is crucial for introducing objectives and criteria to foster cross-institutional support for low-carbon, climate-resilient projects. It is an opportunity to identify and prioritize areas and interventions where the involvement of the DFI could lead to significant direct impacts on the transition to LCCR development model. As such, climate should be taken into consideration in the establishment of investment priorities (and exclusions), looking at specificities in terms of geography (regions, countries), sectors (balance across, priorities within), processes and technologies (prioritization of certain actions).

To date within upstream processes, both qualitative and quantitative definitions are often established to set the investment framework within which the projects are screened. This aims to identify those activities that are eligible for a detailed appraisal and final financing. Climate-related information has been introduced through portfolio-wide targets, climate finance tracking and eligibility screening tools, based on investment policy strategies that lay out priority areas for intervention. In practice these targets, priorities, criteria and eligibility screening tools are based both on the mandates and priorities of the DFI, as well as development priorities of recipient countries.

4.1.1. Overarching objectives, targets and goals

Setting overarching climate-related objectives, targets and goals is often seen as the first step of mainstreaming climate change within an institution. This can take a variety of forms, whether volume-based and focusing on a single sector (such as Crédit Agricole's target to structure €60 billion in new financing in order to combat climate change between 2016-2019); or a percentage of annual signatures presenting significant climate co-benefits (as mainly the

case for DFIs – including IDB's objective of increasing climate-related financing to 30 percent of the Group's operational approvals by the end of 2020). The setting of an overarching performance target related to climate change can establish an institution-wide mandate, and, if linked to other performance reporting, can incentivize climate action.

How this objective is structured and how contributing projects are defined can, nevertheless, have significant impacts on the direct and indirect incentives given to operational teams. The definition of the objective and its disaggregation between sectors, regions, technologies, etc. – and the link with end-impact – should thus receive particular attention.

How are objectives translated in operational incentives: does it emphasize volume or end-project impact?

Among development finance institutions, targets have principally taken the form of the allocation of a percentage of annual commitments or signatures. As seen in **Table 8**, objectives can nevertheless vary significantly, with targets disaggregated by business lines or geographical zones of intervention. The current means for setting objectives and classifying eligible volumes of finance may have some unintended consequences in terms of prioritization of projects and interventions.

First, in some instances the objective may not apply to the all of an institution's activities, with a portion of their annual activity excluded from the percentage (such as interventions related to education and healthcare, or only including project finance). However, by not covering all activities, there may not be an incentive for operational teams to attempt to identify means of fulfilling development goals in all sectors – including non-energy intensive sectors – using solutions coherent with climate objectives.

Second, there is a risk that the focus of interventions may be on maximizing eligible volumes, rather than attempting to identify how to maximize direct or indirect impacts on emissions reduction, increase in resiliency or fostering the energy transition. In general, these approaches focus on setting objectives related to the amount of finance rather than focusing on the impact that the finance might have. For example, subsidizing USD 1 million of relatively low-impact window replacement versus USD 1 million used to leverage private investment for comprehensive thermal renovations of buildings do not have the same contribution to achieving long-term objectives.

Do objectives support direct emission reductions or transformative change?

DFIs are able to support the transformation of a recipient country's economy through domestic private finance mobilization, transition impact, introduction of new practices. Despite the recent significant progress to link development and climate change, the 2°C objective will necessitate further ambition whereby the focus shifts from climate change to a more dynamic "transition" to a low-carbon climate-resilient economic model. A number of issues to take into consideration can be identified. Furthermore, in the context of development finance, thinking in terms of a

TABLE 8: SUMMARY OF THE MAIN CLIMATE AND ENVIRONMENTAL TARGETS SET BY DFIS

Institution	Target	Sub-targets	Definition/Unit of measurement	Period	Source
ADB	Pledge to double its annual climate financing to \$6 billion, representing around 30% of its overall financing.	\$4 billion for mitigation \$2 billion for adaptation	Climate financing	By 2020	<i>ADB Press Release - Sept 2015</i>
AFD Group	50% of AFD's global financial commitments in Foreign Countries ¹ 30% of Proparco's allocations (private financing arm)	70% in emerging countries (Latin America and Asia) 50% in the Mediterranean 30% in the Least Developed Countries	With "a co-benefit for climate"	2012-2016	<i>AFD Climate Action Plan 2012-2016</i>
EIB	Minimum of 25% of annual lending Pledge to increase to 35% during 2015 Lima talks		"Specific climate action projects"	By 2020	<i>2015 EIB Climate Strategy</i> <i>EIB Press release Oct 2015</i>
EBRD	40% of total EBRD financing	These amount do not only target developing countries	"Green financing"	2016-2020	<i>EBRD Green economy transition approach 2015</i>
IDB Group	30% of the IDB's and IIC's combined operational approvals	NA	Climate Finance	By the end of 2020	<i>AG-6/16 IDB Board of Governors Resolution – Increasing Financing for Climate Change</i>
IFC	28% of IFC's annual financing	Catalyze annual \$13 billion in private sector capital through mobilization, aggregation, and de-risking products	Climate investments	2015	<i>2016 IFC Climate Implementation Plan</i>
World Bank Group (including IFC)	Expand its climate investments from the current \$2.2 billion a year to a goal of \$3.5 billion a year 28% of IFC's annual financing	Catalyze \$13 billion in private sector capital annually by 2020 through mobilization, aggregation, and de-risking	Climate investments	by 2020	<i>2016 IFC Climate Implementation Plan</i>

¹ This ratio is calculated on the basis of annual allocations in developing countries, excluding global budget support (GBS), a debt reduction mechanisms, guarantees, FEXTE and Proparco's sub-participation (included in Proparco's commitment).

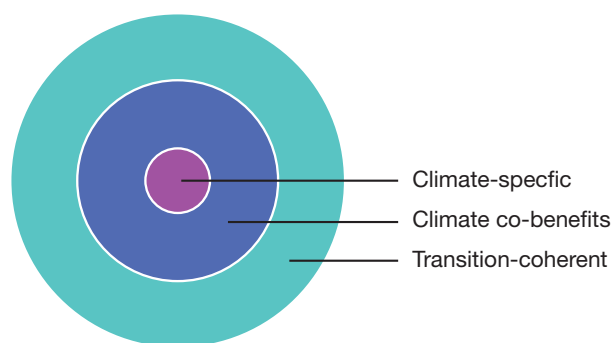
Source: Authors from cited institutional sources as of the end of 2016

systemic transition may be even more important as it could allow developing countries to shape the basis of their energy, industrial and rural production structures around technologies and practices coherent with long-term climate objectives.

First, a transition to a low-carbon, resilient economic model will require investments in projects that are 'climate specific' – or those where GHG mitigation or adaptation are the principal objective. These include often easily-identifiable projects such as the investment in renewable energy generation or extensive energy efficiency actions. Increasingly, there is increasing alignment of definitions of what types of projects and activities can be classified as both having direct impacts on mitigation and adaptation objectives (IDFC 2014). However, while these projects are important, they may represent only a portion of the required investments.

Second, projects selected for investment for development reasons – but not necessarily climate-specific reasons – can be conducted in a way to provide a maximum of climate 'co-benefits' or ancillary mitigation or adaptation impacts. Thus, 'optimizing' the climate impact of certain projects, such as for example by building energy efficient hospitals or schools, or other investments made for non climate-specific development reasons could be aligned with climate objectives. This can include the use of more efficient or low-carbon technologies or integrating resiliency issues. IFIs applying this logic can thus support the climate-related assessment of all projects and financial interventions. This assessment of the climate co-benefits fosters on understanding of how individual development projects can be improved or 'optimized' to maximize development potential and minimize negative climate impacts.

FIGURE 7: THE MULTIPLE LAYERS OF FINANCES TO SUPPORT A LOW-CARBON, RESILIENT ECONOMIC MODEL



Source: (Eschaliér, Cochran, and Deheza 2015)

Third, some investments may be coherent with the transition to a low-carbon development model, but lead to increased emissions when taken individually. Their relevancy for the transition lies in their support for a new economic model— such as stepping stones in the short- or medium-term between technologies. This emerging concept of ‘transition-coherent’ is, nevertheless, highly contextual as it is dependent on the given pathway that a country has chosen to decarbonize its economy and the potential of a DFI to contribute to this transformative change. For example, some investments – such as efficient gas-fired power plants – could in certain circumstances be considered as part of transition financing if they serve to support the deployment of renewable energies in a given national context. This concept of transition-coherent is thus highly contextual as it is dependent on the given pathway that a country has chosen to decarbonize its economy.

Finally, the time horizon within which the sufficiency and ambition of climate finance is understood becomes crucial when the concept of a transition is introduced. Some interventions may reduce emissions marginally – or slightly improve resiliency – without contributing to placing the broader economy on a LCCR-aligned trajectory. Research has pointed to the problems of focusing on the most inexpensive abatement options to reach short-term targets that can create a carbon-intensive lock-in and make the 2050 target more expensive to reach (Vogt-Schilb and Hallegatte 2014).

This suggests that to be effective in practice, additional climate and LCCR criteria must foster the prioritization of projects supporting a country’s LCCR transition without overly limiting the DFI’s scope of intervention. This appears to require the definition of investment priorities and the development of tools that 1) are calibrated to country-level LCCR priorities, 2) allow DFIs to identify and prioritize support for projects and policy support programs inherently aligned with long-term climate and development objectives, and 3) assist in identifying non-climate specific development projects and programs whose alignment with the LCCR transition could be improved through the DFI’s participation.

How are eligible investments classified and climate-related and transition-related benefits defined in practice?

Calculating the climate- and transition-related benefits of projects and interventions is a key issue – particularly

internally when the contribution of each action to a DFI’s climate-related objectives can have an impact on project approval. Climate-related eligibility criteria for project financing often take the form of a qualitative list-positive approach, often linked to the project classification guidelines used in institution-wide targets. In practice, this consists of a list of eligible project types, technologies and sectors of intervention based on institutional policy and, when compatible and in place, recipient-country climate objectives. In some instances, volumetric criteria are used setting maximum and minimum thresholds for eligibility.

For example, in the French Development Agency (AFD) approach, individual financial commitments are classified as contributing to climate-change objectives if they generate “climate co-benefits” through mitigation (emission reductions), adaptation (improved resiliency), or climate oriented capacity building and local policies strengthening in the form of Development Policy Operations (DPOs) or technical assistance. Objectives are differentiated between geographic zones and the level of development of countries¹⁶.

BOX 3: DFIS WORKING TOWARDS HARMONIZATION OF TRACKING METHODOLOGIES

Although DFIs generally have their own specific definition of what they count as climate finance, harmonization among donors is increasing. A group of MDBs¹⁷ has established working definitions and methodologies to guide the annual climate finance tracking efforts presented in Joint MDB Report on Mitigation Finance and the “Joint MDB Report on Adaptation Finance”¹⁸. A “positive-list” of activities contributing to greenhouse gas mitigation to climate change was agreed on to constitute minimum common standards for international reporting purposes. To be classified as adaptation measures, projects must set out the climate vulnerability context, make an explicit statement on the intent to address climate vulnerability as part of its objectives and provide a clear articulation between the described context and project specific activities. These two sets of working definitions provide a basic framework to define the boundaries of what activities should be taken into consideration. Similar work has been undertaken by the members of IDFC¹⁹ to provide a definition of mitigation and adaptation activities, and establish a list of activities and sectors that can be included in climate finance reporting.²⁰

¹⁶ See (Eschaliér, Deheza, and Cochran 2015) for a detailed description of AFD’s definitions of climate finance co-benefits

¹⁷ The MDBs involved are African Development Bank (AfDB), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), Inter-American Development Bank (IDB), International Finance Corporation (IFC) and the World Bank.

¹⁸ The positive list of activities eligible for climate finance reporting are presented in the Joint MDB report, together with the tracking methodology that is used.

¹⁹ IDFC (International Development Finance Club) was formed in 2011, and comprises twenty development banks of national, sub-regional and international origin (Europe, Asia, Central and South America, and Africa).

²⁰ For further information on the positive-list of activities considered as climate or « green » finance, see <https://www.idfc.org/>

Additional eligibility criteria can be defined either for the entire institution or be sector- or region-specific. For example, EIB, IFC and IDB have specific eligibility criteria for carbon-intensive sectors such as transport and energy. IDB has established a matrix defining the minimum power plant requirements for efficiency and maximum GHG emission intensity that make a fossil fuel project eligible for financing (IDB 2012). In 2013 AFD group decided to formally exclude the financing of coal power plant that would not have an effective Carbon Capture and Storage (CCS) system in place.

However, current classification, methods to define climate co-benefits or definitions of climate finance generally do not often include valuable 'qualitative' information on the coherence and impact of the project to national and international long-term climate objectives. For example, a target based on avoided emissions, depending on the definition of the reference scenario, does not necessarily lead to the exclusion of certain high carbon-intensive sectors or technologies when the project focuses on decreasing GHG emissions (i.e. energy efficiency actions on a coal-fired power plant), even if the project is far from sufficient to contribute to achieving the national LCCR pathway. Thus a key part of climate finance tracking procedures, positive-list screening tools – unless using appropriately detailed, country/region-specific and stringent guidance – may not be able to sufficiently analyze the end-impacts of financing in relation to national and international climate ambitions.

Therefore, there may be value in combining positive-list with rough volumetric thresholds to prioritize action in key sectors. The alignment of definitions and the prioritization of sectors with both short-term climate and long-term transition objectives is important to achieve the level of ambition necessary. Pairing financial information with the corresponding reduction in emissions and emission intensity is a first step to improve the ability to assess impact if information is available linking project-level emissions or sectors with long-term objectives. As methods in use today are further elaborated, they will need to take into consideration the question of whether the financed activities contribute to a transformation of the broader economy to a LCCR development pathway.

4.1.2. Policies, strategic documents, and action plans

As presented in **Table 9**, the structuring of strategic intervention frameworks to support low-carbon climate-resilient development and respect long-term transition objectives is a key step to ensure that an institution's activities support the mainstreaming of climate and the LCCR transition. Once 'enshrined' within the frameworks at the operational level different processes and tools can be used to i) screen and prioritize technological options and sectors, ii) understand the order of magnitude of the impacts, or iii) set thresholds for maximum emissions or other relevant indicators. Furthermore, inclusion creates an opportunity for capacity building and knowledge sharing with operational teams and in-country counterparts to assist in identifying the means of achieving development objectives in a manner consistent with climate goals.

Are climate and energy issues formally and systematically defined as priority areas?

The framework governing the interventions of DFIs is composed of a number of complementary and often overlapping strategic documents outlining institutional, sectoral, cross-sectoral and regional or country strategies. The inclusion and contextualization of climate-related concerns within these documents is essential to mainstreaming. The direct and indirect integration of climate change into sectoral and country policies can ensure that climate change is taken into consideration by operational teams. This integration should be contextualized accordingly, which may require internal studies, knowledge dissemination and formal and informal discussions to identify how climate-related issues can be included in meeting sectoral and country-level development objectives.

The inclusion of climate-related issues in project eligibility and 'knock-out' criteria in these documents has the potential to influence what types of projects and interventions are seen as eligible for DFIs – and in turn what interventions enter into the downstream assessment process, and eventual financing (see **Box 4**). It appears essential that these documents are developed in close partnership with stakeholders – such as internal climate-dedicated sector and country teams, as well as key external partners such as

BOX 4: STRATEGIC POLICY FRAMEWORKS & OBJECTIVES – EXAMPLES OF QUANTIFIED INTEGRATION OF CRITERIA AND TARGETS

Integration of climate-related criteria and priorities into sectoral plans through the inclusion of metric-based objectives and definitions:

- Set quantitative objectives of climate related activities (eg. a percentage of climate investments in the overall or sectoral portfolios)
- Set investment priorities based on climate-compatible sectors, technologies, risk and exposure levels
- Set exclusion criteria for highly emissive projects
- Set volumetric objectives on reduced emissions achieved through investments
- Set a cap on total portfolio GHG emissions (including non-climate investments)

Source: Authors

TABLE 9: FUNCTIONS AND MAINSTREAMING OF CLIMATE CHANGE INTO POLICIES, STRATEGIC DOCUMENTS AND ACTION PLANS (THE CASE OF THE IDB AND THE AFD)

	Principal Function	Potential Climate Mainstreaming
Overarching Institutional strategy: <ul style="list-style-type: none"> Updated institutional strategy (IDB) 2012-2016 Plan d'orientation Stratégique (AFD) 	<p>Establish institutional priority areas and guiding principles set in order to achieve the vision and fulfill the institutions' mandate.</p>	<p>These documents can include climate change and/or fostering green growth as a transversal institutional priority.</p>
Cross sectorial policies: <ul style="list-style-type: none"> Cross sectorial policies (IDB) Transversal Intervention Frameworks (AFD) 	<p>IDB – Policies set strictly binding normative frameworks applicable in all cases and not subject to frequent modification.</p> <p>AFD – TIFs propose solutions for institutional engagements to be mainstreamed into AFD's portfolio. CITs address all the geographies of intervention and may be broken-down into sub-strategies if substantial differences exist between the challenges identified at regional level.</p>	<p>IDB – The Environment and Social Policy (OP70) applies to all financial and non-financial products, public sector and private sector operations and its directives are structured under two major categories: a) environmental mainstreaming and b) environmental safeguards. The Disaster Risk Management (DRM) Policy also addresses climate risks.</p> <p>AFD – A CIT has been laid out for: climate change and development</p>
Sector Strategies & Frameworks: <ul style="list-style-type: none"> Sector Strategies & Sectoral Framework documents - IDB Sector intervention frameworks (CIS) - AFD 	<p>IDB – Sector strategies are broad guidelines for IDB operational and knowledge priorities. They define priorities and help establish goals and ways to guide the IDB's action (allocate resources in order to increase impact on those priorities). Sector Framework documents provide flexible guidance to accommodate the diversity of challenges and institutional contexts faced by borrowing member countries and narrow enough to provide guidance.</p> <p>AFD – CIS are elaborated and implemented by sector-specific technical teams and cover the issues related to a specific sector of AFD's operations. Objectives and expected results are broken down at regional level where local specificities and country or region-specific mandates are covered by adapted instruments and differentiated resource allocations</p>	<p>IDB – A dedicated strategy on climate change adaptation and mitigation and the Sustainable infrastructure for competitiveness and inclusive growth target climate change issues explicitly. Also, a SFD on climate change was released late 2015.</p> <p>AFD – CISs have been elaborated for: energy, water and sanitation, education, health, rural development, sustainable cities and food security, etc. A number of these include climate change in their strategic objectives.</p>
Region & Country Strategy / Programming: <ul style="list-style-type: none"> IDB – Contry strategies (CS) and Country programming documents (CPD) AFD – Regional intervention Frameworks (CIR) and Country Intervention frameworks (CIPs) 	<p>IDB – CSs establish the strategic framework to guide IDBG operational support to borrowing member countries and correspond to government periods. They document the agreement between each country and the IDB Group on priorities, development objectives and expected results to be achieved thanks to the support of the IDB. Yearly programming is done as part of the CPD.</p> <p>AFD – CIPs consider the needs expressed at local level, essentially by public counterparts, and take into account AFD's positioning in the local development aid context and its strategic priorities. CIRs are elaborated and implemented by regional departments and deal with the specificities in terms of mandate and local challenges of each region of intervention. The priority sectors of intervention are defined and associated with indicative allocation targets.</p>	<p>In both cases they could include climate-change related interventions among the priority interventions agreed with countries.</p>

Source: Authors from IDB and AFD documentation

ministries and sub-national agencies and the private sector. The integration of climate change into the development of these documents can be used as an opportunity to foster capacity building and knowledge sharing on these issues and can ensure that actions that are not coherent with institutional definitions of climate objectives are screened

out. If structured correctly, screening criteria can equally be used to prioritize investment in projects where DFI finance could lead to improved GHG mitigation, and thus bring a climate co-benefit compared to business as usual.

This integration already occurring in practice as seen in the case of multiple institutions. Estimates suggest that in 2012-

2013, approximately 60% of all new country strategies, which are jointly developed with client governments and other key stakeholders, now address climate issues (RICARDO-AEA 2013). For example, in the fiscal year 2012 the World Bank Group ensured that climate resiliency had been integrated across the operations of the International Development Association (IDA) fund. IDA funds projects in the poorest countries. Within the IDA country strategies developed in 2012, the country's vulnerability to climate change was assessed. Furthermore, the World Bank reports that at least half of country strategies also include actions on energy efficiency, renewable energy, or analytical work/technical assistance on climate change.²¹ At the AFD, the prioritization of projects with climate co-benefits at the upstream level has fostered internal dialogue between AFD's transversal and operational teams, placing the fight against climate change as a priority objective. **Box 5** presents the strengths, but also the limitations, of the AFD's disaggregation of climate-related objectives at the regional level.

Is there a dedicated action plan for the whole institution with clear definitions of responsibilities?

As part of institutional transversal strategic documents, DFIs are developing and implementing climate-specific action plans. A dedicated climate – transition action plan can play an important role in mainstreaming climate change across an institution if it is elaborated in a cooperative manner among different sectoral teams and require the implication of the highest levels of management. Climate action plans

could also require decisions to be made in determining how climate change should shape interventions; how to integrate climate into sectoral and country lending priorities; how to establish goals and deadlines for implementation; and could go all the way to identifying personnel training needs. It thus increases visibility, assigns detailed roles and responsibilities and assured accountability.

Furthermore, a climate action plan can put this issue on the agenda and give a roadmap for implementation. The development of the climate action plan in some instances can be part of a broader cooperative process to foster capacity building and knowledge sharing on this topic as seen in the case of the World Bank Group. For example, the World Bank's climate team elaborated two research reports Decarbonizing Development and Shock Waves: Managing the impacts of climate change on poverty. Through this process, the institution was able to develop and reinforce internal and external relationships on this subject. For example, the development of the latter report resulted in collaborative work with a number of research institutions on the strong relationship between climate change and poverty. According to the lead author of this report, the strong dialogue that the conclusions of this report fueled between the WBG's research team and operational teams was a key element that facilitated collaboration between teams in the elaboration of the recently released Climate Action Plan. In this way, the process itself fosters collaboration when jointly prepared across the institution and framed around "creative thinking" to address climate rather than "new constraints".

BOX 5: INSIGHTS FROM THE AFD: STRENGTHS AND LIMITATIONS OF REGIONAL-SCALE DISAGGREGATION AND A CASE FOR COUNTRY-SPECIFIC LCCR PLANNING

AFD has committed to ensuring that at least 50% of financing is used to support activities with climate co-benefits. This overarching objective has been disaggregated among regions. AFD's regional and country intervention frameworks are elaborated by in-house teams, from the Direction for operations and the Direction of strategy through a dialogue with stakeholders before their final validation by the Board of Directors. One of the main upstream challenges for AFD is to match the Group's regional and country intervention frameworks with the investment needs and priorities expressed by the local counterparts in a manner coherent with the Group's Climate Action Plan.²¹

Regional Intervention Frameworks can in some cases comprise climate objectives set in line with levels of development and their achievement is mutualized among countries within which the AFD is active in the region. These indicative commitment targets are not formally binding, but are nevertheless seen as priorities by regional operational teams given the close attention that management gives to these objectives. The strategy laid out in the regional intervention frameworks is then used as a basis for country intervention where opportunities to support the regional level priorities and operational objectives are then sought out at the country level in the identification of adapted operations.

The current regional disaggregation of climate commitments may limit the identification and prioritization of support for country specific LCCR development pathways. As they are currently established, the level of detail may not sufficiently translate the important contextual differences between and within countries. Thus, increasing the 'resolution' of strategic intervention frameworks to include LCCR transition at the country level – or at the level of more contextualized groups of countries (level of development, fossil fuel production/dependency, forest coverage, etc.) – could help foster and align strategic intervention frameworks with individual national long-term LCCR objectives and strategies. Thus, to foster LCCR development, the AFD could set contextualized objectives at a country level and include them in Country Intervention Frameworks. These would take into account a country's individual level of development, and basic infrastructure and public policy needs and should aim to be coherent with a potential LCCR development trajectory.

Source: (Eschaliér, Deheza, and Cochran 2015)

²¹ http://www.worldbank.org/ida/ida_abcs_climate.html

²² AFD (2012): *Climate Action Plan (2012-2016)*

What engagement and links with recipient country priorities and strategies to foster a 'transition' to a low-carbon, resilient economic model (policy, regulation)?

Given the importance of contextualization to understand what investments are transition-coherent, the development of country-specific scenarios or roadmaps to identify the priority sectors and technologies in line with a decarbonized pathway appears necessary. This would be a dynamic process which considers behavioral, economic and technological progression as a catalyst for low-carbon, resilient investments. This process would focus on how to achieve development objectives in a LCCR-coherent fashion rather than focusing on individual 'climate' investments. The challenge resides in forecasting – or backcasting – different pathways for the progressive evolution of a country's development model. Different possibilities will exist that minimize emissions at the same time as contributing to economic growth and social welfare. Evaluating whether the choices made are in line with what a pathway coherent with the 2°C climate objective becomes a necessity. However, to do so, finding a way of linking short-term investment decisions and long-term LCCR objectives becomes essential.

However, today there is often no clear vision of what a LCCR future compatible with both development needs and climate needs would look like. As such, it is difficult to understand the “transition potential” or “transition impact” of a single investment. Ideally, this should be done by national governments who are best placed to implement many of the economic and regulatory changes needed to foster such a transition. A number of initiatives exist today to assist both developed and developing countries to establish a LCCR vision of economic development. These include the Low Emission Development Strategies (LEDS) process launched in the COP16 in Cancun; and the United Nations' Global Initiative called the Sustainable Development Solution Network (SDSN) pursuing the development of Deep Decarbonization Pathways. COP22 in Marrakech saw the launch of government-produced scenarios on achieving climate ambitions for 2050 by Canada, the United States, Mexico and Germany.

The development of these development scenarios can provide initial baselines or counterfactuals in assessing investment decisions. They can also contribute to identifying how to align individual investments and short- and medium-term objectives with long-term objectives. Their development to assess investment decisions by DFIs will most likely be necessary country by country or at the very least on a regional scale in strong partnership with government and international stakeholders. DFIs could support this process through a variety of means including technical assistance, capacity building support, or policy-based loans.

Once in place, DFIs could design screening criteria to target interventions that foster the emergence of transformative change in key sectors by combining country-specific strategies and lists of priority investment sectors, value chains, and projects corresponding to a given country's chosen LCCR transition pathway. This should support both

the deployment of low-carbon infrastructure investments, but also technologies and planning and policy measures to reduce the vulnerability and increase the resiliency of infrastructures, ecosystems and populations. Furthermore, all DFIs active in the country could use these common LCCR-coherent lists internally for project identification as well as to engage discussions with counterparties to signal the priorities for support and foster project development in these sectors and value chains.

4.1.3. Accountability, Reporting & Tracking

Getting climate change on the agenda – and keeping it there – can require that the increased visibility, attribution of roles and responsibilities and assured accountability are formalized within a given institutions performance indicators and reporting processes. This can be both institutional performance indicators, but also unit- or individual- level incentive and evaluations as discussed in later on.

Is climate included in principal institution-wide key performance indicators and part of reporting and accountability priorities?

The mainstreaming of climate-change at the upstream governance and policy levels allows institutions to think systemically about choices, priorities and orientations in line with long-term objectives. The use of the financial resources with which DFIs are charged is increasing tracked and reported upon and DFIs face a wide range of voluntary, recommended and obligatory reporting. These requirements can be related to impact measurements or financial commitments and are associated with a range of reporting tools and methodologies. Ensuring that this reporting incentivizes investments in transition-coherent areas is essential.

To track progress in meeting these objectives, institutions have put into place tracking and reporting mechanisms to follow progress to meeting these objectives. Often, this information is principally used to assess internal performance towards meeting these goals, but also communicate externally in terms of the DFI's contribution to international climate finance objectives and the USD 100 billion commitment.²³ However, this external communication priority may receive more importance (and thus a focus on volume) rather than internal uses to better understand how the DFIs interventions supports the transformation of the recipient country's economy (domestic private finance mobilization, transition impact, introduction of new practices, etc.).

Ensuring that performance indicators and reporting on climate-related issues are mainstreamed across all operations appears key to both increase flows going to climate-specific investments; but also work to optimize all development investments and prioritize those coherent

23 Much of the international discussions concerning “climate finance” are connected to the commitment made at Copenhagen in 2009 to mobilize \$100 billion annually of additional financing for climate action from developed to developing countries, from both public and private sources. This is a key piece of the international political negotiations as it focuses on providing financing and hence building trust between developed and developing countries.

with the recipient country's long-term vision to achieve the transition. Tracking the portion of financing dedicated to low-carbon or transition-oriented projects can be a useful means to introduce climate as an issue transversally through the monitoring of the allocation of resources. However, if a second step does not occur and the information is not integrated into broader-portfolio management, impact on improving the alignment of all of the institutions activities with a low-carbon development model may be limited. This can also be the case with measuring GHG emissions and consolidating total or avoided emissions at the project or portfolio level—without a clear understanding of a transition-coherent baseline or trajectory.

Is there a mechanism to ensure political follow-up and accountability (i.e. dedicated report)?

How the produced data and information on tracking is used both internally and externally by DFIs is important to ensuring that climate remains on the agenda. Internally, the use of this information can vary. Firstly, in instance where climate change is a set objective tracking becomes an important part of ensuring that the sum of the institutions' activities is helping reach this objective. This is often discussed at the highest level within the Board of Directors who holds the designated management teams responsible for meeting this objective.

In the case of the IDB, the amounts of funding allocated to climate change and sustainability are included in its annual sustainability report following its own internal guidelines to classify development priorities. This report also includes the estimated GHG footprint of a set of projects funded by the IDB. Additionally, the IDBG also participates in the elaboration of a Joint report of the MDB's Climate finance (see **Box 3**). This harmonized methodology will be used to follow the achievement of the recently adopted climate target of the IDBG. Some indicators related to climate change are also part of Corporate Resources Framework whose results are published yearly in the Development Effectiveness Review.

AFD's Climate Team on the other hand releases every year a document that summarizes their climate activity. A snapshot of climate commitments and their regional, mitigation/adaptation breakdown of this activities is included as part of this report.

4.2. Downstream Identification, Structuring & Appraisal Level"

Moving from strategic orientation documents to concrete actions, interventions and investments is a process that can vary widely between institutions. In general, this consists of a mechanism for translating annual country, region or sector programming into a pipeline of interventions, including project finance, capacity support actions, policy dialogue and policy loans. The inclusion of climate-related criteria that are clearly visible and applied in the identifications process is essential to ensuring that the end-impacts of a DFIs interventions correspond to the ambition of their objectives. The inclusion of climate-related criteria should occur as early as possible

in the screening or identification; ideally before projects enter into the structuring and appraisal process. Once projects have entered the institution's system or 'received a serial number', different forms of knowledge, assessment tools and methods can be used to either evaluate if the project will pass due diligences to be funded – and, when possible, if opportunities to improve the climate and 'transition' impact can be improved.

4.2.1. Decision-making and evaluation process

Integrating climate change through capacity, information and standards during the identification, structuring and assessment process can facilitate the improvement of the 'climate' or 'transition' impact on a case by case improvement.

Are climate change issues formally & systematically integrated into project identification, screening, structuring and assessment procedures?

The most opportune moment within the project cycle to mainstream climate change is the process through which country and sectoral programming and envelopes are translated into a pipeline of projects and support activities. The use of screening tools, emission performance standards and exclusion lists, when available, can ensure that even before projects have a 'serial number' and have been accepted for detailed assessment and due diligence, the climate-coherence of the means to achieve the given development objective has been taken into consideration. Thus, it is important for the formal body accepting projects for consideration and detailed evaluation by the DFI take this issues into consideration.

The IDB Group is currently taking initial steps to identify entry points to insert climate resilience opportunities as early as feasible in its project appraisal process. The approach will also be complemented by upstream work in the planning phase to effectively streamline these opportunities into development operations. Simultaneously, the IDB is taking steps to integrate the climate finance tracking into its upstream decision making process before its Eligibility Review Meeting (ERM) – a key moment in the upstream project approval and assessment process. These steps are occurring in the context of the IDB's recently adopted increased climate commitment target and its further commitment to screen all projects for climate risks and resilience starting in 2018.

As described in further detail below, the AFD systematically applies their selectivity matrix to projects entering the pipeline. The process, methods and instruments used to integrate climate into decision making may increase in detail and complexity as the project appraisal moves from a 'macro' initial screening to a 'micro' final assessment level of precision. Specific decisions concerning technologies, materials, transport network characteristics and configurations, etc., can influence a project's emissions, and thus criteria based emission thresholds, limits, best-available-technologies, etc., can contribute to GHG mitigation and adaptation objectives. This appears particularly key in sectors where a choice between options

in a given technology class can have significant impacts on emissions or the resiliency of the project – and the broader development of a given sector in a country (i.e. electricity generation mix, agricultural practices, etc.).

However, addressing climate-related issues can be seen as a hurdle for a project to cross as they reach completion, rather than an issue to have an impact on what types of activities enter into an institution's pipeline. The addition of further assessment and studies can also limit uptake by operational teams. For example, the application of list-positive screening or rough order-of-magnitude estimates requires, in most cases, less resources than precise quantification of GHG emissions based on specific technical details. This can have an impact on the feasibility and success of implementation and uptake of different instruments linked to resource and time constraints of DFIs. As described below, it appears important to combine mainstreaming requirements with the capacity support, and if possible additional financial resources, to ensure that these teams see this as an opportunity rather than an obstacle.

If climate considerations are not taken into consideration until the end of the project assessment cycle, it may be too late in the process to influence choices that could lead to larger emission reductions and transformative impact. In general, as the project becomes more concrete, there are fewer opportunities to reduce emissions beyond “marginal” optimization linked to project design and deployment. It is nevertheless important that the climate change impact and coherence is also integrated into the final stages of validation of an institution's activities. While at this stage it may be too late to have a structuring impact on the project, ensuring that operational teams know this component must be taken into consideration will clearly signal a mandate to do so earlier in the process. In many cases, climate-related issues that are part of often end-of-pipe broader ESG evaluation or sustainable development opinion.

Across the decision-making process, it is important to ensure that a clear signal is given to countries, project developers and internal teams concerning what types of activities will be eligible at both the beginning and the ending of evaluation process is essential to ensure that those stakeholders engage with climate-related issues. As such, DFIs should both to clearly communication to countries what they are willing to finance, but also to engage and support countries in putting into place the regulatory and economic frameworks to support the emergence of a LCCR pipeline of projects and actions to finance. This it is important that non-project finance activities, such as capacity support, policy dialogue activities and policy loans are also evaluated in terms of potential coherence or inconsistencies with climate objectives.

Does the appraisal process include an opportunity to identify climate-coherent project alternatives to achieve principal development objectives? Are additional resources available to make them feasible?

While varying between institutions, the appraisal process can include an assessment of the different options and technical analysis studies that explore the various possible technical specifications and options for projects. The options identified are then analyzed in terms of their environmental impact and different risks to produce much of the information used in the economic and financial analysis.

Ensuring that operational teams have the capacity and the necessary tools in this process can create opportunities to improve projects in terms of their climate-related impact or contribution to a low-energy transition. In some instances, this may require internal studies to build a ‘business case’ that links co-benefits from low-carbon, climate-resilient development with other environmental issues and other social issues (local air pollution, water quality, etc.). Often, the quantification of greenhouse gas emissions is an associated part of this process. The resulting qualitative and quantitative information can be integrated into the options assessment process to ensure that it prioritizes technical solutions that are coherent with long-term climate objectives. A few examples of approaches are given below.

Assessing the GHG impacts and mitigation potential of project options

In 2013, the EIB established an “Emission Performance Standard” (EPS) whereby the institution systematically screens energy-intensive projects and excludes those where the emissions are likely to reach 550gCO₂/kWh or more (EIB 2013a). This type of approach, however, may be limited in practice to the energy sector. This is mainly because of the complex structure and lack of uniformity in the energy intensity of other energy intensive sectors (Wartmann et al. 2009).

Furthermore, the EIB has committed to systematically assessing the scope for cost-effective improvements in resource use, in particular energy efficiency projects (EIB 2013b). This includes an assessment of whether projects use the best available technologies. In some instance the EIB can provide needed technical support to conduct an energy audit of the project. They require project promoters to demonstrate that different efficiency options have been explored, and that the best available techniques (BAT) have been identified. (RICARDO-AEA 2013).

Adaptation: assessing physical risks

Within the technical analysis process, climate risk screening and proofing methodologies have been increasingly deployed by DFIs to assess the exposure of the project to future changes in the climate during the technical analysis of projects. This physical risk assessment process may run concurrent to other risk assessment of technical alternatives, including counterparty, country, and technology risks.

For example, the Asian Development Bank has developed guidelines for climate proofing in the transport, energy and agriculture, rural development and rural sector. The European Investment Bank has developed an in-house guide that outlines general principles and methodologies that can be followed to build resilience to current climate risks, build adaptive capacity and planning and take action to address future climate risks. The World Bank is also developing methodologies and tools across the main climate sensitive sectors for screening (urban risk, and agriculture and natural resources). Finally, in 2015 AFD²⁴ implemented a formal procedure to systematically address 'climate screening' at the downstream level which have been under development since 2012. The principal objective of the "climate screening" procedure is not to identify projects for exclusion. Rather, through the vulnerability rating process projects above an acceptable threshold of risk are identified. When this occurs, project teams work with counterparties to identify options and determine the best alternative to reduce climate risk exposure and if needed propose adaptation measures.

Towards understanding contribution to the transition?

In many instances, the existing processes could be used to identify how optimize – even emissive projects with important development co-benefits – to reduce climate impacts and contribute to the country's LCCR transition. The identification, assessment and comparison of different project alternatives can allow the selection of a final project configuration that achieves the desired development objective in a manner that best supports a country's long-term climate objectives and LCCR goals. DFIs have put into place a number of internal control procedures that could be adapted to focus on giving an independent estimation of whether projects contribute to a recipient country's long-term LCCR development pathway. Currently, the focus of the process is often on assessing whether a project or program provides climate co-benefits – and thus should be prioritized as contributing or having an adverse effect towards the achievement of the institution's climate objectives. Moving forward, quantified information on climate-related impacts and funds allocated to financing climate co-benefits could be combined with information with qualitative data – such as the coherence with the different country-specific priority lists for a country's LCCR transition mentioned above.

DFIs could expand current practice to prioritize projects that foster the transmission of knowledge and capacity to bring new approaches, methods, designs and technologies. This appears to be an important element to foster the linking of development and climate-related objectives both at upstream and downstream levels. Often, identification of project alternatives and a detailed assessment of the GHG emissions – when it does occur – may not occur early enough in the process to influence the final project alternative chosen. This may require DFIs to be involved at earlier stages of project and program development when both capacity and technical knowledge can be taken into

consideration concerning available options to achieve a given set of development goals.

4.2.2. 'Tools,' Process and Criteria

DFIs have taken steps to design, implement and link upstream climate criteria and objectives with downstream screening and assessment tools, as presented in **Table 10**. However, achieving the transition to low-carbon, climate-resilient development pathways will require that not only increasing financial flows to low-carbon projects, but equally capping – and reducing – investments in carbon-intensive activities. This will necessitate a move from a system of tools and indicators that focuses solely on tracking climate-specific investments, to a system that pursues the contribution, optimization and alignment of activities across financial institutions with a LCCR development model and long-term objectives. This mainstreaming across all operations appears key to both increase flows going to climate-specific investments, but also work to align and prioritize coherent development investments with the recipient country's long -term vision to achieve the transition, see **Box 6** for an example from the AFD. This will have implications for how these issues are mainstreamed by development finance institutions at both the upstream and downstream levels.

BOX 6: AFD ASSESSMENT OF THE ALIGNMENT OF A PARTNER COUNTRY'S CLIMATE POLICY WITH THE INTERNATIONAL 2°C OBJECTIVE

Given the dependence of classification on the quality of a country's commitment to climate action, the AFD has identified two main considerations to assess whether the counterpart's Climate Action Plan is acceptable. Firstly, AFD assess whether national policies including climate change issues are being developed, focusing on technical relevancy, coherence and a transversal approach involving several sectors (transport, energy, agriculture...). Five criteria are evaluated to assess the technical relevance of the program: i) a recent diagnosis of current situation in terms of GHG emissions (volumes, sectors, etc), ii) an estimation of future GHG emissions under a business as usual scenario, iii) the establishment of a national GHG emission reductions objective, iv) the elaboration of sectoral strategies contributing to the realization of the national emission reduction objective, and v) the monitoring and evaluation procedures to follow up on the progress of the implementation of the strategy. Secondly, if this initial screening is deemed satisfactory, AFD aims to verify that the project properly fits on the recipient's national emission reduction targets. This test is meant to be performed on a case by case basis relying on criteria that can be built based on experience.

Source: (Eschaliér, Cochran, and Deheza 2015)

²⁴ Other institutions moving forward on establishing risk screening and risk proofing methodologies include the KfW, the EIB, and the EBRD.

TABLE 10: TOOLS, DECISION POINTS AND CLIMATE MAINSTREAMING FOR PROJECT-SPECIFIC DECISION MAKING

	Positive-List	Volumetric Impact	Exposure
Assessment Tools	<ul style="list-style-type: none"> Qualitative definitions of “climate” projects Criteria for screening and exclusion for sectors and technologies 	<ul style="list-style-type: none"> Quantitative methodologies (GHG emissions, energy use, etc.) Emission performance thresholds and standards 	<ul style="list-style-type: none"> Country-level vulnerability assessment tools and guidelines Project level physical impact screening methods Methods of calculating exposure to climate policy and regulatory changes
Stages	Upstream Policy and Screening		
Elaboration of strategic policy frameworks and tracking	Integration of climate-related criteria and priorities into sectoral plans through the inclusion of metric-based objectives and definitions: <ul style="list-style-type: none"> set investment priorities based on climate-compatible sectors, technologies, risk and exposure levels set an exclusion to investments on highly emissive projects set quantitative objectives of climate related activities (eg. a percentage of climate investments in the overall or sectoral portfolios) set volumetric objectives on reduced emissions achieved through investments set a cap on total portfolio GHG emissions (including non-climate investments) 		
Project Eligibility Screening	Screen for eligible project types, technologies, etc.	Screen activities based on rough estimates of: <ul style="list-style-type: none"> Emissions performance compared to thresholds Avoided emissions or impacts compared to baseline 	Identify and screen activities based on rough estimates of: <ul style="list-style-type: none"> Vulnerability to physical risks (country, regional or other aggregated approaches) Exposure of project types (sector, tech.) to climate policy risks
Stages	Down-stream Assessment		
Options assessment and technical analysis	<ul style="list-style-type: none"> Selection of project alternatives based on technology and process eligibility lists established by country, sector, level of development 	<ul style="list-style-type: none"> Detailed GHG footprint calculations of individual projects to compare options Assess avoided emissions of individual technical options for projects 	<ul style="list-style-type: none"> Detailed assessment of direct physical impacts Detailed assessment of policy-risks and resulting impacts on financial returns and future cash flows.
Economic and Financial Analysis		<ul style="list-style-type: none"> Inclusion of emission data in economic analysis to assess welfare impacts Integration of a social cost of carbon into economic analysis 	<ul style="list-style-type: none"> Inclusion of quantified physical and climate risks in financial analysis Integration of a “real” or “shadow” price of carbon in financial analysis

Source: (Cochran, Eschaliér, and Deheza 2015)

Have screening, eligibility and knock-out criteria been established and integrated into the upstream phases of project identification?

Eligibility and knock-out screening can be used by institutions to ensure that projects that are aligned with the institutional investment policy and orientations are selected for further assessment, and eventually financing. The integration of climate and transition-related criteria into this process can ensure that actions that are not coherent with institutional definitions of climate objectives are screened out. If structured correctly, screening criteria can equally be used to prioritize investment in projects where DFI finance could lead to GHG mitigation, and thus a climate co-benefit compared to business as usual.

In practice, some DFIs have developed selectivity matrices as part of their decision-making tools. These matrices set the grounds for prioritization and exclusion of certain projects based on specified conditions. These conditions are typically linked with sectoral and regional lending policy documents that are reviewed and updated periodically. The criteria used in the screening process are often based on the same list-positive approach used in the tracking of institution-wide targets. This includes lists of country/region eligible projects, technologies and sectors for intervention based on institutional policy. Thus, corresponding data about projects is needed. When minimum or maximum thresholds have been established in project eligibility, rough quantification either project-by-project or of general project

types is necessary to facilitate screening. Eligibility criteria can be defined either for the portfolio as a whole or they can be sector or region specific. For example, EIB, IFC and IDB Group have specific eligibility criteria for carbon intensive sectors such as transport and energy. IDB Group has established a matrix defining the minimum power plant requirements for efficiency and maximum GHG emissions intensity that make a fossil fuel project eligible for financing (IDB 2012). In 2013 AFD group decided in 2013 to formally exclude the financing of coal power plants that would not have an effective Carbon Capture and Storage (CCS) system in place.

As part of the screening process, some tools used to assess projects in terms of how they would increase or decrease the institution's exposure to climate-related physical or policy risks (see **Box 7** for an example on physical risks from the AFD). In practice, this may be limited at this stage due to the lack of detailed information on potential physical

impacts as well as how potential climate policies may affect the project financially (fiscal and regulatory impacts, etc.). Exposure to climate change related risks may however be assessed in terms of identifying which technology offers the highest resilience based on local specificities. This type of procedure implies that the institution identifies the expected negative spillovers of a project and compares them to a predetermined list in order to determine whether or not these are acceptable by the institutions' standards. For example, the EBRD has compiled a list of the potential activities where funding from the institution may be sought. Every activity is classified according to its level of potential risk. The classification is based not only on environmental risks, but also on other potential vulnerabilities linked to the project (including social risks). This initial screening determines whether or not the project might be eligible to financing and influences the type of procedure that is then conducted (EBRD 2011).

BOX 7: AFD SELECTIVITY MATRIX: A TOOL TO FACILITATE PROJECT SCREENING

AFD uses a list of exclusions combined with a selectivity matrix to set the ground rules for funding and ensure that projects with extremely negative climate impacts are screened out de facto. In particular, AFD group decided in 2013 to formally forbid the financing of coal power plants that do not have an effective Carbon Capture and Storage (CCS) system in place.

AFD introduced a climate selectivity matrix in its 2012-2016 climate strategy to reconcile climate and development considerations in the screening process. It combines qualitative and quantitative information to facilitate project screening according to the recipient countries' level of development. This matrix uses climate impact thresholds to facilitate project screening corresponding to the recipient country's level of development – and how far they have gone in the development of an acceptable national climate strategy or policy. This selectivity matrix is a detailed grid elaborating on the maximum thresholds of CO₂ emissions for projects to be considered for financing respective to three types of countries (Least developed or crisis countries, Middle-income countries, Emerging countries) and the existence of an acceptable climate policy matrix in the recipient country.

TABLE 11: AFD'S SELECTIVITY MATRIX

Type of project	Threshold	Least developed or crisis countries	Middle-income countries	Emerging countries
Mitigation projects	< -10 KtCO ₂ e/year	AFD Group Funding possible.	AFD Group Funding possible.	AFD Group Funding possible.
Projects with non-significant Climate impact	between -10 KtCO ₂ e/year and 10 KtCO ₂ e/year	AFD Group Funding possible.	AFD Group Funding possible.	AFD Group Funding possible.
Emissive projects	between 10 KtCO ₂ e/year and 1 MtCO ₂ e/year	AFD Group Funding possible.	AFD Group Funding possible.	Possible if not concessional funding. Concessional funding possible if and only if the country has a climate policy.
Strongly emissive projects	>1 MtCO ₂ e/year	Funding possible. If the funding is concessional, the country must have a climate policy deemed acceptable ¹ by the AFD.	No funding unless the country has an acceptable climate policy.	No AFD Group funding.

¹ See Box 4 for the approach applied by the AFD in determining the whether a country's climate policy meets acceptability criteria.

Source: AFD - Climate Action Plan (2012-2016)

Are climate-related criteria included in the economic/welfare analysis conducted for the project in a manner that does not overly discount future climate-related benefits?

DFIs are increasingly required to both validate ex-ante and report ex-post the contribution of their interventions to mandated objectives and public goods. This can take the form of an economic or welfare-based analysis to justify that projects are in the public interest. The economic analysis, which typically follows the principles of Cost Benefit Assessment (CBA) – or associated approaches such as cost effectiveness or multi-criteria analysis – to measure the net impacts of the project on economic welfare and, when used, the variation between the technical alternatives. The inclusion of the economic welfare benefits of climate action can give added weight to justify a deviation from business-as-usual practice. Inclusion in the evaluation of multiple technical alternatives can indicate the welfare cost-efficiency of options and assist in the optimization of the technical characteristics.

For example, the carbon footprint methodology implemented by EIB is integrated in the economic evaluation methodology applied to projects. The ultimate objective of measuring the estimated carbon footprint of projects is to compare the economic and environmental costs with the benefits of the investment, thus including the costs and benefits in terms of incremental GHG emissions. In order to do so, the EIB sometimes applies a “virtual” cost of carbon that enables a conversion of the change in GHG emissions into euros.²⁵ Furthermore, in 2015 the World Bank began accounting for emissions from energy, forestry, and agriculture projects and is currently developing methodologies for water, urban development, and transportation. This emissions data is used in combination with an internal carbon price, or social value of carbon to be integrated in economic analyses. This carbon price starts at US\$30 per ton in 2015 and rises to US\$80 by 2050. For its existing portfolio, it is developing methods to assess carbon exposure²⁶.

The integration of climate criteria in the economic assessment requires principally a predetermined social cost of carbon²⁷ as well as data on a project’s estimated GHG emissions, energy use, or other relevant values into assessment methodology.

²⁵ The carbon footprint is measured by EIB ex-ante and doesn’t include downstream emissions from the products and services used as a result of EIB-financed projects. EIB justifies the exclusion of certain types of emissions with the lack of available information before the implementation of a project. In other words, the ultimate aim of undertaking a carbon footprint estimation is to select the best of all option from a cost/benefit perspective. For more information on EIB’s Carbon Footprint methodology please refer to: “European Investment Bank Induced GHG Footprint The carbon footprint of projects financed by the Bank – Methodologies for the Assessment of Project GHG Emissions and – Emission Variations” (2013)

²⁶ See <http://www.worldbank.org/en/topic/climatechange/brief/integrating-climate-change-world-bank> for a further description of the recent evolutions in how climate change is being integrated at the World Bank.

²⁷ The social cost of carbon (SCC) measures the full global cost today of an incremental unit of carbon emitted now, summing the full global cost of the damage it imposes over the whole of its time in the atmosphere (DEFRA 2007). The SCC estimates what society should, in theory, be willing to pay now to avoid the future damage caused by incremental carbon emissions.

A key point needed further evaluation is the discount rates used by DFIs within this process. Choices made concerning the discount rate can have significant impacts on the comparative value of the social cost of carbon and of climate action in general compared to present day concerns. Disagreement and discussion continues on the methods to value this future cost and the appropriate discount rates to be used (Tol 2003; Stern et al. 2006; Wilfred Beckerman and Cameron Hepburn 2007; OECD 2008; Jarnet and Corfee-Morlot 2009). However, it is clear that the use of discount rates at times ranging between 10 to 15% as practiced by some DFIs clearly handicaps climate action. Perversely, the use of high discount rates may favor short-term economic benefits – however these gains may be put at risk in the medium- to long-term by climate change and potential stranded assets. The use of cost-benefit analysis approaches and an undervaluing of future-impacts for short-term gains remains an important point for continued discussion (Cochran 2012; RICARDO-AEA 2013). It remains to see if the commission mandated at COP22 to make study the social cost of carbon chaired by economists Lord Nicholas Stern and Joseph Stiglitz will address this issue.

Are climate-related criteria (shadow carbon price, risk metrics) incorporated into the financial analysis of interventions?

While not conducted by all DFIs, the financial assessment of projects and proposed alternatives aims at assessing and evaluating the costs and revenue streams of the project owner over a certain period of time. Integrating climate- and transition-related criteria within this process can have two main impacts. A financial risk assessment can include climate-related information to calculate the exposure of future revenue streams to different climate change and climate policy scenarios, otherwise referred to as “transition risk”. The inclusion in financial analysis can also assist in the selection between competing alternatives, allowing the comparison of impacts of different project scenarios to test financial returns of options.²⁸

Taking into account the estimated future costs related to low-carbon development (i.e. increased fossil fuel prices due to carbon pricing, reductions in fossil fuel subsidies) and impacts on the financial models of projects can lead to a prioritization of low-carbon alternatives. This can occur through the inclusion of a “shadow price of carbon” in calculations when no “market” price signal exists. This process can equally include other carbon-related risks. Other material transition risks include short-term transition risks as well as medium- to long-term asset impairments due to physical and climate policy risks.²⁹ This risk-pricing exercise today does not appear to be widespread among

²⁸ For a discussion of what financial actors can already begin doing today, see: Nicol, Morgane, and Ian Cochran. “How should financial actors deal with climate-related issues in their portfolios today?” Climate Brief n°46 I4CE - Institute for Climate Economics, 2017. <http://www.i4ce.org/download/threenotes-on-the-management-of-climate-related-risks-byfinancial-actors/>

²⁹ Short-term transition risks are mainly price-based and depend on the evolution of carbon pricing (tax or market-based) and energy-based products and securities. Impairment risks are related to the stranding of assets following a change in standards, market behavior and requirements. See for more information: (2ndii 2013)

institutions. This may be linked to a lack of methodological approaches, as well as its data intensive nature. It requires basic exposure information concerning projects. It may also require the development of the scenarios necessary to assess future physical and policy impacts – such as a dynamic carbon price linked to long-term climate objectives.

To date, the EIB is one of the principal institutions identified as having implemented carbon pricing as part of its financial appraisal procedures. The financial analysis that is carried out includes a ‘shadow price of carbon’, and measures the financial viability of the project by considering market distortions, subsidies and environmental externalities. Fossil fuel projects are therefore automatically penalized by the analysis (RICARDO-AEA 2013). In practice, a shadow price of €30 per tCO₂ to €50 per tCO₂ by 2030 is included in EIB’s financial appraisal of projects. The shadow price is dependent on the projected evolutions in the markets and regulations and must therefore be dynamic and revised accordingly. For instance, EIB measures the viability of mature renewable projects on the basis of the economic cost of fossil fuel alternatives. The estimation includes the environmental externalities resulting from carbon emissions and other pollutants, and an additional benefit related to security of supply.

Can existing metrics and analytical tools be adapted to look both at direct climate-related impacts, as well as supporting a long-term low-carbon, resilient transition?

Existing metrics used by DFIs can be improved and expanded to support not only interventions with direct positive climate-related impacts, but also foster a broader transition. For example, the development of non-binding country-specific priority lists could be used to facilitate the identification and clearly communicate a DFI’s priorities to invest in: 1) sectors, value chains, technologies as well as projects clearly in line with the recipient country’s LCCR transition; 2) areas of support and project types where expertise, capacity building and or additional finance could reduce GHG impact and improve alignment with transition. These lists would not be designed to limit a DFI to invest only in certain types of projects, but rather to clearly identify for operational teams and in-country counterparts the shared priorities of both the national and international development community. These lists and criteria could evolve over time to become more rigorous, adapt to changing conditions, or focus on promoting or introducing new practices or technologies.

Additional transversal criterion could be established to foster the use of best available alternatives to achieve development goals. Targeted exclusion lists could be developed to indicate what activities are seen as preventing or slowing down the implementation of a LCCR national strategy. This could take the form of country or sector-specific exclusion lists developed in cooperation with national counterparties in line with national low-carbon development strategies.

Existing selectivity tools could also include country-specific volumetric thresholds that could be applied to

all development projects based on the emission intensity of projects and resulting service provision. Thus, the steps DFIs have already taken to integrate volumetric thresholds of GHG emissions into eligibility screening into its selectivity matrix could be taken further through the development of emission performance standards or other metrics that evolve overtime to incentivize increased ambition. These thresholds would become increasingly stringent to incite the optimization of GHG efficiency and resiliency of all development projects in line with national LCCR strategies. Ideally, these thresholds would not be designed to simply disqualify projects, but rather to identify where DFI intervention could lead to the use of more efficient or transformative technologies and approaches to achieve the same development objectives.

Steps in this direction can be seen in practice today. For instance, the financing of natural gas projects has not been formally excluded from AFD’s financings given that the transition-relevancy of natural gas projects needs to be reviewed on a country-by-country basis. This reflects the recognition that gas-fired power plants may be an important part in certain cases, and in the short- to medium-term, to accompany the transition to a LCCR economy. This may be linked to the integration of intermittent renewable energies into the energy mix, or to meet the needs of rapid demographic growth through the installation of combined cycle natural gas-fired power plants.³⁰ Scaling-up the use of qualitative and quantitative measures and the use of emissions performance criteria to assess both emissions as well as the potential to contribute to a country’s LCCR transition appears a means of linking both short- and long-term objectives.

4.2.3. Knowledge Base & Capacity

Climate change mainstreaming requires ‘doing development differently’ and finding new – and novel applications of existing – solutions to achieve development objectives in coherence with climate objectives and putting countries on long-term decarbonization trajectories. This requires that both operational teams – as well as in-country counterparties – have the capacity and knowledge to identify and prioritize how to do this in practice. Furthermore, framing climate change as an opportunity in face of existing or future constraints – whether present day co-benefits such as energy security or forward-looking physical or transition risks – can help build a business case for action. This may be an ongoing process that requires new models of organizing information sharing, training and interaction between operational and transversal teams.

Do operational teams have the knowledge and familiarity with low-carbon, resilient project typologies, technologies, options, etc. to suggest and support their development and implementation?

While operational teams can be at the forefront of experimenting with new climate-friendly technologies and approaches, ingrained practice and technical culture may limit familiarity with climate-coherent development solutions. Also, they may not be in a position to be able to understand

30 AFD (2012): *Cadre d'intervention sectoriel énergie 2012-2016*

how a single project or intervention can impact both short- and long-term climate and transition objectives. As such, it is important for teams to have:

- examples of projects and options, taking into consideration geographies, levels of developments and national priorities and preferences.
- economic assessments and studies laying out the short-, medium- and long-term benefits climate action writing in terms and framed for their core business. This is not only for sectoral specializations, such as transport and energy, but also for the internal macro-economic and evaluation teams that play a key role in assessing interventions.
- business cases and studies should also focus on specific regions and countries to begin to discern what climate-coherent development could look like in practice. A focus on existing projects to give concrete examples, including information on what regulatory and policy frameworks contributed to successful deployment and implementation appears essential.

DFIs can thus demonstrate and support the transmission of knowledge and capacity to bring new approaches, methods, designs and technologies appears to be an important element to foster the linking of development and climate-related objectives both at upstream and downstream levels.

Are project teams able to use and operationally interpret the tools and criteria?

A second part of the capacity issue lies in the ability of operational teams to interpret the results in a meaningful way that can result in links with concrete choices and, in turn, identify and understand different technical options for interventions. This thus indicates that when building informational tools, they may need to be constructed in a way that results can be linked with a variety of different options for projects and interventions.

A second important issue is when operational teams have this information in the process. As discussed previously, the timing of the integration of climate change into the decision-making process can affect the capacity of the institution to make substantive or systemic changes (Cochran 2012; RICARDO-AEA 2013). For example, a number of AFD operational teams have noted challenges in applying the institution's GHG Footprint tool. AFD operational teams indicated that the carbon footprint tool is resource-intensive and requires a substantial set of data that is not always available. Operational teams also stressed that elaborating each project's carbon footprint estimation is challenging due to operational constraints and that in practice they rely often on the expertise of the transversal climate team based in Paris. As such, it may not occur sufficiently upstream in the assessment process to have an influence on the technical profile of the final project alternative chosen. This indicates that discussions could be useful to find the balance between resource needs and timing within the assessment stage and the granularity of GHG emission data necessary to compare project alternatives.

4.3. Ensuring climate mainstreaming functions transversally

The mainstreaming of climate change across a financial institution through the different actions outlined above may require substantial political and technical support. Many DFIs have created a transversal support unit or team to assist in placing climate change on the agenda, keeping it there, and then in turn supporting operational teams to develop the capacity, knowledge – provided that appropriate incentives to do so are set. These teams provide support, help identify opportunities and projects and may be in and of itself composed of a network of centralized and decentralized team members across the institution as well country and regional offices.

Transversal climate support teams can take a variety of forms and this report does not necessarily support one institutional model over another. For example, the 'CLI' climate-focused team at the AFD is a transversal support unit housed within the broader 'Transversal Support Direction'. The IDB Group has just created a new 'Climate Change and Sustainability Department' within which the Climate Change and Sustainability (CCS) division is housed. The Climate Change and Sustainability Department is part of the Vice-Presidency of sectors and by becoming a department that groups all sustainability teams has increased the visibility of these issues inside the IDB Group. This new position within the institution aims to support improved collaboration and interaction with sectoral and country teams. In both institutions, a core team based in the headquarters is in close contact with a number of references and embedded team members across the institutions' principal regions and countries of intervention. Similar arrangements can be observed at the World Bank Group, the EBRD, the EIB, among others.

Having a transversal unit or network can be a successful institutional arrangement if the teams can have both a high-level political support and well established mandate within the financial institution, as well as formalized and collaborative contact with country- and sector-focused teams. Furthermore, it appears essential that a delicate balance is found between playing the role of an 'oversight' body to ensure that climate-related issues have been addressed, and as a trusted partner to 'support' operational teams in achieving effective mainstreaming.

4.3.1. Coordination & Dialogue

Supporting coordination and dialogue on climate-related topics is a key piece in keeping climate on the agenda, as well as ensuring that country and sectoral teams have the capacity and knowledge to integrate these issues into their daily activities. This may combine both oversight duties, as well as the ability to engage with operational teams.

Can the transversal unit support recognition of climate change, with follow-up and monitoring at the highest levels?

The positioning of a transversal support team within an institution can have an impact on its ability to influence both high-level and operational discussions. The climate

or sustainability department may need a formalized direct access or request of information to the board of directors with a dedicated timeslot within their monthly or quarterly meetings. While not necessarily essential, it may be of use to have a formal lead or ‘champion’ for climate change related subjects that reports directly to the director general or president of the financial institution. This can ensure that the highest levels of management are up to date on the institution’s actions, and communicate this issue as a priority to operational teams.

In addition to representation at the highest levels, the development of a set or ‘dashboard’ of indicators can help improve visibility and accountability on this issue across the institution. Most DFIs have set overarching commitments in terms of percentage of activities. The disaggregation of this objective across regions and sectors can additionally provide increased visibility and responsibility across country and sectoral divisions. A dashboard of indicators could be established country by country to understand progress in respect to climate related objectives. Potential indicators could include carbon intensity of electricity supply, vulnerability factors, check-lists on whether certain regulatory frameworks are in place or whether there are continued counterproductive policies in place such as subsidies for fossil fuels, etc. While not yet in place for climate change, the IDB Group’s gender and diversity division has had good experiences in the application of this type of tool. In its efforts to mainstream gender issues, it has found that the follow up and comparison between countries is facilitated by this type of tool and can be a motivational element for country teams.

These objectives and indicators can serve a double purpose. On one hand they prioritize and help identify the concrete actions and options for different sectors to take climate into consideration with sufficient level of detail. Second, the inclusion of climate change within the operational objectives and monitoring process of sectoral and country focused operational teams can create an incentive for these teams to seek out support from the transversal support unit. The provision of the capacity and knowledge to operational teams can in turn be supported by different formal and informal consultation procedures and activities, as discussed in more detail below.

Does the unit have an opportunity to support integration of climate into dialogue and programming with borrowing member countries?

Taking climate change into consideration as early as possible within country-level programming can increase the margin of maneuver to achieve development objectives in a way coherent with climate change. This may require that a transversal unit be formally integrated into the process, with a consultation, support – and potentially oversight – role for both upstream country strategies as well as the elaboration of the yearly programming of projects and interventions that are accepted for consideration and assessment.

In practice, transversal teams may not have easy access to the upstream country level programming phases as this may occur informally between in-country teams and national counterparties. The inclusion of climate-related thresholds and criteria within the screening and initial review process can help to ensure that sectoral and country teams will seek out the assistance of a transversal support unit, particularly if they have access to resources for the necessary additional studies and analysis implied. In terms of the yearly process of country programming, the idea of establishing upstream criteria and policies that will clearly provide guidance to country-focused teams in identifying eligible or coherent projects with the countries NDCs and climate action plans could be explored. On this basis, there is notable importance in attempting to find the clearest entry points in the process for the climate team to have a formalized consultancy role in this process and to help establish indicators linked to expected results of the country strategy.

To support the emergence of a pipeline of projects and interventions, DFIs can engage with national counterparts through policy dialogue to demonstrate the added value – and means – of achieving the medium- to long-term benefits of aligning climate and development objectives. Transversal climate teams can assist in integrating climate-related issues in a formalized way through country planning exercises and the criteria and consideration in the planning process.

Finally, one entry point is to engage with country-focused in-house teams and regional and country economists and specialists to ensure that they are aware and develop or increase ownership of climate change issues. Close collaboration between the transversal climate team and in-house regional and country economists is important as these teams are often in charge of elaborating the documents could foster and give substance to the dialogue with countries such as the country development challenges. The transversal team could foster the development of country-focused reports and frameworks. This could act as an entry point for an increased alignment of strategic documents such as country strategies with high-level climate change objectives and ambitions. For example, the WBG in its 2016 CCAP has set an obligation for all their future Systematic Country Diagnosis (SCDs) and Country Partnership Frameworks (CPFs) to consider risks and opportunities created by climate change and countries’ climate priorities (WBG 2016).

4.3.2. Technical Capacity & Support

A transversal climate unit can assist operational teams on the technical questions related to aligning climate and development priorities. This can be done directly, through in-house expert knowledge and capacity, or indirectly through assisting in writing the terms of reference and linking sectoral and country teams within external technical support and consultants. This can cover a broad number of subjects, not limited to project options identification, integration of climate change into country modeling work and support on renewable energy, energy efficiency and other policy frameworks for policy dialogue.

Throughout this process, it is essential that the transversal climate team support the framing of climate mainstreaming and demonstrate that projects can achieve climate and development goals in an acceptable fashion.

Is the transversal climate team able to frame the 'Business Cases' to demonstrate the value of aligning climate and develop priorities and climate proofing projects to sectoral and operational teams?

Sectoral and country teams may not be familiar with the risks and opportunities presented by climate change. When they are required to take climate concerns into consideration, they may not see the potential positive 'business case' for doing so. Supporting proactive inclusion appears dependent on facilitating the development of such 'business cases' and sharing the needed information and knowledge to support concrete action.

Transversal climate units could support operational teams in gathering the necessary information and preparing the required empirical evidence to strengthen climate components. This information may include macroeconomic modeling to demonstrate the positive long-term impacts of addressing climate-related concerns, as well as the identification of shorter-term actions and the conditions of financial viability of projects and actors linking climate and development.

This could be used to support initial negotiation with governments for the elaboration of the country strategies, as well as during yearly country programming exercises. Working closely with in-country and regional teams is key as they are on the frontline of negotiations with governments to transform the annual envelope into a pipeline of projects and actions. This could lead to the strategic identification of technical cooperation and support contacts, policy based loans and investment loans, and the prioritization of projects. DFIs could further compliment project finance through capacity and policy support to foster the emergence of a domestic policy and regulatory framework that would support and prioritize the development and financing of these projects by local economic actors.

Can the unit support the capacity of country / project teams in technical assessment, project identification and pilots?

Supporting the daily needs of country and sectoral teams is important to supporting the climate mainstreaming. Furthermore, providing this assistance helps to strike the balance between oversight and support. This support can occur through both formal and informal channels, to create forums for and foster exchange.

The need to formalize collaboration between the transversal climate unit and operational teams is often seen as a priority. This could occur through for instance be institutionalized through bi-monthly meetings of division chiefs to set up collaboration priorities and to define short term and medium term outcomes additionally to those set up at the level of department managers. Supporting the creation of other informal and formal dialogue channels between teams and ensure they are systematic is also important.

Different forms of staffing and rotation could be used to facilitate the circulation and appropriation of expertise and information across a DFI exist. First, the idea of facilitating the rotation of transversal climate unit staff could be explored. This exists at times for other specialist teams within a DFI, but may not necessarily be applied in the case of climate. Second, the possibility of having climate change sectoral specialists embedded in sectoral and country divisions is used for different sectors. This would need to be accompanied by a clear mandate to consult this embedded expert and collaborative approach would need to be established by division chiefs. Third, another complimentary possibility is to have sector-focused contact points within transversal climate unit who could assist sectoral and country teams identify the most pertinent internal and external expertise and resources.

Different knowledge products could be developed to support internal mainstreaming. Dissemination material could be expanded to include the development of best practice documents to give information of previous successful and less successful experiences and to facilitate appropriation. These documents could be integrated in turn into relevant training programs for DFI staff and in-country teams as well those aiming national counterparts. Second, targeted knowledge products tailored to country needs and contexts could be part of this work and could give country teams elements for them to advance these topics in the agenda. Finally, to support discussions with in-country counterparts during the country-based planning exercises, there is a need of country-specific identification of the risks, potential losses and economic and social impacts of climate change as well as the inherent opportunities of putting in place policies and investing in low carbon infrastructure. The transversal support unit could assist in the development and access to this information and knowledge.

Finally, the transversal support unit could help sector-focused teams identify different means of achieving development objectives in line with climate considerations. As a first step, a catalogue could be produced to document and render accessible the projects of similar nature already conducted within the institution. In this manner, the transversal team could function as an 'information clearing house.' Second, it could capitalize on formal and informal connections to assist sectoral and country teams identify the climate and sustainability-related questions that need to be asked; and in turn assist teams in writing the necessary terms of reference (TORs) and helping to oversee the external expertise process. Third, the transversal unit could foster the joint identification of project types where there is potential of improvement from a low carbon and resiliency perspective from a more in country consideration of climate and transition risks. This could go so far as the creation of a sustainable infrastructure project preparation facility similar to the one the Asian Development Bank launched early 2016 that prioritizes PPP infrastructure projects with regional cooperation, sustainable development, and climate change characteristics.³¹

³¹ <http://www.adb.org/news/asia-pacific-ppp-project-preparation-facility-launches-operations>

Is use of this support and consultation of the unit formalized within the project identification and appraisal process?

Formally integrating the role of the transversal climate unit into the project identification and appraisal process can help ensure that it has the opportunity to provide assistance and support in the assessment and structuring process. Both ‘oversight’ and ‘support’ roles could be thus fostered. This may include providing technical inputs concerning project options, assistance in deploying and interpreting the climate-related metrics (GHG emission assessment, physical risk assessment, social cost of carbon, etc.).

To ensure that this occurs in practice and systematically, it may be important for the teams to be formally involved or provide support for: country programming; individual project and intervention structuring; steps leading up to the final project approval; ex-post analysis and assessment to create institutionalized memory on the post-construction / implementation performance and climate-related issues.

Limitations on ensuring that this occurs in practice is directly related to the resources available to produce studies or to justify the additional cost of low-carbon, resilient alternatives. This requires the time necessary to dialogue and convince national counterparties and to integrate climate-related issues as early as possible. Thus, it appears essential that involving the transversal climate unit be formally required and planned into the timing of key points for each institution, and the necessary resources are made available to support this as an ex-ante input, rather than only an ex-post consultation.

For example, at the AFD the assessment of climate-related issues is done by the project team in collaboration with the AFD’s transversal climate division. Once a project has passed the initial screening phase, it enters into the detailed appraisal process. Ideally whenever possible, based on the rough carbon footprint measurement conducted during the upstream project identification, a more detailed and refined carbon footprint calculation is conducted during the project appraisal process. The project team is in charge of undertaking the carbon footprint estimation and can receive support from the transversal climate division, who systematically validates the calculations. Second, the final outcome of the AFD’s “climate screening” procedure is a vulnerability ranking whereby each project is classified in three categories, which will be presented for consideration of the Project Identification Committee. This classification would supplement the existing environmental and social ranking and be considered simultaneously. These procedures are implemented by the Environmental and Social Responsibility in Operations and the transversal Climate Division who pilots the technical implementation of this tool. The process seeks not only to facilitate decision-making, but rather to encourage downstream optimization through a selection of the best alternatives in terms of climate risk exposure.

Can the unit initiative and develop projects to demonstrate how alignment of climate and development objectives could be done in practice?

While potentially a lesser role, in some instance it may be of use for the transversal climate team to be able to originate and propose projects to sectoral or country teams. This provides an opportunity for the transversal climate unit to demonstrate the ability of climate-aligned approaches to achieve development objectives. However, in practice, it appears important for this to occur in close collaboration with sectoral and country teams to avoid any confusion with in-country counterparties in terms of responsibilities and accountability. Furthermore, it may require or be enhanced by the capacity of the team to provide additional resources compared to the sectoral or country team existing budget.

4.3.3. Incentives and provision of additional resources

As discussed previously, the mainstreaming of climate and energy concerns may be seen as an additional constraint on achieving the principal objectives of development finance institutions. In addition to demonstrating a clear business case, a means to help ensure that a transversal climate team is seen as a resource beyond being an oversight body. This can be done by providing incentives and additional resources – at least in the short term until teams are acculturated to this new way of conducting activities.

Are earmarked or dedicated financial resources available to cover added cost of improved climate/transition impact (studies, pilot project development, training and capacity building)?

The mainstreaming of climate change across the activities of DFI’s require both time and financial resources be allocated to teams to allow them to address these issues. Investment and additional cost can be linked to:

Ensure that the appropriate expertise is cultivated and retained within the institution: This would require investments to create and maintained the required expertise to provide recognizable added value, particularly within a transversal climate unit to support sectoral and country teams. Furthermore, this may require having either additional recruitment of specialists in the division and/or defining the priorities and tasks of each of the teams inside sectoral divisions.

Support the added studies that may be required: These studies may be conducted by both in-country counterparties and due diligence assessment that the DFI’s teams must conduct. Thus funding must be channeled to support these activities to multiple end-users.

Fund technical capacity cooperation contracts: in many instance, these contracts are key to developing the overarching and country-specific technical knowledge to link development and climate objectives.

Cover any additional costs related to LCCR-aligned technologies and project choices: In many instance, climate-aligned development is more intensive in up-front capital investment. Furthermore, in a number of countries low-carbon, resilient technology may not be readily available.

Making dedicated funding available to cover this additional cost is key to ensure that operational teams do not rule out options purely for price reasons.

Cover increased operational reasons: This could include having the transversal climate teams to participate with country and sectoral teams on relevant in-country identification field missions allowing to co-propose interventions and to get more hands-on experience and understanding of the loan creation process. Funding could also be used as a direct incentive for sectoral and country teams and counterparties to actively include climate related concerns in projects. This could be linked to opportunities to expand credit availability or improve funding conditions for countries that have demonstrated increased ambition in their NDCs and that are increasingly integrating climate consideration in their national and sectoral development plans and policy frameworks.

Identifying the potential sources of this additional funding, and channeling it effectively, can help overcome the barriers to mainstreaming. While the funding of each DFI varies, a number of different sources of additional funding can be identified, such as: 1) internal budgets if available; 2) linking in funding sources from external donors to support part of the added cost of activities, such as technical cooperation contracts as seen in the case of the EBRD; 3) DFIs can also blend sources of international climate finance with own and private sources. For example, the Climate Division of the IDB Group has actively combined international resources in the Climate Investment Funds – and more recently the Green Climate Fund – to leverage additional resources for climate-related projects.

Can the unit channel or link the concessional financing with transition- or climate-related impact?

In some instances, a transversal unit may also need the capacity to grant additional concessional financing (terms of financing) using the DFI's own resources – or external funding if available. Granting access to concessional finance based on climate-related criteria can play a key role in supporting priority areas, reducing investments to barriers and combing financing with technical support and expertise.

Channeling concessional financing does not necessarily have to have a high added cost for the DFI. DFIs may be able to use their relatively high credit rating to borrow on international markets at rates lower than those available in borrowing countries. Using different instruments such as credit lines, the DFI could facilitate access to a lower interest rate or more advantageous terms of financing with little to no added direct cost beyond administrative aspects. Secondly, DFIs are key channels for international sources of climate finance. External funds, such as the Climate Investment Funds, and more recently the Green Climate Fund, are the largest source of external concessional climate finance for the six MDBs (CPI 2016). For example, the climate unit at the IDB has been active in channeling these type of external sources of concessional finance to projects across the institution.

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