



Green
Finance
Initiative



City of London Corporation Research Report

GLOBALISING GREEN FINANCE: THE UK AS AN INTERNATIONAL HUB



In association with PwC



Globalising green finance: the UK as an international hub

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 PwC.

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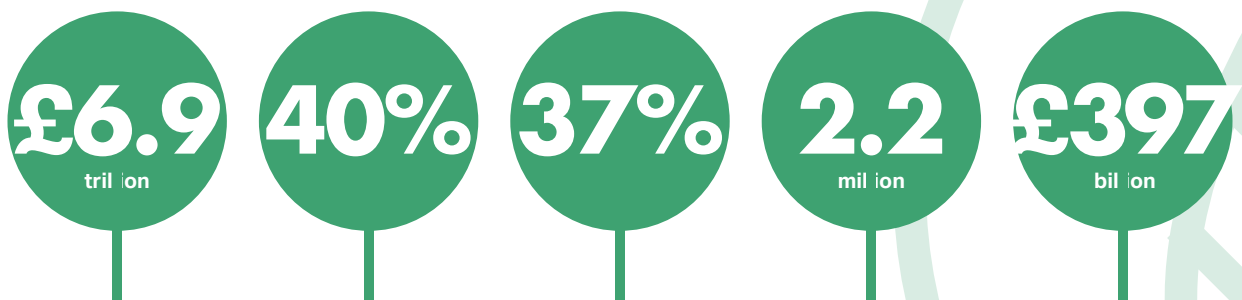
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Key Facts

“As the UN Environment Programme put it so clearly, the financial system we need is one that fully supports and facilitates the transition toward a low-carbon economy, and we believe London can play a leading role in this process.” – **Sir Roger Gifford, Chair of the Green Finance Initiative**

“This Government will back the City of London’s Green Finance Initiative all the way, champion our financial sector and go further and faster to halt climate change in its tracks.” – **Simon Kirby MP, City Minister**

UK as a global financial centre



Total assets under management (AUM)¹

Total AUM managed on behalf of overseas clients²

Total European AUM in the UK³

People employed in the UK’s financial and related professional services sectors⁴

Raised through the London Stock Exchange and private equity between 2006 and 2014⁵



Along with 50 insurance companies and over 200 brokers brought together by Lloyds of London creating a world-leading concentration of insurance services.⁶

1 The Investment Association – UK A Global Investment Hub

2 The Investment Association – UK A Global Investment Hub

3 The Investment Association – UK A Global Investment Hub

4 The City UK – Key Facts about UK Financial and Related Professional Services 2016

5 The City UK – Key Facts about UK Financial and Related Professional Services 2016

6 <https://www.lloyds.com/lloyds/about-us/what-is-lloyds>

UK as a global green financial centre

The UK Government's £3.87 billion International Climate Fund is working to catalyse green private investment and build markets for sustainable, low-carbon ventures worldwide. Launched in 2011, it has supported creation of some of the world's largest climate funds, created more than 39,000 jobs and avoided more than 2.3 million tonnes of greenhouse gas emissions worldwide.⁷ The fund's assets have been raised to **£5.8 billion** for the period April 2016 to March 2021.

Over £10 billion

total capital (£2.7 billion direct commitment) mobilised by the Green Investment Bank (GIB), supporting over 80 low-carbon projects across the UK, with almost 75% of investment from non-GIB sources. The GIB has begun making international minority equity investments, with an initial £200 million pilot targeting East Africa, South Africa and India.⁸

39 green bonds

issued and listed on London Stock Exchange, raising in excess of \$9.3 billion in seven currencies.⁹

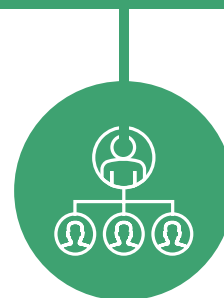
"The UK has the foundations to be a leading global green financial hub, and green finance has the potential to be a significant economic and environmental opportunity for the UK. The work of the Green Finance Initiative, and the vision and recommendations in this report, set out the blueprint and building blocks to make this a reality, and show that green and growth belong in the same sentence."

– Jon Williams, PwC"

38 green companies

have raised \$10 billion on the London Stock Exchange, including 14 renewable investment funds and 12 alternative fuel companies.¹⁰

More than 121 UK energy projects have been successfully crowdfunded, providing **an average project return of 7.36%**.



⁷ <https://www.gov.uk/government/publications/international-climate-fund/international-climate-fund>

⁸ Green Investment Bank. 2015. UK Green Investment Bank agrees terms of a £200m International pilot. Available at: <http://www.greeninvestmentbank.com/our-investments/>

⁹ At 28 October 2016. <http://www.lseg.com/sites/default/files/content/documents/20161013%20List%20of%20Green%20Bonds.pdf#>

¹⁰ <http://www.lseg.com/resources/media-centre/press-releases/finland%E2%80%99s-first-green-bond-lists-london-stock-exchange>

Source: Dr Chiara Candelise, 'Crowdfunding in the energy sector: a smart crowdfunding and empowering tool for citizens and communities?', Centre for Research on Energy and Environmental Economics and Policy, Bocconi University, March 2016. http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/events/IEECB16/Presentations/4.a.4.presentation_on_candelise.v1.pdf



Foreword

Tackling climate change is the defining challenge of our time. Mobilising significant quantities of private capital will be crucial in achieving the transition to a low-carbon economy. Making financial markets more sustainable is necessary to deliver this.

It is clear that climate change represents a material financial risk to all of us. Unmitigated, its costs could be transmitted through pension funds, share prices, premiums and loans – not to mention GDP. We therefore face an economic and prudential, as well as an environmental imperative, to act now.

Green finance allows businesses, savers and investors to contribute to tackling pollution and climate change, while safeguarding long-term profitability. This issue has risen to the top of the political, regulatory and industry agendas worldwide, as clearly demonstrated at the G20 summit in Hangzhou, where world leaders made a historic commitment to “scale-up” green finance.

The UK Government and the City of London’s Green Finance Initiative believe passionately in achieving that goal, and are committed to further strengthening, stimulating and scaling up the green finance sector.

We are not starting from scratch. Across the full breadth of financial services, British institutions and thought leaders have led global efforts in green finance, from the first offshore green rupee and renminbi bonds to the recent momentous decision by Legal and General to launch the Future World Fund that will green the pensions of HSBC.

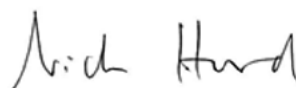
The City of London’s Green Finance Initiative, launched in January 2016 in partnership with HM Treasury and the now Department for Business, Energy and Industrial Strategy, has spent this year convening and consulting with global industry, academic, market, government and regulatory authorities. It has sought to augment the leadership shown by the G20, the Financial Stability Board, the UNFCCC and others, and to better understand the challenges and opportunities associated with green markets globally.

This report represents the culmination of this phase of its work, presenting our vision of what a vibrant, globalised green financial sector might look like and the steps that will be required to get there. Global financial markets have the capacity to enact fundamental economic change – and that is precisely what the green finance sector will do.



Simon Kirby

Economic Secretary to the Treasury



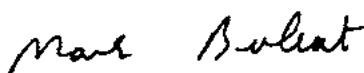
Nick Hurd

Minister of State for Climate Change and Industry



Sir Roger Gifford

Chair, City of London’s Green Finance Initiative



Mark Boleat

Chairman of the Policy and Resources Committee

Executive summary

The Paris Agreement on climate change and the UN's Sustainable Development Goals have fired the starter gun on global collaboration in aid of a sharp transition toward 'green growth' and a low carbon, climate resilient economy. Funding this historic shift will require annual investment measured in the trillions however; in short, the transition required will be as much financial as environmental.

Through the development of 'green finance', this transition is already underway. It has been defined by the G20's Green Finance Study Group as the "financing of investments that provide environmental benefits in the broader context of environmentally sustainable development". And it is one of the best tools available to policymakers to meet environmental and climate targets – but it must be scaled-up in order to be truly successful.

Only a minority of the finance required can be provided from public resources, presenting a significant opportunity and responsibility – to clients, shareholders and society – for the private sector. And in order to fully embrace it, every part of the financial sector must build environmental imperatives into its decision making on capital allocation, risk analysis and the use of institutional resources. The move to green growth and the

greening of finance should be considered an opportunity rather than a cost, and a business case that can deliver short-term, long-term, financial and even non-financial benefits.

This report documents the UK's existing green innovations and collaboration, and its development into a leading global hub for green finance. It envisages what more UK policymakers, regulators and market participants could do both to globalise green finance, and to engender climate-conscious domestic financing. The UK is recognised as a global leader on environmental action, and its private sector can now help to embed the environmental imperative into business models, markets and throughout the global economy by leveraging the UK's cluster of green financial expertise.

The UK benefits not only from its traditional strengths and capabilities as a leading financial centre but from an increasingly deep and broad concentration of dedicated green finance institutions and teams, high-profile thought leaders, the City of London's Green Finance Initiative (GFI), regular, global-level discussions, and a track record of innovation, such as in relation to green pensions, green loans and green crowdfunding. It is a natural hub and partner for green collaboration worldwide; but it can also do

more, and this report presents a six point plan from the GFI and the UK's wider green financial community to enable the UK to meet its full green financial potential:

1. Set a clear path: environmental objectives will only be met if government and industry works together to set a holistic green finance strategy. This could include giving powers to a new or existing independent body to set a long-term path for a greener UK economy; developing open-access green corporate benchmarks; and completing the work undertaken to develop green infrastructure as an asset class.

2. Strengthen data and transparency: engage in regulatory green forward guidance, extend the analysis and understanding of climate-related risks, and work to implement the findings of the Financial Stability Board's Task Force on Climate-related Financial Disclosure.

3. Promote voluntary principles: maintain the market's integrity whilst removing barriers and permitting it room to grow. Work with industry, government, regulators and other financial centres to establish guidelines and consistency, and build upon the success of the green bond market in other areas, such as green tagging for loans.

4. Enable connection and collaboration: work to globalise green finance through international best practice, learning and cooperation. Facilitators could include dedicated bilateral or multilateral green financial discussions; a network for the world's leading green financial centres; and public-private, cross-border secondee programmes.

5. Embed change: ensure that money managers, analysts, consultants and the financial leaders of the future can address climate-related risk and explore green financial opportunities. This will require the inclusion of environmental awareness right across the financial sector, from fiduciary duty, stewardship and governance guidelines to relevant professional and university qualifications.

6. Public sector leadership: provide certainty that ratification of the Paris Agreement represents the first step of persistent government support for a low-carbon transition. The UK could lead in this area by building green objectives and metrics into its Industrial Strategy, for example; making clear the frameworks under which the UK's path to a greener future will be implemented and financing; including environmental risk analysis and green mandates into public sector funds; and further building upon the successes of the International Climate Fund.

1. **The prize:** green finance and its game-changing environmental, economic and market potential

The coming together of environmental and economic imperatives is creating a huge market opportunity. Both the City of London Corporation and the Government are determined to strengthen the UK's capabilities in this area, and to support the country's development as a global hub for green finance.





What is green finance?

Green finance provides a bridge between global environmental priorities and the financial system.

According to the G20 Green Finance Study Group, it is the “financing of investments that provide environmental benefits in the broader context of environmentally sustainable development”¹¹. Green finance incorporates ‘climate finance’ (clean energy, low-carbon transport, energy efficiency and climate resilience), as well as broader environmental and conservation finance to fund green growth and protect and restore natural environments, forest and water resources, biodiversity and eco-systems. Green finance is the environmental pillar of sustainable finance – the integration of environmental, social and governance (ESG) dimensions into financial decisions.

Opportunities in green finance cover all financial sectors and asset classes. They include bank lending for renewables, low-carbon transport and energy efficiency; green equity investments (including infrastructure investment trusts and indices); environmental and climate risk insurance; and carbon markets. Among the foremost growth opportunities are green bonds, responsible investment (in particular green impact investing)

and green project finance. In particular, green bonds can help harness global institutional investment funds in support of green projects and the refinancing of bank lending. Freed up bank balance sheets can then be used to offer innovative green project finance solutions, especially for green infrastructure.

“It is enlightened self-interest that determines why business will act sustainably. If business isn’t sustainable then society is at risk. And if society isn’t sustainable then business is at risk.” – Mark Wilson, Group CEO, Aviva, September 2016

¹¹ http://unepinquiry.org/wp-content/uploads/2016/09/Synthesis_Report_Full_EN.pdf

Why is green finance so vital?

Continued population growth, rising living standards and climate change are putting pressure on the environment. There is an urgent need to produce and use resources within safe limits.

The Paris Agreement (COP21), and the national climate plans¹² that support it, offer an agreed path to a low-carbon future. Green finance is key to meeting the huge demands on investment being created by such targets, estimated at \$2 trillion per year for energy supplies alone¹³.

Significant upgrades in technology, skills, policies and business models, alongside a sea-change in public awareness and environmental leadership, are needed to ensure an efficient transition to a green growth pathway¹⁴, as well as the finance to fund it.

While many see huge obstacles ahead, the transition to a low-carbon economy has already begun and is rapidly gathering pace. In 2015, global carbon intensity (emissions per million dollars of GDP) fell by a record-breaking 2.8%, more than double the average since 2000¹⁵. In addition, some major emerging economies, including China at 6.4%, showed sharp reductions in carbon intensity last year. These may be the first welcome signs of the uncoupling of carbon intensity and economic growth.

Last year 500,000 solar panels were installed every day¹⁶ and two wind turbines were installed every hour¹⁷ in countries such as China, leading to renewables surpassing coal as the world's largest source of installed power capacity additions. On a MW (megawatts) capacity basis, there is already more investment in renewables than fossil fuels. Global investment in new renewables generation rose from 49% of added capacity in 2014 to 55% in 2015, with an investment commitment of \$155.9 billion, up from \$131.5 billion¹⁸. Renewables represented approximately 62.5% of

net additions to global power capacity in 2015¹⁹. However, the broader picture for clean energy (renewables and low-carbon services; and energy-smart technologies) is still mixed as investment in 2016 is expected to end up well below last year's record of \$348.5 billion²⁰.

Despite the acceleration of decarbonisation in 2015, however, many countries are set to fall short of what is needed. Analysis from PwC's Low Carbon Economy Index shows that, based on a 2°C carbon target, countries will need to reduce carbon intensity by an average of 6.5% a year. The combined sum of the national commitments represents a 3% annual reduction which is more in line with a scenario of 3°C of warming, so the Paris Agreement includes a mechanism to raise national targets over time.

Reaching beyond climate change, the 17 Sustainable Development Goals (SDGs) adopted by 193 UN members in September 2015 outline a series of environmental sustainability objectives to be achieved by 2030. These include sustainable water management, resilient infrastructure, responsible consumption and production, sustainable use of marine resources, and protection and restoration of forests and biodiversity. These goals include a number of fixed targets relating to environmental performance, and the finance needed to achieve these objectives should come primarily from existing rather than new sources by building environmental, sustainability and development outcomes into their mandates.

There are also crossovers where initiatives funded by green finance can deliver positive social, as well as environmental, impacts. For example, more efficient use of resources can help to improve access to food and water, while 'climate smart' agriculture can deliver more reliable income for farmers. Although there are potential conflicts across environmental and social objectives²¹, green finance ultimately has the potential to promote greater awareness of non-financial impacts, and increase capacity to deliver environmental and social benefits worldwide.

12 Known as Nationally Determined Contributions

13 <http://www.iea.org/newsroom/news/2014/june/world-needs-48-trillion-in-investment-to-meet-its-energy-needs-to-2035.html>

14 World Economic Forum 2013

15 PwC's Low Carbon Economy Index 2016

16 Financial Times, October 2016

17 International Energy Agency

18 United Nations Environmental Programme (UNEP). 2016. Renewable Energy Investments: Major milestones reached, New world record set. [ONLINE] Available at <http://unep.org/newscentre/default.aspx?ArticleID=36112&DocumentID=27068>. [Accessed 15 October 2016]

19 REN 21: Renewables 2016: Global Status Report

20 <https://about.bnef.com/press-releases/summer-lull-europe-asia-slowdown-make-weak-clean-energy-investment-third-quarter/>

21 Such as conversation and income from logging for rural communities.

Every part of the financial industry has a role, a responsibility and the potential to benefit during the transition to a low-carbon, climate resilient and environmentally sustainable economy.

What is needed?

Public sector money alone won't cover the cost; even the People's Bank of China, custodian of one of the world's largest sovereign reserves, states that private investors must finance 85% of the country's environmental projects²². And for this "green finance is key"²³.

Infrastructure investment required for sectors such as agriculture, transport, power and water under current growth projections stands at about \$5 trillion per year to 2020.

This 'business-as-usual' investment will not lead to stable growth, however, unless it builds in and achieves environmental and sustainability goals²⁴. Estimates of finance needed to achieve these objectives are set out in the table.

Funding a sustainable future

Finance need*	Global investment required**	
		Source
To implement "sustainable growth"	\$0.5 – 1.5 trillion a year by 2020 \$3 – 10 trillion a year by 2050	World Business Council for Sustainable Development (2010)
To achieve the SDGs	Incremental financing needs of \$1.4 trillion in low- and lower-middle-income countries by 2030	United Nations Association – UK (2016)
To achieve global sustainable development and climate objectives	\$90 trillion in the next 15 years	G20
To meet the below 2°C target of the Paris Agreement	\$65 trillion by 2035	International Energy Agency (IEA) (2014)
To transform global energy generation and simultaneously meet emission targets	\$79 trillion by 2050 or \$1.6 trillion per year	UN World Economic and Social Survey 2011 and Global Energy Assessment, World Economic Forum (2013)
To fully fund nations' green infrastructure requirements between now and 2030	\$6 trillion per year	New Climate Economy (Sept 2016)
To deliver new renewable electric power generation to 2025	\$6.9 trillion for business as usual scenario \$12.1 trillion for 2°C or below scenario requirements	Bloomberg New Energy Finance (2016)
To complete developed to developing country flows for climate change adaptation and mitigation	\$100 billion per year by 2020	UNFCCC (2010) Cancún decisions

*Note these are different scopes of action and not an additive list.

** (USD)

22 <http://www.paulsoninstitute.org/events/2015/07/14/paulson-institute-partners-with-pboc-on-green-finance-initiative/>

23 HM Treasury Speech by Harriett Baldwin MP, January 2016, launch of City of London's Green Finance Initiative

24 Green Investment Report, World Economic Forum 2013

Towards a greener UK

The UK is making strong progress.

But funding still falls short.

Progress

Renewable power now makes up nearly a quarter (24.6%) of total generation, up from 19.1% in 2014²⁵. For the second year running, the UK's consumption of coal has fallen by over 20%²⁶, largely as the result of the EU's Large Combustion Plant directive and a UK policy to close coal-fired power plants by 2025.

Yet efforts to achieve legally binding environmental targets require an investment of £330 billion in the UK's green economy between 2011 and 2020²⁷. To date, investment is at less than half the required rate.²⁸

Framework for the future

The roadmap for the UK's transition to a green economy has already begun to be set out in a raft of legislation and policymaking initiatives, the most prominent being:

The Climate Change Act 2008, which establishes a framework to develop an economically credible emissions reduction path, and incorporates²⁹:

- A target to reduce emissions by 80% by 2050 (on 1990 levels) and a requirement to set legally binding five yearly 'carbon budgets'. The first five have been put into legislation and run to 2032.
- A Committee on Climate Change to advise the Government on emissions targets, and report to Parliament on progress.
- A Government commitment to carry out national climate change risk assessments and develop a National Adaptation Plan, both to be reviewed every five years.³⁰

Other examples of policies supporting green finance include:

- The Pensions Act, updated in 2000, which requires investment funds to disclose their policies on ethical (incorporating green) investment;
- The UK Stewardship Code 2010 and 2012 update, which provides principles and guidance on stewardship activities including interventions resulting from concerns on environmental matters.
- The Companies Act 2013 amendment (Strategic and Directors' Reports), under which quoted companies are required to report their annual global greenhouse gas (GHG) emissions and environmental matters affecting performance (including the impact of the company's business on the environment) and any related policies and their effectiveness.

Toward a greener global economy Supported by the UK, the transition toward green capital markets is underway.

Green finance must be globalised to be successful, and the UK's network of economic, financial and environmental partnerships – combined with its innovative International Climate Fund – are supporting efforts to mobilise green capital worldwide.

The UK and China, for example, jointly pledged to "continue to work closely through policy dialogue, low carbon development cooperation, increasing energy efficiency, developing carbon capture, utilisation and storage, promoting renewable energy, climate risk and resilience to climate change and developing low carbon business to business links"³¹. The two governments also agreed a memorandum of understanding regarding sustainable urbanisation.

The Climate Change statement followed issuance of the world's first renminbi-denominated green bond in London by the IFC in June 2014, and helped pave the way for issuance of the first such bonds by a mainland Chinese bank (the Agricultural Bank of China) in October 2015.

25 <http://newclimateeconomy.report/>

26 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/552059/Chapter_5_web.pdf

27 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31757/12-553-green-investment-bank-policy-and-finance-context.pdf

28 <http://www.greeninvestmentbank.com/about-us/>

29 <https://www.theccc.org.uk/tackling-climate-change/the-legal-landscape/global-action-on-climate-change/>

30 Including water, energy, utility, infrastructure and transport management companies and national park authorities

31 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/462160/efd_combined_POP__21_Sept_web.pdf

The momentum within this important potential market has been maintained. At the 7th UK-China Economic and Financial Dialogue in 2015, “The People’s Bank of China and Bank of England commit[ed] to promoting the global consensus on green finance and green investment, popularising the green finance concept and related best practice”. Collaborative work was also undertaken on the water stress nexus, clean-tech R&D and carbon capture and storage, and “China welcomed the UK’s policy support to develop roadmaps for more rapid deployment of offshore wind in China”³². In 2016, the UK and China also co-chaired the G20 Green Finance Study Group, building upon a track record of tangible climate-related activity.

Bank of England Governor Mark Carney has also provided international leadership on this issue, taking an active role in developing national and international action on climate change and financial policy in both his capacity as Governor and as the Chair of the Financial Stability Board (FSB). The FSB established the industry-led Task Force on Climate-related Financial Disclosures (TCFD)³³ to develop voluntary disclosure recommendations on climate-related risks and opportunities. Consistent, comparable and reliable reporting by companies will enable more informed financial decisions by investors, lenders, insurers and other financial markets participants.

Elsewhere, the UK is helping to develop, fund and support low-energy projects across the globe. For example, it is a founding member of Mission Innovation³⁴, a public-private alliance that commits members to double clean energy research by 2020 and work together to increase collaboration on transformational projects.³⁵ It is also working to better enable private sector investment through Climatescope, an online information tool that ranks 55 developing countries according to their renewable energy investment attractiveness, which was co-funded by the Department for International Development (DfID)³⁶. DfID also co-funded a study applying climate change scenarios of +2°C, +3°C and +4°C and their implications for long-term asset allocation, helping investors

to develop a methodology for constructing long-term, climate-aligned portfolios.³⁷

Collectively, such activities are contributing to the UK’s capacity to mobilise green financial flows: in the period 2005-14, for example, the UK was the second-largest source of foreign direct investment in India’s alternative and renewable energy sector, facilitating almost \$900 million of funding.³⁸

Perhaps most significant, however, has been the UK Government’s use of its £3.87 billion International Climate Fund (ICF), since raised to £5.8 billion for the period April 2016 to March 2021. Launched in 2011, the ICF supports low-carbon projects across diverse sectors and technologies, utilises a number of financing mechanisms (including grants, loans, guarantees and equity), and ‘crowds-in’ private sector investment at three levels: globally, locally and project-specific.

32 All from 7th EFD policy outcomes: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/462160/EFD_combined_POP__21_Sept_web.pdf

33 <https://www.fsb-tcfd.org/>

34 <http://mission-innovation.net/>

35 <https://www.gov.uk/government/news/uk-joins-new-international-clean-energy-initiative>

36 DfID has contributed £4.35 million to Climatescope, whose co-funders include the InterAmerican Development Bank and USAID.

37 Mercer, Investing in a Time of Climate Change, 2015; co-funded with the former Department for Energy and Climate Change, the German Government, the IFC and sixteen private investors.

38 [http://www.ey.com/Publication/vwLUAssets/Renewable_Energy_Country_Attractiveness_Index_43/\\$FILE/RECA%2043_March%202015.pdf](http://www.ey.com/Publication/vwLUAssets/Renewable_Energy_Country_Attractiveness_Index_43/$FILE/RECA%2043_March%202015.pdf)

INTERNATIONAL CLIMATE FUND

GLOBAL FINANCIAL MARKETS

Transforming the private equity space for climate investments through the ICF's Climate Public Private Partnerships (CP3)

Acting as an anchor investor, the UK helped to establish two commercially run private equity funds that invest in low-carbon development sub-funds and projects in developing countries.

- 1) The IFC AMC Catalyst Fund reached a final fund size of US\$418 million in June 2014 – one of the biggest emerging market climate private equity fund-of-funds. The UK is an \$80 million anchor investor.
- 2) The Asia Climate Partners fund achieved first close in November 2014 on \$391 million. The fund will make largely direct investments in resource efficiency sectors (specifically energy, water, transport, technology and agribusiness), but may also make some fund investments. It will target a maximum disbursement of 33% to India, 33% to China and 34% throughout emerging Asia.

LOCAL FINANCIAL MARKETS

Reducing risks through a first loss position and development of local financial markets via the ICF's Global Climate Partnership Fund (GCPF).

In December 2013, the UK invested £30 million in the GCPF. The fund operates through local banks in developing countries to make finance available to small and medium-sized enterprises (SMEs), and to households for energy efficiency improvements and renewable energy projects, thereby developing local financial markets for these sectors. The UK's investment and other public funds provide a risk cushion (or 'first loss position') to encourage private investment into the fund. The total fund now stands at \$367million.

For example, the GCPF approved a loan for \$20 million to Southeast Bank in Bangladesh to on-lend for energy efficient technologies in the garment industry. Of the resulting clothing, a portion is exported for sale in the UK, thus the GCPF contributes toward reducing the environmental impact of products purchased by UK consumers.

AT PROJECT-LEVEL

Supporting the development of small-scale projects through aggregation and technical assistance via the ICF's Renewable Energy Performance Platform (REPP)

The REPP seeks to mobilise private sector development activity and investment in small- and medium-scale renewable energy projects across sub-Saharan Africa. The REPP does not directly finance the projects, rather it seeks to assist small- to medium-sized developers throughout the project development life cycle, providing technical assistance for project developers; facilitating access to risk mitigation instruments through project aggregation and the streamlining of institutional processes; and facilitating access to financial structuring assistance and long-term lending.

Taking public-private financing from talk to action via the Global Innovation Lab ('the Lab')

The Lab is a collaborative, cross-border programme operating under the UK Government's Capital Markets Climate Initiative (CMCI). It consists of a global forum of experts and donors charged with taking G7-endorsed green finance projects from talk to action, and convenes key international actors for the purpose of designing, stress testing and piloting instruments and approaches that might catalyse private investment in climate friendly, low carbon projects and infrastructure in developing countries. In doing so, the Lab is helping to meet the goal of keeping global temperatures within a 2°C rise. The UK, along with the US and Germany, has played a lead role in developing the Lab and funding its secretariat, based in London at the Climate Policy Initiative. The Lab's first cycle attracted over 80 proposals, and its second more than 90 submissions of innovative ideas, catalysing \$583 million in funding for projects worldwide.

2. **A global hub:** Why the UK is well placed to lead

The UK's combination of green innovation and financial market depth and expertise make it the ideal location for taking green finance to the next stage of development; from niche to mainstream.



Serving the UK economy

In the UK, 2.2 million people are employed in financial and related professional services sectors³⁹. In the year to 31 March 2015 the sector paid an estimated amount of total taxes in the region of £66.5bn, or 11% of total UK Government tax receipts.⁴⁰ As a range of initiatives attest, green finance offers a fresh and still largely untapped market opportunity for the UK's financial community, and a chance to use its expertise and resources as a powerful force for good.

“China is leading in some areas of green finance, and the UK too. The UK is well placed to play a role as a hub between the East and West, North and South, connecting supply and demand for green finance” – **Alastair Bishop, Blackrock and GFI member**

³⁹ The City UK – Key Facts about UK Financial and Related Professional Services 2016

⁴⁰ <https://www.cityoflondon.gov.uk/business/economic-research-and-information/research-publications/Documents/Research-2015/Total-Tax-2015-OnlineFinal.pdf>

CASE STUDY

FINANCE FROM AND FOR THE COMMUNITY

Swindon Common Farm Solar is the UK's first local authority solar bond⁴¹, which was launched as a partnership between Swindon Borough Council and the local community to fund a 4.8MW solar farm.

The solar farm will generate long-term income for the Council, along with an annual payment for a defined community purpose. Structured as a Community Interest Company, it supports the local authority's work while sharing profits with the community. The project raised a total of £1.8 million via the Abundance green crowdfunding platform, successfully part-funding the solar photovoltaic system. Similar models could be replicated and structured to access the huge pool of retail ISA savings in the UK.

CASE STUDY

PUBLIC INVESTMENT BANK CHANNELS PRIVATE FINANCE

The Edinburgh-based Green Investment Bank (GIB) was the first of its kind worldwide, set up to support green projects on commercial terms and mobilise private sector capital into the UK's green economy. It is a great example of the UK's commitment to finding practical ways to tackle climate change.

The GIB created the world's first offshore wind fund in response to the growing demand for low-carbon infrastructure investment opportunities. The GIB fund attracted numerous UK-based and global institutional investors including one of the world's largest sovereign wealth funds, and by its second close in October 2015 had raised £818 million.

This innovative approach demonstrates the UK's ability and readiness to attract new capital and create liquidity in the market. The GIB fund, which targets equity investments in UK operational unlevered offshore wind power generation assets, has been instrumental in bringing down the long-term cost of finance for offshore wind, as well as enabling the original developers to free up their capital to develop new projects. By February 2016, the fund had financed assets capable of generating nearly 4GW of net renewable electricity annually.

⁴¹ The City UK – Key Facts about UK Financial and Related Professional Services 2016

CASE STUDY

SMART CITIES

'Smart cities' are built around integrated planning, including operation of water, energy and data services. These initiatives can deliver both cost savings and promote the deployment of new technologies in energy supply, use of renewables, and other features reducing resource use and emissions.

The UK Government recognises the huge potential for growth in this area, led by embedding greener and smarter city development in the UK and exporting expertise to middle income and developing countries. Globally, green urbanisation is already a £280 billion market and will grow to £1 trillion by 2020, according to UK Government estimates. The UK's share of this global market is estimated at 10%⁴².

In the UK, a move to smart cities and green urbanisation requires a huge amount of financing. The UK Government commissioned the British Standards Institution (BSI) to create a standards strategy for smart cities in the UK. The UK's innovation agency, Innovate UK, also set up the Future Cities Catapult to transform the UK's capability for growth in this sector. Together they have launched the 'Cities Standard Institute', a joint initiative designed to promote collaboration between cities and key industry leaders and innovators.

CASE STUDY

MAKING GREEN THE NORM

HSBC's UK employee pension fund has decided to change its default fund option in their defined contribution scheme, currently funded with £1.85 billion, to one that aims to provide better risk-adjusted returns over the long term by using an alternatively-weighted index, while also addressing the financial risks of climate change and benefitting from the transition to a low-carbon economy.

The Future World Fund, managed by Legal & General Investment Management, follows the FTSE Russell 'Smart Sustainability' Index, which combined a smart beta approach with climate change considerations. It aims to have a meaningful positive climate impact by favouring low carbon stocks and companies with green revenues, without significantly changing the risk-return profile of the fund.

The Fund also incorporates a programme of engagement to influence company actions. It uses a scoring methodology that considers criteria such as company commitment to climate change, transparency, governance, strategy for resilience, innovation and reputation. Companies that score poorly against these criteria risk being excluded from the fund following a period of engagement.

⁴² The Smart City Market: Opportunities for the UK, Department for Business Innovation and Skills Research Paper No. 136, October 2013

Serving the global economy

Building on these home market foundations, the UK is well-placed to support the global development of green finance.

Key strengths include an established cluster of expertise and innovation stretching across the full breadth of financial services, from centuries old institutions such as Lloyd's of London and the London Stock Exchange – ranked 8th globally and foremost amongst major exchanges for the quality of sustainability disclosure of its listed companies⁴³ – to FinTech start-ups pioneering the financial models of tomorrow.

From a capital raising, trading and management perspective, the UK further benefits from \$7 trillion AUM, access to global capital pools and a central time zone that enables business day links with most major financial centres. Further advantages include use of the English language, a key international language of business, and a legal system known for fairness, stability and transparency.

London continues to be the top ranked financial centre in the Y/Zen Global Financial Centres Index⁴⁴. In the September 2016 index, it again ranked number one for best business environment, financial sector development, infrastructure and reputation, and second only to New York in human capital.

These strengths are reflected in market leading positions across a number of key business and trading areas. In March 2016, banks located in the UK reported total cross-border lending worth

\$4.5 trillion. They ranked first among all banks located in the Bank for International Settlements reporting countries. The bulk of this lending is carried out by banks who are located (and not necessarily headquartered) in the UK⁴⁵.

The UK is also home to the world's biggest foreign exchange market, handling the largest proportion (37%, or nearly \$2.5 trillion) of daily average foreign exchange turnover.

The US and Japan are the largest markets by total debt securities. The UK, however, holds the biggest market share of international debt securities⁴⁶ – non-UK based corporate and governmental institutions issued some \$3.1 trillion of bonds in the UK in the first quarter of 2016, over 14% of the total. Also, the London Stock Exchange now enjoys a market capitalisation of almost £4.4 trillion – the largest stock exchange in Europe and the world's most international, with nearly 2,300 company listings from over 60 countries⁴⁷.

AIM, London Stock Exchange Group's market for smaller growing companies, has supported over 3,600 companies since its inception in 1995, providing access to long-term growth finance and also an exit route for early stage investors. Over 20 years, UK-incorporated companies have raised on AIM over £92bn⁴⁸. Examples of AIM quoted clean-tech companies include: Good Energy Group plc, Green & Smart Holdings plc, Mytrah Energy Limited, React Energy, Rurelec plc, Aggregated Micro Power plc, Hydrodec, Proton Power Inc, PowerHouse Energy Group plc, ITM Power plc, China New Energy Ltd, Ceres Power Holdings plc, Atlantis Resources Limited.

“One of Britain's great strengths is the ability to offer and aggregate all of the services the global financial services industry needs. This has not changed as a result of the EU referendum result and I will do everything I can to ensure the City of London retains its position as the world's leading international financial centre.” – **Philip Hammond, UK Chancellor of the Exchequer, October 2016**

43 <http://www.corporateknights.com/reports/2016-world-stock-exchanges/2016-sustainable-stock-exchange-report-released-14689620/>

44 http://www.longfinance.net/images/gfci/20/Gfci20_26Sep2016.pdf

45 BIS Quarterly Review, September 2016

46 International debt securities are those which are issued in a market other than the local market of the country where the borrower resides.

47 London Stock Exchange data, Sep 2016

48 AIM 20 Key Statistics, www.lseg.com

Elsewhere, the British Private Equity & Venture Capital Association (BVCA), reports that in 2015 members financed 965 companies investing £17 billion, up from £13.4 billion in 2014, with pension funds being the most significant source of funding⁴⁹.

Aside from its established strengths, however, the UK is also a base for twenty-first century innovation and cross-border, public-private sector partnerships.

Islamic finance, for example, has developed markedly in the UK for over 30 years due to a combination of supportive Government policy, clusters of industry and academic expertise and a growing base of Sharia-compliant assets. Today, over 20 international banks offer Islamic financial services through their operations in the UK, six of which offer services that are solely Sharia-compliant. In 2014, the UK also became the first western country to issue a sovereign sukuk (a bond-like, Sharia-compliant financing structure), raising £200 million⁵⁰.

The innovative nature of the UK's financial sector is also reflected in its world-leading FinTech (financial technology) cluster, which features the highest growth in peer-to-peer lending, online payments and analytics sectors. The sector was valued at approximately £20 billion in 2016 and generates £6.6 billion a year in revenue.⁵¹ Over half of all Europe's FinTech disruptors, also known as 'emergent FinTech' start-ups, are located in the UK⁵², and the UK has attracted half the total of venture capital investment in FinTech business in Europe, totalling \$539 million in 2014⁵³.

The development of the UK as a western hub for renminbi (RMB) dominated business highlights a further area of market innovation and development. Utilising the UK's unique market infrastructure, role as a leading international business hub and innovation in foreign payments, London has since become the largest RMB hub outside of China and Hong Kong⁵⁴. The UK has also seen strong growth in Indian rupee (INR) denominated or 'Masala bond' issuances. Since the first such issuance in 2014, the market has seen increased interest from overseas and domestic issuers with a combined outstanding value of INR 94 billion listed on the London Stock Exchange up to the first half of 2016⁵⁵ – and a determination by Indian firms to issue £600 million more in the near future⁵⁶.

Applying these strengths to green finance

This abundance of expertise, experience and innovation, combined with the UK's global reach, provides an ideal launch pad for the green finance sector. Already, the UK has hosted world-first RMB and INR-denominated green bonds, and is a leading global centre for green crowdfunding. As capital markets continue to evolve to meet the needs of the twenty-first century, further such innovations are likely, combining the sector's strengths, exploring new opportunities and utilising the UK's reputation for cross-border, public-private sector financial collaboration.

49 BVCA Private Equity and Venture Capital Report on Investment Activity 2015, Autumn 2016

50 <http://www.lseg.com/resources/media-centre/press-releases/london-stock-exchange-welcomes-uk-government%E2%80%99s-first-islamic-bond-listing>

51 Source: "UK FinTech: On the cutting edge – an evaluation of the international FinTech sector" (pub. Feb. 2016 by EY for HM Treasury)

52 Source: 2014 UKTI / EY report: [http://www.ey.com/Publication/vwLUAssets/Landscaping_UK_Fintech/\\$FILE/EY-Landscaping-UK-Fintech.pdf](http://www.ey.com/Publication/vwLUAssets/Landscaping_UK_Fintech/$FILE/EY-Landscaping-UK-Fintech.pdf)

53 Silicon Valley Bank

54 SWIFT, May 2016

55 London Stock Exchange Factsheet July 2016

56 <http://www.bloomberg.com/news/articles/2016-11-07/india-firms-to-list-600-million-pounds-of-masala-bonds-in-london>

CASE STUDY

CONNECTING GREEN PROJECTS WITH GREEN INVESTORS

In August 2015, the International Finance Corporation (IFC) issued the first green masala bond globally on London Stock Exchange (LSE). The 3.15 billion rupee proceeds were invested, through a back-to-back transaction, in an onshore green bond issued by Yes Bank, one of India's largest commercial banks. Under its \$3 billion offshore rupee Masala bond programme, the IFC has issued bonds worth over 103 billion rupees (\$1.66 billion) in a range of tenors, building a triple-A yield curve and attracting new investors to the London offshore rupee market.

In October 2015, the Agricultural Bank of China (ABC) became the first international Chinese green bond issuer, successfully listing a \$995 million triple tranche USD/RMB denominated bond in London, which was four times oversubscribed, with the RMB tranche being eight times oversubscribed. At the market open ceremony at LSE, the Chairman of ABC stated that the successful issuance and listing on LSE's dedicated green bond segments not only fulfilled the ambitions that were announced "as part of the policy outcomes of the latest UK-China Economic and

KEY MILESTONES IN THE UK'S PATH TO GREEN FINANCE

2001

- The UK Emission Trading System (UK ETS), the first national, multi-sector emission trading programme, was established (it was subsequently scaled up and replaced by the EU ETS)
- Launch of the FTSE4Good Index

2003

- The UK's 'Big Four' banks become signatories to the Equator Principles in its founding year. The UK has since hosted the Secretariat.

2005

- Henderson commissions a pioneering 'carbon audit' of one of its Global Care Income Funds⁵⁸.

2006

- The Stern Review on the Economics of Climate Change was published, commissioned by the UK Government with analysis by the Treasury under the leadership of Lord Nicholas Stern.

2011

- The UK launched its innovative, £3.4 billion International Climate Fund.

2012

- The Green Investment Bank was established, becoming the world's first such institution.

2013

- The first renewable trust (or 'yieldco') was listed in London. Five more have listed since, with a collective market capitalisation in excess of £2.2 billion⁵⁹ (at February 2016).

2014

- London Stock Exchange (LSE) joins the Sustainable Stock Exchange Initiative.
- Launch of the UK's first green loan by Sainsbury's⁶⁰
- Largest sterling green bond launched by the EIB at £500 million.
- Establishment of Affirmative IM, the world's first dedicated green and social bond investment manager.
- The Prudential Regulation Authority issues a questionnaire to insurance CEOs on their analysis and management of climate risk.

58 <http://www.trucost.com/publication/green-portfolio-carbon-audit-henderson-global-care-income-fund/>

59 Based on London Stock Exchange Group data

60 <http://www.businessgreen.com/bg/news/2356136/sainsburys-announces-pioneering-gbp200m-green-loan-to-fund-low-carbon-investment-drive>

Financial Dialogue, but also manifests the close and fruitful cooperation between Chinese and UK financial institutions on green finance, climate change and adaptation initiatives.”

In June 2016, Axis Bank issued the first ever Indian green bond on LSE, raising \$500 million. It is the first international/offshore green bond for Axis Bank within its \$5 billion medium-term note programme, which was also listed in London. The bond attracted the lowest spread for a USD benchmark sized bond issued by an Indian Bank with more than 20% of the bond buyers being dedicated “green” investors.

In November 2016, the IFC also listed on LSE a first-of-its-kind ‘Forests Bond’ that gives investors the option of getting repaid in either REDD+ project carbon credits or cash, raising \$152 million from global institutional investors to support private sector development and prevent deforestation in developing countries⁵⁷.

London Stock Exchange offers a vital new channel of finance for international issuers, providing access to a global pool of liquidity and diversification across geographies and types of investors, including a well-established and experienced, dedicated green investor base.

57 <http://ifcextapps.ifc.org/ifcext/pressroom/ifcpressroom.nsf/0/594A016A78A7B14E8525805D00461397>

2015

- The LSE creates its dedicated green bond segments, enhancing market transparency.
- The first offshore green bond sale from a Chinese bank was completed on the LSE.⁶¹
- Transport for London issued its green bond, the first by a UK public agency.

2016

- Launch of the City of London’s Green Finance Initiative.
- Over £10 billion total capital (£2.7 billion direct commitment) mobilised by the Green Investment Bank (GIB), supporting over 80 low-carbon projects across the UK with almost 75% of investment coming from non-GIB sources. The GIB now broadens its investments to include emerging and developing markets.
- Lloyds Bank launches a £1 billion fund to help commercial real estate developers improve energy efficiency⁶².
- LSE’s FTSE Russell launches Green Revenues, a low carbon economy data model and index series tracking companies that generate green revenues⁶³.
- The LSE joins the Green Infrastructure Investment Coalition and hosts its India Forum in order to facilitate dialogue between investors and green infrastructure developers from India.
- In a March 2016 study, 121 UK energy projects were identified as having been funded via crowdfunding, raising €118 million in total across five energy crowdfunding platforms, and providing an average return of 7.36%. More projects had been financed this way and more profitably than in any other country included in the study⁶⁴.

61 <http://uk.reuters.com/article/uk-china-bonds-offshore-idUKKCNOS807Q20151014>

62 <https://www.ft.com/content/75aec86a-e6cb-11e5-a09b-1f8b0d268c39>

63 <http://www.ftserussell.com/index-series/index-spotlights/green-revenues>

64 http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/events/IEECB16/Presentations/4.a.4.prese%20ntation_candelisev1.pdf

Drawing together international green finance associations and thought leaders

The UK benefits from hosting many of the world's leading organisations dedicated to green finance – dedicated to green finance, from dedicated green financial industry associations and specialist funds to the green finance teams of many international financial institutions and rating agencies. The subsequent concentration affect creates a virtuous circle of ideas, networks and collaboration.

The institutions listed below are examples of prominent organisations based in the UK with a global focus and international networks, membership and impact.

These organisations are further supported by cross-economy focused organisations such as the Climate Disclosure Standards Board, the Carbon Trust, Environmental Investigation Agency and Client Earth.

Education and professional training in green finance

The longer term foundations for innovation are rooted in the cutting edge research into green finance being carried out by leading UK universities. Prominent examples include the Cambridge Institute for Sustainability Leadership, Oxford University's Smith School on Enterprise and the Environment, Saïd School Impact Investing Programme, and the London School of Economics/Imperial College's Grantham Institute on Climate Change and the Environment.

In addition, a few of the UK's professional financial qualification bodies⁶⁵ have begun to integrate principles of environmental risk and responsibility into their syllabuses. The UK's private equity association, the BVCA, also launched a dedicated e-learn course on responsible investment during 2016⁶⁶.

Institution	Established
Asset Owners Disclosure Project	2008
Banking and Environment Initiative*	2010
Carbon Tracker	2009
Climate Bonds Initiative (CBI)	2009
CDP	2003
City of London Green Finance Initiative	2016
Climate Markets and Investment Association (CMIA)	2008
Climate Policy Initiative	2009
ClimateWise*	2007
Green Alliance	1979
Green Infrastructure Investment Coalition	2005
International Investors Group on Climate Change (IIGCC)	2005
Investment Leaders Group*	2013
Share Action	2005
UN PRI	2006

* Run by the University of Cambridge Institute for Sustainability Leadership (CISL)

65 Examples of UK professional financial bodies include: the Association of Chartered Certified Accountants (ACCA), Association of Corporate Treasurers (ACT), CFA (Chartered Financial Analyst) Institute, Chartered Alternative Investment Analyst Association (CAIA), Chartered Banker Institute, Chartered Institute for Securities and Investment (CISI), Chartered Institute of Management Accountants (CIMA), Chartered Insurance Institute (CII), Institute of Chartered Accountants in England and Wales (ICAEW) and the Institute of Chartered Accountants of Scotland (ICAS)

66 <http://www.bvca.co.uk/Training/eLearning/ResponsibleInvestment.aspx>

3. **Hub and hinterland:** a vision for the future of green finance in the UK

The UK can enhance global access to green capital pools, innovation and clusters of expertise, and drive development of a financial sector that integrates environmental imperatives throughout its business models and markets. Green finance can also act as an engine for green growth and decarbonisation at home.





Home of accessible, innovative and reliably 'green' finance

Markets, the Government and innovators within both finance and industry can all play their part in creating a mutually supportive green finance eco-system.



Key enablers include:

- Clear and consistent political support for a green economy, which is reflected in leadership in climate diplomacy and a regulatory landscape that promotes the green economy and develops cross-sector awareness and management of systemic environmental risks.
- Green technology is supported by a clear and comprehensive path for taking ideas from innovation through to commercialisation, with green finance mechanisms a central facilitator of this.
- Revitalised use of debt securitisation to scale up green infrastructure finance⁶⁷, supported by well established transparent, consistent and reliable market mechanisms.
- Smaller green product denominations and the use of retail-specific instruments to empower local communities to invest in improvements to their immediate environment.
- Innovations in the use of public finance to leverage green capital markets and private investors (building on the success of the Green Investment Bank).
- Standards and reporting mechanisms that assure investors their money is delivering a material positive environmental impact.

⁶⁷ OECD Analysing potential bond contributions in a low-carbon transition, 2016

All finance is aligned to a green strategy

Green finance is scaled up and moved into the mainstream.

Key enablers include:

- A financial sector with longer-term thinking and environmental priorities embedded in its role in the economy and business planning, based on an established and broadly accepted and understood base of guiding principles and minimum standards.
- Financial institutions are transparent about their environmental risks, environmental impact and planned path to a green business model. The recommendations issued by the Task Force on Climate-related Financial Disclosure, once finalised, could be widely adopted by companies, including financial institutions, leading to greater transparency on the financial risks and opportunities associated with climate change. New and existing funds could also be reviewed for long-term climate and environmental impacts, and future proofed with appropriate, climate-aligned allocations.
- Green considerations are part of capital allocation decision making within businesses of all sectors, also greening this internal flow of finance.
- The education, training and emergence of the next generation of industry leaders and asset owners, with a strong focus on green values and social purpose.
- The emergence of the next generation of financial service providers and markets, building on commercialised innovations, particularly in relation to green FinTech.
- Environmental factors becoming fully incorporated into debt and equity analysis, with clear links to impacts on credit ratings and share prices.

Collaboration across sectors and financial centres

As a hub for green finance, the UK works as part of an international collaborative network and as a central connector of supply and demand across developed, emerging and developing markets.

Key enablers include:

- In the UK, mutually beneficial cross-sector collaboration drives green innovation and knowledge, e.g. academic networks working in partnership with the private sector, from start-ups to corporates.
- Established working collaborations with other financial centres on key issues such as unlocking assets for green finance. Collaboration addresses green principles, labels and data, similar to the Sustainable Stock Exchanges Initiative.
- Healthy competition among financial centres helps to promote and attract green finance, and drive innovation.
- The UK operates as a global facilitator, where businesses and governments come to collaborate and raise capital for green projects large and small. The financial sector is a key partner in UK initiatives with emerging and developing markets.

4.

The way forward:

Recommendations to
realise the green financial
sector's potential

The UK's potential as the world's leading green finance centre is compelling and the likely benefits for both the environment and the economy are significant. But capitalising on this will require leadership and action. Building on the pioneering work of the G20 and COP21, here is a six point plan from the GFI for turning the vision into reality.





“We recognise that, in order to support environmentally sustainable growth globally, it is necessary to scale up green financing. The development of green finance faces a number of challenges, including, among others, difficulties in internalising environmental externalities, maturity mismatch, lack of clarity in green definitions, information asymmetry and inadequate analytical capacity, but many of these challenges can be addressed by options developed in collaboration with the private sector.

“We believe efforts could be made to provide clear strategic policy signals and frameworks, promote voluntary principles for green finance, expand learning networks for capacity building, support the development of local green bond markets, promote international collaboration to facilitate cross-border investment in green bonds, encourage and facilitate knowledge sharing on environmental and financial risks, and improve the measurement of green finance activities and their impacts.”

– G20 Leaders Communiqué,
September 2016

Recommendation 1: Setting a clear path

The action

Establish a holistic sustainable finance strategy and action plan to mobilise the private and public capital needed to achieve the green finance vision and underlying climate and SDG targets. These should be mirrored in broader economic plans.

The strategy should include:

- Clear national positions on ethical and sustainability issues, such as methods of energy production and sectors of the economy receiving public investment and support, that reflect global and national priorities.
- A clear funding strategy that enables disruptive green innovation, including financial services, to develop along a complete path from initial ideas through testing and piloting into mainstream commercialisation.
- A clear path to maximising the role of alternative green finance, such as peer-to-peer lending, crowd-funding and angel investing.
- Steps to develop 'energy efficiency' as a new asset class, in particular building on the work of the Green Investment Bank in renewables.
- Further developing green infrastructure as an asset class and associated project pipelines by harmonising documentation, enhancing project transparency and identifying international best practice.
- Open-access benchmark(s) of corporate performance on green, across financial and all other sectors of the economy, with rankings based on alignment with green principles, integration into financial disclosures and alignment with environmental SDG targets and the two degree climate goal.
- Establishing a directory of UK-based funds investing in environmental initiatives to signal commitment to the global market and attract issuer and project roadshows to the UK.

The rationale

The UK must stay committed and proactive on climate change and environmental sustainability to create the enabling environment for UK green innovation and promote the development of a leading green finance centre. A clear path would stimulate green business, technology, projects and innovation, and in turn, the financial services industry would respond with the products and services to support them. The implementation of nationally determined contributions (NDCs) requires capital market assistance and predictable, standardised project financing solutions. The experience gained in green financing in the UK can be exported to other markets.

To achieve this, a dynamic test bed needs to be in place at home. The UK economy, led by the Government, should focus on the longer term by viewing the low-carbon transition and associated technologies and finance as an investment and opportunity rather than a cost or obligation. To take a lead internationally, the UK could focus on progressing domestically one or two of the global step changes required to really stimulate green finance, such as the pricing of carbon.

Accelerating delivery

Consider giving powers to a new or existing independent body to set the long-term path for the UK green economy, with all major stakeholders involved and responsible for success. This could link into HM Treasury and the Department for Business, Energy and Industrial Strategy through a 'green economy policy committee'. The UK benefits from a concentration of world-leading thinkers on green finance and this should be leveraged to bring credibility to the body and strategy and to advocate and build connections for green finance across the public and private sectors.

LINKS TO ▷

G20 option 1: Provide strategic policy signals and frameworks

Recommendation 2: Strengthening data and transparency to improve understanding of risks, impacts and opportunities

The action

At an institutional level, deepen environmentally-related financial disclosure. Implement the recommendations of the Task Force on Climate-related Financial Disclosure and consider extending its principles and approach to cover broader environmental systemic risks in exposed sectors. Issues to cover include food production, biodiversity loss and clean water availability. Risk metrics need to be more relevant for the long-term (e.g. looking at potential losses over a multi-year horizon or using more forward looking analyses rather than historical data).

At the market-wide level, relevant sector regulators should extend the analysis of environmental systemic risk, started by the Prudential Regulation Authority's review of the impact of climate change on the UK insurance sector and staff working paper on the impact of climate change on a central bank's objectives⁶⁸. The analysis could be extended beyond the insurance industry to wider sectors of financial services and the economy, and also beyond climate change to include other environmental risks such as land use, biodiversity and water. To raise the profile of the issues, and the quality of responses, questionnaires could again be sent by the relevant regulator to CEOs. Further support should also be given to the industry to implement and internalise the existing climate-related work.

The risk profile of green finance should be evaluated and the findings published to highlight whether it has a higher, or lower, risk profile to non-green finance. On the back of this, capital weightings should be reviewed to ensure that environmental risks and any benefit of green finance is properly reflected (for example, a 2013 US study found that mortgages secured against energy efficient homes have a 32% lower likelihood of default)⁶⁹. This work can start with better disclosure – by requiring that banks tag their mortgage lending using energy efficiency standards⁷⁰.

The rationale

It's important to develop a clear and comprehensive understanding of the economics driving the allocation of capital, and risks and market failures in this model; assess current levels of action on managing environmental risks; and raise awareness across the financial sector of the associated risks and opportunities. Once the level of risk and action is understood, public sector interventions could be used to change these economics to lower any environmental systemic risks and ensure a longer term approach to mitigation and management. This will help pave the way for future proof finance. The increase in published information would shed light on the size and nature of environmental risks and further enable capital to be deployed towards low-risk options. The risk of increases in the cost of capital will motivate companies and institutions towards more effective management of environmental risk.

LINKS TO ▷

G20 option 6: Encourage and facilitate knowledge sharing on environmental and financial risk

68 <http://www.bankofengland.co.uk/Pages/climatechange.aspx>

69 Home Energy Efficiency and Mortgage Risks, Institute for Market Transformation, 2013

70 How green tags could boost finance for energy efficiency, Environmental Finance article by Nick Robins and Peter Sweatman

Recommendation 3: Promote voluntary principles for green finance and measure impact

The action

Establish consistency across institutions and financial centres by building green finance on a base of common green principles, labels, metrics and minimum criteria and supporting successful market-led efforts such as the Green Bond Principles⁷¹ coordinated by the International Capital Market Association (ICMA). Products and approaches should remain flexible to meet the needs of different investors and could be supported by stock exchange minimum standards for green disclosures and rating agency methodologies to incorporate green criteria into equity and credit ratings.

Build on the success of the green bond market to take labelling 'upstream' into the banking sector and 'slipstream' into equity markets, for example through the green tagging of loans⁷². Enable markets to expand into different shades of green, keeping principles and criteria broad and leaving investors to select products based on preferences for use of proceeds. Harmonisation could be provided by:

- Consistent labelling of green financial products through the development of industry guidelines covering information to be provided in product prospectuses and marketing documents. Such labelling could also support the revitalisation of debt securitisation as a vehicle for green finance.
- A common checklist covering the principles, processes and criteria to be completed at the institutional and/or product level and published on the financial institution's website or in related marketing.
- Common performance metrics for green impacts and established methodologies, approaches and verification procedures for their calculation.
- A self-nominated single public directory of institutions committed to green finance and the kite marks of principles and standards adhered to by each institution, e.g. Green Bond Principles⁷³, Equator Principles, etc.

The rationale

Consistency and confidence from a common set of minimum standards and guiding principles will help remove the risk of 'green washing' and reputational risk to green finance. It can also provide clarity to investors and reduce their administrative burden of understanding the green credentials of each product. Principles and industry developed frameworks, eligibility criteria and certification schemes are preferred over regulations to stimulate innovation, diversity and mainstreaming of green finance. A single directory will give confidence to international investors and issuers that the UK is a centre for reputable green finance. Once institutions have the tagging capabilities to define, measure and verify their 'green' project books, they could also become bastions of green bond issuance, freeing additional green capital in the process and enhancing market liquidity.

LINKS TO ▷

G20 option 2: Promote voluntary principles for green finance

G20 option 7: Improve the measurement of green finance activities and their impacts

71 <http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/green-bonds/green-bond-principles/>

72 <https://www.environmental-finance.com/content/analysis/how-green-tags-could-boost-finance-for-energy-efficiency.html>

73 <https://www.ft.com/content/75aec86a-e6cb-11e5-a09b-1f8b0d268c39>

Recommendation 4: Enable connection and collaboration

The action

Within the UK, it is important to establish a mechanism for greater collaboration on green issues across different sectors of the economy. For example, greater exchange of ideas and insight could help to pull in insurers earlier when investors are looking at green projects in emerging markets – to reduce the risk and facilitate financial flows. One objective is to enable greater transferability of people across industry, government, regulators and academia to accelerate the transfer of knowledge and understanding. This could be facilitated by a green finance secondee programme and extended internationally, in particular into emerging markets. The UK should also ensure it has fast, cheap and accessible internet and digital infrastructure to enable increased virtual collaboration.

For the next five years in particular, green or broader sustainable finance should remain an agenda item for all global financial meetings, including WEF Davos and the G20.

“To reach escape velocity, market participants and public authorities will need to coordinate to deliver common green bond frameworks and definitions, and other necessary supporting infrastructure, to build local and cross-border markets.”
– Mark Carney, Governor of the Bank of England, September 2016

The rationale

Collaboration will lead to the faster development of the green finance market at an international level and maximise the impact of the financial sector in achieving green objectives. As well as being an exporter of green finance capability, there is a lot the UK could learn from initiatives in other finance centres too.

Accelerating delivery

Internationally, the UK should work within a network of green finance centres to align standards and exchange learning, ideas and expertise with the objective of building environmentally conscious financing globally, similar for example to the current Sustainable Stock Exchange Initiative. The UK should seek to integrate where possible with overseas green finance initiatives such as any European green capital markets union. The network would recognise the areas of leadership, capabilities and comparative advantages of each centre but also common areas of transition challenges building on the work of the UNEP Inquiry, FSB Task Force and G20 Green Finance Study Group. The focus of the UK should be on using its size, networks and strengths as a global financial centre to scale and mainstream green finance and act as a central hub for connecting supply and demand for green finance and green financial learning.

LINKS TO ►

G20 option 3: Expand learning networks for capacity building

G20 option 5: Promote international collaboration to facilitate cross-border investment in green bonds

WHAT WE CAN LEARN FROM OTHER COUNTRIES

The UK must take note of the emergence of other centres of green finance and emulate suitable best practice. Examples include:

China

China has established standards for green bonds and environmental disclosure and now, through the green finance mechanism, may also offer government interest subsidies via refinancing and professional guarantees, set up a national green development fund, to improve investment returns; and urge local governments to include green financing into their annual task list.⁷⁴

Emerging markets

The policies, principles, guidelines and roadmaps of the 12 emerging market countries engaged in the Sustainable Banking Network⁷⁵.

Europe

The European Commission is developing a “comprehensive European strategy on sustainable finance”, as well as a High Level Expert Group (HLEG) on sustainable finance to include representatives from across the sector⁷⁶.

Japan

Japan’s Principles for Financial Action towards a Sustainable Society.⁷⁷

France

The French government legislated on disclosure of climate change risks with the publication of Article 173, which is part of the 2015 Law on Energy Transition for Green Growth. It has also announced a government green bond programme to begin in early 2017.

Sweden

Sweden’s innovation on green mortgages and municipal green financing.

Bangladesh

Bangladesh’s central bank concessionary refinancing for domestic bank green lending to promote renewable energy and environment friendly financial activity. 47 green product lines are now eligible for refinance⁷⁸.

US

The US National Association of Insurance Commissioners (NAIC) Insurer Climate Risk Disclosure Survey now receives responses from 90 companies across 18 states. The disclosures and their ratings are made public.⁷⁹

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Recommendation 5: Embed change

The action

Investing in a green future should form a core part of a broader agenda of twenty-first century cultural change in financial services. To achieve this, it will be important to embed environmental awareness into:

- Fiduciary duty, stewardship and governance regulations and guidance.
- Corporate vision and purpose, and associated governing documents, led by statements of support by industry CEOs.
- Capital allocation and the role of actuaries.
- Relevant qualifications required by the Financial Conduct Authority Handbook and university finance courses.
- Citizen financial education to build understanding of their holdings and the potential non-financial positive impacts of their pension funds and other savings investments.
- Public sector training, to build understanding of the financial markets and their potential to achieve positive societal (including environmental and sustainability) outcomes.
- Wealth management advice to inform the next generation of high net worth individuals on the potential positive impacts of wealth.

The rationale

Environmental awareness should be embedded into the DNA of the financial sector to help bring green finance into the mainstream and to maximise innovation and benefits. Capacity building will give finance professionals the confidence to discuss green considerations with clients and integrate them into decision making (especially key for investment consultants). It will also bring comfort to clients that their financial managers understand the environmental as well as the financial sector. The desire of all communities to improve their immediate environment could also help to bring a green dimension into current and future pools of retail assets.

“A big part of mainstreaming green finance is changing the way financial professionals think about the purpose of finance and the role of the industry. The academic and professional institutions of the UK – supported by the UK’s world leading luminaries on green finance – must, and have the capability to, lead on training a new generation of financial professionals with long-term, sustainable finance values.” – **Aniket Shah, UNSDSN, Investec and GFI member**

Recommendation 6: Public sector leadership

The action

To drive change, the UK Government should lead by example through targeted communication and use of public resources. It should make clear the frameworks under which the UK's path to a lower-carbon future will be implemented and financed and build this into a cross-sector strategy, as well as ensuring that existing initiatives, such as the British Business Bank and UK Industrial Strategy, are aligned with national climate objectives. Public sector action should include:

Communication to the market:

Clear signals from Government, through regulators and industry associations, to the financial market, in particular financial advisors (actuaries, consultants, valuations analysts, accountants) that the Paris Agreement is in place and action and responsibility needs to be taken across all sectors of the industry.

Scale-up funds:

Build on the success and experience of the Green Investment Bank and International Climate Fund to develop fund mechanisms that can:

- Help aggregate green projects into investible products. This is especially important for energy efficiency and both local and developing country initiatives where the average project size may be smaller.
- Draw in private sector investment for taking new green market models (technologies, business and financial products and services) on a supported path from idea, through financed business development to commercialisation. Focus on those areas with existing challenges to growth.

Risk support mechanism:

Develop mechanisms to support risk taking (e.g. for political, technology and currency risk) by the private sector in green finance products such as green bonds. This would better enable the private sector to invest more in non-sterling currencies and emerging markets, and to export knowledge and expertise from the UK to build effective capital markets and green finance systems overseas.

Alignment of public resources with green priorities:

- Green bond issuance to set an example and increase liquidity in the market.
- Enable public sector pension funds to go down the scale of credit risk to invest into green projects and real assets (aligned with their liabilities) and extend this and the integration of green considerations, through The Pensions Regulator, into private pension funds.
- To ensure after playing a role in demonstrating new green products/services that public finance does not crowd/price out private investors, e.g. by accepting low risk return profiles.

Rule changes:

- Leverage the trend towards defined contribution pensions by changing the requirement for daily liquidity to enable investment into longer-term projects such as infrastructure. Require 'auto-enrolment' to default into 'green' and climate proof funds.
- Reduce regulatory red tape for green innovation, such as in permitting and approvals.
- Review fiscal frameworks to identify limited interventions to accelerate the up-take of green finance, for example tax offsets for investing in renewables or energy efficiency assets, or specialised green vehicles with lower corporation tax.
- Integrate environmental risks (identified in recommendation 2) into capital weighting requirements, such as lower risk weightings for green mortgages.

The rationale

Policymakers hold the key to securing the commitment and unlocking the resources of the private sector. The UK private sector and international investors and project developers need a strong signal from the UK Government that it is committed to green priorities and leading on this agenda.

LINKS TO ►

G20 option 4:

Support the development of local green bond markets

About the City of London's Green Finance Initiative

The City of London Corporation – the body responsible for running the Square Mile – regards green finance as prudent, profitable and one of the best tools available in the race to cut carbon. That's why, in January 2016, we launched our Green Finance Initiative in partnership with both industry and the UK Government departments HM Treasury and the now Department for Business, Energy and Industrial Strategy. It aims to:

Provide public and market leadership on green finance;

- Advocate for specific regulatory and policy proposals that might enhance the green finance sector worldwide; and
- Promote London and the UK as a leading global centre provision of green financial and professional services.

For more information, visit www.greenfinanceinitiative.org

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Comments

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Green
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City of London Corporation Research Report

**GLOBALISING
GREEN FINANCE:
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