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Aligning finance with the Paris Agreement:

An overview of concepts, approaches, progress and necessary action

James Rydge

Policy insight

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This paper was first prepared as a briefing note for Nicholas Stern. It provides an accessible entry point on the issue of on Paris alignment of finance flows. It is not an exhaustive account or detailed analytical piece; future updates will update, expand and deepen the analysis.

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Executive summary

What is Paris alignment of finance?

'Paris alignment' refers to the alignment of public and private financial flows with the objectives of the Paris Agreement on climate change. Article 2.1c of the Paris Agreement defines this alignment as making finance flows *consistent* with a pathway towards low greenhouse gas emissions and climate-resilient development. Alignment in this way will help to scale up the financial flows needed to strengthen the global response to the threat of climate change.

It can first be considered at a strategic level to drive systemic change. In this context we need to ask if the public and private sector are doing what is needed to ensure financial decisions take climate change into account and align with the objectives of the Paris Agreement. If not, the next question is, what actions are needed?

Better methods and metrics to assess Paris alignment and guide investment decisions are needed urgently

Crucial to driving systemic change will be sound methods and metrics to assess Paris alignment of finance flows and guide investment decisions. While countries, companies and financial firms and institutions may be raising their ambition and reaffirming their commitment to the Paris Agreement, for example through net-zero targets, the relatively undeveloped state of methods and metrics to assess their actions and guide investment decisions is becoming a major constraint. Efforts to develop robust, comparable, consistent, and possibly standardised methods and metrics need to rapidly accelerate. If actors cannot be held to account for their financial decisions this blunts incentives to shift finance to decarbonisation. For example, Paris alignment of finance will likely mean no new coal financing, but currently it is difficult to assess actual finance flows by key finance actors; incumbents are still investing hundreds of billions per year in fossil-fuel projects (Reclaim Finance, 2020).

This paper provides a high-level overview of emerging methods and metrics. While there is a proliferation of initiatives on Paris alignment of finance flows, there is little overview, and almost no evaluation, of emerging approaches. This paper provides a first step in this direction, providing a high-level and accessible overview of the most prominent methods and metrics emerging in the public and private sector. It is not an exhaustive and detailed account: rather, it seeks to provide clarity on the concept of Paris alignment with discussion of prominent initiatives from development banks and private finance. It is designed to trigger further research and evaluation. Extensive references are provided for readers who wish to access more detailed information. *This is a rapidly developing field of work and the analysis will be updated and expanded in the future to reflect the latest thinking, learning and progress.*

Summary of findings

Work on Paris alignment methods and metrics – for assessing both finance flows and stocks/portfolios – is emerging in the public and private sectors but approaches differ widely because Paris alignment of finance means different things to different actors. A common theme from this overview of Paris alignment of finance flows – which we will update as further progress is made – is that all finance actors need to better coordinate their work on methods and metrics to increase consistency, coherence and comparability, and ensure it is integrated into a comprehensive strategy to drive systemic change – i.e. go beyond project or portfolio level assessment. Better coordination will also ensure that work by one actor can inform and be applied by another, e.g. work by the private financial sector on portfolio alignment can be applied by development banks.

Multilateral Development Banks (MBDs) and the private financial sector are leading on developing methods and metrics to assess and Paris-align finance flows. Nine MDBs are collaborating through the MDB Paris Alignment Working Group (led by the International Finance Corporation in 2020) to jointly develop their own unique approach to Paris alignment. The emerging MDB 'Building Block' approach consists of six Building Blocks (BBs) identified as key for achieving Paris alignment. For example, BB1 relates to mitigation projects, BB2 is about adaptation and resilience, BB4 is strategy, engagement and policy support in client countries, and BB5 is reporting and metrics. The MDBs are currently 'road testing' their approach internally, developing case studies and building consistency. It will be crucial to learn, prior to the COP26 conference in 2021, more about how MDBs plan to progress and roll out the full methodology for all building blocks, including how their method encourages and assesses systemic low-carbon transformation in client countries.

A number of think tanks, such as E3G, have provided assessments of the Building Block approach and have set out their own methods and metrics. The European Commission has called for the MDBs to adopt and report against the Paris-aligned EU Taxonomy in their methodology. The MDBs will push forward with the test phase and consider these ideas and assessments but have not indicated when they will make their work public. With the political context shifting in 2021, in large part due to a new US administration that plans to re-engage with the world on climate, it may be possible to enhance disclosure of progress on their work and plans for implementation.

The private financial sector is emerging as a leader on methods and metrics to assess and Paris align finance, in particular around asset allocation. There is a proliferation of financial sector methods and metrics. Green taxonomies and environmental, social and corporate governance (ESG) are useful tools, but have limitations that need to be overcome, including a lack of consistency and comparability. More dynamic, forward-looking 'warming' metrics are emerging as the preferred choice for assessing Paris alignment of portfolios.

The private financial sector is pioneering an outcome-based approach, where an estimate of the 'temperature' of a portfolio is calculated and compared to a Paris benchmark, e.g. 1.5˚C. The Bank of England, for example, recently reported the temperature of its corporate holdings. A recent review of the leading methodologies found little consistency and correlation across the resulting temperature estimates (Institut Louis Bachelier et al., 2020). This was attributed to differences in quality and extent of data (which are lacking in many areas such as agriculture) and differing underlying assumptions. Therefore, while this metric is seen as clearer and more useful than alternative approaches for decision-making, there is much more work to be done to ensure convergence of the key assumptions and principles underpinning it.

While different approaches will be developed by different actors in the public and private sector, it would be extremely beneficial to design a set of 'minimum standards' for methods and metrics (including taxonomies) that could be used as the basis for a more comparable and coherent approach/vision on alignment. It may not be possible to completely align approaches across actors – e.g. Paris alignment for MDBs will necessarily look very different to alignment for the private sector – but it would be good to avoid further proliferation of different methods and metrics, e.g. for portfolio alignment, which is leading to poor consistency, comparability and confusion. Common metrics could be useful to help coordinate and accelerate action across the different parts of the finance and development community that need to assess, report on, and Paris-align finance flows, and work together to accelerate systemic change.

Beyond this technical aspect of Paris alignment, it is important to recognise that Paris alignment is more than alignment of finance flows and asset allocations. The technical work is one (critical) part of a larger strategic picture. At the systems level, Paris alignment can be understood as the sufficiency of collective and individual support, and finance and investment, to enable a sustainable recovery from COVID-19 and the transition to net-zero across countries (including climate, nature, resilience, social and just transition). In other words, this is about system transformation and alignment, or 'better development' that serves both people and the planet, rather than a narrow concept of project-based finance flow alignment. Alignment will not be

attained through some 'green' projects and some 'brown', and incoherent policies and institutions. Within this strategy, COVID-19 increases the urgency of the technical work on methods and metrics to ensure a strong, inclusive, sustainable and resilient global economic recovery that is Paris-aligned, building the foundations for the transition to net-zero.

This systems perspective is particularly relevant for the MDBs/DFIs (development finance institutions), where their work on Paris alignment should be part of, and integral to, COVID-19 recovery and development strategies in client countries, and should recognise the mutually supportive role of the Sustainable Development Goals (SDGs). It is very important to work with and support all countries on their COVID-19 recovery strategies, their overall strategies for net-zero, their Long-Term Strategies (including shorter-term nationally determined contributions/NDCs), National Adaptation Plans, National Biodiversity Strategy and Action Plans and so on, and their policies and institutions around these. (All need to be better integrated into national budgets and economic plans.) Country buy-in to this process is crucial. One way to facilitate this is through climate-friendly (Paris-aligned) and SDG-supporting country platforms. These bring together MDBs/DFIs and other development partner operations, including national development banks, to accelerate the creation of the policies, institutions and investments needed to achieve the objectives of the Paris Agreement and the SDGs.

The MDB Building Block methodology on Paris alignment must be developed in a way that enables MDBs to properly assess and implement the full system transformation needed to achieve Paris alignment. It will need to recognise that the entire development system needs to be aligned across short- and long-term strategy, policy, scaling up, institutions – not just projects. To do this, MDBs need not only to operate better as a system, but also operate more effectively individually, to ensure sufficiency of action to drive a sustainable recovery and transformation to net-zero and a better development system. (This will need both board and shareholder buy-in.) The emerging MDB Building Block approach has the potential to take this systemic view, which can then be implemented by individual MDBs. For example, Building Block 4 considers support for client countries to develop low-emissions and climate-resilient long-term strategies. But to be consistent with full system transformation it will need to go further than what we currently know about the methodology. The European Investment Bank (EIB) is leading, committing to Paris alignment by the end of 2020. The EIB's experience will be valuable for developing and taking forward the joint MDB methodology.

Structure of the paper

This paper focuses on reviewing a selection of the most promising methods and metrics for assessing Paris alignment of finance flows, including portfolio allocation.

- Section 1 explains what Paris alignment of finance means from a systems perspective for public and private finance, the role of methods and metrics within that, and the implications of COVID-19.
- Section 2 examines how Paris alignment is defined in the literature in relation to international financial institutions (IFIs) and development banks.
- Section 3 provides a high-level overview of existing approaches to Paris alignment (methods and metrics) being developed by public IFIs, in particular the multilateral development banks.
- Section 4 examines approaches to Paris alignment by the private financial sector and concludes with a short discussion on Paris alignment work within finance ministries.
- Section 5 discusses how to consider Paris alignment methods and metrics as part of coherent sustainable development strategies and the mutually supportive role of the SDGs; this perspective is necessary, particularly for MDBs, to drive systemic change and truly align with the objectives of the Paris Agreement.

1. What is Paris alignment of finance and what are the related implications of COVID-19?

'Paris alignment' involves aligning public and private financial flows with the objectives of the Paris Agreement on climate change. Article 2.1c of the Paris Agreement defines this alignment as making finance flows *consistent* with a pathway towards low greenhouse gas emissions and climate-resilient development.[1, 2] This will help to scale up the financial flows needed to strengthen the global response to the threat of climate change. It can be considered at a strategic level, where we can ask if the public and private sector are doing what is needed to ensure financial decisions take climate change into account and align with the objectives of the Paris Agreement.

Actions are *not* yet sufficient and momentum and work on Paris alignment need to accelerate rapidly. At a strategic level, sufficiency of action on Paris alignment, i.e. the actions needed to drive systemic change to a low-carbon economy, can be considered in the following way:

- The ***private finance sector*** needs to take climate into account in all financial decisions. This "requires the right framework so that the financial sector can allocate capital to manage risks and seize opportunities in the transition to net zero" (Carney, 2020) and includes mobilisation of finance and shifting the financial system (through the 3 Rs of Reporting, Risk and Returns).
- The ***private corporate sector*** needs to go far beyond finance to develop company-wide transition plans and targets to achieve net-zero. Examining these plans and targets is beyond the scope of this paper (and includes trade, scope-3 emissions and supply chains) but the private sector is relevant to this discussion on Paris alignment of finance flows as the vast majority of investment is financed from retained earnings. For major corporations and companies that are sitting on vast amounts of cash, if internal decisions regarding the use of this cash do not change, then changing the flows from the finance sector to the private sector is not going to make much of a difference. For firms that are grossly over-leveraged – for many, COVID-19 has exacerbated high debt levels that existed prior to the pandemic – the scope for financial disruption, asset vulnerability and systemic risk from asset stranding is heightened.

  The main way in which the finance sector can influence these internal corporate flows and manage risk is through their decisions on which assets to hold and trading decisions on secondary markets, as well as being active shareholders at AGMs. The financial sector and financial markets (and regulators and consumers) are increasingly demanding information about how companies are managing climate risks and pursuing opportunities (ibid.). Major initiatives and commitments are set out by Mark Carney in the recent COP26 private finance strategy update (ibid.). By the same token, private firms are becoming aware of the need to invest in an array of assets that are resilient to a low-carbon, resource-efficient transition. This means investing in physical and human capital as well as ideas that will not be devalued or left stranded in the new economy of the 21st century. The demands of these businesses, and their ability to create and shape new markets, will in turn steer the direction of finance.

[1] It may also involve alignment with the Sustainable Development Goals (SDGs), e.g. the funding of a hospital, which take a wider development perspective (see Section 5). Article 2.1c of the Paris Agreement states that "This Agreement…aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by: (c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development."
[2] Finance stocks are also relevant, for example asset portfolios, and methods will be needed to assess their alignment, which are reviewed in Section 4. While it will be finance flows that shift a portfolio to being Paris-aligned, the direction of causality can go both ways. For example, divesting an asset and deflating its stock increases the cost of capital for the dirty asset and reduces the flows. Also, some stocks are best left stranded (e.g. scrapping a coal plant before the end of its useful life).

- The ***public finance sector*** needs to mainstream climate into their existing finance operations. The multilateral development banks (MDBs) and finance ministries are developing methods and metrics for aligning finance flows as part of their broader work programmes on climate.[3] This work is crucial, but as we argue in Section 5, it must be considered as part of a wider strategy to drive systemic change.[4] In this context, the current health and economic crisis adds a new dimension.

COVID-19 context

Sufficiency of action on Paris alignment must now also be examined in the context of COVID-19. To reduce the risk of economic depression and social disruption, governments (finance ministries) will need to set out clear macroeconomic strategies (investments, policies and finance) to restore confidence, create quality jobs and grow out of a COVID-induced recession and debt by supporting activity in the short term and expanding productive capacity in the medium term (Zenghelis and Rydge, 2020). These recovery strategies will also need to set the foundations for the long-term transformation to net-zero.

An important part of recovery packages in highly indebted developing countries will be debt restructuring to free up fiscal space. This presents an opportunity for aligning public finance flows, for example by using debt for climate swaps (Akhtar et al., 2020). Moreover, the aftermath of COVID-19 is an inflection point and in that sense an enhanced opportunity in many other ways. The economic shock wrought by the pandemic is likely to prove a turning point in the allocation of investment towards key assets necessary to secure a productive, resilient and sustainable recovery (Hepburn et al., 2020). COVID-19 has created new risks, but also opportunities as behaviours change and new technologies are adopted.

Public finance is critical to driving these recovery strategies and the long-term transformation beyond, and all of it must be Paris-aligned, but there is a real risk that it will not be (Coalition of Finance Ministers for Climate Action, 2020a).

The importance of methods and metrics

A crucial part of progressing the strategic framework for Paris alignment and driving systemic change will be getting the underlying mechanics in place: that is, designing sound methods and metrics that can measure, report and inform investment decisions. COVID-19 has increased the urgency of this work. Trillions of dollars in government stimulus has already been spent, more is to come over the next 12 to 18 months, in particular through the IFIs; huge amounts of finance are looking for a home with attractive risk return profiles; and the private sector is looking to invest and rebuild: therefore, work on methods and metrics needs to accelerate rapidly and start to be applied.

[3] See the work of the MDBs coordinated by the Paris Alignment Working Group (described in Section 3) and the work of the Coalition of Finance Ministers for Climate Action, in particular around green budgeting under Helsinki Principle 4 (described in Section 4).
[4] Crucial will be strong government policy (that is clear, credible and coherent), especially around carbon pricing, and strong institutions, including green investment banks.

2. How the literature defines Paris alignment in the context of IFIs and development banks

At a strategic/conceptual level, the literature takes a comprehensive approach to Paris alignment based on economy-wide transformation. Definitions consider both climate change mitigation and adaptation, with a focus on system transformation.

A paper by the Climate Policy Initiative and Institute for Climate Economics for the International Development Finance Club (IDFC) describes a three-dimensional framework (CPI and I4CE, 2019):

1. ***A comprehensive scope of action:*** Institutions should seek to directly or indirectly support low-emissions, climate-resilient development across all business areas – and take into account impacts on broader systems and value chains. This goes beyond measuring investment in activities supporting mitigation or adaptation outcomes; rather, it implies that all activities are carried out in a manner consistent with the long-term goals of the Paris Agreement.
2. ***A long-term time horizon to guide impact:*** Institutions should prioritise actions that are consistent with both near-term climate objectives and long-term goals and do not lead to lock-in or mal-adaptation. It is essential to recognise that some activities that result in 'relative' rather than 'absolute' emissions reductions or enhanced resilience may be counterproductive to achieving long-term goals.
3. ***An ambitious scale of contribution*:** Institutions should seek to contribute to the ambitious goals of the Paris Agreement through activities that: do no harm, support Paris-consistent climate co-benefits, and foster transformative outcomes.

A World Resources Institute paper also takes a comprehensive approach (Larsen et al., 2018). It argues that MDBs need to transition to a Paris Alignment Paradigm, which involves not only maximising volumes of climate finance, but also gradually bringing the rest of the MDBs' pipelines and portfolios into alignment with the requirements of the Paris Agreement, mainstreaming adaptation across all MDB operations, and helping client countries implement and develop stronger nationally determined contributions (NDCs). As discussed below, the MDB Building Block approach will try to embed these elements but is not, as yet, sufficiently transparent to assess how this will be achieved.

The OECD defines alignment as "supporting ambitious climate action and reinforcing the principles of sound development" (OECD, 2019). Development cooperation that is Paris-aligned supports the three core objectives of the Paris Agreement on climate change mitigation, adaptation and finance flow consistency (as outlined in Article 2.1). It also demands concerted attention to implementing and improving countries' key mechanisms for delivering their commitments under the Paris Agreement, i.e. NDCs and long-term low greenhouse gas emissions strategies (LTSs). The OECD approach offers a conceptual framework for development cooperation providers to design, implement and continually assess their efforts to align with the Paris Agreement. The framework describes four main characteristics; while useful, the OECD paper does not develop this on an operational level for MDBs or others.

The characteristics in the OECD's definition are:

1. Paris-aligned development cooperation does not undermine the Paris Agreement but rather contributes to the required transformation.
2. Paris-aligned development cooperation catalyses countries' transitions to low-emissions, climate-resilient pathways.
3. Paris-aligned development cooperation supports the short- and long-term processes (NDCs and LTSs) under the Paris Agreement.
4. Paris-aligned development cooperation proactively responds to evidence and opportunities to address needs in developing countries.

The OECD adds that:

- Paris alignment demands action from a variety of development cooperation actors through the levers of finance, policy support and capacity development.
- Paris alignment requires that climate action be included in development cooperation strategies, programmes and operations.
- Paris alignment requires the integration of climate action across development finance. The integration of climate objectives across project portfolios provides an indication of the extent to which development cooperation (and the activities it facilitates) is supporting alignment with the objectives of the Paris Agreement.

The OECD also states that challenges to Paris alignment need to be addressed at three levels:

1. **In donor countries' and development cooperation providers' overarching strategies** and policies – to help ensure that providers and donor countries are coherently supporting the transition of developing countries towards low-emissions, climate-resilient pathways.
2. **Within developing countries** – to support developing country governments to plan for, finance and implement the transition to low-emissions, climate-resilient pathways.
3. **At the system level** – to establish consistent standards and pursue ambitious action across the international development cooperation architecture.

3. Approaches to Paris alignment by IFIs and other development banks

While the selected review in Section 2 recognises that Paris alignment is part of long-term development strategies, in practice the methods being developed on Paris alignment appear more limited, often adopting a narrow project or portfolio approach. Many do, however, have the potential to be developed into comprehensive systems-level frameworks for 'better development' for people and the planet.

What are the main actors doing?

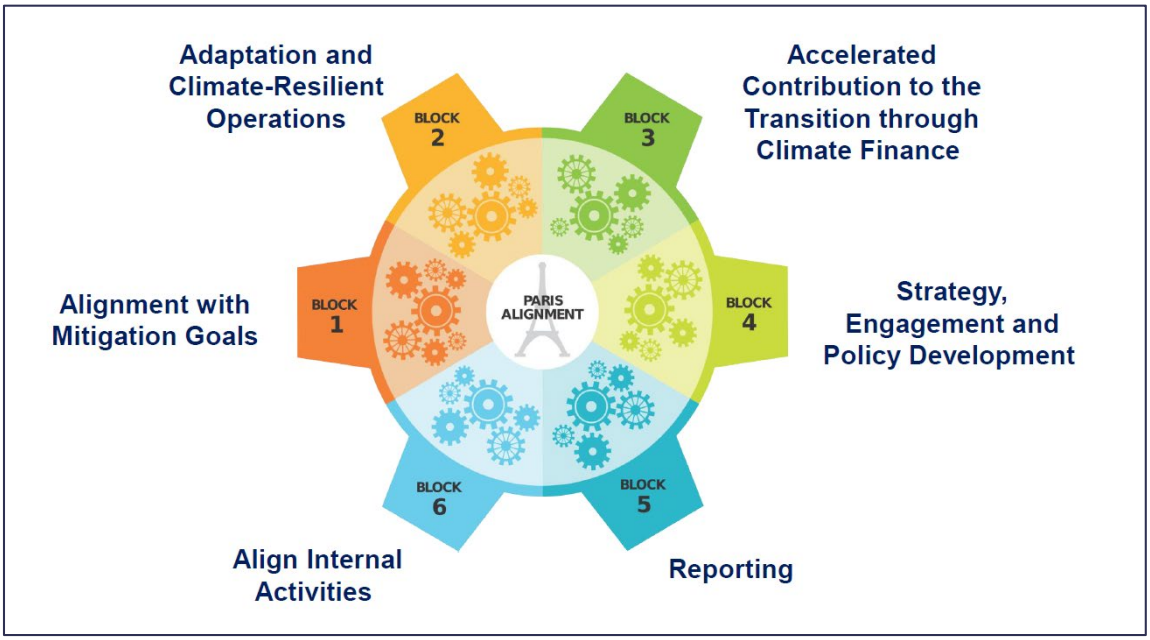
Multilateral Development Banks (MDBs)

The MDB approach to Paris alignment is developing and is based on six 'Building Blocks' (Figure 3.1). A joint MDB working group, the Paris Alignment Working Group (PAWG), consisting of the nine largest MDBs, is developing methods and tools to operationalise each of the Building Blocks and aims to have this work completed and operational by 2023–24 (although no process or date has been set for full implementation). The MDB work is currently in a test phase.

The main tasks of the PAWG in 2020 included:

1. Piloting the Paris alignment approach and developing case studies
2. Developing an approach for intermediated finance and policy lending
3. Undertaking a stocktaking exercise to review Just Transition initiatives and developing relevant common definitions
4. Progress with reporting indicators
5. Stepping-up MDBs' coordination and political visibility of the support MDBs are providing to countries and other clients on NDCs and LTSs and identifying strategic entry points in supporting LTS development, in coordination with UNFCCC processes and other key stakeholders.

Figure 3.1. Six MDB Building Blocks for Paris alignment



Source: MDB Paris Alignment Working Group (2019)

Some detail is available on the six Building Blocks. The information that is publicly available reveals that Building Block 1 (BB1), Alignment with Mitigation Goals, will be implemented on a project basis. Projects will be classified in a binary way as being in either in a 'negative list' (not aligned, which includes mining of thermal coal, coal power generation, electric extraction of peat and

electricity generation from peat) or a 'positive list' (universally aligned, i.e. projects that are aligned irrespective of the national context). All other 'unclear' projects will need to be assessed through the following five specific criteria to determine alignment: NDC consistency; consistency with country long-term strategy; consistency with global long-term pathways; a no regrets test; and an economic analysis test.

BB2 on adaptation and resilience has a three-level assessment framework. Level 1 identifies and assesses climate risk, asking if the operation (assets, stakeholders, etc.) are at risk. If the answer is "no" then the operation is Paris-aligned. If "yes", then the method moves to level 2. Level 2 looks at climate resilience measures asking if measures have been defined to limit value exposure or build climate resilience. Level 3 asks if the operation is consistent with national policies/strategies for climate resilience. If the answers to the questions in either level 2 or 3 are "no" then the project is not Paris-aligned.

BB5 considers metrics for assessing Paris alignment, in particular assessing and reporting on progress and impact in client countries. Little detail on BB5 is publicly available, with the MDBs citing challenges due to data gaps across projects and countries.

The MDBs are currently working on the internal 'road testing' of their approach, developing joint case studies and building consistency, comparability and transparency. They also want other development partners to be able to deploy the methodology, and for their work to inform other emerging Paris alignment approaches in the public and private sector.

Technical consultations on the Building Block approach have been held with a range of think tanks. Of these, E3G has provided one of the most in-depth assessments (Mabey et al., 2018, Dunlop et al., 2019; E3G, 2020), which the MDBs are considering as they progress their Paris alignment work (the E3G work is examined below).

When assessing the MDB Paris alignment work it is important to understand that the Building Block approach is trying to achieve a common methodology that will be applied by each MDB according to their unique characteristics and circumstances. The methodology, therefore, will set out high level common principles and a framework for Paris Alignment, but MDBs will decide on some of the specificity of detail during implementation. The MDBs stated in their 2018 declaration that the "building blocks serve as the basis for a joint MDB approach towards alignment with the objectives of the Paris Agreement, while fully acknowledging each MDB's mandate, capability and operational model. Accordingly, differentiated ways and timing of implementation are possible within robust common principles, framework, criteria and timeline" (World Bank, 2018). The European Investment Bank (EIB) approaches Paris alignment in this spirit in its *Climate Bank Roadmap 2021–2025* published in June 2020. It takes account of the Building Bock Framework and then applies it to its own context, mapping the MDB Paris alignment framework to its *Climate Bank Roadmap*. The EIB notes that it must also align with EU policy and the EU Taxonomy, and this requires the Bank to, in some cases, go further than the MDBs' common approach (European Investment Bank Group, 2020).

Individual MDBs also need to ensure they have shareholder, board and client country support on their Paris alignment activities. For example, moving too fast on excluding certain projects may lead to strained relations with client countries and even a reluctance to develop Long Term Strategies. At the same time, the climate crisis implies an urgent need for all stakeholders to push for stronger ambition. A sensitive strategy is needed that can effectively increase ambition on Paris alignment in all three of shareholders/boards, MDBs and individual client countries. This will unlock progress and help MDBs to advance their work on Paris alignment at the pace needed.

The International Development Finance Club (IDFC)

Developing a common approach to Paris alignment in the IDFC is challenging due to the heterogeneity of its membership; the IDFC's approach (IDFC, 2018) is diverging from some of its national development bank (NDB) members. It appears that at present, the IDFC considers Article 2.1c of the Paris Agreement to be the guidepost for its Paris alignment plans and actions. The implication of Article 2.1c is that all financial flows would be made compatible with the other two

long-term goals of the Paris Agreement (2.1a and b), or that no financial flow should be found to be inconsistent with them. The IDFC states that Article 2.1c "leads us to consider pathways towards low-emissions, climate-resilient development at country level, and thus countries' long-term climate and development strategies". It notes that this approach appears consistent with much of the work being currently undertaken by international organisations like the OECD, as well as prominent think tanks like Germanwatch, World Resources Institute, E3G and others. The IDFC commissioned the CPI/I4CE paper (discussed in Section 2), the main objective of which is to establish a reference framework to support financial institutions, especially the 25 national and regional IDFC member development banks, to evaluate and design their alignment strategies.

The IDFC states that its members have promoted and endorsed five voluntary principles for mainstreaming 'climate action within financial institutions', which were designed in 2015 and adopted later that year during COP21.[5] While these principles of mainstreaming were designed before the Paris Agreement was adopted, the IDFC states they have proven to be extremely robust and pertinent. The five principles are:

1. Commit to climate strategies
2. Manage climate risks
3. Promote climate-smart objectives
4. Improve climate performance
5. Account for your climate action.

An update on its Paris alignment position was released in November 2020 and confirms the IDFC is "willing to align its investment with the SDGs and the Paris Agreement" (IDFC, 2020a). The IDFC discusses various barriers to progress and important considerations, including the need for renewed and explicit mandates, adapted business models and invective frameworks, consideration of COVID-19, and also the need for standardised tools to assess SDG and Paris Alignment (IDFC, 2020b).

There is little relation between the IDFC approach and MDBs' approach. There has been a dialogue between MDBs and the IDFC but no convergence. The IDFC's five principles are very high level and are designed to help introduce climate considerations into the operation of financial institutions. Interestingly, the approach of the Agence Française de Développement (AFD) to Paris alignment stands out as being quite different from the five principles. The AFD Group 2018–2022 Strategy rests on five foundational commitments that underpin all actions, one of which is 100 per cent Paris Alignment. They commit that all project funding will now finance climate-change-resilient, low-carbon development, and the AFD Group will draw on public and private resources to fund these efforts.

The Association of European Development Finance Institution (EDFI) announced in November 2020 that its 15 publicly owned development bank members will be fully Paris-aligned for new financing by 2022 and their portfolios will achieve net-zero by 2050. They will also immediately cease new coal or fuel oil financing and limit other fossil fuel investments (EDFI, 2020). EDFI metrics are presented in Figure 3.3 below and mapped to the MDB and E3G metrics.

Joint Declaration of all Public Development Banks in the World. At the November 2020 Finance in Common Summit, the first global summit of all development banks, all banks committed to align their activities with the objectives of the Paris Agreement. The agreed to collectively prepare and implement "common methodologies for the characterisation of SDG- and Paris Agreement-aligned investment, building on the work of OECD and UNDP on SDG-compatible finance, on the work carried out by the MDBs and IDFC on Common Principles for Climate Finance Tracking and on alignment, as well as on other existing work on green investment and sustainable finance taxonomies, such as the International Platform on Sustainable Finance (IPSF)" (Finance in Common, 2020). They also agreed to provide information on the degree of Paris alignment of their portfolios.

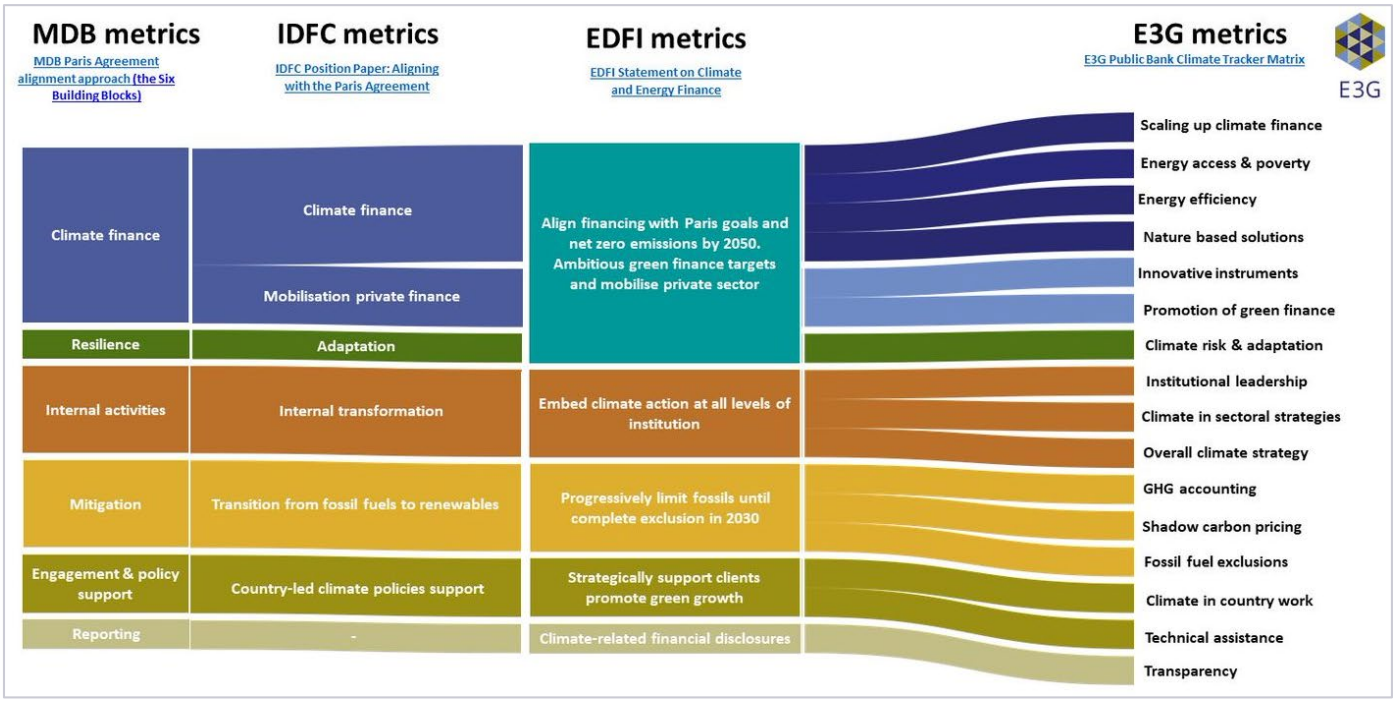
[5] See https://www.mainstreamingclimate.org/5-principes/

Analysis on the MDB Paris Alignment methodology

There is a range of analysis designed to help MDBs with their Paris alignment work.

E3G has produced one of the most detailed approaches to MDB Paris alignment available. The think tank takes the six Building Blocks (BB1 to BB6) of the MDB/IDFC Paris alignment frameworks (Figure 3.1 above) and breaks them down into '16 metrics' of Paris Agreement alignment for a development finance institution (see Figure 3.2). E3G begins with climate finance (BB3 in the MDB methodology), as this is at the core of Paris alignment of finance flows.

Figure 3.2. E3G metrics mapped to MDB, IDFC and EDFI metrics



Source: Dunlop et al. (2019)

E3G also takes the six Building Blocks and *defines* four levels of alignment, from 'not aligned' to 'transformational'. Figure 3.3 illustrates BB1 only.

Figure 3.3. E3G's alignment of Building Block 1 with four benchmarks

MDB Paris alignment blocks	E3G criteria	Benchmarks			
		Not aligned	Some progress	Paris-Aligned	Transformational
Alignment with mitigation goals	**Greenhouse gas accounting at project and portfolio level**	No GHG accounting at project or portfolio level	Tracking emissions only in certain sectors; or full tracking but no target to reduce emissions	Ambitious target to peak and reduce portfolio GHG emissions	Science-based target to reduce portfolio emissions (or better), covering both direct and indirect lending and Scopes 1, 2 and 3.
	Policies to restrict finance to fossil fuels	No fossil fuel exclusions or evidence of recent fossil fuel investments	Exclusions on either coal or upstream oil and gas	Commitment to ending all fossil fuel finance by 2020; already implemented exclusions on coal and upstream oil and gas	Total exclusion of fossil fuels and related infrastructure with official policy and full implementation, direct and indirect lending

Source: Dunlop et al. (2019)

E3G has also created a toolbox of policies for MDBs to consider when approaching the issue of how to align to Paris (Dunlop et al., 2019). Figure 3.4 illustrates this for BB1. And it recently released a comprehensive Public Bank Climate Tracker Matrix[6] that uses 15 detailed metrics ranging from greenhouse gas accounting to energy lending ratios, country strategies to technical assistance, and fossil fuel policies to climate risk, to assess the level of Paris Agreement alignment each bank has achieved. This tool combines detailed analysis of internal bank documents, consultation with the banks themselves, and external information sources to produce a matrix that provides an independent, easy to understand summary of how public banks mainstream climate change. It is intended to translate often technical and obscure information into the simple traffic light system ranging from 'Unaligned' to 'Transformational'. The assessment also makes recommendations for each bank on how to reach Paris alignment and become transformational leaders in the transition to a climate-safe world – the ultimate goal.

Figure 3.4. Example of approaches set out by E3G for BB1

MDB Paris Alignment blocks	E3G criteria	Measures and tools
		Approaches for alignment with the Paris Agreement (Institutions that have implemented these approaches are in brackets[A])
Alignment with mitigation goals	Greenhouse gas accounting at project and portfolio level	• Introduce a science-based GHG emissions reduction target. (IFC) • Set a date for portfolio GHG emissions to peak by. (ADB) • Set a 1.5°C compliant pathway for absolute portfolio emissions. (FMO) • Inclusion of Scope 3 GHG emissions in reporting.
	Policies to restrict finance to fossil fuels including exploration	• Establish an exclusion of all or some fossil fuel technologies (coal, oil or gas) and related infrastructure. • Set a technology-neutral Emissions Performance Standard of a certain amount of grams of CO_2/kWh, possibly with a ratcheting down mechanism. (EIB)
Adaptation and climate-resilient operations	Climate risk	• Create processes to look at systemic or structural climate resilience across an economy and a portfolio.

Note: A. The institutions named in brackets are a non-exhaustive list. Where many institutions implement this policy or a version of it then this is left blank to preserve the readability of the table. Source: Dunlop et al. (2019).

E3G has used this methodology to complete an in-depth analysis of Paris Agreement alignment at the eight biggest MDBs – see its major *Banking on Reform* report (Mabey et al., 2018) and subsequent update in its Matrix mentioned below.[7] Applying E3G's method shows the MDBs are far from Paris-aligned.

More recently (November 2020), E3G published an updated assessment of the level of Paris alignment of the eight leading MDBs, which shows that none of them are yet fully aligned with the Paris Agreement, despite their commitments to do so made five years ago. The European Investment Bank (EIB) is arguably leading the MDBs on Paris alignment ambition. As described above, the EIB's *Group Climate Bank Roadmap 2021–2025* commits that all financing activities will be Paris-aligned from the end of 2020 (EIB, 2020). E3G assesses the EIB *Climate Bank Roadmap* as being positive on the whole, in particular in terms of the shadow carbon price of €250 per ton by 2030 and €80 by 2050, but it also recommends further work around implementation and monitoring, adaptation and resilience, and nature-based solutions, if it is to be truly transformative.[8]

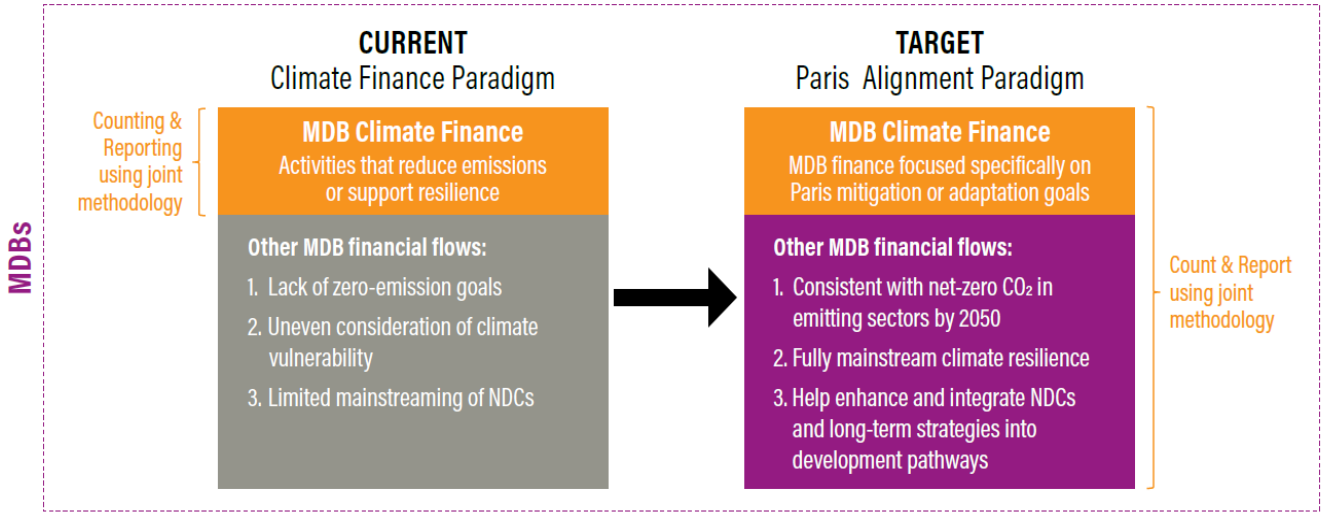
[6] https://www.e3g.org/matrix/
[7] The summary colour-coded table is available here.
[8] See: https://www.e3g.org/banks/eib/

E3G has also completed an analysis of Paris Agreement alignment at six multilateral and bilateral banks in Asia – ADB, AIIB, World Bank Group, China Development Bank, Korea Development Bank and Japan International Cooperation Agency – in its report *Banking on Asia* (Dunlop et al., 2019).

The IDFC has produced a paper on climate resilience metrics, which is designed to help operationalising Building Block 2 on resilience (IDFC, 2019). It also has a paper documenting the lessons learned from applying the set of 'Common Principles for Climate Change Adaptation Finance Tracking', developed in 2015, which can also help to operationalise BB2 (Multilateral Development Banks Climate Finance Tracking Working Group and the International Development Finance Club Climate Finance Working Group, 2018).

The World Resources Institute (WRI), Germanwatch and NewClimateInstitute have released supporting papers on the MDB methodology. The first paper consists of a series of guides on how MDBs can operationalise their six building blocks (NewClimateInstitute et al., 2020). A second study argues that the MDBs are not only providers of finance, technical assistance, and knowledge products, but also an integral part of an ecosystem of public financial intermediaries (Larsen et al., 2018). The latter report considers what this wider alignment paradigm entails (describing several specific actions) and describes tools/metrics to put it into practice (Figure 3.5). This work can help guide the MDBs as they develop their building blocks to ensure they are consistent with a wider Paris alignment paradigm.

Figure 3.5. Metrics for MDB Paris alignment



Note: This is part a larger figure with the original title 'Overview of Shift from Climate Finance Paradigm to Paris Agreement Alignment'. Source: Larsen et al. (2018)

4. Approaches to Paris alignment by the financial sector and governments

Private financial sector

As governments and companies design and disclose their Paris alignment strategies and net-zero transition plans, private finance also needs to be fully engaged. Financial institutions will increasingly be expected to disclose their own progress towards Paris alignment and show how clients' money is invested.

Any measure that seeks to express how investments are aligned with the transition to net-zero needs to be:

- Forward-looking (giving credit to efforts by companies to decarbonise)
- Anchored in real-world climate targets
- Dynamic, to show progress towards the targets. (Carney, 2020)

If private finance cannot disclose how it is aligned to net-zero, clients will reallocate capital, similar to how private finance itself (asset managers, etc.) will likely divest from companies they hold that fail to disclose their own alignment (or become active shareholders at AGMs). As governments' net-zero commitments grow and are made credible through stronger policy support, it quickly becomes in everyone's interests in the private finance sector to disclose on Paris alignment and align investment decisions. But the crucial question is how to do this.

Emerging tools assess Paris alignment and guide investment decisions

There are a number of methods and metrics emerging, but many of those developed to date do not provide the level of clarity and detail needed by financial markets, regulators and consumers to assess Paris alignment of finance and inform investment decisions. Two prominent methods are taxonomies and environmental, social and governance (ESG) criteria. (The Task Force on Climate-related Financial Disclosures [TCFD] also covers methods and metrics and will need to require disclosure of Paris alignment in the future.) A temperature metric is emerging as the preferred method for assessing Paris alignment of asset portfolios due to its potential simplicity and transparency. Each of these is discussed below.

Taxonomies

A green taxonomy is a legal classification system that can be used to define which economic activities are environmentally sustainable or Paris-aligned.[9] Banks and financial institutions, investors and bond issuers are all important users of green taxonomies but so too are financial regulators and policymakers (Hussain, 2020). Green/sustainable taxonomies can increase investor confidence, e.g. they prevent greenwashing and facilitate labelling, which increases demand and visibility in the market, improves market integrity, and enables development of sustainable finance policy instruments, e.g. green bond standards. A selection of these are examined in recent work by the Network for Greening the Financial System (NGFS, 2020a) and the OECD recently assessed several major taxonomies (OECD, 2020a). Taxonomies can also help governments develop plans to achieve national commitments, e.g. to their NDCs and the SDGs.

EU taxonomy for sustainable activities

The highest profile green taxonomy under development is the European Commission's. The EU taxonomy for sustainable activities defines which economic activities (financial assets and products) can be considered environmentally sustainable. The taxonomy bridges the gap between international goals and investment practice, signalling the types of activities that are consistent with the EU's Paris-aligned goals.

[9] The International Platform on Sustainable Finance (IPSF) was launched to facilitate exchange of good practices on taxonomy development and implementation, and to facilitate dialogue on harmonisation.

An example of the taxonomy for 'Production of electricity from solar PV' is provided in Table 4.1. It provides precise metrics and thresholds to prevent greenwashing and acknowledges these will need to evolve as the transition progresses.

Table 4.1. EU taxonomy for solar power

Sector classification and activity	
Macro-sector	D - Electricity, Gas, Steam and Air Conditioning Supply
NACE level	4
Code	D.35.1.1
Description	**Construction and operation of electricity generation facilities that produce electricity from solar photovoltaic**
Mitigation criteria	
Principle	• Support a transition to a net-zero emissions economy • Avoidance of lock-in to technologies which do not support the transition to a net-zero emissions economy • Ensure that economic activities meet best practice standards • Ensure equal comparability within an economic activity with regards to achieving net-zero emissions economy target • Where necessary, incorporating technology-specific considerations into secondary metrics and thresholds
Metric	Any electricity generation technology can be included in the taxonomy if it can be demonstrated, using an ISO 14044-compliant Life Cycle of Emissions (LCE) assessment, that the life cycle impacts for producing 1 kWh of electricity are below the declining threshold. However: • Solar PV is exempt from performing a LCE o This exemption is subject to regular review in accordance with the declining threshold
Threshold	**Facilities operating at life cycle emissions lower than 100gCO_2e/kWh, declining to net-0gCO_2e/kWh by 2050, are eligible.** • This threshold will be reduced every 5 years in line with a net-zero CO_2e in 2050 trajectory • Assets and activities must meet the threshold at the point in time when taxonomy approval is sought • For activities which operate beyond 2050, it must be technically feasible to reach net-zero emissions Production of electricity from solar PV is eligible. This is subject to regular review in accordance with the declining threshold.
Rationale	
An over-arching, technology-agnostic emissions threshold of 100g CO_2e / kWh is proposed for the electricity generation. This threshold will be reduced every 5 years in line with a trajectory to net- zero CO_2e in 2050.	
Do no significant harm assessment	
The main potential significant harm to other environmental objectives from the installation and operation of photovoltaic (PV) panels relate to: • The PV installation siting: impacts on ecosystems and biodiversity if built in a designated conservation area or other areas with important ecosystem and biodiversity value. • The impacts from the production and end-of-life management of the PV systems and its component/materials: potentially significant environmental impacts are associated with the sourcing/production of materials and components of PV systems (see 'Manufacture of Low Carbon Technologies' for DNSH criteria)	

Source: TEG (2020a)

In practice, the EU taxonomy is a list of economic activities[10] with performance criteria (thresholds and metrics) for their contribution to six environmental objectives. The EU taxonomy lists 70 climate change mitigation and 68 adaptation projects by sector and activity. To be included in the EU taxonomy, an economic activity must contribute substantially to at least one of these environmental objectives and *do no significant harm* to the other five, as well as meet minimum social safeguards.

The six objectives are:

- Climate change mitigation
- Climate change adaptation
- Sustainable use and protection of water and marine resources
- Transition to a circular economy
- Waste prevention and recycling
- Pollution prevention and control
- Protection of healthy ecosystems

The European Commission wants MDBs to disclose against this as part of their Paris Alignment Frameworks. Only the EIB has committed to disclosing against the EU taxonomy to date.

Criticisms of the EU taxonomy

A range of criticisms have been made of the EU taxonomy, the most major being that it is a binary instrument, specifying static metrics and thresholds against which a project is assessed as compliant or not. For example, a company would assess its revenues against the taxonomy and report the percentage of total revenues that are compliant. Mark Carney has criticised the binary nature of the taxonomy and has called for a "50 shades of green" approach that is more dynamic. Others have called for brown taxonomies and transition taxonomies under the rationale that we need metrics and methods that allow us to assess not just green activities but also environmentally harmful activities and those that can transition to low-carbon (see Box 4.1 below). This will enable a better assessment of where the world is on the transition to net-zero. The EU taxonomy is also limited to sectors that are covered by NACE codes[11] and it artificially separates mitigation and adaptation projects when they are often interwoven (e.g. a low-carbon, climate-resilient project). For firms this could be particularly problematic if their business activities sit outside the NACE codes.

Other debates around the design of the EU taxonomy have centred on the potential inclusion of nuclear power or natural gas (which may necessitate a brown or shades-of-green taxonomy), and a concern that the taxonomy needs to consider other factors. For example, some of the activities listed face no finance challenges, while others have wide funding gaps. There is a need for more work around existing barriers to financing, including identifying what financial instruments have the most impact in overcoming these barriers – investors reallocating capital to sustainable activities does not appear to influence corporate decision-making but shareholder resolutions do (e.g. work of Climate Action 100+) and can shift finance into the 'gaps'.

An application of the EU taxonomy: EU Green Bond Standards

The proposed EU Green Bond Standards are relevant to Paris alignment in that they are likely to require alignment with the EU taxonomy. The EU Technical Expert Group on Sustainable Finance (TEG) has released reports on how an EU Green Bond Standard (EU-GBS) can be developed, including in a recent *Usability Guide* (TEG, 2020b).

The TEG (2018) has previously recommended that the EU-GBS should have four elements:

1. Alignment with EU taxonomy: proceeds from EU Green Bonds should go to finance or refinance projects/activities that (a) contribute substantially to at least one of the six taxonomy environmental objectives, (b) do not significantly harm any of the other objectives and (c) comply with the minimum social safeguards. Where (d) technical

[10] The taxonomy adopts a sector framework using the NACE33 industrial classification system of economic activities.
[11] See https://ec.europa.eu/competition/mergers/cases/index/nace_all.html

screening criteria have been developed, financed projects or activities shall meet these criteria, allowing however for specific cases where these may not be directly applicable.

2. Publication of a Green Bond Framework, which confirms the voluntary alignment of green bonds issued with the EU-GBS, explains how the issuer's strategy aligns with the environmental objectives, and provides details on all key aspects of the proposed use-of-proceeds, processes and reporting of the green bonds.
3. Mandatory reporting on use of proceeds (allocation report) and on environmental impact (impact report).
4. Mandatory verification of the Green Bond Framework and final allocation report by an external reviewer.

A prominent criticism (again made by Mark Carney) is that this approach is considering a binary classification, meaning the bond will be either green or brown, with no scope for '50 shades of green'. The separation of mitigation and adaptation in the taxonomy is also an issue. To comply with the Green Bond Standard, a green building project would only need to be reviewed against an energy efficiency threshold, and 'do no harm' for adaptation, for example. Issuers may choose the thresholds that are easiest to achieve, which could have unintended consequences. For example, in the draft taxonomy the threshold for energy efficiency in new building construction may be easier to achieve than the threshold for renovation of existing buildings. Encouraging new construction over renovation could be counterproductive from an environmental lifecycle perspective. Also, some green bond project categories may have aspects that fall across several different NACE codes, requiring multiple threshold analyses.

Other taxonomies and classification principles and guidance

A range of other taxonomies and green classification principles have been developed (see NGFS, 2020a and Hussain, 2020). Examples of these include:

- The Chinese taxonomy
- The Bangladesh Taxonomy
- The Mongolian Green Taxonomy
- The Climate Bonds Taxonomy
- The Vietnam Central Bank's directive on green loans E&S risk management
- The Pakistan Central bank requirement on financial institutions to follow the Green Banking Guidelines
- The Brazilian banking association's classification framework at the national level
- Task Force on Climate-related Financial Disclosures (TCFD)
- The United Nations Environment Programme Financial Institutions (UNEP-FI) working group framework including the Principles for Responsible Banking
- Green Bond Principles (as discussed above)
- Green Loan Principles
- Equator Principles
- The Moroccan Capital Market Authority's (AMMC) guidelines at the national level regarding green, social, and sustainability bonds
- The Common Principles for Climate Mitigation Finance Tracking, developed by MDBs and the International Development Finance Club (IDFC).

The OECD has recently mapped sustainable finance definitions and taxonomies in five jurisdictions: the EU, China, Japan, France and the Netherlands (OECD, 2020a).

The main taxonomy design principles are presented in Box 4.1 below.

Box 4.1. Taxonomy design principles

1. Establishing the overarching objectives. These should be to transition to a sustainable economy and growth model. Other objectives might include: providing standardised definitions for green investments; supporting the growth of green markets by sending clear signals to markets/investors that increase finance flows to green capital (including international investors looking for responsible investment strategies); facilitating the tracking and reporting of public and private expenditures and investments based on a technically sound methodology; avoiding greenwashing; tracking finance flows; and developing incentives and policy instruments.

2. Establishing the environmental objectives. E.g. are they climate change mitigation/ adaptation/circular economy/pollution/water? For a country, the taxonomy can be organised along the lines of national environmental objectives that are consistent with the country's overall sustainable development priorities and agenda. For many countries, it will make sense for their taxonomy to be constructed to meet Paris alignment targets, including nationally determined contributions (NDCs) and net-zero targets.

3. Determining relevant sectors and categories for investments. Ideally these should be determined based on their expected contribution to achieving the selected environmental objectives. Existing industry classifications used by national statistical agencies or the International Standard Industrial Classification (ISIC) can be used to determine sectors (although these can be narrow and omit many relevant activities).

4. Selecting and assessing investments in the taxonomy. Selecting specific investments within the identified sectors and categories is a major part of developing a taxonomy. The key criterion for selecting a particular type of investment is how it contributes to meeting either a national target or a standard or accepted threshold (See for example, Table 4.1 above for the EU taxonomy).

5. Identifying users of the taxonomy. These need to be clearly identified and might include banks, investors, issuers of green bonds, finance ministries. Guidance on how to use the taxonomy needs to be set out, for example financial institutions could use the taxonomy to assess eligibility for green financial products, keep track of the volume of such products and report progress towards selected sustainability related targets such as share of a portfolio supporting low-carbon investments.

Several other challenging considerations will also need to be addressed. Relevant questions that may need to be answered include:

- What shade of taxonomy – green, transition, brown? There are growing calls for transition taxonomies (these define projects, assets and activities that can transition from high- to low-carbon intensity and environmental impact, rather than ones that are strictly green; see Milburn, 2020) and brown taxonomies (these define environmentally harmful activities) (TEG, 2020c). Canada is designing a transition taxonomy for resource-intensive economies (Taylor, 2020).
- Does the taxonomy take a systems approach and consider trade-offs? For example, an electric vehicle is not green in itself – it depends on how it is powered and used.
- How does it deal with multiple pathways to net-zero in 2050; taxonomies need to open the possibility of many different pathways to the target.
- Can the taxonomy adapt to new technologies and shocks like COVID-19, e.g. aviation bailouts, social dimensions of finance and transition?
- Is the taxonomy consistent with best practice and does it encourage comparability? Fragmented and multiple taxonomies may hamper market growth.
- Will governments require mandatory reporting on adoption of the taxonomy to allow regulators to track progress towards the targets and key objectives?

Source: Hussain (2020), Coalition of Finance Ministers for Climate Action presentations on Helsinki Principle 5.

Environmental, social and governance (ESG)

ESG measurement and reporting is gaining interest in the wake of COVID-19. Measurement methods and metrics here are weak and inconsistent and are holding back more sustainable investment strategies. There are more than 1,000 approaches to calculating ESG scores (Carney, 2020). A new ESG taxonomy is needed. This will need to pay closer attention to how the 'E' dimension is related to Paris alignment and how the 'S' dimension relates to working conditions and just transition (as a recent example has made very clear[12]). Demand for more quantitative metrics will likely increase following COVID-19, as will calls to mandate ESG disclosure. France is already leading the path to mandatory disclosure; their Article 173 requires disclosure on ESG issues for companies and the finance sector (Légifrance, 2015).

The CEO of State Street recently said in a FT article, "Policymakers, portfolio managers, pension plan sponsors, researchers and standard-setters, like the CFA Institute, need to work with the Sustainability Accounting Standards Board (SASB) and the global Task Force on Climate-related Financial Disclosures to help develop better metrics, methodologies and reporting standards for ESG issues" (Taraporevala, 2020). Larry Fink of Blackrock is encouraging companies to report in line with Sustainability Accounting Standards Board (SASB) standards. Bloomberg reports that so far this year 279 companies are reporting in line with these standards, up from 118 in all of 2019. SASB reports that 150 investors are also using its metrics in their investment process. The right metrics are now needed to increase the translation of transparency and information into improved ESG performance.

Progress towards a more coherent, comprehensive global corporate reporting system is being made. A project launched at the Annual Meeting of the World Economic Forum in January 2020 and developed within the International Business Council (IBC), involving Deloitte, EY, KPMG and PwC, has resulted in a core set of 'Stakeholder Capitalism Metrics' (SCM) and disclosures that can be used to align mainstream reporting on performance against ESG indicators (World Economic Forum, 2020). The metrics are deliberately based on existing standards, to encourage convergence among the leading private standard-setters and bring greater comparability and consistency to the reporting of ESG disclosures. Climate change features as a key theme within the 'Planet' pillar of this system of reporting on sustainable value creation. The core metrics and disclosures relating to climate change are comprised of components from the Global Reporting Initiative (GRI), the GHG Protocol, the Climate Disclosure Standards Board (CDSB), the TCFD and the Science Based Targets initiative. The importance of greenhouse gas emissions targets that are in line with the goals of the Paris Agreement is emphasised.

Task Force on Climate-related Financial Disclosures (TCFD)

The TCFD recommends organisations disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material. It also states that organisations should consider including metrics on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable. Illustrative examples are provided (TCFD, 2017).

In their guidance for sectors, TCFD states that "Where climate-related issues are material, organisations should consider describing whether and how related performance metrics are incorporated into remuneration policies.

"Where relevant, organisations should provide their internal carbon prices as well as climate-related opportunity metrics such as revenue from products and services designed for a lower-carbon economy.

"Metrics should be provided for historical periods to allow for trend analysis. In addition, where not apparent, organisations should provide a description of the methodologies used to calculate or estimate climate-related metrics." TCFD (2020)

[12] Sarah O'Connor, writing in the *Financial Times*, reported that: "Shares in fast fashion retailer Boohoo lost a third of their value last month [July] after allegations that workers in its UK supply chain were paid £3.50 an hour." (O'Connor, 2020)

While some illustrative examples are provided by sector and for carbon foot printing, there is much flexibility in the TCFD's guidelines. A wide range of metrics and targets can be adopted and disclosure of Paris alignment is not yet necessary. Going forward, TCFD disclosures will need to include clear Paris alignment tests to ensure it becomes the mandatory reporting vehicle for Paris alignment assessments.

Also important (and for the public sector) is disclosure of a forward-looking assessment and scenario planning. Public and private finance actors need to show if they have a future Paris-aligned investment and business strategy that is sensitive to different future transition paths. For example, systemic change may happen faster than expected due to higher carbon prices and/or cheaper technology substitutes. This type of planning will be needed to limit systemic risk through an orderly adjustment in asset valuation, prevent avoidable financial loss and avoid locking in to stranded assets (Zenghelis and Stern, 2016).

In November 2020, the UK Government announced its intention to make TCFD-aligned disclosures mandatory across the economy by 2025. The UK's Joint Government-Regulator TCFD Taskforce has released a report (HM Treasury, 2020a) and accompanying roadmap (HM Treasury, 2020b), which set out an indicative pathway to achieving mandatory TCFD-aligned disclosures. The roadmap presents a coordinated strategy for seven categories of organisation: listed commercial companies; UK-registered companies; banks and building societies; insurance companies; asset managers; life insurers and FCA-regulated pension schemes; and occupational pension schemes. Measures are planned in each of these categories and will be introduced incrementally by relevant regulators and government departments, with a significant portion of mandatory requirements expected to be in place by 2023.

Temperature warming metrics – portfolio alignment

Temperature metrics for assessing Paris alignment of portfolios are rapidly developing. Their advantage is they go beyond a static assessment of Paris alignment at one point in time. They are a forward-looking, outcome-based approach to Paris alignment which estimates the 'temperature' of a portfolio and compares it with a Paris benchmark (e.g. 1.5°C).

Temperature estimates to date demonstrate that private finance is far from Paris-aligned. According to research published by Mirova, the S&P 500 index is compatible with warming of 4.9°C, and the MSCI World Equity index with 5°C (Stephens et al., 2018). This points to systemic problems as these indices are used to construct portfolios for the growing proportion of passive investments and as performance benchmarks for active managers.

AXA is a leader in this regard and has estimated the current 'warming potential' of its corporate and sovereign holdings, disclosing that these stand at 3.3°C and 2.9°C respectively, below the broad market reference of 3.7°C (AXA, 2019). It has committed to align its portfolio with 1.5°C by 2050. The Bank of England recently reported the temperature of its corporate holdings (Bank of England, 2020). This approach could also be applied to MDB/DFI portfolios.

There is a need for the temperature metrics that are under development to be more transparent, more robust, better aligned, and more comparable and consistent with one another. Temperature metrics are more sophisticated than simpler static metrics such as the percentage of a portfolio with net-zero targets. But as approaches increase in sophistication and become potentially more useful to decision-making, they also become more complex and sensitive to assumptions and inputs (Blood and Levina, 2020).

Blood and Levina (2020) review seven leading temperature metrics in detail for the Portfolio Alignment Team at the COPp26 Private Finance Hub. Table 4.2 presents the nine key judgements involved in estimating the seven leading warming metrics. The research examines the opportunities and challenges around estimating the warming metric, including the need for more robust data, better scenarios and sectoral pathways, and minimum standards. The report notes that the Net-Zero Asset Owner Alliance has published a call for convergence around the key principles for implied temperature rise (or degree warming) metrics. The Institutional Investors

Group on Climate Change (IIGCC) has published criteria for forward-looking metrics as part of its consultation on a framework for investors.

Table 4.2. Overview of portfolio warming metrics, by the Portfolio Alignment Team

	Key Judgement		Lombard Odier	MSCI	PACTA	SBTi	TPI	Trucost
1	Benchmark type	IEA scenarios	Proprietary 1.5C, 2C, 3C and 5C scenario	Multiple, incl 1.5C and 2.0C UNEP, 3.0C NDC, and 3.8C BAU	All IEA scenarios included as standard Any scenario that includes both production capacity and emission forecasts would work (PACTA for banks)	Hundreds of IPCC scenarios	Three IEA scenarios for most sectors	Adapted from IEA and IPCC scenarios
2	Benchmark granularity	Time, sector	Time, geography, and sector/industry/sub-industry-prescribed scenario	Two versions: 1. Time, sector-specific for Scope 1, and 2. Time only for Scopes 2-3	Time, geography, and sector-prescribed scenario	Time, sector	Time, sector	Two methods: 1. Time and sector-prescribed, and 2. Time only
3	Intensity vs Absolute emissions	Intensity	Absolute (directly)	Intensity	Absolute production (for power, automotive, coal, oil & gas) and emissions intensity (steel and cement)	Absolute or intensity may be used	Intensity	Intensity
4	Scope of emissions	Scope 1-2	Scope 1-3 assigned to all companies	Scope 1-3 assigned to all companies	Scope 1-3 boundary depends per sector, however minimum of 85% coverage of scopes 1-3 per sector	Scope 1-3 (3 where material)	Scopes 1, 2 and/or 3 depending on the sector	Scope 1 and 2 (Scope 3 work in progress)
5	Current company level emissions	Self-reported	Self-reported and gap-filling using sectoral models	Self-reported	External estimates	Self-reported	Self-reported	Self-reported
6	Future company-level emissions	Current emissions intensity held constant to 2030 and 2050	Hybrid combining historical assessment of the company's level of ambition and future emissions	Emissions targets (for Scope 1-3) and patents and green revenues (for cooling potential)	Self-reported asset investment plans combined with business intelligence and permit requests	Emissions targets, otherwise 3.2C default score	Self-reported emissions reduction targets	Hierarchy: Targets, Asset-level data, extrapolation of company or sub-industry historical trend, holding current intensity constant
7	Cumulative vs point-in-time	Compares point-in-time alignment of emissions intensity with given pathway	Compares cumulative emissions to allotted carbon budget	Inputs point-in-time emissions intensity into warming function to derive temperature	Compares point-in-time alignment with a given pathway	Compares point-in-time alignment of emissions with given scenario pathway	Compares point-in-time (current and future) alignment of emissions intensity with given pathway	Compares cumulative emissions 2012-2025 with carbon budget under a range of scenarios
8	How is the metric expressed	One of five temperature scores: 1.5°C, 2°C, 2.7°C, >2.7°C and 3°C	Degrees warming	Degrees warming	Percentage alignment of exposure (e.g. 20% too many GW power generated from coal)	Degrees of warming	Visual time series comparison of emissions intensity to benchmark values	Company- and portfolio-level cumulative absolute over/(under)shoot and degree warming
9	Aggregation to portfolio level	Recalculate intensity for the entire portfolio (with 100% emission attribution), to compare with an aggregated benchmark	Aggregated cumulative firm-level over-/ undershoot relative to total carbon budget based on enterprise value plus cash share, converted to temperature	Weighted average of companies' warming potentials	Reports at a sector / technology level	Weighted average of company level scores	Only company-level assessments	Aggregates company-level absolute cumulative over / (under)shoot based on ownership share then converts to portfolio warming metric

Source: Blood and Levina (2020)

Institut Louis Bachelier et al. (2020) have also studied, analysed and compared methods and frameworks available to investors who wish to measure the alignment of their investment portfolio with a temperature trajectory, and then translated and expressed the degree of alignment of their portfolio in an implied temperature rise (ITR) metric, in *The Alignment Cookbook*. This is the first in a series of reports commissioned by the French Ministry for the Ecological and Inclusive Transition (MTES) and WWF France to review the range of climate-related methods and metrics available to investors, covering the topics of both temperature alignment methodologies and metrics for climate risks.

One of the methods reviewed in Blood and Levina (2020) is the 2°ii *Paris Agreement Capital Transition Assessment (PACTA)* tool, which is available free at www.transitionmonitor.org. The tool measures the extent to which a financial portfolio is aligned with a benchmark climate scenario, according to current and planned assets, production profiles, investments, and greenhouse gas emissions. PACTA takes forward-looking, geography-specific, asset-level data to calculate production profiles (i.e. the technology exposure) of companies in a portfolio, across seven climate-relevant sectors. These profiles can be aggregated to the portfolio level and compared with the portfolio's 'target profile' under a climate scenario, which represents the technology pathway aligned with the particular climate goals of that scenario, for each technology. This is a similar approach to the degree warming metric in that it measures the deviation of a portfolio from a benchmark, but the deviation is not converted into a temperature score. PACTA analysis can be performed for listed equities and corporate bonds, as well as by banks for their corporate lending portfolios.

The PACTA tool is being used by the private sector and also by governments to assess Paris alignment of their respective financial sectors. PACTA was applied in a recent assessment of Paris alignment in the automotive industry (IIGCC, 2020), for example, which can help to guide investor

action and investments. And the Swiss government has recently used PACTA to assess the Swiss financial sector's alignment with climate goals (2° Investing Initiative, 2020).

Another method that is gaining traction is the *Science Based Targets initiative (SBTi)*. The SBTi is a joint initiative by CDP,[13] the UN Global Compact, WRI and WWF. The initiative defines and promotes best practice in setting greenhouse gas emission reduction targets consistent with the level of decarbonisation required by science to limit warming to 1.5°C or well below 2°C; it offers resources and guidance on reducing barriers to adoption; and it independently assesses and approves targets.

The initiative has operated since 2015 for companies. In October 2020, the SBTi extended its science-based target framework and validation service to banks and other financial institutions for the first time. To qualify for validation by the SBTi, the Scope 1 and 2 portions of financial institutions' emissions (covering their operations and purchased energy) must be in line with an average annual linear reduction rate of 4.2 per cent for a 1.5°C pathway and 2.5 per cent for well below 2°C, and their Scope 3 targets (covering their investments and lending portfolios) must meet specific criteria relevant to each asset class.

Other initiatives seeking to help investors measure, disclose and transition to net-zero include the Centre for Climate Aligned Finance and the Partnership for Carbon Accounting Financials.[14]

Public finance – governments

Finance ministries will be responsible for much of the work to align public (government) finance flows with the Paris Agreement. In the discussion on green budgeting below we focus on methods and metrics for aligning financial disbursements, but the task of mainstreaming climate and Paris alignment goes far beyond this. While some alignment of finance will be budget-related (e.g. direct green investment, R&D support and subsidies), some will be policies (e.g. pricing, standards and regulations) and some will be institutional (e.g. National Investment Banks).

Work by the Coalition of Finance Ministers for Climate Action

Recognition of the urgency and scale of this task was a major motivation for establishing the Coalition of Finance Ministers for Climate Action ('the Coalition'). The Coalition states that it recognises the challenges posed by climate change, the unique capacity of the world's finance ministers to address them, and the ways in which efforts to tackle climate change could be strengthened through collective engagement. The work of the Coalition is guided by the six (non-binding) Helsinki Principles. Their recent work has explicitly recognised the impact of COVID-19 (Coalition of Finance Ministers for Climate Action, 2020a).

The six Helsinki Principles include: aligning policies and practices with the Paris Agreement; sharing experience and expertise with each other; working towards measures that result in effective carbon pricing; taking climate change into account in macroeconomic policy, fiscal planning, budgeting, public investment management, and procurement practices; working to mobilise private sources of climate finance; and engaging actively in the domestic preparation and implementation of Nationally Determined Contributions (NDCs) submitted under the Paris Agreement (ibid., n.d.) An update of the Coalition's progress under each Helsinki Principle was released at their October 2020 Ministerial meeting (ibid. 2020b).

Green budgeting

One focus of the Coalition's work in 2020 has been green budgeting, under Helsinki Principle 4 – "Take climate change into account in macroeconomic policy, fiscal planning, budgeting, public investment management, and procurement practices." This is especially relevant to this discussion, and to finance ministries, as it involves methods and metrics to align public expenditures and revenues with climate objectives.

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[13] CDP describes itself as "a not-for-profit charity that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts". https://www.cdp.net/en

[14] See https://climatealignment.org/ and https://carbonaccountingfinancials.com/ respectively.

Green budgeting:

- Gives transparency to climate measures
- Increases awareness of climate expenditures
- Increases the effectiveness of policy in achieving national climate objectives
- Helps resource mobilisation and impacts resource allocation
- Helps with the issuance and reporting on green sovereign bonds
- Can help with political economy challenges around subsidy reform and use of carbon pricing revenues
- Increases the effectiveness of budget reforms across ministries and helps bring them together
- Can show how budget measures impact green objectives
- Helps countries achieve international commitments, including NDCs
- Can be used – most urgently – to guide the implementation of stimulus packages, including helping to prioritise sustainable investments and report on the green impact of stimulus packages. (OECD, 2020b)

Research on green budgeting approaches and actions are available on the OECD website, including recent Coalition green budgeting workshop material (OECD, 2020c).

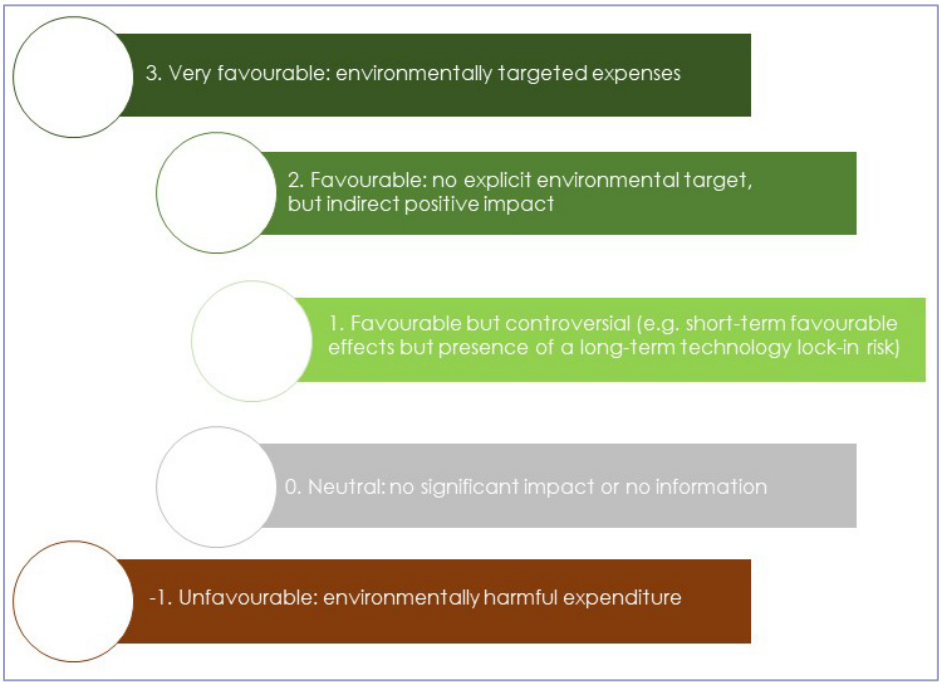
In terms of methods and metrics for green budgeting, much work to date has focused on tagging climate expenditures, rather than revenues. Tagging methods are diverse across countries and not very comparable as a result. They also involve a binary weighted tagging system that is not necessarily Paris-aligned. The OECD has provided introductory guidance and principles on green budget tagging, including a recent assessment of country experiences (OECD, 2020d).

The United Nations Development Programme (UNDP) has also made a significant contribution in this area. Its 2015 methodological guidebook on climate public expenditure and institutional review (CPEIR) sets out a step-by-step process, methodologies and tools to conduct a CPEIR. It also reviews the processes and methodologies used in 19 CPEIRs, examines challenges of implementation, and proposes a common framework for future CPEIRs (UNDP, 2015). A 2019 technical note provides detailed guidance for governments to track climate finance in their budgets (UNDP, 2017).

Example of France

France is an example of a country that is working to progress green budgeting (Figure 4.1).

Figure 4.1. France's classification of budgetary and fiscal expenditures by environmental impact



Source: Marcus (2020)

France applies these five levels or tags across the six EU taxonomy objectives (mitigation, adaptation, water, waste/circular economy, pollution, biodiversity), by sector (Table 4.3). For example, it classifies spending on road maintenance in the transport sector, €318 million, as environmentally neutral across the six EU taxonomy objectives (Marcus, 2020).

Table 4.3. Example of proposed green budgeting method applied to France's transport sector

Actions	Million euros	Climate mitigation	Climate adaptation	Water management	Waste and circular economy	Pollution reduction	Biodiversity landscape protection
Roads - maintenance	318	0	0	0	0	0	0
Railways	2,431	2	0	-1	-1	1	-1
Waterways	251	2	2	2	0	2	0
Ports	99	1	0	0	0	1	0
Ports – for rivers	1	2	2	2	0	2	0
Public transport	23	2	0	0	0	2	0
Intermodal transport	32	3	0	0	0	2	0
Supporting services	18	0	0	0	0	0	0
Road transport	6	0	0	0	0	0	0
Air transport	35	-1	-1	0	0	-1	0

Source: Marcus (2020) citing Conseil général de l'environnement et du développement durable (CGEDD) and Inspection générale des finances (IGF)

Ongoing and future work on green budgeting

A forthcoming OECD/EU survey on green budgeting in OECD countries shows that a major challenge to implementing green budgeting, whether a country had started implementing or not, is a lack of methodologies. OECD countries already implementing green budgeting also report they are constrained by a lack of resources. Most countries want to identify and share international best practices and develop international guidance. Nearly 80 percent of countries cite a lack of tools to measure the impact of green budgeting (OECD, 2020e).

Going forward, work on green budgeting needs to explore these constraints. In terms of methods and metrics, it needs to explore the possibility of a common taxonomy or common tagging method, e.g. an international, standardised tagging system that is Paris-aligned. (It may be possible to bring in the EU taxonomy, although no country has done this to date.) However, a fully harmonised, common approach may not be possible given the unique circumstances of each country.

Work on green budgeting methods and metrics is ongoing. Learning-by-doing and sharing of country experiences will be crucial as methods develop. The Coalition of Finance Ministers for Climate Action, working with the OECD, UNDP and others, has a key role here. It will be important to effectively use the vast amount of existing work, knowledge and expertise and build on it (e.g. by the UNDP, OECD, country experiences). Many developing countries are taking innovative approaches and the Coalition and others can learn from and help them, e.g. Indonesia, Bangladesh, Mexico, and Nepal. Nepal is integrating climate tagging with social, gender and vulnerability issues, for example.

Building links and effective ways to cooperate and share information across government ministries (beyond finance ministries), that is to agree a common internal government approach to defining

climate expenditure and revenue, is also needed. Finance ministers have a key convening role here across ministries to align on climate expenditure tagging definitions.

Lastly, in the public finance context, the work of central banks and regulators on Paris alignment is also important and is being led by the Network of Central Banks and Supervisors for Greening the Financial System (NGFS). The NGFS recently published a first set of climate-related scenarios that explore the transition and physical impacts of climate change under varying assumptions, with the aim of providing a common reference framework for central banks and supervisors (NGFS, 2020b). The Coalition of Finance Ministers for Climate Action and the NGFS are exploring ways to work together more closely.

5. Integrating Paris alignment into coherent sustainable development strategies and the mutually supportive role of the SDGs – a systems perspective

Alignment of finance flows is about more than projects and portfolios; this is particularly important for international financial institutions, governments and institutional investors who are already developing approaches to Paris alignment to recognise. Paris alignment must be understood as the sufficiency of collective and individual support and finance to drive a sustainable recovery from COVID-19 and long-term transformation to net-zero, including building climate resilience and investing in natural capital. In other words, this is about system transformation and better development for people and the planet.

In this context, ***work on Paris alignment needs to be part of, and integral to, long-term development strategies.***

For IFIs, the development sector and the private sector, this means it is very important to come together and work with and support countries to develop their overall strategies for net-zero and their long-term development strategies (including shorter-term NDCs).

Important questions for development institutions, including MDBs, to ask include:

- Do client countries have a sustainable recovery strategy in place?
- Are their NDCs sufficiently ambitious and aligned with a sustainable recovery and long-term transformation?
- Are the NDCs anchored in a well-articulated growth and long-term development strategy?
- Has the NDC been translated into specific implementable programmes?
- What are the key gaps in policy, e.g. carbon pricing, and key institutional reforms that are necessary?
- What sustainable investments are needed and available in each country and what are the finance implications of going to the scale necessary?

This is the only way to achieve country ambition.

This type of 'better development' Paris alignment approach appears to be part of the emerging MDB Building Block methodology (as stated in World Bank, 2018):

> *We will build on existing efforts to support the NDCs' revision cycle and develop services for countries and other clients to put in place long-term strategies and accelerate the transition to low-emissions and climate-resilient development pathways. In developing these new services, we will ensure consistency with the SDGs and establish collaborative partnerships with other institutions and private sector actors while scaling-up outreach and knowledge-sharing initiatives.*

Demand from countries for MDB assistance on NDCs and Long-Term Strategy development is also high. However, many important details remain unclear. It is not clear how prescriptive the methodology will be – there are indications it will be a broad framework each MDB can implement as it wishes according to its own structure. It is also unclear if the roll-out and implementation of the methodology will be too late to influence COVID-19 recovery spending. The MDB approach to Paris alignment will also need to be much clearer on how it can assess the extent they are helping client countries deliver the full system transformation needed to achieve Paris alignment and SDGs.

Country platforms

One way to achieve greater country ambition and take a systems approach is through country platforms, developed by the country (with MDB support and encouragement), which are climate friendly (Paris-aligned) and support the SDGs. The objective of Paris-aligned country platforms would be to accelerate the creation of the policies, institutions and investments needed to achieve Paris alignment and the SDGs through more coordinated action across the development community. The report of the G20 Eminent Persons Group on Global Financial Governance sets out what these national country platforms could look like and what changes they will require of IFI and development partner operations (G20 Eminent Persons Group, 2018). If done well, they have the potential to unlock significant progress on Paris alignment and the SDGs by greatly boosting the capacity of countries to take stronger action on climate change.

To be effective, country platforms must be owned by governments, encourage competition, and retain a government's flexibility to engage with the most suitable partners. Within this framework, it will be essential to join up IFI and development partner operations (which may include MDBs, national and regional development banks, UN agencies, philanthropies) to maximise their contributions as a group, including their ability to scale up private investments through coherent and complementary operations between development partners. Joined-up operations will also enable development partners to provide more consistent and better coordinated support for the necessary policy and institutional reforms.[15]

The development of, and convergence towards, common core standards will be essential to unlock synergies in the system, ensure sustained development impact, and improve the ease with which the private sector can collaborate with different development partners (and lower the cost). These core standards could include ESG, building local capacity, coherent pricing policies, and other climate/environmental objectives. Country platforms can also help to strengthen crisis response capacity. Cooperation at the country (and regional)[16] level could be supported by global cooperation between IFIs on key thematic issues such as sustainable infrastructure.

Ensuring that country (and regional) platforms are climate friendly (Paris-aligned) will require a significant shift in the way the development community operates (as detailed above). The first task is to ensure the development of coherent and comparable Paris alignment approaches within the IFIs and development banks themselves. This will enable the development community to come together (through these platforms) and credibly work with countries to ensure their strategies for net-zero and their long-term development strategies (including shorter-term NDCs) are also Paris-aligned. This highlights the importance of getting the MDB Paris alignment methodology right and accelerating its development and implementation in individual MDBs.

The Sustainable Development Goals (SDGs) are mutually supportive here. Paris-aligned country platforms that bring together the major development players would not only help to create the policies, institutions and investments needed to achieve the SDGs, but they could also be guided by them. For example, Goal 9 on infrastructure, Goal 11 on sustainable cities, and Goal 13 on climate change can all guide country platforms on the types of sustainable investments that are needed.

[15] Scaling private sector investment would follow from coordination to strengthen government capacity in project selection, preparation and implementation; to build regulatory certainty; and to standardise contract documentation to enable the development of an infrastructure asset class. The platforms will also enable the IFIs themselves to integrate their project preparation facilities.

[16] The G20 Eminent Persons Group report also suggests that regional platforms can be established to facilitate transformative cross-border infrastructure projects that enable regional connectivity and open up new supply chains and market.

6. High-level recommendations

The public and private sectors need to rapidly progress their work on methods and metrics for Paris alignment of finance flows and integrate this as part of a wider strategy to drive systemic change. The relatively undeveloped state of the work for assessing Paris alignment of finance flows is becoming a key constraint to accelerating the transition and meeting the objectives of the Paris Agreement. Not only does this hold back finance flows to green investment, but if the major finance actors cannot be held to account for their financial decisions this blunts incentives to shift finance to decarbonisation.

- **The MDBs, as leaders of action on Paris alignment by development banks, need to progress their work on Paris alignment methods and metrics and bring forward their 2023–24 deadline for completion of this work.** They should:
  - Commit to a more ambitious date for completion of the methodology, with a clear programme for roll-out in each MDB announced by COP26.
  - Continue to engage closely with the COP26 Presidency and the 'likeminded shareholders group' on Paris alignment, who can help overcome political obstacles (at the board level and in client countries) and accelerate collective progress.
  - Ensure immediate action is taken to Paris align COVID-19 recovery spending.
  - Continue to enhance support for client country NDCs, LTS and Just Transition strategies ahead of COP26 (which will help fill data gaps).
  - Develop and disclose metrics to assess progress and impacts of Paris alignment efforts in client countries.
  - Learn from the European Investment Bank's early commitment to Paris align its activities from the start of 2021.
- **Governments, with finance ministry leadership, need to progress their work on, and commit to, full Paris alignment**, including the Paris alignment of revenues and expenditures (as part of green budgeting), coherent and credible policy reform, including tax reform such as carbon pricing, and the development of strong NDCs and Long-Term Strategies. They also need to ensure all stimulus spending is Paris-aligned and supports a green recovery. The work of the Coalition of Finance Ministers for Climate Action should be strongly supported by governments and collective ambition raised; action needs to progress beyond information sharing, as important as this is, to clear commitments and deliverables for 2021 across each of the Helsinki Principles (and on economic recovery).
- **The private financial sector needs to work collectively to develop, refine, standardise and report on Paris alignment methods and metrics, in particular the forward-looking 'warming' temperature metric, by COP26 in 2021.** Reporting of a transparent, robust comparable and consistent temperature metric should be required under the TCFD regime, including disclosure of a forward-looking assessment and scenario planning that sets out a future Paris-aligned investment and business strategy that is sensitive to different future transition paths. TCFD should be made mandatory for financial firms across all developed countries by COP26, with clear plans announced for implementation in emerging markets.
- **The major public and private sector actors should come together during 2021, perhaps under an initiative hosted by the COP26 Presidency or the UNFCCC, to agree a set of minimum standards for methods and metrics** that could be used as the basis for a common, consistent, and coherent approach on Paris alignment. These could be immediately applied to COVID-19 recovery packages.

Work on methods and metrics for aligning finance flows and asset allocations across the public and private sector should be seen as part of a wider strategy to drive systemic change to net-zero. Only then will action be sufficient to achieve true alignment with the objectives of the Paris Agreement Article 2.1c. For example:

- **The private finance sector must see its work on methods and metrics for aligning finance flows and asset allocations in the context of financial system transformation.** Mark Carney's three Rs (reporting, risk, returns) is the leading framework for transforming the financial system. The work of the NGFS will also be key to transformation.
- **The MDB Building Block approach to Paris alignment needs to embed the alignment of finance flows in a comprehensive strategy** to help client countries deliver the full system transformation needed to achieve Paris alignment and SDGs. There are encouraging signs that their common Paris alignment methodology will do this.
- **Governments must take a broad view of Paris alignment as being the mainstreaming of climate into finance ministry operations** (and other relevant ministries and bodies). This will involve prioritising and expanding the work and ambition of the Coalition of Finance Ministers for Climate Action to ensure it considers the full systems transformation that is necessary for Paris alignment.

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