The UK Regulators and Climate Change

	The Bank of England - Prudential Regulation Authority	The Financial Conduct Authority	The Financial Reporting Council	The Pensions Regulator
Remit	The Prudential Regulation Authority (PRA) sits within the Bank of England and is responsible for the prudential regulation and supervision of around 1,500 banks, building societies, credit unions, insurers and major investment firms.	The Financial Conduct Authority (FCA) is the conduct regulator for 56,000 financial services firms and financial markets in the UK and the prudential regulator for over 18,000 of those firms.	The Financial Reporting Council (FRC) is the UK's independent regulator for accountants, actuaries and auditors, responsible for promoting transparency and integrity in business. It also sets the UK Corporate Governance Code and Stewardship Code.	The Pensions Regulator (TPR) is the public body that protects the UK's workplace pensions. TPR makes sure employers, trustees, pension specialists and business advisers can fulfil their duties to scheme members. It has a role in driving up standards of governance and trusteeship.
Joint statement on climate change	The UK's regulators have published a joint statement on climate change to set out how climate-related financial risks require a coordinated approach and collective action to address.			
Action on climate change	**Published reviews into the financial risks from climate change facing the insurance sector and banking sectors.** These reviews set out how climate change poses financial risks to these firms, and how these risks have distinct characteristics that require an enhanced approach. **Published a Supervisory Statement to enhance banks' and insurers' approaches to managing the financial risks from climate change,** setting out expectations for firm's practices across governance, risk management, scenario analysis, and disclosure. **Asked insurers to consider the impact of different physical and transition risks scenarios** as part of a UK market-wide insurance stress test. **Announced plans to test the financial system's resilience to climate-related financial risks** as part of the Biennial Exploratory Scenario (BES) stress test. **Established the Climate Financial Risk Forum, jointly with the FCA,** to build intellectual capacity across the private sector for assessing the financial risks from climate change. **Co-founded the Network for Greening the Financial System** and chair work stream two on macroeconomic and financial stability implications of climate change. **Promoted the importance of climate-related disclosures by supporting TCFD,** which was set up under the Governor Mark Carney in his role as FSB chair. **Announced its intention to undertake climate disclosures in line with the TCFD** that will outline how the Bank of England manages the financial risks from climate change, becoming the first central bank to do so across its entire operations. **Co-founded the Sustainable Insurance Forum** to bring together insurance supervisors and regulators to address sustainability challenges. **Undertook analysis on the green mortgage market,** considering the relationship between energy efficiency and credit risk.	**Extending the remit of the Independent Governance Committees** to cover consideration of firm's Environmental, Social and Governance priorities and how they respond to member concerns, subject to consultation. **Launched a Green FinTech Challenge** to encourage firms to develop innovative solutions to support the UK's transition to cleaner economic growth**.** **Established the Climate Financial Risk Forum, jointly with the PRA** to build intellectual capacity across the private sector for assessing the financial risks from climate change. **Published a discussion paper on climate change and green finance** setting out a range of proposals in relation to climate change. **Joined the IOSCO sustainable finance network** to collaborate with other IOSCO members on sustainable finance issues. **Introduced new requirements** to improve shareholder engagement and increase transparency around stewardship. **Launched a Discussion Paper on building a regulatory framework for effective stewardship,** jointly with the FRC, to consider how asset owners and asset managers can most effectively integrate climate change and other environmental, social and governance factors into their investment activities.	**The Corporate Governance and Stewardship Codes** encourage companies and investors to report on how they have taken into account long-term sustainability factors (including environmental factors) into their decision making**.** Jointly with the FCA, the FRC also published a Discussion Paper on building a regulatory framework for effective stewardship. **Through the Joint Forum on Actuarial Regulation,** the FRC highlights the risks to high quality actuarial work arising from climate change in the annual Risk Perspective. **The FRC monitors whether companies are complying with the statutory disclosure requirements of the strategic report** (which includes reporting on principal risks and uncertainties) as well as any financial statement implications of climate change. **The FRC's audit monitoring will** consider the adequacy of the auditors' work over principal risk disclosures (including climate risk) and the financial statement implications of climate change. **The Financial Reporting Lab** will produce a report this year that will provide practical guidance on best practice climate reporting. **The FRC's project on the Future of Corporate Reporting** will consider the need for improved sustainability information from companies.	**Updating Defined Contribution investment guidance** to reflect Government regulation to clarify and strengthen trustees' duties, including in relation to Environmental, Social and Governance considerations, including climate change. **Contributed to the revised Stewardship Code** consultation welcoming the code as a tool to improve investment governance and risk management on Environmental, Social and Governance issues, including climate change. **Co-established an industry working group on climate change** to produce guidance for pension schemes on climate-related practices across governance, risk management, scenario analysis, and disclosure. TPR expect to consult on this guidance in late 2019 with a view to putting it on a statutory footing during 2020 as part of the Governance Code required by the Occupational Pension Schemes (Governance) (Amendment) Regulations 2019. **Monitoring the landscape** through questions on climate change in annual governance surveys of Defined Benefit and Defined Contribution schemes.
Adaptation Reporting	The UK regulators will submit a report on actions they are taking to strengthen preparedness to climate change impacts in their respective remits under the Adaptation Reporting Power, along with 84 other organisations[27].		These reports will provide vital intelligence on the interaction between financial regulation and climate change and will provide the opportunity to collectively strengthen existing approaches as well as to inform future Government action.	

*The Prudential Regulation Authority published a Climate Change Adaptation Report as part of the second round of adaptation reporting powers under the Climate Change Act[28].

We recognise that the Government also has a responsibility to act. We have already delivered on the Green Finance Taskforce's recommendation **to strengthen and clarify trustees' investment duties so that from October 2019 occupational pension schemes will be required to publish their policy on financially material considerations, including those arising from climate change**[29]. This will also require relevant schemes to publish their policies in relation to the stewardship of investments. The Asset Management Taskforce, launched by the Government in October 2017, has recently established a stewardship sub-group that will consider how the Taskforce can promote and enhance the UK as a centre of excellence for sustainable stewardship[30].

The Government will be taking additional action to strengthen our response by clarifying the roles and responsibilities of the UK regulators to take account of these issues.

- **For the Prudential Regulation Authority and Financial Conduct Authority, we will ensure that the need to have regard to the COP21 Paris Agreement when considering how to advance their objectives and discharge their functions is reflected in the next Letter of Recommendations that HM Treasury issues to each authority[31]. Likewise we will ensure there is a similar provision in the remit and recommendations letter that HM Treasury issues to the Financial Policy Committee[32].**
- **For The Pensions Regulator, we will be including climate-related financial issues in the Government's allocation letter with a view to embedding considerations in other documents when the opportunity arises.**

The Government welcomes the actions that leaders from across the financial sector have already taken to galvanise action.

For example, the Transition Pathway Initiative (TPI) (see Case Study) helps asset owners research and track investments and engage with individual companies on how they manage their greenhouse gas emissions[33]. We encourage market participants to sign up to voluntary principles as relevant to their sector, such as the UN Principles for Responsible Investment, UN Environment Programme Finance Initiative's Principles for Sustainable Insurance and Principles for Responsible Banking[34,35,36].

Case Study: The Transition Pathway Initiative – pension funds going green

The TPI is a global initiative to assess companies' preparedness for the transition to a low-carbon economy. It was initially established as a joint initiative between the Environment Agency Pension Fund and the Church of England National Investing Bodies to support efforts to address climate change.

Today, over 40 investors globally have pledged support for the TPI. Jointly they represent over £10.3 trillion of combined assets under management. The online tool, which is free-to-use and open-to-all, has analysed the performance of 300 companies in 14 sectors, including the airline and car industries. This sort of information helps asset owners research and track investments and engage with individual companies on how they manage their greenhouse gas emissions.

"Businesses should be able to explain to investors how they plan to manage climate change risks, invest and innovate on the way to the zero-carbon economy of the future. With the launch of the Transition Pathway Initiative, asset owners from around the world are sending a strong signal that portfolios will align in the future with companies that are taking the transition to a low carbon economy seriously" – Emma Howard-Boyd, Chair of the Environment Agency and UK Commissioner to the Global Adaptation Commission.

Fostering transparency and embedding a long-term approach

One of the essential functions of financial markets is to price risk to support informed, efficient capital-allocation decisions. As firms develop their response to the financial implications of climate change their approaches must be built upon transparent and decision-useful climate-related information and a long-term approach. The Government will take action by:

- Setting expectations and ensuring a coordinated approach on TCFD;
- Supporting high quality TCFD disclosure and reviewing progress; and
- Building on TCFD to broaden action on transparency.

Setting expectations and ensuring a coordinated approach on TCFD

In 2015, in response to a call from G20 leaders, the Financial Stability Board (FSB) established the private sector TCFD to enhance transparency on the financial risks and opportunities from climate change[37]. One area of innovation the TCFD introduced was around scenario analysis which can foster a longer-term approach to considering climate-related financial risks and opportunities.

The Government formally endorsed the TCFD recommendations in September 2017[38]. We welcome the progress being made implementing the recommendations on a voluntary basis. **The Government expects all listed companies and large asset owners to be disclosing in line with the TCFD recommendations by 2022.**

Box 4 – The TCFD recommendations

The TCFD has established a globally recognised framework through which exposure to climate-related financial risk and opportunities can be disclosed. A total of 785 organisations are now supporters of the TCFD, including the world's largest banks, asset managers and pension funds, responsible for assets of $118 trillion.

Core Elements of Recommended Climate – Related Financial Disclosures

Governance
The organisation's governance around climate-related risks and opportunities

Strategy
The actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning

Risk Management
The processes used by the organisation to identify, assess, and manage climate-related risks

Metrics and Targets
The metrics and targets used to assess and manage relevant climate-related risks and opportunities

We also welcome the actions being taken by UK regulators with respect to disclosure. For example, in their October 2018 discussion paper on climate change and green finance, the FCA sought views on the value of introducing a requirement for financial services firms to report publicly on how they manage climate risks to their customers and operations as well as feedback on further steps it should consider to improve climate-related disclosures by issuers of securities admitted to trading on a regulated market[39]. The PRA have published a supervisory statement to enhance banks' and insurers' approaches to managing the financial risks from climate change, including setting expectations on disclosure[40].

To meet the ambition of this strategy, we believe there needs to be an improvement in the quality and quantity of climate-related financial disclosure. Consistent with the recommendation of the NGFS that policymakers and supervisors consider further actions to foster broader adoption of the TCFD recommendations, the Government will be:

- **Establishing a joint Taskforce with UK regulators, chaired by the Government, to ensure a co-ordinated approach on climate-related financial issues. The Taskforce will examine the most effective way to approach disclosure, including exploring the appropriateness of making reporting mandatory.**
- **Taking forward discussions with relevant international standard setters to promote internationally consistent disclosure.**

Supporting quality TCFD disclosure and reviewing progress

Disclosure is only useful if it guides decision-making. The Government recognises there are still challenges for industry in developing approaches to implementing the TCFD recommendations and that best practice will take time to develop.

Supporting the private sector to address these challenges, for example through climate and environmental related data and analytics, presents a significant commercial opportunity for the UK, as explored further in Chapter 3.

We recognise the Government can also play an important role in providing climate-related information to the market in a proportionate manner, as evidenced by our approach to streamlining the UK's energy and carbon reporting framework.

Case Study: The Streamlined Energy and Carbon Reporting (SECR) Framework

The Government has introduced a new Streamlined Energy and Carbon Reporting framework which came into force from 1 April 2019 to simplify carbon and energy reporting requirements for businesses. This new framework will extend the number of organisations required to report on their energy use and emissions in their company annual reports, as well as an intensity metric and energy efficiency action in the previous 12 months. This mandatory reporting obligation now falls on all large or quoted companies and large limited liability partnerships incorporated in the UK, an estimated 11,900 organisations, increasing the coverage from an estimated 1,200 quoted companies. This broadening and simplification of energy and carbon disclosures will provide a level playing field in reporting across large businesses.

We are working with the FRC to help facilitate digital reporting of SECR disclosures and to ensure the information is more accessible for external stakeholders.

We are also taking action to support the implementation of TCFD through guidance:

- **The Government and The Pensions Regulator have jointly established an industry group to develop TCFD guidance for pension schemes. The Pensions Regulator expect to consult on this guidance in late 2019 with a view to putting it on a statutory footing during 2020 as part of the Governance Code required by the Occupational Pension Schemes (Governance) (Amendment) Regulations 2019.**

The Government will work closely with the GFI to build capacity on TCFD-related issues and welcomes the actions UK regulators, and other actors, are taking, including:

- The PRA and FCA's initiative to establish a Climate Financial Risk Forum to build capacity and share best practice across financial regulators and industry in order to advance financial sector responses to the financial risks from climate change[41];
- The NGFS taking forward work to provide a small number of high-level scenarios which can be used by industry to support implementation of the TCFD's recommendations[42]; and
- Initiatives such as the TCFD Knowledge Hub[43], which provides resources to support TCFD implementation, powered by the Climate Disclosure Standards Board.

The Government also recognises we have an important role, working closely with other stakeholders, in reviewing progress. That is why:

- **The Government will continue to explore actions we can take to advance the greening of the UK financial system and will publish an interim report by end of 2020, including progress on TCFD implementation.**

Building on TCFD to broaden action on fostering transparency

The TCFD recommendations have been instrumental in developing a framework for disclosing climate-related financial risks and opportunities. Actions to foster transparency can also support the Government's domestic and international commitments on the environment and sustainable development. That is why the Government is supporting the work of the World Benchmarking Alliance to develop transformative benchmarks that will compare companies' performance on key areas of sustainability and impact on the UN Sustainable Development Goals.

Recent reports such as those from the Intergovernmental Science and Policy Platform on Biodiversity and Ecosystems Services (IPBES)[44] and the OECD[45] are strengthening the evidence base on the potential systemic economic and financial impacts of nature-related issues such as biodiversity loss and the private sector have highlighted the need for a complementary approach to TCFD on these broader issues[46].

To accelerate progress, the Government will:

- **Work with international partners to catalyse market-led action on enhancing nature-related financial disclosures.**

Work in this area will help companies understand what financial markets require from disclosure in order to measure and respond to nature-related financial risks, building on a report[47] presented to the G7 Environment Ministers' meeting in May this year. It will also complement the global review of the economics of biodiversity led by Professor Sir Partha Dasgupta, discussed earlier in Box 3.

Catalysing market-led action will mirror the success of the TCFD's approach by supporting the private sector to develop consistent and comparable disclosures in order to better manage, measure and respond to nature-related financial risks.

Improving financial risk understanding related to biodiversity loss and natural capital degradation will also support financial institutions and policymakers to differentiate between companies and projects that are aligned with the implementation of international biodiversity commitments, the UN Sustainable Development Goals and the UK's 25 Year Environment Plan.

Building robust and consistent green financial market frameworks

Clear and consistent frameworks, such as green definitions and standards, will be important to ensure confidence in the effective functioning of green financial markets. The Government will be taking action through matching the ambition of the objectives of the EU's Sustainable Finance Action Plan, creating Sustainable Finance standards and working with the Fair and Effective Markets Review.

The EU's Sustainable Finance Action Plan

The Sustainable Finance Action Plan was launched by the European Commission in May 2018 as part of the EU's response to the Paris Climate Agreement[48]. Its three objectives are:

- To reorient capital flows towards sustainable investment;
- To manage financial risks stemming from climate changes by considering environmental and social goals in financial decision-making; and
- To increase transparency in financial products so that citizens can make informed decisions about their investments.

The UK has formerly endorsed these objectives and will continue to use its knowledge and expertise to support the EU's objectives on Sustainable Finance.

- **The Government commits, in relation to green finance, to at least match the ambition of the three key objectives included in the EU's Sustainable Finance Action Plan.**

In accordance with the EU Sustainable Finance Action Plan, the EU proposed three legislative files. These are on disclosures, benchmarks, and a new sustainable finance framework (commonly known as a taxonomy). The UK has been closely involved in all three files and continues to participate in Council discussions on the taxonomy file and the Member States Expert Group.

To ensure the Government has the option of onshoring the EU's proposals into UK law, regardless of the EU Exit outcome, all three files are included as part of the Financial Services (Implementation of Legislation) Bill.

Creating sustainable finance standards

Together with the private sector, we have funded the British Standards Institution (BSI) to design and roll out a programme of internationally relevant standards on Sustainable Finance, starting with the development of three new Publicly Available Specifications (PAS). The scope of the three PAS documents has been established following an extensive industry engagement exercise, and the BSI continues to coordinate with industry leaders as these documents are developed. Two of the Sustainable Finance PAS standards currently in development are:

- **PAS 7340: Sustainable Finance Framework:** A guide to outline a framework for, and provide guidance on, implementing principles and approaches to sustainable finance within financial services organisations. It establishes guiding principles and common terms and definitions related to sustainable finance to help organisations of all sizes and sectors.
- **PAS 7341: Sustainable Investment Management:** A specification setting out requirements to establish, implement, and manage the process of integrating responsible and sustainability considerations into investment management. It includes stewardship and the levels of engagement needed to demonstrate ongoing sustainable investment management and practices.

The BSI are currently refining the scope of the third PAS which will seek to set out requirements for the assessment, governance, labelling and communication of funds presented as having sustainable credentials.

The Draft PAS 7340 is expected to undergo public consultation in July-August, and we expect PAS 7341 to open for consultation soon thereafter. **The Government encourages all interested parties to respond to the consultation** to help ensure the standards are robust and drive increased alignment of activity with our global sustainability goals.

The International Organisation for Standardisation (ISO) has established a new Technical Committee on Sustainable Finance which is chaired by the UK[49]. The Technical Committee will develop international standards on the topic of sustainable finance, and the UK-led PAS work will look to inform and feed into this activity.

The Fair and Effective Markets Review (FEMR)

The FEMR is a working group, led by the Bank of England and co-chaired with HM Treasury and the FCA[50]. Putting good conduct and accountability at the heart of financial markets, the FEMR will:

- **Work to understand the potential or actual barriers to the growth and effectiveness of green finance.**

This will engage a broad range of market participants to gather views on the level of transparency and disclosure. It will also explore metrics for measuring the impact of green finance and assess the availability of comparable data. This exercise will feed into the work of the PRA/FCA's Climate Financial Risk Forum and inform the continued development of the Government's Green Finance Strategy. Overall, the work is intended to support the development of the green finance market, which will play a vital role in the UK's transition to a clean and resilient economy.

Driving the greening of the global financial system

The UK has taken a leading role in shaping the global agenda on climate change and green finance, including through our representation in international forums and our extensive diplomatic network. These include for example:

- Establishing the G20 Green Finance Study Group with China in 2016 which provided options to G20 members on how to scale up green finance globally[51]. The Group's synthesis report was welcomed at the leader's summit in China and provided global signalling to policymakers and financial markets worldwide of the need for green finance. The UK has continued to chair the group with China under Germany and Argentina's G20 Presidencies;
- HM Treasury recently became a founding member of the Coalition of Finance Ministers for Climate Action and endorsed the Helsinki principles with 21 other finance ministers. The Coalition, which was formed in April 2019, convenes finance ministers committed to taking collective and domestic action on climate change and achieving the Paris Agreement's objectives;
- The Governor of the Bank of England chaired the Financial Stability Board (FSB) during the development of the TCFD recommendations and the Bank of England was a founding member of the NGFS; and
- UK financial services expertise has contributed to the EU Sustainable Finance Action plan.

Recent years have witnessed significant progress. Through the actions of central banks and the private sector there is increasing momentum to integrate climate and environmental factors more comprehensively into the global financial system. The real-world economic changes needed to shift investment, supported by global initiatives such as the Green Climate Fund, are underway.

At the same time, we recognise further urgent action is required to meet the challenge set in the 2015 Paris Agreement to align financial flows with low carbon and resilient growth.

The Government commits to using the UK's global influence to promote the greening of the financial system internationally. This includes playing an active role in the Coalition of Finance Ministers for Climate Action; leading on the adaptation and resilience strand at the United Nations (UN) Climate Action Summit; and exploring initiatives to accelerate alignment of finance ahead of COP26 in 2020.

To drive the greening of the global financial system, the Government will:

- Champion the resilience agenda;
- Drive action through international collaboration;
- Partner with the private sector;
- Explore initiatives to accelerate alignment to the Paris Agreement; and
- Align the UK's Official Development Assistance (ODA) spending with the Paris Agreement.

Championing the resilience agenda

Building resilience to the physical risks from climate change will be essential as global temperatures increase. More fully integrating physical risks into the financial system and ensuring adaptation as well as mitigation is sufficiently addressed will be a key focus of our strategy. That is why the UK and Egypt will co-chair the global effort to promote resilience and adaptation to climate change at the UN's Climate Action Summit in September 2019.

The Government aims to promote systemic shifts in the way that public and private financial actors plan and invest their resources to adapt to current climate impacts and build resilience for the future. These build on a number of the recommendations outlined in this strategy. The governments of Bangladesh, Malawi, the Netherlands and St Lucia are working with us to achieve this supported by the United Nations Development Programme, and working closely with the Global Commission on Adaptation, the World Bank, the World Economic Forum and the UN Environment Programme.

Driving action through international collaboration

Addressing the financial risks and opportunities arising from climate change and environmental degradation is a global challenge, and requires a collective, global response. We will drive international collaboration through our bi-lateral partnerships, our long-standing relationships with international organisations and our international network.

Partnerships are key to our work. The UK's regular Economic and Financial Dialogues with China (see Case Study), Brazil and India include green finance as an area for collaboration in financial services. In 2018, we also strengthened our relationships with China, Colombia, and Mexico and Colombia though

Case Study: UK and China partnership on green finance

At the 9th and 10th UK-China Economic and Financial Dialogue (EFD) the UK and China recognised each other as their primary partner in green finance for capital raising, product innovation and thought leadership. We agreed a set of joint priorities which are now being supported by the UK PACT programme. At the 10th EFD, the UK-China Green Finance Centre, launched by the City of London Green Finance Initiative and the China Green Finance Committee in 2018, was formally recognised by both governments.

This will build on the work of the UK-China Green Finance Taskforce, which launched in 2016 with the aim of increasing areas of collaboration on greening the Belt and Road Initiative, TCFD implementation, ESG investing, green asset securitisation, and green standards, as well as capacity building. The group jointly launched a three-year TCFD-implementation pilot where ten leading financial institutions committed to adopting TCFD recommendations under the coordination of PRI and published an Action Plan setting clear expectations for the pilot.

The group has also developed a series of Green Investment Principles to promote sustainable infrastructure investment. As part of this work, a joint secretariat in the UK and China has been established to further develop the principles, ensure robustness, and raise ambition for green, low-carbon and climate-resilient investment. The joint Taskforce has also partnered on green and clean technology and agreed to set-up the London-Beijing Green Technology Investment Gateway.

the UK Partnerships for Accelerated Climate Transitions (UK PACT) programme.

The Government continues to support the greening of financial sector and building resilient outcomes through our long-standing collaboration with key international organisations. We will do this, in part, via our role in the Coalition of Finance Ministers and in partnership with the World Bank as its secretariat.

The UK amplifies its international assistance by collaborating with multilateral development banks (MDBs) and driving their climate ambition through Board and investment engagement. MDBs often have unrivalled reach in developing country finance ministries, national development banks and others.

As a Board Member and shareholder of the MDBs, the UK is using its expertise to drive ambition on increased leveraging of financial flows from private sources and in-country policy support for greening economies. This includes pushing MDBs to: raise ambition to align with the Paris Agreement, using their existing climate leadership to encourage climate action; adopt stretching private finance mobilisation targets where appropriate; and advocate to raise awareness of climate-related financial risks. This is especially important in their work establishing capital markets in the developing world – starting with implementing the TCFD recommendations across their own portfolios. We will also work with other institutions, including for example the International Monetary Fund, to achieve these objectives.

The Department for International Development (DFID) and the Bank of England are also scaling up their partnership to build the capacity of central banks in developing countries and the Government will explore using this as a platform to share the Bank's expertise internationally in managing climate-related financial risk.

The Government's international network, which includes climate attachés across 58 countries worldwide, accompanied by our extensive trade attaché network, promotes climate action and mutual prosperity with our partners. Promoting the greening of finance internationally will be a key part of the Government's diplomatic strategy, financial development and climate engagement, which is outlined in further detail in Chapter 3.

Partnering with the private sector

The Government recognises we can also play a role driving private sector action and collaboration as part of our international strategy. For example, through the Powering Past Coal Alliance (PPCA) the UK and Canada, supported by CCLA Investment Management, have worked with leading institutions to establish Finance Principles with commitments on restricting financial services for new unabated coal power projects and supporting the phase out of existing capacity by 2030 in the OECD and 2050 in the rest of the world. That is why the Government is:

- **Launching the Powering Past Coal Alliance Finance Principles, through which financial institutions can commit to support the phase out of unabated coal power within Paris Agreement timeframes.**

Aviva plc, Hermes Investment Management and the Church Commissioners for England have joined the Alliance as founding signatories of the Finance Principles, alongside CCLA and Storebrand as existing PPCA finance members. The UN-supported Principles for Responsible Investment initiative will be an official Partner to the PPCA.

The Government has also launched the Global Resource Initiative (GRI) to bring together thought leaders across business, finance and civil society on the issues of sustainable supply chains. These leaders will develop ambitious, practical recommendations for how the UK can reduce the 'imported deforestation' embedded in the commodities that we consume; improving the long-term resilience of our supply chains. The Taskforce, to be chaired by Sir Ian Cheshire, will shape the direction of the Government's policy on sustainable trade while creating a model of change that can inspire other countries towards the same ambitions. The GRI will also work closely with the GFI to support a shift towards investment that better accounts for the value of a healthy environment, a stable climate and natural capital.

Exploring initiatives to accelerate alignment to the Paris Agreement

The Government recognises these actions alone will not create the incentives to redirect finance towards clean and resilient investments at sufficient speed and scale to meet the challenge of the Paris Agreement.

Collectively governments need to be able to track economy-wide efforts to align financial flows and give political impetus to international activity. Further momentum is needed from the public and private sector, including clarifying fiduciary duties and strengthening corporate governance, developing green taxonomies, enhancing climate-related financial disclosure and improving climate-related data and analytics.

Ultimately, we need to strengthen and broaden the international coalition driving action to green the global financial system and to develop a common framework and roadmap around which leaders, governments, central banks, financial regulators and the private sector can take the collective action required.

As the Government implements this strategy, we will utilise opportunities such as at the UN Climate Action Summit in September and our G7 Presidency in 2021, to consider how best to champion action to align financial flows with the goals of the Paris Agreement.

Aligning the UK's ODA with the Paris Agreement

As the Government explores initiatives to align global financial flows, we will be taking action to ensure UK Government leads by example through **aligning the UK's Official Development Assistance spending with the Paris Agreement**, strengthening the existing provisions in the UK Government's guidance on considering climate and environmental factors.

In practical terms this will include:

- Using an appropriate carbon price in relevant bilateral programme appraisal;
- Ensuring any investment support for fossil fuels affecting emissions is in line with the Paris Agreement temperature goals and transition plans;
- Implementing a proportionate approach to climate risk assurance; and
- Ensuring that relevant programmes do not undermine the ambition in countries' Nationally Determined Contributions (NDC) and adaptation plans.

We will consider how to demonstrate that on aggregate, our ODA is delivering climate benefits and supporting implementation of the Paris Agreement. We anticipate this including identifying opportunities to work with countries to enhance and embed clean growth and climate resilience, incorporating what is included in NDCs and adaptation plans into their growth plans, to help meet the long-term goals of the Paris Agreement. We will encourage similar actions in relevant multilateral institutions and programmes, where appropriate.

Our actions to align the UK's ODA with the Paris Agreement also demonstrate the Government's commitment to leading by example by integrating climate and environmental factors into financial decision making in the public sector, as we discuss further below.

Government leading by example

The focus of this strategy is on aligning private sector financial flows with clean, resilient and environmentally sustainable growth. At the same time, the Government recognises the integration of climate and environmental risks and opportunities also has relevance to financial decision-making in the public sector. Therefore, while there is clear focus on the private sector, the public sector needs to remain alert to the impacts from transitioning to a cleaner economy, as our understanding in this area is enhanced by improved data. That is why, the Government will:

- **Consider the financial risk exposures relating to climate change and the low carbon transition as part of the 2020 Managing Fiscal Risks report;**
- **Undertake a review, led by HM Treasury, to understand the costs of achieving net zero GHG emissions by 2050 and to understand where these costs will fall across the economy;**
- **Ask Government departments to incorporate the updated 2018 Green Book focus on climate risks in their policy development, including at the Spending Review; and**
- **Embed TCFD reporting in publicly funded financial bodies.**

Our work in this area will build on an existing framework within the public sector which has already taken steps to consider the financial risks from climate change (Box 5).

Box 5 – Selected Government activities integrating climate-related financial risks and opportunities in decision making

- In 2018/19 we updated our guidance on the preparation of Annual Reports and Accounts with new reporting requirements for Climate Change Adaptation.
- HM Treasury's Green Book provides guidance on assessing the viability and value for money of policies and projects across government[52]. The Green Book is at the leading edge internationally, including when it comes to practical appraisal of climate change, natural capital and other environmental effects. It also requires that the Climate Change Risk Assessment (CCRA) be used to account for current and future climate risks along with vulnerabilities in appraising policies and projects.
- The National Infrastructure Commission will be examining the resilience of the UK's infrastructure, to consider what action Government should take to ensure it is resilient to future changes, such as climate change[53]. This will build upon the NIC's National Infrastructure Assessment which included recommendations on de-carbonising how the UK powers and heats its homes and deals with waste[54]. The Government will publish an Infrastructure Strategy later this year in response to the NIC's National Infrastructure Assessment.
- From 2020, the Office of National Statistics will publish comprehensive Natural Capital Accounts for the UK to guide policy development in line with our long-term goals. This will provide a robust metric alongside GDP to measure the sustainable growth of our economy and highlight future priorities for public and private investment.

Embedding TCFD reporting in publicly funded financial bodies

The Government recognises that as TCFD becomes mainstream in the private sector it is also right that publicly funded financial bodies, such as CDC and UK Export Finance (UKEF) also implement the TCFD framework, as appropriate to their individual mandates and financial models. That is why:

- **CDC and UK Export Finance will make climate-related financial disclosures in their accounts in line with the TCFD recommendations, as soon as practicable following the close of the 2020/21 financial year.**

CDC is the UK's development finance institution. Its mission is to support the building of businesses throughout Africa and South Asia, to create jobs and make a lasting difference to people's lives in some of the world's poorest places. CDC invests directly by providing equity, debt, mezzanine finance and guarantees to businesses; and also, indirectly through supporting fund managers who are aligned with its mission and who invest capital on its behalf. CDC invests in seven core priority sectors: infrastructure, financial institutions, manufacturing, agribusiness, construction, health and education.

CDC established its climate change policy in 2014 and has made a strong commitment in its 2017-21 strategic framework to further assess and address climate change risks and opportunities as a core part of its investing. Making climate change financial disclosures in its accounts in line with the TCFD recommendations is a logical next step in this process. **CDC will make climate-related financial disclosures in its accounts in line with the TCFD recommendations, as soon as practicable following the close of the 2020/21 financial year.**

UK Export Finance (UKEF) is the UK's export credit agency and a government department, reporting to Ministers in the Department for International Trade. Its mission is to ensure that no viable UK export fails for lack of finance or insurance from the private sector, while operating at no net cost to the taxpayer. UKEF provides insurance, guarantees and loans which help to make exports happen which might otherwise not, helping UK exporters and their supply chains grow their business overseas. UKEF has a total capacity of £50 billion to support UK exports.

UKEF has strong capability in the assessment of project specific risks across sectors and manages its risk profile as an export credit agency which assumes risks in line with the needs of UK exporters on a case by case basis. **UKEF will further strengthen this capability by making climate-related financial disclosures in its accounts in line with the TCFD recommendations, as soon as practicable following the close of the 2020/21 financial year.**

Chapter 2: Financing Green

Overview

Transitioning the global economy to clean, resilient and environmentally sustainable growth will require investment at an unprecedented scale. The International Energy Agency has estimated that $13.5 trillion of public and private investment in the global energy sector alone will be required between 2015 and 2030 to meet Paris Agreement targets[55].

The UK is a world leader in cutting emissions while creating wealth. By legislating for a net zero emissions reduction target by 2050 and preparing to put the 25 Year Environment Plan on a statutory footing, we are responding to the latest science and raising our ambition. Meeting our objectives will require increased levels of investment in green and low carbon technologies, services and infrastructure.

Between 1990 and 2017, the UK reduced its emissions by over 40 per cent while growing the economy by more than two thirds, the best performance in the G7 on a per person basis[56]. We have done this by taking the lead, drawing on our existing industrial strengths in technology and finance, and guided by legally binding commitments to drive down emissions and reverse the decline in our natural capital asset base. The UK clean growth sector has invested over £92 billion of public and private green investment in clean energy in the UK since 2010[57].

The UK was the first country in the world to establish a Green Investment Bank (GIB), attracting much needed private finance to address the challenge of climate change. Thanks in part to the GIB, the green investment market has improved in terms of the private sector capital available, which in turn has meant that green investment has now become more mainstream.

Through the Clean Growth Strategy, the 25 Year Environment Plan, and our Industrial Strategy we are putting in place policy frameworks capable of building on this momentum to deliver the transformation required. The Clean Growth Strategy sets out how Government is investing over £2.5 billion to support low carbon innovation from 2015 to 2021. Since the Strategy was published, the Government has continued to invest in low carbon innovation, such as through the latest wave of the Industrial Strategy Challenge Fund, and we now expect to invest more than £3 billion over this timeframe. This forms part of the largest increase in public spending on UK science, research and innovation in almost 40 years.

While progress to date has been strong, the decarbonisation of our economy requires significant levels of investment in resilient low carbon infrastructure and services. This creates huge opportunities for UK business and financial institutions. By one estimate, the low carbon economy in the UK could grow 11 per cent per year between 2015 and 2030 – over four times faster than the rest of the economy[58].

Notwithstanding our strong starting position, we cannot afford to be complacent about the barriers that will need to be overcome to scale up from current investment levels to the levels required to deliver our long-term goals. Given that much of the need for green finance will fall in less developed and emerging markets, we must also support and drive international progress.

Since 2008 the UK's International Climate Finance has been working to catalyse green private investment and create markets for sustainable low carbon ventures, as well as supporting developing countries to combat and cope with the impacts of climate change and reducing deforestation.

Our Approach

This chapter sets out the key actions that government is taking to drive the flow of green finance both domestically and internationally. Our approach recognises the need to:

- Establish robust, long-term policy frameworks;
- Improve access to finance for green investment;
- Address market barriers and build capability; and
- Develop innovative approaches and new ways of working.

Accelerating the flow of finance into the projects and technologies that will help us deliver on our objectives is a key objective for the newly launched Green Finance Institute, which will work in partnership with Government, financial services and key stakeholder groups.

And we must ensure that we have access to up to date information to track our progress. We will develop and enhance our approach for measuring progress on our objectives, including how best to monitor flows of green finance in the UK.

Establishing robust, long-term policy frameworks

Solid foundations for clean and environmentally sustainable growth

By hardwiring our long-term goals into legislation, and setting clearly defined trajectories and robust governance arrangements to hold governments to account for delivering on these goals, and we have created a world-leading framework to ensure that the UK becomes increasingly attractive for green investment. This recognises the importance that investors place on long-term certainty when evaluating opportunities.

Under the Climate Change Act 2008, the UK was the first country in the world to introduce long-term legally binding emission reduction targets. The Act provided a statutory framework for keeping the UK on a pathway to achieving 80% reduction in emissions by 2050, guided by five-year caps on emissions – 'carbon budgets' – with independent statutory oversight by the Committee on Climate Change. The UK's new target to reach net zero greenhouse gas emissions by 2050 makes us the first major economy in the world to set such a target in

Figure 2 – Supportive policies to leverage private investment

Power

- The sector has attracted more than £92 billion of investment in clean energy in the UK since 2010.

Homes

- The Heat Networks Investment Project seeks to leverage in around £1 billion of private sector and other investment.
- The Private Rented Property EPC E Minimum Standard for England and Wales has the potential to attract around £0.5 billion of investment.
- The Clean Growth Strategy's aspiration of upgrading as many homes as possible to EPC Band C could require an investment of between £35 billion and £65 billion.

Transport

- We are investing nearly £1.5 billion between April 2015 and March 2021, with grants available for ULEV cars, vans, lorries, buses, taxis and motorcycles, and schemes to support charge point infrastructure at homes and workplaces and on residential streets.

Business Energy Use

- The £315 million Industrial Energy Transformation Fund will support businesses with high energy use transition to a low carbon future and cut their bills through increased energy efficiency.
- Climate Change Agreements provide tax discounts worth over £200 million a year from the Climate Change Levy to incentivise energy efficiency action in 53 industrial sectors.
- The £18 million Industrial Heat Recovery Support programme is designed to encourage and support investments in heat recovery technologies in industry.

Environmental Land Management

- £2 billion per annum is spent currently on land management in England under the EU Common Agricultural Policy. As we leave the EU, this money will be channelled into a new system of payments to reward land managers for providing public goods, aligned to the goals of the 25 Year Environmental Plan.

legislation. This framework, along with our obligations under the historic Paris Climate Agreement, embodies a robust and consistent commitment to act on climate change, and to monitor progress transparently.

The Government will bring forward the first Environment Bill in over 20 years. The Bill will put environmental ambition and accountability at the very heart of government. It will help us make good on our commitment to leave the natural world in a better condition than we found it. The published draft Principles and Governance clauses set out how we will create a new Office for Environmental Protection to make sure that we succeed. The new Office for Environmental Protection will be empowered to hold future governments and public bodies to account for progress, including through the courts if necessary. The Bill will also commit the Government to measuring and reporting on progress, backed up with a regularly refreshed, credible plan of environmental action.

Box 6 – Action to drive clean growth and environmental performance

- Announcing two missions and further support for innovation under the Industrial Strategy's Clean Growth Grand Challenge, committing to at least halve the energy use of new buildings by 2030, and to establish the world's first net zero carbon industrial cluster by 2040 and at least one low-carbon cluster by 2030. These missions will drive public sector and private sector action to achieve these specific objectives and seek to develop and pilot solutions that can be replicated.
- Cutting emissions and energy bills for our businesses. To understand how we can encourage banks and energy service companies (ESCOs) to engage in the energy efficiency market for small and medium sized enterprises (SMEs) we released a call for evidence which asked whether there would be any value in a government guarantee to underpin loans to SMEs from ESCOs, financial institutions, energy efficiency lenders and partner organisations, to de-risk these products.
- Publishing the outcome of the Review of CCUS Delivery and Investment Frameworks by the end of 2019 to support delivery of the Government's CCUS Action Plan. The Action Plan was designed to enable the first CCUS facility in the UK, to be commissioned from the mid-2020s. This is a key step towards meeting our ambition of having the option to deploy CCUS at scale during the 2030s, subject to costs coming down sufficiently.
- Agreeing sector deals in areas such as offshore wind and nuclear power – ensuring that investors and the Government have a shared plan to deliver the investment and skills needed to maximise UK opportunity.
- Committing to launch a roadmap for heat decarbonisation policy in 2020, to set out how we get to a long-term policy framework for decarbonising heat in the first half of the next decade. More immediately, the Government will introduce a Future Homes Standard by 2025 to ensure new build homes are future-proofed with low carbon heating and world-leading levels of energy efficiency. We are also developing a regulatory pathway to phase out fossil fuel heating in buildings not connected to the gas grid during the 2020s. Together, these actions will unlock significant new green finance opportunities, including Green Mortgages for new build and potentially also new business models for retrofit.
- Publishing the Clean Air Strategy, which sets out ambitious action for achieving emissions ceilings of key air pollutants by 2020, and 2030 from all sources, including transport, industry, agriculture, and domestic sources. A key emphasis of the strategy is to target action to reduce public exposure to the most harmful pollutants, committing to setting a new, ambitious, long-term target to reduce people's exposure to fine particulate matter.
- Publishing a Road to Zero Strategy, setting out measures towards cleaner road transport to put the UK at the forefront of the design and manufacture of zero emission vehicles.
- Committing public money to environmental outcomes under the Agriculture Bill. This could include the protection and enhancement of our natural and working landscapes, delivering clean air and water, promoting natural resilience to climate impacts, and encouraging tourism and wellbeing. Our new environmental land management system will help the farming and forestry sectors grow greener by offering an improved market for environmental goods and services, and thereby enable the farming sector to unlock opportunities for investment from the private sector.
- The forthcoming Energy White Paper will seek to address the challenges arising from the radical transformation of the energy system over the coming decades. It will set a vision for the development of the energy system out to 2050, consistent with the Government's climate change goals, and sets out a series of actions out to 2030 that prepare the energy system for the long term. It will set out a new approach to financing nuclear and increased ambition on other technologies.
- Setting out in the Resources and Waste Strategy how we will eliminate avoidable plastic waste, double resource productivity and eliminate avoidable waste of all kinds by 2050. It creates the long-term policy environment to leverage the investment needed to achieve our high recycling ambitions, and to further develop our domestic reprocessing and secondary materials markets. By showing leadership and supporting the development of technologies and solutions that maximise the value we get from resources and minimise waste, we can achieve strategic ambitions more quickly, as well as increase the UK's competitiveness and opportunities for trade.

Ratcheting up ambition

Over the last year we have increased our ambition for transforming energy and environmental performance in key sectors, with new policy statements, sector strategies and roadmaps, and new measures in Budget 2018 and the Chancellor's 2019 Spring Statement.

Box 6 sets out some of this economy wide action from measures to incentivise investment in energy efficiency in buildings to the development of new markets for technologies such as offshore wind and carbon capture, usage and storage (CCUS).

A key theme of the Green Finance Taskforce was the importance of driving supply and demand for green lending products. In publishing this strategy, we are:

- **Announcing new proposals focused on driving action and investment in the Commercial and Non-Domestic Buildings and Homes sectors.**

Commercial and non-Domestic Buildings

In response to a recommendation from the Green Finance Taskforce, **the Government will work with partners to determine the steps necessary for landlords and businesses to understand,**

and potentially disclose, their operational energy use. We are currently working with the Better Buildings Partnership on their Design for Performance initiative and their review on ways operational performance can be measured and utilised in certain new builds.

The Government intends to consult on the future trajectory of the minimum energy efficiency standards in the non-domestic private rented sector in Summer 2019. This demonstrates the Government's commitment to providing landlords and businesses in the sector both time to respond and certainty. Current and future rented sector policy is projected to be one of the key measures in driving energy efficiency improvements through the 2020s.

Homes

In the Clean Growth Strategy, we set an aspiration to upgrade as many homes as possible to Energy Performance Certificate (EPC) Band C by 2035 with fuel poor homes reaching this standard by 2030. The total investment required to improve our housing stock to this standard is estimated between £35 billion and £65 billion. This will require mobilising significant private investment from new sources so, alongside the Clean Growth Strategy, we called for evidence on Building a Market for Energy Efficiency. **The summary of responses to that Call for Evidence is published alongside this document.**

Based on the responses to this Call for Evidence and the recommendations of the Green Finance Taskforce **we intend to take action that will build the market for green finance products to support home energy efficiency**. These actions include:

- **Publishing a consultation later this yea**r on the merits of setting requirements for lenders to help households improve energy performance of homes they lend to.
- **Publishing an update to the EPC data available through open data, and a commitment to update this at least every six months, to support lenders in driving energy efficiency by evaluating the EPC performance of their lending portfolios**. We will also consider how this data could be made available on a live basis as part of updating the EPC Register platform.
- Given support for the Pay as You Save approach, **we will continue to explore further opportunities for simplification and improvement of the Green Deal framework to support the funding of energy efficiency measures**.
- **Sponsoring new technical standards (PAS 2035:2019 & PAS 2030:2019) covering the end-to-end delivery of energy efficiency measures**. The British Standards Institution published these standards in June. These will be embedded within the new TrustMark government endorsed quality scheme, which large financiers have stated will improve the investment attractiveness of energy efficiency. It will also ensure consumers get what they are expecting and have suitable financial protections in place.
- **Reviewing how Government energy efficiency data, using the National Energy Efficiency Data-Framework (NEED)**, could be used to support innovative green finance product development.

Improving access to finance for green investment

Long term policies and increased ambition have sharpened the incentives for investment from the private sector. Our strategy recognises the need for additional government support to overcome investment hurdles in certain sectors. This includes:

- The provision of carefully designed public support to leverage private capital; and
- Measures to unlock new revenue streams in areas such as natural capital, carbon finance and resilience.

Public funds to leverage private capital

To improve access to finance Government has allocated substantial resources to fund investment in clean energy and natural capital growth. These funds are levering in larger sums from the private sector in order to achieve the overall level of investment required. Our strategy recognises the transformative potential of blended funding models and other innovative mechanisms for delivering public support.

For example, the Heat Networks Investment Project, provided as 'gap funding' to grow the market, aims to have a transformative impact on the development of cost-effective carbon savings required to meet our future carbon reduction commitments. In return for a public investment of £320 million, the project is aiming to lever in around £1 billion of private and other capital by 2021.

We are also making smaller strategic investments to pump prime new markets by funding the development of effective project delivery models that others can replicate with confidence. For example, we are investing £5.7 million of investment to kick-start planting in the Northern Forest – an initiative which will see a minimum of 1.8 million new trees by 2022 – and will help to develop and test approaches that will lay the foundations for the National Forest Partnership to achieve their longer-term ambition of 50 million trees planted over the next 25 years[59].

Building on this experience, **we are expanding our portfolio of blended, innovative funds** to ensure that public investment acts as a catalyst, increasing access to finance for promising new technologies and investment models:

- A new **clean growth venture capital fund** will be launched with a £20 million capital contribution from the Department for Business, Energy and Industrial Strategy (BEIS), with a view to attracting a matching or potentially greater capital sum from the private sector. In addition to catalysing the Clean Growth equity financing market, this money will be invested on commercial terms in UK companies seeking to commercialise promising technologies.
- We are working with stakeholders, including in the finance sector to explore the potential for a **Natural Environment Impact Fund.** This could provide a mix of technical assistance and capital support to kick-start a pipeline of commercially attractive, revenue-generative projects.
- The £400 million **Charging Infrastructure Investment Fund** will accelerate the roll-out of charging infrastructure by providing access to finance to companies that deliver public charge points. The Government will invest up to £200 million in the Fund, to be matched by private investors.
- We are developing an **Industrial Energy Transformation Fund**, backed by up to £315 million of investment, to support businesses with high energy use to transition to a low carbon future and to cut their bills through increased energy efficiency. The Government has consulted on the design of the fund.
- **We are investigating options to increase the size of the Public Sector Energy Efficiency Loan Scheme (managed by Salix Finance)**. This approach will be outlined in a roadmap for the public sector later in 2019 along with other key policies and programmes required to meet the ambitions of the Clean Growth Strategy. The scheme the has funded over 17,000 projects, enabling public sector organisations to reduce their bills, with savings recycled into a dedicated fund for reinvestment. The scheme is estimated to deliver £1.4 billion (undiscounted) of public sector bill savings over the period 2018-2032 and projects are estimated to reduce greenhouse gas emissions by 1 MtCO2e over the fifth carbon budget period (2028-2032)[60].

- The Government will create the **UK Shared Prosperity Fund** (UKSPF), a programme of investment to tackle inequalities between communities by raising productivity, following our departure from the European Union. The UKSPF will invest in the foundations of productivity as set out in our Industrial Strategy to support people to benefit from economic prosperity, especially in those parts of the UK whose economies are furthest behind.

Unlocking new revenue streams

Whilst there is a clear role for government to act as a cornerstone investor, it is equally important that green projects are able to develop new revenue streams that provide rewards for the environmental benefits they deliver.

We are taking action to do this by developing new approaches to financing natural habitats, expanding carbon finance, enhancing resilience and reforming regulatory frameworks**.**

Financing natural habitats

The Government has committed to introducing mandatory biodiversity net gain for developments in England as part of its longer-term ambition to embed a 'net environmental gain' principle for development. Biodiversity net gain describes an innovative approach to development that aims to leave the natural environment in a measurably better state for wildlife than beforehand. While the focus of biodiversity net gain is on avoiding negative impacts and encouraging improvements for wildlife within development sites themselves, it also offers potential to stimulate the development of markets in off-site compensation and habitat banks. Habitat banking enables many small developer contributions to be aggregated for investment in larger scale green infrastructure.

Alongside biodiversity net gain, Natural England is rolling out district-level licensing for developments that impact great crested newts. District-level licensing enables developers to fund off-site compensatory habitats for protected species that are affected by development. This changes a system designed to ensure simple compliance into one that delivers positive environmental improvement, funded by developers.

By enabling the long-term planning of habitat creation, improving opportunities to find suitable land and enabling trade in habitat units, these new policies have the potential to open up the field of habitat creation to a wider suite of potential investors and to remove some existing barriers to investment in natural capital.

Expanding Carbon Finance

Carbon finance also offers a revenue stream for investors, by giving value to the greenhouse gas emissions that are reduced or removed by a project. The Chancellor announced a package of funding for forestry in the 2018 Budget, including a Woodland Carbon Guarantee, which will underwrite £50 million of carbon credits from forestry. In the 2019 Spring Statement, the Chancellor further announced a Call for Evidence that would explore whether travel providers should be required to offer carbon 'offsets' to their customers. Such a requirement could create a new source of demand for carbon offsets, one form of carbon finance.

The UK has led the way in developing robust standards for offsetting, including the Woodland Carbon Code which provides a robust basis for terrestrial carbon offsetting. Our Peatland Code strongly supports corporate social responsibility investments and has good potential to support offsetting in the future. These standards have helped a growing number of businesses invest in carbon reductions with confidence.

The Government will consider how to further deepen the links between public and private sector initiatives to mobilise and spend carbon finance. For example, we will explore the scope for further private sector engagement in REDD+ (Reducing Emissions From Deforestation and Degradation), a key pillar of the international framework for investment in nature-based solutions. We are committed to further supporting the development of robust offset standards, including the development of methods for accounting for marine carbon offsets, to increase the opportunities for investment in nature-based solutions to climate change.

Enhancing Resilience

The frequency of destructive weather events,

in particular flooding and coastal erosion, is likely to grow. This year the Department for Environment, Food and Rural Affairs (Defra) has consulted on the scope for new local funding mechanisms to generate revenue streams to back investment in reducing these risks and on the UK's infrastructure requirements for climate resilience and flood risk management. Later this year Flood Re, one of the world's biggest and most innovative natural hazard re-insurance programmes, which is designed to ensure householders in high flood risk areas can access affordable insurance, will complete its first scheme review. Following consideration of this report and the recent consultations, government will publish a new policy statement in 2019, including the role of complementary finance sources, local funding mechanisms and the ongoing Flood Re scheme.

National and international standards bodies (BSI and the International Organisation for Standardisation (ISO) respectively) are additionally exploring the role of standards in climate change adaptation. By providing rigorous and consistent approaches to adaptation decision making, standardisation offers improved confidence and transparency in order to leverage investment in resilience activities. The first international adaptation standard, ISO14090: Adaptation to climate change – Principles, requirements and guidelines, was published earlier this year with further standards in the process of being developed[61].

Reforming regulatory frameworks

Government recognises that driving investment at the scale required to meet some of our long-term goals requires different approaches to regulation. For example, in our Resources and Waste Strategy we have committed to reforming the current packaging producer responsibility system. This includes adopting the 'polluter pays' principle so that producers of packaging cover the full net cost of managing their packaging at end-of-life, compared with less than 10% of the costs of managing household waste under current legislation. This will increase the incentives for supply chain innovation, accelerating the development and uptake of low impact packaging solutions and the commercial rewards of investing in sustainable product design and more durable products. Our intention is to legislate by 2021 and to have reforms operational by 2023.

In the water sector, some public utilities are working with regulators to deliver environmental objectives in a different way. For example, by paying farmers and landowners to modify their land uses the overall pollutant burden in a catchment can be reduced. By offsetting in this way pollutant load targets for catchment areas can be met at a far lower cost than equivalent action through investment in conventional water treatment infrastructure. Nature-based solutions to protecting water supplies, reducing pollution and addressing flood and drought resilience also deliver valuable benefits for carbon sequestration, biodiversity and wider social objectives.

One currently operating scheme, which was set up primarily to address pollution, has been forecast by the utility concerned to deliver savings of over £100 million for bill payers together with a range of additional benefits[62]. These initiatives, demonstrated in connection with water management, are scalable and transferable more widely. Government will work with the water industry and regulators to identify barriers to the further development of this model and its adoption in other areas.

Addressing market barriers and building capability

We recognise that even with long-term policy in place, and bold and ambitious commitments to provide access to finance, there are also market frictions that can prevent the flow of private sector finance from supporting our clean growth and environmental ambitions.

We are taking action to drive financing opportunities in low carbon and resilient infrastructure, support local green finance action and to reduce transaction costs.

Driving financing opportunities in low carbon and resilient infrastructure

We will showcase green investment opportunities and drive the demand for and development of resilient, investment-ready projects:

- We recognise significant investment is required in low carbon infrastructure in the UK to deliver our carbon budgets. The government's ongoing Infrastructure Finance Review explores how government can continue to ensure that good infrastructure projects can raise the finance they need, particularly in the light of technological change, the changing nature of our relationship with the European Investment Bank, and the need for infrastructure that is resilient to climate change and required to deliver our fourth and fifth carbon budgets. This review will inform both the 2019 Spending Review and the National Infrastructure Strategy.
- As discussed in Chapter 1, the National Infrastructure Commission (NIC) is carrying out a study, to understand the current and future resilience of UK infrastructure. This will develop a framework for assessing resilience and making recommendations to government that can be used in the next National Infrastructure Assessment, which is required by HM Treasury every five years. Integrating climate considerations in this way will ensure that decisions made about the UK's future infrastructure needs take into account, in a consistent way, not only the technological future but also the future climate.
- BEIS will be supported by the Infrastructure and Projects Authority to seek to apply a green filter to the National Infrastructure and Construction Pipeline.
- The Government recognises the importance of investing in natural capital to create great places for people to live and work. This is why Government is working closely with local stakeholders and investors involved in development in the Oxford Cambridge Arc. Embedding natural capital into major new development at the outset will help to maximise the opportunities for nature-based solutions to climate change and flood resilience, create great places for people and attract investment. It can help improve strategic planning and decision-making, achieving better environmental outcomes.
- The benefits of investing in green infrastructure are clear, with increasing evidence that spending time in nature can bring health and well-being benefits (see Future Parks Accelerator Case Study). The Government wants to encourage more investment, and as a first step we will be

Case Study: Future Parks Accelerator

In February 2019 the Secretary of State for Housing, Communities and Local Government announced an investment of £1.2 million into the Future Parks Accelerator programme. Future Parks Accelerator is a joint National Lottery Heritage Fund and National Trust programme to support 8 local authority areas to transform their parks estates, testing and learning from new and innovative models of parks management and funding to create more sustainable parks estates for the future. The learning from the programme will be shared widely to help local authorities to develop sustainable plans for their parks estates.

Newcastle City Council has blazed a trail for the Future Parks Accelerator programme; they have undergone a pioneering journey to set up a Parks and Allotments Trust and in April 2019 transferred their parks and green spaces estate to the Trust on a long lease. During their journey, Newcastle City Council have gathered significant learning and developed key documents which will be of value to many other local authorities. The Government has invested £210,000 to help Newcastle to collate and disseminate their learning with other areas.

setting out what 'good' green infrastructure looks like. Natural England has commenced a project to define a framework of green infrastructure standards to assist local authorities to audit and plan for green infrastructure in their area. This will also inform work by government to develop national planning policy and guidance and better ways of measuring changes in green infrastructure in order to encourage investment.

Supporting local green finance action

The Green Finance Taskforce also highlighted the important role of local actors in guiding potential investors towards opportunities that meet local priorities, and therefore stand a good chance of securing backing from local communities and decisions makers. Often there is a lack of the resources and skills needed to develop a pipeline of projects sufficient to unlock investment opportunities in local areas, and investment-ready project proposals are in short supply.

Innovative projects such as those showcased below (see Natural Capital Pioneers Case Study) have shown that with the right leadership and the application of suitable skills and resource this barrier can be overcome.

The Environment Agency is working closely with local authorities, for example through the Manchester IGNITION project, to find innovative funding and financing solutions to pay for resilience measures, which could be adopted more widely. These approaches will inform new ways local stakeholders can raise the funding they need to manage local risks.

Sharing local best practice

Delivering the required transformation means building on the existing pockets of good practice including those described above so that all communities can access the finance that they need. Ultimately this depends on strong local leadership, but central government can play a clear role. That is why the Government is taking action, including supporting the rollout of local strategies for unlocking additional investment:

- Through the Heat Networks Delivery Unit, we are supporting local authorities through the early stages of project development.
- The Local Energy programme is designed to start to build the capacity and capability at local levels to deliver integrated clean growth solutions. To date the Government has invested £10 million in the Programme. This includes funding for all 38 Local Enterprise Partnerships to write their own energy strategies, five local energy hubs to support a pipeline of low-carbon projects (using the energy strategies as a basis for their work) and a suite of supporting toolkits and guidance.
- We are also transferring the £10 million Rural Community Energy Fund to the hubs to support communities to develop local projects.
- In January 2019, the Government and UK100 delivered the first Investing in Local Energy conference. The conference, held in Leeds, brought together leading green finance experts and investors and some of the UK's largest companies and town hall leaders from across the country to discuss how to unlock at least £2 billion to help support clean local energy projects as part of the Industrial Strategy.
- We are supporting the Ecosystems Knowledge Network to bring together local natural capital champions to engage with national partners and potential investors through a Natural Capital Investment Forum.

Case Study: Natural Capital Pioneers Programme

The IGNITION project, led by Greater Manchester Combined Authority with support from the DEFRA 'Pioneers' Programme, has shown how local governments can access green finance for natural capital investment and identify pipeline project opportunities for investors. The project has built a knowledge base of resources around contracting and investment approaches that will enable investment in nature-based solutions to be scaled in city regions across Europe. The first investment opportunity within IGNITION will enable investors to share the financial rewards from investing in sustainable urban drainage solutions, to deliver substantial reductions in public institutions' water and sewerage bills.

Pioneer programmes in North Devon and Suffolk have highlighted the benefits gained from the sea and options for translating this into revenue generative investments. These include restoring fish stocks and improving fishing infrastructure, boosting sustainable tourism, increasing the impact of water quality schemes, increasing the positive effects of blue carbon on the climate and of biodiversity on human health and wellbeing. In North Devon, lead project partner WWF will pilot two promising models for structuring this type of investment during the current financial year.

Reducing transaction costs

Novelty and uncertainty add to the costs of project proposals and reduce the chances of attracting funding. In the previous section, we noted the successful models that are being tested in some areas and the support that Government is providing to enable these models to mature and be replicated on a larger scale.

In addition, the size and volume of projects at a local and regional level often prohibit securing large scale financing. Many of the solutions required are by nature small scale both for those seeking to secure decarbonisation and environmental outcomes.

We welcome the action by local authorities and the private sector on these issues:

- The City Leap Project, led by Bristol City Council, has demonstrated how large volumes of small projects can be aggregated into a single capital raising prospectus to unlock private finance.
- In Cumbria, Nestle and other partners are pioneering the Landscape Enterprise Network (LENS) approach. This requires an understanding of stakeholders within the landscape and their reliance on natural capital assets, such as soil, water or woodland. By first identifying the market, the LENS approach starts with potential sources of investment, which could be a range of local stakeholders including water utilities, local and multinational businesses, employers and householders. When combined with tools such as reverse auction this could provide an efficient mechanism for multi-stakeholder landscape investment.

In order to drive the reduction of transaction costs, in March 2019, the Government launched the Boosting Access for SMEs to Energy Efficiency (BASEE) competition. The competition will provide £6 million of funding to accelerate the growth of the energy services market for small and SMEs by driving down transaction costs and promoting third party investment in energy efficiency projects. The funding will be available for new innovative scalable business models or solutions that reduce costs, simplify processes and encourage take up of energy efficiency by SMEs at scale.

Developing innovative approaches and new ways of working

The Government can also play an important role working with others to develop innovative approaches to accelerating green investment and demonstrating the success of low carbon, resilience and natural capital investments and associated benefits. This includes catalysing public-private sector collaboration and exploring new ways of working, for example, with regard to Government procurement.

Public-Private sector collaboration

A key theme of our Green Finance Strategy is public-private sector collaboration. Bringing together the investor community with policy makers and project developers can help to develop innovative and shared approaches to address finance challenges in key sectors. The GFI has been created, in part, to lead some of this work.

- **The Green Finance Institute will launch a series of mission-led coalitions that will convene multi stakeholder groups to address the barriers to greater and more rapid deployment of green capital**. These projects will help to accelerate private investment in the Government's Clean Growth Strategy and 25 Year Environment Plan through tangible actions that will unlock supply and demand and encourage green investment.

The Government will this year publish its Clean Maritime Plan. As the global transition to zero emission shipping gathers pace over the coming years, driven by increasing international pressure to tackle emissions of greenhouse gases and air quality pollutants, the UK has the opportunity to build on its existing position as a world leading financial centre to become the global hub for the provision of green finance for the clean maritime sector.

- **To capitalise on this opportunity, the Government will launch a 'Financing Green/Greening Finance for Maritime' initiative at London International Shipping Week**. This will have a dual approach, both providing information to industry about zero-emission funding opportunities, while also promoting opportunities in clean maritime to potential investors.

Exploring new ways of working

We are also using our innovation funding to support new ways of working and to foster new approaches in the private and public sectors:

- Modern Energy Partners (MEP) is a collaboration between BEIS, the Energy Systems Catapult (ESC) and Cabinet Office. MEP's mission is to enhance the capability in energy managers and associated decision makers to come together with supply chain experts (including investors) to develop and design, finance, procure, build and operate cost-effective integrated energy solutions. The project is mobilising the public sector to use its own sites as a pathfinder to attract investment and stimulate innovation.
- **The pilot phase of MEP finished in March 2019, and the project has successfully been awarded £20 million to support phase two**. The project will grow private sector expertise in cutting-edge smart, integrated energy efficiency solutions that combine low carbon generation, storage and energy demand management, to benefit both individual sites and the wider energy system. Up to £14 million will be used to implement sophisticated energy upgrades at up to eight sites, with designs for up to 36 additional public sector sites completed by the end of March 2021.
- The Greening Government Commitments (GGS)[63] also demonstrate Government's leadership in improving the environmental sustainability of its own estate. Specific targets are set for reducing emissions, waste and water, and for improving sustainable procurement. The value of overall saving from reduced energy use, waste arisings and water consumption are estimated at £150 million in 2017/18 compared to the 2009/10 baseline. Following the achievements reported under the GGCs across government so far, a commitment to making further progress beyond 2020 has been maintained, demonstrating a commitment to leadership in this area.
- The BEIS Whole House Retrofit competition is a key step towards accelerating a reduction in domestic retrofit costs. The competition supports the Clean Growth Grand Challenge, in particular the Buildings Mission, which aims to halve the cost of retrofitting existing buildings to the same energy standards as new buildings by 2030. The £10 million grant funding will be awarded to projects that can demonstrate cost reductions by carrying out deep retrofit at scale on a large number of similar properties. The funded projects will need to consider both process related and material innovations, by focusing on mass production and large-scale delivery.

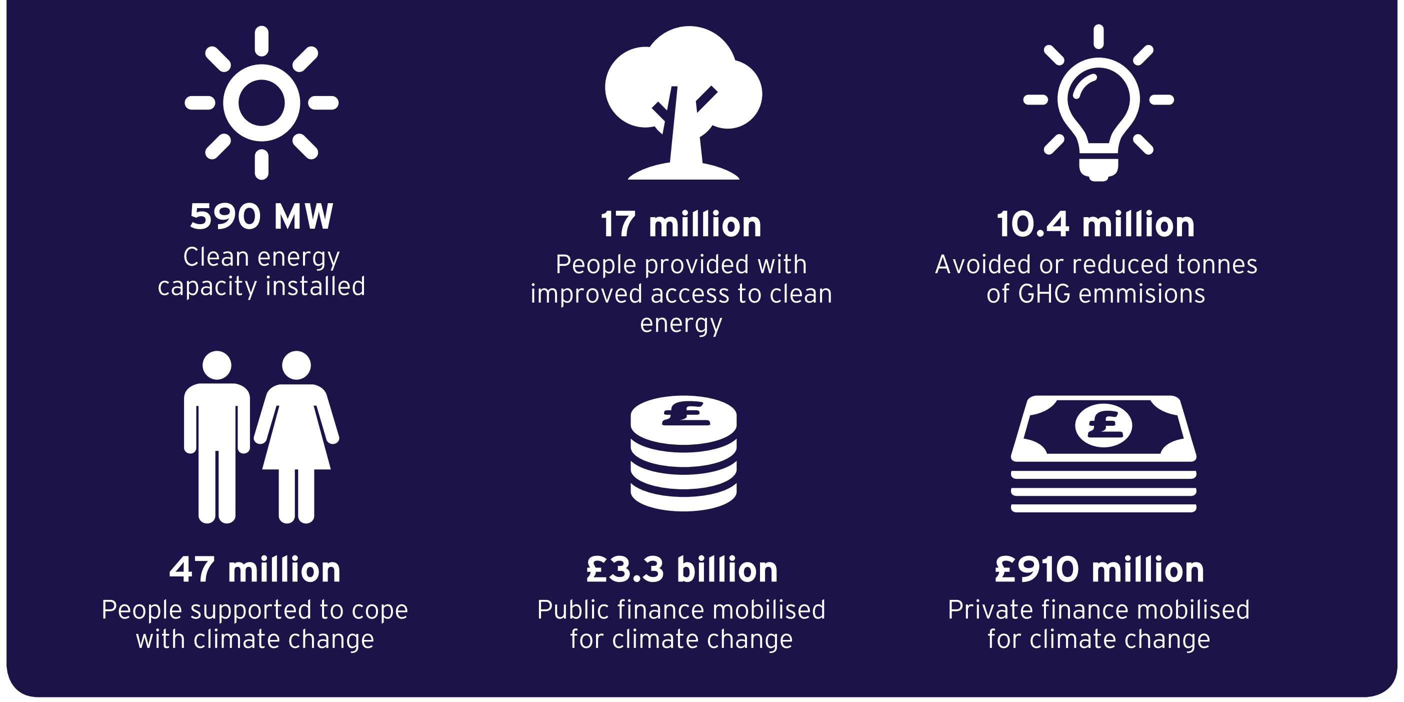
Driving International Green Investment

At least $6 trillion per annum of new or reallocated infrastructure investment up to 2030 will be required to meet the Paris Agreement, and the wider Sustainable Development Goals[64, 65]. While this is a major challenge, it also presents significant economic opportunities.

This huge investment and economic opportunity will drive the transformation of the global economy to be environmentally sustainable, resilient, and prosperous for all. It includes decarbonising industry and transport, building smart energy systems and increasing access to affordable, clean energy. Different economies will face varying challenges, and the UK is working through its strong partnerships and the Official Development Assistance portfolio to overcome hurdles and accelerate action. Public sector funding is particularly crucial in accelerating climate action in difficult to reach areas like adaptation and resilience. But public sector funding alone is insufficient to meet the investment needed for the global transition to environmentally sustainable growth. Public interventions must therefore focus on mobilising private finance and removing market barriers to such investment.

The Government is committed to helping developing countries in this global transition, including through the shared developed country goal of mobilising $100 billion per year in climate finance from public and private sources by 2020 and through to 2025. The UK has committed to spend at least £5.8 billion of International Climate Finance between 2016 and 2020. This builds on the £3.87 billion that the UK spent on climate activities between 2011 and 2015[66]. These funds have thus far produced outcomes in key areas including forestry and land use, industrial decarbonisation, and energy transitions (Figure 3).

Figure 3 - 2018 UK Climate Finance Results[67]



By sharing skills and expertise the UK assists governments to develop the policy frameworks to enable private investment, and help businesses design strong projects to access finance. We also use strategic public investment and innovative financing instruments to leverage private finance and break down market barriers to investment. Across Government we have a number of country focused programmes to help develop green finance markets, including UK Partnering for Accelerated Climate Transitions (UK PACT) and the Prosperity Fund. Examples are outlined in Annex A. This is supported by our work to transform domestic, international and multilateral institutions, as well as institutional investors, to make green finance part of their core business.

Establishing robust, long-term policy frameworks

Responding to the needs and priorities of developing countries, the Government is marshalling its' expertise to design regulatory and market frameworks that are opening up stable enabling environments for investment. For example, our Global Energy Transfer Feed-in Tariff (GET FiT) programme has supported the development of small-scale on-grid renewable energy projects in Uganda by working on feed in tariffs and with government. By working closely with the energy regulator and the Government of Uganda, this has delivered 87MW of renewable power generation[68]- creating jobs, reducing emissions and providing a major boost to the country's total power generation capacity making greater access to energy for Ugandans. The regulator is now highly skilled and able to continue the work on its own.

The UK is supporting countries to ensure they are mobilising private finance to be resilient to climate shocks. In July 2017, the Prime Minister launched the UK-led Centre for Global Disaster Protection. This £33 million programme draws upon UK and global expertise in risk, finance and insurance to design and support disaster risk financing systems, helping developing countries put financing and plans in place before disaster strikes.

Improving access to finance for green investment

UK finance has been used in a range of innovative ways to help communities and businesses access finance. For example, in Sub-Saharan Africa, the Government funded Renewable Energy Performance Platform (REPP, £148 million) supports small and medium sized project developers by providing technical project development advice and early stage finance. As the scale of this support grows so too does the momentum behind these renewable energy markets, attracting private and institutional investors. Through the Global Climate Partnership Fund (GCPF, £55 million investment), the Government is using its finance to lessen risk and attract funds to support local financial institutions in 25 countries. GCPF provides these institutions with technical and financial support to provide green loans at commercial rates. This is stimulating a market for these debt products with 34 local financial institutions making 74,000 loans to SME and household clients by 2018[69].

Limited access to insurance also restricts investment and damages the resilience of communities and economies. An estimated $163 billion of assets are underinsured in the world today, with emerging economies accounting for $160 billion (96%) of the global total[70]. The Government is supporting alternatives to traditional insurance to address this barrier, for instance: Global Parametrics is a UK funded and based social enterprise to strengthen resilience to natural disasters in developing countries. The company uses cutting-edge climatic, seismic and financial risk modelling to design products that provide financial protection to organisations operating in developing countries.

Furthermore, the Centre for Environment, Fisheries and Aquaculture Science (Cefas) is working to improve the climate resilience of Small Island Developing States (SIDS). Ecosystem-based insurance products are being explored to address unsustainable state debt accumulation as a result of extreme weather events, by facilitating access to funds for restoration or as compensation to fishermen. Both of these goals aim to rehabilitate

the protective and livelihood-related functions of ecosystems. For instance, coastal ecosystems such as coral reefs, mangroves and seagrass beds, can provide storm protection for coastal communities, while supplying benefits for fisheries and tourism.

The UK's climate finance is leveraging private investment; attracting institutional investors and taking advantage of the expertise of the City of London. This combined approach offers huge potential to mobilise green finance. The Government uses its funds to kickstart markets; help projects reach financial close and demonstrate profitability, reduce risk perceptions and improve the cost of capital. For instance, UK funds are being used in the Sustainable Infrastructure Programme (SIP) in Brazil, Colombia, Mexico and Peru (SIP Latin America, £177.5m). They accelerate the implementation of national green development plans by catalysing private sector investments into low carbon infrastructure.

Addressing market barriers and building capability

Our climate finance is responsive to market barriers and the needs of developing countries. The UK Government is building strong partnerships with countries including China, Mexico and Colombia, to deliver technical support. For example, the £60 million UK PACT programme works closely with governments to develop the enabling environment for investment. This includes projects progressing local green finance taxonomies and supporting climate related asset disclosure and transparency. UK PACT will expand into other geographies and sectors in the coming years.

Multilateral investment is a key tool for building capability to gain and deliver investment scale in countries; these funds have well-developed pipelines, can deliver at scale, and are producing results. The UK has been one of the largest contributors to multilateral funds financing the green economy, and we work to focus fund investments where they can play a full role as a lender of last resort and maximize private sector mobilisation.

The UK has contributed £720 million to the Green Climate Fund (GCF) to date and is one of the leading contributors to the Global Environment Facility (GEF), having committed £250 million for 2018-2022. Since 2015, the GCF has become the world's largest dedicated climate fund and the key multilateral fund for supporting implementation of the Paris Agreement. It has committed $5 billion across 102 projects to date, while leveraging over $12.6 billion in co-financing[71]. The UK has been a strong advocate of the GCF doing more to mobilise private sector finance; pushing successfully for the establishment of a dedicated Private Sector Facility to work directly with the private sector.

The UK is also a founding member of the Climate Investment Funds (CIFs) and is the largest contributor, investing over $2.5 billion since 2008[72]. Over the coming years, the CIFs will have allocated over $8 billion to projects that reduce emissions; support clean growth; build climate resilience and protect forests across more than 70 developing countries[73, 74]. At over $5 billion, the Clean Technology Fund (CTF) is the largest of its programmes and focuses on the deployment of clean technologies to reduce the greenhouse gas emissions of developing economies. Investments are designed to help push new technologies over the 'tipping point' so that they no longer require concessional finance and can instead be supported by the market. The CTF has an impressive track record: its dedicated private sector windows have on average mobilised £7 from investment partners for every £1 of CTF finance spent; with around a third of the co-financing coming from the private sector[75].

Developing innovative approaches and new ways of working

Where there is a limited range of financial instruments available to deliver green investments, particularly in more challenging markets such as forest commodities, the Government promotes innovation using its climate finance. For example, the UK's Partnerships for Forests (P4F) programme, working with Lestari Capital, helped to incubate the new Sustainable Commodities Conservation Mechanism. This helped to meet demand for forest protection and restoration and promoted long-term conservation through global commodity markets. Furthermore, P4F's first successful partnership, a sustainable rubber production initiative, has mobilised £68.4 million of private investment and brought 88,000 hectares under improved sustainable land use management[76].

Moreover, the UK is making targeted investments to support innovative financing for emerging sectors, such as Blue Carbon. The Government recently announced £12.75 million to fund mangrove restoration, which will support projects in Small Island Developing States, and those with high rates of deforestation. The program will mobilise strategic public and private sector investments in the Blue Carbon sector, with a focus on developing incentive-based instruments including technical cooperation grants, loans, high-risk investment grants and equity. £20 million of junior capital has also been committed to the Eco Business Fund (EBF). This is an impact investment fund, lending throughout Latin America and the Caribbean, promoting environmentally responsible business in the Fund's four focus areas of agriculture and agri-processing, fisheries and aquaculture, forestry, and sustainable tourism. EBF is demonstrating a commercially viable financing model which leverages private sector capital whilst complementing this with a strong technical assistance arm to both beneficiaries and financial institutions. The fund will drive transformational change through embedding environmentally sustainable lending practices within partner financial institutions.

The UK has been a strong supporter of action under the Montreal Protocol to tackle fluorinated gasses that damage the ozone layer. Building on these efforts we are working with international partners to deliver an early switch from technologies that use other fluorinated gasses which are powerful greenhouse gasses. This includes the Kigali Cooling Efficiency Programme which is designed to mobilise private investment into energy efficient cooling technologies.

The Government also promotes low carbon growth through CDC, the UK's Development Finance Institution. CDC invests across Africa and South Asia to promote the transition to low carbon growth and offers support to the companies it invests in to become climate smart. In the past two years they have committed over $500 million in clean power generation, including founding the renewable energy platform Ayana to develop utility scale solar and wind generation projects across India, and supporting off-grid solar power company M-KOPA to provide 90 million hours of kerosene-free lighting a month, to 750,000 households across East Africa[77]. Also, through the UK Climate Investments (UKCI) the UK is mandated to invest £200 million in green projects across Sub-Saharan Africa and India on commercial terms. This fund is designed to mobilise private sector finance to scale up renewable energy and energy efficiency projects and demonstrate that low-carbon investments can be profitable.