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At the GFI, we take great pride in our reputation as ruthless pragmatists. We believe a greener future rests on the ability to redeploy finance towards net zero and nature-positive outcomes. Since our inception almost 5 years ago, we have focused our efforts on identifying and demonstrating how public, private, and philanthropic capital can be used most effectively to transition real economy sectors in line with the demands of science.

As a bridge between the policymakers and the financial markets, we provide a unique platform for the kind of radical collaboration that is needed to address the execution gap – turning concepts, commitments, and ambitious aspirations into solutions that unlock investment.

Our latest publication, the Green Finance Quarterly, aims to capture this approach. This selection of articles provides a snapshot of the breadth of our interests and activities: from operationalizing ambitious global initiatives such as the Taskforce for Nature-Related Financial Disclosures (TNFD) that has recently launched a set of groundbreaking recommendations, to scaling innovative, alternative funding solutions for local authorities to finance their climate commitments. Our objective is always to deliver tangible outcomes that catalyse the movement of capital.

You will also find extracts from the latest work of our coalition on decarbonizing road transport, which not only identifies the barriers that will need to be overcome to accelerate investment in electrifying the UK's heavy goods vehicle fleet but also proposes some potential demonstrable solutions to address them. In addition, we update on how our new European offices are aiming to expand our work and impact.

And we're pleased to share with you our initial views on some of the key topics that leading banks and our partners at Laudes Foundation were keen for us to explore during London Climate Action Week, where we invited over 100 leading experts to provide their insights and expertise to discuss what is next for transition finance, risk-sharing, green finance regulation, carbon removals, and adaptation finance. These reflections have proven timely given the attention and focus these topics received during COP28 and will inform our work in the months and years to come.

The whole team at the GFI hopes you enjoy reading this inaugural edition of GFQ. We also invite you as valued friends, supporters, future partners, and fellow pragmatists to collaborate with us to deliver a greener future – made possible through finance.

# Contents



Foreword	02
Translating concept into action: The Taskforce on Nature-related Financial Disclosures	04
GFI European Expansion	06
Heavy Hauls, Lighter Footprints: Financing the transition to zero emission trucks	08
Mobilising capital at the municipal level: Local Climate Bonds Toolkit	11
International Climate Finance	13
What next for risk-sharing?	15
What next for adaptation finance?	18
What next for carbon removals	21
What next for transition finance?	24
What next for financial regulation?	27

# Translating concept into action: The Taskforce on Nature- related Financial Disclosures

**I**n September 2023, the Taskforce on Nature-related Financial Disclosures published its final recommendations, with a celebration at the New York Stock Exchange during New York Climate Week. The following week, the GFI, as secretariat host, advisor to the Chairs, and former co-chair of the TNFD informal working group, was delighted to host the UK Launch of the TNFD's Recommendations in London at the Royal Society, where renowned naturalist Charles Darwin had been a fellow. We were joined by leaders in business, finance and civil society to hear from speakers about the importance of integrating nature and biodiversity into the way we do business and the transformative potential of the TNFD as a tool to support this, including:

- Dr Rhian-Mari Thomas OBE, CEO of the Green Finance Institute
- The Rt Hon Thérèse Coffey, then Secretary of State for Environment, Food and Rural Affairs of the United Kingdom
- Sir Adrian Smith, President, Royal Society
- David Craig, Co-Chair, TNFD
- Emily McKenzie, Technical Director, TNFD
- C.S. Venkatakrisnan, CEO, Barclays
- David Croft, Group Head of Sustainability, Reckitt
- Professor Andy Purvis, Natural History Museum
- Baroness Penn, then Lords Treasury Minister, HMT
- Tanya Steele, CEO, WWF UK
- Andrew Mitchell, Vice-Chair, TNFD Stewardship Council

## TNFD Recommendations

It is clear that we need to change the relationship between business, finance and nature. Nature is no longer just a corporate social responsibility issue, but a core and strategic risk management issue alongside climate change. Accelerating nature loss is increasing physical and transition risks to business and investors, and the TNFD's recommendations are a vital tool to start understanding business exposure to nature.

After two years of design and development through an open innovation process in consultation with thousands of stakeholders across sectors and markets, the TNFD published its recommendations in September 2023.

It includes 14 recommended disclosures based on the four pillars of the Taskforce on Climate-related Disclosures (TCFD): governance, strategy, risk & impact management, metrics & targets – so that organisations can build on what they've already done with climate and have an integrated approach to disclosing against nature.



## NATURE

## Now, what's next for the TNFD?

**T**he journey from concept to delivery, to integrate nature into business and financial practices, has been an extraordinarily collaborative effort. The TNFD have involved hundreds of organisations and thousands of individuals to incorporate the insights and expertise from scientists, civil society, multilateral organisations, corporates, financial institutions, local community groups, and indigenous peoples in the consultative process.

At the GFI, we are proud to play our part by co-chairing the informal working group that set up the Taskforce, hosting the global secretariat, and convening the UK consultation group.

Now we're passing the baton onto the corporates and financial institutions to embed the TNFD into the way their businesses operate – and we are here to support along the way through the UK consultation group. Any organisation can implement TNFD recommendations on a voluntary basis and leading companies have already announced their plans to start TNFD reporting, including GSK, Mirova, Ecopetrol, Severn Trent, Sanlam Investments and others. There are also official TNFD consultation groups in ASEAN, Brazil, France, India, South Africa, the US, and other major markets who can support you in your journey.

Disclosures through the TNFD are a critical first step to centralise nature within business models, operations and supply chains. However, to mobilise capital at scale additional measures will also be needed. At the GFI, in addition to our support for the TNFD, we are pursuing complementary work programmes that include:

- Developing a supply of investable high-integrity nature projects;
- Ensuring that supply is met with demand from investors, financial institutions and corporate buyers;
- Creating a supportive market environment and infrastructure.

Please do get in touch with us if you have any questions about how to get started with TNFD disclosures or mobilising finance for nature more broadly – [tnfdncg@gfi.green](mailto:tnfdncg@gfi.green).

# European Expansion

This quarter saw the official expansion of the GFI to Denmark and Spain with the appointment of Directors Signe Fosgaard in Copenhagen and Eduardo Brunet in Madrid. Supported by funding from the Laudes Foundation, the GFI in Europe has an initial focus on decarbonising the built environment with the potential to expand into other sectors, such as transport and nature, building on the success of the sector-specific approach undertaken in the UK.

## The challenge?

Globally, the operation and construction of buildings accounts for around 37% of CO<sub>2</sub> emissions. As such, decarbonising the built environment is vital to achieving net zero. In Europe, annual deep renovation rates are currently 0.2% and will need to reach 3% by 2030 to achieve the EU's climate goals.

To achieve the EU's 55% emissions reduction by 2030, around €275 billion of additional investment in upgrading existing buildings is required every year.



Annual investment gap of €275 billion a year to upgrade the EU's buildings

# Spain

In Spain, the GFI is focused on increasing the flow of private finance to decarbonise the economy with an initial focus on the built environment. The GFI is currently leading the finance work stream of the citiES 2030 programme – comprising eight Spanish cities – Barcelona, Madrid, Soria, Seville, Valencia, Valladolid, Vitoria-Gasteiz, and Zaragoza – as part of the EU’s mission to deliver 112 climate neutral and smart cities by 2030 through collaborations between local authorities, citizens, businesses, investors, and regional and national authorities. There is significant momentum and local interest in replicating the GFI’s successes in the UK, including delivering [the London Green Finance Fund](#) and Local Climate Bonds, in Spain.

The GFI is also working with partners to translate the solutions we are bringing to market in the UK to Spain. For example, this includes a collaboration with leading law firm, Uría Menéndez, to adapt into Spanish legislation a Property Linked Finance structure based on the PACE financing scheme. With the Spanish Banking Association, we are customising the ‘Lender’s Handbook on Green Home Retrofit and Technologies’ for the Spanish market, to provide a vital resource for financial institutions looking to increase their awareness of the financial products and services which will facilitate the roll out of net zero ready buildings.

Our launch in Spain featured an in-person event with a keynote from David Lucas, then Secretary of State for Transport, Mobility and Urban Agenda. The event also featured a panel exploring "Green and sustainable investment: Challenges and achievements in the Spanish industry", which addressed the importance of public-private collaboration and the need to accelerate investment in the transition to net zero.

Since launching in Spain, our partnership with the Superior Council of the Colleges of Architects of Spain (CSCAE) to promote the decarbonisation of buildings and urban regeneration received one of the Sustainability Actions 2023 awards.

# Denmark

In Denmark, the GFI is currently focused on risk-sharing measures in the insurance sector; commercial bank involvement in the social housing sector and municipal retrofitting schemes; and on decarbonising the existing real estate portfolio of Danish pension funds, from an operational and embodied carbon perspective.

As part of its initial focus, the GFI has partnered with the World Climate Foundation to work with investors and the wider Danish real estate sector to design, operationalise, and bring to market financial mechanisms for de-risking and scaling up green real estate investment, initially in Denmark, but with the potential to scale into other Nordic and European countries.





# Heavy Hauls, Lighter Footprints: Financing the transition to zero emission trucks

**T**he freight and logistics sector in the UK underpins the functioning of the economy, contributing over £127 billion to the UK economy per year. However, as almost all Heavy Goods Vehicles (HGVs) are powered by diesel, representing a disproportionately large share of UK transport emissions (19%) – this sector is a priority to decarbonise. In recognition of this, the GFI's Coalition for the Decarbonisation of Road Transport has expanded its work to innovate the financial solutions necessary to accelerate decarbonisation of this sector.

Zero emission truck (ZET) technology, whether battery electric or hydrogen fuel cell-based, is rapidly advancing. Some ZETs already rival the performance of their diesel counterparts. However, despite these advancements, the adoption of ZETs remains limited, with only 0.1% of the UK's vehicle parc consisting of ZETs.

Adopting these new technologies represents a £100 billion investment opportunity for the public and private sectors. There is limited time remaining, as many HGV operators in the UK have just one more cycle of replacing their fleet before the phase out dates for diesel trucks, which means many are making decisions now that will impact the speed at which they are able to decarbonise in the future.

To help mobilise the capital required, the GFI brought together global experts from finance, freight and logistics and energy sectors, with leading thinkers from academia and non-profit organisations as well as local and central government, to co-create the solutions which can accelerate the decarbonisation of the HGV sector. This article summarises the barriers hindering the adoption of ZETs and explores potential financial and policy solutions that can unlock the £100 billion investment opportunity while steering the sector towards a cleaner, greener future. The full report is available [here](#).

# Barriers

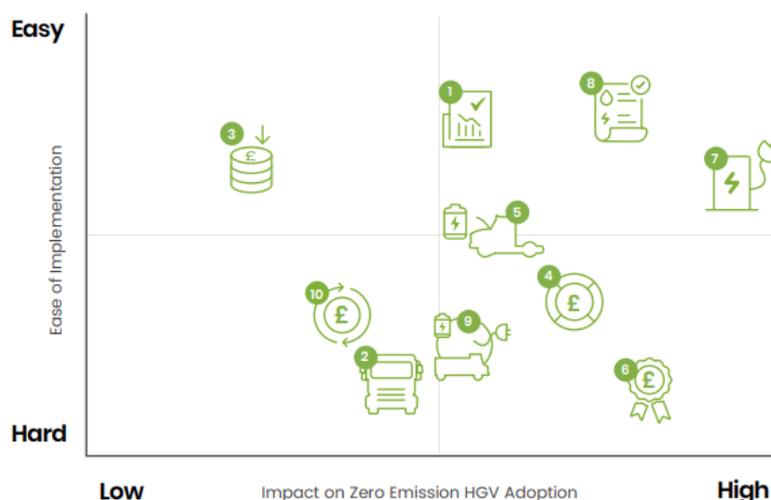
Several barriers impede the widespread adoption of ZETs:

- 1. High capital cost:** ZETs powered by batteries, are 2-3 times more expensive than diesel trucks. Hydrogen trucks have an even higher upfront cost. This poses a significant challenge to making a successful business case, especially for small and medium-sized operators who cannot access low-cost finance.
- 2. Infrastructure challenges:** Building the necessary infrastructure for recharging or refueling ZETs is costly. Estimates suggest that between £11 and £24 billion will be needed for depot infrastructure, and £1 to £2 billion for public infrastructure by 2050.
- 3. Limited vehicle availability & suitability:** ZET technology is not suitable for all operations, especially those which require ancillary equipment. Across most existing original equipment manufacturers, production levels are currently low and lead times can be long.
- 4. Technology uncertainty:** The debate over whether hydrogen or battery electric technology will dominate is causing hesitation among operators. Both technologies will have a role to play, depending on the specific use case.
- 5. Operational impact:** Adopting ZETs may require adjustments to day-to-day operations, including changes to route planning and downtime scheduling.

## Solutions – policy and finance can be used to unlock these barriers

Through extensive consultation with stakeholders, ten demonstrator solutions were identified as potentially transformational in enabling HGV operators to transition. Many of these are applicable to smaller HGV operators who require greater support. Stakeholders assessed the solutions based on scale of impact on ZET and infrastructure uptake, and ease of implementation:

- (1) Solutions to reduce the cost of owning and operating ZETs**, including residual value guarantees (1); shared risk arrangements (2); demand aggregation (4); concessional loans (3) and small operator loan default guarantees (6).
- (2) Solutions to unlock investment in charging infrastructure**, including; Shared charging infrastructure agreements (7); utilisation linked finance (8); electric-trucking-as-a-service (9) and revolving funds (10).



**A** stable and supportive policy environment will be key to supporting investment at the pace and scale required. The UK Government has laid the groundwork by setting diesel truck phase out dates, and the large scale zero emission road freight demonstrator (ZERFD) project will be crucial in understanding how to scale battery and hydrogen technologies for long haul transport. There are several key policy levers which could be considered to further drive investor certainty and support the sector to transition.

**1. Supporting ZET supply chains:** Implement a Zero Emission Vehicle (ZEV) mandate, specifying yearly targets for OEMs to achieve zero-emission vehicle sales by 2040. Phase out diesel HGVs through mechanisms like increased fuel duty or carbon pricing, whilst ensuring simplicity for operators and preventing SMEs from facing a competitive disadvantage.

**2. Enhancing incentives for ZETs:** Revise grant and tax incentives for ZETs in the UK, increasing grant amounts, streamlining the application process, and expanding eligibility criteria. For example, revising existing grants for grid connections and charging infrastructure.

**3. ZET infrastructure strategy:** Develop a comprehensive roadmap for a zero-emission road freight sector, outlining energy requirements, infrastructure needs, and use cases. Set targets for charging infrastructure deployment, collaborate with private businesses, and provide guidance and incentives for local authorities.

**4. Streamlining charging infrastructure processes:** Simplify and standardise processes for grid connections and charging infrastructure installation at depots.

**5. Addressing energy price volatility:** Mitigate the impact of volatile electricity prices on total cost of ownership for ZETs by providing operators with a guaranteed electricity price, similar to the red diesel scheme.

## Driving progress forward

The urgency of the transition demands a coordinated effort. A stable policy environment, supported by innovative, scalable financial solutions, is crucial for the successful transition to ZETs. Our newest report, developed in collaboration with the sector has identified demonstrator solutions that can serve as a blueprint for overcoming the barriers and mobilising capital at scale.

We invite finance and industry organisations to contact us at [cdrt@gfi.green](mailto:cdrt@gfi.green) should they be interested in helping deliver the demonstrator solutions identified in our report.



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## LOCAL CLIMATE BOND TOOLKIT

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# Mobilising capital at the municipal level

According to the UK's government's Net Zero Strategy, 82% of all UK greenhouse gas emissions are within the scope of influence of local authorities. Over 320 councils have declared a climate emergency recognising the billions of low carbon investment required to transition to net zero. Local authorities are developing plans to decarbonise, but access to attractive and diverse sources of funding is still a barrier to action.

A challenging macroeconomic environment has led to almost one in five councils believing they may need to issue a Section 114 notice next year – where they are unable to meet their key spending commitments – according to research by the Local Government Association. Responding to the challenges of net zero and funding constraints, Local Climate Bonds (LCBs) are a community municipal investment that offers councils a simple, proven, and cost-effective financing mechanism to raise and deploy private finance for local decarbonisation projects. Robust due diligence on the creditworthiness of a council is an integral part of the LCB process. This combined with provisions of the Local Government Act that reduce the risk of council debt, means the only way for a council to remove debt from its balance sheet is to repay it. These controls, and the backing of the UK Government if required, mean that no UK council has defaulted on its borrowing.

Many councils across the country have ambitious plans to transition their public buildings, places and communities to support a greener, cleaner future. LCBs are an innovative financial solution that support local authorities with their net zero ambitions and directly benefit their residents.

## LOCAL CLIMATE BONDS

### History of Local Climate Bonds

Following research by the University of Leeds, Local Climate Bonds – a form of Community Municipal Investments (CMIs) – were launched as pilots in 2020 in West Berkshire and Warrington with each council raising £1 million while engaging residents on their climate plans.

After the pilots, the GFI and Abundance Investment, an ethical crowdfunding platform, launched the Local Climate Bond campaign in July 2021, supported by UK100, Innovate UK, and Local Partnerships to highlight the benefits of LCBs, share success stories, and provide access to green and municipal investment experts.

To date nine pioneering councils (West Berkshire, Warrington, Islington, Camden, Cotswold District, Telford and Wrekin, Westminster, Lewisham, and Hammersmith and Fulham) have raised over £6.5 million from over 2,000 investors to fund local net zero projects in their communities. These projects range from installing solar panels on public buildings cutting energy bills and emissions, to rewilding and nature restoration, to electric vehicle charging infrastructure.

This year has seen some record-breaking raises as the market continues to evolve and scale. In March, Westminster Council raised £1 million from 484 investors in just nine days.

 9 Pioneering councils from across the UK have issued an LCB

>£6 million 

Has been raised for local green projects



Almost 2,000 investors have participated in an LCB

On 15th November, Hammersmith and Fulham (H&F) became the ninth council to issue a Local Climate Bond launching with a £5million target, the biggest target issued by a local authority to fund green projects, enabling residents and businesses to receive a return for investing in green projects in Hammersmith and Fulham.

Councillor Rowan Ree, H&F Cabinet Member for Finance and Reform, said “Investors know that their money is being invested in projects that will make a positive impact on our communities and people’s lives. It also means that the council can deliver climate and ecological projects cost-effectively, which will help save taxpayer money. It’s a rare win-win.”

### Launch of the Local Climate Bond Toolkit

Research by Abundance Investment and the University of Leeds has calculated that LCBs could raise as much as £3 billion, if issued by the 343 councils in England. From conversations with local authorities across the UK, the Green Finance Institute realised councils were not fully aware of the benefits of LCBs or the steps involved.

In response to this, the GFI developed the [Local Climate Bond Toolkit](#) which includes a step-by-step guide to the issuance process, technical FAQs, and case studies of West Berkshire Council and Westminster City Council which each raised £1 million via a crowdfunding platform hosted by Abundance Investment.

Miles Ashton, Local Green Investment Lead, GFI, said: “Local authorities will be vital to the UK reaching its net zero target. Over 75% of local authorities have declared a climate emergency and have ambitious targets to reach net zero before 2050. Local Climate Bonds have enabled nine pioneering councils to raise millions for green projects, while engaging with and empowering local residents. This toolkit aims to make the issuance process easier to understand for councils exploring a Local Climate Bond.” To find out more about Local Climate Bonds, contact [localclimatebond@gfi.green](mailto:localclimatebond@gfi.green).

# International climate finance

There is near universal consensus that high-growth, developing countries need support from developed ones to meet the global targets of the Paris Agreement.

The wealthier countries most responsible for climate change, kicked off COP28 in determined style by pledging a combined total of just over \$700m (£556m) to the \$30bn Loss and Damage fund. According to the most-used estimates, this represents less than 0.2% of the irreversible economic and non-economic losses developing countries are facing from climate degradation every year.

The fund itself was a critical deliverable for this COP – to establish trust in the process, and to open the investment channels needed to enable capital to flow into the areas of the globe that are disproportionately impacted by global heating. But it must be the beginning not the end of the discussion. These commitments must have a catalytic impact on private capital flow to deliver the quantum of finance the science demands.

Whilst public capital is important and more is needed, we need other ways to close the gap. Ultimately this means new primary capital from private sources flowing into new projects, mainly into renewables.

Alongside this comes limitations on green finance regulation to help mobilise this capital. Regulation can police the definition and subsequent stewardship of transition assets. It can deliver new levels of transparency through disclosure. Taxonomies can determine exactly what is green, and therefore worthy of new capital deployments. None of these approaches alone will mobilise the capital we need for climate solutions in mitigation and adaptation. For that we need a dedicated mobilisation strategy.

In the UK, one successful example is offshore wind – deployed and scaled with a targeted capital mobilisation strategy. A combination of public subsidy, generous price support, the Greencoat/Green Investment Bank (GIB) fund creating a listed yieldco with the GIB as a cornerstone investor, resulted in a new asset class that helped attract investors. This process was successful in facilitating substantive reductions per unit cost of electricity – in the most recent successful auction in 2022, cheaper than natural gas. Success was built on the recognition that without a sector specific, public-private partnership, we would not mobilise capital, and no amount of regulation would deliver sufficiently.

## INTERNATIONAL

This is relevant because a similar approach is needed in emerging economies – public capital from donor countries will never be sufficient. The need to deploy public capital smartly, to mobilise private capital is foundational to the Just Energy Transition Partnerships (JETP). These are the centrepiece of private finance mobilisation and are additional to the \$100bn pa climate finance commitment. For example, the Indonesian JETP is tasked with delivering \$20bn; \$10bn to come from the International Partners Group (IPG) of donor countries of which the UK is part, which will in turn mobilise \$10bn from the private sector.

At face value, this is a strong start, but everything depends on whether a sophisticated mobilisation strategy is in place. The \$10bn committed from the private sector is, without further intervention, only committed at market rates already accessible to Indonesia. Mechanisms are needed to lower the cost of capital. With the release of the JETP Comprehensive Investment and Policy Plan, the beginnings of a mobilisation strategy are now visible. It sets out where decarbonisation is required across different sectors and recognises where specific interventions may be required to attract private capital. For example, in variable renewable power, the CIPP recognises that the cost of deployment of offshore wind must be reduced and that ‘financial mechanisms’ may be required to manage this. The CIPP goes on to discuss wider reforms and innovations needed in the finance system in Indonesia.

These are all important and necessary interventions, and the CIPP is only a first consultation. A crucial next step is to bring them together in two related ways. The first is to filter all of these complementary elements through a real economy lens. Returning to the example of offshore wind, all the elements, from public policy, to power purchase agreements

with price support, through to public capital deployment and guarantees to attract private capital, need to be brought together in a sector specific strategy. Once in place, green products like green bonds and loans or even novel fund structures can be deployed, but they are not themselves a means to raise new private capital for specific sectors. What is required is new private capital for new projects. Specific public policy interventions in these sectors need to be linked directly to the investment mandates and risk/return appetites of private investors, to lower the cost of capital and mobilise the capital required.

Second, to manage this real-economy mobilisation strategy, new institutional capability is likely to be required. This approach requires connecting multiple government ministries, public finance institutions, project developers and private capital providers. Interventions need to align all of these stakeholders to deploy capital at scale.

There is huge potential for the political will behind the JETP programme to be translated into real capital deployment, presenting an opportunity to refine and scale the approach. After all, a recent estimate puts Indonesia’s capital need at closer to \$100bn just to decarbonise their power sector by 2030. To succeed, we need to move away from separate conversations about real economy decarbonisation and greening the financial sector. They need to be brought together and, likely, into new institutions, embedded in key markets. The GFI is pleased to be developing this approach, with support from the FCDO, beginning in Indonesia before expanding into other markets. If you would like to be involved or to hear more, please get in touch with [comms@gfi.green](mailto:comms@gfi.green).



# What next for risk-sharing?

There is widespread acceptance that public finance cannot singularly finance net zero.

**T**he projected investment required, must be met by private capital, with public capital and development capital deployed mainly as enablers. Many, if not most, financial institutions and asset owners are committed to net zero -so the capital is already committed in principle. Similarly, there has been a plethora of regulations designed to 'green' the financial system, and a suite of financial products through which capital can be deployed. Blended finance - the deployment of public capital to offer 'business as usual' returns to financial institutions - is 'the wrapper' under which most mobilisation strategies fall.

If blended finance is to move from the realm of a much-discussed but ultimately niche product suite to actually accelerating the transition to a net zero economy at scale, a mindset shift is needed.

This needs to be underpinned by thinking holistically about whole-sector transition, not just individual, sub-scale deals. This means looking first at investment need, and then working backwards to aggregate a mix of risk-sharing solutions that will ultimately mobilise capital at scale. There are a range of tools that can support this approach., including blending public capital and private capital to share risk, and ensuring that companies seeking finance to deliver real economy outcomes are investable.

This approach must be leveraged in the deployment of new climate finance mobilised at COP28. In the first four days alone, there was over [\\$57bn mobilised](#). This finance, and any further commitments post-COP28, can maximise impact through this approach.

## (1) Public finance as an enabler

Public finance, as well as multilateral development bank (MDC) capital must be deployed as an enabler of private capital, as well as an investment, generating potential returns or at least return of principle. There are several options for public capital deployment in the context of blended finance:

- **Debt:** Most blended finance debt interventions take the form a guarantee. A guarantee such as that offered by the Treasury or a government-backed entity (e.g. UKIB), can be up to 100% of principal and interest of debt financing, or 100% of one element of a broader package of debt finance. Guarantees work either by extending the credit rating of the guarantor to the borrower or by other mechanisms, such as first loss provisions.
  - An example of this is the African Development Fund (ADF) and African Development Bank's provision of partial credit guarantees to support ADF countries and state-owned enterprises. The GFI has pioneered its own credit enhancement product – the GF2 which supports capital mobilisation from local institutional asset owners into domestic climate smart infrastructure. This approach to risk sharing widens the pool of eligible investors, reduces financing costs for the borrower and can crowd-in further finance at market rates.
- **Equity:** As companies scale and seek equity investment, there are multiple opportunities for public capital deployment to help crowd-in private investment. This is principally about building a bigger pool of equity for growth companies to access.
  - Equity needs are also sector specific. The GFI has looked in detail at the investment thesis for the Electric Vehicle (EV) battery supply chain and has identified an equity gap of £20-100 million, after early-stage proof-of concept but before commercialisation. We have designed a Battery Investment Facility, which would bring together public and private capital to unlock investment into companies which can contribute to a successful battery supply chain.

## (2) Demand – companies seeking finance

To bring the demand side closer to the needs of private investors, there are things that businesses and developers can undertake to increase their access to capital and lower financing costs.

- **Investment Readiness:** This is about turning vision into technical procurement plans that structures projects to make them investable. It is about creating both scale and certainty in a way that projects are presented and potentially bundled and scaled (e.g. Natural Environment Investment Readiness Fund & Fund for Investment Readiness in Scotland). These funds, designed and delivered in partnership between the GFI and Defra/the Environment Agency and the Scottish Government/NatureScot/the National Lottery Heritage Fund respectively, support landowners and farmers with advice and technical assistance on how they can transition to sustainable land management and monetise the value of their assets by creating credits in carbon, biodiversity, and resilience.

## RISK-SHARING

- **Revenue certainty:** Market risk is a key consideration for investors looking at net zero opportunities, particularly in strategically important, but commercially unproven technologies. There are opportunities to create revenue certainty by developing new business models and revenue structures. For example, offtake agreements create a guaranteed buyer for the product or service in question; The most well-known success story is the deployment of Contracts for Difference in renewable energy in the UK which effectively guarantees a minimum price that the UK government will pay as offtaker from future wind farm and other renewable energy developments.

### (3) Investors

Finally, it is not simply the case that private investors should just wait for appropriate risk adjusted returns. There are things they should do to create new markets and projects for their high level, net zero commitments to mobilise into.

- **Developing a better understanding of the perceived risks and collaborating on public-private solutions:** This was a core activity of the UK Green Investment Bank that worked with investors to improve understanding and created investible sectors such as listed offshore wind. The GFI's sectoral coalitions convene specialist private investors and lenders around the table with policymakers and developers to unpack the barriers to investment and co-design solutions (e.g. 'Private Finance Group' for nature).
- **Create and develop new asset classes like venture philanthropy** which offer a more productive outlet for Corporate Social Responsibility (CSR) budgets and deliver greater societal benefits through leverage and scale. Utilisation Linked Finance for scaling up EV charging infrastructure demonstrates this – a guarantee provided from a philanthropic commitment de-risks bank loans where demand may be initially low.

## Conclusion

While the approaches to blended finance above have been tried, tested and piloted, rarely have they been scaled.

Many of these blended finance approaches have been deployed on an individual basis, but they are not in themselves a mobilisation strategy for sectoral transition. Every sector is different, and each needs a holistic approach to mobilising sufficient capital at scale needed for net zero.

The GFI has pioneered this approach in two ways. The first is by thinking entirely by sector and secondly, by recognising that delivery requires a different institutional approach that involves working with both public policymakers and private capital providers in parallel.

**The GFI is looking to build more coalitions to deliver sectoral transitions in the UK and globally. Sector experts from policymaking and investment need to come together to design new mobilisation strategies where they can have the greatest impact. Please get in touch if you would like to be involved.**



# What next for Adaptation finance?

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£5-10bn  
per year

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will need to be invested in adapting the UK economy to the effects of climate change across both the public and private sectors

The climate is changing. Investment in resilience ('adaptation finance') needs to increase at pace to protect economically important assets, lives and livelihoods, and manage systemic risks to the UK. While estimates vary, around £5–10 billion per year will need to be invested in adapting the UK economy to the effects of climate change across both the public and private sectors.

On the public side, there needs to be investment in a number of areas – this analysis focuses on adapting publicly owned infrastructure (e.g. hospitals, government buildings, schools but also flood defences). On the private side, there needs to be investment across all sectors of the economy to build resilience to the changing climate.

The message in the Committee on Climate Change's 2023 progress report (CCCRA3) was clear: The UK is chronically underprepared for the changes that are already here. This is putting lives and livelihoods at risk. Yet, security is the ultimate compact between state and citizens and the response to these risks therefore need to be sharply prioritised – while still focusing on reducing emissions across the economy.

**To further advance adaptation finance, adaptation needs to be rebranded to 'climate security' by the UK Government.** The question then turns to how climate security can be implemented effectively.

## Adaptation finance exists already

**F**inance for climate security is not a new concept; resilient infrastructure and buildings, flood defences and sustainable agriculture are well understood investment concepts. More than a tenth of allocations from 2020–2021 UK green gilts contributed to adaptation in the UK and internationally – notably the building of UK flood defences.<sup>1</sup>

The UK also has established approaches for mobilising private capital into such sectors. For example, FloodRe – a public/private partnership between the Government and insurers established as a joint initiative – has launched a ‘build back better’ scheme, which enables homeowners to install property flood resilience measures up to the value of £10,000 when repairing their properties after a flood. The initiative helps insurers in the UK make the flood element of their household insurance policies more affordable.

Research by Impax Asset Management found that adaptation sectors collectively delivered cumulative returns that were 16.3% higher than the market over the past five years. While this is not necessarily an indicator of continued out-performance, it does indicate that competitive returns are feasible.

All sectors of the economy will need to adapt but will require financing to do so. While efforts are positive, they are ad hoc and slow, driven in part by responding to events rather than preparing for them. A step change in action is needed.

## There is more the private sector can do

Scaling up the required investment in adapting critical infrastructure systems will require action by both government and the private sector, as well as radical collaboration across different parts of the financial services, to a degree not seen before. To find a path forward and unlock financial solutions, the resilience and climate security of the UK economy needs to be considered through two lenses: place-based resilience solutions (e.g. physical flood barriers and natural flood management systems) and the resilience of individual assets (e.g. to heatwaves, flood and drought).

There are three key areas where the private sector can start to accelerate action unilaterally: private infrastructure delivered by non-utility businesses; existing housing; and food and agriculture systems. Many of these investments deliver benefits today. Indeed, most of those risks identified as high priority by the CCRA3<sup>4</sup> relate to asset types that are privately owned or operated in the UK, including supply chains, water use, agriculture and human health issue.

Success will be determined by data usage and scenario analysis to identify risks and develop solutions. As noted in the Mission Climate Ready report, there are good examples of financial institutions stepping up already, with sustainability linked bonds for investing in resilient buildings and water efficiency (e.g. BBVA Water Footprint Loan).

In some cases, the market is already acting. Appropriate responses will hinge on financial services firms differentiating responses to weather events versus planning for climate resilience. In other cases, new business models and incentives to invest will need to be created. These are likely to vary based on asset ownership and whether new build or retrofitting is required.

# Government needs to set the direction to accelerate private sector action

**T**here is a need for authoritative direction for the market on what potential future conditions society needs to prepare for.

The Government needs to set expectations of what a climate secure and resilient economy should look like – the range of physical risks to consider and minimum operational performance expectations of key infrastructure. A systems change approach to matching new policy with financial incentives and risk/return across all sectors of the economy is needed.

Efforts need to be accelerated to define policy and regulatory environment for relevant assets and infrastructure to create systems of incentives. The Government's Land Use Nature and Adapted Systems Advisory Group (LNAS AG), a sub-group to the Green Technical Advisory Group, chaired by the GFI, will be advising on defining a series of adapted systems in the UK. But a comprehensive programme of policy development is still needed to turn this vision into delivery of the resilient system needed to create a climate secure economy.

## Moving Forward

Bright spots in the growth of finance for climate security are visible but more needs to be done. A new narrative, policy framework, and

investment thesis is needed across the UK. The GFI is cochairing with Impax Asset Management, alongside a technical partnership with the Environmental Change Institute at Oxford University, the Climate Financial Risk Forum Adaptation Working Group to :

- Work with financial institutions to showcase best practice and build frameworks for better directing finance into adaptation and resilience solutions.
- Analyse the current financial regulatory framework to see how it can be better used to support finance for climate security;
- Set out where public policy is needed to generate an expanded deal pipeline to leverage the effects of supply side interventions;
- Understand what disclosures would be helpful to support the deployment of capital into adaptation finance opportunities.

**Please do get in touch if you would like to get involved in this work.**



# What next for carbon removals?

The very term 'net zero' implies that some economic activity will be all but impossible to abate. So, while we must bear down on emissions, we need credible approaches to remove carbon from our atmosphere. Carbon removal is the process of purposefully removing carbon dioxide from the atmosphere and storing it durably. It encompasses a wide range of different technologies with different levels of maturity, durability, risks and price points.

Many worry that companies and governments could treat carbon removals as a substitute for decarbonisation in pursuit of net zero. As with the approach to carbon offsets, avoiding this outcome and ensuring integrity will require careful monitoring and accountability. Even with very deep and rapid cuts in emissions, scaling up durable carbon removals sufficiently to get to net zero will be a massive challenge.

## The market opportunity

Even on optimistic mitigation scenarios, the challenge is huge. Across IPCC scenarios, 420–1100 billion tonnes of carbon dioxide removal (CDR) will be required cumulatively by 2100 to limit global warming to 1.5°C with no or limited overshoot. The world emits around 40 billion tonnes of CO<sub>2</sub> every year. [Recent analysis](#) estimates annual demand for durable carbon removal at around 40–200 million tonnes in 2030, translating into a \$10–40 billion market opportunity in that timeframe and growing thereafter. The scale of CDR growth required is vast. Fortunately, there is increasing evidence of a willingness for investors to outlay capital; carbon funding grew 4 times between 2021 and 2022, with half the funding toward carbon removals.

## An Approach to Scale

Given that time is short, and the market is at a very early stage of innovation and development, it is sensible to look at a broad and diverse portfolio of CDRs, which help to maximise the removal potential and minimise over-reliance on any one technique. The Climate Change Committee highlights that a whole range of removal methods will likely be needed to reach net zero in the UK by 2050.

Our approach therefore needs to address barriers to scale of each scientifically viable technology. For some removal solutions, such as Direct Air Capture and Storage (DACs) and Bioenergy with Carbon Capture and Storage (BECCS), capex requirements can be incredibly high. While the scale of capital needed for these solutions is an infrastructure play/ debt capital, the risk profile is not. Other approaches, such as biochar and enhanced rock weathering, will likely need to be deployed by a dispersed set of actors – which bring distribution and aggregation challenges. Thus, getting to scale assumes rapid learning and cost reductions. Government intervention will be needed to deliver this.

In February 2023, the US Department of Energy announced \$2.52 billion in funding for two carbon management programmes – large scale pilots and demonstration projects.

Separately, they announced in August 2023 up to \$1.2 billion for the development of the first two of four commercial-scale DAC facilities, in Texas and Louisiana.

The UK laid out a high-level greenhouse gas removal strategy in 2022 and is currently developing implementation details, as there is a particular geological opportunity for DACs and BECCS, due to the carbon storage potential of the North Sea. As of March 2023, the UK has a target to capture and store 20–30 million tonnes per year by 2030 through a mixture of BECCS and DACs and is working on a business model to enable this. Public capital for the sector is available through the Government's support for carbon capture utilisation and storage (CCUS) clusters, originally capitalised with £1 billion and recently expanded by up to a further £20 billion .

These are solid foundations from which to build a market framework that leverages private capital to accelerate the commercialisation of a portfolio of carbon removals. However more needs to be done to target key risks. Fortunately, lessons learned from developing business models for adjacent net zero sectors can support accelerated deployment of carbon removal.



There are several solutions to overcome financing barriers:

- **Policy clarity around technologies** – With different technologies and concepts often conflated, the UK government has an opportunity to set up a transparent system to create a policy environment that is flexible enough to support multiple GGR technologies.
- **Revenue certainty** – Predictable demand signals are needed to address market risk. Policy can create these through regulated demand and/or policy incentives. The recently announced contracts for difference (CfDs) in the UK are an attractive option. Keeping policy flexible to support a range of solutions would be beneficial.
- **Addressing other investment risks** – First Of A Kind risks abound. Tailored capital solutions are needed to attract debt and lower costs of capital. While CfDs are a good way to clarify the revenue topline, guarantees, most likely from the public sector, will also be fundamental in bringing the banking sector onboard. This could be in the form of first loss capital or revenue guarantees.
- **Shaping standards** – Standards for the durability of carbon removals are also key to market integrity, and should underpin any guarantee provisions. This is especially the case for nature-based solutions, such as the important but often overlooked solution presented by soil regeneration, but also for ensuring the climate effectiveness of emerging new approaches.

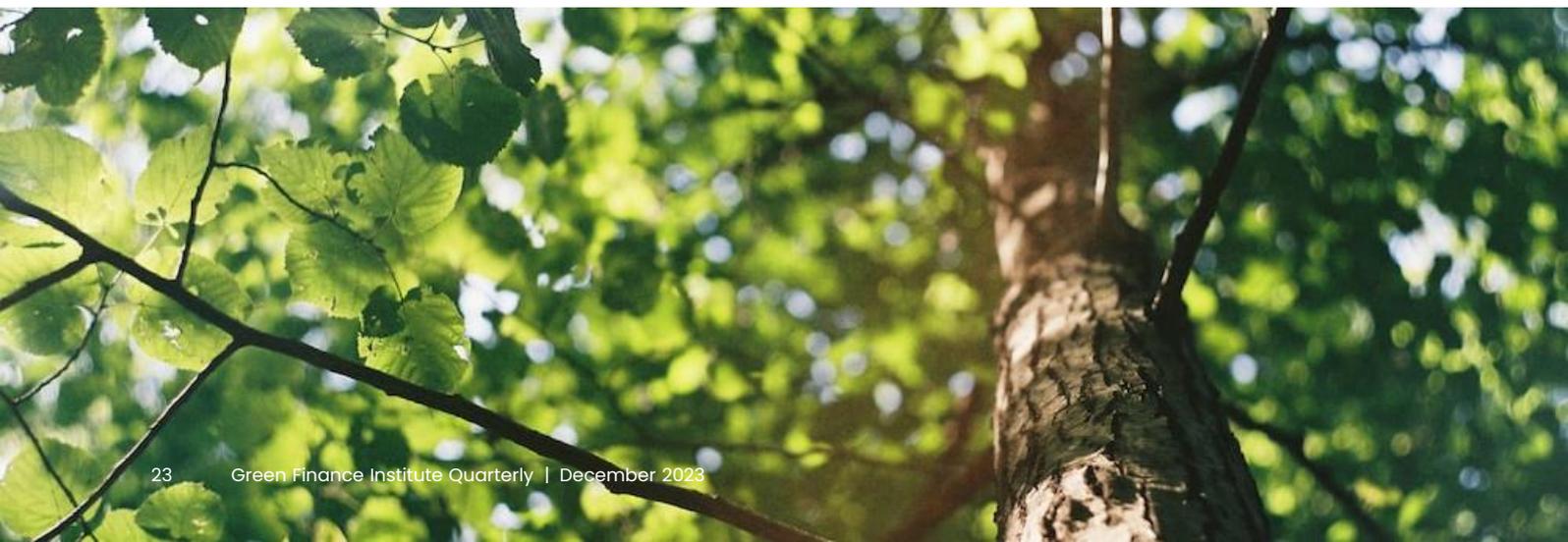
## Moving ahead

The UK's GGR strategy is generating significant opportunities as it takes shape. In addition to new fiscal commitments to the sector, commitments to create a GGR business model will provide revenue certainty. While attractive fiscal support has also been provided in the US, the UK cluster approach framework facilitates vital network brokering and can support a significantly wider range of developers and technological pathways.

The UK is therefore an important test-bed for developing a holistic financing and policy package to support accelerated commercialisation of carbon removal technologies. In parallel, the Government also has room to build on existing market infrastructure for nature-based carbon removals.

We now need a 'go to market' strategy for each carbon dioxide removal technology, while creating the overarching market infrastructure to underpin the supply and demand for different technology solutions.

We are developing a programme of work to support this approach and contribute to wider commercialisation efforts and invite potential delivery partners to get in touch to discuss how we can work together in a shared endeavour.



# What next for transition finance?

To avoid the most extreme effects of a changing climate, the global economy needs to transition away from one reliant on fossil fuels to one that deploys clean technology and nature-based solutions and services. The most recent Intergovernmental Panel on Climate Change (IPCC) Assessment Report noted that without immediate and deep emissions reductions across all sectors, limiting global warming to 1.5°C is beyond reach. This means investing in green technologies in order to replace and retire those causing climate change. BloombergNEF has found an average ratio of 4:1 of investment in low carbon versus fossil energy supply will be required by the end of the decade to limit global warming to less than 1.5°C (compared to the 1:1 ratio of investment today).

## **The next few years are critical**

One of the authors of Intergovernmental Panel on Climate Change (IPCC) Assessment Report – AR6, produced in 2022 – said: “It’s now or never, if we want to limit global warming to 1.5°C.” In this context, the efficiency and equitability with which the transition is delivered really matters. This is being jeopardised by the increasingly loose use of language, particularly in relation to the term “transition finance” – which can be used generically and imprecisely to mean finance provided to any business embarking on a journey to become greener.

Lending to a company or an asset that should be transitioning is not the same as actually financing that transition – and yet a lot of transition finance only clears this very low hurdle. Oil and gas companies, for example, should be transitioning but that doesn’t mean they are. As an example, The Guardian reported that in 2021, after receiving a £430m green transition loan, the international engineering company Wood Group grew its upstream oil and gas business by 17% while reducing the size of its renewable, hydrogen, and carbon capture business units by 35%.



*“It’s now or never, if we want to limit global warming to 1.5°C.”*

– IPCC, Assessment Report

# Language matters

This issue of loose use of language as a way to justify BAU lending to companies that should be transitioning, but are failing to, is increasingly in the spotlight.

**T**he concept of 'transition finance' recognises that green transition is a complex process. As investment into renewables and zero-carbon infrastructure scales, other activity that is not yet net zero will also need to access finance to support its transition (to green operations or phase out).

In 2022 GFANZ had set out four strategies necessary for financing a whole economy transition to net zero (visible on the right of the page). At COP28 in December 2023, a technical note setting out 'voluntary, non-binding technical information for financial institutions to consider if they choose to incorporate the four key transition financing strategies in their net zero transition plan' was published.

This is a logical demarcation as we do need to finance all of these to hit net zero and the technical note offers further detail on what the categories include. However, (1) and (2) are simply green finance for companies and assets that are already green. Bundling them under a transition finance banner while academically correct is confusing and unhelpful. We propose these categories be dropped from the transition finance lexicon.

The real challenge lies in delivering credible solutions around (3) and (4), notably around advancing finance to entities that are not yet net zero but aspire to be. This is where clear governance, definitions, reporting and compliance requirements will be helpful, as are emerging through taxonomies for green assets, to ensure transition finance does not become the next frontier of greenwashing.

The greatest care of all needs to be taken when providing category 3 finance, which should be the only type of finance carrying the label 'transition finance' and should explicitly not be made available to fossil fuel producers. For these firms – the bulk of whose revenues are drawn from fossil fuel extraction and distribution – one can only conclude that whole-company transition is no longer likely or credible. Any transition-related finance needs to be limited to either asset-based green finance or ring-fenced finance for fossil-based asset decommissioning.

## GFANZ LABELS

- 1** The development and scaling of climate solutions;
- 2** Assets or companies already aligned to a 1.5°C pathway;
- 3** Assets or companies committed to transitioning in line with 1.5°C-aligned pathways;
- 4** The accelerated managed phaseout of high-emitting physical assets.

## TRANSITION FINANCE

Category 3 should be out of scope for these companies since it is fraught with greenwashing risk. This risk was set out in an article in Bloomberg published earlier this year. It notes that at an investor event in June, Shell set out an updated strategy that included cutting costs and doubling down on profit drivers like oil and gas. A review of Shell's Capital Markets Day pack from June 2023 appears to confirm these points. More importantly, any financial institution that might have advanced 'transition finance' in this context would now surely have to consider recategorising it.

Category 4 is relevant and needs to be underpinned by an authoritative and dynamic list of asset types that fall into this category. This list, which GFANZ would be well placed to deliver, should be market-led and scientifically underpinned by IPCC data - rather than through current governments' policies, which in many cases are not aligned with delivering a 1.5°C future. We propose this should be renamed, simply, fossil fuel asset-decommissioning finance.

For other firms at the forefront of the transition - aviation, auto, steel, cement, plastics etc. - whose products are still needed in the future net zero economy - but the means of production needs to be decarbonised - categories 3 and 4 are both relevant and useful. However, for the term 'transition finance' to be useful and enduring, we need a much a higher burden of proof moving from 'should be transitioning' to 'is transitioning'.

### **Climate solutions and green finance have to be the priority**

There are very real questions about whether the debate about transition finance has been nothing more than an academic distraction. The debate now needs to be put to bed: there is green finance, there are green companies, there is fossil fuel asset-decommissioning finance and there is transition finance - tightly defined and controlled finance made available to firms that can credibly and are genuinely attempting to transition their businesses to be net zero aligned.

We now need to end the debate by bringing clarity as swiftly as possible and create space for the ingenuity and skills of the capital markets to be brought to bear to understand the new technologies and new business models that are needed to transform our global economy and more importantly how to finance them.

## PROPOSED REALLOCATION OF GFANZ LABELS

### Green Finance

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Climate solutions

Assets/companies  
aligned to a 1.5°C  
pathway

### Transition Finance

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Assets / companies  
committed to  
transitioning in line  
with a 1.5°C pathway

### Fossil-based asset decommissioning

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Accelerated, managed  
phase out of high  
emitting physical assets





# What next for financial regulation?

With the recent reporting of ESG regulation pushback, it can be easy to forget the central premise of climate-related financial regulation – that climate risk is also financial risk. It poses significant risk to financial stability, alongside the physical, transition and liability risks. In the UK, that concept, not regulatory overreach, is behind the leadership shown on climate change from the Bank of England. Where financial stability is under threat, the Bank and more specifically the Prudential Regulatory Authority (PRA) are mandated to act. And where the Bank of England leads, others have followed. Thus, it is through this lens that regulatory intervention should be assessed, and the responses of financial institutions follow.

## **Disclosures are only a means to an end**

In the UK, firm-level behavioural change in relation to governance and later climate and sustainability issues has traditionally been driven by principles-based disclosures. Thus, transparency has been deployed to drive the operational changes required to tackle climate change. For example, the Department of Work and Pension's disclosure requirements require that TCFD disclosures include, 'as far as they are able', 1.5°C and 2°C transition scenarios and that disclosures be provided on a comply or explain basis.

But climate disclosures should be an output of core business strategy and operational changes instituted to deliver that strategy – not an end in themselves. The act of disclosure should be the culmination of a strategic business process to identify, price and address physical, transition, and liability climate risks and opportunities, as these are presented in each sector. The process should enable disclosure of a firm's exposure to climate risk but also stimulate development of a clear transition plan to manage it to protect corporate value.

# Tick-box responses from the market risks more prescription from regulators

In cases where financial institutions approach complying with such regulation with a reporting-only mindset, this disclosures-driven approach is bound to fail. Efforts have been made by the Prudential Regulation Authority (PRA) and Financial Conduct Authority (FC) to move regulated firms beyond this tick box approach through initiatives such as the Climate Finance Risk Forum (CFRF). This helps but is unlikely to be enough on its own. Significant change needs to be driven from the top and, of course, through changes to real economy policy to develop a scaled pipeline of investible green projects. It is a truism that financial services will only be as green as the economy they serve. But that doesn't mean financial services firms should wait passively for that pipeline to emerge.

## What do firms want?

It is fair to say firms do not want more financial regulation. They also want the existing approach to be simpler and most want it connected to domestic real economy policy ambition that catalyses green investment opportunities. This will require more clarity on the broader sectoral enabling environment, including clear signaling from governments on what their priority sectors are for decarbonisation and what policy, incentives and fiscal support is being made available, and the longevity and consistency of these decisions. This starts to position regulation and investment as two sides of the same coin, as policy indicates what counts as green and creates durable investment roadmaps for firms to act on. Investments that align with these



will de facto be climate-proofed. The Inflation Reduction Act is a clear example of this but in the UK, the Net Zero Council is also mandated to achieve some of the same goals.

## Getting behaviours right - how should financial institutions be responding?

The board is the natural focus for strategic risk management on climate, as it is for all strategic business decisions. Policymakers have indicated that senior engagement at CEO level on climate change is critical to drive decision making forward. This must include clear communication about the real issues involved in climate transition for firms, alongside clear, tangible asks on the policy enabling environment. This is not then about ease of compliance or otherwise, it is about real business risk, challenges around the transition plans needed to mitigate that risk, and implications for whether policy and regulation are enablers or, a compliance exercise that cuts across business strategy.

Thus, it is time for CEOs to mandate internally the production of credible, assured climate transition plans that acknowledge the clear relationship between their fiduciary duty and practical management and conduct accountability on climate matters. This then needs to be communicated externally, notably to their investors, as a proactive step to retain long-term shareholder value.

## REGULATION

### This analysis implies two deliverables from firms:

**A tangible action plan and commitment of resources** to understand, approximate, and refine climate risks at the financial and operating level and their monetary impacts on the business in the short, medium, and long term.

**This risk assessment and subsequently published action (transition) plan** will shed light on firm capability and maturity when it comes to measuring and mitigating climate risk. It then follows that firms need a concerted holistic plan to upgrade training and development of sophisticated climate talent, integrated fully into business operations, across all levels and functions.

### Getting there but probably not there yet ... what else is needed?

There can be little doubt that we are heading for a financial crisis – failure to manage climate risk is leading us to an end of century collapse in the financial system. Governments do not have, and nor will they ever have, the fiscal capability to successfully deliver a climate collapse bailout. It must be addressed now – choices made between now and 2030 determine the range of options and the range of outcomes for the rest of the century.

To mitigate this risk, transparency, culture and real economy policies need to be in place. Readying the supply of finance through effective financial regulation requires a ‘grand bargain’ on climate risk, fiduciary duty and investment opportunity – which is not yet manifesting as it should and must, prompting the question: are there policy interventions available to accelerate change? Several are under discussion in the UK and merit consideration.

These include:

- **Make climate transition plans mandatory in the financial sector**
- **Include climate in the Senior Managers Regime (SMR)**
- **Include climate considerations in executive remuneration**
- **Publish the UK Green taxonomy**

It is important to note that the UK’s regulatory strategy is to shape global regulatory approaches and become an early adopter, as we have seen with TCFD, and now the International Sustainability Standards Board (ISSB). This represents an opportunity for the UK to triangulate between the EU approach, which market participants cite as too cumbersome, and the US whose equivalent moves are in their infancy. But opportunity is there for financial institutions as well. Decisions are made by those who show up. The UK has an incredible track record in effective collaborative policy making across financial institutions, academia and NGOs. For example, the advice developed by the Green Technical Advisory Group (GTAG), chaired by the GFI, over a period of 2 years to support UK Green Taxonomy development has been informed by an engaged group of experts from within finance, business, NGOs and academia.

This model of regulatory development needs to continue, supported by ongoing constructive input from financial institutions to ensure any future regulation coming down the line does what is intended – to help shift capital markets and the economy on a net zero nature positive footing, and enables these firms to make good on their net zero and nature positive commitments.

