

CALL FOR EVIDENCE: E3G RESPONSE June 2022

UPDATE TO GREEN FINANCE STRATEGY: CALL FOR EVIDENCE

F3G RESPONSE

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Summary

The current cost of living crisis has highlighted the acute risks of the UK Government not proactively acting to deliver net zero. Without a managed approach to bring clean energy online across the UK, the British Energy Security Strategy¹ cannot be delivered and further crises will follow. Internationally, the UK has played a leading role in securing ambition on green financial reform, and credibly delivering the net zero strategy will further advance the UK's diplomatic agenda. The UK led the way on green finance by committing to create the world's first Net Zero Financial Centre and a Net Zero Financial System², and implementing several progressive green finance reforms. However, the UK is yet to set out a comprehensive plan for how it will deliver finance for the net zero transition across the country. The 2022 Green Finance Strategy will be an opportunity for the Government to set out such a plan.

E3G's response to the Call for Evidence on the Update to the Green Finance Strategy³ is based on the following core principles that are essential for the Green Finance Strategy to be a success⁴

- > Represents a financing plan to get the UK on track to meet its climate targets for 2050 net zero and adaptation
- > Sets out how public investment and policy will be used to leverage in private finance, including aligning public budgets with net zero.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/10 74650/green-finance-strategy-cfe.pdf

¹¹ https://www.gov.uk/government/publications/british-energy-security-strategy

 $^{^2\} https://www.gov.uk/government/publications/greening-finance-a-roadmap-to-sustainable-investing$

⁴ https://www.e3g.org/publications/financing-the-net-zero-transition/



- > Includes analysis and publication of financial flows to identify critical net zero investment gaps and investment opportunities and nominates an independent institution to carry out this function on an annual basis e.g., OBR, CCC
- > Sets science-based standards and requirements for financial regulation to incentivise alignment of financial flows with 1.5 degrees.
- > Fully integrates Nature Positive and Cross-UK prosperity targets
- > Sets out clear objectives for UK global leadership and cooperation to secure international financing and financial reform to support climate safety for all

E3G has provided answers to the following sections in the call for evidence:

- 1. Capturing the Opportunity
- 2. Financing the UK's energy security, climate, and environmental objectives
- 3. Financing Transition activities
- 4. Ensuring broad access to green finance for local authorities, SMEs, and retail customers
- 5. Greening the financial system
- 6. Providing the market with the right data
- 7. Leading Internationally
- 8. Supporting an inclusive transition in emerging and developing economies
- 9. Mobilising finance in emerging and developing economies using green bonds

Capturing the Opportunity

- 1. What are the key characteristics of a leading global centre for green finance?
- > E3G's 2021 Briefing 'A Net Zero Financial Centre'⁵ sets out key characteristics for a net zero financial centre in the UK. These are summarised below.
- Achieving global climate goals will require a rapid reorientation of capital flows from unsustainable to sustainable economic activities, together with a mobilisation of additional finance at scale. The IEA' Net Zero by 2050' report quantified the shift that must be achieved in financial flows to deliver the 1.5C goal of the Paris Agreement. In relation to energy, under a financial centre aligned with net zero there

⁵ https://www.e3g.org/publications/a-net-zero-uk-financial-centre/



should be no new investment in new fossil fuel supply⁶. Current flows of finance should be directed to clean energy, reducing costs for the lowest income households, and leveraging private finance to meet global energy investment needs. However, global investment flows to fossil fuels remain inconsistent with global climate goals⁷.

- > Building a net zero financial centre will be necessary to support the wider whole-of-economy changes required to support decarbonisation. In 2021, under the UK G7 Presidency, G7 Finance Ministers and Central Bank Governors discussed the roles of both private firms and public actors in delivering net zero financial systems⁸. Pre-COP26, a letter from leading UK financial institutions, responsible for over \$5 trillion in assets, also called on the Prime Minister to develop a world-leading net zero financial system. This resulted in the Chancellor announcing at COP26 the intention to create the world's first Net Zero Financial Centre in the UK⁹.
- > The finance for the transition will come from a range of sources, public and private.

 To build a net zero financial system, it is important that each sector contributes fully and working to their strengths. The financial centre is now recognising the direction of travel for net zero policy and the clear business opportunities associated with the transition, exemplified by the Glasgow Financial Alliance for Net Zero (GFANZ) representing 40% of Global AUM¹⁰.
- Siven the critical role that public finance and policy play in shaping markets and scaling up private investment in new energies, achieving a net zero UK financial system will require a comprehensive plan that integrates the policy and regulatory tools in the government's toolkit with market signals and regulations that will inform the decisions of finance sector actors. It will also require strategic public investment in particularly tricky markets like the built environment and nature.
- > The government must kickstart action now on net zero finance across different financial sub-sectors. Some sub-sectors will transition before others, and the government need not wait for every technical detail to be agreed to send the initial

⁶ https://www.iea.org/events/net-zero-by-2050-a-roadmap-for-the-global-energy-system

 $^{^{7}}$ Since the Paris Agreement was adopted in December 2015, over £2.7 trillion of new investment (or \$3.8 trillion USD) has been directed towards fossil fuels by Banks

https://www.ran.org/bankingonclimatechaos2021/

⁸ This meeting included discussion of G7 countries' role in driving forward the transition of their economies and financial systems to net zero https://www.gov.uk/government/news/g7-finance-ministers-and-central-bank-governors-meeting-chaired-by-chancellor-agrees-ambitious-climate-agenda-in-uks-cop-presidency-year%20.

⁹ https://www.gov.uk/government/news/g7-finance-ministers-and-central-bank-governors-meeting-chaired-by-chancellor-agrees-ambitious-climate-agenda-in-uks-cop-presidency-year%20.".

 $^{^{10}\} https://ifamagazine.com/article/cop26-mark-carney-and-gfanz-announce-130 trillion-commitment-to-net-zero-by-financial-sector/$



policy signal. Suggested timings for the transition of each sector can be found in E3G's briefing, with specific recommendations for supporting the different sub-sectors¹¹.

- Although finance will be a key driver of the UK's transition, support for real economy transition will also be crucial to ensure sustainable investment opportunities are widely available. We note that certain sectors will require particular attention for the UK to be a global leader in green finance. Currently, a major investment gap for getting on track for net zero is supporting the decarbonisation of the built environment. The Climate Change Committee estimates that the total investment costs are £360 billion to 2050, of which around £250 billion is for the programme of upgrading homes and £110 billion in public and commercial buildings¹². Therefore, a focus on greener homes and buildings will be an essential characteristic of a leading global centre for green finance.
- 2. Do you consider the UK's green finance regulatory framework to be world-class?
- > UK regulation is world-class, indicated by the UK's consistently high rankings on global financial centre evaluations¹³. However, the global marketplace is moving quickly, so the UK must continue developing and innovating to maintain its leadership position. The UK should lead the way on promoting dialogue across leading jurisdictions to enable international standards and, where this is not possible, supporting Paris-aligned interoperability between standards.
- > There is a clear opportunity with the Financial Markets and Services Bill to deliver world-leading reforms for how the UK greens its financial sector, particularly around regulatory mandates for net zero. UK regulators are not yet fully aligned with the Government's commitments on delivering net zero by 2050, and the Bill's proposals to establish climate as a 'regulatory principle' rather than a statutory objective will limit regulators from fully assessing and managing systemic climate risk.
- > The purpose of financial regulation should reflect the role of the financial sector to invest in serving the UK's economic, environmental, and social goals. Regulators also take actions to address the fact that climate change has the potential to create catastrophic financial risks, which the government has stated an intention to address by rewiring the financial system to deliver the world's first net-zero aligned financial system and centre¹⁴.

¹¹ https://www.e3g.org/publications/a-net-zero-uk-financial-centre/

¹² https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Buildings.pdf

¹³ https://www.cityam.com/london-retains-green-finance-crown/

 $^{^{14}\,}https://www.gov.uk/government/publications/fact-sheet-net-zero-aligned-financial-centre/fact-sheet-net-zero-aligned-financial-centre$



> Financial regulation that prioritises climate could create significant economic opportunities, support the development of new markets built around ESG compliance, and root a net-zero financial hub in the UK. Rather than emphasizing competitiveness, the government should use the 'once in a lifetime opportunity' of the Financial Markets and Services Bill to place resilience and climate objectives as the path to achieving international competitiveness¹⁵.

Considerations for Treasury include:

- > Regulators should be given statutory objectives to align finance with the UK's climate and nature goals, as this will empower them to actively advance innovative climate policies and drive through new climate-related regulations without having to wait for legislation. This will establish the UK's climate leadership and accelerate the global trend towards aligning financial regulation with sustainability goals. Including climate as a statutory objective in the finalised bill would support the governments promise to deliver a net-zero aligned centre and would enable regulators to manage climate related financial and systemic risk to the financial sector¹⁶.
- > If financial regulators are tasked with centring growth and international competitiveness without an equal or greater enforceable need to align with netzero, there are significant risks that the UK market will fail to attract the types of financial investment and activities necessary to robustly transition the UK economy to net-zero. Treasury noted that "the regulators are not required to act to advance their regulatory principle," just to take them into consideration. Including climate as a 'regulatory principle' rather than a statutory will significantly weaken their ability to actively support climate action by the private sector.
- 3. To what extent does the UK's private and public sectors have appropriate skills/capacity to attract international green finance flows?
- > The UK is particularly well placed to lead the global trend for financial sector commitments to net zero¹⁸, given that it has deep and liquid capital markets with global reach, and benefits from the soft power advantage of shaping regulatory

¹⁵ https://financeinnovationlab.org/the-government-is-to-prioritise-the-city-over-the-climate-so-much-for-the-promises-made-at-cop26/

¹⁶ https://www.cityam.com/queens-speech-failed-turn-financial-regulators-into-public-asset/?amp;amp;

 $^{^{17}\} https://www.gov.uk/government/consultations/future-regulatory-framework-frf-review-proposals-for-reform$

¹⁸ A **recent global survey** of over 500 pension funds and over 500 insurers indicated that 94% of insurers and 90% of pension funds either had committed to net zero or were planning to do so. https://www.ft.com/content/1716097a-4483-4236-b3d3-d5c88fcef64f



practice worldwide ¹⁹. However, the UK faces a significant challenge: the British financial sector is one of the world's largest emitters, ²⁰ aligned with 4°C of global warming²¹. The UK has an opportunity with the Green Finance Strategy to set out the missing piece of the puzzle: a clear plan for financing the transition²². A plan that supports policy coherence will reduce confusion for private firms and will optimise the mobilisation of finance for the transition. It will also ensure that action is at the pace and scale required to meet the Government's carbon budgets²³.

- > In the financial services sector, the transition will be a significant source of job creation. As investment is needed at scale to support cross-UK prosperity, this is an opportunity to create distributed financial expertise and green finance jobs across the UK. This will need to be actively supported and managed to sure these are delivered fairly across the UK. PwC's Green Jobs Barometer assesses regional disparities and highlights the need for a more managed approach.²⁴
- > Achieving this will require the Green Finance Strategy to set out a package of support for green skills, education, and training opportunities. As the financial sector will influence, and is dependent on, the transition of the real economy, a suite of interventions will be needed to address the skill gap. There are significant skills, educational and training gaps in both supporting the jobs of the future, and a lack of comprehensive support for workers to adapt their skills from legacy industries to new and sustainable careers. E3G echoes the calls in Green Alliance's recent report²⁵ that a strategic approach is required to plug the 'acute skills shortages across the sectors it most urgently needs to decarbonise', with dual benefits for both net zero and levelling up goals. Research suggests that one in five jobs in the UK (approximately 6.3 million workers) will require skills which may experience demand growth (approximately 10% of UK jobs) or reduction (approximately 10%) in the

 $^{^{19}\} https://www.e3g.org/publications/kaleidoscope-of-global-green-finance-is-being-shaken-can-the-uk-regain-lead/$

²⁰ Recent analysis shows that 25 large financial firms are responsible for 1.8 times more CO2e emissions than the territorial emissions of the UK itself https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/critics-take-aim-at-uk-financial-sector-the-world-s-9th-largest-carbon-emitter-64415431

²¹ In 2019, Mark Carney stated that the UK's financial sector was aligned with 4°C or more of global heating https://www.theguardian.com/business/2019/oct/15/bank-of-england-boss-warns-global-finance-it-is-funding-climate-crisis

²² For more information on a net zero finance system, see https://www.e3g.org/publications/financing-the-net-zero-transition/

²³ According to the CCC's 6th Carbon budget, which the UK Government has now enshrined into law, including cutting domestic emissions 78% by 2035.

 $^{^{24}\,}https://www.pwc.co.uk/who-we-are/our-purpose/building-trust-in-the-climate-transition/supporting-a-fair-transition/green-jobs-barometer.html$

²⁵ https://www.gov.uk/government/groups/green-jobs-taskforce



transition.²⁶ Equipped with a highly skilled workforce, UK firms could get ahead of the competition and begin to benefit earlier from the productivity gains associated with a net zero economy and financial sector.

Recommendations for Government include:

- > Providing clear signals to support private sector transition:
 - Ensure that Transition Plan Taskforce outputs are incorporated into regulation, including sectoral templates for financial sub sectors.
 - Build capacity and finance skills within the real economy to create a solid project pipeline of investible projects - both in the UK and abroad. The UK Infrastructure Bank will be a key player in supporting these markets, and the UK can take a more strategic approach to capacity and pipeline building for transition investments abroad through aid and diplomacy. See question 7, 19 and 20 for more detail.
- > Build on the recommendations of the Green Jobs Taskforce ²⁷ to support skill development across the UK by:
 - Set clear cross-UK prosperity targets, incorporating the Green Job Taskforce's regional prosperity targets²⁸, in line with Levelling Up objectives and invest in local finance and skills to deliver these
 - Develop the the Green Jobs Taskforce's mapping of green skills gaps and commit to developing an investment plan for green skills, education, and training opportunities to support the net zero transition, including staff in legacy industries. This should include building green finance capacity across the UK.
- 4. What are the UK's comparative strengths and weaknesses in its green finance offering compared to other international financial centres? What are these are for: a) Asset management b) Capital markets c) Banking d) Insurance e) Professional services f) Fintech

Strengths

> The UK has a mature and innovative green financial services and support ecosystem which has been at the forefront of developing new sustainable finance instruments in a range of sectors including asset management, trading, banking, and insurance. Enhanced regulatory and market-driven incentives would further expand

²⁶ https://www.e3g.org/publications/a-net-zero-uk-financial-centre/

²⁷ https://www.gov.uk/government/groups/green-jobs-taskforce

²⁸ https://www.gov.uk/government/publications/green-jobs-taskforce-report



the opportunities for growth. The UK also benefits from a thriving and innovative fintech ecosystem which includes initiatives to support net zero finance.

Weaknesses

- Post-Brexit, the UK faces significant challenges in ensuring the City's continued pre-eminent role as a financial centre within European markets. Accelerating the development of the City of London as a global net zero financial centre within a high integrity legal and regulatory framework could help to offset some of those pressures.
- 5. How can the UK government measure progress towards becoming a leading global centre for green finance?

Domestic measures of progress may include:

- Shift in UK public and private financial flows from unsustainable to sustainable, as measured by the new tracking mechanism that was promised in the Net Zero Strategy and elaborated in question 10.
- > Number of new sustainable markets matured by the UK Infrastructure Bank, assessed on a regular basis as part of Treasury's review of the Bank's progress.
- > Reduction in financed emissions, as outlined by 2021's report from WWF on the carbon impact of the city of London, equivalent to the 9th biggest economy in the world.²⁹
- > Overall productivity of UK financial sector and relative % of green finance activity as a rising proportion of the total productivity generated.
- > Increased access of citizens to green/sustainable retail finance options, including pensions, insurance, savings products, bonds.
- > Number of future-fit, net zero aligned firms choosing to list on UK stock exchanges.
- > Progress towards nature positive goals by activities financed by the UK financial sector like halting biodiversity loss and accelerating gain by 2030³⁰.

International measures of progress may include:

> Increasing the UK's ranking on international indexes of global green financial centres e.g., Global Green Finance Index³¹ and/or GGFI³²

²⁹ https://www.wwf.org.uk/press-release/big-smoke-report

³⁰ https://www.cbd.int/article/draft-1-global-biodiversity-framework

³¹ https://www.cityam.com/london-retains-green-finance-crown/

³² https://investinholland.com/news/amsterdam-tops-world-ranking-for-green-finance/#:~:text=Amsterdam%20Tops%20World%20Ranking%20for%20Green%20Finance%20Global,edition%20of%20the%20Global%20Green%20Finance%20Index%20%28GGFI%29.



- > Influence of UK on international financial standards e.g., ISSB, International Platform on Sustainable Finance
- > The UK securing international diplomacy wins such as G7/G20 commitments on mandatory transition plans, and commitments to developing net zero financial systems. This is in line with the UK's diplomatic priorities on climate change as set out within the FCDO's Integrated Review³³.
- > Scale and scope of capital mobilised by UK-based financial institutions for sustainable investment in emerging markets and developing economies.
- 6. What areas for potential growth for example emerging financial products and instruments are there in green finance for the UK financial services sector?

Opening markets in the Built Environment Sector

- > E3G's answer focuses on the decarbonisation of the built environment due to how critical this sector will be in delivering a range of UK policy goals including Levelling Up and Net Zero.
- > The decarbonisation of homes and buildings presents a significant potential growth area with around 29 million UK homes requiring retrofits to get on track for net zero by 2050. Given the divergent nature of the UK's building stock, and the different financial circumstances of different households, there is significant potential scope for growth and innovation within the UK financial services sector.
- Private and blended finance can play an important role in filling the green home investment gap but only with the right ecosystem of drivers in place to stimulate significant new demand. Measures targeted at different 'trigger points' where people are likely to undertake works are needed to meet government targets, as well as considering the needs and drivers of different segments of the population. These are outlined in more detail in response to question 7.
- In addition to innovation in green private finance offerings, there could be a major role for blended finance in meeting the investment gap for financing green homes and buildings, as well as in other key sectors like nature. The UK infrastructure Bank could also play a significant role in unlocking markets internationally if its remit was expanded over time.
- > The Green Finance Institute's Coalition for the Energy Efficiency of Buildings market review report³⁴ sets out a wide portfolio of potential innovative financial products

³³ https://www.gov.uk/government/collections/the-integrated-review-2021

 $^{^{34}\} https://www.green finance in stitute.co.uk/wp-content/uploads/2020/05/Financing-energy-efficient-buildings-the-path-to-retrofit-at-scale.pdf$



and services. Some of these opportunities include low-interest loans, green mortgages, Demand Aggregation Finance (DAF) and property-linked finance. E3G's recent briefing for the UK Infrastructure Bank suggests further opportunities³⁵.

Financing the UK's energy security, climate, and environmental objectives

- 7. How can the UK support a financial system that leverages private investment to meet the UK's climate and environmental objectives?
- Achieving a successful UK climate transition will require regulatory drivers, incentives, subsidies, as well as support for consumers and supply chains. A comprehensive package of measures to support the financing of the UK's climate transition would send a clear signal to financial market actors about their role in supporting the achievement of decarbonisation and resilience goals in the real economy and unlock the huge potential available globally of net zero capital for the UK's transition³⁶.
- Siven this appetite, there is significant potential for a UK net zero financial centre to attract inward investment flows for new and sustainable UK markets and services. Harnessing this will require comprehensive reform to the way the UK approaches scaling up new markets. Intervention by the UK Infrastructure Bank both domestically and internationally will support UK leadership in new markets like green steel and retrofit solutions. The UK could also become a leading provider of green financial services including auditing, insurance products and green accounting.
- > Expanding the UK Infrastructure Bank's remit to include an international arm, to deliver mission led public investment to scale up mitigation and adaptation markets globally³⁷, would support the growth of markets internationally. This could include technical assistance and project development support and could work in conjunction with the other measures outlined in question 33.
- > To capture these opportunities, it is essential that the Green Finance Strategy sets out a clear plan³⁸ to align the wider suite of measures which are needed for green investment to thrive. This requires strategic public investment, public policy changes,

³⁵ https://www.e3g.org/publications/making-markets-through-the-uk-infrastructure-bank/

 $^{^{36}}$ https://ifamagazine.com/article/cop26-mark-carney-and-gfanz-announce-130trillion-commitment-to-net-zero-by-financial-sector/

³⁷ https://www.e3g.org/publications/national-infrastructure-bank-design/

³⁸ The UK's 2019 Green Finance Strategy does not include a needs assessment or an understanding of the co-benefits of the transition, nor does it outline a plan to meet the UK's needs.



and updates to financial regulation. Through employing a broad range of regulatory and financing signals, a Net Zero Financing Strategy will also create new markets and generate long-term returns in essential infrastructure such as green hydrogen, building retrofits, and nature. Together with regular transparent monitoring, this will support a fair, levelled up transition and generate continued public support.

Recommendations for financial sector reform include:

- > Ensure the UK green taxonomy remains science-based³⁹ and includes measures to avoid significant harm
- Put in place legislation to ensure Transition plan requirements are extended to all large companies in the UK from 2023, potentially with phased implementation. Publish clear timelines for when these requirements will be rolled out to other companies and SMEs.
- > **Support for regulatory reform** to ensure these requirements are implemented in a credible and robust environment (see question 2, 28, 29).

Recommendations for specific sectors include:

- > Creating new markets in Nature: See question 15
- > Creating new markets in the Built Environment. With regards to the flourishing of green homes finance (see question 6), a suite of measures will need to be introduced with cross-departmental coordination between BEIS, HMT, DLUCH and the UKIB.
 - Long-term, regulatory market signals to the market, industry, and consumers: This can be done through confirming regulatory timelines for minimum energy efficiency standards for all housing tenures (including tightening standards in the private rented sector and gradually introducing measures for owner occupiers) and the phase-out of fossil heating systems. Measures like requiring mortgage lenders to disclose the average energy efficiency of their lending portfolio could spur innovation and interest in financial products like green mortgages.
 - Improve the consumer experience through public engagement and trusted advice services. Making home retrofits straightforward will be critical to drive demand and underpin successful delivery. A dedicated advice service could be introduced this year, giving customers independent advice on energy saving measures and guiding them through choosing the right steps, finding local

³⁹ https://www.e3g.org/news/united-call-for-a-gold-standard-green-taxonomy/



- suppliers, and accessing relevant support. The UK has a model which could be scaled in the Home Energy Scotland service.
- Build the supply chain with skills investment, starting this year by launching an Olympic-style skills and training programme for the retrofit supply chain. High quality standards should be baked in from the start as the market grows to build confidence among households, therefore helping leverage private finance.
- Restructure incentives to encourage home retrofit: There are structural changes the government should make to incentivise action and investment. For example, removing legacy policy costs from electricity bills which raise the price of electricity disproportionately relative to gas— will lower bills immediately while also encouraging a switch to clean electric heating. Introducing an Energy Saving Stamp Duty adjustment could spur people to undertake retrofit measures at the point of sale of a property, a common time when people consider home improvements.
- Introduce new support this year to help families upgrade their homes by expanding ECO to include a new "ECO Plus" scheme giving families on middle and lower incomes access to subsidised energy efficiency measures delivered by their energy companies. With £1bn per year, ECO Plus could support up to 2.1m households over three years. The scheme is only part-subsidized, and will therefore also act as an incentive to leverage private finance
- Support attractive green finance options for people who want to invest further, putting new reporting requirements on mortgage lenders and setting up concessional green home finance through the UK Infrastructure Bank in the medium-term – including KfW style loans to leverage significant private finance.
- 8. How can the UK support a financial system that leverages private investment to meet the objectives of the British Energy Security Strategy, including in areas such as nuclear, hydrogen, carbon capture and storage and domestic oil and gas production, to reduce our reliance on imported fossil fuels as part of a smooth energy transition?
- > E3G firmly pushes back on the mischaracterisation that increasing domestic oil production reduces the UK's reliance on foreign imports. Government should not seek to leverage further stimulate investment in new oil and gas production for the following reasons:
 - Mixed signals as to the UK's future energy system damage the speed at which financial institutions can transition their investment portfolios to supercharge



renewables rollout: In order to effectively leverage private investment at the pace and scale needed to bolster Britain's energy security and meet the UK's energy targets, Government must ensure it sends clear signals to financial institutions. The development times for new oil and gas assets mean that they require global carbon budgets to be exceeded in order to be economic. By signalling support for continued investment in this, Government hinders the pace at which financial institutions will transition their portfolios.

- Domestic oil and gas production expansion will contribute little to the UK's energy security: While it is true that the majority of gas from the UK continental shelf (UKCS) is consumed domestically, 80% of the UK's oil is exported overseas. This is partly due to the fact that oil is a globally traded commodity, but chiefly due to the make-up of the UK's oil refineries being ill-suited to using UK crude oil as a feedstock. As a result, producing more oil in the UK does little to improve the UK's physical energy security, or affect UK emissions, as we will still be reliant on importing oil form overseas. Since 70% of what remains in UK reserves is oil and an even larger proportion of the current project pipeline it is crucial to avoid viewing this as a route to domestic energy security. Finally, regardless of whether gas or oil is produced domestically, prices are set on international and regional markets meaning that a modest amount of additional UK production will make little difference to UK affordability.
- Production expansion comes with significant risk of asset stranding:
 Stimulating investment in new oil and gas production would represent a failure of governance by significantly increasing the basin's exposure to stranded asset risk. Research by Carbon Tracker has highlighted that investors risk a \$500bn stranded asset trap if they look to short-term price signals over long-term trends in demand⁴⁰.
- > Scaling up renewables can also deliver significant reductions to the UK's reliance on fossil fuels. In order to effectively leverage private sector investment into these new technologies, Government can pursue the following things:
 - Increase the capacity caps in upcoming CfD auctions for renewables
 - Reform the mandate of grid and planning regulators and skills bodies to align with net zero, which will help to facilitate an increase in renewables deployment rates

⁴⁰ https://carbontracker.org/reports/managing-peak-oil/



- Unblock planning regulations for onshore wind to boost opportunities for development
- Send clear signals as to the UK's direction of travel, to provide confidence to financial institutions to transition their portfolios towards renewables.
- > While Hydrogen will clearly have some role to play in the future energy system the UK needs, its role must be carefully considered, especially in the context of reducing fossil fuel imports. Recent research has highlighted that if blue hydrogen were to replace gas as a fuel for heating homes, our reliance on gas imports would increase by 10%, due to it being an extension of the gas value chain.⁴¹
- Someon homes measures like energy efficiency and heat pumps are the fastest and most effective way to bolster Britain's energy security and reduce reliance on imported fossil fuels. Heat pumps can support families to transition away from reliance on fossil gas towards clean, affordable electric heating. Energy efficiency can permanently cut total energy use, resulting in bill savings year on year. The 'ecosystem' of measures identified in question 7 can help spur progress in green homes finance.
- > Research by E3G shows that demand-side measures which the government could implement immediately using existing policies and mechanisms could cut Russian imports by 80% this year and save an average of £150 per household. Key measures identified in the report⁴² include:
 - o Increasing support for energy efficiency through existing schemes
 - Accelerating take-up of the most efficient appliances
 - Launching a major new public information campaign
 - o Expanding the Boiler Upgrade Scheme to speed up the electrification of heat
 - o Removing the tax penalties holding back energy saving home upgrades
 - Lowering bills and incentivising electrification by removing legacy policy costs
 - Introducing a comprehensive training offer to fill skills gaps
 - o Incentivising energy efficiency by amending the stamp duty system

⁴¹, Blue hydrogen costs 36% higher than UK's 2021 estimate and would increase gas import dependency https://ieefa.org/articles/ieefa-europe-blue-hydrogen-costs-36-higher-uks-2021-estimate-would-increase-gas-import

 $^{^{42}\,}https://www.e3g.org/publications/the-home-energy-security-plan-demand-side-measures-to-lower-bills-and-get-off-gas/$



Accelerating the phase-out of gas boilers in new build homes

- 9. What barriers are there to unlocking private investment to support the UK's energy security, climate, and environmental objectives?
- > A clear and accountable plan for how the UK will mobilise investment to deliver net zero and adaptation goals is required to unlock private investment at scale. Government should ensure wider policy coherence around the UK's net zero transition when delivering a net zero financial centre and system. Policy coherence, strategic public investment and clear long-term market signals are required to support private finance in investing green for the long term. The Green Finance Strategy should tie these together and represent a national financing strategy. This could include an updated evaluation of the costs and co-benefits of the transition, to extend upon 2021's Net Zero Review⁴³, alongside a map of the UK's financial system and the various sub-sectors in transition. Suggestions for strengthening accountability can be found in question 5 and 10, including comprehensive financial flow mapping on an annual basis to assess progress towards UK net zero and adaptation goals.

Decarbonisation of UK homes:

> Energy Performance Certificates

- O It will be important that the government continues work to improve Energy Performance Certificates. EPCs are based on Standard Assessment Procedure (SAP) or Reduced Standard Assessment Procedure (RdSAP) methodologies and provide an energy efficiency rating on a scale of A (highest) to G (lowest). EPC data is available on every residential property that was built, sold, or rented in the UK since 2008. They are a valuable source of data and describe the general features of a property (e.g., fabric, heating systems, renewable energy technologies).
- O However, EPCs experience several widely recognised issues: the data is static and provides no insight on operational performance, the results can be inconsistent and undermine confidence in their reliability, and the open-source database of EPC lodgements does not link to Land Registry data (a significant issue for lenders seeking to assess the efficiency of properties on their mortgage portfolio). Moving forward, the government might look to integrate real time performance monitoring and metered energy savings approaches which are currently being developed.

⁴³ https://www.e3g.org/news/net-zero-review-expected-to-be-half-baked/?msclkid=3d7ea5e4cfae11ec80eea1d947655614



> Barriers across the different housing tenures.

• The table below sets out key barriers in the energy efficiency sector. These barriers are overviewed in more detail in the Green Finance Institute's market review⁴⁴ and are summarised below:

Table 1: Key financial and non-financial barriers to action and investment in greener homes

	1				,
Owner Occupied (first-time buyers, mortgaged homeowners, outright homeowners)	Upfront costs Higher upfront costs of low-carbon heating systems vs traditional gas boilers; costs of whole house retrofit	Lack of financial support Lack of financial products and incentives; first-time buyers seek to minimise outgoings, highly leveraged, have limited options for further borrowing	Unclear Government signals Long-term uncertainty on schemes, nothing on efficiency for 'able to pay'. Regulatory clarity for heat, but lack of clarity on efficiency	Supply chain Fragmented market and access to trained installers	Cother Lack of access and accessibility of quality, trusted advice, and information
Private Rented (small and large landlords, asset managers)	High upfront costs, particularly for multi- property portfolios; currently	No financial incentives or support; limited capacity to leverage credit, limited	Lack of long- term certainty	Fragmented market and access to trained installers	Landlord- tenant split incentive District Heating: size

⁴⁴ https://www.greenfinanceinstitute.co.uk/wp-content/uploads/2020/06/Financing-energy-efficient-buildings-the-path-to-retrofit-at-scale.pdf



	unable to aggregate demand	awareness for acquiring finance	Ambiguity on new standards		of market, lack of regulatory environment
Social Rented (Including Housing Associations and local councils)	High upfront costs to decarbonise large portfolios	Higher cost of borrowing for Housing Associations than local authorities; many social landlords close to borrowing limits	Lack of long- term policy certainty and capital investment from central government	Supply chain maturity Stock often dispersed	Short-term grant profile difficult to reconcile with long-term objectives District heating: size of market, lack of regulatory environment

- 10. How can the UK government assess and measure progress toward financing the UK's energy security, climate, and environmental objectives?
- > The Government committed in the Net Zero Strategy⁴⁵ to robustly, and regularly, assess the alignment of the UK's financial flows with net zero. The UK needs to fulfil this pledge and track both private and public financial flows in order to measure whether the financial system is supporting the climate transition at the scale and speed required.
- > E3G would like to see the following key elements included in the Green Finance Strategy 2022:
 - Net Zero Finance Strategy setting out a national investment plan to get on track to net-zero, and a roadmap of concrete steps including policy, regulation, public investment, and incentives.

⁴⁵ https://www.gov.uk/government/publications/net-zero-strategy



- New independent institutional capacity⁴⁶ to analyse the UK's financial flows in order to measure progress against net zero and adaptation investment goals, and to transition different sectors of the economy. These flows should be assessed annually against investment targets as set out by the CCC⁴⁷.
- Establishes a robust governance process to monitor progress on government plans to finance the net-zero transition e.g., cross-governmental committee
- > As the British Energy Security Strategy aims to create a sustainable long-term energy system in line with the UK's net zero goals, this tracking should also enable progress tracking against the BESS. Over time, this independent functionality could assess financial flows against progress towards additional goals including those covered under the UK's Environment Plan⁴⁸.

11. How can the UK best facilitate greater private investment into climate change adaptation and resilience activities?

- > As outlined in question 5 and 10, in order to best make use of public investment and policy, an independent institution such as the CCC should conduct comprehensive and regular mapping of investment gaps towards the UK's Net Zero and Adaptation goals ensure that Government fully understands where intervention is required. An initial mapping could be included in the Green Finance Strategy. This mapping should be incorporated into national and regional climate adaptation plans and should happen annually to ensure progress is monitored.
- > The UK has made steps to strengthen the financial sector's management of physical climate risk, by making TCFD disclosure mandatory and by introducing a requirement to disclose transition plans which can be expected to include an element of adaptation and physical risk management. However, it is important to recognise (and was recognised by the Bank of England in the analysis of the 2022 climate stress test) that if climate risks are better understood by financial market actors, this will drive investment away from exposed geographies and communities and could increase financial exclusion by making it more difficult for some firms and citizens to access insurance and banking. These impacts will be very unevenly distributed across the UK, adding further to the challenges of levelling up. It will be important therefore for the UK to develop a proactive investment strategy to meet

⁴⁶ This could be extension of existing institution's functionality such as the Office for Budgetary Responsibility, or a new function/institution.

⁴⁷ https://www.theccc.org.uk/publication/sixth-carbon-budget/

⁴⁸ https://www.gov.uk/government/publications/25-year-environment-plan



its adaptation and resilience goals, and to ensure that sufficient public investment and guarantees are in place to enable private sector participation in the investments required, where there are opportunities for commercial returns.

- As the UK's climate bank, the UK Infrastructure Bank can potentially play an important role in delivering strategic public investment to de-risk and leverage private finance into adaptation and resilience activities across the UK. The Bank should take proactive action to invest in and scale up new markets in Nature. See question 15 for more detailed recommendations.
- > Inclusion of adaptation and resilience elements in firm-level transition plans will potentially play an important role in ensuring that firms are actively looking for opportunities to invest in adaptation and resilience, and also that firms are addressing the resilience of their own assets to future climate impacts rather than hoping for the best and effectively leaving the state to pay for the costs and damages caused by future impacts. It will also be crucial to ensure that upskilling of the financial sector for climate literacy in general, should include elements related to physical climate risk, adaptation, and resilience.
- > The UK has a strong scientific base as well as a strong financial sector, and this should in turn give the UK a position of strength in developing science-based financial products and services that will support adaptation and resilience investment worldwide. Plans to grow the UK's green financial services capability should fully include this element.
- > With the built environment representing around 23% of the UK's carbon footprint, spurring greater private finance to the retrofit of homes will be essential to support climate change adaption. Please see our response to question 7 to see more detail on the suite of measures the government could support to see green homes finance thrive.
- > Adaptation is an important component of the UK's overseas development aid (ODA). This is welcome, as adaptation continues to receive far less financial support than mitigation and need is growing from developing economies⁴⁹. The latest IPCC Working Group II report on adaptation, impacts and vulnerability confirms that climate impacts are hitting developing countries particularly hard but that existing adaptation efforts are fragmented, small scale and incremental, as well as sector-specific and focused on planning rather than implementation. Vulnerability to climate

⁴⁹ The UN estimates developing countries will need \$140-300 billion annually to support adaptation by 2030. Annual adaptation finance is currently around \$19 billion. https://www.unep.org/resources/adaptation-gap-report-2021



change has also been shown to make it harder for developing countries to access global financial markets for funding⁵⁰.

> The UK already has balanced its ODA roughly 50/50 between mitigation and adaptation, but this is not yet common across other jurisdictions. The UK should champion this approach and use its diplomatic influence to secure similar commitments from other significant providers of adaptation finance. This will support the delivery of adaptation goals worldwide and enable greater leverage of private finance to support these efforts alongside public finance commitments. Without ambition setting from the UK, many developing countries will lack the fiscal space to invest in mitigation which will limit the clean energy markets of the future, including markets for green products made by UK companies and services around risk management – significant for UK financial services.

Financing transition activities

12. Are there barriers to the mobilisation of private investment into transition activities? If so, what are they and how might they be overcome?

Recommendations for the financial sector include:

- > Build on the Net Zero Strategy to develop a transition finance strategy for the UK at national and sectoral level. The Net Zero Strategy is the key source of information for investors as to how the UK intends to transition. The British Energy Security Strategy also sets this out to a certain extent in the field of energy supply, although it is missing crucial elements around demand, e.g., the need for large-scale energy efficiency efforts. However, the UK is still lacking an overall financial strategy for mobilising the investment needed to transition and the Green Finance Strategy presents an important opportunity to rectify this.
- Monitor the UK's progress at transitioning the economy and financial sector. The UK's plans for mandatory transition plan disclosure by listed and financial firms will make an important contribution to mobilising transition finance by providing an economy-wide source of bottom-up market-based data on investment plans and opportunities. In order for investors and policymakers to be able to use this information most effectively, these disclosures should result in the production of consistent, comparable data across firms.

⁵⁰ From 2008 to 2018, 20 of the most climate-vulnerable developing countries paid \$40 billion to \$62 billion more in interest payments on sovereign debt due to the risk of droughts, floods, and hurricanes https://eprints.soas.ac.uk/26038/1/ClimateCostofCapital_FullReport_Final.pdf



- > Providing a clear definition of transition investments. The green taxonomy currently is expected to define only green activities and those which rely on Best Available Technologies. In the EU the Platform on Sustainable Finance has proposed the creation of 'amber' and 'red' categories, in which 'amber' activities are possible for a time-limited period. The UK could decide to extend its own taxonomy to embrace a similar approach. In order to ensure international interoperability, it would be highly desirable if the UK could also join and play an active role in the Transition Working Group of the International Platform on Sustainable Finance, working with the various other countries which are also exploring approaches to categorising transition activities.
- Addressing investment gaps for innovation. The UK should explore the matrix of public finance and investment to ensure that innovation in transition finance can be supported. For example, the UK Infrastructure Bank could be critical in assessing technology requirements in the clean energy space to ensure that innovators have access to finance.

Recommendations for the Built Environment include:

- Several market failures exist in the decarbonisation of the built environment sector which are currently curtailing private investment from flowing to address these challenges. These are summarised in response to question 9. Several actions will help overcome these, which have been described in more detail elsewhere throughout the response. These include grants and partial subsidies for mid-to-low-income families to help with the upfront costs of retrofit, setting out a clear package of policy signals including confirming regulatory timelines for minimum energy efficiency standards for all housing tenures, and using the UK Infrastructure Bank to address supply chain and market barriers to scaling these markets up. See question 7 for further detail.
 - High upfront costs: Government subsidies for mid-to-low-income households will be essential for supporting poorer families with the upfront costs of retrofit and can help 'pump prime' the market for heat pumps, helping lower the costs for all households. As well as grants, the government can consider partial subsidies and blended finance through loans offered through the UK Infrastructure Bank. Financial products and services like property-linked finance and salary sacrifice schemes could help spread the upfront costs of retrofit over time. Business models like heat-as-a-service can also help overcome the challenge of high upfront costs.



- Lack of available financial support: More can be done to support innovation of new financial products and services to ensure that across the different housing tenures, and the cross-section of households within each.
- Unclear government signals: This can be done through confirming regulatory timelines for minimum energy efficiency standards for all housing tenures (including tightening standards in the private rented sector and gradually introducing measures for owner occupiers) and the phase-out of fossil heating systems. Measures like requiring mortgage lenders to disclose the average energy efficiency of their lending portfolio could spur innovation and interest in financial products like green mortgages.
- Supply chain constraints: Supporting skills and supply chains, as outlined in response to question 7, could help overcome supply chain constraints.

13. How can the UK become a leading hub in structuring and innovating on transition finance?

- Set out a vision and plan for transition. If the UK is to put itself forward as an international leader on transition finance, it will need to be able to communicate a very clear and credible message as to what transition activities are and what transition will look like over time in the UK and in key high-emitting sectors. This will require some of the measures discussed in the answer to Q12, e.g., ensuring strong domestic regulation around transition finance through transition plans, taxonomy, etc, as well as creating a credible national finance strategy to support investment into the Net Zero Strategy.
- International credibility on transition will depend on being able to demonstrate a strong forward direction of travel, avoiding the perception of backsliding by investing in unsustainable assets (e.g., new upstream oil and gas development). It will also depend on the UK engaging constructively on transition finance in international forums such as the International Platform on Sustainable Finance and the G20 Sustainable Finance Working Group. The Bank of England should continue to play a leading role within the Network for Greening the Financial System (NGFS) and should regularly assess the progress of the UK's own climate transition.

 Provided that clear policy signals are provided, the UK financial sector has a wealth of skills and expertise that would enable the UK to become a leading hub in structuring and innovating around transition finance. As a historic leader in financing infrastructure in high-emitting sectors, the UK is extremely well positioned to support those sectors to transition.



- > Supporting international capacity building and exporting UK Services. This will be a growth area so the UK should ensure that UK transition finance expertise is accessible to other jurisdictions to build the transition finance market e.g., training, international standardisation. The UK infrastructure Bank could also play a role in expanding these markets internationally (see question 7).
- 14. Is there a role for the UK government to support the development of transition finance markets in the UK and internationally?
- > There is a clear role for the UK Government to support the development of transition markets across the UK domestically. The UK Infrastructure Bank will play a critical role in accelerating green finance for transition activities. For more detail, see question 7.
- > Transition planning will also support private finance in anticipating risks and reorientating their investments towards these new markets. See question 12 for further information.

Recommendations to support domestic and international transition financing include:

- Put in place legislation to ensure Transition plan requirements are extended to all large companies in the UK from 2023, potentially with phased implementation.
 Publish clear timelines for when these requirements will be rolled out to other companies and SMEs.
- > Ensure regulators have a statutory objective to address climate change to support transition finance and maintain the credibility of UK transition finance.
- > Add UK taxonomy to Common Ground Taxonomy and play an active role within IPSF/G20 SF WG to promote international norms for categorisation of green economic activities
- > Use the UK's role in IOSCO to ensure a strong ISSB standard
- Use G7/G20 spaces to champion the adoption of mandatory transition plan requirements in 2023, as well as the broader concept of a net zero financial system.



15. How can the UK best support the mobilisation of private investment to natural capital assets?

- > The severe state of environmental degradation and biodiversity decline in the UK has been urgently criticised by the House of Lords Science and Technology Select Committee⁵¹ and the House of Commons Environmental Audit Committee⁵², and the financing gap to meet the UK's own targets on nature stands at between £44B to £97bn over the next 10 years⁵³. Significant intervention is required to address market failures and help crowd in private investment to new nature-positive markets.
- > Supporting private investment in mobilising towards natural capital assets will require a holistic approach.

Recommendations for government include:

- > Strategic Public Investment: The UK Infrastructure Bank will play a critical role in unlocking nature markets in future. E3G recently held a roundtable for the UK Infrastructure Bank team about the potential role of the Bank in unlocking opportunities in nature positive markets⁵⁴. E3G also worked with other organisations to produce a joint letter on a 'Mandate on Nature for the UKIB'⁵⁵. Practical actions associated with this include:
 - HMT reviews UKIB Bill to formally adopt a third objective to meet a nature positive target, entailing directly supporting investment in nature and ensuring all infrastructure investments positively contribute to nature.
 - HMT reviews UKIB Bill to formally include resilience alongside mitigation within the Climate Change objective — investing in projects to support the resilience of natural systems and deploying nature to ensure infrastructure is fit for purpose in a changing climate.
 - The Bank invests upfront in Nature projects to provide a clear signal of intent to the market about the types of transformational projects the Bank will support.
- Developing investment standards and accounting practices around natural capital investment including supporting the development of market mechanisms around sustainability. This could include:

⁵¹ https://publications.parliament.uk/pa/ld5802/ldselect/ldsctech/147/14702.htm

⁵²https://committees.parliament.uk/publications/7463/documents/78144/default/

⁵³ https://www.greenfinanceinstitute.co.uk/news-and-insights/finance-gap-for-uk-nature-report/

⁵⁴ E3G UKIB Nature Roundtable 10th February 2022 Summary (March 2022)

https://www.e3g.org/publications/uk-infrastructure-bank-and-e3g-rountable-creating-resilient-markets-for-nature/

⁵⁵ Joint letter to the UKIB, 15th November 2021, 'A Mandate on Nature for the UKIB'



- Establishing corporate requirements to move the market e.g., SDR, Transition Plans, TNFD.
- o Improving risk management using nature-based solutions e.g., by working with insurance companies on Natural flood management (NFM).⁵⁶
- Supporting the standardization of codes and investment approaches in nature-based investment e.g., using the UK Infrastructure Bank to establish best practices in blending and Stacking for example supporting the combination of carbon and flood risk benefits in Salt Marshes to make them more financially viable⁵⁷. GFI Hive⁵⁸ has some further policy recommendations.
- > **1.5 aligned Financial Regulation:** Leveraging regulatory tools such as transition plans and the UK green taxonomy will be essential to ensuring private finance supports the UK's natural capital. Practical actions include:
 - Establishing a science based 1.5 aligned UK green taxonomy which includes robust Do No Significant Harm measures to ensure investments are not actively harmful to the 6 objectives set out by the tool
 - Set out a forward pathway for ensuring that transition plans will over time include not only adaptation planning but also nature recovery plans.
 - Set out a clear timeline for the UK adopting ISSB, including nature and biodiversity protections
- 16. How can the UK government best assess the progress and development of a natural capital investment market?
- > See question 5 and 10 for recommendations on assessing national progress towards investment targets.
- > As set out in E3G's recent letter to the UK Infrastructure Bank on Key Performance Indicators for the Nature-Positive markets⁵⁹, metrics may include:
 - % UK investment aligned with UK green taxonomy
 - % UK investment aligned with the UK's 2050 Resilience target and the Environment Act species abundance target

⁵⁶ https://catchmentbasedapproach.org/learn/what-is-natural-flood-management/

⁵⁷ https://nbs.capitalforclimate.com/

⁵⁸ https://www.greenfinanceinstitute.co.uk/gfihive/

⁵⁹ https://www.e3g.org/news/e3g-letter-to-the-uk-infrastructure-bank-on-key-performance-indicators-kpis-for-success/



 Overall impact of portfolio on biodiversity as measured by change in habitat condition, Biodiversity Net Gain Metric 3.0 units, and/or number of species on UK Biodiversity Action Plan and/or IUCN Red List within the project footprint.

Ensuring broad access to green finance for local authorities, SMEs, and retail customers

- 17. How can the UK financial sector support the delivery of the UK's climate and environmental objectives at the local level, whilst also benefitting local growth and communities?
- > The financial sector will play a significant role in new and evolving markets for net zero. This is particularly the case for the built environment and retrofit space, where there is significant appetite from investors to turn the demand for energy insulation into workable business models.
- > The benefits of delivering green homes for local growth and communities, particularly in Levelling Up areas, are significant. Some examples include:
 - Cut household bills: Improving the least efficient homes currently rated 'D' or worse for energy performance to 'C' would save those households on average around £916 per year should the energy price cap rise to £2,800 this autumn.
 - Improve Energy Security: Moving the average EPC rating of households from D to C would reduce UK gas imports by 15%.
 - Level Up across the UK: Investing in energy saving measures will support hard-hit families and boost economic growth in Levelling Up priority areas in the North and Midlands, where 55% of those in fuel poverty live
 - Create jobs: A nationwide retrofit scheme could support nearly 100,000 jobs in all UK regions from 2022 to 2024, in line with the Levelling Up agenda.
- 18. How can local authorities support the mobilisation of private and public investment to key sectors and technologies for the UK's climate and environmental objectives, whilst also meeting local priorities? What barriers to this are there?
- > There are substantial opportunities for local authorities to deliver both levelling up and net zero objectives, but Local Authorities face barriers when trying to deliver finance for these objectives. In addition to ensuring there is sufficient



finance to support these objectives, this is much about coordination between funding sources such as the UKIB and the PWLB, as it is about capacity building.

- > The Green Finance Strategy can support levelling up and local authorities in delivering cross UK prosperity by centring just transition principles in the strategy, including supporting local authorities and investing in a fair transition for legacy industries.
- > **Establishing Net Zero Hubs across the UK** will be critical to deliver comprehensive support to local authorities for the transition including technical assistance and project development support, clarity on sources of finance, and incentives to transition. See question 3 and 19 for further measures.
- 19. What is the current state of capability within local authorities to attract investment, and how can it best be supported?
- > Local Authorities have the potential to be influential actors in delivering net zero and levelling up, working with the private sector to deliver solutions. However, there are differences in the capability of local authorities in the UK to attract green investment. One of the biggest barriers for local government is not capital but revenue funding. Significant capacity gaps exist, with some local authorities unable to spend £20m because they lack £40,000 to hire staff to deliver projects. This may require capacity building (see below) and flexibility in the allocation of CAPEX to support delivery costs. The CCIC⁶⁰ has identified gaps in available headcount within local authorities to deliver innovative financing structures and investment, as well as a number of gaps in capabilities and skills across a number of specialist and complex areas such as low carbon technology and financing.
- Across the country, there are local authorities and regional actors seeking solutions to the same problems. With regards the decarbonisation of the built environment, there are significant opportunities for local authorities to support the mobilisation of private and public investment - with leaders in this space already making good progress. However, there are also barriers to local authority investment.
- > Time and resources can be saved through avoiding "reinventing the wheel". The UK Infrastructure Bank can offer a hub of information sharing to promote best practices and tried and tested investable propositions, and project development and technical assistance know-how. The European Investment Bank's European

⁶⁰ https://cp.catapult.org.uk/project/uk-cities-climate-investment-commission/



Local Energy Assistance (ELENA) previously offered this option in the UK, with revenue funding structures – enabling local actors to develop investable propositions across sectors and match that up with different funding stacks. There is currently a scattering of technical assistance available across the UK, which the UK Infrastructure Bank could supercharge with support of Treasury, funnelling grant funding. This should be underpinned with thorough project evaluation so that other regions can learn lessons – for example, understanding how much energy is avoided by investing in an efficiency portfolio of homes.

- > The UK Infrastructure Bank, although important, cannot solve these issues alone so the Green Finance Strategy should set out the relationship between different funding bodies and sources of support for local authorities and encourage collaboration between private sector investors, local businesses, local public bodies, and local residents. The Bank should collaborate with Innovate UK, the Strategic Innovation Fund, and the Shared prosperity fund to develop the expert advisory, technical assistance and project development functions Local Authorities require to actively participate in delivering a net zero built environment.
- > Specific recommendations can be found in the table below, taken from E3G and UK100's briefing on the UK Infrastructure Bank Advisory Function⁶¹, and question 18.

Table 2: Local Authority Barriers to Net Zero and the role for the UK Infrastructure Bank

LA Barriers to Net Zero investment		How could UKIB and its Advisory function
1.	Resource constraints to originate and develop projects: LAs have very limited resources to develop projects and this has been exacerbated by the budgetary challenges presented by the COVID-19 pandemic. The five NZH in England have provided some additional development support but they are very thinly spread.	help? Work with BEIS and the NZH to develop funding solutions to aggregate place-based approaches to Net Zero investment that build local development capacity on a financially sustainable basis. This could involve the creation of dedicated regionally focused development funds which combine public and private funding.
2.	Competing demands of council revenue and capital budgets: Net Zero investment has to compete with demands on council budgets to provide key services. Again, this has been	Help shape the UKIB LA lending capacity to ensure it complements existing LA financing resources to encourage additional Net Zero investment.

⁶¹⁶¹https://www.e3g.org/publications/uk-infrastructure-bank-local-authority-advisory-service/



	exacerbated by the COVID-19	
	pandemic.	
3.	Lack of patient capital/de-	Work with sources of government patient
	risking finance products: finance	
	products are needed which	capital and private sector providers of capital
	recognise the risks and long-	to develop innovative financing solutions.
	term payback of many low	
	carbon projects.	
4.	Local energy projects are often	Use its pan-UK role to help shape solutions
	small scale: LAs lack the	that lend themselves to standardisation and
	mechanisms to aggregate small	
	scale projects to achieve	aggregation.
	economies of scale.	
5.	Risk aversion: it is generally	Use its industry knowledge, public sector
	challenging for the public sector	standing and financing expertise to develop
	and LAs to invest in	solutions that address the natural risk
	innovation/'first of kind'	
	technologies and new delivery	aversion of LAs
	models.	
6.	Stop /start government policy:	Share its market knowledge with government
	low carbon investment has been	to inform future policy and regulation
	subject to short term changes	developments, and to help ensure that
	around revenue and grant	government policy remains consistent over
	support that has made it difficult	
	to create viable long-term	time.
	programmes that generate economies of scale and drive	
	down unit costs over time.	
7	Constraints of government	
7.	funding: the terms of	Use its knowledge of the market to advise on
	government funding to support	the most cost-effective ways in which
	local energy investment often	government funding should be offered to LAs
	prevent the optimum potential	to encourage the development and delivery of
	bids from being made (for	Net Zero investment project pipelines.
	example, project scale	This could include investment in in-house LA
	thresholds, detailed bid criteria,	expertise for securing funding.
	process, and timescale	expertise for securing funding.
	requirements). LAs typically	
	respond to funding which in	
	some cases may limit the	
	capacity to develop a more	
	strategic approach.	
8.	Regulatory constraints: our	UKIB's engagement with the market will
	current regulatory system has	enable it to understand the constraints that
	been designed to support our	our current regulatory system places on
	existing centralised energy	San San Che regulatory System places on
	system and therefore creates	



	constraints for developing local solutions.	developing local placed based energy solutions. UKIB should feed this knowledge back to the government and regulators to influence the development of government and regulatory policy that supports local place-based Net Zero investment. UK100's Power Shift ⁶² report lays out the problems facing local and combined authorities in delivering Net Zero and sets out the thematic areas where a fresh approach to powers and resources can enable delivery.
9.	PWLB funding: this is relatively inflexible and lacking in innovation. For example, it cannot be used to invest in assets that are not owned by the borrowing LA.	The UKIB will need to ensure that its LA funding capacity is sufficiently innovative and flexible to provide LAs with an attractive new source of funding that encourages them to accelerate the pace of their Net Zero investment. The benefits of using UKIB funding will need to be communicated to LA finance officers and others involved in developing LA Net Zero projects. Key features to consider include: Streamlined application process with clear guidance for LAs This could be developed in conjunction with the ESC's Net Zero Go ⁶³ tool's ability to fund riskier/additional projects in nature and the built environment.
10.	"stop/start" nature of short- term funding creates a reluctance in local supply chains to gear up for short term opportunities, particularly those that require investment in new skills and accreditation.	By creating longer term funding streams for Net Zero investment programmes, the UKIB could work with LAs and project developers to give businesses the confidence to develop the necessary skills and supply chains.

 $^{^{62}\,}https://www.uk100.org/sites/default/files/publications/Power_Shift.pdf$

⁶³ https://www.netzerogo.org.uk/s/



20. How can the UK financial sector support SMEs and retail customers to align with the UK's climate and environmental objectives?

- Requiring net zero transition plans from all companies in the UK economy, including guidance for SMEs over time, in addition to clear sectoral guidance produced by the Transition Plans Taskforce, will be one of the most effective mechanisms to support the wider economy in aligning with the UK's climate and environmental objectives. Given the current requirements are for listed financial institutions and companies, practical steps for the financial sector to support SMEs include:
 - Put in place legislation to ensure Transition plan requirements are extended to all large companies in the UK from 2023, potentially with phased implementation.
 - Publish clear timelines for when these requirements will be rolled out to other companies and potentially SMEs, potentially in a simplified form
 - Establish a clear regulatory environment to take account of climate and environmental objectives (see question 2, 18 and 19)
 - Government and the financial sector should set out clear and accessible advice and certification to SMEs and individuals and provide clarity on available support from Banks and public sector.
- 21. Is there a role for the UK government to facilitate broad access to green finance for local authorities, SMEs, or retail customers? If so, what should these roles be?
- > There is a clear role for government in setting out a supportive ecosystem of advice and support for retail customers and SMEs, including the right advice and regulatory framework to support transition. See questions 2, 18, 19 and 20.

Greening the financial system

- 26. What are the key characteristics of a Net Zero-aligned Financial Centre? How would these characteristics apply to a typical UK-based: Bank, Insurer, Asset manager, Regulated asset owner, Listed company, Large private company, Small and medium size enterprise (SME), Retail investor, Professional services firm, or any other relevant industry participant
- > E3G's briefing on a Net Zero Financial Centre outlined what the transition may look for key sectors across the financial industry⁶⁴. This is summarised in question 2 and

⁶⁴ https://www.e3g.org/publications/a-net-zero-uk-financial-centre/



a timeline together with transition characteristics for critical sub-sectors across the UK financial industry, can be found in this briefing.

Table 3: Timeline for financial sub-sectors in transitioning to net zero

Sub-Sector	Suggested Timeframe to Net Zero
Service Providers and Advisors	~2025
Insurance Sector	~2030
Banking and Lending	~2030
Asset Owners and Asset Managers	2050
Stock Exchanges	~2050
Derivative Markets	2050

- 27. What market barriers are there to the integration of environmental-related factors into financial decision-making?
- > It is currently challenging for companies to verify sustainable investments on large scale, leading to widespread greenwash⁶⁵ and issues around identifying which investment opportunities are aligned with a company's own targets on green finance.

Actions to overcome these market barriers will include:

- > Clear mapping of investor needs in terms of labelling and certification, including active consultation with actors across the financial ecosystem, to ensure taxonomy, transition plans and any other requirements become credible and decision useful.
- > Ensuring that the UK Green Taxonomy remains science-based and excludes fossilgas from its list of sustainable activities, in order to support companies in having clarity on the sustainability of investment products⁶⁶
- > Underpinning private finance regulation like Transition Plan requirements with a science-based UK Green Taxonomy
- > Supporting a system of clear certification and labelling, potentially through regulators like the FCA⁶⁷
- > Supporting international standardisation on taxonomies through the International

⁶⁵ https://esgclarity.com/fca-plans-to-extend-tcfd-disclosures-and-target-greenwashing/

⁶⁶ https://www.e3g.org/news/united-call-for-a-gold-standard-green-taxonomy/

 $^{^{67}\} https://www.e3g.org/publications/e3g-response-to-fca-discussion-paper-on-sustainability-disclosure-requirements-and-investment-labels/$



Platform on Sustainable Finance ⁶⁸ and supporting interoperability to reduce reporting burdens for multinational organisations and ensure high global ambition.

- > **Public finance should align with the UK green taxonomy as fast as private finance, if not sooner.** The UK should harmonise the UK Infrastructure Bank's Investment Framework and the new Green Sovereign Bond and Green Retail Savings products frameworks with the taxonomy. This is necessary to send clear signals to the market as to what is green, and what is not. The CCC has also supported a Net Zero Test to ensure public spending and budgets are aligned with the UKs targets on climate⁶⁹.
- > Over time, this can be expanded to include complementary goals like naturepositivity through the development of:
 - A forward pathway for ensuring that transition plans will over time include adaptation plans and nature recovery plans
 - Setting out a clear timeline for the UK adopting ISSB, including nature and biodiversity protections
- 28. What should the role of the UK government or regulators be to support the greening of the financial system? How could they go further?

Recommendations to support UK regulators in greening of the financial system include:

- > Establish a clear direction of travel for UK Finance in the UK Green Finance Strategy
- > Establish the UK listings regime as a green flagship internationally, including requiring net zero transition plans for listed companies by 2025 and set out clear enforcement mechanisms for listed firm that don't comply after this time
- Make climate change a statutory objective for UK regulators and set out a clear pathway for including nature and biodiversity risk. See question 2 for specifics on the role for statutory objectives on climate for UK regulators within the Financial Markets and Services Bill.
- > Ensure the Bank of England sets out a forward roadmap for how it will use the taxonomy and transition plans to manage climate-related aspects of

 $https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/international-platform-sustainable-finance-$

factsheet_en.pdf#:~:text=The%20International%20Platform%20on%20Sustainable%20Finance%20%28IPS F%29%20was,Singapore%2C%20Switzerland%2C%20United%20Kingdom%20and%20the%20European%20 Union.

⁶⁸

⁶⁹ https://www.theccc.org.uk/uk-action-on-climate-change/reaching-net-zero-in-the-uk/



macroeconomic risk and monetary policy. This may include updating the Bank of England's capital requirements for financing fossil fuel activities to be increased in line with their risk profile⁷⁰

Providing the market with the right data

- 29. What steps can the UK government take to support a robust investment data ecosystem to attract green finance flows?
- 30. Are Scope 3 (supply chain) emissions data important for investors to assess and manage climate-related risks and opportunities?
- Understanding Scope 3 emissions data is extremely important for investors to assess and manage climate-related risks and opportunities, particularly for sectors where Scope 3 emissions are high (for example energy companies and financial sector firms.) While reporting of Scope 3 emissions is not as mature for some sectors as reporting on Scopes 1 and 2 due to its greater complexity, the practice is very well established over more than two decades and widely used as a means of assessment.
- 31. Is there a role for the UK government to support businesses (of different types and sizes) to make good quality Scope 3 emissions disclosures (including SMEs in the value chain of disclosing entities)? If so, what should this be?
- Sovernment guidance around emissions and climate risk reporting can potentially include sector-specific guidance to indicate what type of Scope 3 reporting is expected for individual sectors, and to what extent expectations could be reduced for SMEs. Sector-specific guidance around transition plans may also be useful in this regard. See question 20.
- 32. Up to 2030, how can the UK government best support the global transition to a net zero, nature-positive financial system that is both inclusive and resilient?

 Diplomatic and policy measures that the UK can implement to support the global transition include:
- > Increase the mobilisation of public and private investment to achieve 2030 climate and nature targets in emerging and developing economies.
 - See question 33
- > Support global adoption of high ambition international green standards

⁷⁰ The Basel Committee has already done this for cryptocurrencies, https://www.finance-watch.org/the-one-for-one-rule-a-way-for-cop26-ambitions-to-manifest-in-policy/



- Ensure that the UK taxonomy is aligned to the IPSF's Common Ground
 Taxonomy and adopt a leading role within IPSF/G20 SF WG to drive forward international norms for categorisation of green economic activities
- Use the UK's role in IOSCO to ensure strong ISSB global disclosure and reporting standards and take a proactive stance in calling for interoperability between ISSB and EFRAG adopted standards
- Leverage UK's role in G7 and G20 to champion the adoption of mandatory transition plan requirements in 2023, building on the standard-setting work of the UK's Transition Plans Taskforce
- Support the implementation of new Race to Zero criteria and push for the adoption of clear governance mechanisms to address non-compliant GFANZ members by COP28
- Support the update of international standards on prudential regulation and capital requirements on fossil finance by the Basel Committee, including by adopting into UK domestic regulations
- As a key shareholder in International Financial Institutions, including Multilateral Development Banks (MDBs) and the IMF, the UK should support MDBs and Public Banks in mainstreaming net zero and resilience
 - Take forward holistic UK MDB shareholder climate strategy to ensure transformative Paris alignment and climate mainstreaming by MDBs and other international public development banks, including CDC Group / British International Investment which should lead by example. Get British International Investment (CDC Group) to offer to IDFC to host the Finance in Common Summit in October 2023, building on the COP26 legacy.
 - Lead a like-minded group of governments from Global North and Global South on climate reform of MDBs and IMF. Maintain and fully resource the FCDO-Germany like-minded group on MDB Paris alignment.
 - Invest and champion the new Joint MDB Long Term Strategy Facility, which has
 the potential to create ambitious Long-Term Strategies for almost 150 countries
 worldwide within the context of the UNFCCC.
 - Assign responsibility within HMG for maintaining relationships with MDBs that the UK does not have a shareholding in, such as the European Investment Bank, Islamic Development Bank, Council of Europe Development Bank and New Development Bank. COP26 was an opportunity to create a relationship with these institutions on climate and the International Financial Institutions



Department in FCDO should be tasked with maintaining this. E3G understands it is possible for the UK to contribute to IsDB trust funds, for example.

- Work to resource the replication of country platforms (JET-Ps) to more countries, and to create permanent single international financial architecture for this with a strong role for public banks and private sector, plus UK aid for building capacity and project pipelines.
- Support the creation of an international financial architecture for country partnerships with a strong role for public banks and private sector, plus UK aid for building capacity and project pipelines
- Recognised that the role of the private sector is a condition for a greater and targeted participation of public finance, ODA should be restored and the UK should maintain a 50/50 split of funding for mitigation and adaptation (see question 11). Improving and addressing access to finance will also be an important aspect of improving quality. The UK Infrastructure Bank could also over time have an international function (see question 7)
- > Upgrade the international financial architecture that developing countries rely on
 - Lead on convening a task force to review the IMF-WB debt sustainability
 analysis to incorporate climate risks, but also the spending needs to be required
 for developing countries to take forward the transition. Current debt profiles are
 a blocker for countries to take forward the upfront investment for the
 transition⁷¹. This could also inform the debt analysis of credit rating agencies,
 and investors.
 - Support UN efforts to review the methodology and impacts of credit rating agencies and their implications for debt sustainability, particularly in emerging markets and developing economies.
 - As a shareholder of the IMF, work with like-minded shareholders, including from the Global South, to encourage the newly established Trust Fund on Resilience and Sustainability to ensure that existing IMF programs and conditionalities do not discourage increase investment in the transition⁷³.

⁷¹ https://www.bu.edu/gdp/2022/02/10/climate-change-and-imf-debt-sustainability-analysis/

⁷² UN DESA, Credit Rating Agencies and Sovereign Debt: Challenges and Solutions, **Credit Rating Agencies_paper_0.pdf (un.org)**

 $^{^{73}\} https://www.bu.edu/gdp/2022/02/23/5-design-features-for-a-transformational-resilience-and-sustainability-trust-at-the-imf/$



- Support international efforts towards a shared outcome on loss and damage finance at COP27⁷⁴ by leveraging the UK's diplomatic influence in G7/G20/UNFCCC spaces and other relevant international fora.
- Encourage all future COP Presidencies to run a 'Finance Campaign' outside of the UNFCCC negotiations as was the case for COP26
- 33. How can the UK government increase the mobilisation of public and private investment to achieve 2030 climate and nature targets in emerging and developing economies?

Proposals to increase the mobilisation of public and private investment internationally include

- > Advance a new G7 global infrastructure investment push to shift trillions
 - In 2021, under the UK G7 Presidency, the G7 Leaders at the Carbis Bay Summit "committed develop a new partnership to build back better for the world, through a step change in our approach to investment for infrastructure, including through an initiative for clean and green growth". Following Glasgow, the UK-led G7 established a Partnership for Infrastructure and Investment (PII), "setting out principles and next steps to modernise the G7's approach to infrastructure finance and narrow the infrastructure investment gap in developing countries", including:
 - Sustaining a step change in our ambition partnering with developing countries on their infrastructure investment plans as a standing priority, together with increased cooperation, coordination, and collaboration between us to ensure we are greater than the sum of our parts.
 - Scaling up finance mobilising both public and private sector finance and expertise, including by leveraging public finance to catalytically crowd in the private sector; and by supporting access to sustainable finance from G7 capital markets.
 - Cementing this UK G7 legacy requires a continued UK diplomatic effort over the coming years and over the 2020s, in partnership with G7 allies, notably the US and Germany, and bringing together development finance institutions as well as capital markets actors. It will require new financial commitments from G7 countries to mobilise private capital, fortunately at comparatively high leverage rates, as well as new structures at different levels to develop and scale green capital market instruments, and new incentives for public finance

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⁷⁴ https://www.e3g.org/publications/roadmap-for-progressing-on-loss-and-damage/



institutions to move beyond lending to other catalytic activities such as guarantees. In operational terms, G7 Leaders offices (e.g., No10 and Cabinet Office) must build stronger mechanisms for joint implementation with ministries of energy and climate (BEIS), finance (HMT), and foreign affairs and development (FCDO).

- Catalytic public finance instruments will be crucial to achieving private
 finance mobilisation, particularly when channelled through the global
 ecosystem of public banks starting top-down with contributions to the
 Multilateral Development Banks, together with strong use of shareholder
 powers to ensure that these banks are playing their full role to ensure climate
 transition.
- More country platforms will be needed, and eventually an international architecture to support the creation of a financing platform for every country that requires one, particularly to match public investments with private capital, possibly via resourcing on a regional level. Building on learnings from prior UKbacked efforts such as the Climate Finance Accelerator and NDC Investment Plans supported by the NDC Partnership, the UK can play a leading role in the creation of new platforms and of the comprehensive architecture.
- > Advance negotiation in the COP process for a NCQG that is ambitious, feasible, and dynamic
 - To ensure that all these measures are cemented in international architecture and lead to meaningful collaboration with developing countries, it will be important to anchor them in the UNFCCC and in particular to the discussions to define the New Collective Quantified Goal (NCQG), the post-2025 climate finance goal. Unlike the previous \$100 billion goal, the new iteration must be not only ambitious but also innovative and nuanced.
 - E3G proposes an ambitious headline target for overall finance mobilization in the post-2025 goal, backed up by:
 - Subgoals for mitigation and adaptation, and with subgoals for associated financed achievements a GHG emissions reduction goal and an adaptation impact goal
 - Dedicated sub-goals, with buy-in, for the 10 leading MDBs ("M10),
 DFIs/IDFC, ECAs, ODA, GFANZ, CIFs, GCF and for climate-focused recapitalisations and replenishments thereof, by contributor countries.



- A commitment from contributor countries to (a) assign the responsibility for scaling and implementing NDC Investment Plans and JET-Ps to specific institutions and (b) providing each non-Annex I country with support for an NDC investment plan plus a country package/adaptation package/JET-P by 2030 or 2035.
- 34. How should the UK government assess and measure progress towards the transition of the global financial system and mobilisation of finance for global climate and nature Goals?

Metrics to assess progress towards international transitioning may include:

- > Progress report against G20 Sustainable Finance Roadmap
- > Total climate finance flows (e.g., as measured by CPI⁷⁵)
- > Amount of climate finance mobilised in context of \$100bn
- > Joint MDB climate finance report
- Paris alignment of MDBs should be assessed with the E3G MDB Public Bank Climate Tracker Matrix. E3G would be happy to do a similar assessment of British International Investment (CDC Group) if funding permits.
- 37. What are the unique challenges for emerging and developing economies in meeting the requirements of the transition to a net zero and nature-positive global financial system, and how can the UK best provide support to overcome these?
- > Developing economies face much higher costs of capital than developed economies, partly due to perception of higher risks by financial institutions. According to the IEA, emerging and developing economies currently account for two-thirds of the world's population, but only one-fifth of global investment in clean energy, and one-tenth of global financial wealth. The UK and its partners must therefore work using their public finance and public finance institutions to reduce the risks and costs of capital for these investments. This can be achieved by offering greater concessional climate finance (e.g., via GCF) to blend into loans to improve their affordability, as well as the increased use of guarantees which offer even greater untapped mobilization potential.
- > In partnership with allies like the USA and EU countries, the UK can also continue and step up its efforts to demand that the MDBs do more Balance Sheet Optimisation, engaging in synthetic securitisation (e.g., climate bond issuances) increasing leverage ratios and challenging their AAA credit ratings, if need be, while

⁷⁵ https://www.climatepolicyinitiative.org/the-programs/climate-finance/



supporting efforts to understand credit rating agency approaches and how to work around them. At the same time, partnering with allies, the UK must champion climate-themed recapitalisation of the MDBs as being cost-effective use of donor money and essential in order to scale finance, including private finance mobilization.

> Despite having significant project origination potential, developing countries also face significant challenges with project preparation. Here, strategic use of grants can help developing countries to mobilize investment by preparing projects as well as project costings and financing strategies, as proof of concept. In an aggregate level, this is similar to the need for the UK to continue to support NDC Investment Plans and national financing strategies, with grants and financial technical assistance.

Mobilising finance in emerging and developing economies using green bonds

- 38. Considering the key market incentives and barriers, how can the UK best support an increase in high quality, green bond issuances for emerging and developing economies? *
- > According E3G research and interviews with various capital market participants from the public and private sectors, there are various key barriers to scaling issuance of green bonds and other green capital market instruments. To tackle various barriers, the UK should pursue the establishment of global, regional, and country platforms for finance mobilisation at scale, working with regional MDBs and national DFIs based on existing examples of engaging green capital markets, resourcing guarantee facilities in partnership with the G7 and major donors. See for example, ADB ASEAN Catalytic Green Finance Facility. Too small deal size (<50 million) is a central barrier to engaging major institutional investors at scale, requiring aggregation via platforms which the UK can support, with wholesale approaches to de-risking.
- > The UK can address risk at various levels, notably with support for guarantees, helping crowd in private capital by ensuring that instruments such as bonds are investment-grade. To address credit risk, there is an important role for the UK to back partial credit guarantees DFIs need to deploy more credit enhancement. While first-loss donor capital is currently country and sector specific, there is a need for a portfolio approach placing the first-loss component on top. Currency risk remains a big obstacle to mobilizing international private investments in developing countries, which the UK can also help mitigate through targeted finance for risk mitigation mechanisms. Examples of currency risk mitigation mechanisms requiring greater scaling include The Currency Exchange Fund (TCX).



> There is also considerable potential to for the UK to support MDBs and DFIs, including developing country national development banks, to scale up their synthetic securitisation and issuance of climate bonds, freeing up space on balance sheets for further financing. In addition, project pipeline origination is a recurring challenge where UK grants and technical assistance can play a crucial role⁷⁶ (see question 7)

About E3G

E3G is an independent climate change think tank with a global outlook. We work on the frontier of the climate landscape, tackling the barriers and advancing the solutions to a safe climate. Our goal is to translate climate politics, economics, and policies into action. More information is available at www.e3g.org

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⁷⁶ Further information and citations available upon request