Green Finance Initiative

CITY OF LONDON

FIFTEEN STEPS TO GREEN FINANCE

A discussion paper from
the UK Green Finance Initiative

In association with

E3G

**Fifteen Steps to Green Finance:
A discussion paper from the UK Green Finance Initiative** is published by the City of London Corporation's Green Finance Initiative. The development of the report, and consultation Fifteen Steps to Green Finance: A discussion paper from the UK Green Finance Initiative is published by the City of London Corporation's Green Finance Initiative. The development of the report, and consultation with GFI members and other stakeholders, was managed by E3G.

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The Green Finance Initiative (GFI)[1]

The City of London Corporation has taken a leading role in the growing global green finance market. The private sector is already playing a significant role in financing the low-carbon energy transition. The City of London has established the Green Finance Initiative (GFI), to leverage the experience and expertise of the City of London to deliver listed and unlisted investment in UK and global green infrastructure, ranging from the successful work in growing the Green Bond market to over $100 billion of annual issuance, to pioneering direct renewable infrastructure investments by UK pension funds.[2]

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1 http://greenfinanceinitiative.org/

2 https://www.climatebonds.net/

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Executive summary

As it shapes the UK economy to compete in the 21st century the UK Government has adopted five important domestic and international policy obligations whose delivery is dependent on expanding green finance. Domestically, the Industrial Strategy is a key driver of future economic growth for the UK. Furthermore, the recently published Clean Growth Strategy and forthcoming 25-Year Environment Plan will identify further opportunities for investment. At a global level, the UK is a signatory to the 2016 Paris Agreement and the United Nations 2015 Sustainable Development Goals.

Access to reliable flows of low cost capital is essential if the Government's policy obligations are to be met. The decision to the leave the European Union complicates the task of meeting them, not least because of a scaling back of access to the European Investment Bank and growth of competition from other financial centres in Europe. Solutions need to be sought both to manage risks to the UK economy but also seize the opportunities created by the delivery of these domestic and international obligations.

The transition to a green economy is a global challenge estimated to be worth tens of trillions of dollars over the coming decades and presents significant economic opportunities. As the Governor of the Bank of England Mark Carney has set out "By ensuring that capital flows finance long-term projects in countries where growth is most carbon intensive, financial stability can be promoted. By absorbing excess global saving, equilibrium interest rates can be raised and macroeconomic stability enhanced. And by allocating capital to green technologies, the prospects for an environmentally sustainable recovery in global growth will increase."

The UK, and the City of London specifically, is already a hub for green finance. Expanding its competence and experience on green finance further to seize the opportunities the global transition to a green economy presents will enable both the UK and the City of London to develop a distinctive and competitive offer to investors everywhere. Building upon a groundswell in support from financial institutions for 'greening' finance catalysed by the work of the Bank of England, it will also ensure the UK can meet both its domestic and international policy obligations and deliver a successful Brexit process.

This briefing paper sets out fifteen steps to expanding green finance in the UK, falling under three headings: financial policy innovation to promote green finance; domestic infrastructure investment to expand green finance; green finance as a means to boost global trade.

15 Steps

Financial policy innovation to promote green finance

1. **Set up a Green Fintech Catapult to build upon emerging opportunities** to provide capabilities and testbeds to support green fintech development by public and private sector actors. The new Catapult would be a world-leading centre designed to transform innovation on green finance from largely academic ideas to commercial products and services.

2. **Use the forthcoming review of the Stewardship and Corporate Governance Codes to fully assimilate the Financial Stability Board Taskforce of Climate**-Related Financial Disclosures recommendations into the UK regulatory framework. Issue guidance to clarify that for listed companies, climate change risk and the company's proposed approach to managing it should be included in annual reports. Have an explicit comply or explain requirement to disclose what effect climate change may have on the business – and extend it to non-listed companies with public debt.

3. **Require financial institutions to report their alignment with the goals of the Paris Agreement** – and more specifically how aligned they are with to the Clean Growth Strategy and the UK's 5th Carbon Budget. This would have the effect of the UK implementing an enhanced version of France's Article 173.

4. **Establish a new UK Green Standards Board** to build trust in new green finance products and funds through credible quality controls and audits.

5. **Develop a dedicated label for funds and products** exclusively focused on supporting BEIS Clean Growth Strategy and DEFRA's 25 Year Environment Plan. This could be extended to include Lifetime Individual Savings Accounts (ISAs).

6. **Request the Prudential Regulation Authority set an expectation** for insurers and require banks to include long-term sustainability factors in the Own Risk and Solvency Assessment (ORSA) made by insurance companies and internal risk assessments by banks to pave the way for adjustments to capital requirements. To model physical risks of climate change, for example, this could include an expectation to report financial exposure to extreme weather at a minimum of 1 in 100-year risk levels.

7. **Offer direct grants or tax exemptions** to firms issuing and listing verified green bonds in the UK. Announce a consultation on potential incentives for holders and issuers of green securities and loans.

8. **Embed an industry-wide understanding** that environmental and social issues are important drivers of long-term investment value. Consult on requiring pension funds to have at least one trustee with sustainability/environmental expertise.

Domestic infrastructure investment to expand green finance

9. **Modernise the Public Works Loan Board** so it becomes a source of pre-investment capital or risk capital to crowd private sector capital into green infrastructure.

10. **Use the National Productivity Investment Fund** and the £40bn UK Guarantee Scheme as public-private risk sharing facilities to boost investment in the UK and support delivery of the Clean Growth Strategy and the 25 Year Environment Plan.

11. **Create a National Resilience Office** based in the Cabinet Office with responsibility for considering the resilience implications of all investment plans and decisions and ensuring appropriate steps are taken to address them.

12. **Instruct the UK DMO** to issue a sovereign green bond of a size similar to the recent €7bn French Green Bond and use the proceeds to finance flood resilience in the UK.

Green finance as a means to boost global trade

13. **Task the Foreign and Commonwealth Office (FCO)** to work with the UK Green Finance Initiative to further boost the UK's global profile and offer on green finance and ensure the City of London becomes first choice for structuring and arranging green investments globally.

14. **Set up a joint initiative** between Association of British Insurers, DEFRA, BEIS and Communities and Local Government (CLG) to develop and promote a UK climate resilience bond market, with a view to then promoting the resilience bonds to overseas markets.

15. **Task the UK's export credit agency**, UK Export Finance, to support UK green finance exports by underwriting currency and political risk (covering first loss) for UK institutions investing in green finance opportunities in emerging economies to boost UK trade links.

The Government's decision to set up a dedicated Green Finance Taskforce in 2017 is a very welcome next step. We look forward to seeing its members help transform this important UK debate into a set of clear actions by the UK government to unleash the power of green finance in the UK to boost trade, investment and global leadership on climate change and sustainability.

1. Introduction

The UK Government has important domestic and International policy agendas that expanding green finance can help deliver.

At a global level the UK has signed up to the **2016 Paris Agreement on Climate Change**[3]**:** Article 2 requires the alignment of financial flows with a 1.5/2°C trajectory and implies a fundamental reorganisation of both the financial system and the real economy it serves. It has also signed up to the 2015 Sustainable Development Goals – which set out specific goals to be achieved in the next 15 years to end poverty, protect the planet and ensure prosperity for all – also imply a significant rethink of the UK's current economic development model[4].

There are several domestic agendas underway that could help the UK deliver on these international commitments.

The 2008 Climate Change Act includes a legally-binding target to reduce UK carbon emissions by 80% compared to 1990 levels by 2050[5]. To meet this, the government is required to set out its plan to meet an interim greenhouse gas reduction target of 57% by 2032. This was published as the **Clean Growth Strategy** in October 2017. The Strategy sets out a bold vision not just to deliver reduced greenhouse gas emissions, but also cleaner air, lower energy bills for households and businesses, an enhanced natural environment, good jobs and industrial opportunity[6].

Separately, DEFRA has committed to developing a **25-Year Plan** on environmental quality, protection, and enhancement[7]. Although the 25-Year Plan has been delayed beyond its expected release in 2016, in July 2017 the government reaffirmed its intention to publish the plan[8].

Finally, the **Industrial Strategy** will be a key driver and policy framework for future UK industrial and economic growth. Since the formation of the department of Business, Energy and Industrial Strategy (BEIS) in 2016, the Government has been developing a new Industrial Strategy. It published a Green Paper on building the strategy and held a consultation of industry actors in the spring[9]. While the Government's full response is still being formulated, the Clean Growth Strategy includes key elements, focusing as it does on building on the UK's strengths; improving productivity across the country; and ensuring the UK is the best place for innovators and new businesses to start up and grow.

The vote by the UK in 2016 to leave the European Union creates complications with the delivery of the UK's domestic policy obligations and will need to be addressed. For example, as set out above, there have been delays in getting key policy plans agreed and published.[10] There are risks of an investment hiatus caused by business uncertainty over future access to the EU single market.[11] Finally, uncertainty exists regarding the UK's access to

3 http://unfccc.int/paris_agreement/items/9485.php

4 http://www.un.org/sustainabledevelopment/sustainable-development-goals/#

5 https://www.theccc.org.uk/tackling-climate-change/reducing-carbon-emissions/carbon-budgets-and-targets/

6 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/651916/BEIS_The_Clean_Growth_online_12.10.17.pdf

7 https://www.gov.uk/government/publications/defra-single-departmental-plan-2015-to-2020/single-departmental-plan-2015-to-2020

8 https://www.gov.uk/government/speeches/the-unfrozen-moment-delivering-a-green-brexit

9 https://www.gov.uk/government/consultations/building-our-industrial-strategy

10 https://www.businessgreen.com/bg/news/3012730/beis-clean-growth-plan-coming-this-autumn

11 For example, the UK has drawn a 'red line' on jurisdiction of the European Court of Justice, which suggests, under current arrangements, would exclude it from the EU Emissions Trading Scheme, Euratom and active membership of the internal energy market and its decision-making bodies – which has particular relevance to delivery of the Clean Growth Strategy. Though the UK would still have access to the EU internal energy market, third-party countries are required to adhere to EU rules of markets and environment.

the European Investment Bank (EIB) – a major investor in UK infrastructure in particular – and the largest public infrastructure lender globally. Currently 90% of EIB investment is directed to EU Member States and there have been reports the EIB has begun scaling back investment in the UK ahead of its exit from the EU.[12] The EIB Group invested €31bn in the UK from 2012-2016, of which 30% was in the energy sector.[13]

Solutions need to be sought both to manage risks to the UK economy but also seize the opportunities created by these international and domestic agendas. Expanding green finance is a key means to do this.

The transition to a green economy is a global challenge estimated to be worth tens of trillions of dollars[14] – vast investment will be needed notably in Asia and other emerging economies[15]. **The UK, and the City of London specifically, is already a hub for green finance** – but the race is now on among other global centres to become leading providers of green financial services. While this is desirable, **more should be done to make London and the UK the global centre of choice and in doing so help manage the uncertainty around delivery of the UK's domestic policy agendas and help deliver a successful Brexit process.**

This would build upon **a groundswell in support from financial institutions for 'greening' finance** – catalysed by work led by the Bank of England. The establishment of the G20 Green Finance Study Group in late 2015, co-chaired by the UK and China, and later establishment of the Financial Stability Board Taskforce on Climate-related Financial Disclosures (TCFD) has significantly advanced detailed thinking on both why and how the financial system should be 'greened'. Investors worth €19 trillion and banks worth €7 trillion have endorsed the work and recommendations of the TCFD.

As the Governor of the Bank of England Mark Carney has set out "By ensuring that capital flows finance long-term projects in countries where growth is most carbon intensive, financial stability can be promoted. By absorbing excess global saving, equilibrium interest rates can be raised and macroeconomic stability enhanced. And by allocating capital to green technologies, the prospects for an environmentally sustainable recovery in global growth will increase."[16] The next step is for the Government to capture these opportunities, building on the substantive momentum already created.

This briefing paper sets out fifteen steps to expanding green finance in the UK. The key elements include:

- Financial policy innovation to promote green finance;
- Domestic infrastructure investment to expand green finance;
- Green finance as a means to boost global trade.

12 https://www.architectsjournal.co.uk/news/european-investment-bank-freezes-public-building-loans-due-to-brexit/10022730.article

13 http://www.eib.org/projects/regions/european-union/united-kingdom/index.htm

14 From Bank of England Quarterly Bulletin 2017: Topic article: The Bank of England's response to climate change.

15 New Climate Economy 2014: Better Growth Better Climate

16 See Alfred Burnes Memorial Lecture: Resolving the Climate Paradox http://www.bankofengland.co.uk/publications/Documents/speeches/2016/speech923.pdf

2.
Financial policy innovation to promote green finance

A number of changes to the regulation, supervision and oversight of financial markets and institutions would expand the UK green finance sector, helping promote financial stability, market efficiency and consumer protection. They mainly hinge upon the provision of information to and use of information by financial institutions; incentives (financial and non-financial); and accountability.

Information is the lifeblood of financial markets. For green finance to develop and expand in London it is crucial that the city has unparalleled levels of access to transparent information to enable its financial institutions to fully assess climate change and wider environmental risks and opportunities in relation to financial products and asset classes. At present, this can be difficult: a range of measures relating to financial policy have a key role to play in addressing gaps.

2a
Building the foundations through improving company level disclosures

Many companies do not adequately disclose their exposure to climate change and wider environmental risks and opportunities because they mistakenly perceive the implications to be long-term and therefore not relevant to decisions made today[17]. Research by the Principles for Responsible Investment (PRI) found this problem is compounded by the fact that **while over one-third of companies believed they were able to quantify and communicate the business value of sustainability initiatives accurately, only 7% of investors agreed**[18].

It was to remedy this lack of clarity and transparency on what constitutes useful and comparable disclosures that the TCFD was set up[19]. The TCFD – made up of both issuers and users of information – released its final report to G20 leaders in June 2017. **The TCFD report set out the importance of firms considering the impact of climate change as part of their governance, risk management and corporate strategy.** It recommended metrics and strategies that firms – both non-financial and financial – should consider disclosing. Investors, banks and many global companies have welcomed the recommendations. More comparable and comprehensive decision-useful disclosures will allow investors to make more informed decisions that also act to reduce systemic risks to the UK's financial system.

Some key elements of the TCFD's recommendations (which are voluntary) are actually already covered in UK legislation. This is a significant green finance credential for the UK. For example, listed companies are required to provide in their annual reports a description of the principal risks and uncertainties facing the company – which should include climate risk – together with its business model and strategy; the main trends likely to affect future performance

17 Task Force on Climate-related Financial Disclosures (2016) Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures

18 https://www.accenture.com/t20150523T042350__w__/us-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Industries_15/Accenture-Investor-Study-Insights-PRI-Signatories.pdf

19 Task Force on Climate-related Financial Disclosures (2016) Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures

and position of the company; environmental matters (including impact of the company on the environment); and specific reporting of greenhouse gas emissions.

Yet despite this, some companies that are very exposed to climate change-related transition risks – i.e. the policy, technology and physical risks that could prompt a reassessment of the value of a large range of assets as costs and opportunities become apparent[20] – have not reported on climate risks as part of their legal obligations, as set out in the Companies Act[21]. In addition to the patchy adherence to current disclosure requirements, there are questions about the technical ability of companies themselves to disclose the right information. For example, OECD analysis shows company boards tend not to place sufficient emphasis on potentially "catastrophic" risks: even if these do not appear very likely to materialise, they are important to consider since the effect of such risk could have large impacts on the business and investors[22].

Given this context – and since climate change-related risks will potentially have large negative impacts on investors, stakeholders, taxpayers, or the environment – there is a case for government to be more explicit in setting expectations around the need for companies to identify and manage such risks.

The Government should work to fully assimilate the TCFD's recommendations into the UK's existing regulatory framework. The forthcoming review of the Stewardship Code and Corporate Governance Code present an immediate opportunity to achieve this[23]. **Guidance should be issued to clarify that for listed companies, climate change risk and the company's proposed approach to managing it should be included in annual reports.** This should include – in line with TCFD recommendations – **an explicit requirement to disclose on a comply or explain basis what effect climate change may have on the business. This requirement should also be extended to non-listed companies with public debt.**

Where a company is highly exposed to climate change-related transition risks (such as in the fossil fuel extractive sector), a forward-looking and comprehensive approach to risk assessment should be encouraged through using scenario analysis to assess financial risks (and of course opportunities) in relation to climate change. Assumptions and methodologies by which forward-looking scenario plans have been used to assess such risks should be fully disclosed to ensure investors can decide what is most useful/important to them.

Reporting should provide a strategic review of risk and opportunity – but also provide a more granular breakdown of 'green' versus 'brown' or 'neutral' revenues[24]. Better disclosure of green revenues – as recommended by London Stock Exchange Group ESG Guidance – will ensure that the opportunities associated to the transition to a low carbon economy are also captured, in line with TCFD recommendations.

The Government should also consider providing further guidance, or tasking relevant regulators to provide guidance, to industry on developing scenarios to ensure cross-sector comparable scenarios are used that provide investors with comparable information. For example, guidance could specify that where a major climate change-related risk is identified, a range of forward looking scenario analysis should be used, perhaps for 2°C but also 3°C and 4°C, since it is not a given that

20 See http://www.bankofengland.co.uk/publications/Documents/speeches/2016/speech923.pdf

21 Several companies have, to highlight this issue, reported to the UK Financial Reporting Council for investigation https://www.clientearth.org/clientearth-triggers-review-companies-climate-disclosures/

22 http://www.oecd.org/daf/ca/risk-management-corporate-governance.pdf

23 This consultation was initiated because of a belief that businesses need to focus more on long term value creation. While it focuses mainly on executive pay, customer and employee voice, the potentially severe and disruptive impact of climate change on company valuation – especially for those in the fossil fuel sector – argues for climate related financial disclosures to be included in the remit. In this context a board's view on the extent to which corporate strategy is affected by climate related risks and opportunities and the governance processes for addressing them provides vital information for investors. See FRC response to the Review at https://www.frc.org.uk/news/august-2017/corporate-governance-will-evolve-to-meet-the-chang

24 'Green' revenues and 'green' tagging (referred to later) are generic terms taken here to mean business activities or the financing of business activities that contribute to positive environmental outcomes. This relates to – but also goes beyond – climate change-related impacts, and includes for example renewable energy but also water infrastructure, recycling facilities etc. Brown revenues refer here to business activities firmly rooted in the fossil fuel economy for example oil production or diesel car manufacture. Neutral revenues refer those that are neither 'brown' nor 'green', for example business activities relating to manufacture and provision information and communication services.

policies put in place to curb climate change will succeed and a smooth transition to a low carbon economy ensue.

In time, as more information becomes available, the information disclosed could be used to develop publicly available corporate benchmarks, ranking companies on their performance managing climate change and wider environmental issues[25]. This would have additional informational value for investors – but also provide useful publicly available and comparable information to enable civil society to engage 'laggard' companies to demand improved company performance on climate change and wider environmental issues.

Further thought will need to be given to whether and how to require disclosure from small and medium-sized enterprises, which will be key to greening the UK economy but for whom reporting is disproportionately resource intensive.

2b. Reinforcing better disclosure via innovative data capture and processing

Financial centres agglomerate and attract financial institutions and related service providers for many reasons. One of these reasons is to reduce information asymmetries and the transaction costs associated with gathering, assuring and using information. The systems that collect, collate and disseminate financial market information are therefore a key component of a well-functioning financial centre.[26]

Given it is early days for company-level reporting on climate change-related risk, there would be value in pursuing in parallel innovative approaches to collecting data that don't rely on disclosure via company reporting.[27] Developments in data capture (via satellites and sensors) and data processing (machine learning and natural language processing) present new means to gather information about companies' exposures to climate-related risks. **It will be especially important for enforcement on land use issues such as land use change, deforestation and water rights.**

The proliferation of satellites and sensors generates access to information about activities in remote locations in more detail than ever before. In the absence of companies disclosing information, this makes it possible to determine what climate change risks/impacts face companies and assets at very high degrees of granularity. When combined with machine learning to rapidly process and interpret the huge amounts of data generated from new data capture methods, this can unlock significant analytical capabilities for investors and other stakeholders.

Innovation and research in this technology is at a relatively nascent stage but shows promise. In combination with enhanced corporate reporting, boosting UK capacity in asset level data capture and processing would create a significant opportunity for the UK to become the standard setter in corporate disclosures, further boosting the UK's green finance leadership credentials. It would guide the development of key markets for many decades to come and give the UK a sustained comparative advantage over other jurisdictions.

To capture the opportunity, **the UK Government should set up a Green Fintech Catapult to build upon emerging opportunities to provide capabilities and testbeds to support green fintech development by public and private sector actors.** The new Green Fintech Catapult would sit alongside other UK Catapult Centres, acting as a world-leading centre designed to transform innovation on green finance from largely academic ideas to commercial products and services[28].

25 While TCFD disclosures will greatly improve disclosure, outside of the professional investment industry much of the data will remain difficult to understand or compare. Corporate benchmarks would be a novel means to address this by harnessing the TCFD disclosures and translating them into corporate league tables highlighting best and worst performers by sector. This would incentivise a race to the top in corporate sustainability performance. See https://www.aviva.com/media/news/item/the-world-benchmarking-alliance-launches-global-consultation-17825/

26 City of London (2013) From Local to Global: Building a Modern Financial Centre

27 See for example: Caldecott, B.L. and Kruitwagen, L. (2016) Guest Opinion: How asset-level data can improve the assessment of environmental risk in credit analysis.

28 As well as technology, a key area for the catapult to consider will be the chain of liability around legal responsibility for ensuring the reliability of information provided about company assets by third parties.

Within it, financial institutions would work alongside experts from the private sector, academia, civil society and key government institutions including Bank of England, BEIS, Her Majesty's Treasury (HMT) and Committee on Climate Change.

2c. Encouraging better quality disclosures by financial institutions

Identification and appropriate labelling or 'tagging' of green securities and loans is key to understanding UK progress in meeting national obligations under the Paris Agreement to align financial flows with 1.5/2°C; the potential for systemic risks to the financial system from climate change; and how far advanced the greening of the UK's financial sector actually is.

Knowing whether and how securities are financing 'green', 'brown' or 'neutral' activities in the real economy and tagging them accordingly is a key stepping stone to enabling institutional investors to better identify the extent of their exposure to green (but also non-green) investments and facilitate the process of shifting capital to be aligned with sustainable growth. Such an exercise would also help institutional investors avoid some of the risks associated with 'brown' investments, including potential asset stranding resulting from transition risk. **The same exercise undertaken by banks to understand their loans books would help them – as well as the system overall – reduce exposure to physical risks such as flood risk and transition risks such as energy price shocks, which Bank of England is currently assessing.**[29]

Clearly the better quality the data obtained from non-financial companies, the easier this task will be. But, given the urgency of the need to address climate change, with just 3 years left to reverse the rise of global carbon emissions[30], financial institutions should be encouraged to move forward as soon as possible.

Fortunately, there are many private sector initiatives looking at the issue of definitions, identification and tagging. These include the Climate Bonds Standard, the Green Bond Principles and S&P's Green Evaluation Service. FTSE Russell has also developed extensive work on green revenues to help investors better understand companies' exposures to the green economy[31].

Tagging is also a fundamental pre-requisite to enable the Government to incentivise green activities. Equally, given it is a substantial undertaking, financial institutions will need encouragement to tag all securities and loans.

France has taken a lead in this area: although it is very early days, the UK can learn from it. France has encouraged the tagging of green securities and loans through implementation of Article 173 of the Energy Transition Law[32]. Article 173 requires financial institutions on a "comply or explain" basis how their activities are consistent with climate objectives. As a result, a process of tagging and tracking green securities and loans is now underway.

In the UK tagging could be incentivised through requiring financial institutions to report their alignment with the goals of the Paris Agreement on Climate Change – and more specifically how aligned they are with the Clean Growth Strategy – and the UK's 5th Carbon Budget, out to 2032, set out under the Climate Change Act 2008. This would have the effect of the UK implementing an enhanced version of France's Article 173[33].

29 The Bank has announced an internal review on the impact of climate change on PRA-regulated institutions in the banking sector. See Bank of England Quarterly Bulletin 2017 Q2: Topical article: The Bank of England's response to climate change.

30 Should emissions continue to rise beyond 2020, or even remain level, the temperature goals set in Paris become almost unattainable. https://www.nature.com/news/three-years-to-safeguard-our-climate-1.22201

31 Green revenue disclosure involved companies in their annual report and accounts breaking out segment revenues into subsegments where the associated products or services have a clear environmental utility. This relatively simple disclosure puts information into the hands of investors who wish to re-allocate capital towards the green economy.

32 France's article 173 requires public and private investors in France to report on how they integrate environmental, social and governance (ESG) factors in general into their investment policies – and, where applicable, risk management – but also specifically on how climate change considerations are incorporated. This has stimulated a process to begin the tagging of securities for 'green-ness' by French financial institutions.

33 Capital in the City of London is deployed globally and so thought would need to be given by financial institutions on how they will report on how climate-aligned and sustainable their investment and lending is in other jurisdictions. Green bonds taxonomies developed by the Climate Bonds Initiative and the Dutch SDI Taxonomy initiative are two places to begin.

The data provided would enable financial institutions to better understand where their own risks lie but equally understand and actively respond to the untapped potential encompassed by the transition to a low carbon economy. In addition, aggregating data across all disclosing organisations through reporting to the Prudential Regulation Authority will also allow the UK Government to assess the status of current investment flows and any investment gaps faced, which would inform whether further policy interventions are needed to keep the UK on track with its climate objectives[34]. It would also help facilitate an orderly transition to a low carbon economy, avoiding a sudden and abrupt repricing of carbon-intense assets that Bank of England Governor Mark Carney described as a 'climate Minsky moment'.

The Prudential Regulation Authority has initiated a review of climate change-related risk in the banking sector. So it is particularly **timely for the UK government of consider enhancing the availability of data to the Prudential Regulation Authority – and the value case for encouraging tagging to facilitate such supervisory assessments.**

The information gathered by tagging individual securities and bank loans to identify whether they are 'green' will also bolster efforts to create green financial product labels to increase investor awareness of green opportunities. This includes helping to systematise the identification and pooling of green loans, facilitating the generation of high quality green asset-backed securities – and generating significant new potential for this emerging asset class.

34 The establishment of an Observatory of this kind is being discussed at EU level. See https://ec.europa.eu/info/publications/170713-sustainable-finance-report_en

2d. The role of standards and labels in building a trusted green finance sector

Well-designed investment products, where proceeds are ring-fenced for green investment, are potentially powerful tools to expand UK green finance. Such green financial products are likely to be particularly popular amongst retail investors.

The broader sustainable investment market is estimated to have grown to US$22.9 trillion at the start of 2016, up 25% from 2014.[35] Younger savers are far more likely to be interested in sustainable investment than older savers. A Morgan Stanley poll in early 2017 found that around 86% of 'millennials' – roughly those born from the early 1980s to the mid-1990s – were interested in sustainable investing and are around two times more likely than the overall individual investor population to invest in companies or funds that target social or environmental outcomes.[36] This preference needs to be better catered for by financial markets given that: (i) the savings of younger people as a proportion of the total will increase over time; and (ii) the risk of fund overperformance is now borne by savers (with the shift from defined benefit to defined contribution pensions).

Looking beyond just younger savers, in the UK 60% of surveyed pension holders indicated that they would like their pension provider to undertake activities that support the long term sustainable performance of the companies they invest in.[37] Similarly, institutional investors are also becoming more aware of the importance of investing in a more sustainable way. For example, BlackRock, the world's largest asset manager, with assets under management of US$5.1 trillion announced recently that it will put pressure on its investee companies to act on climate change. Still, many asset owners say it is difficult to capitalise on pent up demand.

35 http://www.ussif.org/files/Publications/GSIA_Review2016.pdf

36 https://www.morganstanley.com/ideas/sustainable-socially-responsible-investing-millennials-drive-growth

37 http://www.plsa.co.uk/PolicyandResearch/DocumentLibrary/~/media/Policy/Documents/0391_what_do_pension_scheme_members_expect_of_how_their_savings_are_invested_an_NAPF_research_report.pdf

The lack of commonly agreed labels and classification system for green financial products has been cited, rightly or wrongly, by some financial institutions as a barrier to developing products. Developing a labelling/classification system will be helpful in two ways. First in increasing the confidence of financial institutions to develop and offer new green financial products. Second in boosting retail and institutional investor confidence that such products are actually green – since labels/classification systems offer protection against 'greenwashing'.

Classification is also important for a range of non-financial market stakeholders. Firms will have a better understanding of what is expected of them (for example, on how to measure the 'green' share of their activity), reducing the burden of generating meaningful disclosures by taking some of the guesswork away. Policy makers will be able to make clear their objectives for the transition and flag financial flows targeted towards those goals; and civil society organisations will promote the system strongly as a way of putting the issues they care about in the mainstream.

A thriving market for green financial products could be built by establishing credible labels and quality standards. In France two new labels were introduced in 2015. One is a socially responsible investment (SRI) label. The other the TEEC is for funds explicitly focused on investing in France's 'Energy and Ecological Transition for the Climate' and linked directly to delivery of Article 173.

The programme of work being developed by the British Standards Institution for the UK Government focused on promoting the integration of socially responsible investment considerations and practices relevant to green finance into investment and wider finance management will be another significant green finance credential for the UK[38].

The UK Government should consider the development of a dedicated label for products exclusively focused on supporting delivery of the Clean Growth Strategy and 25-Year Environment Plan. This could be extended to include Lifetime Individual Savings Accounts (ISAs), which have the potential to be a leading long-term focused savings vehicle for the green economy.

Trust in new green finance products require credible quality controls and audits. For both the French SRI and TEEC labels, quality requirements have been defined and auditors are accredited by a dedicated committee, COFRAC. The UK would benefit from a similar approach.

Some work has been developed on green assessments and labels (for example, by rating agencies and consultants) but this is not controlled by UK market supervisors, industry associations or public regulators. Additional difficulties in regulating the market arise from the large variations in approach to developing green or sustainable products.

A new supervisory approach should be established focused on assessing the rigor and transparency of the assumptions and methodologies used to develop new green financial products to enable the market to make informed decisions. This could take the form **of a new UK Green Standards Board** composed of members of the Committee on Climate Change, Natural Capital Committee, UK Sustainable Investment Forum and other experts. The Green Standards Board should be mandated to work with key Government departments including BEIS, DEFRA to establish appropriate new labels and standards to build trust in green financial products.

2e.
Green fiscal incentives

The process of developing means to identify and tag green securities implies a significant operational undertaking for financial institutions – with significant costs attached. Similarly, the process of identifying – and indeed for the purposes of issuing green bonds, ring-fencing – green revenues from corporate ventures has a cost.

Given the public good that will emerge from such endeavours – including greater visibility of UK exposure to climate change-related risk and opportunity as well as a boost to green finance-related professional services and visible UK leadership in this arena – **there is a strong case for**

38 This should start with the development of a fast-track international standard (ISO) for green finance and responsible investment. An ISO standard would help boost the UK's green finance credentials as an international standard setter, while building confidence for investors and their clients in green finance and in doing so boosting demand for green finance products.

the Government to consider incentivising such activity.

The Government should focus first on incentivising growth in the UK green bond market. The UK is well positioned to become a green bond hub but government intervention is likely to be needed to boost UK issuances, which – notwithstanding the recent £552m SSE issuance – have been very limited to date. Green bonds have the advantage that market-based definitions are well established. In addition, the green bond market, which is expected to reach $150bn globally in 2017, is currently larger than the markets for other green instruments (e.g. green loans).

One of the challenges for some potential green bond issuers appears to be the additional costs associated with verifying and registering green bonds[39] relative to issuing a regular bond. The Government could address this barrier and actively boost UK green bond issuances by offering direct grants or tax exemptions to firms issuing and listing verified green bonds in the UK.

This would mirror an announcement made in Singapore, where the Monetary Authority of Singapore announced it will set up a Green Bond Grant Scheme. The grants will cover up to 100 per cent of the cost of obtaining an external review for green bonds for qualifying issuances, up to S$100,000 per issuance. Issuers will also be able to receive the grant multiple times. Qualifying criteria states that the bond must be issued and listed in Singapore, have a minimum size S$200 million and tenure of at least three years. The bond can be denominated in any currency[40].

Separately – and in parallel to financial institutions moving forward with green tagging – the Government should investigate the cost of time or volume-limited incentives for holders and issuers of green securities and loans.

Incentives considered should include:

- Retail investors – for those invested in accredited green financial products, an exclusion from or reduction in capital gains tax and stamp duty reserve tax; for those invested in a green Lifetime ISA, an increase in the annual saving limit.
- Institutional investors – for those invested in accredited green securities, a reduction in stamp duty reserve tax.
- Businesses – enhanced capital allowances for companies issuing verified green bonds, so the costs of the green capital assets being financed through green bonds can be written off against a business's taxable profits.
- For banks – underpinned by a common understanding of what a green loan is and credible data on the proportion of the loan book given over to green purposes, a reduction in the bank levy calibrated to the level of green lending.

A separate forthcoming paper discusses in detail the kinds of incentives – and potential cost to HMT – the Government could deploy.

- In addition, for the purposes of encouraging the uptake of green mortgages, a variable application of stamp duty, linked to building energy performance, could be considered. Lower stamp duty would be payable on homes with a higher energy performance rating and higher duty on inefficient homes – with the option to receive a back-dated stamp duty rebate within 1 year of home purchase to encourage green mortgages to be taken out[41].

2f. Using the prudential/ fiduciary framework to incentivise green finance

In September 2017, it was announced that European Supervisory Authorities, under which UK regulators operate, will be required to integrate sustainable finance and Fintech considerations into financial supervision. This will include requirements to monitor how financial institutions identify, report, and address environmental, social and governance risks, thereby enhancing financial viability and stability[42].

39 https://www.climatebonds.net/standards/faqs

40 http://www.channelnewsasia.com/news/business/mas-to-offset-cost-of-issuing-green-bonds-with-new-grant-scheme-8603578

41 Economic analysis undertaken by the UK Green Building Council indicates this could have near zero cost to the UK Government. See http://www.ukgbc.org/sites/default/files/130705%2520Retrofit%2520Incentives%2520Task%2520Group%2520-%2520Report%2520FINAL_1.pdf

42 https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-supervision-and-risk-management/european-system-financial-supervision_en#reviewoftheesfs

Even before this announcement, international work was underway to explore how sustainability factors could be incorporated into each of the three pillars of the prudential framework for insurance – Solvency II – so that the rules recognise more explicitly the long-term nature of insurance companies' liabilities and their long-term investment horizon. It was expected that this could lead to further reductions in the capital requirements for green infrastructure investment, building on adjustments made in 2016 and further incentivising and facilitating investment in green assets.

The UK can already move forward unilaterally on one element. Under Pillar 2, the Prudential Regulation Authority should set an expectation that insurance companies assess the risks of climate change to their portfolio at a more granular level. This would have the effect of seeing long-term sustainability factors incorporated in their Own Risk and Solvency Assessment (ORSA). In the absence of there being a robust and widely accepted method in place, insurers would need to disclose the methodology by which environmental risks and opportunities have incorporated into these assessments. To model physical risks of climate change, for example, this could include a requirement to report financial exposure to extreme weather at a minimum of 1 in 100-year risk levels. For larger firms with internal models, these already embody a stress-testing approach that could be adapted.

This could pave the way for a reassessment by firms of capital held against potential risks, with lower amounts held where risks are deemed to be well managed. It would incentivise an active approach – and would need to be underpinned, of course, by tagging.

Similarly, the banks, while regulated under Basel III, could under Prudential Regulation Authority supervisory controls be required to incorporate long-term sustainability factors into their risk management practices. As for insurers, there should be a requirement for them to disclose the methodology by which climate change risks and opportunities have been incorporated into these assessments. **Again, this could pave the way for an institutional level recalibration of capital requirements Pillar 2 framework of the Capital Requirements Directive IV (CRD IV), with lower requirements for those banks with higher exposure to green investments.** As for insurers, this work would be underpinned by tagging.

In time, once a robust and widely accepted method has been established, the Prudential Regulation Authority could ensure that risks related to sustainability issues, most obviously climate-related ones, are included in stress tests for all insurers and banks.

For pension funds, the UK Government should actively promote the recently updated guidance to pension funds that Fiduciary Duty goes beyond short term financial factors and includes consideration of material long term environmental and social factors thus requiring fiduciaries to integrate into their investment decisions[43].

The **Financial Reporting Council's consultation on amendments to the UK Corporate Governance Code present an opportunity to further clarify that environmental and social issues are important drivers of long-term investment value.** This could be achieved by providing clear examples of how to integrate such issues into investment processes and decisions.

It could be further formalised by a requirement for pension funds to have at least one member of trustee boards to have sustainability/environmental expertise and consider a requirement for trustee training on these issues. The government should consult formally on the value of such an approach.

In all, such incentives would have the effect of encouraging a more active approach to engaging with green finance opportunities – including more engagement both by banks and institutional investors in the underlying assets in their portfolios – which will be key to delivering an orderly transition to a green UK and global economy.

43 https://www.professionalpensions.com/professional-pensions/opinion/3010649/de-risking-schemes-must-rethink-fiduciary-duty-over-esg-risks

1. **Set up a Green Fintech Catapult** to build upon emerging opportunities to provide capabilities and testbeds to support green fintech development by public and private sector actors. The new Catapult would be a world-leading centre designed to transform innovation on green finance from ideas to products and services.

2. **Use the forthcoming review of the Stewardship and Corporate Governance Codes** to fully assimilate the Financial Stability Board Taskforce of Climate-Related Financial Disclosures recommendations into the UK regulatory framework. Issue guidance to clarify that for listed companies, climate change risk and the company's proposed approach to managing it should be included in annual reports. Have an explicit requirement to disclose what effect climate change may have on the business – and extend it to non-listed companies with public debt.

3. **Require financial institutions to report their alignment with the goals of the Paris Agreement** – and more specifically how aligned they are with to the Clean Growth Strategy and the UK's 5th Carbon Budget. This would have the effect of the UK implementing an enhanced version of France's Article 173.

4. Establish a new UK Green Standards Board to build trust in new green finance products and funds through credible quality controls and audits.

5. **Develop a dedicated label for funds and products exclusively focused** on supporting BEIS Clean Growth Strategy and DEFRA's 25 Year Environment Plan. This could be extended to include Lifetime Individual Savings Accounts (ISAs).

POLICY RECOMMENDATIONS 1-5

Policy recommendations

6. **Request the Prudential Regulation Authority set an expectation** for insurers and require banks to include long-term sustainability factors in the Own Risk and Solvency Assessment (ORSA) made by insurance companies and internal risk assessments by banks to pave the way for adjustments to capital requirements. To model physical risks of climate change, for example, this could include an expectation to report financial exposure to extreme weather at a minimum of 1 in 100-year risk levels.

7. **Offer direct grants or tax exemptions to firms** issuing and listing verified green bonds in the UK. Announce a consultation on potential incentives for holders and issuers of green securities and loans.

8. **Embed an industry-wide understanding** that environmental and social issues are important drivers of long-term investment value. Consult on requiring pension funds to have at least one trustee with sustainability/ environmental expertise.

POLICY RECOMMENDATIONS 6–8

3. Domestic Infrastructure investment to expand green finance

In 2016 the UK grew faster than any other major advanced economy bar Germany, business created 3.4 million more private sector jobs and the deficit fell below 3% of GDP. Despite these achievements, medium-term prospects are less encouraging. Business investment fell in 2016 by 1.5% for the first time since 2009[44] and there is a significant and urgent domestic investment and innovation agenda that needs to be financed[45].

The UK is delivering less than a half of the green infrastructure projects required to meet its environmental targets[46,47]. Meanwhile, investor demand for investment opportunities linked to these targets is substantial and currently unmatched by the supply of viable projects.

Institutional investors, especially those with long-term liabilities, such as insurers and pension funds, would like to increase allocations to infrastructure assets since they offer inflation-linked long-term returns. For defined benefit pension funds, increasing investment in infrastructure assets can help reduce deficits. Analysis by Macquarie suggests that for every £1bn UK defined benefit pension funds allocate from corporate bonds to infrastructure debt, a reduction in pension fund deficits of £270 million could be achieved.[48] However, there are currently so few investable opportunities that any reallocation of institutional investor funds to green infrastructure is unlikely to reduce deficits until more opportunities are made available.[49]

Whilst investment in UK clean energy infrastructure has grown in recent years towards the levels required to meet policy targets (Chart 1), **UK investors consistently cite a lack of UK-based green infrastructure investment opportunities as a major barrier to deploying more capital to these assets.**

44 Office for National Statistics (2016) Business investment in the UK: Oct to Dec 2016 revised results https://www.ons.gov.uk/economy/grossdomesticproductgdp/bulletins/businessinvestment/octtodec2016revisedresults

45 The government is currently considering responses to its Industrial Strategy Consultation: upgrading infrastructure, encouraging trade and inward investment and delivering affordable and clean growth are all listed as priorities. https://www.gov.uk/government/consultations/building-our-industrial-strategy

46 By 2020: 15% of UK's energy needs and 10% of its transport energy consumption has to come from renewable energy sources; reduce the amount of biodegradable municipal waste sent to landfill to 35% of 1995 levels; reduce carbon intensity of new cars and vans to 95 grams of carbon dioxide per kilometre (g/km) and 147 g/km respectively; by 2050, return aviation emissions to 2005 levels; and reduce water consumption to an average of 130 l/person/day by 2030 from 2008 the level of 150 l/person/day. Source: Vivid economics (2011), The Green Investment Bank: Policy and Finance Context.

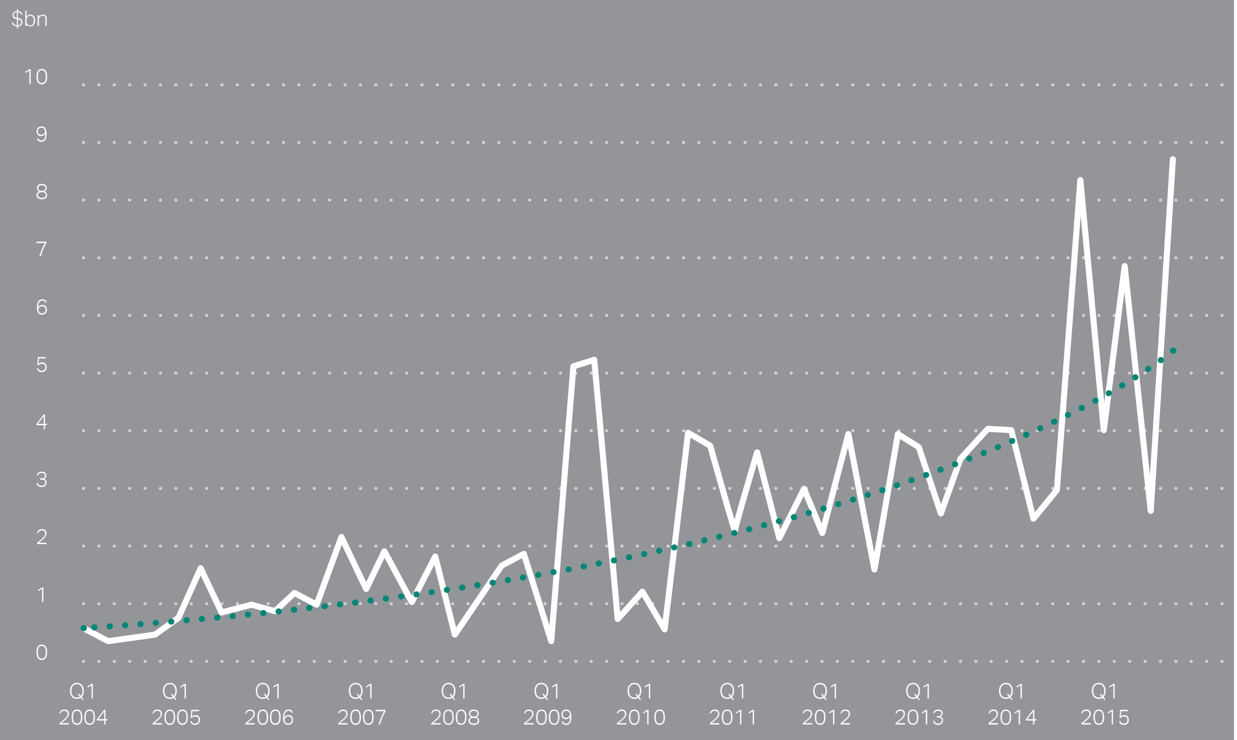
47 In terms of reducing GHG emissions the UK is on track to outperform on the second (2013 to 2017) and third (2018-2022) carbon budget, however, it isn't on track to meet the fourth (2023 to 2027). To meet the former the UK will need to reduce emission by at least 3% a year from now until 2050, according to the Committee on Climate Change.

48 Macquarie (2016), Appraisal of private debt opportunities: A holistic approach for UK pension funds.

49 https://www.ipe.com/reports/special-reports/liability-driven-investment/infrastructure-debt-a-niche-strategy/10013539.fullarticle

CHART 1:
Investment in UK clean energy infrastructure, 2004 – 2015

Source: Bloomberg New Energy Finance



The Clean Growth Strategy and 25 Year Environment Plan are two opportunities to change the situation and boost the supply of domestic green infrastructure projects, increasing investment in the UK that will promote economic growth and ensure the UK meets its climate mitigation and adaptation goals. The UK infrastructure market is one of the most respected markets globally due to its openness, transparency and (to date) long term stable policies.

To maximise the chances of successful delivery of these policy agendas, the Government should encourage investment by UK financial institutions into green infrastructure and in doing so boost green finance and reinforce the City of London's competitive advantage.

This can be achieved by Government working with financial institutions to develop a National Capital Raising Plan setting out how the UK will fund both clean growth and environmental resilience in the long-term through its the Clean Growth Strategy and 25 Year Environment Plan by measures to (i) reduce investor exposure to the riskiest period in the lifetime of green (and other) infrastructure investments – the planning and construction phase (see Chart 2); (ii) increase the resilience of UK infrastructure to climate risks; and (iii) encourage regional actors including local authorities and cities to access private sources of finance, in part by reforming a public source of borrowing: the Public Works Loans Board (PWLB). PWLB reform is a complex issue – but there will be significant value in prioritising research to quickly determine the options for moving forward.

In this context, there would be particular value in engaging with UK pension schemes (£1tr) and especially pooled local government pension schemes, which have committed up to 10 per cent of assets to infrastructure[50] as 'critical friends' to understand how a series of government reforms can enable them to more easily deploy capital to meet these targets.

50 http://greenfinanceinitiative.org/renewable-energy-infrastructure/.

3a.
Increasing supply of UK green infrastructure projects

According to the latest report to Parliament from the Committee on Climate Change, continued progress towards delivering the UK's carbon reduction commitments[51] depends on significant new Government measures.[52]

51 Greenhouse gas emissions are about 42% lower than in 1990, around half way to the 2050 commitment to reduce emissions by at least 80% on 1990 levels. The UK's statutory targets are to reduce emissions by at least 50% by 2025 and 57% by 2030 on 1990 levels.

52 https://www.theccc.org.uk/2017/06/29/new-plans-for-a-new-parliament-are-urgently-needed-to-address-climate-change-risks/

(i) Measures to crowd private finance into the construction of UK green infrastructure

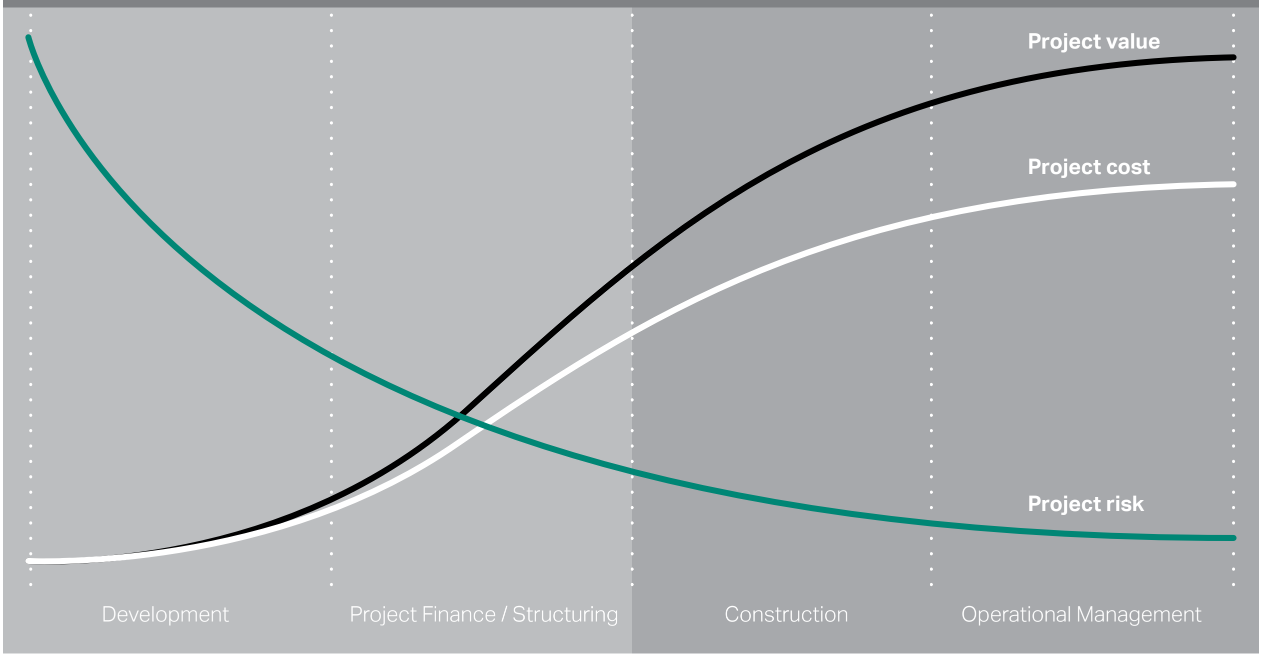
In acknowledgement of a shortage of equity and technical expertise to finance new green infrastructure at the scale needed to deliver a low carbon transformation in the UK, in 2010 the UK Government created the Green Investment Bank. Its recent privatisation leaves a gap in the institutional landscape that there would be benefits to addressing. Another key function provided by the Green Investment Bank was public private risk-sharing via co-investment, which protected investors from a retroactive adjustment of policy support that affects the expected risk-adjusted returns. In a post-Green Investment Bank privatisation era – one in which the UK also faces a loss of access to the EIB, a major UK infrastructure lender[53] – other risk-sharing vehicles become very important.

53 As of June 2017 the bank has outstanding loans in the UK worth more than £48bn and has helped finance trains, trams, energy projects, universities, housing and water projects.

CHART 2:

Project risk and project value/cost over time

Source: Low Carbon



There should now be an explicit commitment from the Government to use the National Productivity Investment Fund and the £40bn UK Guarantee Scheme as public-private risk sharing facilities to crowd private finance in at scale to deliver the Clean Growth Strategy and 25 Year Environment Plan. This commitment should focus on:

- Using the National Productivity Investment Fund to crowd private capital into supporting the less mature green infrastructure and business models that will be important to deliver the Clean Growth Strategy and, with it, the UK's Industrial Strategy aims.
- Deploying the UK Guarantee Scheme[54] on flexible terms. The scheme should be used to offer planning insurance and construction guarantees and a range of credit enhancement tools. For example, first loss guarantees can reduce the financial risk that investors in complex projects bear. As such, these instruments are likely to become key tools to ensure construction finance is forthcoming for new complex infrastructure projects.

Both these measures will help **build investor confidence in the risk-adjusted returns they can expect from their investment in green infrastructure.** According to the Infrastructure and Projects Authority the involvement of the UK Guarantee Scheme has, in some cases, reassured investors without the need for a guarantee. In addition, once infrastructure projects are operational, refinancing (included as asset-backed green bonds) can occur at lower cost, bringing down the cost of building new UK infrastructure.

(ii) Measures to increase the resilience of UK infrastructure to climate risks

The forecast losses from natural disasters in the UK will be high based on current trends. 10-35% of UK infrastructure disruptions are caused by extreme weather and, unless action is taken, both disruption and losses will continue to rise. For example, the number of assets in high flood risk areas is expected to increase by around 50% by 2050 and losses from coastal and river flooding in England and Wales could rise from an annual average of about £1.2 billion today to between £1.6 and £6.8 billion in the 2050s[55].

Because of this the Committee on Climate Change's 2017 Statutory Report to Parliament recommends that the Government strengthens the UK's National Adaptation Programme in the first half of 2018[56]. It goes on to state that the new programme, which drives action to prepare for climate change impacts, must address priority areas: flood risks to homes and businesses, risks to the natural environment, including to soils and biodiversity, and risks to human health and wellbeing from higher temperatures. The forthcoming 25-Year Environment Plan is expected to address this.

Investing in better preparedness will reduce economic losses from extreme weather events in the UK and create opportunities to develop expertise that can be exported where needs are greater still.

The UK Government should **ensure climate resilience is fully considered in UK infrastructure planning by creating a National Resilience Office (NRO) based in the Cabinet Office. It should also extend the role of the Cabinet Office from emergency planning to responsibility for working across government to oversee the effective consideration of the resilience implications in all investment plans and decisions[57].**

The NRO should carry out three key functions. First, assess the overall resilience performance of UK infrastructure, ensuring that resilience is fully considered from the design and investment phase and absorbing existing resilience, and Civil Contingency responsibilities. Second, act as an advocate to ensure that climate risk and resilience is integrated into major infrastructure projects going forward. Third, work with the National Infrastructure Commission and Infrastructure

54 See https://www.gov.uk/government/publications/uk-guarantees-scheme-key-documents

55 See UK Climate Change Risk Assessment, published in 2012.

56 Ibid. The Natural Capital Committee has also identified flood hazard protection should be a priority issue for the government to address https://www.theccc.org.uk/2017/10/04/long-term-outcomes-natural-environment-climate-change-challenge/

57 N. Mabey & T. Dimsdale (2016) Fast, Safer, Smarter, Cleaner: Making Britain's infrastructure systems fit for the future. E3G

Projects Authority to create the environment for major infrastructure projects to promote resilience projects across government departments and in tandem with the private sector.[58]

Going further, to help finance UK climate resilient infrastructure and 'market' UK expertise, **the UK Debt Management Office (DMO), an Executive Agency of HMT should issue a green sovereign bond. Given the severe risks posed by extreme rainfall in the UK, the proceeds of the bond should be used to invest in flood resilience. The bond should be a similar size to the recent €7bn French sovereign green bond.**

Such a move would be a clear signal that the UK is developing as a centre of excellence for green finance, while promoting inward investment. Repayment of the interest on the bond would be offset by avoided flood recovery costs at a UK level.[59] It would also support the emergence of a UK resilience bond market (discussed later).

3b. Reforms to the PWLB to boost private finance access to green infrastructure investment opportunities

Modernising the PWLB governance should be a priority for the UK Government. For many years the PWLB – a statutory body operating within the UK DMO – has been a source of borrowing for local authorities which is often used to finance local infrastructure projects. Through the PWLB, local authorities have access to very low-cost debt (60 basis points above gilts, which are at historically low levels). Most local infrastructure priorities are financed this way.

While the PWLB loans give local authorities access to low cost capital, it limits the incentive for local authorities to access capital markets, which have the depth and diversity of sources required for the UK to meet its green infrastructure investment requirements. Since the scale of the UK's green infrastructure requirements means private finance will have to be the main source of investment, opening local authorities to private finance should be addressed as a priority.

A key goal should be to reorient local authority borrowing to capital markets, which would also help promote a green munibond-style market in the UK.

The government is already undertaking reform of the PWLB – on the back of a series of alarming local authority investments in business parks and private housing developments. For example, Spelthorne Borough Council's redevelopment of BP's office park at Sunbury-on Thames for £360m, for which it borrowed £377m from the PWLB – a huge undertaking compared to the Council's gross assets of £87.7m.[60]

PWLB reform will be a complex issue – but there will be significant value in prioritising research to quickly determine the how to move forward. **Priority options to consider are reforming the PWLB to become a source of pre-investment capital (for example to fund green infrastructure project development) or risk capital (to be used where, for example, long-term revenue uncertainty for green infrastructure may be too high for the private sector to investor alone).** In this way, the PWLB could fulfil some of the functions currently undertaken by the EIB which will be lost once the UK exits the European Union.

This approach would have the effect of creating new opportunities for private sector finance – and indeed the Municipal Bonds Agency – to connect place-led green investment with capital markets.

58 See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/599228/IPA_narrative_document_web.pdf

59 In the UK, according to KPMG, the economic impact from the winter floods in 2015-2016 were between £5bn to £5.8bn, where costs to local authority and infrastructure was £0.1bn whilst flood defence repair and replacement was £2bn. In the USA an analysis by Federal Emergency Management Authority (FEMA) found that every dollar the US on risk reduction can be attributed with having provided the country with about $4 in future benefits. See https://link.springer.com/article/10.1007/s11069-016-2170-y

60 Other examples include: in 2016, Surrey Heath borough council spent £86m on The Mall, Camberley; Stockport borough council bought the Mersey way centre in the town for £75m; Canterbury city council bought half of the £79m Whitefriars; Stockport borough council bought the Merseyway centre for £75m; and Mid Sussex district council spent £23m on another in Haywards Heath. For further information, see: https://www.ft.com/content/84892c56-1a17-11e7-bcac-6d03d067f81f?mhq5j=e2

Policy recommendations

9. **Modernise the PWLB** so it becomes a source of pre-investment capital or risk capital to crowd private sector capital into green infrastructure.

10. **Use the National Productivity Investment Fund and the £40bn UK Guarantee Scheme** as public-private risk sharing facilities to boost investment in the UK and support delivery of the Clean Growth Strategy and the 25 Year Environment Plan.

11. **Create a National Resilience Office based in the Cabinet Office** with responsibility for considering the resilience implications of all investment plans and decisions and ensuring appropriate steps are taken to address them.

12. **Instruct the UK DMO to issue a sovereign green bond** of a size similar to the recent €7bn French Green Bond and use the proceeds to invest in flood resilience in the UK.

9–12 POLICY RECOMMENDATIONS

4.
Green finance as a means to boost global trade

The UK's withdrawal from the European Union and uncertainty over the future relationship with its largest trading partner (44% of UK exports), increases the need for the UK to trade more with the rest of the world. Making the UK and City of London a global hub for green finance will bring substantial benefits to the UK through unlocking diverse trade opportunities for the financial services sector and build on London's existing reputation as a leading global financial centre.

There should be a particular focus on strengthening trade links with large, developing economies.[61] Many of these economies, including China, India and Latin America, are growing quickly and will account for a greater proportion of global GDP and trade flows in the future. It is in these same developing economies where demand for green finance expertise is greatest – generating significant trading opportunities.

Beyond this, the need to build a more sustainable global economy will be a substantial driver of global trade flows in the years to come. The 2016 Paris Agreement and its impact on the direction of domestic policy agendas of many countries is driving a shift to less carbon intensive and more climate-resilient economies. The UK should capitalise on this shift with a triple focus on exporting:

- Expertise in green advisory services.
- Expertise in financing climate mitigation, promoting the UK as a centre of excellence for structuring and arranging finance for green infrastructure and investing in the global green economy.
- Expertise in financing climate adaptation, including promoting the development and uptake of insurance products to increase climate resilience globally.

61 UK exports to developing countries are largest to China (3.3%), India (1.2%) and Brazil (0.7%)

4a.
Export expertise in green advisory services

Green finance is a new and growing area. **A strong disclosure regime, launch of a Green Fintech Catapult and development of a new UK Green Standards Board will markedly enhance London's relative attractiveness and help UK based financial institutions and service providers pioneer the next generation of products and services using the very latest data and analysis techniques.**

This would be a visible means to accelerate the development of UK services at home but also promote UK advisory services overseas.

In addition to standards and labels, skills need to be developed. Navigating the real-world context -against which the green finance agenda is developing and effectively responding to the risks and opportunities climate change and wider environmental challenges present- will require literacy amongst financial professionals across the investment chain. Initiatives such as the new Green Finance Certificate proposed by the Chartered Banker Institute is an excellent first step that should be welcomed by the Government.

Similar professional education certificates should be also developed by other professional bodies such as the Chartered Financial Analyst

Institute, the Chartered Insurance Institute and so on. A green bond qualification developed by the Chartered Institute for Public Finance and Accountancy for Local Finance Directors could also be very timely[62].

A dual focus on such professional training alongside the development of a ISO standard on Green Finance will act to significantly and visibly enhance UK green financial skills and credentials – promoting the UK as a centre of innovation and excellence.

4b. Export expertise in financing climate mitigation

The UK is a leader in many 'green' sectors including green finance, electric vehicles, smart grids, transport telematics, energy storage, off-shore wind, biofuels and solar PV[63]. The UK low-carbon economy employs at least 432,000 people, with a turnover of more than £77bn in 2015[64]. This is part of the reason the UK is likely to make the transition to a green economy around 10 years ahead of the world average[65]. Using green finance to support this growing green SME sector should be another key focus for the UK Government not least because it creates a compelling UK offer of expertise to assist other economies in the delivery of their domestic environmental agendas.

As well as technology requirements, infrastructure requirements globally are vast.

The majority of global infrastructure investment requirements, estimated at USD90tr to 2030, which must be climate-aligned to meet the terms of the Paris Agreement, are in developing countries (80%)[66]. The UK is well placed to assist in the financing of these projects and there are likely to be substantial opportunities for the City of London and its institutions to become first choice for structuring and arranging green infrastructure finance across the globe. In tandem opportunities for UK investors to invest in the green economy overseas should also be promoted.

Continued promotion of the UK as a centre of excellence through the UK Green Finance Initiative. **The resources of the Foreign and Commonwealth Office (FCO) should be mobilised to promote the capability of the UK-based financial sector, further boosting the UK's global profile and offer on green finance.** The UK's credentials and expertise in green finance will be materially boosted by increasing domestic green investment opportunities, as set out in the Section 3.

Demand for green finance expertise is extensive in developing countries, where there can often be a lack of skills, access to capital markets and risk mitigation products. To take one example, in Mexico the Ministry of Finance notes that there are significant skills shortages among project developers and financial institutions to develop and finance green infrastructure[67]. This situation is similar in many other developing countries and is one of the reasons Multilateral Development Banks have had such an important role to play in deploying green finance in these regions.

In the case where UK financial institutions structure deals and generate fee-based income on behalf of overseas clients, there are not likely to be significant financial risks to UK financial institutions. This is not the case if UK-based financial institutions invest their own capital in green infrastructure opportunities in developing economies. In these instances, investors will be exposed to political and currency risks.

To overcome this hurdle, **the government should formally task the UK Export Finance to provide protection in the form of export insurance for UK investors deploying capital into green finance opportunities overseas.** This could include, for example, direct investment into overseas green infrastructure, with a focus on managing currency and political risk.

62 https://www.cisl.cam.ac.uk/publications/sustainable-finance-publications/environmental-risk-analysis-by-financial-institutions-a-review-of-global-practice

63 https://www.theccc.org.uk/wp-content/uploads/2017/03/ED10039-CCC-UK-Bus-Opportunities-Draft-Final-Report-V7.pdf?utm_content=buffer19813&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

64 https://www.theguardian.com/environment/2017/jun/04/green-business-needs-strong-and-stable-support-from-the-next-uk-government

65 https://www.theccc.org.uk/wp-content/uploads/2017/03/ED10039-CCC-UK-Bus-Opportunities-Draft-Final-Report-V7.pdf

66 New Climate Economy 2014: Better Growth Better Climate

67 http://eleconomista.com.mx/finanzas-publicas/2017/06/26/poca-capacidad-limita-apoyo-0

4c. Export expertise in financing climate adaptation

The UK is the home to world class expertise in climate science – held in the UK Met Office but also numerous academic centres around the UK. As the global climate continues to change, the importance and value of this expertise in helping governments and businesses understand and manage to climate risks will grow. The most obvious links are into the insurance sector.

The UK insurance and reinsurance sector is a global business. Increasingly its risk analysis techniques are being called upon to inform the physical risk aspects of climate change for the lending and investment community, especially around infrastructure investment[68].

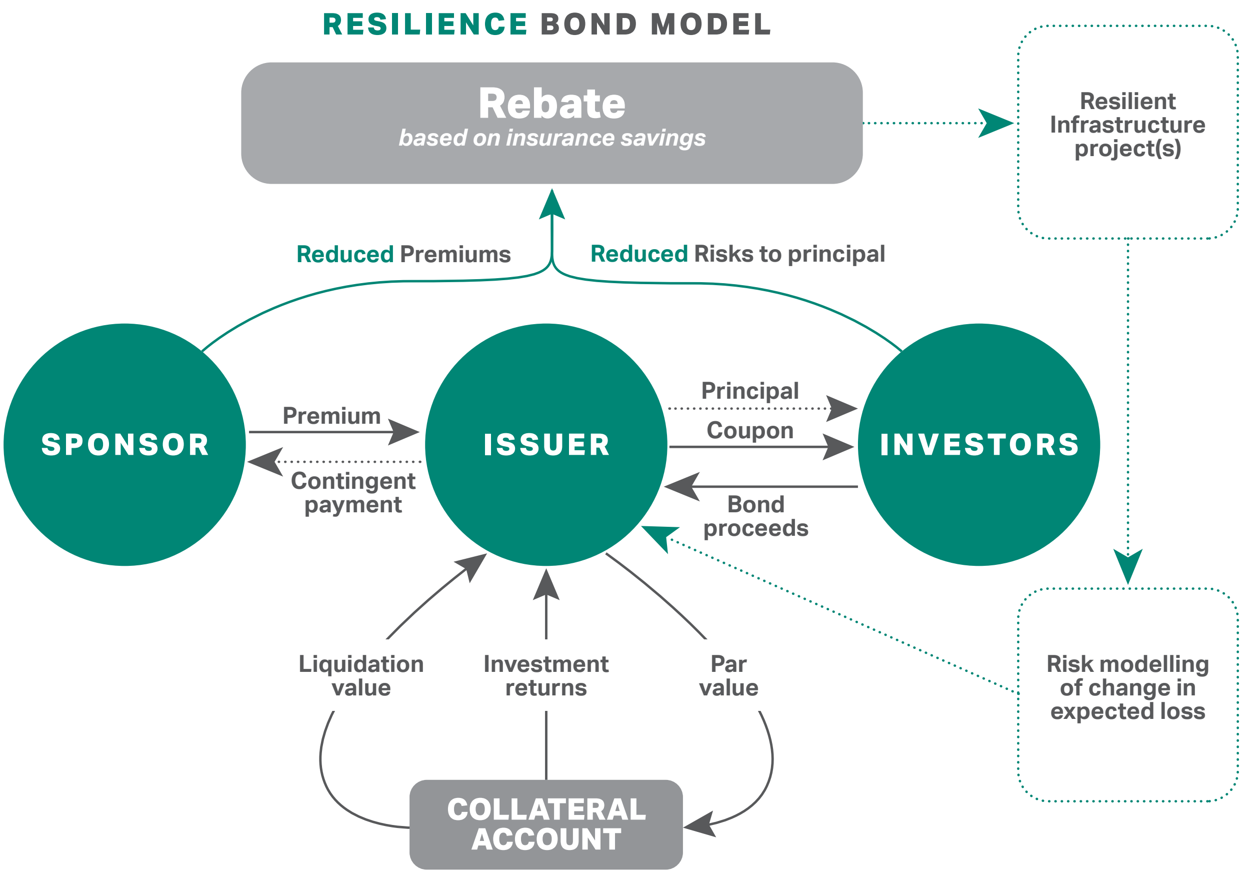
The insurance sector has made considerable progress in evaluating the risks posed by extreme weather – which, as discussed earlier, now needs to be better accounted for in the wider financial system.

This expertise and also insurance solutions being developed by the community are highly marketable globally. In particular the **UK insurance sector is well placed to export its services abroad, developing and promoting new climate resilience insurance products**. The Department for International Development (DfID) has launched a Centre for Global Disaster

68 https://www.cisl.cam.ac.uk/publications/sustainable-finance-publications/investing-for-resilience

CHART 3:
The resilience bond model

Source: Re.bound Program Report. Leveraging Catastrophe Bonds as a Mechanism for Resilient Infrastructure Project Finance, December 2015



Protection, which aims to provide direct insurance development to approximately a dozen countries with technical assistance also a priority. This vehicle could also draw on and promote the existing strengths of the City of London's insurance sector.

Leveraging both advice in modelling and understanding climate change impacts and expertise to design innovative new products would build the UK's reputation as a centre of excellence on climate resilience insurance, would help deliver UK aid but also turn DfID grants into business opportunities for UK insurance providers. One example could be the development of resilience bonds.

Resilience bonds are an innovative variation on the catastrophe bonds that can be bought by local governments planning to invest in infrastructure to increase climate resilience (e.g. build strengthened flood defences). The local government then undertakes infrastructure investment to increase resilience, which is paid for by a reduced premium on the resilience bond, reflecting the reduced risk created by the green infrastructure upgrade. In other words, insurance coverage is linked to capital investment in resilient infrastructure systems (such as flood barriers and green infrastructure) which then reduce expected losses from disasters (Chart 3).[69]

Worldwide only 26% of economic losses due to natural disasters, including those caused by climate change, were covered by insurance in 2016, indicating a potentially huge global demand for such products.

As a next step the UK Government, notably DEFRA, BEIS and Communities and Local Government (CLG), could set up a joint initiative with the Association of British Insurers to develop and promote a UK climate resilience bond markets at home and overseas. Bonds could be made available for purchase by UK local authorities as part of a package of infrastructure measures and financial products to promote UK climate resilience. Once piloted in the UK these could then be promoted to larger overseas markets.

69 See https://www.brookings.edu/blog/the-avenue/2015/12/16/financing-infrastructure-through-resilience-bonds/

13. **Task the Foreign and Commonwealth Office (FCO) to work with the UK Green Finance Initiative** to further boost the UK's global profile and offer on green finance and ensure the City of London becomes first choice for structuring and arranging green investments globally.

14. **Set up a joint initiative between Association of British Insurers, DEFRA, BEIS and Communities and Local Government (CLG)** to develop and promote a UK climate resilience bond market, with a view to then promoting the resilience bonds to overseas markets.

15. **Task the UK's export credit agency, UK Export Finance, to support UK green finance exports** by underwriting currency and political risk (covering first loss) for UK institutions investing in green finance opportunities in emerging economies to boost UK trade links.

13–15

POLICY RECOMMENDATIONS

5. Moving forward and the Green Finance Taskforce

While the process of Brexit creates significant uncertainty for the UK economy, a recent poll by City thinktank Zyen found that London remains top of the list of global financial centres across a range of competitiveness attributes from the business environments; human capital; infrastructure; financial sector development and reputation[70]. London as a global hub for innovation in green finance should now be a core focus for the UK Government to embrace and strengthen this lead.

As this paper sets out there are many possible ways forward to achieve this. The primary focus should be on targeting green finance reforms to accelerate investment by UK as well as global financial institutions into the UK economy – followed by exporting that expertise and capital globally. As such, the Government's decision to set up a dedicated Green Finance Taskforce in 2017 is a very welcome next step.

As the Bank of England has noted, responding to climate change will require many different actors to play a role, including those within the financial community. The proposals set out here can help to ensure financial firms have considered climate-related financial risks and their role in supporting an orderly market transition.

This can enhance the resilience of the United Kingdom's financial system to climate change but also help the UK seize upon the global opportunities inherent in the need to shift to a sustainable economy both now and for the long term.

We look forward to seeing GFT members help transform this important UK debate into a set of clear actions by the UK government to unleash the power of green finance in the UK to boost trade, investment and global leadership on climate change and sustainability.

70 http://www.longfinance.net/images/gfci/GFCI21_05_04_17.pdf

Green Finance Initiative

CITY OF LONDON

FIFTEEN STEPS TO GREEN FINANCE

A discussion paper from
the UK Green Finance Initiative

In association with

E3G