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The Tipping Point for Climate Finance

Making financial flows consistent with the Paris Agreement

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Foreword

Make no mistake: climate risk is a huge financial risk. But the climate transition that can mitigate this is also a once in a generation economic opportunity; when change happens, it is often faster than you ever thought possible.

We need to build on growing areas of momentum to achieve a just transition for the entire global economy. The implementation of transition plans from all actors, including governments and the bodies of the international financial architecture, can provide the nudge we need to cross the tipping points that will make the transition exponential.

We have seen the acceleration of the impacts of a warming world in 2023, but I remain optimistic, because we have also seen evidence of ways to accelerate our response. These are not yet at the level needed to achieve the ambitious targets governments have agreed to, which are critical to enable private sector and financial institutions like us to meet the challenging ambitions we have for the transition. But momentum is a powerful force and there are areas where it is building.

One of these is the growth of renewable energy. The International Energy Agency has found the rapidly increasing deployment of renewables and take up of electric vehicles have kept open a narrow pathway to limiting warming to 1.5°C by the end of the century. It also finds that we increasingly know the tools to rapidly increase emissions reductions.[1]

Momentum is growing. China still produces a huge amount of its electricity from coal. But its roll-out of renewables is extraordinary, with its large utility-scale solar capacity now exceeding the rest of the world combined, putting it on track to achieve its solar and wind targets for 2030 five years early.[2] With momentum comes opportunities. For example, in the roll out of electric vehicles, we have opportunities like our investment into Connected Kerb's deployment of 190,000 on-street chargers in the UK by 2030.[3]

Since COP26, we have seen huge growth in the setting of net-zero targets, with 88 per cent of emissions, 92 per cent of GDP and 89 per cent of the world's population now covered by a target of some form.[4] Arguably more important still is the growing traction in transition plans from the private sector. Transition plans bring long-term targets into actions in the here and now and help shape our investment decisions. Take companies in high-emitting sectors, like Enel. It has set out how the growth in its energy production from renewable sources will be matched by the elimination of production from coal, which it has been able to accelerate from 2030 to 2027[5] in a decarbonisation roadmap validated as 1.5 degree-aligned by the Science Based Targets initiative (SBTi). Similarly, when shipping giant Maersk began to assess the implementation of its net-zero target, it was able to accelerate it from 2050 to 2040.[6]

To move from individual examples to whole-of-sector and whole-of-economy transitions, we need policy certainty and implementation. Climate change is the greatest market failure the world has ever seen, and we need governments to take action to correct it.

> *"We need to build on growing areas of momentum to achieve a just transition for the entire global economy."*

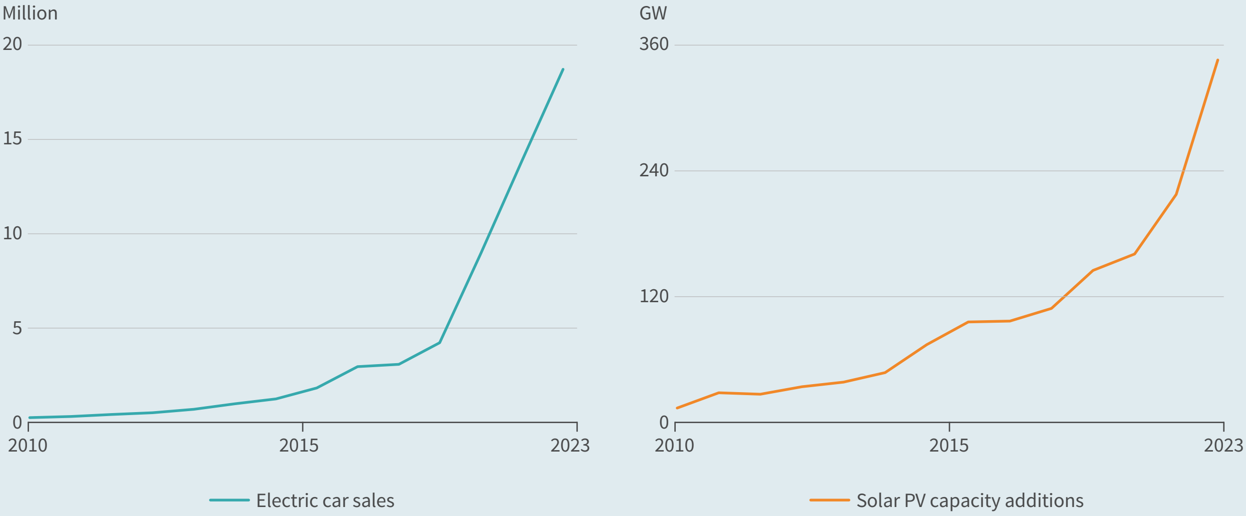
But governments have a critical role in shaping markets as well as fixing market failures. We have seen the huge impact of the Inflation Reduction Act in the United States, which is expected to turn $1.2 trillion of incentives and supportive regulation into over $3 trillion of investments in key clean-energy sectors by 2032, cutting 22 gigatonnes of emissions and helping the US to align with net zero by 2050.[7] Other countries need to respond with ambitious plans of their own to avoid being left behind in what should become a race to the top on transition.[8]

> *"Governments have a critical role in shaping markets as well as fixing market failures."*

What we need now is a big push to crest the tipping points and let the transition fly. To do that, we need government transition plans in response to the findings of the Global Stocktake on progress towards the Paris Agreement goals. These plans can provide the certainty on implementation of Paris commitments and attract finance to invest for the future we want to create, unlocking this huge economic opportunity as well as driving down emissions. We also need to make sure blockages are removed through an effective enabling environment; transition plans across the international financial architecture can help with that. The world may at times seem immoveable, but as Malcolm Gladwell wrote, *"with a push in just the right place, it can be tipped"*.[9]

Mark Versey
CEO, Aviva Investors

Figure 1. **The path to 1.5°C has narrowed, but clean energy is growing**

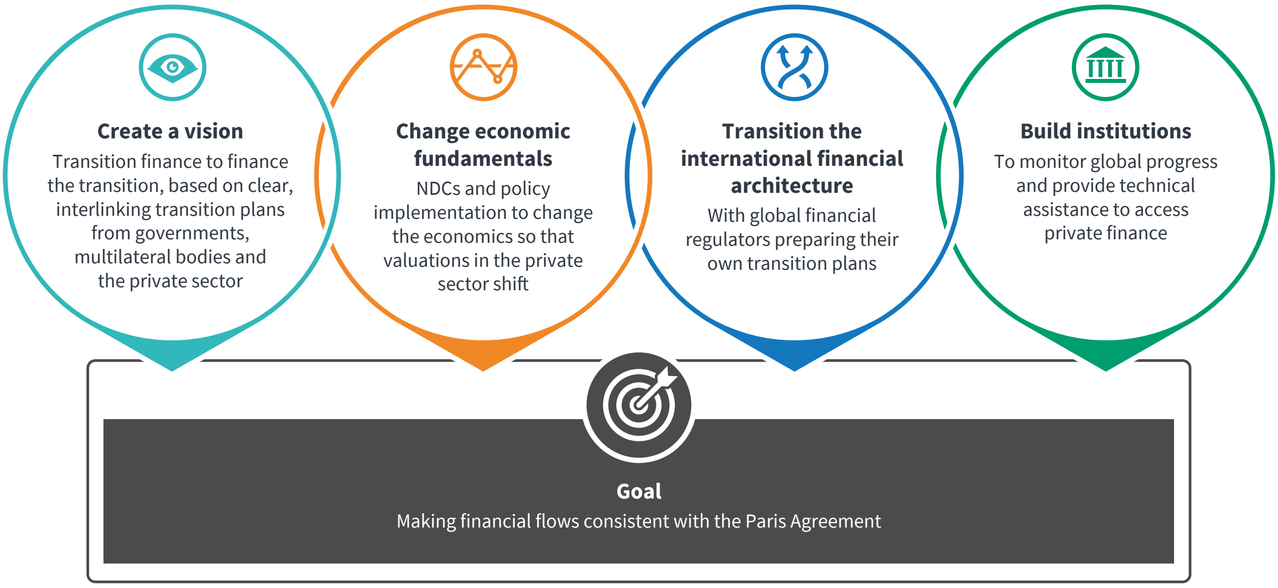


Source: International Energy Agency, September 2023.

Executive Summary

How can we mobilise investment of $4-6 trillion per year for a just transition to a low-emissions, climate-resilient economy, and solve the broader question of how to align all financial flows with the goals of the Paris Agreement and Kunming-Montreal Biodiversity Framework?
In our vision statement for a transition-focused financial system (page 8), we highlight four principles that might inform such a transition – creating a vision, changing economic fundamentals, transitioning the international financial architecture and building institutions to synthesise the transition plan ecosystem. We also highlight the central importance of transition planning at all levels of the global economy to incentivise markets and make market actors believe in the transition.

Figure 2. **The Tipping Points for Climate Finance - aligning the whole of finance to global goals**



Source: Aviva Investors, November 2023.

We know we have the right globally agreed goals, but are lacking evidence of implementation commensurate with the urgency of the challenges. We **take stock** of the progress (page 12) and set out our proposed response, starting with **national transition plans** for implementation of Nationally Determined Contributions (NDCs) as a central response to the findings of the Global Stocktake (page 14).

To support the creation of national transition plans, we outline how **principles** formed in the private sector, founded in ***"Ambition", "Action"*** and ***"Accountability"***, could provide a framework on which national plans might be built (page 18).

Executive Summary

Transition planning across the whole global economy can provide a series of **self-reinforcing actions and information flows**. Signals from national plans can inform plans for regulators and supervisors of finance, and these help to shape transition plans from financial actors and the private sector, whose plans and dependencies in turn provide information about how plans across the system can iterate and develop over time (page 20).

Transition planning should be seen as a **strategic opportunity** more than a reporting burden (page 21) and can promote long-term and **resilient decision making** from governments as much as private actors (page 24).

Transition planning should be seen as a strategic opportunity more than a reporting burden, and can promote long-term and resilient decision making from governments as much as private actors

A core element of any national transition plan will need to cover how **influence will be used in institutions** across the international financial architecture, the governance arrangements that **safeguard the stability and function** of the global monetary and **financial systems**. Although there has been considerable (and much needed) attention on reforming multilateral development banks, there is a need for transition plans to be issued across this architecture. We argue this is particularly the case for the multilateral groups of regulators and supervisors of finance, which can use their transition plans to set out how their **mandate and supervision of finance will evolve** to account for the global commitments the governments of their stakeholders have made (page 25).

Reinterpretation of mandates, and clarity on how an enabling environment will be created for private finance to implement their own ambitions for the transition, including making sure **regulation is not impeding progress**, will be central to the renewal of the international financial architecture to be **fit for purpose in a transition-focused ecosystem** (page 29). The importance of doing so is brought home in our analysis of **climate risk as financial risk** (page 33) and the need for a pre-emptive response before it is too late.

We conclude and reiterate our **call to action**, with guiding objectives for the **response to the Global Stocktake** to create a transition-focused response that can **trigger positive tipping points** before the negative ones are engaged (page 39).

To achieve our collective goals, everything needs to change. Changes must be led by the most developed countries for the benefit of all. This cannot just be about financial system reform, important though that is. It needs to be about creating a new global paradigm for the transition, led by each nation setting out plans aligned to the global goals they have agreed.

Climate change and the transition to a low-carbon economy are rightly identified as a huge economic opportunity, requiring a focus not just on costs but on investments that could generate attractive returns

Introduction

A vision for a transition-focused financial system

At the heart of the Paris Agreement is the crucial question of how the world finances the transition to a low-carbon, resilient economy. To do so, we need to harness investment of $4-6 trillion[10] per annum in a way that both underpins sustainable development and moves money incrementally towards activity aligned with that future. Achieving this will require a coordinated programme of action – starting with clear policy and market signals that change the economics of the transition. To put the scale of this challenge in context, the Marshall Plan of 1948 delivered $13 billion of funding to rebuild Europe after World War Two, or around $165 billion in today's prices.[11] We need to mobilise the equivalent of 30 Marshall Plans every year to invest in the transition.

We need to harness investment in a way that both underpins sustainable development and moves money incrementally towards activity aligned with that future

The fifth biennial assessment of climate finance by the UN Framework Convention on Climate Change (UNFCCC) Standing Committee on Finance, published in October 2022, identified an average of $803 billion per year going to climate-positive assets and activities over the period 2019-20.[12] Recent analysis by the Climate Policy Initiative puts the average in 2021-22 at $1.27 trillion.[13] It is clear markets are not currently delivering investment at the scale required. Private capital must close a significant part of this gap – for both adaptation and mitigation activities. This will require a step-change in how we regulate, report on and catalyse investment for the transition, especially in emerging markets and developing economies.

We also need a huge stepping-up of finance for mitigation and adaptation – this requires us to implement the commitments in a way that changes how markets value economic activity, and also to evolve the financial architecture to support the transition

We need a huge stepping-up of finance for mitigation and adaptation. This requires us to implement the national commitments made in the Paris Agreement in a way that changes how markets value economic activity, and also to evolve the whole of the international financial architecture to create a supportive regulatory and supervisory environment for the transition. Even $4-6 trillion per year is only a fraction of the total financial flows around the global system and total stock of assets, both of which are fundamentally misaligned with the transition. As the UNFCCC's Synthesis Report on the Technical Dialogue of the First Global Stocktake, published in September 2023, recognises, all financial flows, domestic and international, public and private, must be aligned with the Paris goals. As it highlights, however, *"…significant finance flows continue being directed, including through subsidies, towards investments in high-emissions activities and infrastructure that lack resilience. Shifting these flows is critical to making rapid and durable progress towards achieving the Paris Agreement goals."*[14]

The key question is: How can the necessary shift in finance be achieved?

Finance is complex. No one can credibly claim to understand the nuances of every element of the system. It is encouraging to see finance ministers and central bankers, as well as representatives from private finance, engaging in the UNFCCC Conference of the Parties (COP) process as never before. But those involved need support to bring finance and financial-system outcomes into the negotiations so the outcome of COP28 moves markets.

We share profound concern about the financial, economic, environmental and human rights challenges that will ensue if we do not address climate risk. As private finance participants, we want to offer our suggestions for a potential way forward.

There are four key principles:

1 **Create a vision** – The world needs a top-down vision of how such a vast amount of money will be mobilised. As part of this, we propose creating an interlinking system of global transition governance that has countries, regulators, financial institutions and companies all in scope. Creating such a vision will be a feat of planning, and national transition plans, complemented by transition plans across the international financial architecture, finance and the wider economy, can be a means of providing this.

2 **Change economic fundamentals** – Governments need to use the implementation of their NDCs to send signals to the market via a comprehensive set of policies that change the economics of the transition, building on current initiatives and coalitions. These policies should underpin a national transition plan, which would provide a reference point for the private sector and financial markets. They should also be informed by the detail in private sector transition plans, particularly their policy dependencies, and the private sector needs to align its advocacy with governments with its stated ambitions. This detail and evidence of implementation is required for markets to trust governments' commitments to the Paris Agreement and respond accordingly. Markets will recognise climate-related risks, opportunities and impacts as affecting future cashflows as those policies are implemented and therefore the valuations of the private sector will shift. But government leadership and stable policy environments are required to drive private finance at the scale negotiators seek.

3 **Transition the international financial architecture** – To facilitate the transition of financial markets and institutions, financial regulators need their own transition plans. These will help reduce the market short-termism that undermines the transition and drive positive market sentiment in support of the transition. Multilateral regulators and supervisors could publish these plans of their own initiatives, or a coordinated role could be provided through the Financial Stability Board (FSB) and G21.

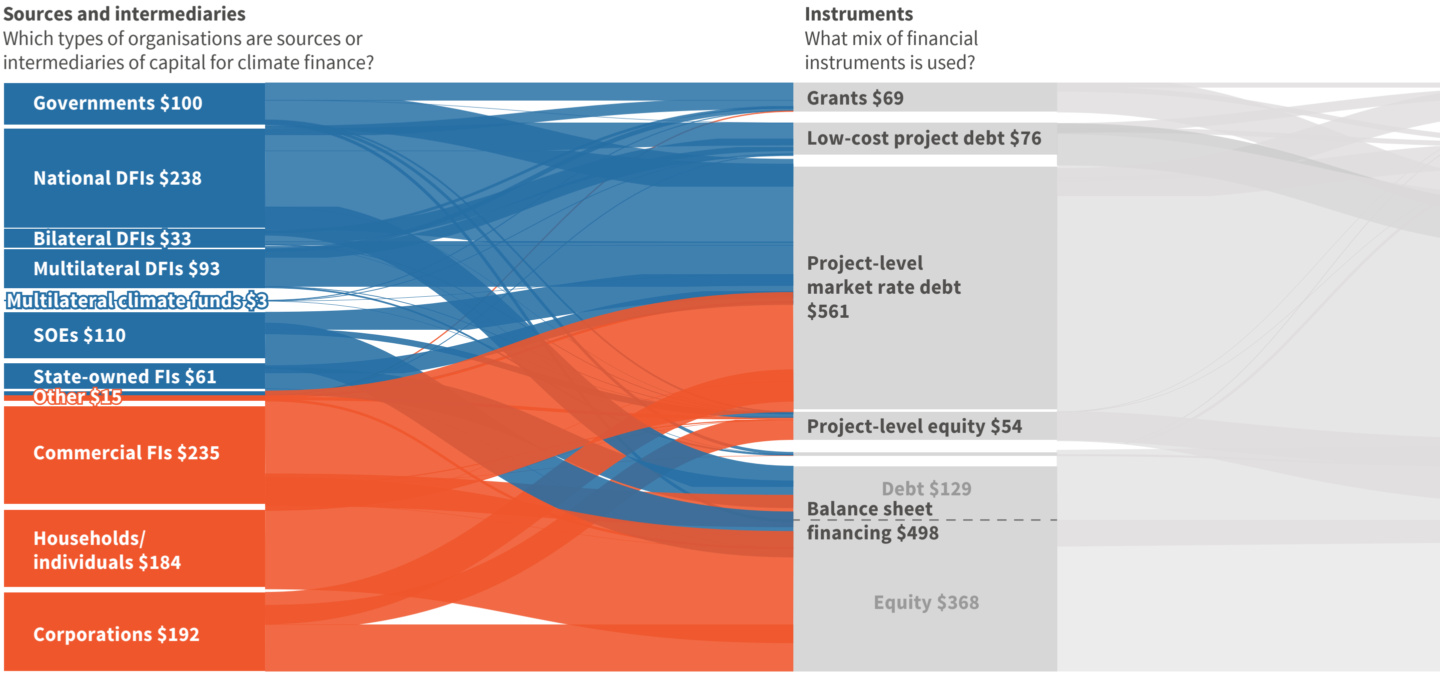
4 **Build institutions** – We need a global institution that helps maintain an interactive and evolving database of transition plans, guiding (not governing) an economic transition that is also just and equitable. This institution should also provide a technical assistance programme, including a knowledge-sharing platform, that supports developed and developing countries wanting to mobilise global private finance as well as helping financial regulators to produce their own transition plans. To this end, we propose a significant enhancement of the Organisation for Economic Cooperation and Development (OECD), as it brings together the greatest sources of private sector capital within its developed country membership and already has economic policy competence in this area. However, other institutions could also be brought in to advise – for example, the World Bank, UN Development Programme (UNDP), G21 Sustainable Finance Working Group (SFWG) through its Technical Assistance Action Plan (TAAP), UN Department of Economic and Social Affairs (DESA) and UN Conference on Trade and Development (UNCTAD) – as this would help give an institutional voice to developing country concerns.

In this report, we outline how, building on momentum in the private sector, transition plans from governments in response to the findings of the Global Stocktake, and from the bodies across the international financial architecture, particularly regulators and supervisors, can create a tipping point in the transition to bring these four elements about. We review progress to date and highlight the importance of implementation from governments in shifting markets to accelerate the transition, and the role transition plans can play in doing so. We outline how a transition ecosystem can be created, with reinforcing information flows between different groups across the economy, and propose principles that might inform national plans. We highlight that managing these risks is already integral to the role of the bodies within and influenced by the international financial architecture, but that coordination through publishing, implementing and reporting against transition plans can reduce fragmentation and promote a more efficient transition by sending signals to guide the progress of financial market actors. Markets are a function of economic fundamentals. In other words, market actors are moved by the extent to which their investments are likely to make money. One of the reasons emissions continue to rise – despite clear evidence this threatens a safe future for humanity – is the economic policy framework continues to support high-emitting activity. If the world genuinely wants to mobilise that $4-6 trillion figure, predominantly from private finance, it needs policies to prioritise low-carbon, nature-positive solutions that incentivise markets. This means governments have to make transition-aligned assets into attractive investment propositions and devise a regulatory and supervisory framework that facilitates this goal through its design principles and purpose.

We need to shift the fundamentals. Country NDCs should set out policies for implementation, ideally in the form of a country-level transition plan. These plans need to set out how to internalise the negative externalities (fiscal) on those investments that contribute to the climate challenge, by implementing the *"polluter pays"* principle. They also need to shift subsidies towards the activities we need for the transition: those that support adaptation to a warmer world and those that protect nature. NDCs should also provide a clear forward policy pathway that will show how private sector innovation and investment in the research

If the world genuinely wants to mobilise then it needs policies to incentivise markets – governments have to make transition-aligned assets attractive investment propositions and devise a regulatory and supervisory framework that facilitates this goal

Figure 3. **Global climate finance flows in 2021/2022 (US$ billion)**



Source: Climate Policy Initiative, November 2023.

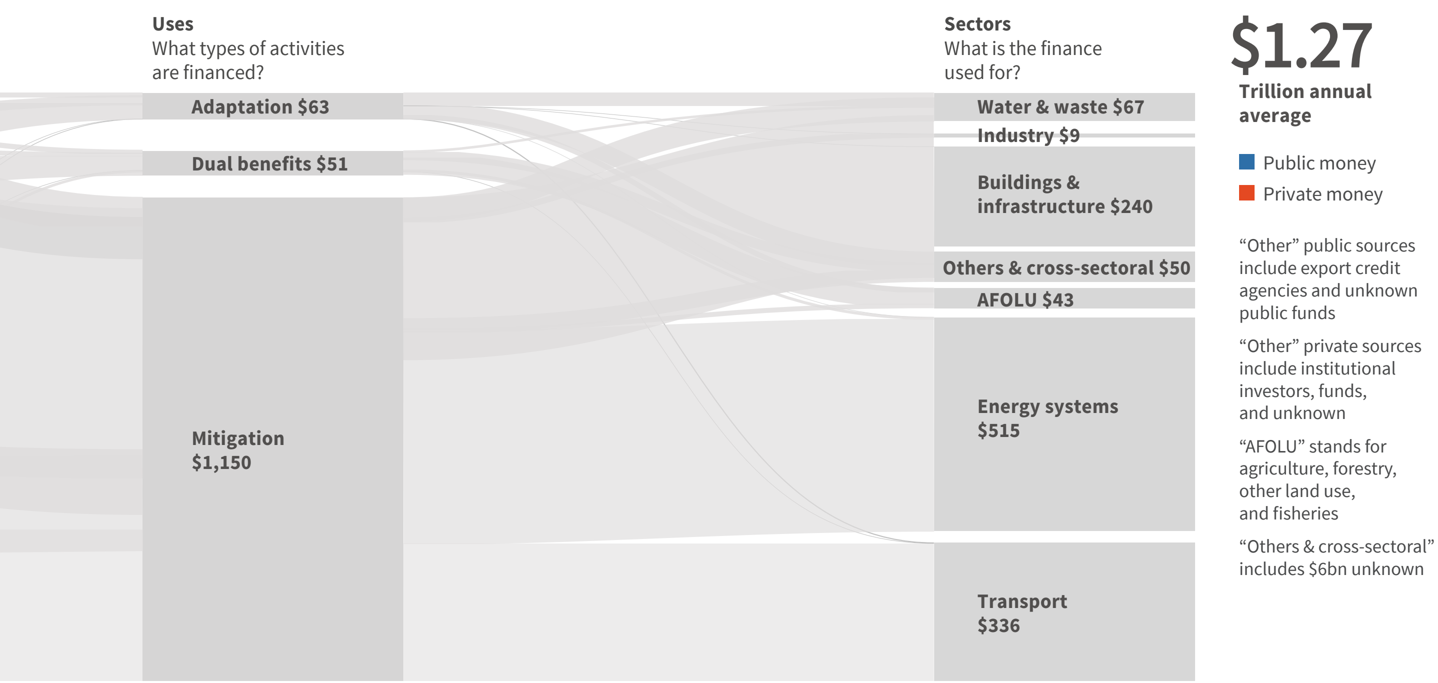
and development of climate solutions will be profitable. Fundamentally, this requires a broad suite of government policies including fiscal measures, market mechanisms, standards and regulations. For example, the world must deliver on its commitment to phase out inefficient fossil fuel subsidies. Ideally, this would start with developed countries and progress incrementally in a manner consistent with our common but differentiated responsibilities and in support of a just transition.

We also need to shift the collective mindsets that dominate markets, which are exceptionally short term in nature. The Independent Expert Group of the G21 highlighted this in the context of multilateral development bank reform, but it applies at a systemic level: *"Reforms...will only work with a change of mindsets and attitudes".*[15] And we need an international financial architecture consistent with the aims of multilateral agreements like the Paris Agreement and Kunming-Montreal Framework. This means ensuring financial regulation that holds back the transition gets out of the way. It also means ensuring all institutions have, and report on how they are implementing, a transition plan that can guide their decision and policymaking to support financial-market implementation of net-zero ambitions. Developing country transition plans in particular should also set out capital-raising strategies (which would benefit from technical assistance funded by developed donor countries). Effective plans will harmonise demand for capital from productive activity and the supply of capital from investors, which is mainly a function of fundamentals.

> *"Reforms...will only work with a change of mindsets and attitudes."*

Putting these things in place will not be easy. There are many who benefit from the current system who will fight to maintain it, even though it undermines the common good and the opportunities of future generations. But the collective benefits that would be garnered from a decisive shift – to implement the Paris Agreement; to renew the financial architecture to support a global economy aligned with sustainable goals, not pitted against them; to tackle systemic risks that threaten the stability not just of markets but of development and civilisation; and to foster geopolitical, economic and social stability – represent too big a prize not to try. We need to start now.

> Effective plans will harmonise demand for capital from productive activity and supply of capital from investors, which is ultimately mainly a function of fundamentals



Taking stock

A lack of collective political will on implementation leaves us critically off-track

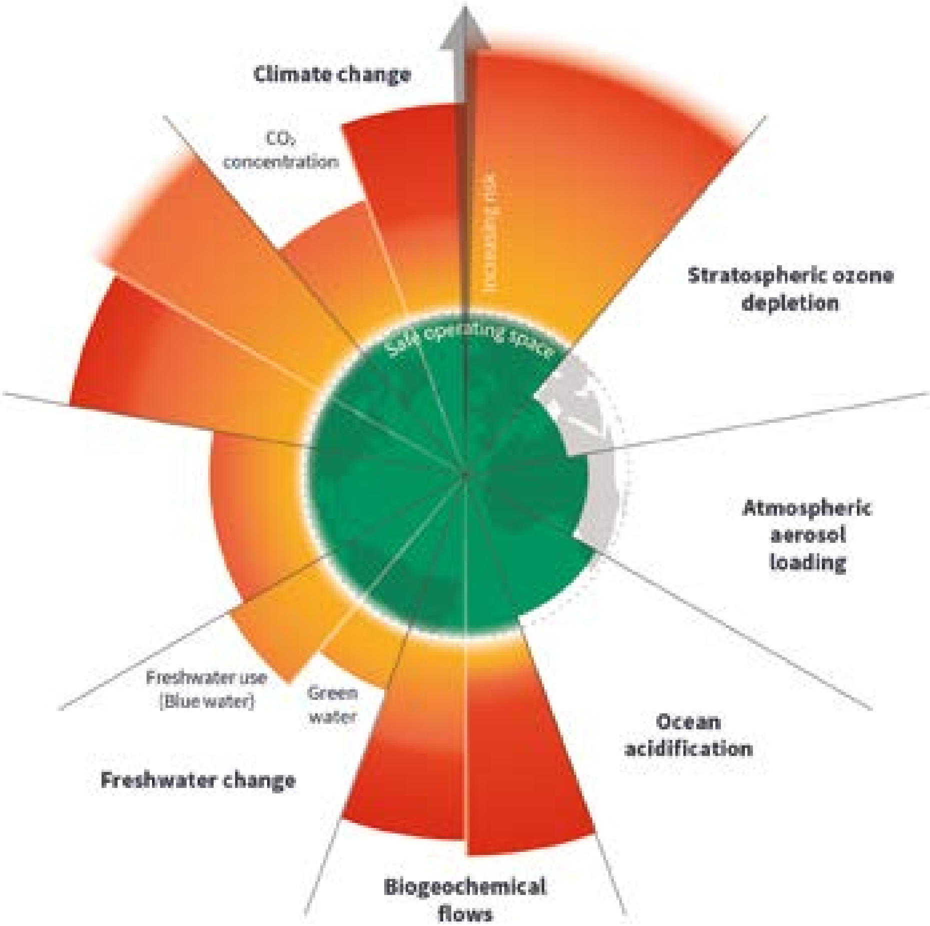
This year sees the completion of the first Global Stocktake of progress towards to the goals of the Paris Agreement. This represents a significant milestone and test of the global commitment to implement what was agreed in 2015.

The Paris Agreement was a huge geopolitical achievement. Its aims[16] remain the touchstone for global climate action by both Parties to the UNFCCC and the private sector, to which Parties are increasingly looking to support implementation and acceleration. At the time the Parties signed the Paris Agreement, the world was on a pathway towards four degrees of warming by the end of the century. Eight years later, projections estimate the current trajectory at 2.7 degrees. This substantial progress creates hope the very worst impacts of climate change might be avoided. But emissions continue to rise[17] and projected warming remains way in excess of targeted levels.[18] As we continue to transgress planetary boundaries, we threaten to cross tipping points that lead us to runaway warming, with reinforcing negative feedback loops.[19]

Substantial progress creates hope the very worst impacts of climate change might be avoided

The G21's Independent Expert Group summarises this: *"The window for avoiding these tipping points through appropriate policy reforms and investments is still open but closing fast"*.[20]

Figure 4. **Transgressing planetary boundaries**



Source: Azote for Stockholm Resilience Centre, based on analysis in Richardson et al, 2023.

The Synthesis Report on the Technical Dialogue of the First Global Stocktake[21] makes this plain: *"Since its adoption, the Paris Agreement has driven near-universal climate action by setting goals and sending signals to the world regarding the urgency of responding to the climate crisis. While action is proceeding, much more is needed now on all fronts… to strengthen the global response to the threat of climate change in the context of sustainable development and efforts to eradicate poverty, governments need to support systems transformations that mainstream climate resilience and low GHG emissions development. Credible, accountable and transparent actions by non-Party stakeholders are needed to strengthen efforts for systems transformations."* [22]

Although commitments are increasing,[23] implementation remains woefully inadequate. The sheer scale of the transformation required – of economies and societies, our relationships with each other and with nature – is only starting to become clear and is too little understood. Action in the remainder of this decade will be critical in determining the range of possible long-term outcomes in terms of warming pathways. These are outcomes that determine the prosperity of what should be many future generations. Incremental changes and doing what is seen as politically palatable, rather than what is necessary according to science, will not be enough to deliver the reforms needed in every corner of society and the economy.

But change is possible. All these economic and market structures have been put in place as a result of human decisions and activity. It is not written in the stars things need to be this way. We can imagine – and deliver – something different. In all of this, it is also important to recognise that the changes needed, and the pace at which they are enacted, will be different in different regions and contexts. This means respecting the principles of common but differentiated responsibilities and recognising the biggest responsibility lies with those with the biggest environmental footprints, now and historically, and those with the greatest resources.

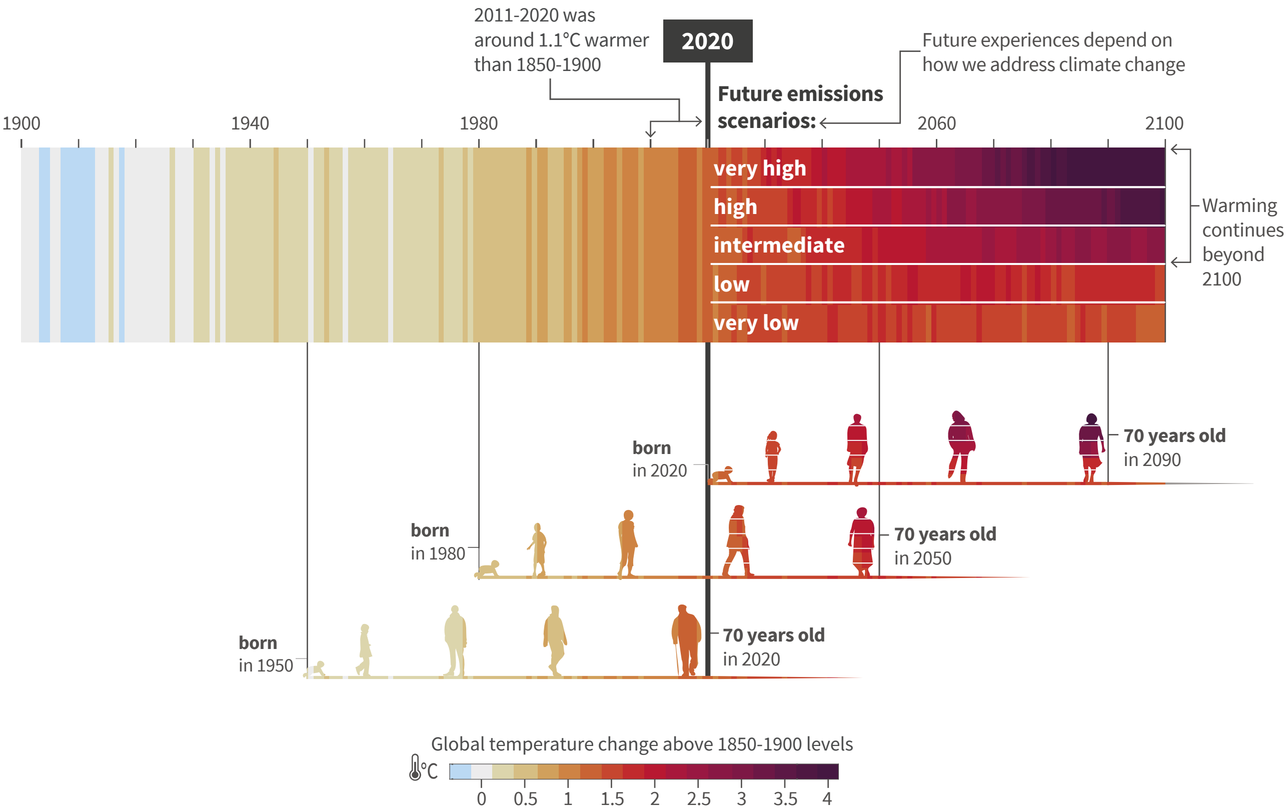
> It is not written in the stars things need to be this way. We can imagine – and deliver – something different

We have the right global goals, but a lack of delivery and accountability mechanisms

We have the right goals, but there are insufficient mechanisms to enforce action. There is also a lack of agreement about what action is needed and how to go about taking these steps at the pace and scale appropriate to the crisis. There is a collective action problem, with each actor focusing on short-term priorities and hoping someone else makes sure everyone achieves the long-term goals.

There are also those who benefit from the current system and are seeking to protect their interests by using their influence to perpetuate it. The Intergovernmental Panel on Climate Change (IPCC) is clear: to limit end-of-century warming to 1.5 degrees Celsius, emissions must be cut by 43 per cent from 2019 levels by 2030 and then continue to fall.[24] Instead, global emissions are still increasing, as they have every year since Paris (other than those when the coronavirus pandemic effectively shut down the global economy).

Figure 5. **The impact of different emissions scenarios on future generations**



Source: IPCC, 2023.

A transition plan-led response to the Global Stocktake

Making financial flows consistent with the goals of the Paris Agreement

Although climate action has increased since the Paris Agreement, we are going in the wrong direction on global emissions. There is no cohesive global vision for delivering the finance needed to support closing the emissions and implementation gaps. Conversations around the mobilisation of finance need to be comprehensive to support a whole-of-economy transition. But they currently focus solely on one or two elements of the problem, without a vision of how the whole could be greater than the sum of its parts.

The recently released Global Stocktake Synthesis Report – the most comprehensive analysis of global climate action to date based on scientific and technical data, as well as consultations with governments, business and civil society – emphasises the importance of whole-of-government and whole-of-society responses.[25] We also need a *"whole-of-global-economy"* response to create a specific, time-bound, holistic plan to transition the global economy to align with the goals of the Paris Agreement (which recognises differentiated historic responsibilities and future development and decarbonisation pathways, and takes into account the need for the transition to be rooted in justice and the protection and restoration of nature).

A *"whole-of-financial-architecture"* response must also support this transition. If we are to build resilience whilst avoiding fragmentation and unintended consequences, we need an enabling environment aligned with global goals as we move towards rapid implementation. This environment must be created by national governments in the implementation of their pledges and commitments. But financial regulators and supervisors must also play their part, as they oversee the financial system that is crucial to providing the investment the transition requires. The current focus on the reform of multilateral development banks is important. These institutions play an essential role in financing projects, building capacity and leveraging private finance. However, a whole-of-financial-architecture approach would also include regulatory and supervisory bodies and standard setters. The COP28 Presidency has set out an ambition to *"build the foundation for the finance system of the future"*.[26] To make this a reality, a systemic response is needed to this systemic problem.

A "whole-of-financial-architecture" response must support this transition

Key principles for an effective whole-of-financial-architecture response:

- **Create a vision** – The response to the Global Stocktake should include not only government and public body action, but detailed analysis of the progress made by private finance towards the goals of the Paris Agreement. A global vision is needed to make all financial flows consistent with Article 2.1.c of the Paris Agreement, which can be led by the creation and implementation of national transition plans.
- **Change economic fundamentals** – The Stocktake should make clear it expects Parties to respond not only with essential and urgent enhancements of NDCs, but also a clear implementation plan – a national, whole-of-government transition plan with annual reporting on progress. These plans can send signals to markets about commitment to transition and policy shifts that will change future corporate cashflows and therefore market valuations.
- **Transition the international financial architecture** – The Stocktake outputs should include a review of the international financial architecture. A detailed regulatory vision is needed to align the regulation and supervision of finance with the ambitions of Parties – a blueprint for a transition-aligned, purpose-enabled financial architecture.

  All bodies within the international financial architecture should respond to the signals sent by government stakeholders in signing up to the Paris Agreement, Kunming-Montreal Framework and the Sustainable Development Goals (SDGs) by creating their own institutional transition plans. These will set out how their work will transition to take account of the global commitment to net zero, particularly the steps to be taken before 2030 to align with a 43 per cent cut in emissions against 2019 levels. These transition plans would send important signals about prioritisation to guide those they regulate and supervise.
- **Build institutions** – An institutional guiding, monitoring and analysis mechanism is needed. We need clear guidance for national and financial architecture transition plans along with an annual synthesis report that monitors implementation and supports iterative, dynamic and responsive plans that evolve with the accelerating transition.

Creating a transition ecosystem

National transition plans to inform private sector action at the heart of the response to the Stocktake

To ensure the picture is different when the second Global Stocktake happens in five years time, it is important Parties respond decisively to this Stocktake's findings. Support will come from non-state actors, many of whose business models are existentially threatened by the current trajectory. But governments hold the main levers to drive change and determine the pace and priorities of their contributions to the transition.

The private sector can, however, turbo-charge the signals Paris-aligned and Paris-enabling policy sends. Several sectors, including solar-power generation and electric vehicles,[27] are beginning to transition at an exponential rate, following the *"s-curve"* pattern that has typified previous industrial transitions, as technology learning curves kick in and costs come down. We are yet to see this s-curve emerge at the state or multilateral level when it comes to putting in place the policies that can change the economics of transitions and harness markets towards delivery. But transition plans have the potential to create tipping points that set off exponential and systemic change. If governments adopt these plans, which can provide certainty of policy implementation and evidence of action through regular reporting of progress, they can provide the sort of signals that change markets' valuations of economic activities. Parties will be asked to enhance the ambition of their NDCs in response to the Stocktake, at least by the next cycle of NDCs due in 2025 at COP30. But whilst this is necessary, it risks only widening a yawning implementation gap if there are no detailed delivery actions behind these more ambitious NDCs. The Global Stocktake Synthesis Report makes this clear.

National, whole-of-government transition plans should include detailed and plausible capital-raising plans to attract public and, in particular, private finance to support the implementation of NDCs and drive the growth, jobs, opportunities and development that will accompany the transition. As the Glasgow Financial Alliance for Net Zero (GFANZ) sets out, *"Governments should publish economy-wide transition plans, underpinned by sectoral pathways and specific policies."*[28]

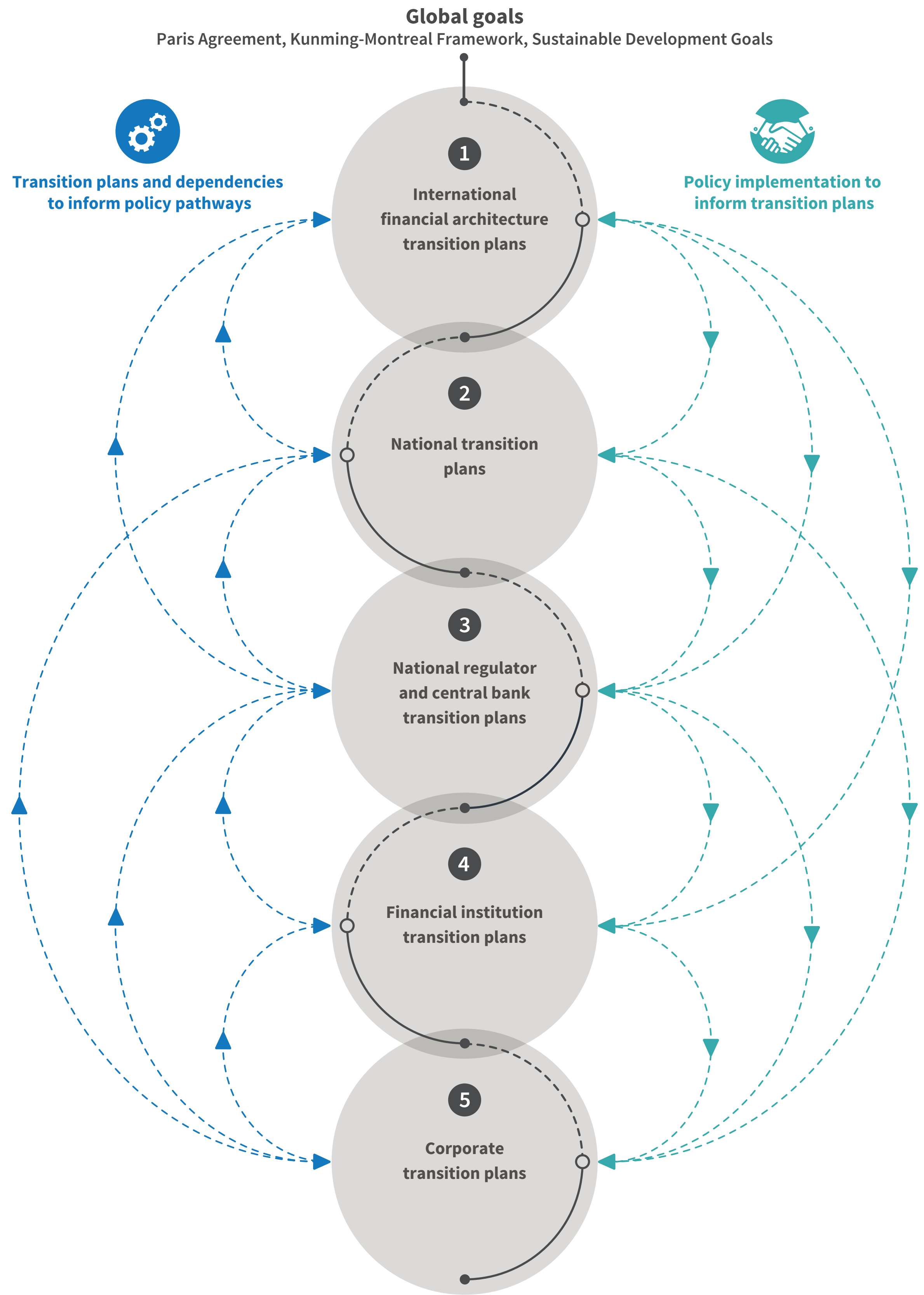
This level of detail will send signals about transition priorities and direction to which the private sector corporate and investor audience can respond when making investment decisions and allocating capital. As the International Energy Agency (IEA) states in its 2023 *World Energy Outlook, "more ambition on net zero emissions pledges is required by countries around the world and countries need to do much more to back up their pledges with firm policy commitments and measures to ensure their realisation".*[29]

The principles that underpin the momentum developing behind private-sector transition plans can inform these national transition plans and ensure that they are holistic, comprehensive and comparable, and so can support non-state actors in making and implementing their own plans.

Transition plans have the potential to create tipping points that set off exponential and systemic change

> *"More ambition on net zero emissions pledges is required by countries around the world and countries need to do much more to back up their pledges with firm policy commitments and measures to ensure their realisation."*

Figure 6. **Interlinking transition plans across the global economy**



Source: Aviva Investors, November 2023.

National transition plan principles

We propose principles for national transition plans, using the same high-level guiding principles of the Transition Plan Taskforce (TPT) for private sector plans, adapted for governments preparing their implementation plans. These principles are Ambition, Action and Accountability.

1 Ambition

The next updates to NDCs should reflect the urgency to act. As UN Secretary General António Guterres said at the 2023 General Assembly: *"[I call on]…governments to hit fast forward, so that developed countries reach net zero as close as possible to 2040, and emerging economies as close as possible to 2050 according to the principle of common but differentiated responsibilities".*[30]

In developing a transition plan, a country should consider its "Strategic Ambition" for NDC implementation in terms of pathways and priorities. This updated ambition should inform, and be informed by, a country's *"strategic and rounded"* approach to the transition.

This approach was coined by the TPT, originally developed for private-sector transition plans: *"That is, the entity should consider the actions that it can take now to capture opportunities, minimise future risks and protect and enhance long-term value, both for itself and for the economy, natural environment and society on which it depends."*[31]

> *"Governments must hit fast forward, so that developed countries reach net zero as close as possible to 2040, and emerging economies as close as possible to 2050 according to the principle of common but differentiated responsibilities."*

For the purpose of this document, the *"strategic and rounded"* approach has been reinterpreted for government transition plans. National ministries should consider the domestic and global transition for the economy and society across three interrelated channels:

- **Decarbonising the economy** – signals and incentives to businesses across the economy and through international activity in the short, medium and long-term to reduce the country's greenhouse-gas (GHG) emissions in line with their NDCs.
- **Responding to the country's climate-related risks and opportunities** – management of climate-related risks and opportunities as the economy decarbonises, including economic shocks, and enhancing the country's resilience to the changing climate, with benefits to society at the core of the approach.
- **Contributing to the global transition** – the government's actions to use the levers it has available to enable the global transition to a net-zero economy in a just manner.

2 Action

Governments should devise roadmaps on how they will deliver on their NDCs and wider sustainability commitments, sending signals to the wider economy on policy implementation and measures to attract and provide overseas investment.

Considering the country's NDC ambition, transition plans should cover the following:

- Fiscal policy incentives
  - Tax, levies, subsidies and carbon-pricing incentives
  - Regulatory interventions
  - Long-term investment roadmap including spending commitments
- Sector-level policy measures, targets and interventions – such as energy, transport, heat and land use – to inform implementation of private-sector transition plans and deliver centrally defined sectoral pathways.
- Adaptation measures to support systemic resilience in the face of the changing climate.
- For developed countries, the role of the geopolitical space in enabling a just transition, including capital-spending plans to support emerging markets and developing economies.

Across each of these points, short, medium and long-term actions should be set out.
In aggregate, each government should assess its targets to ensure they align to long-term NDCs and, in the short-term, enable the country to meet its interim NDCs.

Governments are the cornerstone of economies and global communities. In addition to policy incentives, governments need to adopt a multi-stakeholder engagement approach, to adapt and iterate the plan to ensure holistic delivery domestically and internationally:

- **Engagement with business** – Countries' plans will have interdependencies with private-sector transition plans. Engaging with domestic and international trading partners across sectors will help inform policy formation and fiscal measures and deliver public-private partnerships. This ongoing engagement will be a key feedback loop to keep the country on track to meeting its *"Strategic Ambition"*, ensuring the interventions are well-timed and governments can assist in addressing any systemic issues, to support businesses to deliver their own plans.
- **Engagement with citizens** – The ultimate success of a transition strategy will be securing social buy-in through ongoing engagement with the public and ensuring the benefits of the transition are felt equitably across society.
- **Global cooperation** – Governments are shareholders of multilateral development banks and have seats in global coalitions, such as the G21 and G77. Recognising ther influence, they should use transition plans to set out their diplomatic priorities on climate change in multinational forums and how they intend to use their resources to help deliver global goals.

3 Accountability

Delivery of transition plans needs to be integrated into a country's institutional architecture to ensure long-term commitments are prioritised over short-term imperatives. In doing this, countries can seek to break the *"Tragedy of the Horizon"* beyond political cycles and timeframes considered by technocratic authorities.

To ensure institutional accountability, governments should consider undertaking activities to ensure effective development and ongoing delivery of the plan across departments and key institutions:

- Create inter-departmental groups to facilitate coordination and cooperation in policy alignment and triggers to amend policy as plans are delivered.
- Allocate roles and responsibilities for delivery of the plan across government departments, with the finance ministry overseeing the delivery of the plan in totality.
- Develop mechanisms to hold wider government to account, including through independent bodies, e.g. the Climate Change Committee (CCC) and Office for Budget Responsibility in the UK.
- Review existing mechanisms with central banks, financial and sector-level regulators to ensure the existence of feedback mechanisms to respond to transition plans.

To ensure accountability with the public, governments should report annually on progress against the plan, updating for new information and external developments.

Embedding transition planning throughout the global economy – a series of reinforcing actions

Transition planning can provide the roadmap for short, medium and long-term actions at all levels to support the achievement of globally agreed sustainability goals by working in symbiosis to strengthen delivery.

National plans should be informed by globally agreed goals and ambitions, embedding principles of common but differentiated responsibilities, justice and equity. These goals will also inform the transition planning of multilateral bodies within the international financial architecture, as their primary stakeholders are those governments or national bodies that derive their authority and mandate from government. National transition plans should not only speak to the country's domestic agenda but also include all government spheres of influence and international dependencies for successful transition and NDC implementation, including their influence in international forums.

The details of private sector plans, particularly their policy dependencies, can inform national plans. National transition plans should also embed the principles of a just transition and cover the protection and restoration of nature.

Transition plans from the bodies within the international financial architecture and their members should set out how their interpretation of their mandates and work programmes, including the supervision and regulation of finance where relevant, will evolve to account for the commitments made by their government shareholders and stakeholders, and draw on the evidence base of transition plans from those they regulate and supervise.

Both national transition plans and those from the bodies within the international financial architecture will inform transition plans from central banks and regulators, which will be powerful signals to financial institutions. The mandates of central banks and regulators are interpreted in light of national commitments, and national transition plans will powerfully inform the work of these bodies in overseeing market stability and integrity and price stability.

Financial institutions will also look to national transition plans and those of the international financial architecture, as well as domestic central banks and regulators, to inform the preparation of their entity-level plans. This transition-planning ecosystem will also inform the engagement of financial institutions with regulators and policymakers as they advocate for the enabling environment they need to achieve their net-zero ambitions in the best interests of their customers, shareholders and the stability and integrity of markets.[32]

Corporate transition plans will consider and be considered by financial institutions as well as national transition plans, with feedback loops, reporting and advocacy flowing throughout the economic system.

Transition planning as a strategic opportunity

There is a risk the production of a transition plan, whether at corporate, national or multilateral level, can be seen as a burden and an additional disclosure exercise in a world of increasing reporting obligations. For corporations, the reporting requirements of the Task Force on Climate-related Financial Disclosures (TCFD), Taskforce on Nature-related Financial Disclosures (TNFD) and the International Sustainability Standards Board (ISSB) come on top of increased demands for information against which sustainability credentials can be assessed. For countries, although the TCFD framework did not address sovereign risks and opportunities, that is a lacuna it is important to close – after all, sovereign debt represents half of the $129 trillion global bond market[33] and is at the core of the assets most favourably treated under prudential regulation for banks and insurers. This has been recognised in the final status report of the TCFD and it will be important to see this work develop.[34]

However, transition plans are, or should be, different. In a world beginning a transition that needs to cover all sectors and geographies at the same time, and at a pace never seen before, to stay within remaining carbon budgets, it will become increasingly difficult to attract or maintain investment without a plan. Transition plans have been described as *"so much more than just another piece of disclosure, they are an organisation's growth narrative, their license to operate, the proof of effective governance and their ability to demonstrate resilience in a swiftly changing world".*[35]

> In a world beginning a transition that needs to cover all sectors and geographies at the same time, and at a pace never seen before, to stay within remaining carbon budgets, it will become increasingly difficult to attract or maintain investment without a plan

For a country, a transition plan that sets out the key areas it will focus on in its development and decarbonisation journey – recognising no two countries' priorities and circumstances will be the same – is the tool to connect global promises to priorities that can attract private capital to supplement domestic resource mobilisation. A forward-looking plan, reported upon annually to give confidence in its implementation, and which has long-term aims to build in resilience, can be a powerful tool to attract investment. But creating such a transition plan and reporting on its implementation can also provide confidence that good governance and structures are in place. Credit rating agencies can take this into account, especially if their methodologies evolve to look forward and longer term, rather than relying on backward-looking data that is not necessarily a good guide to the future in a dynamic – and likely disorderly – transition.

A transition plan and reporting on its implementation can also provide confidence that good governance and structures are in place

In this way, a comprehensive transition plan and investment roadmap, covering decarbonisation as well as development, can be a means of improving national credit ratings and escaping sovereign debt traps, lowering the cost of capital for countries in emerging markets and developing countries. These might take the form of more prescriptive and comparable long-term, low-emissions development strategies under the Paris Agreement,[36] or could be informed by the developing Integrated National Financing Frameworks.[37] They should also be informed by, and reflected in, the Country Climate Development Reports developed by the World Bank.[38] These plans can also learn from the frameworks developed by and for the private sector that include details of corporate and financial-actor policy dependencies and can therefore guide national policy responses.[39]

In the transition, there will be competition for capital and investment. Countries with the best plans and frameworks will attract investment, so the strategic imperative and opportunity of developing the best financing plan for each national transition is huge. We have already seen the Inflation Reduction Act (IRA) attract capital to the United States, which limits the pool of capital available not only to developing countries but also other developed nations. But we have also seen encouraging responses from policymakers elsewhere, not least that of Brazilian Finance Minister Fernando Haddad, whose description of President Lula's *"comprehensive plan for ecological transformation"* [40] begins to sound a lot more like a whole-of-government transition plan than the solely incentives-based industrial strategy being rolled out in the US.

Countries with the best frameworks will attract investment, so the strategic imperative and opportunity of developing the best financing plan is huge

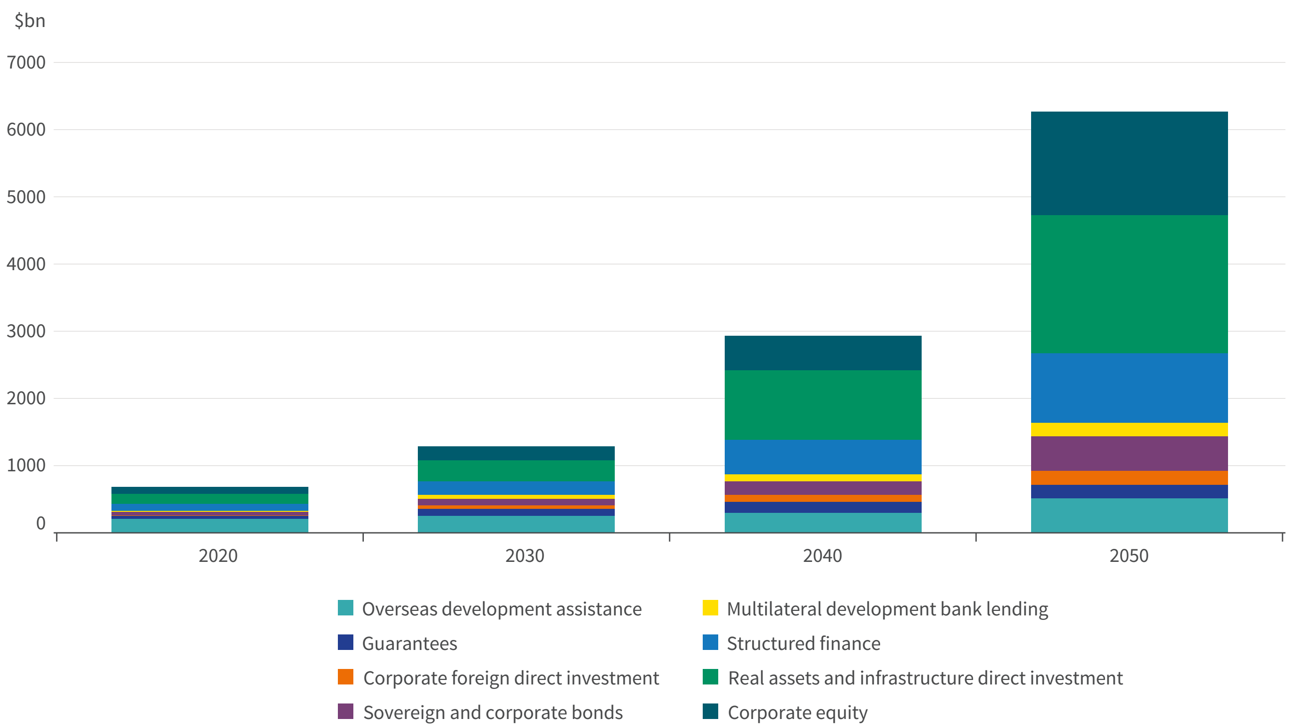
There is also the risk of fragmentation, which could slow down the transition in what is already a race against time. Fragmentation could occur between countries – as seen by some of the responses to the IRA, the proliferation of taxonomies across the world that seek to classify which economic activities are *"green"*,[41] and the risk of the same with transition-plan frameworks. But there is also the risk of fragmentation within national strategies in the absence of a coordinated vision and plan, as inconsistent signals dull the indicators to the private sector around investment and government commitment.

There is also the need for a strategic approach in the review of existing regulatory and supervisory frameworks as well as the development of new ones informed by the transition. As set out below, there is the risk regulation put in place to prevent repeating previous crises has the inadvertent effect of discouraging the mobilisation of capital to emerging markets and developing economies. From a strategic point of view, emerging work and coalitions provide positive signals for best practice and avoiding fragmentation. The work of the Coalition of Finance Ministers for Climate Action is a key example. The Coalition has principles focused on mainstreaming climate in economic policy and alignment of policies with the Paris Agreement, mobilising climate finance, promoting carbon pricing, engaging in the NDC process and sharing best practice.[42] However, it has also set out a dynamic vision for how finance ministries can drive climate action and utilise a range of tools at their disposal to do so.[43]

A strategic approach is needed for the review of existing regulatory and supervisory frameworks as well as the development of new ones informed by the transition

Similarly, the Network for Greening the Financial System has a programme of work to support central banks and supervisors in better understanding and assessing climate-related risks, opportunities and systemic vulnerabilities, as well as work on nature-related financial risks.[44] The Bridgetown Initiative[45] has also been critical in building momentum on multilateral development bank reform and debt restructuring, with an emphasis on representation and justice for middle- and lower-income countries. This thinking, as well as many other inputs, was brought together in Paris in June 2023 in a summit that concluded in the Paris Pact for People and the Planet[46] and a roadmap of key milestones as a follow-up to the meeting.[47] Reform of multilateral development banks was also a key element of the African Leaders' Nairobi Declaration.[48] As noted above, the reform of multilateral development banks has received considerable attention. The *"triple agenda"* proposed by the Independent Expert Group to the G21, and their *"bigger, better, bolder"* proposals, provide a roadmap for shareholders and stakeholders to take reforms.[49] A similarly strategic and best practice-focused body for regulators and supervisors, and/or the utilisation of existing collaborative forums to share insights, particularly in the context of developing transition plans for work and supervision, would be a useful addition to the current architecture.

Figure 7. **Building a capital stack for the $4-6 trillion needed per annum will require mobilising a variety of sources of capital**



Source: Aviva Investors, November 2023.

Transition plans promote resilient decision making

Setting, delivering on and regulatory reporting against long-term transition plans can also promote resilience in the face of short-term pressures and financial or fiscal shocks. In times of crisis or under pressure, having a long-term aim in mind can help guide a response to urgent short-term concerns without reducing the range of options to achieve the ultimate goal. For example, shocks such as the COVID-19 pandemic and Russia-Ukraine war – along with the concomitant food and energy crises, inflation and climate impacts – have delayed and constrained progress towards achievement of the Paris goals and SDGs.[50]

The lack of long-term plans for the achievement of the goals of Paris and the SDGs may, in fact, have contributed to the failure to align fiscal stimulus in response to the pandemic and its financial shocks with acceleration of the transition towards these global ambitions. For example, adopting a *"market-neutral"* response to quantitative easing inadvertently supported capital-intensive, high-emitting economic activity. At best, this was a missed opportunity; at worst, it slowed the transition at a time when a guiding transition plan could have informed a different choice. In times of stress, it is instinct to revert to orthodoxy and comfort of the familiar: in the case of the energy and inflationary crisis, this has meant using more fossil fuels, despite their misalignment with climate goals. As shocks become more frequent and extreme, a forward-looking plan to guide the world's response towards less-familiar, but ultimately more productive, courses of action would be prudent.

By setting long-term strategic goals that reflect global commitments made by the national governments that are their stakeholders and shareholders, institutions within the international financial architecture can use their long-term targets to guide responses to immediate pressures so that those responses do not undermine the long-term aim.

Climate change associated flooding,
Badin District, Pakistan. September, 2022.

Renewing the international financial architecture

Embedding tackling climate change and supporting implementation as part of the system's purpose

At COP27, in the Sharm el-Sheikh Implementation Plan, Parties acknowledged *"delivering [$4-6 trillion per year] funding will require a transformation of the financial system and its structures and processes, engaging governments, central banks, commercial banks, institutional investors and other financial actors".* [51]

This sentiment was amplified in the Synthesis Report on the Technical Dialogue of the First Global Stocktake, which states: *"Scaling up climate ambition requires the implementation of regulations and policies to incentivise international and domestic investments towards transforming the financial system. In this regard, a wide range of actors needs to engage in systematic reform efforts to improve the international finance architecture, which enhances access to finance to support effective climate action at the required scale and speed, provides access to capital and improves debt sustainability, in particular in developing countries."* [52]

> *" Scaling up climate ambition requires the implementation of regulations and policies to incentivise international and domestic investments towards transforming the financial system."*

For finance, in addition to national transition plans to support NDCs, an enabling regulatory and supervisory environment is essential. This means any *"systems transformation"* will necessarily involve the renewal of the international financial architecture so its purpose includes supporting the transition and SDGs to which its country stakeholders have committed. It is not for the financial architecture to directly require where investments, lending or underwriting should take place, although prudential and regulatory regimes send important signals to market participants about perceptions of risk. But it is a crucial part of a functioning transition-focused ecosystem and can be an enabling catalyst to the implementation of goals set by governments, influencing private-sector analysis of where opportunities lie and therefore where capital should be directed and risk-adjusted returns might be found.

Then there is the risk of inconsistent regulatory signals from the international financial architecture. Without a design principle around creating an enabling environment to support the achievement of government commitments, there is the risk regulation gets in the way. This is already in evidence in prudential frameworks – Citibank noted regulatory treatment of products linked to multilateral development banks under Basel III limits the ability of some banks to provide capital.[53] Similarly, for insurers, the prudential treatment of investments in regimes like Solvency II incentivises investment in developed-market sovereign and investment-grade corporate bonds without considering their possible contribution to systemic risks, or the fact investment into emerging and developing markets can and does protect the value of developed-market investments in a global transition paradigm. Mafalda Duarte, executive director of the Green Climate Fund, may have rightly said *"climate investments in developing countries are climate investments in all countries"*,[54] but higher capital charges under prudential regimes like Solvency II for the sovereign debt of countries with lower credit ratings remain a disincentive for institutional investors.

> Without a design principle around creating an enabling environment to support the achievement of government commitments, there is the risk regulation gets in the way

The European Central Bank's assessment of the market neutrality principles applied to its own bond-buying programme reveals it may have contributed to maintaining a lower cost of capital for high-emitting industries because they form the majority of investment-grade sectors.[55] This supports previous findings by the London School of Economics.[56] Research also indicates financial regulation is disincentivising capital mobilisation to support the transition in some cases.[57] There have been calls for a review of existing regulation to assess its fitness-for-purpose and to ensure it is not inadvertently obstructing the scaling-up of capital mobilisation for the transition.[58] GFANZ has set out that *"all of society – public and private enterprises in all regions – must move forward together and the global financial architecture must ensure this"*.[59]

Defining the international financial architecture

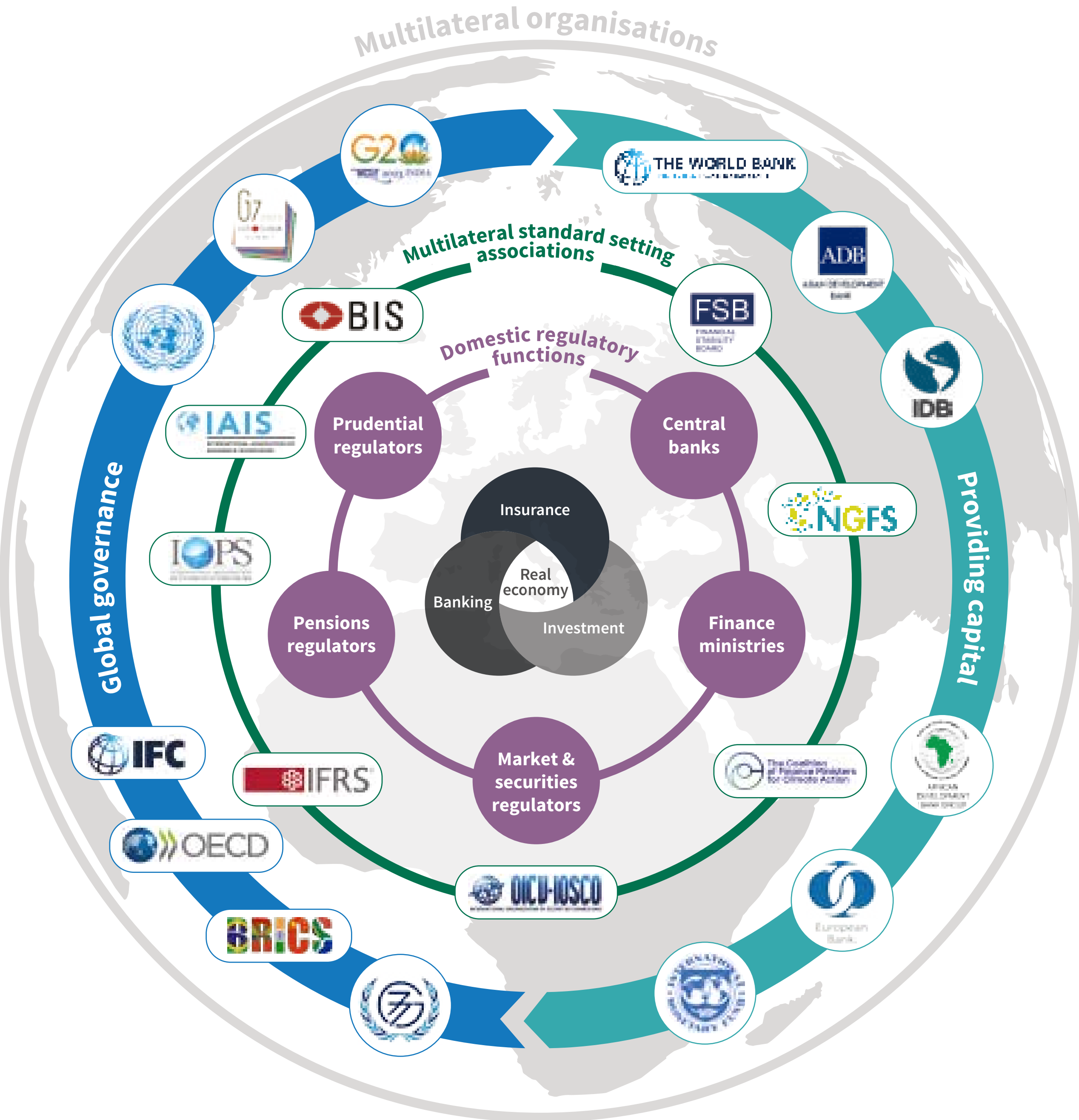
The *"international financial architecture"* refers to the governance arrangements that safeguard the stability and function of global monetary and financial systems.[60] In particular, and what is sometimes overlooked, it includes domestic regulators and supervisors who have significant influence over private finance. Across the international financial architecture, influence is often driven by the respective size of a country's economy. Within multilateral development banks and international financial institutions, the respective percentage shareholdings and proportion of capital contributed are a big factor in determining influence. Developing economies are often not well represented, leading to issues of a lack of global coordination on economic issues, including tackling climate change. As UN Secretary-General Guterres has explained, *"The global financial architecture is no longer capable of meeting the needs of the twenty-first century world: a multipolar world characterized by deeply integrated economies and financial markets, but also marked by geopolitical tensions and growing systemic risks...Even worse, the global financial system perpetuates and even exacerbates inequalities. In 2021, and we applaud this decision, the International Monetary Fund allocated over $650 billion in special drawing rights. European Union countries, including my own, received $160 billion. African countries: $34 billion."*

> *"The global financial architecture is no longer capable of meeting the needs of the twenty-first century world."*

Conversations about reform of the international financial architecture have increased over the past couple of years. However, there is inconsistent use of the term. This means it is not clear whether or not two different calls for reform are addressing the same system. Many conversations have centred around the potential for reform of multilateral development banks to leverage private finance, particularly by mobilising private capital for investment in emerging markets and developing economies. These reforms are hugely important. Multilateral development banks have a crucial role in providing concessional finance, guarantees, blending in private capital and, importantly, providing technical assistance and capacity building to developing countries so their project proposals are suitable to private investors. However, even the most ambitious proposed reforms to multilateral development banks do not create sufficient financial flows to mobilise the $4-6 trillion per year needed to achieve the transition.[61] Of this amount, $2.4 trillion needs to flow towards emerging markets and developing economies (excluding China)[62] and will be the focus for development finance.

Therefore, it is important that any discussion of the international financial architecture includes the bodies that regulate and supervise private finance, as well as multilateral development banks and international finance institutions. This would include the bodies that are part of FSB, including the prudential supervisors of banking within the Basel Committee on Banking Supervision (BCBS), of insurance within the International Association of Insurance Supervisors (IAIS), and the regulators of securities markets as part of the International Organisation of Securities Commissions (IOSCO).

Figure 8. **Regulation and supervision of international finance**



Source: Aviva Investors, November 2023.

Furthermore, although that investment need is crucial, unless the whole of finance evolves to make all financial flows consistent with the goals of Paris, money will continue to go to activities that undermine them. The Stocktake Synthesis report finds that *"significant finance flows continue being directed, including through subsidies, towards investments in high-emissions activities and infrastructure that lack resilience. Shifting these flows is critical to making rapid and durable progress towards achieving the Paris Agreement goals."*

Therefore, a holistic approach to the architecture is required, thinking beyond reforms to multilateral development banks and international financial institutions, which are essential but also insufficient to mobilise all of the capital required. We must go further to truly reform and renew the system, embedding principles that support the achievement of Article 2.1.c of the Paris Agreement so that all financial flows are consistent with it. They should also ensure the architecture can, as a matter of clearly identified purpose and priority, support mobilising the trillions of dollars of investment needed to achieve the transition.

As set out by the G20 Independent Expert Group on Strengthening Multilateral Development Banks, whole-of-system change is required: *"The whole system of the global financial architecture, and of the [multilateral development banks'] role within that system, must evolve to better support countries in aligning all their public expenditures with the investments needed to undertake the required transitions."*[63]

> *"The whole system of the global financial architecture must evolve to better support countries in aligning all their public expenditures with the investments needed to undertake the required transitions."*

Government funded rural electrification work.
Raebareli district; Uttar Pradesh, India.

Reflecting climate risks and goals in mandates

Overseeing and monitoring the integrity and stability of the financial system

Finance ministries, central banks, regulators and supervisors have a common mandate to protect the stability, functioning and integrity of the economy. This is recognised in the purpose of the Coalition of Finance Ministers for Climate Action:

"Finance ministers hold the keys to unlocking climate action. Finance ministers know most clearly the economic consequences of climate change: both the risks posed by its mounting impacts to their economies, as well as, increasingly, the opportunities of climate action which could unlock $26 trillion globally in investments and create 65 million more jobs through 2030. They can also play a leading role by incentivising climate-informed public expenditure and utilising climate fiscal tools such as carbon taxes and emissions trading systems to cut emissions and prioritize low-carbon growth."[64]

The mandates of leading finance ministries, central banks and bodies within the international financial architecture include protecting or maintaining the stability and integrity of the financial system, enabling strong, sustainable economic growth and maintaining price stability by avoiding high levels of inflation or deflation. It is clear climate change risks are central to all of those objectives.

In our paper *Act Now*,[65] a call to action for the international financial architecture, we emphasised the need to review mandates to ensure climate action is put at the heart of the financial system, its supervision and regulation.[66] In some cases, it may be necessary, or at least helpful, for a specific mandate to be secured. The Coalition of Finance Ministers has recognised the absence of a mandate as a potential barrier to progress, but it argues that articulating how climate action can work within existing mandates is also important:

"Taking on an enhanced role can only happen if Ministries of Finance can clearly articulate their core tasks and responsibilities at the national level, strengthen their mandates to drive climate action, and introduce this role into national climate governance frameworks. Without such mandates, the necessary resources and expertise might be difficult to acquire."[71]

However, through publishing transition plans, these bodies can set out how they will interpret their mandates in light of climate risks.

"Taking on an enhanced role can only happen if Ministries of Finance can clearly articulate their core tasks and responsibilities to drive climate action."

How climate change impacts the existing work of bodies within the international financial architecture

However, even in the absence of a specific mandate, addressing the financial risks of climate change is a central part of these institutions' roles. Central banks and regulators take their direction from governments, particularly finance ministries, about the policy priorities in which to discharge their mandates. Similarly, within the international financial architecture, mandates and constitutions are interpreted within the priorities and guidance of shareholders and stakeholders. This makes policy commitments and messaging from governments crucial to the interpretation of mandates and the work the international financial architecture, including national central banks and regulators, undertakes.

How ought government commitments inform the interpretation and implementation of the existing mandates these institutions have been given? These governments are the shareholders and stakeholders of multilateral as well as national institutions, and their commitment to the goals of the Paris Agreement, SDGs and Kunming-Montreal Framework, as well as other norms and standards, should inform how the governance of finance takes these frameworks into account.

Climate change poses a risk to the stability of the global financial system, not only in the future, but now. Consider the context: delayed action in cutting global emissions and a lack of implementation of policies consistent with the Paris Agreement; the increasing and cascading physical impacts of a warming world; the impact of shifting into an El Niño climate pattern (which has surprised scientists, who are seeing effects they expected further into the future[68]); the risk of hitting climate and financial tipping points. Given these factors, effectively managing the transition and limiting and adapting to physical climate risks will be vital if the stability of the financial system is to be maintained.

> Climate change poses a risk to the stability of the global financial system. Not only in the future, but now

Managing the impacts of climate change is also key to maintaining price stability. Climate change and the transition to a low-carbon economy are rightly identified as a huge economic opportunity, requiring a focus not just on costs but on investments that could generate attractive returns. But the costs of physical climate impacts continue to impact inflation. Disruption of supply chains; insured and uninsured losses; energy-supply disruption due to drought undermining hydroelectric projects and the cooling mechanisms for nuclear power stations; crop failure due to the impact of extreme heat on food supplies; changing disease vectors and air pollution adding to health costs – all of these factors are playing a role.[69] François Villeroy de Galhau, Governor of the Banque de France, made this plain in a recent speech: *"Central banks' core mandate worldwide is price stability, and climate change already affects the level of prices and activity – think of severe drought in Argentina which cost three per cent of GDP, of floods in Pakistan with losses and damages equivalent to eight per cent of GDP, or of the recent rise of food prices everywhere – hence we have to deal with the effects of climate change on the economy. It's not mission creep, it's not a politicisation of our mandate, it is our core business and core duty."*[70]

It is essential that the mandates of entities across the international financial architecture, central banks, regulators and multilateral groups of supervisors are now read in light of the global situation in which we find ourselves and the global goals to which countries have committed – the Paris Agreement, SDGs and Kunming-Montreal Framework. A key means of securing this is for the institutions of the financial architecture to publish transition plans that set out how they will evolve their interpretation of their mandates to consider national commitments. The UK's introduction of requirements that the Prudential Regulatory Authority and Financial Conduct Authority *"have regard"* to sustainability, including climate change, in their rule making, and a regulatory principle to consider the need to contribute towards the UK's legally binding net-zero and environmental targets in carrying out their functions, are examples of how some jurisdictions are beginning to evolve mandates. Without such provisions, or reinterpretation of mandates in published transition plans, there is a danger commitments made by governments at multilateral events like COPs do not *"trickle down".* National transition plans that do not include details of how the country will use its influence in national, international and multilateral forums to secure such financial transition plans would be considered incomplete due to the absence of detail (and regular reporting) against this crucial lever. The evolution of the vision of the World Bank, which now seeks to *"create a world free of poverty on a liveable planet"*, is a welcome development in this regard.[71]

> The evolution of the vision of the World Bank, which now seeks to "create a world free of poverty on a liveable planet" is a welcome development

Transition plans for the international financial architecture – leading the normative shift

To support financial institutions as they transition their investment, lending and underwriting models to align with their own transition plans, the bodies that make up the international financial architecture, particularly members of the FSB, should similarly review their work programmes and mandates and produce their own plans to transition their supervision and regulatory practices, as well as their operational activities, clear in the knowledge their national government stakeholders have committed to the Paris Agreement and many of those they supervise have made net-zero commitments. These transition plans should reflect on the ways in which their existing mandates and purpose should be read in light of the need to avoid worsening the climate crisis whilst also seeking to ensure a coordinated and orderly response to a transition that is likely to be turbulent.

The FSB could arguably lead this normative shift, ideally mandated by the finance ministers and central bank governors of the G21.[72] But all other bodies within the FSB membership – the International Monetary Fund (IMF), World Bank, Bank for International Settlements, OECD, BCBS, IAIS, IOSCO, International Accounting Standards Board, Committee on the Global Financial System and Committee on Payments and Market Infrastructures[73] – should prepare, and annually report upon, transition plans.

Similarly, the Network for Greening the Financial System and Coalition of Finance Ministers for Climate Action should prepare principles for transition planning for central banks and supervisors, and finance ministries, respectively, reflecting on the principles for and ambitions set out in national transition plans, and encourage members to implement them. The FSB should then include in its reporting to the G21 a synthesis of the *"state of the transition"*, as informed by each entity's transition-plan reporting, along with policy recommendations to the G21 for closing the gap between the current trajectory and that necessary to achieve the aims to which countries have committed. For this to happen, it is key that governments begin by setting out their own national transition plans and that these include the use of the government's influence to protect the integrity of the global economy by embedding the principles of transition planning across the architecture. The UN has also called for bodies within the international financial architecture to set out their transition plans: *"The requirement for transition plans would include the multilateral development banks, as well as regulators and standard setters and the financial institutions within their purview."* [74]

However, this would not be the only means by which these changes might be brought about. The bodies within the international financial architecture could set out how they intend to interpret their mandates and focus regulation of their own initiatives. The outcome of COP28 could also include that the Parties would use their influence across the financial architecture to request transition plans be produced by the bodies within it. The monitoring of and synthesis of progress against transition plans across the financial system could be undertaken by the OECD, with its reporting and recommendations informing the discussions at the G21 and future COPs.

Transition plans and reporting from these bodies would also send powerful signals to financial-system actors about the pace of the transition and governments' commitment to it, further driving reinforcing feedback loops of action and delivery that would also flow through to financing in and action from the real economy, forming a *"triple helix"* of rising ambition.[75] To create these signals, it is important transition plans from bodies within the international financial architecture not only cover their operations, but also include the influence they have over the financial system and regulation.[76]

> *"Transition plans and reporting from the bodies of the international financial architecture would send powerful signals to financial-system actors about the pace of the transition and governments' commitment to it."*

Focusing finance on the transition

The primary means of securing this investment will be the implementation of policies within the national transition plans that support enhanced NDCs and an accelerating transition. Correcting the market failures that mean the costs of emissions are not reflected in corporate cashflows, and therefore valuations, must be central to these policies. So must incentives to support those activities, which must be rapidly scaled up and deployed to support a just transition and protect sustainable development.

Clear and consistent roadmaps are needed to phase out inefficient fossil-fuel subsidies and shift fiscal support from activities that are undermining long-term economic growth. Providing, reporting progress against, and sticking to timelines for these shifts will help businesses and investors plan and transition their activities accordingly.

IMF research finds that in 2022, \$1.3 trillion of explicit subsidies to fossil fuels were provided across 170 countries. The same analysis found full fossil-fuel price reform (removing subsidies and pricing environmental and social costs, whilst charging foregone consumption taxes) would reduce global carbon dioxide emissions to an estimated 43 per cent below baseline levels in 2030 (in line with keeping global warming to 1.5-2°C), while raising revenues worth 3.6 percent of global GDP and preventing 1.6 million local air pollution deaths per year.[77]

Measures such as these can change the economics of the global financial system so the profit motive aligns with the transition to a sustainable and low-carbon economy. The economics of the transition must also reflect a sharing of the value of the resources crucial to the transition, which largely exist in the Global South, and ensure the benefits of those transition assets are fairly shared to support a just global transition and fair distribution of its benefits and revenues. Investment in those crucial assets can be a key means by which capital can be mobilised towards countries blessed with them. A fair proportion of the benefits need to be retained in those countries, rather than extracted to benefit the Global North, as has happened during previous transitions. In order to accelerate progress, the transition needs a financial architecture designed to support the mobilisation of capital and consistency of financial flows with the Paris Agreement, and in which the transition is embedded as part of the purpose of the system.

> In order to accelerate progress, the transition needs a financial architecture that is designed to support the mobilisation of capital and the consistency of financial flows with the Paris Agreement

The existing architecture has evolved rather than having been designed as a whole, principally in response to successive financial crises, most recently the Global Financial Crisis (GFC) of 2008. It is inappropriate to assume regulatory principles designed to avoid repeating the mistakes of previous crises are necessarily suitable to support the transition and prevent future climate crisis or collapse. Due to the binary and irreversible nature of runaway climate change, this is one crisis that must be avoided by precautionary actions (ex-ante) rather than reacted to (ex-post). This is how we avoid the Tragedy of the Horizon within national and international financial regulation and regulators.

A clear and present danger to the financial system

Climate risk is financial risk

Climate change is no longer a risk we have to think of as something that might manifest in the future. This year seems certain to be the hottest since records began[78] and we have seen the devastating impacts of our warming world all around us. Heatwaves and average temperatures breaking records on multiple continents. The lowest sea-ice levels on record. Sea-surface temperatures not just breaking but smashing records, with the power of the oceans absorbing the equivalent of an atomic bomb explosion every second over the past 150 years;[79] this is leading to ever-more violent storms and hurricanes and dramatically heavier and more concentrated rainfall. We know these impacts will worsen as long as we continue to increase global emissions in the face of exhortations from scientists, NGOs and citizen protesters. We also know more clearly than ever that these impacts create and exacerbate financial risks, as does the need for what will now be an accelerated and bumpy transition. However, markets continue to be extremely short-term in their analysis of what are seen as long-term risks. This leads to the continuation of climate change as the greatest market failure the world has seen.[80] But as well as correcting market failures, we need governments to shape markets, including through transition plans that can create the tipping points to drive markets. If greater scientific data, calculations of the losses from climate change and the benefits of the transition, and agreements at COPs, G7s, G21s and UN General Assemblies mattered as much to markets as they should, we would be well on the way to tackling these problems.

A present, growing and non-diversifiable source of risk that also amplifies familiar risks

Although the point has been described as self-evident,[81] it bears clear repetition – climate change creates financial risks. The transition and physical risks from climate change manifest in familiar market risks – credit risk, market and liquidity risks, and operational risks – but, as Bank of England Deputy Governor Sarah Breeden says, *"[climate risks] have distinctive characteristics and require a different approach if we are to manage them well".*[82]

Climate change is not limited to physical and transition risks. It is an amplifier and accelerant of other risks. The World Economic Forum's (WEF) *Global Risks Report 2023* names the failure to mitigate climate change, and failure of climate-change adaptation, as the fourth and seventh most severe risks respectively over a two-year period, and the first and second most severe over the next decade.[83] But with the possible exception of cybercrime and cyber-insecurity, all the other risks the WEF identifies interact with, and are made both more proximate and more severe by, climate change. All these risks carry financial consequences; they contribute to and are affected by an ever more volatile global geopolitical, economic, social and environmental situation. This makes it harder to respond to climate change with the necessary levels of action, reinforcing a vicious cycle.

> *"Climate risks have distinctive characteristics and require a different approach."*

Figure 9. **The World Economic Forum's top ten global risks over two and ten years**

	2 years	10 years
1	Cost of living crisis	Failure to mitigate climate change
2	Natural disasters and extreme weather	Failure of climate change adaptation
3	Geoeconomic confrontation	Natural disasters and extreme weather events
4	Failure of climate change adaptation	Biodiversity loss and ecosystem collapse
5	Erosion of social cohesion and societal polarisation	Large-scale involuntary migration
6	Large-scale environmental damage incidents	Natural resource crises
7	Failure of climate change adaptation	Erosion of social cohesion and societal polarisation
8	Widespread cybercrime and cyber insecurity	Widespread cybercrime and cyber insecurity
9	Natural resource crises	Geoeconomic confrontation
10	Large-scale involuntary migration	Large-scale environmental damage incidents

Economic | Environmental | Geopolitical | Societal | Technological

Source: WEF, Global Risks Report, 2023.

A risk to global financial stability

Climate financial risks are unique, novel and a clear and present danger to the stability and integrity of the financial system on which the global economy, sustainable development and society – in short, modern civilisation as we have come to know it – depend.

Climate risks can simultaneously impact all sectors and geographies with contagion, cascading impacts and amplifying effects. It really can be everything, everywhere, all at once. The impacts of climate change are likely to manifest on a far greater scale than risks with which market participants and their regulators and supervisors are familiar, or that regulatory systems and internal risk models were designed for. To return to Breeden's argument: *"[Climate risks] will affect every consumer, every corporate, in all sectors and across all geographies. Their impact will likely be correlated, non-linear, irreversible, and subject to tipping points. They will therefore occur on a much greater scale than the other risks we are used to managing."*[84]

> *"Climate risks will affect every consumer, every corporate, in all sectors and across all geographies. Their impact will likely be correlated, non-linear, irreversible, and subject to tipping points. They will therefore occur on a much greater scale than the other risks we are used to managing."*

The physical impacts of climate change, and the financial impacts and risks connected with them, can create reinforcing feedback loops that increase the severity of effects across seemingly uncorrelated sectors and geographies, meaning familiar risk-mitigation strategies like diversification are insufficient. *"Climate-related risk is non-diversifiable and will have a financial impact on many companies",* as the TCFD puts it.[85] The impact of tipping points – conditions beyond which changes in a part of the climate system become self-perpetuating, and which may lead to abrupt, irreversible and dangerous impacts – is not just a question seriously concerning climate scientists.[86] Tipping points can happen in financial markets too. In 2008, the crystallisation of systemic risks incubated within the banking sector, particularly in the financialisation of the US mortgage market, led to tipping points in market sentiment such that confidence and then liquidity dried up. Because the financial system depended upon both, it amplified these effects, and significant market losses were only stemmed by huge government intervention. As with climate tipping points, which become self-perpetuating, the market response amplified the impact of events like the fall of Lehman Brothers and other vulnerabilities in the banking market. As with climate impacts, there was also swift contagion that exaggerated the impacts and meant other sectors and geographies were quickly affected.

However, climate impacts are likely to be more correlated, swifter acting and far harder to contain. When transition risks crystallise, whether through policy corrections, technological breakthroughs, shifts in consumer sentiment, or in other ways, valuations of exposed investments will not only be shifted due to the impact on cashflows and credit risks. It is likely liquidity will also be an amplifying factor in a climate *"Minsky moment"*,[87] as buyers for assets that are most affected may not be found at any price. This has been observed in other contexts, such as when Russia illegally invaded Ukraine. Even before sanctions were imposed on Russia, the knowledge they were coming meant those seeking to offload exposed investments could not find buyers. Liquidity evaporated far faster than any bank or asset manager could sell, leading to assets being written down to a *"fair-value"* of nothing. In a crisis, anthropology means humans are naturally wired to hold onto what they have due to *"loss aversion"*, with losses looming larger than gains.[88] This means that in a crisis, liquidity can be the first element of market stability to fail. In a market with no buyers, you cannot sell at any price.

The need for a pre-emptive response – Why you cannot "bail out" a climate-induced financial system collapse

In 2008, the market panic was diluted, and the economy eventually shored up, through unprecedented stimulus from governments in the form of quantitative easing. In addition to cutting interest rates to historically low levels, central banks bought government and corporate bonds in huge quantities. A similar approach to global fiscal stimulus was adopted when the COVID-19 pandemic struck in 2020, but this time on a far larger scale. The average stimulus provided by developed countries in 2008-'09 is estimated at 2.63 per cent of their GDP, with the 2020 response averaging 9.72 per cent, a 270 per cent increase.[89] McKinsey estimated total stimulus in the COVID response to be over triple that of 2008, with some countries' outlay over ten times that during the GFC.[90]

But the climate crisis is not one that can be rationalised and restructured after the event. Unlike 2008 and 2020, a crisis affecting all sectors and all geographies at the same time would not be one governments would have the fiscal capacity to absorb, particularly in light of weakened post-pandemic national balance sheets and the waning of the era of ultra-low inflation. A crisis of that type could end up in a financial collapse, with catastrophic impacts across civilisation: on the global economy, sustainable development, national indebtedness and modern social patterns. This is something that needs to be avoided pre-emptively rather than reacted to after-the-fact.

Prevention is important when it is not clear that there will be or even can be a cure. As Mark Carney said in a speech outlining the Tragedy of the Horizon, *"the catastrophic impacts of climate change will be felt beyond the traditional horizons of most actors – imposing a cost on future generations that the current generation has no direct incentive to fix… once climate change becomes a defining issue for financial stability, it may already be too late…as risks are a function of cumulative emissions, earlier action will mean less costly adjustment"*.[91] And this theme is taken up even more starkly by Breeden, who said *"the size and balance of future risks will be determined by actions taken in the next decade – probably in the next three to five years"*.[92] Given that Breeden delivered this speech in 2020, her argument is more startling still.

> *"The catastrophic impacts of climate change will be felt beyond the traditional horizons – imposing a cost on future generations that the current generation has no direct incentive to fix… once climate change becomes a defining issue for financial stability, it may already be too late…"*

Act now - the precautionary principle

Acting pre-emptively rather than waiting until we understand the full implications of an event, or have perfect information upon which to base a decision, is core to the precautionary principle. This is not a new concept, nor is it unfamiliar in the geopolitics of climate change. The 1992 Rio Declaration, so much of which still applies more than three decades later, includes Principle 15: "*In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."* [93] The need to take measures today that not only benefit the current generation, but also consider the ability of future generations to thrive, grows ever more acute. In fact, the current situation is barely precautionary at all, as there is scientific consensus enough on the causes of climate change and measures needed to mitigate its worst effects. When we know what is required, but governments are unwilling to take the necessary steps, the problem is politics, not a lack of information.

> *"Lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."*

One of the issues repeatedly raised by market participants as a limitation on climate action is a lack of reliable data upon which to report. But this is also true of market activity in general: there is often a lack of reliable data upon which to make investment, lending and underwriting decisions; credit ratings and research advice are often based on incomplete information. But those activities continue regardless. This is undoubtedly a problem, and the assumptions and proxies currently being used may well lead to a huge underestimation of the risks, both transition and physical, to which financial institutions are exposed. The information asymmetry between issuers and borrowers and the financial system, between what is known and what is disclosed, makes a nonsense of any claims to market efficiency (as the efficient-market hypothesis is based on both informational efficiency and rational incorporation of that information[94]) and the power of the market to price and put a value on risk. Even with perfect information, future risks are often discounted to the extent they are not reflected in asset prices.[95] Assumptions of perpetual growth and infinite resources may make valuations ever less helpful in a rapidly changing world in which planetary boundaries are ever more recognised and important.

> Assumptions of perpetual growth and infinite resources may make valuations ever less helpful in a rapidly changing world in which planetary boundaries are ever more recognised and important

This is not only a problem for corporate risk and opportunity assessment and valuation. It is arguably an even bigger problem for regulators and governments. There is insufficient information about the transition risks posed to companies and financial institutions. At the same time, financial-market participants' disclosures are painting an optimistic picture of their ability to implement net-zero commitments; in many cases these disclosures complacently accept optimistic models and scenario analyses that do not sufficiently account for physical and cascading risks or tipping points, nor the muted emergency signals from corporates. This means regulators and governments are lacking the necessary feedback from the private sector that should be telling them they need to pull every available lever as hard as possible. A study by the Institute and Faculty of Actuaries found that *"…in some cases firms are making public disclosures that raise significant questions – showing benign economic results in high physical risk scenarios. These outputs may provide false comfort to institutions and advisers. They may be particularly dangerous for regulators seeking to understand systemic risk, as an aggregation of benign results may result in misplaced confidence regarding the threat of climate change to financial resilience."*[96]

In essence, climate change means every valuation is wrong.[97] The $100 trillion question is, *"How wrong?"*. Research by Cambridge Econometrics and Ortec Finance on behalf of GIC, the Singaporean sovereign wealth fund, suggests a hypothetical global portfolio of 60 per cent equities and 40 per cent bonds would see its cumulative returns decline by nearly 40 per cent over a 40-year period in a scenario where no additional climate policies are introduced (i.e. business as usual), in comparison to a climate-uninformed baseline.[98]

> Climate change means every valuation is wrong

This conclusion is translated into financial risk by the Bank of England: *"If government policies were to change in line with the Paris Agreement, then two thirds of the world's known fossil fuel reserves could not be burned. This could lead to changes in the value of investments held by banks and insurance companies in sectors like coal, oil and gas."*[99]

The need to make markets believe government signals – implementation is key

Markets seem to be deeply discounting the possibility governments will put in place the policies necessary to implement what they announce in communiques and outcome documents. A recent example of this was seen when the G7 Leaders' Communique from Hiroshima in May 2023 reaffirmed the G7 commitment to *"the elimination of inefficient fossil fuel subsidies by 2025 or sooner."*[100] The share prices of fossil-fuel companies were unaffected, even though implementation of the policy within the committed timeline would represent a significant shock to the economics of fossil-fuel extraction and refinement.

One means to address this lack of belief in government follow-through is to require transition plans from governments that set out detailed policy implementation pathways to support their pledges. But then also, crucially, to require annual reporting of progress against them, synthesis of that reporting, and highlighting of any laggards or backsliding. That information could be used by corporates to inform their capital and operational expenditure and investment decisions, and by financial-market participants to inform their assumptions about where best to deploy their clients' capital, manage risks and seek returns. In the UK, the role of the CCC in monitoring progress and reporting back to government is one that could usefully be replicated across different jurisdictions.

Reporting of progress, and highlighting of any laggards or backsliding. could be used by corporates to inform their capital and operational expenditure and investment decisions, and by financial-market participants to inform their assumptions about where best to deploy their clients' capital, manage risks and seek returns

Addressing systemic risks – mitigating risks to the system will necessitate transitioning the system

Systemic risks to the financial system are those that arise from an impairment of all or parts of the financial system and have the potential to have serious negative consequences for the real economy.[101]

But, as the FSB recognises, systemic climate risks are also broader than this. They are not only a threat to the financial system but are made worse by its actions in allocating capital to and underwriting activity that exacerbates these risks: *"There are important systemic aspects such as externalities, second-round effects and spillover of risks that could be amplified by the financial system, further increasing (or decreasing) the magnitude of financial risks"*.[102]

In the same way the financial risk of climate change is at once an element of and amplifier of traditional market risks, but also a standalone risk with unique features, the systemic nature of climate risk is both familiar and unique. Climate change is an accelerant and magnifier of existing systemic risks but also a systemic risk in itself. In fact, as we discussed in *Act Now*, climate change poses a catastrophic and cascading risk to the financial system that could predicate not only a crisis but a collapse of the system as we know it, plausibly triggered by physical risks and the undermining of the insurance underwriting model, with disastrous impacts on the real economy and society.[103]

This is echoed by the United Nations Office for Disaster Risk Reduction: *"Systemic risk is associated with cascading impacts that spread within and across systems and sectors via the movements of people, goods, capital and information within and across boundaries. The spread of these impacts can lead to potentially existential consequences and system collapse across a range of time horizons."*[104]

Conclusion – our call to action

The calls to reform the international financial architecture grow ever louder. UN Secretary General Guterres has been leading the charge towards a renewed system. As he puts it: *"In the longer term, we will not solve today's challenges by relying on the financial system that helped to cause them. The global financial architecture was created for a world that no longer exists. It cannot address the challenges faced today by developing countries. Let's be honest: it has failed countries at their moment of greatest need. It is now widely recognized that we need an economic system that is coherent and coordinated, and reflects today's global economic reality. A system that supports stable economic conditions; and helps countries to invest in the SDGs."*[105]

The UAE Presidency for COP28 has made financial-system reform one of its core priorities. In a letter to Parties setting these out it said, *"We know that the current international financial architecture is fragmented and offers insufficient solutions. If we are to achieve the goals of the Paris Agreement, emerging and developing countries need in excess of $2.4 trillion of annual investment in climate action by 2030. Climate finance arrangements need to transform to deliver at this scale, to work better as a system and support finance mobilization directed to developing countries at unprecedented levels."*[106]

COP28 and the response to the Global Stocktake can seize this opportunity and build momentum towards a financial system that supports implementation of global commitments by Parties and the mobilisation of capital to support them.

These are the steps we believe are required:

- **Create a vision** – The response to the Global Stocktake should include not only government and public body action, but detailed analysis of the progress made by private finance towards the goals of the Paris Agreement. A global vision is needed to make all financial flows consistent with Article 2.1.c of the Paris Agreement, which can be led by the creation and implementation of national transition plans.
- **Change economic fundamentals** – The Stocktake should make clear it expects Parties to respond not only with essential and urgent enhancements of NDCs, but also a clear implementation plan – a national, whole-of-government transition plan with annual reporting on progress. These plans can send signals to markets about commitment to transition and policy shifts that will change future corporate cashflows and therefore market valuations.
- **Transition the international financial architecture** – The Stocktake outputs should include a review of the international financial architecture. A detailed regulatory vision is needed to align the regulation and supervision of finance with the ambitions of Parties – a blueprint for a transition-aligned, purpose-enabled financial architecture.

  All bodies within the International Financial Architecture should respond to the signals sent by government stakeholders in signing up to the Paris Agreement, Kunming-Montreal Framework and SDGs by creating their own institutional transition plans. These will set out how their work will transition to take account of the global commitment to net zero, particularly the steps to be taken before 2030 to align with a 43 per cent cut in emissions against 2019 levels. These transition plans would send important signals about prioritisation to guide those they regulate and supervise.
- **Build institutions** – An institutional guiding, monitoring and analysis mechanism is needed. We need clear guidance for national and financial architecture transition plans along with an annual synthesis report that monitors implementation and supports iterative, dynamic and responsive plans that evolve with the accelerating transition.

These actions are not out of reach. They could be implemented in the next two years. There is no time to wait. Setting the right policies to align the financial system with a just and nature-positive net-zero pathway is not only the right thing to do but the key to generating sustainable and inclusive economic growth across the world. That is a prize worth capturing.

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Inclusion here is not to suggest that all these individuals endorse all the ideas in this paper and any errors or omissions belong to the author. However, their challenges, ideas, and suggestions were enormously valuable.

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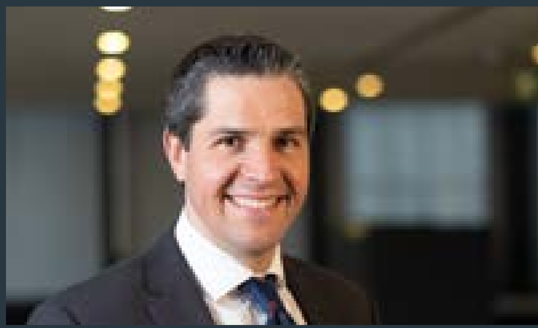

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