

Mainstreaming Low-Carbon Climate-Resilient growth pathways into Development Finance Institutions' activities

A research program on the standards, tools and metrics to support transition to the low-carbon climate-resilient development models¹



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Lessons from the use of climate-related decision-making standards and tools by DFIs to facilitate the transition to a low-carbon, climate-resilient future

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Abstract

The integration or 'mainstreaming' of climate change into development finance decisions poses a broad number of operational challenges. Drawing from the current practice of Development Finance Institutions (DFIs), this paper first identifies three families of tools and metrics used by DFIs to integrate both mitigation and adaptation objectives into investment decision making. Based on this analysis, it then establishes a framework for integrating carbon standards and tools into the upstream strategic and downstream assessment stages of investment decision making. It principally considers the integration into the assessment of direct project finance and investment, but also looks at budget support, programmatic and indirect interventions. Finally, the paper identifies the next steps to build on existing tools and indicators that currently focus on climate finance tracking to those that foster the alignment of long-term development with the 2°C climate objective. This alignment implies moving from 'static' assessment tools - that identify whether or not emissions are reduced or resiliency is increased by an action – to a 'dynamic' process within which the 'transition impact' is assessed.

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Disclaimer

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Table of contents

EXECUTIVE SUMMARY	4
1. LEARNING FROM THE CURRENT PRACTICE OF DFIS	10
1.1 A stylized framework for mainstreaming of climate and LCCR issues into investment decision-making	10
1.2 Three families of approaches to mainstreaming climate-related information	12
1.3 Qualitative approaches	13
1.4 Quantitative approaches	15
1.5 Exposure approaches	17
2 FRAMEWORK FOR CLIMATE MAINSTREAMING IN PROJECT-SPECIFIC DECISION-MAKING	18
2.1 Upstream Use of Approaches: Targets, Tracking, and Project Screening	19
2.1.1 Integration into the strategic policy frameworks through priorities, targets and tracking	20
2.1.2 Screening: Eligibility and Knock-out criteria	22
2.2 Downstream or Project-Level Assessment	23
2.2.1 Options assessment and technical analysis process	23
2.2.2 Economic and Financial Assessment	24
2.3 Framework for Climate Mainstreaming in Non Project-Specific Decision-making	27
2.3.1 Defining Non-Project Specific affectation of financing	27
2.3.2 Evaluating Coherence with the Climate Change Objectives and a LCCR Transition	28
2.3.3 Importance of Engagement	29
3 ADAPTING METRICS AND ASSESSMENT TOOLS TO MEASURE ALIGNMENT WITH A LCCR DEVELOPMENT MODEL	29
3.1 Lessons from Current Upstream Practice	30
3.2 Lessons from Downstream Assessment	31
3.3 Developing nationally-appropriate LCCR scenarios as a basis for LCCR Transition Assessment	31
4 CONCLUSIONS	32
BIBLIOGRAPHY	36

Executive summary

Development Finance Institutions (DFIs), such as Multilateral and Bilateral Development Banks, have increasingly begun ‘mainstreaming’ climate change into their policies and analysis of individual projects. They have been active over the past decade in setting objectives and creating standards and tools to integrate climate into their operational procedures through guidelines, metrics, indicators, screening criteria, etc. to allow them to track progress, assess investments and report on climate-related targets.

Tracking the portion of financing dedicated to low-carbon is a useful tool to introduce climate transversally through the monitoring of the allocation of resources. However, if the information is not integrated systematically into project screening, appraisal and selection, impact on improving the alignment of all of the institutions activities – and a recipient country’s economy - with a low-carbon development model may be limited. The mainstreaming of the transition to a low-carbon climate-resilient (LCCR) development model across economic activities and investment decisions implies that it becomes a prism through which all investment and finance activities – as well as development plans, country and regional strategies, and institutional policies – must be viewed.⁵

Three families of tools that can be used by Development finance institutions to achieve mainstreaming at the upstream and downstream stages of decision making

A review of the integration of climate change into the operational activities of DFIs and other finance-sector actors has identified three broad families of tools: qualitative; quantitative; and exposure-based approaches applied by DFIs to mainstream climate change into their activities.

Investment decision making can be divided into two stages: the “upstream” policy or strategy level and a “downstream” or “project / intervention” analysis.⁶ Development finance institutions are combining different types of tools to mainstreaming climate change and the transition to a low-carbon climate-resilient development model into their project-based decision-making practices.⁷ Table 1 presents the integration of climate standards and tools into the different stages in the decision-making process and the principal objectives of each stage.

⁵ As out lined in Paper 1 of this series, the term ‘LCCR’ development model refers to one that simultaneously tackle local development priorities and needs for resilient, low carbon growth.

⁶ For simplification, the authors use the term project, however it is recognized that the institutions discussed here intervene through a number of different means beyond support for individual projects (budget loans, financial intermediation, investments in specific climate funds, etc).

⁷ In addition to direct project finance, Development Finance Institutions also provide financial support for Development Policy Operations (including budgetary support), credit lines and other 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 and discussed in less detail in this report.

Table 1 : Tools, decisions 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. x% 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

Upstream Use of Approaches: Targets, Tracking, and Project Screening

The mainstreaming of climate-change at the ‘Policy Level’ allows institutions to think systemically about choices, priorities and orientations in line with long-term objectives. For instance, to ensure that their operations in the energy sector are in line with a transition to a low-carbon economy, the ‘Policy Level’ could prioritize the deployment of renewable energy technologies as well as – when pertinent – support infrastructure (such as efficient gas power plants) to fulfil any network needs due to production variability. At this level, both quantitative and qualitative tools may be used to classify and produce rough impact estimates that: i) allow an understanding of the order of magnitude of the impacts, ii)

screen and prioritize technological options and sectors, iii) are compared against thresholds for maximum emissions or other relevant indicators.

This policy level also presents an opportunity to identify and prioritize projects where the involvement of the DFI could lead to significant emission-reductions. The targets, criteria and eligibility screening tools are linked with the broader mandates and international priorities of the DFI itself, as well as the co-constructed regional or country intervention plan linked to the national development priorities.

Among DFIs, climate-related information has been introduced in upstream decision-making through portfolio-wide targets, climate finance tracking and eligibility screening tools based on investment policy strategies laying out priority areas of intervention. Estimates suggest that 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).

Table 2: Three Families of Climate 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)	Exposure of projects and or activities to direct and indirect: Physical impacts of climate change; Impacts of climate policy and regulation regulatory impacts (energy-related costs, regulations standards, etc.); Market behavior evolutions
Project or object-focused analysis	Screening and classification of individual project based on technical profiles and local context.	Assessment of total and avoided impact of project typically compared to a baseline or sector average.	Assessment of exposure of individual project or activity.
Company, asset issuer or non-object focused	Assessment of objectives, company, or asset issuer (eg. stocks and bonds) based on qualitative characteristics (eg. ESG checklists, sectors of intervention)	Assessment of: <ul style="list-style-type: none"> • GHG footprint of company or pro-rata footprint of asset held • Company resource use compared to benchmark 	Assessment of: <ul style="list-style-type: none"> • Exposure of company, asset issuer, etc.

Source: Authors

Downstream or Project-Level Assessment: technical, welfare, financial and risk assessment of project and program options

The project-level assessment typically has two objectives. Firstly, it can be used to screen-out projects that made it through the eligibility screening process, but after further analysis have been considered to be too disconnected the institution's objectives. Secondly, and most often, the focus is on the optimization and improvement of projects in line with the DFIs' objectives and country intervention framework. This appears 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. Specific decisions concerning technologies, materials, transport network characteristics and configurations, etc., can influence a project's emissions. Use of criteria based on emission thresholds, best-available-technologies, etc., can contribute to mitigation and adaptation objectives.

The analysis of options and technical analysis focuses on the different project alternatives (technologies, processes, technical specifications, etc.). DFIs use the environmental and social studies and screening undertaken during the technical analysis to assess the impact on the local environment and society. These studies can be used to link co-benefits from low-carbon, climate-resilient development with other environmental issues and other social issues (local air pollution, water quality, etc.). The quantification of greenhouse gas emissions can be part of this process. This quantified data can focus either on total or avoided emissions.

The data produced in the technical analysis is often used as part of the economic and financial assessment of project options. It is important to differentiate between these two types of assessments. The economic analysis 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. 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 cost-efficiency of options in terms of welfare and assist in the optimization of the technical characteristics.

The financial analysis is based on a discounted cash-flow approach considering 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. While relatively rare in practice today, 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 'carbon risk'. An assessment using information estimating how physical impacts as well as carbon risks could affect a project's profitability can assist in selecting alternatives that minimize these risks. The inclusion of this 'carbon risk' in financial analysis can also assist in the selection between competing alternatives, allowing the comparison of the impacts of different project scenarios as well as the potential financial returns.

Adapting metrics and assessment tools to measure alignment with a LCCR development model

DFIs have taken steps to design, implement and link upstream climate criteria and objectives with downstream screening and assessment tools. 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 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. This will have implications for how these issues are mainstreamed by development finance institutions at both the upstream and downstream levels.

Assessing current 'upstream' climate mainstreaming practice suggests that 'climate finance reporting' and a number of the internal reporting procedures currently conducted by institutions may not be sufficient to assess the long-term impact of the resources allocated. Ensuring that the portfolio-wide targets of intuitions prioritize low-carbon, climate-resilient projects depends on the structure of the target and the definitions of what is included. Thus, thinking in terms of 'transition-coherent' and 'transition incoherent' rather than classifying investments as 'climate specific' and 'climate related' appears necessary. Current classification, quantification methodologies and reporting of climate finance amounts may not include needed 'qualitative' information on the coherence and impact of the contribution to an energy transition necessary for institutions to better-align their activities. 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 appears important to achieve the necessary level of ambition.

An assessment of downstream practice indicates that multiple methods are currently used to calculate GHG emissions and 'optimize' projects may lead to reductions in the projects GHG emissions or improvements in resiliency. However, this does not directly assess how the project can be adapted to be coherent with the 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 concerning GHG mitigation and resiliency in light of national appropriate decarbonization or resiliency pathways. Thus, criteria and baselines will need to be updated as countries develop, markets and technologies evolve, and the recipient country LCCR pathways are clarified. Using this information, DFIs could identify project-specific choices (technologies, processes, etc.) most coherent with long-term transition objectives.

Next steps

This paper has identified potentially effective steps forward to mainstream a low-carbon, climate-resilient development model into the operations of financial institutions. In practical terms, aligning development projects with the LCCR transition implies moving from 'static' assessment tools - that identify whether or not emissions are reduced or resiliency is increased by an action – to a 'dynamic' process within which the 'transition potential' or 'transition impact' is assessed. Nevertheless, focusing only on the direct impacts of projects on GHG emissions and resiliency – without further information on how to contextualize this information in terms of the LCCR pathway or 'baseline' of the recipient country – may have only limited added value for decision-making.

Thus, a challenge resides in developing and forecasting different pathways that a given country could follow to transition to a LCCR development model to achieve both long-term climate and development objectives. Achieving 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.

Fostering the decarbonization of sectors through the deployment of new technical and financial solutions as well as deep behavioral changes must occur within a broader national and international vision for LCCR economic and social development.

Table 3: 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. x% 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.
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1. Learning from the current practice of DFIs

Public financial institutions, including Development Finance Institutions (DFIs), such as Multilateral and Bilateral Development Banks, have increasingly begun the process of ‘mainstreaming’ climate change into their policies and analysis of individual projects. They have been active over the past decade in setting objectives and creating a broad range of standards and tools to integrate climate into their operational procedures.⁸ Many DFIs have come together through various channels to work collaboratively on this topic. These concerted efforts address both definitions of what ‘green’ or ‘low-carbon, climate-resilient’ investment is, as well as the harmonization of impact assessment methodologies.

In coordination and independently, DFIs have developed procedures, guidelines, metrics, indicators, screening criteria, etc. to allow them to track progress and report on their climate-related targets. However, to date no comprehensive analysis has examined how these climate-related tools, instruments and approaches are increasingly included in the investment decision-making process – nor attempted to draw lessons in terms of how they can be adapted to support the transition to a low-carbon climate-resilient future. Tracking the portion of financing dedicated to low-carbon or transition-oriented projects is a useful tool to introduce climate as an issue transversally through the monitoring of the allocation of resources.

However, if the information is not integrated into broader-portfolio management project by project, impact on improving the alignment of all of the institutions’ activities with a low-carbon development model may be limited. The mainstreaming of the transition to a low-carbon climate-resilient (LCCR) development model across economic activities and investment decisions implies that it becomes a prism through which all investment and finance activities – as well as development plans, country and regional strategies, and institutional policies – must be viewed.⁹

Building on the concepts introduced in paper 1 of this series,¹⁰ this paper presents the issues surrounding the mainstreaming of climate-related information into the decision-making process. It then presents a typology for classifying and understanding the potential and limits around the different types of information standards and tools developed to date. It finishes by drawing a number of lessons for aligning this mainstreaming with a the transition to a low-carbon, climate-resilient development model.

1.1 A stylized framework for mainstreaming of climate and LCCR issues into investment decision-making

For the purpose of this section, investment decision making can be divided into two parts: the “upstream” policy or strategy level and a “downstream” or “project / intervention” analysis.¹¹ The

⁸ See (RICARDO-AEA 2013) for a study commissioned by the European Commission DG Climate Action which maps and describes in details the instruments developed by a broad range of institutions.

⁹ As developed in paper 1 of this series, the term ‘LCCR’ development model refers to one that simultaneously tackles local development priorities and needs for resilient, low carbon growth.

¹⁰ Paper 1 of this series discusses the role of Development Finance Institutions in aligning long-term climate and development objectives: *Climate and development finance institutions: linking climate finance, development finance and the transition to low-carbon, climate-resilient economic model*.

¹¹ For simplification, the authors use the term project, however it is recognized that the institutions discussed here intervene through a number of different means beyond support for individual projects (budget loans, financial intermediation, investments in specific climate funds, etc).

differences between project investment and recipient policy or program support will be explored later in the section.

- **Upstream 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). Within this process, both qualitative and quantitative definitions are often established to set the investment framework within which the projects are screened to identify those that are eligible for a detailed appraisal and the final financing offered.
- **Downstream Project Level:** Using the criteria established at the Policy Level, potential projects go through initial – and if selected – detailed analysis. The project level can be disaggregated into a number of different steps depending on the institution. Nevertheless, this process typically includes: economic, social and environmental impacts 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.

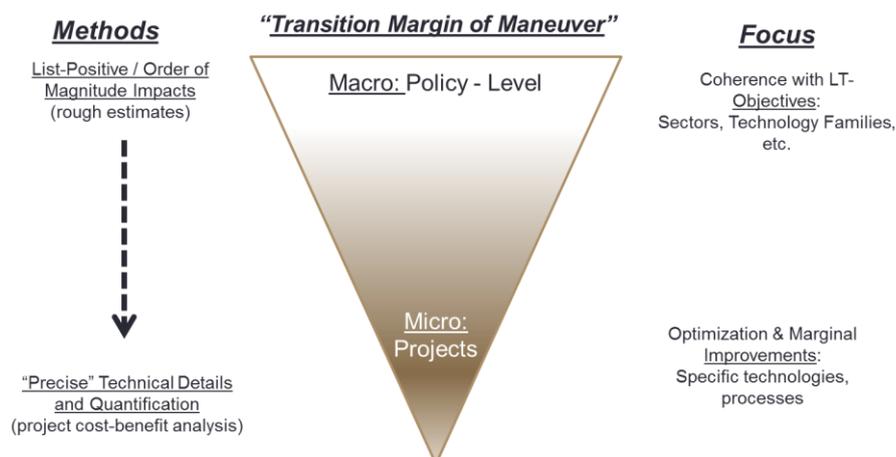
Dividing investment into these two broad areas allows a clearer understanding of how the investment framework set at the upstream policy level influences both the projects that are eventually analyzed at the downstream level as well as how this analysis occurs. The timing of the integration of climate change into the decision-making process can affect the capacity of the institution to make substantive or systemic changes (Cochran 2012; RICARDO-AEA 2013).

As illustrated in Figure 1, the mainstreaming of climate-change at the 'Policy Level' allows institutions to think systemically about choices, priorities and orientations in line with long-term objectives. For instance, to ensure that their operations in the energy sector are in line with a transition to a low-carbon economy, the Policy Level could prioritize the deployment of renewable energy technologies as well as – if necessary – supporting infrastructure such as low-emission gas power plants to fulfil any network needs due to production variability. At this level, both quantitative and qualitative tools may be used to classify and produce rough impact estimates that: i) allow an understanding of the order of magnitude of the impacts, ii) screen and prioritize technological options and sectors, iii) are compared against thresholds for maximum emissions or other relevant indicators.

Second, integrating climate information and standards at the project level can facilitate the 'climate' or 'transition' optimization on a case by case improvement. This appears 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. 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 objectives. However, in many instances when a project is sufficiently developed to be proposed for financing to DFIs and other large-scale financing institutions, it may be too late in the process to influence the systemic choices that could have much larger direct emission reductions as well as ability to support a low-carbon development pathway. In general, as the project becomes more concrete, there are fewer opportunities to reduce emissions beyond "marginal" optimization linked to project design and deployment.

As indicated above, the methods and instruments used to integrate climate into decision making may increase in detail and complexity as the project appraisal moves from a macro to a micro level of precision. The application of list-positive screening or rough order-of-magnitude estimates requires different 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.

Figure 1: Decision-Making Process and the Impact of Climate-Related information



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

1.2 Three families of approaches to mainstreaming climate-related information

This section presents a typology of three “families” of metrics and indicators that are currently used to integrate these issues. It draws on the experience of Development Finance Institutions - including Multilateral and Bilateral Development Banks – in their efforts to “mainstream” climate considerations into their broader investment policies and analysis of individual projects. They have been active over the past decade in setting objectives and creating a broad range of standards and tools (procedures, guidelines, metrics, indicators, screening criteria, etc.) to “mainstream” climate into their operational procedures.¹²

A review of the integration of climate change into the operational activities of DFIs and other finance-sector actors has identified three broad families of tools: qualitative; quantitative; and exposure-based approaches.¹³ The inclusion of these tools into the decision-making process pursues the following objectives, linked to measuring and limiting the impact of projects on climate-change and the local environment:

- Annual tracking of climate finance contributions for external reporting purposes;
- Contribution to and alignment with short- and long-term mitigation and adaptation objectives (and, if applicable, regulations and reporting requirements);
- Understanding exposure of assets to the physical risks posed by climate change;
- Understanding the exposure of assets to the impacts of climate-related policy (such as energy pricing, evolutions in regulation, emergence of new standards, etc.)

As presented in Table 4 these approaches can be used in different ways, to assess both individual investments as well as to characterize the broader portfolio of institutions. Across all approaches, a certain number of methodological and definitional issues need to be addressed to produce the data

¹² See (RICARDO-AEA 2013) for a study commissioned by the DG Climate Action of the European Commission which maps and describes in detail the instruments applied by a broad range of institutions.

¹³ While the above section has focused principally on mitigation, the different approaches can also be used in assessing the resiliency of projects to future climate change. Positive-list approaches can include classification of projects that increase resiliency. Volumetric approaches can quantify the reduction in vulnerability (persons / assets at risk, etc.). Finally, exposure approaches can calculate the impact of changes in the climate on project operations and returns on investment.

needed for analysis. Secondly, baseline scenarios, thresholds and other criteria are needed to 'contextualize' the descriptive information to provide useful and meaningful input for investment decision making. Each approach requires different data inputs, and definitions or methodologies to aid in gathering and processing the descriptive information on each project, company or asset being assessed. As seen in the table, these methods can be applied either to projects or activities that have a clearly defined outputs or "objects" (construction or renovation of infrastructure, other fixed capital investments) with describable and quantifiable impacts of technologies, industrial processes, etc. These metrics are also increasingly applied to investment decisions in companies, issuers of stocks and bonds as well as policy support programs. In these cases where an 'object' or measureable outcome is less easily described or assessed, different methods looking at the institutional and operational information concerning the entity or entities financed is assessed as done in "traditional" ESG assessment approaches. The section below focuses principally on the former "project" or "object-focused" metrics and tools. The latter is addressed briefly at the end of this section.

1.3 Qualitative approaches

This approach consists of classifying projects and activities using qualitative information and comparing this information to guidelines and criteria to classify them as contributing to, being neutral, or counter-productive to objectives. This approach can be applied in multiple ways based on project classification of sectors, technologies, processes, etc. At the portfolio-level, a list-positive approach allows institutions to define and track how their activities support specific project types, often expressed in percentage of commitments, signatures, total financial flows, or similar measures.

To function properly, qualitative approaches require definitions of what is considered low-carbon or climate-resilient. This is typically laid out in an institution's Investment Policy or strategic plan (See Box 2). This set of definitions, whether structured around economic sectors, technological families or sub-families, core-businesses of companies, etc., is key in linking the DFI's long-term objectives with the operational standards through which projects are selected for further appraisal.

Although DFIs generally have their own specific definition of what they count as climate finance, harmonization among donors is increasing. A group of MDBs¹⁴ 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"*¹⁵. A "positive-list" of activities contributing to greenhouse gas mitigation or adaptation to climate change was agreed on to constitute minimum common standards for international reporting purposes. These 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 IDFC¹⁶ 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.¹⁷ In March 31st 2015 both networks announced that they agreed to work jointly to establish Common Principles for Climate Change Adaptation and Mitigation Finance Tracking¹⁸.

¹⁴ 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.

¹⁵ 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.

¹⁶ 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)

¹⁷ For further information on the positive-list of activities considered as climate or « green » finance, see [IDFC website](#).

¹⁸ For more information : <http://www.worldbank.org/en/news/feature/2015/04/03/common-principles-for-tracking-climate-finance>

Table 4: 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	<ul style="list-style-type: none"> 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
Baseline scenarios, thresholds and criteria for contextualization and comparison	<ul style="list-style-type: none"> Guidelines and qualitative criteria for screening and exclusion for sectors and technologies Thresholds for exclusion based on company ESG criteria 	Baseline scenarios and thresholds for acceptable levels of: <ul style="list-style-type: none"> Energy use GHG emissions Other forms of resources use and efficiency 	Thresholds for acceptable exposure levels from projects to: <ul style="list-style-type: none"> Physical risks Economic value at risk
Types of Application:			
Project or object-focused analysis	Screening and classification of individual project based on technical profiles and local context.	Assessment of total and avoided impact of project typically compared to a baseline or sector average.	Assessment of exposure of individual project or activity.
Company, asset issuer or non-object focused	Assessment of objectives, company, or asset issuer (eg. stocks and bonds) based on qualitative characteristics (eg. ESG checklists, sectors of intervention)	Assessment of: <ul style="list-style-type: none"> GHG footprint of company or pro-rata footprint of asset held Company resource use compared to benchmark 	Assessment of: <ul style="list-style-type: none"> Exposure of company, asset issuer, etc.

Comparatively, this approach can require less data than other approaches given that only basic project information is needed and compared to the DFI's policy on approved sectors or technologies. However, application is not always straight forward as each project must be considered with its specificities, in the light of the context for which it was designed. For example, some definitions used today may classify all rail projects as contributing to long-term low-carbon objectives. In the case when rail investment is linked to coal mining and transport, more information on the use of the infrastructure is needed to ensure coherence and reduce misclassification. As described in detail below, among the DFIs reviewed here, positive-list approaches are most used in the upstream phase of investment decision-making.

Box 1: Strategic Investment Policies – the cornerstone of climate-coherent decision-making

In an effort to increase the transparency of their actions, Development Finance Institutions generally publish their global investment policy. This document sets the key elements of their long-term strategy, as defined according to their mandate. It can be declined either into shorter term strategic intervention plans or into regional or sector-based approaches.

Depending on the institution, the level of detail of these strategic intervention frameworks can vary. In many instances, they will include a definition of what the Institution classifies as “climate finance”, or in other terms, of what the institution considers as a “climate co-benefit”. In rarer cases, a brief outline will be proposed to describe the process and issues related to the energy transition in developing countries. The institution may communicate and justify specific actions it plans to undertake in the context of the climate challenge. Strategic investment documents may in particular be used to elaborate on decisions to finance certain technologies or sectors which might be subject to debate among the international and donor communities.

1.4 Quantitative approaches

These approaches consist of quantifying the volume of greenhouse gases, energy use, etc. and the resulting impact of the projects and activities in relation climate and LCCR objectives. This quantified data is then compared in most cases to a benchmark, baseline or threshold to contextualize the information in terms of acceptable levels and long-term objectives. For example, the greenhouse gas emissions of a project are quantified and compared with a counterfactual scenario to calculate the emissions reduced. Institutions can then use this information to assess the impact of and, if sufficient information is available, the efficiency¹⁹ of their interventions. Data on individual projects can be aggregated at the portfolio or sub-portfolio level. Thus, quantifying the impact in terms of GHG emissions or avoided emissions allows institutions to i) limit the impact of their “non-climate” related activities and ii) measure the impact of their “climate” investments. Further information may be needed, however, to identify if the resulting impact on emissions is coherent with long-term LCCR objectives (see Section 3).

Quantitative or “volumetric” approaches require defined methodologies to quantify the emissions, energy use or other relevant variable to be assessed. Methodologies define what is included in the accounting boundaries (principally structured around Scope 1, Scope 2 and Scope 3 emissions), the emission factors or other proxies to be used in estimates, and the methods for estimating impacts using different types of data (measured, modeled, downscaled, etc.). A number of DFIs are working

¹⁹ Efficiency of intervention is assessed differently by IFIs. In many instances, IFIs focus on the ratio efficiency of emissions reduced and resources used. However, this may give very little indication in terms of progress or coherence of an action with long-term LCCR objectives.

together to harmonize approaches through the *IFI Framework for a Harmonized Approach to Greenhouse Gas Accounting* (see Box 2).

This approach requires, however, typically more data than qualitative approaches. Information is needed on individual projects as well as the double constraint of elaborating impact estimates and as counterfactual scenarios. GHG and other impact-based volumetric measures are used to calculate the “avoided” impacts and, potentially, the efficiency of their actions (see Box 2). As such, a baseline scenario is established to estimate what are the most likely impacts of the project. DFIs have taken different approaches, at times using a baseline “without project” or in other instances estimating what the most likely alternative would have been.

The DFIs reviewed here use volumetric methods principally in the downstream analysis of projects that have passed initial screening. Nevertheless, a rough estimation of GHG emissions from projects at the upstream screening stage is often used. For example, AFD has established emission ceilings for projects that are eligible to receive financing in different geographic areas. In the case of the EIB, an Emissions Performance Standard (EPS) of 550gCO₂/kWh was set for coal-fired power plants above which projects are not eligible.

In downstream phases, more-precise quantified data is often calculated based on the rough calculations used in initial project screening. This data is used by a number of institutions as part of consolidated reporting procedures to estimate the carbon footprint of activities – either independently or as part of institutional objectives. Quantified data can also be incorporated into the economic and financial analysis of the projects. Because it serves a different purpose, the methodology applied to quantify GHG emissions may differ from the calculations used for reporting on the carbon footprint of activities²⁰. The choice of a reference scenario – or counterfactual scenario – to calculate avoided-emissions or other elements necessary for cost-benefit or socio-economic analysis is particularly challenging as it plays a decisive role in the assessment of the co-benefits of a project, and, by extension, in the investment decision (see Box 2).

Box 2: GHG Emissions quantification and DFIs

The use of carbon footprint estimation tools is gradually spreading across the major DFIs. The quantifying of greenhouse gas emissions from projects is typically seen as the initial step in producing the volumetric data necessary to understand the impact of projects, assess cost efficiency and produce the data needed for both downstream, project-level assessment, as well as aggregation at the portfolio level. The contextualization of calculated emission levels is a key part of producing information useful for decision-making; this includes the comparison to a baseline scenario with no project or with the mostly likely alternative.

Economic and government actors – including DFIs – have independently developed approaches and methodologies to quantify greenhouse gas emissions. Much heterogeneity has historically existed between methods and key concepts, including the inclusion of different emission scopes, acceptable data sources, frequency, organizational/project perimeters, emission factors, etc. These differences, while not necessarily directly analyzed from the perspective of DFIs, have been addressed extensively in existing literature and thus are not treated in detail here (Cochran 2010; Cochran and Morel 2013; Bellassen et al. 2015; WRI/WBCSD 2004).

²⁰ As we will see in section 3 of this report, AFD applies different reference scenarios for its GHG reporting and its economic and financial analysis.

To address differences in approach, nine members of the Working Group of the International Financial Institutions agreed to a harmonized framework for GHG accounting.²¹ This included a principle on policy commitment, methodology, and reporting. The IFI Working Group has been active in discussing the overall potential and specific technical aspects of moving toward a joint IFI methodology for GHG accounting. The sectors identified and agreed on as being priorities for an upcoming harmonization of project-level methodology are the energy and transport sectors. Based on experience, the goal of the Working Group has been evolving towards reducing the variance in GHG reporting by focusing on the development of joint guidance, while providing flexibility linked to data quality (CIF 2014).

Selecting a baseline scenario is challenging, especially when it comes to assessing development projects. Some transformational projects may be essential for a country's economic development, yet emissive. The counterfactual scenario chosen to assess a project may be either a "without project" scenario or an "alternative scenario" that reflects the most likely alternative project that would achieve the same outcomes or level of service. By opting for an "alternative project" scenario, several methodological choices must be made. The potential barriers to implementation and the direct and indirect benefits of the alternative must be analyzed in order to estimate the likelihood of each scenario (WRI/WBCSD 2003). Alternative scenarios are therefore extremely data intensive and often carry a high level of uncertainty in calculations. To date, no agreement has been found among the donors' community on which methodology is more suitable to analyze the impact of development projects. When it comes to impact assessment, the conservativeness of "without project" scenarios is often preferred to the approximations related to alternative scenarios.

Quantified impacts are often the main standards used to set and measure the accountability of DFIs with regards to resource optimization. It is therefore critical to consider aggregated portfolio impact estimations in an effort to analyze their overall contribution to the global energy transition. In such regard, the Bretton Wood Project recently pointed out that as of 2013, Multilateral Development Banks had USD 20 billion of active investments in fossil fuel projects, corresponding to a carbon potential of the equivalent of 29.3GtCO₂ (BWP 2014). The report further showed that contrary to the reporting and communication around quantifiable impacts of low-carbon projects, MDBs actually favored fossil fuel projects over renewable energy. This report suggests that accounting for 'brown' investments is therefore crucial if the impact of DFIs is to be realistically and objectively estimated.

1.5 Exposure approaches

This approach consists of estimating the exposure of an institution's portfolio or individual projects to climate-related physical impacts (long-term changes in the water cycle, catastrophic events) as well as changes in market and regulatory contexts related to policies aligned with a low-carbon climate resilient. Risks linked to changes in climate policy - or 'climate risks' - can take the form of increased costs or changes in the business environment due to carbon pricing, regulations and standards, as well as subsequent changes in consumer and market behavior and product and service demand.²² These measures can take different forms and often require the qualitative and quantitative data needed for the two approaches discussed previously.

To date, exposure-based approaches have principally focused on the physical impacts of climate change. Thus, significant efforts are currently being made to assess the vulnerability and the resiliency

²¹ Agence Française de Développement (AFD), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Inter-American Development Bank (IDB), the International Finance Corporation (IFC), KfW Development Bank, the Nordic Environment Finance Corporation (NEFCO), and the World Bank (WB).

²² See (FTF 2015) for an analysis of what these risks entail for institutional investors.

of projects and other targets of intervention to climate impacts. This process typically is data-intensive as it requires highly contextualized details concerning the projects' surrounding environment, the impact scenarios and the detailed technical characteristics of the projects.

The relatively new 'carbon-risk' approach involves assessing the exposure of the project to changes in the market and regulatory environment due to climate policies. Today, a number of institutions use a theoretical 'shadow' price of carbon in economic and financial analysis.²³ However, more widespread estimates of the impact of changes in the regulatory environment (performance standards, technologies, impacts on consumer demand for products and services) are not systematically assessed. As in the case of physical risks, this can also be data-intensive depending on the focus (energy data - consumption, fuel mix, price; technologies and techniques in use - efficiency, externalities; costs to users and consumers, etc.). Scenarios charting potential and probable changes in the policy and regulatory environment may equally be needed, particularly in the case of the transition to an LCCR economic model. Furthermore, these approaches are confronted with the difficulty of integrating highly uncertain information linked to recipient political commitment to long-term climate objectives and the coherence of economic policies in decision making.

2 Framework for Climate Mainstreaming in Project-Specific Decision-making

This section presents a framework for integrating carbon standards and tools into investment decision-making through the different families of tools presented above. It focuses principally on the integration into the assessment of "object-based" investment projects – such as infrastructure and investment in other forms of fixed capital. Examples from current practice are drawn from the descriptive data concerning IFIs and DFIs compiled by Ricardo-AEA in their 2013 report based on the rich review (RICARDO-AEA 2013). Table 5 presents the integration of climate standards and tools into the different steps in the decision-making process and the principal objectives of each step.

The upstream policy and screening process has been separated into the two stages: elaboration of strategic policy frameworks and tracking; and project eligibility screening. Downstream assessment has been divided into two interrelated stages: options assessment and technical analysis; and economic and financial analysis. The final stage in the investment decision-making process – impact assessment, monitoring and evaluation of investment performance after project completion – is not looked at in detail in this study. It nevertheless merits future research given that ex-ante decision-making can be informed by information from ex-post assessment as a track record for project typologies, technologies within different contexts takes shape.

²³ See (CDP 2013) for an analysis of the use of internal carbon prices by economic actors and (Cochran et al. 2014) for the state of practice of public financial institutions in the OECD.

Table 5: 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 on climate related activities (eg. x% 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

2.1 Upstream Use of Approaches: Targets, Tracking, and Project Screening

As described above, upstream decision-making is crucial for introducing objectives and criteria that foster cross-the-portfolio support to low-carbon, climate-resilient projects. It is also an opportunity to identify and prioritize projects where the involvement of the DFI could lead to significant emission-reductions. The targets, criteria and eligibility screening tools are linked with the broader mandates

and international priorities of the DFI itself, as well as the co-constructed regional or country intervention plan linked to the national development priorities.

Among DFIs, climate-related information has been introduced in upstream decision-making through portfolio-wide targets, climate finance tracking and eligibility screening tools, based on investment policy strategies laying out priority areas of intervention. Estimates suggest that 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).

When these guiding policy documents are structured to support low-carbon climate-resilient development and respect long-term transition objectives, DFIs use a number of tools as described below to integrate climate into portfolio-wide targets as well as selectivity criteria for projects and programs eligible for funding.

2.1.1 Integration into the strategic policy frameworks through priorities, targets and tracking

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 ensuring that an institution's activities support the mainstreaming of climate and the LCCR transition. Once 'enshrined' within the frameworks, at the operational level, DFIs can use a number of tools as described below to integrate climate into portfolio-wide targets as well as for applying selectivity criteria to projects and programs eligible for funding. Both quantitative and qualitative tools may be used in this process 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.

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 also included actions on energy efficiency, renewable energy, or analytical work/ technical assistance on climate change.²⁴

Furthermore, targets set at the highest level of the institution are principally used to manage allocation to priority sectors and geographic areas. The integration of climate-related indicators can ensure a minimum portion of activity is dedicated to climate action. However on its own this may not be sufficient to ensure that climate-related considerations are integrated into the assessment of all of the institution's activities. Thus it is important for strategic investment frameworks and project eligibility criteria to take into consideration climate-related issues.

In practice, and as presented in Table 6, a number of DFIs have set climate-related investment targets.

²⁴ http://www.worldbank.org/ida/ida_abcs_climate.html

Table 6: Summary of the main climate and environmental targets set by DFIs

Institution	Target	Sub-targets	Definition/Unit of measurement	Period	Source
ADB	- 40% of Asian Development Fund's operations - 50% for ADB's operations	NA	Supporting "environmental sustainability"	2016	(ADB 2012)
AFD	- 50% of AFD's global portfolio in Foreign Countries	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	(AFD 2011)
EIB	- 25% of annual lending		"Climate Finance"		(EIB 2014)
EBRD	- Reduction of 26 to 32 MtCO ₂ emission / year	NA	CO ₂ emission reductions per year		(EBRD 2012)
IDB	- 25% of annual lending	NA	Climate change, renewable energy and environmental sustainability	2012-2015	(IDB 2011)
IFC	- 20% LT finance - 10% trade finance.	NA	Supporting "climate smart sustainable development"	2015	(IFC 2014)
KfW	- 30% of KfW's investments (domestic and international)	Of which 50% of development finance (KfW Entwicklungs Bank)	"Climate change or environment related"		(Ricardo-AEA 2013)

Source: Authors after Ricardo-AEA 2013

Targets have principally taken the form of the allocation of a percentage of annual commitments or signatures. When targets are set as percentages of total signatures and allocation, this requires the elaboration of lists of eligible project types, technologies and sectors of intervention based on institutional policy and, when compatible and in place, recipient-country climate objectives. These lists allow institutions to classify projects and allow for the consolidation of allocated funding. When targets are set as an absolute portfolio emission level (carbon footprint), or as an emission reduction level, data on the quantification of total or avoided GHG emissions project by project must be centralized to calculate progress. Today the EBRD is one of the only DFIs identified to have set a specific target in terms of reduction of CO₂ emissions on the operations financed in the energy sector. This follows the gradual implementation of its *Sustainable Energy Initiative* since 2006. In some instances, targets are disaggregated by business lines or geographical zones of intervention.

While institutions have been working together to classify and track financial flows contributing to climate-related objectives, the definitions of the perimeter of inclusion can vary greatly. As such, comparability between institutions (and the aggregation of reported numbers) is difficult to establish for the following reasons:

- There can be substantial differences between the definitions of "LCCR," "green," "climate" or "environmental" financing
- The basis of calculation can differ from one institution to another (e.g.: commitments vs signatures or disbursements)

- The time and geography scale is not always clearly defined.

Institutions have also put into place tracking and reporting mechanisms to follow progress to meeting these objectives. As discussed in more depth below, this can range from the classification of projects as “climate” to the quantification of the GHG emissions of projects and investments.

2.1.2 Screening: Eligibility and Knock-out criteria

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.

The criteria used in the screening process can be 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. In practice, most 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.

Climate-related eligibility criteria for project investment often take the form of a qualitative list-positive approach, typically linked to the project classification guidelines used in institution-wide targets. They can be volumetric, using defined thresholds and rough estimations of GHG emissions and related measures to evaluate the eligibility of proposed projects. 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 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 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 plant that would not have an effective Carbon Capture and Storage (CCS) system in place.

At this stage, exposure tools can also be used to screen projects in terms of how they would increase or decrease the institution’s exposure to climate-related physical or policy risks. 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).

2.2 Downstream or Project-Level Assessment

Once a project or program has successfully passed the initial round of screening criteria based on an institution's investment policy priorities, it enters the downstream or project-level assessment. This process is often iterative, with increasingly detailed studies and assessments undertaken as the process continues.

The project-level assessment typically has two objectives. Firstly, it can be used to screen-out projects that made it through the eligibility screening process, but after further analysis have been considered to be too disconnected from the institutions' objectives. Secondly, and most often, the focus is on the optimization and improvement of projects in line with the DFI's objectives and plan for country intervention.

Project-level assessment can be broken into two parts: firstly, the options analysis and technical analysis; and secondly, the economic and financial assessment of alternatives. The options analysis and technical assessment focuses on the different project alternatives (technologies, processes, technical specifications, etc.). Increasingly detailed environmental and risk assessments of the proposed options are then produced. The resulting information is used in economic and financial analyses that look at the overall impact (economic analysis) and feasibility (financial analysis) of the different options.

This process typically results in a set of detailed assessment scores and ranking which prioritizes the technical specifications that the DFI would like to be seen adopted by the project developer. The financial package that the DFI is willing to provide depending on the final structure of the project; and finally the issues (environmental, social, climate-specific) that must be addressed and mitigated before the financing will be granted.

2.2.1 Options assessment and technical analysis process

The options assessment and technical analysis process is composed of a number of 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.

Through the identification and assessment of technical alternatives, opportunities to improve projects in terms of their climate-related impact or contribution to a low-energy transition can be identified. The environmental and social studies and screening undertaken during the technical analysis assess the impact on the local environment and society. These studies can be used to link co-benefits from low-carbon, climate-resilient development with other environmental issues and other social issues (local air pollution, water quality, etc.). In many instances, the quantification of greenhouse gas emissions is an associated part of this process. This quantified data as discussed above can focus either on total or avoided emissions. Quantifying the carbon footprint of financed projects requires the establishment of a baseline or threshold to contextualize the resulting information for a given country's level of development – as well as long-term climate objectives. Both the resulting qualitative and quantitative information can be integrated into the options section process to ensure that projects eligible for financing prioritize technical solutions that are coherent with long-term objectives.

For example, 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). To date, it appears that such carbon performance standards have only been tested on the energy sector, mainly because of the complex structure and lack of uniformity in the energy intensity of other energy intensive sectors (Wartmann et al. 2009). In addition, the implementation of an EPS may not be feasible in certain geographies. With

regards to its Energy Strategy for 2014-2018, EBRD justifies its choice to continue to support coal-fired power in transition countries through applying “Best Available Technique” (BAT) screening methodology given that alternative fuels are not always be available in its countries of operation (EBRD 2013). 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).

Box 3: Accounting for the physical-impact of climate scenarios project assessment

It is widely acknowledged by DFIs that climate change risks can threaten the outcome of an investment by jeopardizing economic growth. In fact three main risks have been identified as being climate change related: i) Direct threats (e.g.: damages from extreme weather to infrastructures built by a project), ii) Indirect threat (e.g.: climate impacts on health impacting a non-health sector project), iii) Underperformance of investments (e.g.: agricultural projects that fail when rainfall decreases) (IDS 2007).

When considering the development benefits of a project through the “climate prism”, the investor may consider the potential impacts of the environment on its projects, or in other terms tries to value the economic loss associated with climate change. The mismatch between adaptation strategies and projected needs, otherwise known as the “potential for regret”, is valued as the opportunity costs associated with decisions that are optimal for a small number of climate scenarios but not necessarily robust over a wider range of possible futures. Decisions that have net benefits over the entire range of climate scenarios are qualified as “no regrets” decisions (Lavell et al. 2012). Climate risk screening and climate proofing methodologies therefore differ from other forms of impact evaluation in that the rationale is based on the success of the project itself and not on its impact on its environment.

Evaluating climate vulnerability is a complex matter as it depends on various factors such as: i) the type of impact that could be faced, ii) the potential magnitude of the risk, iii) the rate and duration of the event(s), and iv) the irreversibility of its effects (Lavell et al. 2012).

Several organizations (such as the CRED International Disaster Database²⁵) provide data on direct, indirect, and collateral impacts for large-scale disasters. The information available deals with the human impact of disasters but also with disaster-related economic damage estimates. Such an input is valuable for decision making as it provides standardized measures of the elements identified above, more specifically of the type of impact that could be faced, or of the frequency and duration of the events. For smaller-scale climate related disasters, the information available is scarcer. The evaluation of their social and economic impacts is therefore more difficult to establish and the risk incorporated in the investment is harder to price.

The initial risk assessment of technical alternatives typically addresses the counterparty, country, technology and physical risks with which projects are confronted. To date, this initial risk-assessment process has focused principally on the physical risks posed to projects and its alternatives by climate change. 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. 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

²⁵ <http://www.emdat.be/>

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 climate screening (urban risk, and agriculture and natural resources). Finally, in 2015 AFD²⁶ 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.

2.2.2 Economic and Financial Assessment

The data produced in the technical analysis is often used as part of the economic and financial assessment of project options. It is important to differentiate between 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 the financial analysis which is based on a discounted cash-flow approach considering costs and revenue streams over a certain period of time. While each process may look at similar issues and use the same data, the overall framework for assessment and results are different. See Box 4 and Box 5 for the difference between the social cost and shadow price of carbon used in the two processes.

The **Economic Assessment** aims to measure the net impacts of the project on economic welfare and, when applicable, 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.

The integration of climate criteria in the economic assessment requires principally a predetermined social cost of carbon (see Box 4) as well as estimated GHG emissions, energy use, or other relevant values into assessment methodology. Furthermore, exposure-based approaches require multiple scenarios concerning physical and climate-policy risks. The use of cost-benefit analysis approaches and an undervaluing of future-impacts for short-term gains has been a strong point of discussion (Cochran 2012; RICARDO-AEA 2013).

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.²⁷ Furthermore, in 2015 the World Bank began accounting for emissions from energy, forestry, and agriculture projects and is currently developing methodologies for water,

²⁶ Other institutions moving forward on establishing risk screening and risk proofing methodologies include the KfW, the EIB, and the EBRD.

²⁷ 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)

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 exposure²⁸.

Box 4: Climate and Cost-Benefit Analysis

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.

Including the “social” cost of carbon in the economic analysis of projects can influence the choice of design and technologies towards low-carbon projects. Although this is a valuable piece of information for decision-makers, several difficulties may arise:

- The emissions stabilization trajectory is a function of global emissions, thus requiring assumptions about the actions of other actors;
- 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);
- Principally due to the discount rate used, the SCC often ends up being a very small piece of the economic analysis, rapidly outweighed in analysis by present day concerns;
- SCCs are generally data intensive and require: i) estimates of the increased cost to use a different approach/ technology or process, and ii) estimates of the potential operational benefits (reduced energy costs, reduced pollution);
- Calculating the cost-effectiveness of this incremental change compared to other technologies and the emissions saved (i.e. the Economic Assessment) may prove challenging.

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. While relatively rare in practice today, 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 ‘carbon risk’ (see above). An assessment using information estimating how physical impacts as well as carbon risks could affect a project’s profitability can assist in selecting alternatives that minimize these risks. 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.

Firstly, 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”²⁹ in calculations when no “market” price signal exists (see Box 5). This process can equally include other carbon-related risks. Other potentially

²⁸ 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.

²⁹ A Shadow Price of Carbon is a value based on the price of carbon necessary to achieve long-term mitigation objectives. Institutions may calculate their own or use the values given by carbon taxes or market-based pricing systems.

material carbon risks include short-term carbon risks as well as asset impairments due to physical and climate policy risks.³⁰

This risk-pricing exercise today does not appear to be widespread among institutions. This may be linked to a lack of methodological approaches, as well as its data intensive nature. Firstly, it requires basic exposure information concerning projects. Furthermore, it may 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.

Box 5: Shadow Price of carbon in the financial analysis: Example from the EIB

The Shadow Price of Carbon (SPC) is not the same thing as the Social Cost of Carbon, which is an estimate of the marginal cost of emitting one ton of carbon on the social welfare. The SPC is also a value based on the estimated cost of carbon, however it is often calculated by estimating the price of carbon necessary to achieve long-term mitigation objectives. Institutions can use the values given by carbon taxes or market-based pricing systems.

To date, the EIB is the only institution identified as having implemented carbon pricing as part of its financial appraisal procedures. The financial analysis that is carried out includes a 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 SPC 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.

2.3 Framework for Climate Mainstreaming in Non Project-Specific Decision-making

In addition to direct project finance, Development Finance Institutions also provide financial support for government programs, credit lines and other 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. To date, no comprehensive analysis is available concerning the approaches used by DFIs to assess the climate-related impact of these activities. The below section nevertheless attempts to identify possible means of pursuing this form of ex-ante assessment to facilitate the mainstreaming of climate change and LCCR issues.

2.3.1 Defining Non-Project Specific affectation of financing

Non-Project Specific affectation of financing can be defined for both public and private recipients. In the case of public recipients, this can include:

- Budget support of public entities DFIs provide budget support (grants, concessional loans, etc.) to public entities to support activities
- Programmatic lending: provide funding for a specific sector-based program of actions

³⁰ Short-term carbon 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 behaviour and requirements. See for more information: (2013)

- Carbon funds, trust funds

DFIs also provide non project-specific financing for private entities, including:

- Credit lines to banking institutions (when oriented only to sectors)
- General financing of companies: Financing through bonds purchase, debt and/or equity investment, guarantees and risk sharing instruments, structured investments (debt funds, venture capital)

2.3.2 Evaluating Coherence with the Climate Change Objectives and a LCCR Transition

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 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.

Qualitative approaches based on list-positive tools may be possible when lending is constrained to a sector or a set of activities, clearly identifying the coherence of the activities with climate objectives - and more broadly the energy transition - is not easily established. List-positive tools can be structured along broad sectoral classifications for interventions, loosely linked to definitions of eligible techniques, processes, technology or other criteria that can be assess in terms of coherence with long-term LCCR objectives. However, without an ‘object’ to evaluate, it may be more difficult to assess in any quantified or exposure-based fashion.

Modified list-positive and quantified approaches based on ESG-reporting checklists merit further exploration whereas the broader strategy or proxy indicators of engagement of the recipient on greenhouse gas mitigation, increased resiliency and the LCCR trajectory in general are assessed to estimate the alignment with long-term objectives. Financial eligibility could be linked to the presence of:

- LCCR coherence of broader policy orientations or existing objectives
- Presence of a developed or implemented climate action plan / INDC contributions (for countries)
- Development of GHG mitigation target / renewable energy target / other EE/efficiency regulatory framework
- Quantified Payment for Performance / Dynamic Eligibility - If funding is multi-year, future eligibility could be made contingent on progress to established mitigation or sector-based objectives deemed coherent with the LCCR development model.

Eligibility is thus linked to the larger strategic framework of the entity rather than to a single project. While not providing a clear assessment, this can provide increased probability that funding will be used in a fashion that supports climate and LCCR-coherent development. See Box 6 for the example of the Global Environment Facility. It may nevertheless be difficult to evaluate the ambition of the climate and energy policy in place to understand if it is coherent with the LCCR pathway for the country.

Box 6: GEF's methodology to allocate resources and maximize global environmental benefits

The Global Environment Facility uses a methodology to score and allocate its resources to countries, based on their ability to successfully implement projects and on their potential for generating substantial global environmental benefits. The System of Transparent Allocation of Resources (STAR) was designed in 2009 to increase predictability of funding and flexibility in programming. Three different indexes are used in practice:

Global benefits index (GBI): One part is related to the emissions of greenhouse gases, excluding land use change. It rewards countries that show a decrease in the amount of emissions of CO₂ relative to GDP or "Carbon Intensity." The other part is related to forest cover, in the absence of an adequate indicator to track GHG budgets from land use change. It rewards countries with a decreasing-over-time-loss of forests; it is equal to one if there is no loss.

Global Performance index (GPI): The GPI is a proxy for performance, considering actual performance from GEF projects, commitment to put in place environmental policy and institutional frameworks, and governance and financial management.

Social Economic Development Index: Based on the country's GDP per capital this index ensures that more financial resources be mainstreamed to Least Developed Countries. However, it does not address the countries' estimated vulnerability to climate change.

Source: (GEF 2010)

2.3.3 Importance of Engagement

Success of these types of intervention – and ensuring their coherence with LCCR development strategies – thus hinges on the capacity of DFIs to engage with recipients. Engagement can allow individual DFIs – and if possible in cooperation with other institutions – a means of working to influence and integrate climate-related issues into national strategies. The EBRD has a long history of policy engagement through the Sustainable Energy Facility, working to align climate- and energy-related regulation with policies financing energy efficiency and renewable generation.

DFIs can also engage with companies – particularly in the case of equity investments– as a way to influence policy and strategic decision making to ensure coherence when sectoral and technological orientations allow with the LCCR transition.

3 Adapting metrics and assessment tools to measure alignment with a LCCR development model

DFIs have taken steps in designing, implementing and linking upstream climate criteria and objectives with downstream strategies, screening and assessment tools. This is a key part of ensuring that the actions of these institutions contribute to climate-change related objectives. Positive-list, volumetric and exposure-based tools and instruments have been integrated at both upstream and downstream stages of investment decision-making. These tools are used to screen for projects and investment opportunities coherent with climate targets and objectives, assess the impact of projects on emissions and resiliency as well as assess the exposure of projects to physical and climate policy-related risks.

One of the principal challenges today is to scale-up the financial flows to the trillions of dollars per year necessary to achieve the 2°C long-term objectives (see Paper 1 for a more detailed discussion). While estimates vary, the 2014 report for the Global Commission on the New Climate Economy suggests that between 2015 and 2030 approximately USD 92 trillion financing is necessary to meet infrastructure and development needs without jeopardizing global emission reduction objectives. 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 89 trillion USD to maintain or strengthen economic growth over the same period (NCE 2014).

Achieving the transition to low-carbon, climate-resilient development pathways will require that not only increasing 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 focusing on the tracking of ‘siloes’ climate-specific investments to mainstreaming, optimizing and aligning 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 (particularly in the case of adaptation), but also work to optimize all development investments and prioritize those coherent with the recipient country’s long-term vision to achieve the transition.

In the first case, the integration of climate change as a transversal subject may be an initial phase where the objective is to assess and measure how an institution contributes through its BAU activities to climate objectives. Tracking the portion of financing dedicated to low-carbon or transition-oriented projects is a useful tool to introduce climate as an issue transversally through the monitoring of the allocation of resources. However, if the second step does not occur and the information is not integrated into broader-portfolio management project by project, 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.

Thus, mainstreaming climate change across all of an institution’s activities may require that the whole portfolio – project by project - be considered through the ‘climate or LCCR transition prism’ whereby each financing operation contributes either directly or indirectly to the recipient country’s climate or energy transition objectives. To date, limited work has been conducted to understand what this paradigm change could imply for decision making metrics.³¹ The below section will focus on what modifications to current approaches may be necessary to provide information that improves the allocation of resources to projects supporting low-carbon, climate-resilient development.

3.1 Lessons from Current Upstream Practice

The proposed paradigm shift suggests that “climate finance reporting” and a number of the internal reporting procedures currently conducted by institutions may not be sufficient to assess the long-term impact of the resources allocated. Ensuring that the institution and portfolio-wide targets prioritize low-carbon, climate-resilient projects thus depends on the structure of the target and the definitions of what is included. Thus, thinking in terms of ‘transition-coherent’ and ‘transition incoherent’ rather than classifying investments as “climate specific” and “climate related” will be necessary.

Current classification, quantification methodologies and reporting of climate finance amounts may not include valuable ‘qualitative’ information on the coherence and impact of the contribution to an energy transition necessary for institutions to better-align their activities. For example, a target based on avoided emissions does not necessarily lead to the exclusion of certain sectors or technologies when interventions nevertheless lead to GHG emission mitigation (i.e. energy efficiency actions on a coal-fired power plant). While currently a key part of climate finance tracking procedures, positive-list

³¹ In run-up to the G7 meetings in June 2015, the German government commissioned the report *Developing criteria to align investments with 2°C compatible pathways*. This report has taken initial steps to review 2°C scenarios and ‘roadmaps’ and to link these global 2°C scenarios and investment criteria, focusing on the energy, buildings and transport sectors (Höhne et al. 2015).

screening tools – unless using appropriately detailed, country/region-specific and stringent guidance – may not be able to sufficiently analyse the ambition of projects.

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. As many institutions are doing, pairing the financial flows with the corresponding reduction in emissions can 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.

3.2 Lessons from Downstream Assessment

As seen above in the discussion of the downstream assessment process, multiple methods are currently used to calculate GHG emissions and ‘optimize’ projects. This optimization of a project (in terms of design, technological choices, impact mitigation, etc.) can today lead to reductions in the projects GHG emissions or improvements in resiliency. However, this does not directly assess how the project can be adapted to be coherent with the country’s long-term LCCR development objectives. Successfully linking upstream LCCR standards and objectives with downstream climate optimization tools is thus crucial to ensure an effective and durable mainstreaming of LCCR considerations into operations.

This implies that the analysis of options may need to contextualize GHG mitigation and resiliency options in light of national appropriate decarbonization or resiliency pathways. Thus, criteria and baselines will need to be updated as countries develop, markets and technologies evolve, and the recipient country LCCR pathways are clarified. Using this information, DFIs could identify project-specific choices (technologies, processes, etc.) most coherent with long-term transition objectives. This could occur through country or region specific data on transition-coherent alternatives for the proposed projects and technologies. The development of country-specific maximum and minimum standards / screening criteria for the technologies used within a proposed project type could also be of use to give the bases for comparison that operational teams will need in practice. Through this process, DFIs could potentially identify opportunities to use project funding – or make additional funding available – to support the adoption of best-available technologies or use performance-based incentives to provide an incentive to find innovative, low-carbon / transition coherent solutions.

3.3 Developing nationally-appropriate LCCR scenarios as a basis for LCCR Transition Assessment

In practical terms, aligning development projects with the LCCR transition implies moving from ‘static’ assessment tools - that identify whether or not emissions are reduced or resiliency is increased by an action – to a ‘dynamic’ process within which the ‘transition potential’ or ‘transition impact’ is assessed. For list-based approaches, the lists of eligible technologies and emission performance standards could evolve and tighten as countries progress to a low-carbon, resilient model. In the case of volumetric approaches - measuring GHG emissions and consolidating total or avoided emissions at the level of the portfolio - will need to be assessed in terms of a transition-coherent emission trajectory estimated to be necessary to achieve long-term goals. This alignment will further increase the potential usefulness of exposure-based approaches that rely on forward-looking scenarios of how both climate-related physical and policy risks will affect the project.

The challenge resides in developing and forecasting different pathways that a given country could follow to transition to a LCCR development model to achieve both long-term climate and development

objectives. Different possibilities will exist that minimize emissions and increase resilience at the same time as contributing to economic growth and social welfare. Evaluating whether the choices made are in line with what the pathway that each country has established to achieve 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. Based off existing practice, Table 7 presents an initial framework for integrating LCCR transition objectives into investment decision-making.

Ideally, the development of national-appropriate transition pathways should be done by national governments with the necessary political will 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.³² The development of these potential development pathways could be used as baselines or counterfactuals in assessing investment decisions. They could also contribute to identifying how to align individual investments and short- and medium-term objectives with long-term objectives.

Achieving 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. Thus, fostering the decarbonization of sectors through the deployment of new technical and financial solutions as well as deep behavioral changes must occur within a broader national and international vision for LCCR economic and social development. However, in many instances today, there is no clear vision of what a low-carbon, climate-resilient future compatible with both development needs and climate needs would look like. As such, it will become increasingly important in the coming years to find the means to evaluate this “transition potential” or “transition impact” of individual investments.

4 Conclusions

This paper has presented an overview of how DFIs are designing, implementing and linking upstream climate criteria and objectives with downstream strategies, screening and assessment tools. This is a key part of ensuring that the actions of these institutions contribute to climate-change objectives. Positive-list, volumetric and exposure-based tools and instruments have been integrated at both upstream and downstream stages of investment decision-making. These tools are being used to screen for projects and investment opportunities coherent with climate targets and objectives, assess the impact of projects on emissions and resiliency as well as assess the exposure of projects to physical and climate policy-related risks.

One of the principal challenges today is to move from a system of tools and indicators that focus principally on climate finance tracking – an important part of fostering trust and progress on international cooperation – to methods facilitating the alignment of activities across financial institutions and the entire economy with the LCCR transition. This paper has identified potentially effective steps forward to mainstream a low-carbon, climate-resilient development model into the operations of financial institutions. Focusing only on the direct impacts of projects on GHG emissions and resiliency – without further information on how to contextualize this information in terms of the LCCR pathway or ‘baseline’ of the recipient country – may have only limited added value for decision-making.

³² For more information, see <http://unsdsn.org/what-we-do/deep-decarbonization-pathways/>

Nevertheless, achieving 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. Thus, fostering the decarbonisation of sectors through the deployment of new technical and financial solutions as well as deep behavioral changes must occur within a broader national and international vision for LCCR economic and social development. In many instances today, there is no clear vision of what a low-carbon, climate-resilient future compatible with both development needs and climate needs would look like. Resolving this lack of national LCCR development pathways as well as developing the means of evaluating the ‘transition impact’ of individual investments are key parts of achieving long-term climate and development objectives.

Table 7: A Draft Framework for Integrating LCCR Criteria across Levels of Investment Decision-Making

General Objectives		LCCR Decision Support Tools & Information		
Investment Process Objective	LCCR Mainstreaming Objective	Qualitative Tools	Quantitative Tools	Exposure Tools
Upstream Strategic Definition and Screening				
Integration into Institutional Policy and Country Strategies: Manage allocation to priority sectors and geographic areas	<ul style="list-style-type: none"> - Ensure a minimum portion of activity is dedicated to climate action - Ensure that the IFI's strategy is in line with national LCCR trajectory 	<ul style="list-style-type: none"> - Country/region specific list of transition-coherent actions (projects, programs, intermediaries, etc.) 	<ul style="list-style-type: none"> - Centralization of total or avoided GHG emissions 	Alignment of strategies with: <ul style="list-style-type: none"> - Assessment of country/region/sector exposure to physical climate change - Assessment of expected regulatory and other policy frameworks
Identification and Screening: Ensure that projects aligned with the institutional investment policy and orientations are selected for further assessment.	<ul style="list-style-type: none"> - Ensure that projects that are not coherent with institutional definitions of climate objectives are screened-out. - Identify potential actions where IFI finance could lead to GHG mitigation 	<ul style="list-style-type: none"> - Lists of country/region eligible projects, technologies and sectors for intervention based on institutional policy and the corresponding data from projects 	<ul style="list-style-type: none"> - Acceptability thresholds for submitted projects in case of established thresholds (could be based on project typologies, etc.) 	Assessment of proposed projects by exposure and potential to reduce: <ul style="list-style-type: none"> - Physical risks and resiliency - Impacts to return on investment
Down-stream Project Appraisal Options assessment and Technical Analysis				
Assess and improve the technical specifications of projects; identify viable modifications align project specifications with objectives	<ul style="list-style-type: none"> - Optimize project-specific choices (technologies, processes, etc.) to improve project coherence with long-term transition objectives - Identify co-benefits between climate action and other SD / Environmental (and social) indicators - Mitigate the impact of climate actions on the local environment (and society) - Assess the physical risks posed to projects by climate change - Assess the carbon risks posed by regulatory and policy evolution for a LCCR future 	<ul style="list-style-type: none"> - Country/region specific data on transition-coherent alternatives for the proposed projects and technologies 	<ul style="list-style-type: none"> - Dynamic thresholds for emissions levels by sector, country and project type aligned with LCCR objectives 	Methods to identify technical options that: <ul style="list-style-type: none"> - improve resilience at the local level - reduce exposure to projected regulatory changes - Impacts on returns on investment given LCCR policy

Economic and Financial Analysis				
Measure the net impacts of the project and its alternatives on economic welfare at the local and national level	<ul style="list-style-type: none"> - Integrate climate-related criteria (social cost of carbon, etc.) to evaluate the cost-efficiency of projects - Evaluate alternatives: Comparison of impacts of different project scenarios to test cost-efficiency - Exposure: identify risk to economic welfare based on physical and climate-policy impacts on project 		<ul style="list-style-type: none"> - Integration of estimated GHG emissions, energy use, or other relevant values into assessment methodology 	<ul style="list-style-type: none"> - Assessment of the carbon risk through multiple scenarios: Integration of estimated GHG emissions, energy use, or other relevant values into assessment methodology
Considering costs and revenue streams of the project owner over a certain period of time	<ul style="list-style-type: none"> - Initial justification: Integrate climate-related criteria (social cost of carbon, etc.) to evaluate the financial returns in a low-carbon future - Option selection: Comparison of impacts of different project scenarios to test financial returns of options in a single scenario - Exposure: identify risk to project returns based on physical and climate-policy impacts on project 		<ul style="list-style-type: none"> - Integration of estimated GHG emissions, energy use, or other relevant values into assessment methodology 	<ul style="list-style-type: none"> - Assessment of the carbon risk through multiple scenarios: Integration of estimated GHG emissions, energy use, or other relevant values into assessment methodology

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