

Update on the design of the Green Investment Bank

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Glossary

BIS	Department for Business, Innovation and Skills
CCS	Carbon capture and storage
CEO	Chief Executive Officer
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
EE	Energy efficiency
EU	European Union
EV	Electric vehicle
GIB	Green Investment Bank
Green Deal	Government policy covering energy efficiency of British properties
GW	Gigawatt
Ofgem	Office of Gas and Electricity Markets
Pari passu debt	Loans with equal rights of payment
PFI	Private finance initiative
Rolling stock	All vehicles that move on railways
ShEx	Shareholder Executive
SME	Small and medium-sized enterprises
TWh	Terrawatt hours

Foreword

This Government is absolutely committed to promoting green growth and to ensuring the UK makes a successful transition to a low carbon economy. This will require more sustainable use of natural assets, less environmental damage, improved resource efficiency and greater energy security and resilience, while also maximising growth and creating high value employment. This challenge will involve unprecedented levels of investment in new infrastructure.

The development of well designed, stable policies is key to providing the incentives needed by business if it is to have the confidence to invest in new, green infrastructure. We have made significant steps towards this end, with the introduction of a carbon price floor, proposals on electricity market reform, the Green Deal for energy efficiency in buildings, a major waste policy review and new initiatives to encourage the roll-out of electric vehicles.

However, while such policies are necessary, they are not sufficient. In particular, a lack of appropriate finance might threaten to limit the scale and pace of our transition. The proposals published today set out a vision for a new and enduring institution – the world's first dedicated green investment bank – to complement the existing policy landscape. The institution will play a vital role in addressing market failures which are constraining the flow of finance.

The GIB's mission will be to accelerate private sector investment in the UK's transition to a green economy. Its initial remit will be to focus on green infrastructure assets. It will work to a 'double bottom line' of both achieving significant green impact and making financial returns. It will also operate independently and at arm's length from Government, which will agree its strategic priorities over Spending Review periods.

As the Chancellor set out in his Budget speech in March, the initial capitalisation of the GIB will be £3 billion and the Government will enable the GIB to have borrowing powers from 2015–16 and once the target for debt to be falling as a percentage of GDP has been met. The new institution will need to comply with state aid rules. Therefore, the proposals I am publishing today will need to be approved by the European Commission before we can establish the GIB. Given the need for early action, my department will start to make direct, state aid compliant investments in green infrastructure projects from April 2012. In due course, we will transfer these investments to the new institution. Once state aid approval is achieved and the final form of the institution is agreed with the Commission, we will move to enshrine the GIB in legislation.

I would like to thank the Environmental Affairs Committee for their advice on this important initiative, together with the enormous amounts of support and advice that I and my colleagues across government have received from a broad spectrum of industry, finance and environmental groups. There is now much work to be done to implement these plans and I look forward to updating on further progress in due course.

Vince Cable



Executive summary

The GIB will support the Government's green policy objectives

The UK Government is committed to achieving the transition to a green economy and delivering long-term sustainable growth. However, this transition requires unprecedented investment over the coming decades, with an estimated investment of up to £200 billion in the energy system alone over the period to 2020, and further significant investment in other key green sectors such as transport, waste, water and flood defences. The Government committed in the 2011 Budget to fund the GIB with £3 billion over the period to 2015. The GIB will become a key component of the transition to a green economy, complementing other green policies to help accelerate additional investment.

The GIB will play a key role in addressing financial market failures

The transition to a green economy is constrained by a series of market failures. Government policy is focused on overcoming these market failures using a range of policy instruments including market incentive mechanisms such as carbon pricing, support for low carbon electricity and landfill taxes.

However, even after these policies are implemented, particular market failures can affect the financing

of the green economy and limit investment. These include risk aversion resulting from a lack of information and information asymmetries, as well as high costs of transactions, which constrain the total amount of investment. Without further intervention, these would lead to under-investment against the Government's ambitious green objectives.

Tailored and targeted financial interventions can help to overcome risk aversion, high transaction costs, and the resulting lack of capital and complement other policies. Examples of intervention include:

- Risk mitigation products to present more attractive risk profiles to a wider range of investors.
- Innovative finance mechanisms to overcome high transaction costs of investment and share risks.
- Capital provision via either equity or debt, where shortages of capital remain.

A wide range of sectors is likely to be eligible for intervention over the full period of transition to a green economy and these will change over time. Following a wide, but non-exhaustive, review of different needs across the green economy, this report highlights three sectors to illustrate the evidence of market failure: offshore wind, non-domestic energy efficiency and waste. Work is ongoing to explore further the evidence of market

failures in these and other sectors and to establish the GIB's priorities, including assessing the potential and necessity for the GIB to support the financing of investment in domestic energy efficiency during the first stages of Green Deal delivery. The Government's primary aim remains for this to be a private-sector led scheme.

These interventions require a new institution, rather than coming as a series of Government interventions. It will build the necessary deep expertise in financial markets and green investments to mobilise additional private sector capital and gain market credibility by operating at arm's length from Government.

The GIB will be set up as an enduring institution

The GIB's mission is proposed to be providing financial solutions to accelerate private sector investment in the UK's transition to a green economy. The GIB will work towards a 'double bottom line' of both achieving significant green impact and making financial returns. This will be enshrined in a series of operating principles, which it is proposed will also include delivering enduring impact through sustainable investments, maintaining strategic alignment with Government policy, operational independence from Government, partnership with the private sector and minimising market distortions.

The GIB will be established as a Companies Act company and follow best practice corporate governance. It will operate at arm's length from Government, setting its strategic priorities in consultation with ministers. The GIB's strategic priorities will lay out broad guidance on strategy and criteria for investment over each period of agreed GIB funding, including green policy objectives and likely sectoral focus, the nature of market intervention priorities to be tackled, high-level green and financial return criteria and its borrowing mechanism. The GIB's management will then develop this into a business strategy and business plan.

The GIB will need state aid approval. Once this is achieved, the GIB will be enshrined in legislation to confirm its independent status as an enduring institution with a key public role.

The GIB will use a range of product interventions to achieve its mission

The GIB will be shaped by its management team, based on the strategic priorities, taking into account market needs. This will reflect the balance of sectors covered, products offered and the intermediation model. Following establishment and during this Parliament, the GIB is expected to grow to a staff level of between 50 and 100 employees.

A range of possible GIB product interventions have been tested with market participants. These include:

- **Risk mitigation:** First loss debt in each of the construction and operating phases of projects, for example to help mobilise additional investment into the offshore wind or waste sectors.
- **Innovative finance mechanisms:** An upfront refinancing commitment which guarantees an exit for long-term bank finance after construction, upon certain conditions being met. This could apply to offshore wind.
- **Capital provision:** Equity and senior debt on market terms to provide additional capital, for example in offshore wind or waste projects.

The GIB is likely to continue to explore a range of other products, including innovative finance mechanisms to increase capital provision for non-domestic energy efficiency, as well as other forms of debt, equity and guarantee or insurance-like products in a range of other sectors.

Implementation will consist of three phases

The GIB will have £3 billion available for investment and capital over the period to 2015. The GIB will

comply with state aid rules. It will also acquire borrowing powers in future. Accordingly, the GIB will evolve over three phases:

- **Phase I – Incubation:** April 2012 to achievement of state aid approval. The Government will make direct financial investments prior to the establishment of the GIB to accelerate investment in the green economy.
- **Phase II – Establishment:** Following state aid approval, the GIB will be established as a stand-alone institution in line with the proposals in this document.
- **Phase III – Full borrowing GIB:** From April 2015 the GIB will be given powers to borrow (subject to public sector net debt falling as a percentage of GDP). This will enable the upscaling of the GIB's activity.

Before Phase I, BIS will establish and draw upon an Advisory Group of experienced financial professionals, which over the period to Phase II will advise on the setting up of the institution.

Section 1

A GIB is needed to help the UK transition to a green economy

The UK Government is committed to leading the way in the transition to a green economy. However, investment in the green economy remains hampered by a range of market failures as well as by its heavy reliance on policy interventions by Government. The financial sector cannot always commit capital at the scale required due to a number of market failures. These include risk aversion, as a result of imperfect information, and high transaction costs. The availability of finance has been reduced by the financial crisis and may be further constrained by upcoming regulatory changes. The GIB can help address these market failures by providing targeted financial interventions, including risk mitigation products to improve the risk/return profile of investments, innovative financing mechanisms and capital.

1.1 The UK Government is committed to transitioning to a green economy

The UK Government is committed to delivering long-term sustainable growth and to setting the UK firmly on the path to a green economy. The future green economy is one that encompasses a more sustainable use of natural assets, reduced environmental damage, improved resource efficiency, energy security and resilience to climate change while maximising growth and creating high value employment. The move to a green economy will include a radical long-term transition for many traditional sectors and support from a thriving low carbon and environmental goods and services sector. The Government is further committed to addressing one of the world's most exacting environmental challenges – climate change – by working to secure an international climate change agreement, underpinned by ambitious action at home.

To fulfil these commitments, the Government has adopted a comprehensive set of environmental objectives and targets with supporting policy measures, including:

- **The Climate Change Act:** This Act requires a reduction of UK greenhouse gas emissions by 80% by 2050, with an interim target that requires emissions to be reduced by 34% by 2020, compared with 1990. The Government has recently proposed that the Fourth Carbon

Budget for the period 2023–2027 is set in law at an amount equivalent to a 50% reduction from 1990 levels by 2025. The Climate Change Act also sets out measures to increase resilience and adapt to the impacts of climate change.

- **Renewable Energy Target:** The UK has committed to deriving 15% of all energy from renewable sources by 2020, consistent with the EU Renewable Energy Directive.
- **Compliance with EU waste targets:** The EU Waste Framework Directive calls for 50% of household waste to be recycled by 2020, and for a 35% reduction in biodegradable municipal waste landfill by 2020 compared with 1995.
- **Compliance with EU air quality standards:** The Air Quality Standards Regulations 2010 transpose the requirements of the EU Ambient Air Quality Directive and the Fourth Daughter Directive to improve air quality, particularly the need to meet legal limits on nitrogen dioxide and fine particulate matter.
- **Water management:** The Water Framework Directive contains two objectives of no deterioration and achieving 'good' status in water bodies by 2015. The Bathing Water Directive and the Urban Waste Water Treatment Directive are also driving up standards.

Additionally, further policy measures impacting carbon emission are in place or planned. These include the carbon price floor announced in the 2011 Budget, proposals to reform the electricity market, the 'Green Deal'¹ to improve domestic energy efficiency, and a pledge of up to £1 billion of Government support for the development of carbon capture and storage technologies. Achieving these ambitious commitments and goals

will require action by the public, private and social sectors, and by individual citizens.

1.2 The transition to a green economy will require significant investment between 2010 and 2020

The transition to a green economy will require a significant amount of investment across several important sectors in power, energy efficiency, transport, waste and water. This section gives an indication of the level of investment that may be required in green infrastructure over the next decade. In power generation, for example, Government policy is to set a market-based framework to provide sufficient incentives to attract private investment in new generation which will help deliver its objectives of security of supply, decarbonisation and affordability. This means that the Government does not set specific capacity targets for specific generation technologies and therefore the figures used to provide context in this document are purely illustrative.

- **The Power sector** represents by far the largest capital investment need, with a broad range of estimates suggesting an investment requirement in power generation and transmission of at least £110 billion over the period of 2010–20.² The financial needs differ within each sub-sector:
 - **Renewable Power:** The UK National Renewable Energy Action Plan suggests that the UK could see around 34 GW of renewable power generation from a variety of technologies in 2020, including in offshore wind and biomass electricity. This would require £50 billion–60 billion of further investment over the decade to 2020.³
 - **Carbon capture and storage:** CCS technology is currently being demonstrated.

¹ A framework to enable private firms to offer consumers energy efficiency improvements to their homes, community spaces and businesses at no upfront cost, and recoup payments through a charge in instalments on the energy bill.

² Department of Energy and Climate Change, *Electricity Market Reform: Consultation Document* (December 2010).

³ DECC analysis. Total cost is undiscounted capital costs at 2009 prices. The total will vary depending on a range of factors including technology learning rates and input costs.

The Government has announced funding of up to £1 billion to cover the capital costs of the UK's first, and one of the world's first, commercial-scale CCS projects and is committed to providing additional funding towards a further three projects. The overall lifetime costs for the full demonstration programme could be around £7.2 billion–9.5 billion.⁴

- Nuclear generation: Due to the long lead times for nuclear generation projects, the maximum technical potential for new build by 2020 is ~6 GW,⁵ requiring a minimum ~£17 billion total investment.⁶ Nuclear power is likely to play a more significant role by 2030.⁷
- Transmission: An estimated £4.7 billion is required by 2020 to reinforce the transmission network to accommodate future renewable energy and nuclear generation.⁸
- Smart grid and smart meters: Smart meters will be rolled out to households and small non-domestic buildings between 2014 and 2019, requiring an estimated investment of up to £11 billion.⁹
- **Renewable heat:** Recent analysis for the Renewable Heat Incentive suggests that the UK could see ~68 TWh of renewable heat generation by 2020 from non-domestic sources. This would require ~£10 billion of investment by 2020.¹⁰
- **Energy efficiency:**
 - Non-domestic energy efficiency: Industry and commercial buildings could require ~£4.5 billion investment over the period to 2020.¹¹ The projects range from small (from tens of thousands of pounds) to large (with over £100 million investment for a large-scale industrial power and heat generation plant).
 - Domestic energy efficiency: Homes present a significant energy efficiency opportunity with estimates of a maximum feasible potential of ~16 million separate new installations by 2020.¹² The estimated amount of finance ranges from £14 billion to £21 billion over the period to 2020.¹³
- **Transport:**
 - Rail: A series of major rolling stock procurements for delivery up to 2018 is under way for each of Thameslink, the Intercity Express programme and Crossrail which will require private sector investment of £4 billion–6 billion.¹⁴ Further significant investment will be required in continuing electrification of the classic rail network and in high speed rail over the coming two decades.
 - Low Carbon Vehicles: The Government is providing up to £30 million in match funding to support the installation of electric vehicle recharging infrastructure in lead places across the country, including

⁴ DECC, *A framework for the development of clean coal, Impact assessment* (2009).

⁵ DECC, *2050 Pathways Analysis* (July 2010) and Vivid Economics analysis.

⁶ Based on ~£2.9 billion per GW assumed cost. The total will vary depending on a range of factors including technology learning rates and input costs.

⁷ Committee on Climate Change, *The Renewable Energy Review* (May 2011).

⁸ Electricity Networks Strategy Group, *Our Electricity Transmission Network: A Vision for 2020* (March 2009).

⁹ DECC, *Smart Metering Implementation Programme: Response to Prospectus Consultation* (March 2011).

¹⁰ DECC analysis for the Renewable Heat Incentive. Total cost is undiscounted capital costs at 2010 prices. The total will vary depending on a range of factors including technology learning rates and input costs.

¹¹ AEA Report for DECC, *Assessing the carbon dioxide emissions and cost-effective carbon savings potential for organisations not covered by EU ETS, CCAs or CRC (CESA 0903)* (October 2010).

¹² An installation refers to a particular energy efficiency action such as loft insulation or solid wall insulation. A single property may undergo several installations.

¹³ Estimated number of installations and costs contained in Energy Bill Impact Assessment Table 1: Assumed total number of installations for each measure over period 2013–2020; cost estimate relates to potential investment over the decade to 2020.

¹⁴ Department for Transport estimates.

plans to install up to 9,000 charge points by the end of 2013, with continued private sector investment to 2020 and beyond. Many commentators also expect hydrogen to play a part in the de-carbonisation of road transport, which would require investment in appropriate fuelling infrastructure.¹⁵

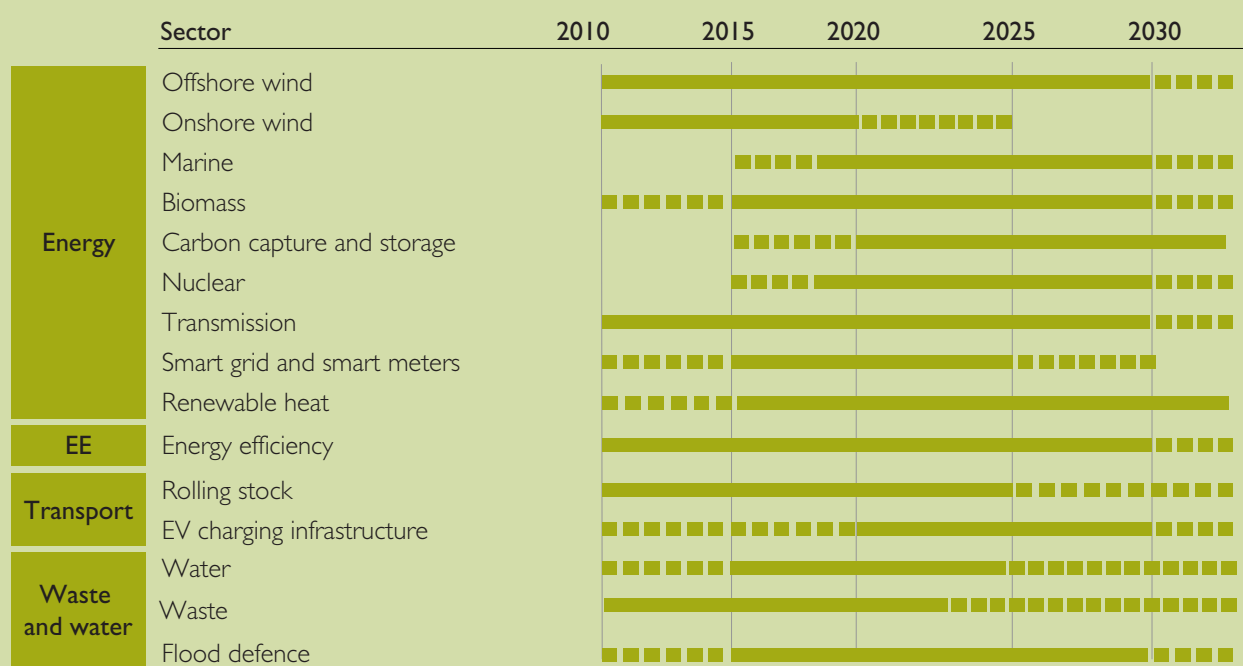
- **Waste and water:**

- **Water:** To maintain and improve the public water supply is likely to require investment of ~£20 billion over the next five years and an estimated £95 billion over the next two decades.¹⁶
- **Waste:** The waste sector, including both municipal waste and commercial

and industrial waste requires up to an estimated £15 billion of investment to divert waste from landfill, improve sustainable waste management and generate more energy from waste.¹⁷

- **Flood defences:** In February 2011 Defra announced expected flood defence expenditure over the four years from 2011/12¹⁸ of over £2 billion, an average of ~£0.5 billion a year. In addition to this, a further £80 million–100 million a year has been spent by local authorities. Expenditure is estimated to need to rise to at least £1.1 billion a year by 2035 to maintain current risk levels.¹⁹

Chart I
Approximate timing of investments



Source: GIB project team analysis; non-exhaustive range of sectors

¹⁵ Department for Transport analysis.

¹⁶ Ofwat, Defra analysis.

¹⁷ Estimate based on a range of industry estimates including Infrastructure UK, Institution of Civil Engineers, Defra analysis.

¹⁸ Press release at: <<http://www.defra.gov.uk/news/2011/02/09/flood-defence/>>.

¹⁹ Environment Agency, *Investing for the future: Flood and coastal risk management in England* (2009).

1.3 The green economy faces significant market failures and other barriers that need to be addressed

Despite clear Government ambition and a good knowledge of the funding requirements, there remains a significant risk that capital investment over the coming years will fall short of what is needed to transition the economy at the required pace. In particular, the combination of a number of different market failures is constraining the availability of finance for investment in new, emerging (and in this case, green) technologies.

This section describes the interaction of these market failures and highlights where they could be addressed by financial interventions.

We have identified a number of market failures which are affecting the financing of the green economy, including green infrastructure projects:

- **Externalities:** Carbon emissions from, for example, electricity generation using fossil fuels affect the wider environment and where these impacts are not included in the price of the electricity, these are referred to as 'negative externalities'²⁰ – due to the harm they cause. Since many green investments, like renewable power generation, are often more expensive than their higher carbon alternatives, policy interventions, for example the introduction of a cost of carbon as set within the EU Emissions Trading Scheme, are required to address the externalities.
- **Imperfect information and information asymmetries:** Incomplete information leads to uncertainty in the market and hence affects the market's ability to judge properly the merits of a project and its potential risk. Information asymmetries can lead to a significant imbalance of information between different players, which results in a breakdown of transactions that would otherwise be beneficial. One example is energy efficiency opportunities, where many energy users are unaware of the potential savings or how to capture them and therefore invest less than the optimal amount in upgrades of building fabric, fittings, plant and machinery.
- **Positive spill-overs from innovation:** Technology innovation, particularly at early stages, often has benefits to other players which cannot easily be captured by the innovator; for example where intellectual property is not fully protected from being copied by competitors or where benefits take place in society that cannot easily be captured in the price.
- **Public goods in infrastructure:** Infrastructure often provides a public good which benefits the wider economy but which does not have a business model that generates revenues appropriate for investors to make the required investment. Flood defences are a good example of this.
- **Imperfect competition/market power:** Unlike public goods, where it is difficult to recover fully the returns on investment, some infrastructure assets (in particular core energy, water, transport and telecoms) can deliver a return. However, because the networks are essentially natural monopolies (and hence more effectively and efficiently delivered by a single provider) government intervention is required to ensure competitive pricing (for example the Regulated Asset Base regime that currently oversees much of the UK's network infrastructure).
- **Need for complementary goods and services:** Development of an industry might be limited because complementary goods and services that are required for the industry's development are not yet available at the time or to the extent required. For offshore wind, this could include the availability of transmission infrastructure or supply

²⁰ An externality exists when the price imposed on an activity does not reflect its true cost to those affected. These can be positive or negative, although frequently the negative externalities are of key concern.

vessels. A lack of financing of projects can also be seen as a missing complementary good. Strong Government signalling as well as targeted policy interventions that support investment in the supply chain can help mitigate this limitation.

Some of these failures are manifesting themselves in the financing of the green economy and for green infrastructure in particular, as follows:

- **Temporary restrictions in company and bank balance sheets resulting from 'frictional' cost of raising new capital:** Companies, including utilities, industrial players and waste companies, are the traditional source of investment in much green infrastructure, using traditional corporate finance. For large, discrete projects, project finance raised in the banking community may also be used. However, the scale of investment required now (driven by the rapid scaling up of policy ambitions) can temporarily exhaust available capital from corporate balance sheets or banks, leading to investment below that required to meet policy objectives.

Long-term bank lending via structured finance products will be further affected by new regulations (such as Basel III, which requires banks to increase their capital across all asset categories) and by current illiquidity in credit markets following the financial crisis. Whilst the lack of capital should be temporary, transaction costs associated with raising additional capital limit the pace at which the balance sheets of traditional investors can be grown. These transaction costs include frictional costs of providing the necessary information between principal investors and target companies and risk aversion among investor groups (see below).

As a result of these restrictions, projects may need to access alternative pools of capital across a wider investor base.

- **Risk aversion due to imperfect information and information asymmetries:** Often, investments in key sectors of the green economy lack deal precedent and a track record of performance.

Uncertainty can exist around construction costs, technology reliability and performance, policy certainty or counterparty risks. While different investor groups can be comfortable with different elements of risk profiles, the number of investors willing to take the set of required risks may be limited by lack of information and experience and the application of risk averse rules of thumb. As a result, Government interventions, which help reduce the risks for certain types of investment, may be required to expand the range of willing investors.

- **High financing transaction costs:** Many green projects involve novel technologies and business models, which increase the costs of 'due diligence'. In addition, green projects can sometimes be high in number, but small in size and distributed across a large number of sites – for example energy efficiency projects across a large corporate estate or within the domestic sector. These factors can raise the costs of assessing and monitoring as well as organising external finance for projects and could prevent good projects with positive economics from obtaining funding.

Each of these issues can disproportionately affect the financing of green projects due to their particular characteristics. These include:

- **Reliance on long-term policy:** Many green investments rely heavily on policy interventions to make them economically viable. Projects often only generate an acceptable return if policies remain in place for more than ten years and often multiple decades. This reliance can create significant perceived policy risk for investors. Whilst policy design can help to mitigate these perceived risks (for example guaranteeing grandfathering of policy on existing investment), the lack of track record in long-term green policies means that this will continue to be an issue.
- **Novelty of technology:** Green investments often involve the application of new technologies, such as in deepwater wind projects or marine power;

leading to a lack of a commonly understood track record and capability to evaluate projects.

- **Need for rapid scale-up:** In some green sectors, rapid scale-up is required to achieve a trajectory that can meet long-term targets or international obligations. Where this pace is combined with novel technologies and reliance on policy interventions (e.g., offshore wind), investment can fall short of the required level.
- **Capital intensity:** Green technologies are often more capital intensive than their 'non-green' alternatives (e.g., offshore wind compared to gas-fired power generation; waste recycling and recovery compared to landfill). As a result, they may require a greater share of traditional investors' capital and a wider investor base to reach the required scale of investment.

A range of Government policies have been devised to help overcome, or at least limit, the effect of market failures on the financing of green projects. However, there is evidence that market failures which are apparent in the green sector are interacting with market failures affecting financing. The combinations of failures are particularly evident where the Government has adopted ambitious green objectives requiring high levels of investment.

The result is underinvestment compared with Government policy objectives and leads to a potential role for a green investment bank to help address this investment shortfall.

1.4 Targeted financial intervention is required to catalyse the investment needed to develop a green economy at speed

As introduced above, Government uses a range of policy interventions to overcome market failures that hamper the green economy, with a preference for market-based mechanisms that apply in a non-discriminatory way to all players in the market. However, the interactions of market failures, in the context of ambitious green policies and these market-based mechanisms, may still

mean Government needs to intervene directly. These interventions should be targeted at specific situations and tailored to ensure maximum 'additionality' and minimum market distortion.

There are a number of financial interventions that could help resolve financial market failures in the green sector:

- **Risk mitigation:** Change the risk/reward profile of investments by making higher risk investments in a project. This could be achieved in a number of ways, such as offering contingent debt facilities, taking tranches of subordinated debt or first loss equity or via guarantees or insurance-like products. As a result, the projects could attract larger quantities of conventional debt capital in both the construction and operating phase:
 - Construction phase: Increase the availability of existing sources of capital for construction, such as bank project finance debt.
 - Operating phase: Facilitate the refinancing of projects and increase the flow of capital to green sectors by helping to replace higher risk capital put in place at construction (and return such capital for further construction) with lower risk capital, such as investment grade debt, for the remainder of the operating phase.
- **Innovative finance mechanisms:** Devise or support innovative finance mechanisms to overcome information asymmetries or high transaction costs by introducing new forms of capital to existing types of projects. For example, create mechanisms to invest in energy efficiency that relieve corporate balance sheets and introduce either bank or institutional investor capital to a wider range of projects.
- **Capital provision:** In some cases, it may not be possible to mobilise additional finance at the scale and pace required to meet Government policy objectives. As a result, capital may need to be injected directly into projects:
 - Equity capital, to increase the risk-taking capacity of the market.
 - Debt capital, to increase the pool of capital available to back certain types of project.

- **Information provision:** Tackle information asymmetries through dissemination of research into the opportunities of investing in different sectors as well as building confidence in Government policy by investing as a principal.

The financial interventions mentioned above could be implemented by deploying a range of products designed to address different sector-specific investment needs.

1.5 A new institution is required to deliver ongoing financial interventions

The sections above explained why Government-organised financial interventions could form part of a more efficient and effective suite of policy measures to deliver the Government's objectives for the green economy. These interventions could be delivered through a series of programmatic interventions, or by a new financial institution.

The Government believes that the best way to deliver financial interventions to accelerate the transition to a green economy is through a new, enduring institution.

The need for an enduring institution over the coming decades is as follows:

- **Financial market failures are complex and fast-changing, requiring deep expertise:** Understanding the ultimate causes of financial market failure requires deep knowledge and expertise. This includes understanding issues such as the asymmetries of information between different investors and the transaction costs related to financial due diligence. A financial institution which can develop expertise through participation in the market is best placed to decide what interventions are required to be efficient and effective.
- **Green finance interventions to tackle market failures require development of in-house specialist expertise:** Financial interventions designed to tackle market failures require a combination of specialist finance expertise and

an expertise in Government policy and green technologies. A new institution will be able to develop these skills, becoming a market leader in cutting-edge green technology financing. It could also then advise Government on the impact that policies are having on investment in the green economy.

- **Intervention at arm's length from Government builds credibility:** Although Government could attempt to build the required green finance expertise internally, credibility and market confidence can be increased if the interventions are made at arm's length from Government by professionals with private sector expertise.

For these reasons, a new and enduring institution is required to deliver the financial interventions needed to support the transition to a green economy.

1.6 The GIB will require focus to be effective

Financing needs and market failures are not equally pressing in all parts of the green economy. Given limited resources and the need to deliver efficient and effective interventions, the GIB will need to review carefully the market need and potential impact of different interventions. The GIB's strategic priorities are likely to include policy objectives, market intervention priorities, broad green criteria and financial criteria. These are explained further in section 2.3 below.

It is likely that a range of projects or interventions will satisfy these criteria. Following a non-exhaustive review of different needs across the green economy, we have identified three sectors to illustrate the evidence of market failures: offshore wind, non-domestic energy efficiency and waste. Further work is ongoing to determine the potential impact of GIB interventions in these sectors in order to confirm whether they should be prioritised. Decisions on priority sectors will be determined in due course. Some sectors are less likely to be an early priority, although this is likely to change over time.

- Timing:** The sector is yet to require investment that exceeds the capacity of traditional sources of financing, or does not yet offer opportunities for investment on terms likely to meet the GIB's criteria. This includes CCS and EV charging infrastructure.
- Relevance or need for GIB interventions:** Other policies have recently been set or are actively being considered to address current market failures, and GIB interventions are either not likely to be, or are not yet understood to be, complementary. This includes areas such as onshore wind and investment in flood defences.

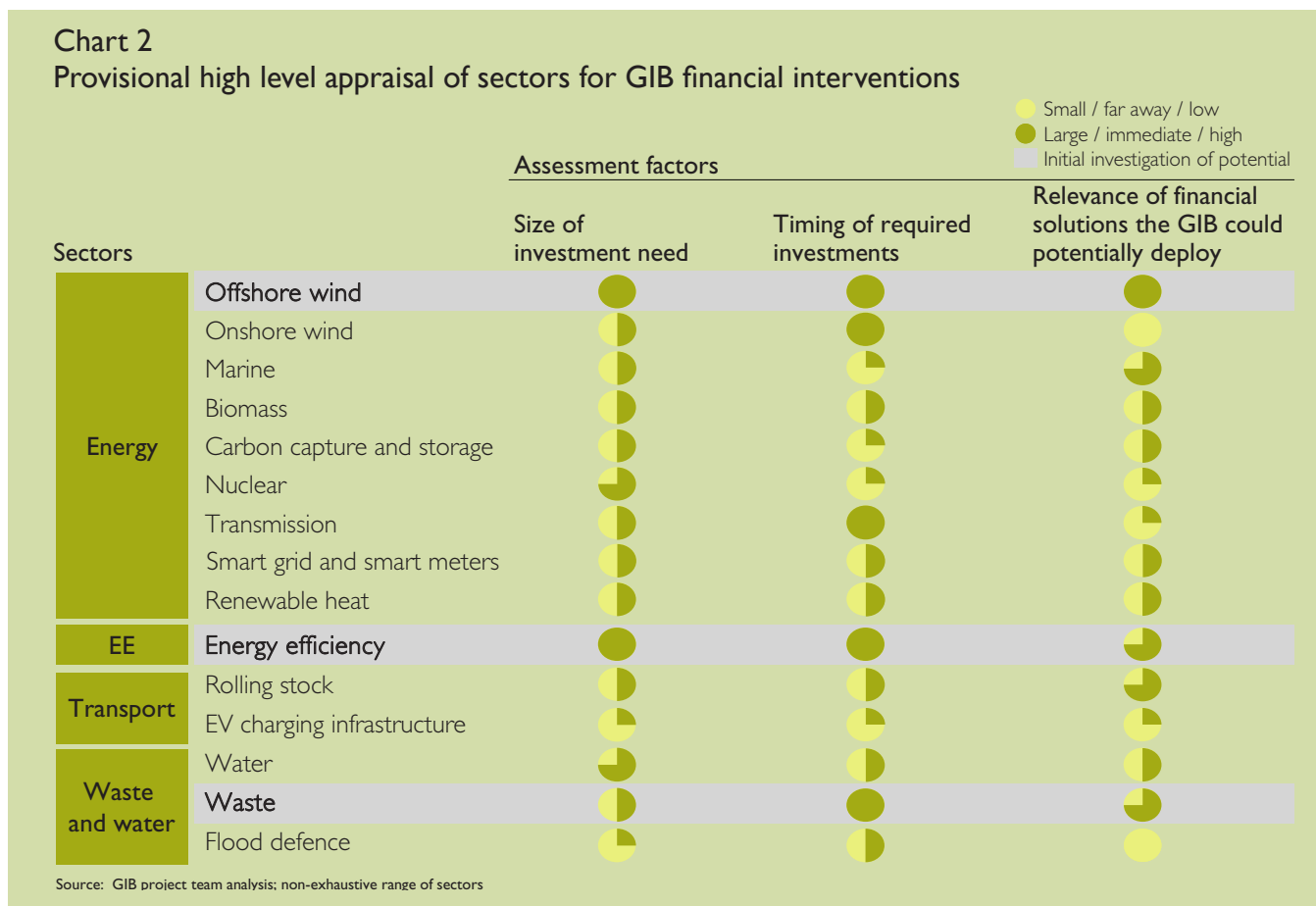
Utilities are investing in offshore wind, but cannot invest at the likely scale required due to constrained balance sheets. Offshore wind suffers from a significant lack of information and from information asymmetries, due to the novelty of the technology, lack of long-term track record and reliance on policy to support its economics. These are exacerbated by its capital intensity and rapid scale-up requirements. These failures lead to risk aversion among some investor groups and can limit the number of potential investors in offshore wind, which have so far mainly comprised traditional utility investors.

Chart 2 sets out a provisional high level appraisal of sectors for financial intervention.

Offshore wind

The offshore wind sector plays an important role in the Government's desired UK power generation mix.

The GIB could play an important role in finding additional sources of financing beyond utility balance sheets, by co-investing or by helping to refinance after the end of construction. Interventions could also reduce project financing costs by helping to place debt in the capital markets and by de-risking project finance for development or construction. This would facilitate the increased participation of



independent project developers and financial investors.

Waste

Investments in the waste sector are needed to help the UK meet its landfill diversion targets, reduce greenhouse gas emissions and contribute to renewable energy targets. The aim of such investments is to reduce landfill volumes and related environmental costs and help to recover recycled materials or energy from waste.

The Landfill Tax is a key policy tool for encouraging investment in sustainable waste management and the waste sector is currently undergoing a major transformation. However, evidence suggests that several issues remain, including the need for complementary services and long-term contracts to give investors certainty around the introduction of novel technologies and business models that lack track record and that can produce risk aversion among some investor groups. These problems persist, for example, in the commercial and industrial waste sector, which plays an important role in sustainable waste management. This can make it difficult for waste companies to obtain financing beyond their balance sheets, which can be significantly constrained.

It is envisaged that the GIB could play a catalysing role to help companies scale up investments by introducing equity and debt co-investment. It could also provide risk mitigation products that reduce the risk profile of projects and make traditional bank debt more available.

Non-domestic energy efficiency

Investment in non-domestic energy efficiency has the potential to reduce energy usage and, at the same time, provide attractive rates of return for the companies that invest. These include both large scale commercial buildings and industrial plant and machinery across a wide range of sectors.

Industrial players and large commercial property owners can have limited balance sheets, which restrict their ability to invest in a full range of cost-effective energy efficiency measures. The GIB could introduce innovative finance mechanisms to increase the amount of lower cost debt for commercial buildings and industrial energy efficiency. These financing mechanisms could potentially be combined with advice to help identify further energy efficiency measures.

The case for GIB interventions in particular sectors is emerging. Work is ongoing to develop the case for interventions in these and other sectors. Residential and small non-domestic building energy efficiency is currently being addressed by the Green Deal policy, which is undergoing detailed design. Work also continues to explore the evidence of market failures. This work will include consideration of the potential and necessity for the GIB to support the financing of investment in domestic energy efficiency during the first stages of Green Deal delivery. The Government's primary aim remains for this to be a private-sector led scheme.

Box 1**Areas of the green economy where existing or planned policies are likely to be sufficient to tackle market failures**

- Early stage, pre-commercial technology development: There is a broad landscape of Government support for early-stage green and low carbon technology development. In particular, significant support is provided by the Technology Strategies Board, the Carbon Trust and the Environmental Technologies Institute. In addition, research councils provide support for early stage R&D.
- Commercial technology development: The Government has made a number of interventions to support increased venture capital. For example, Capital for Enterprise manages a range of funds, some of which target innovation by technology companies, including green technology.
- Growth of small and medium-sized enterprises: There is a broad range of Government interventions to assist SMEs' growth, including the Enterprise Finance Guarantee and Enterprise Capital Funds.
- Grid transmission: Ofgem has put in place a regulated asset base and an offshore transmission operator regime that seek to provide an attractive and stable environment to incentivise long-term investment.
- Municipal solid waste: Government is providing support for PFI contracts.

Section 2

The GIB will be set up as an enduring institution

The GIB will be set up as an enduring institution. We will put in place best practice corporate governance arrangements and ensure that it operates at arm's length from Government. These will include:

- A well defined charter that contains the GIB's mission and operating principles and provides guidance on its long-term goals
- Clear strategic priorities that outline green priorities, sectors in scope and high level guidance on investment criteria, amongst other things
- Investment criteria, which translate the strategic priorities into metrics to guide the GIB's investment decisions

This section describes these arrangements in more detail. It also sets out how certain legal constraints will affect the set-up of the GIB.

2.1 The GIB's long-term goals will be defined in its mission and operating principles

The GIB will have a long-term charter that outlines its mission and operating principles. This charter will provide the core principles that will govern the GIB's operations throughout its existence. Following completion of the state aid approval process, the GIB will be enshrined in legislation to confirm its independent status as an enduring institution with a key public role.

Mission

The GIB's mission will be around providing financial solutions to accelerate private sector investment in the UK's transition to a green economy.

The mission statement will give the GIB sufficient flexibility to adjust to changing market needs. It will, however, contain a number of implicit choices. These will include:

- To focus on investments that support the transition of our domestic economy.

- To focus on the broader ‘green economy’ (rather than narrowly on infrastructure, or low carbon sectors).
- To focus on deploying financial solutions (rather than policy, advocacy or technical research) to increase the supply of private sector capital.

Operating principles

The GIB will shape its business model and operations in accordance with a set of proposed operating principles. These will be subject to further work, but it is proposed they will be along the following lines:

- **Green objectives, sustainable finances:** Working towards a ‘double bottom line’, deploying capital to achieve significant green impact whilst generating positive portfolio returns and in doing so, preserving and building its capital base.
- **Enduring impact:** Building a sustainable institution that delivers the long-term impact required by the UK’s transition to a green economy.
- **Strategic alignment with Government:** Aligning strategic priorities with Government green policy objectives and initiatives.
- **Operational independence from Government:** Putting management and operational decision making at arm’s length from Government.
- **Partnership with the private sector:** Operating in cooperation with private sector players, enhancing private sector provision and leveraging private sector capabilities where appropriate, and not acting where Government policy objectives could be met by private sector provision alone.
- **Minimising distortions:** Operating consistently with EU state aid rules, minimising inappropriate competition and adverse impacts on market pricing.

2.2 The GIB’s governance model will be designed to support its mission

The GIB will initially be owned by the Government and will operate as a separate institutional unit at arm’s length and with full operational independence.

The GIB’s proposed governance model will be designed to allow for a possible eventual transfer of ownership from Government to the private sector of some or all of its activities.

The governance model will have five components – the Department for Business, Innovation and Skills (via the Shareholder Executive) as Shareholder; a GIB Policy Group through which ministers will be consulted about priorities, the GIB Corporate Board, the Board Committees and the Executive Management – with the following main responsibilities:

- **Shareholder:** The Department for Business, Innovation and Skills, via the Shareholder Executive (ShEx) will be the GIB’s sole shareholder. ShEx currently works with a number of shareholder departments to support their capabilities as shareholders of businesses such as the Export Credits Guarantee Department and National Air Traffic Services. The shareholder will, in consultation with the GIB Policy Group, approve the founding articles of the GIB, the GIB charter and the strategic priorities. It will also exercise shareholder controls over board membership, remuneration and other customary matters.
- **GIB Policy Group:** The GIB Policy Group will be a forum to co-ordinate departmental priorities. It will also agree the GIB’s strategic priorities with the GIB Corporate Board and Executive Management. Its decisions will reflect ministers’ policy agendas and priorities. Ministers will also sign off the GIB’s strategic priorities.

The GIB Policy Group will be chaired by BIS and comprise representatives from relevant government departments. The list of departments will be determined by ministers.

- **GIB Corporate Board and its committees:**

The GIB Corporate Board and its committees will operate in line with best practice private sector corporate governance guidelines. The Board's main task will be to help the GIB Policy Group set the strategic priorities and ensure the GIB is operating in line with its mission, operating principles and strategic priorities. Its responsibilities will include:

- Setting strategy and plans: Annually review the strategy and business plan for the GIB, developed by the Executive Management, taking into account the strategic priorities agreed with ministers.
- Monitoring performance: Monitor and evaluate the GIB's progress towards accomplishing its strategy and business plan.
- Overseeing key management issues: Appoint the CEO, evaluate the CEO succession plan, set senior management and CEO compensation and evaluate their performance.
- Ensuring the safety and soundness of the business operation: Oversee risk management and auditing, ensure ethical behaviour and compliance with laws and regulations and accounting principles.
- Overseeing other governance issues: Propose new candidates for the Board, set Board governance processes, and input into personnel strategy.

- **Executive Management:** The Executive Management will be responsible for the GIB's day-to-day operations. Its specific responsibilities will include:

- Developing long- and short-term strategy: Developing and proposing the long-term strategy and annual business plan which would include decisions around the investment priorities (e.g., at a sector level) and products.
- Developing investment evaluation criteria: Determining detailed investment criteria, for agreement with the Board.
- Managing performance: Managing the organisation to deliver against the business plan, including creating and

building appropriate processes and taking appropriate human resource decisions.

- External reporting: Providing performance reports to BIS, the GIB Policy Group and the general public according to an agreed reporting framework.

The GIB will operate transparently. In particular, we envisage it sharing information in two main areas:

- **Shareholder report:** The GIB will report at an agreed frequency to the Shareholder. Its metrics will be determined by the Executive Management team in consultation with the Board and BIS. These will be aligned, where appropriate, to Government policy objectives. The reporting is expected to cover information about the GIB's financials (e.g., financial results, capital allocation, risk allocation, operating expenses), its relationship with partner organisations (e.g., amount of funding allocated via different partners), and its green economy impact (e.g., volume of new and total deals by sector; actual and expected 'green impact', cost efficiency). It would also contain specific indicators of value for money.
- **Annual report:** The GIB will publish an annual report to inform the Shareholder and the wider public about its activities. The content of this report will be determined by the Board in consultation with BIS and the GIB Policy Group. It is expected to include a summary of its annual financial results and an overview of its impact on the green economy.

Interim reports will be provided for BIS and the GIB Policy Group in case of major events.

2.3 The GIB's strategic priorities will guide its Executive Management

The Government and the GIB Corporate Board will agree medium-term, broad strategic and investment guidance for the GIB. In this way, the Government will align the GIB's strategic direction with its policy priorities, while not interfering with the GIB's day-to-day management. Ministers will sign off the GIB's strategic priorities.

It is envisaged that the strategic priorities will be set for each of the GIB's funding periods, including any agreed cap on borrowing. This is expected to coincide with Government Spending Reviews.

The strategic priorities will provide guidance on the GIB's short to medium term strategy as well as on the criteria which management should consider when judging the suitability and value for money of investments. This guidance will form the basis of the GIB investment committee's more detailed investment criteria. We envisage the strategic priorities will include:

- **Alignment with green policy priorities:**
 - Green policy objectives: Guidance on areas of the green economy that are priorities and that the GIB could potentially focus on, provided these also meet wider criteria. The priorities could also include high level guidance on any areas of the green economy in which the GIB should not invest.
 - Market intervention priorities: Broad guidance on the financing market failures and barriers which the GIB should seek to address.
 - Other policy requirements: Guidance on areas of the green economy where current or future planned policy interventions will mean GIB intervention is unlikely to be required.
- **Broad investment criteria that include:**
 - Green criteria: Broad parameters to define the performance characteristics of green investments and the metrics for measuring and monitoring green benefits both across

individual projects and the portfolio as a whole.

- Financial criteria: Guidance on the risk-adjusted financial return and capital preservation requirements for the GIB, including its portfolio diversification requirements (within the constraints of the policy parameters).

Whilst the strategic priorities will be agreed between the Government and the GIB Corporate Board over GIB funding periods (which are expected to coincide with Government Spending Reviews), the GIB Corporate Board will have the ability to propose amendments should the investment environment shift over time. This feedback loop, initiated by the GIB, will enable the GIB to remain proactive in delivering the maximum impact against its mission.

2.4 The GIB's strategic priorities will also guide its investment criteria and day-to-day investment decisions

The GIB's investment committee will make investment decisions. The committee will consist of members of the Executive Management and will report directly to the Board. Above a defined threshold, or in exceptional cases, individual investment decisions may require approval by the Board. The investment committee will make decisions based on a detailed set of investment criteria.

The investment criteria are expected to comprise a mix of 'green/social' and commercial factors that reflect the GIB's strategic priorities. Below is an illustrative list of such factors.

- **Green/social criteria:**
 - Green impact: Contribution of an investment to policy objectives set out in the GIB's strategic priorities. Potential metrics could include, for example, tonnes of CO₂ reduction, or tonnes of waste diverted from landfill.

- Growth impact: Contribution of an investment to the growth of the UK's green economy.
- Additionality: That a project would not be financed in full without the GIB's involvement. Concessional funds could be used if it is unlikely that the project would otherwise go forward. However, the GIB may need to avoid market distortions and maintain minimum risk-adjusted financial returns.
- Cost-effectiveness: 'Green impact' per pound of funding provided by the GIB. This measure would need to consider the efficiency of a given technology and the investment's ability to mobilise additional private sector finance.
- Compliance with other best practice criteria: These could include other environmental criteria, including the protection of the local environment and health and safety requirements.
- **Commercial criteria:**
 - Risk adjusted return: The risk-adjusted expected return of a project is above a specific threshold to ensure capital preservation and accumulation. The precise threshold will be set by the Executive Management in response to the high level financial objectives set by ministers.
 - Financial sustainability: That a project has a high probability of long-term financial sustainability both during the period of the GIB's investment and afterwards. This could include that a project is viable for the long term to ensure that the expected 'green impact' is realised and sustained.
 - Exposure limits: These could include sub-sector, technology and geographic criteria that would help to mitigate risks.
 - Capital recycling: That a project requires shorter term funding, and hence allows faster capital recycling (within the constraints of policy parameters).

2.5 Regulatory and compliance issues will influence the establishment and activities of the GIB

The GIB will operate within a number of legal and regulatory frameworks, which impose boundaries on the scope of its operations and which will change over the GIB's various phases. The most important constraints are:

- **State aid:** The design of the GIB itself, and its products and services, will need to take into account the application of the state aid rules (particularly set out at Article 107 of the Treaty on the Functioning of the European Union). The proposals for the GIB will have to be notified to and approved by the European Commission, with initial discussions having already begun. However, not all proposed activities will require state aid approval. It is therefore proposed to build the GIB in phases, starting with activities that do not require new state aid approvals – see section 2.6 below.
- **Financial regulation (prior to GIB borrowing):**
 - **Banking regulation:** Legal advice is that the GIB will not initially need to be authorised by the FSA as a bank. However, the GIB management team may wish to shadow best banking practice in the lead-up to acquiring borrowing powers. This analysis only applies to the GIB before it gains borrowing powers and is based on the assumption that the GIB, at this stage, will not fund itself by soliciting deposits, either from the retail or wholesale market, and will not hold itself out to the market as a securities underwriter or as being willing to buy and sell securities on a continuous basis (i.e., market-making). The GIB will need to determine which borrowing mechanism to use and whether and when to apply for a banking licence.
 - **Other regulated activities:** As the GIB will initially: (i) operate within government or be otherwise wholly owned by government, (ii) deal with or manage only government funds, and (iii) to the extent that it provides advice or other investment services, do so

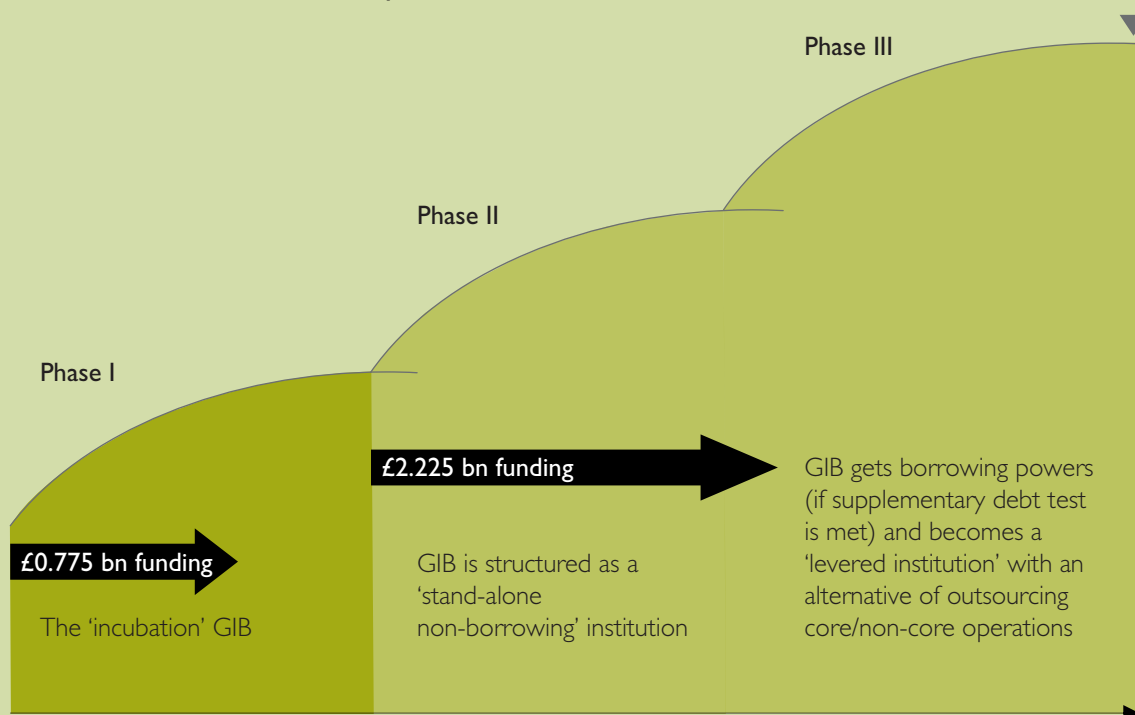
only within government, it will also not need to be authorised to conduct regulated asset management or advisory activities. The GIB's regulatory status will, however, need to be kept under review if and when its business model or product range is developed and, in particular, if the GIB starts to manage third party (i.e., non-government) funds, or provides investment advice on a commercial basis, becomes involved in securities underwriting or placing activities, offers risk transfer or hedging products (such as credit default swaps or contracts of insurance) or otherwise engages directly with the retail financial services market.

2.6 The GIB will evolve in three phases

It is unlikely that state aid approvals for the GIB will be obtained by April 2012 – the date at which the Government aims to start making financial interventions in the market. Therefore, the build-up of the GIB will be staggered over three distinct phases. The phased evolution (Chart 3) will enable the GIB to operate smoothly within the remit of legal, regulatory and affordability constraints and adapt to any emerging policy priorities. The first phase would lay the foundation of the future GIB and enable early investments to be made. The future phases would be aimed at developing a fully functional institution.

- Government funding and accounting treatment:** The GIB will be established as a company under the Companies Act 2006. The Office of National Statistics will need to come to a view, in due course, on the GIB's classification, including whether it is a 'public corporation' for the purposes of the National Accounts.
- Phase I – Incubation:** From April 2012 until achieving state aid approval, the GIB will be in an incubation phase. Investments will be structured so that either (i) no state aid is involved (because the Government is participating on fully commercial terms); or (ii) the projects are within the scope of existing state aid exemptions and approvals.

Chart 3
The GIB will evolve in three phases between now and 2020



Source: GIB project team analysis

- **Phase II – Establishment:** Following state aid approval, the GIB will evolve into a stand-alone institution. In this phase, the GIB will be created as a fully operational institution with a well-defined organisational structure and operating model and will act as a provider of financial support and investment for the green economy. Its set-up and scale will, to a large extent, depend on its sector and product distribution focus. The governance will be structured as described in sections 2.1–2.4.
- **Phase III – Borrowing powers:** From April 2015, and if public sector net debt is falling as a percentage of GDP, the GIB will acquire borrowing powers. This will enable it to broaden the scope of its product offering and sector focus and to become a significant lender for green investments across a wider range of sectors if the case for market failure of capital provision is made.

2.7 In the incubation phase, the Government will invest directly

During the incubation phase, the Government will make direct financial interventions to accelerate investment in the green economy. The Government will make these interventions via the Department of Business, Innovation and Skills using a small staff of finance professionals. Investment decisions will be overseen by an investment committee and will need to be compliant with state aid restrictions. During this phase, the Government will also put in place an Advisory Group, comprising experienced finance professionals. The Advisory Group is expected to focus its advice on the setting up and long-term strategic direction of the GIB.

2.8 The location for the GIB will be chosen to enable it best to deliver its mission

As the GIB transitions into a fully operational entity in Phase II, it will need to be based in a location that allows it to operate in an effective, efficient and scalable manner. The Government and the GIB Corporate Board, working closely with the

Government Property Unit, will consider a number of criteria before taking a decision on the GIB's location, including:

- **Ability to fulfil the GIB's mission:** The GIB will be based in a location that best enables it to fulfil its mission through other players in the wider green and financial markets. In particular it will need to be in close proximity to the following groups:
 - Private sector financiers: Including bank project finance teams, infrastructure funds, private equity houses, commercial lending banks and institutional investors. Close proximity will enable the GIB to encourage mobilisation of additional private sector capital.
 - Project sponsors: Including the head offices of utilities, waste companies, large industrial companies and 'green' project developers.
 - Specialist advisors: Including specialist legal advisors for project finance, commercial and technical advisors and asset service providers.
 - Green thought leadership: To solicit third party advice on green priorities – e.g., NGOs, trade associations, government agencies.
 - Government: To engage appropriately with Government on the impact of policy changes and future funding.
- **Ease of access to the talent pool:** It is imperative that the GIB's location provides easy access to deep pools of talent with the necessary skills in financial services and 'green' expertise.
- **Commercial costs:** The major cost drivers are likely to include:
 - Costs of recruiting financial services and other expert talent including professional advisors
 - Building rental and infrastructure costs to host and support a small sized banking function (currently envisaged as a 50–100 employee operation).
 - Costs of back office support, administration and maintenance.
 - Travel costs (e.g., for staff travel involved in marketing, origination and due diligence).

Section 3

The GIB will deliver a range of products

The GIB Corporate Board and Executive Management team will be responsible for shaping the GIB during its second phase, taking into account guidance from the strategic priorities. The shape of the GIB will be influenced by the sectors that require significant GIB interventions as well as the initial product mix and the approach to risk management.

An illustrative view of these areas follows below.

3.1 The initial product mix will include both equity and debt products

It is envisaged that the GIB will offer a broad range of products tailored to the needs of different sectors. The initial product mix is envisaged to consist of equity and debt instruments designed to address specific financing needs that have been identified through extensive consultation with market participants across a number of potential sectors. Over time, the GIB could offer new products in response to market needs, policy imperatives, and an improved understanding of the impact of different product interventions. These could include innovative forms of financing mechanisms which introduce new classes of capital to corporate investors or, subject to legal, regulatory and fiscal affordability requirements, some more

targeted forms of guarantees or insurance-like products.

The GIB will deploy product lines carefully tailored to specific transactions and programmes. The aim of each of these products would be to increase the rate or scale of deployment of assets and investment in their targeted area. These products could span equity and mezzanine and other debt instruments.

Five potential product areas have been identified in research to date, which could be both effective in mobilising additional capital and deployed rapidly in the market. While the actual market need will determine the product uptake, some products are likely to be best suited to particular sectors, as described below.

- **First loss debt in the construction phase:** The GIB could offer a subordinated facility to replace the contingent financing that senior creditors currently provide in some projects to finance construction cost overruns. This could provide two benefits. First, the contingent commitment previously provided by senior lenders could be freed to be lent into other projects. Second, the subordination of this facility would improve the risk profile for the senior creditors, potentially bringing new lenders into sectors where they do not currently participate. The contingent subordinated facility may require concessional terms to fit into the overall project economics.

Construction contingent subordinated debt is likely to be suitable for the offshore wind sector in which large amounts of capital are required during the construction phase. The contingent subordinated debt could attract new capital and free up part of the already invested capital to be used for bringing forward other investments. This product would be dependent on the greater use of project financing in the sector.

- **Equity co-investment:** Investment on market terms in sectors in which available equity capital is limited, the GIB could offer to invest equity alongside other sponsors on a pari passu basis. This would enable sponsors to develop more assets than they would otherwise have been able to develop, and, in some cases, could accelerate investment by allowing sponsors to support more projects at one time.

Pari passu equity co-investment could be applicable to renewable power and waste management projects, where bank financing is limited and balance sheet financing is also restricted. In these sectors the GIB could provide part of the capital on equal terms with the other sponsors enabling more capacity to develop. It is also possible that the GIB could co-invest with sponsors that would like to use newer technologies but do not wish to provide all of the capital required to do so in a given project. The GIB could also purchase sponsors' equity in completed projects to allow them to redeploy their capital into new development. This could be a first step to the GIB seeking to refinance an operating asset, for example introducing lower cost forms of finance such as investment grade debt.

- **Pari passu senior debt:** When there is a shortage of senior debt finance available, the GIB could lend on a pari passu basis with other financial institutions. This product does not involve any concessionary elements and is designed to address capacity constraints. As such, it will enable the financing of large projects for which there is some, but not enough, commercial appetite at any given time. This product would

absorb a large amount of the GIB's funding capacity relative to other products and would need to be used judiciously.

The offshore wind sector is the main candidate for pari passu senior debt in the short term. Research suggests that there is little or no immediate demand for senior debt for current projects or initial projects under the Round 3 licences. However, given the degree of financing required it is reasonable to be prepared for specific shortages of senior debt finance. These shortages could arise as lending institutions exhaust their lending capacity for this sub-sector or if specific corporate sponsors and a sufficient secondary market for loans do not develop.

- **An upfront refinancing commitment:** Although several banks routinely make loans to finance construction of low carbon infrastructure, the regulatory capital requirements for long-term loans mean that many do not wish to hold loans for the very long periods typical for this kind of financing. The GIB could commit on a pre-agreed basis at financial close to refinance bank debt following the construction and commissioning of assets, subject to performance tests. This would give banks greater certainty of refinancing, reduce effective maturity of loans, and allow more investment into new assets.

The offshore wind and waste management sectors could find stapled refinancing particularly relevant because of their need for significant investment during the construction phase and because of the long life of projects. The GIB's provision of a stapled refinancing commitment could support additional investment into the sector. Given that the projects where construction will start in the coming years have already secured financing and given that project financing is not currently widely used, this product is likely to become more relevant in future years.

- **Subordinated debt during the operational phase:** Providing subordinated debt during the operational phase would improve a project's

risk profile for institutional investors to a level commensurate with their risk appetite. It could better enable refinancing of sponsors' (banks, utility companies) investments with long-term capital market financing, and the released capital could be deployed in new projects. Like the construction phase subordinated debt, this product may require concessional terms and depend on project finance execution.

Operational subordinated debt could be suitable for waste management and offshore wind projects. For both sectors the construction and operational phases present very different risks, and institutional investors could potentially participate in financing the operational phase, enabling capital to be recycled into the construction phase of additional projects.

The above products are not an exhaustive list. The GIB is expected to continue to explore new products across the full range of risk mitigation, capital provision and innovative finance products, including guarantees and insurance-like products. Each intervention will be carefully weighed against the investment criteria and metrics of success set by the GIB Corporate Board from time to time to ensure value for money.

3.2 The GIB will pursue a number of models to deliver its products

The GIB's origination and distribution approach will need to reflect the different characteristics of the sectors it serves and the products it offers. Sectors with large complex deals are likely to require a more direct approach (e.g., offshore wind and waste). The GIB might need to use intermediaries to distribute more standardised, smaller-ticket products to a broader customer base, which could involve working with other banks. Alternatively, the GIB could also decide to contract out part of the investment management function to a private sector asset manager. The precise mix of models will be a decision for the management of the GIB to consider and will evolve over time. Any distribution approach

should be set up to ensure that the GIB remains agile to adapt to changing market needs while managing the cost and efficiency of the operation.

The future decisions of the Executive Management regarding sector focus and product mix will determine what sort of organisation the GIB will ultimately need. The GIB will look to model itself on relevant private sector commercial/investment banking structures. It is expected that the overall size of the GIB will remain relatively small, with between 50 and 100 employees in most of the organisational structures considered.

3.3 The GIB will mitigate both product and counterparty risks

A key cause of market failures in green infrastructure is the inherently risky nature of the investments. The GIB will need to understand and mitigate these risks to ensure that its products help it to deliver its strategic priorities and that it generates the required returns on its investments.

The GIB will face two main types of risks: product/project/sector risk (i.e., uncertainty about the return on investment in a specific product/project/sector) and counterparty risk (i.e., uncertainty over the ability and willingness of a counterparty to fulfil its contractual obligations towards the GIB related to an investment or product). The GIB will need to consider how small changes and extreme events such as the default of counterparties or the shut-down of an entire asset would impact its profitability and ability to maintain its investment schedule.

To reduce the likelihood and impact of risks there are several actions that the GIB could take to mitigate product/project/sector risk and counterparty risk:

- **Product/Project/Sector risk mitigation:**
 - Extensive due diligence with partners and expert advisors: An extensive due diligence process should be established using

outsourced expertise if necessary in the case of new projects or sectors, particularly given the highly technical nature of many of the GIB's potential investments.

- Focusing on re-investment initially: The GIB could, where appropriate, initially focus on re-financing existing investments on market terms (e.g., buying out existing debt) to ensure it invests into a product/project/sector that has been previously evaluated by the private sector, subject to a careful valuation of the investment.
 - Robust product/project risk acceptance criteria and policy: Each product should be judged on a stringent set of criteria both in terms of inherent product/project risk and external policy risk.
 - Sector exposure limits: Each sector should have an exposure limit, maximizing potential losses in case of systemic issues in any given sector.
 - Stringent deal monitoring procedures: It will be crucial that procedures are put in place to monitor deals on an ongoing basis, particularly given the long-term nature of many of the proposed GIB products.
 - Controlled size of commitment: The GIB's exposure to any one project should be managed, as far as possible, to prevent over-concentration and susceptibility to one project's having the potential to damage the entire bank.
 - Portfolio level risk criteria: Portfolio risk should be controlled by managing total sector exposure and product mix.
- **Counterparty risk mitigation:**
 - Pari passu co-investment: Investing on a pari passu basis with others, particularly those operating on commercial terms, would spread the risk taken on by the GIB.
 - Counterparty exposure regulations: Limits should be put in place to ensure the GIB is not over-exposed to any one counterparty in case of default.
 - Reducing positions over time: For long-term investments with a high risk profile, the GIB should consider reducing its exposure over time by off-loading/syndicating investments in the market.
 - Leveraging partner institutions' assessment systems: The GIB could use available information held by other organisations on the credit rating and counterparty risk of potential investment targets.

Annex

High level implementation plan of the GIB

As previously described, there will be three phases of implementation of the GIB policy, reflecting the constraints of state aid and funding availability.

Phase I – Incubation

Phase I will focus on achieving two goals: 1) making stand-alone financial interventions using the government's own balance sheet; 2) making preparations for the full launch of the GIB, once state aid approval is obtained.

As explained earlier, prior to state aid approval being granted, the GIB itself will not carry out any investment activity. In order to make immediate interventions to help mobilise additional capital into the green economy and help meet pressing environmental targets, the Government will pursue some financial interventions using the £775 million of funding from 2012–13 made available in the Budget. It will also seek to identify a pipeline of potential interventions which the full GIB could pursue, once the state aid process is complete.

Phase I will involve the following steps:

- **Legal & regulatory compliance:** Compliance with any legal and regulatory requirements, including state aid rules.

- **Internal approvals:** Acquire necessary internal approvals based on the need to demonstrate that interventions in Phase I will represent value for money.
- **Strategic planning,** including identifying the objectives, the likely areas of focus, the build up of capability and the budgeted costs of building the capability.
- **Appointment of the Advisory Group** to the Government to advise on the setting up and long-term strategic direction of the GIB.
- **Establishment of a governance framework** that covers the operations of the team and that includes operating principles, objectives and agreed investment criteria. This will involve a cross-government policy group helping to set strategic priorities.
- **Recruitment** of a small team of finance professionals from across Government together with requisite support staff.
- **Design of pre-launch business processes and systems** to support the investments and cash management activities.

In parallel to Phase I operations, the Government will be preparing to launch the full GIB in Phase II including managing the handover of activities to the new institution. These activities are noted below under Phase II.

Phase II – The GIB launch

Phase II will see the end of the incubation phase and the launch of the GIB as a stand-alone institution.

Establishing the GIB as a stand-alone institution will involve a number of steps which will start in Phase I, including:

- **State aid compliance:** The Government will oversee the state aid approval process with the European Commission.
- **Legislation:** Following state aid approval, the Government will introduce appropriate legislation confirming the GIB's independent status as an enduring institution with a key public role.
- **Establishment of the detailed governance framework:** The new institution will be incorporated and detailed arrangements for its corporate governance put in place.
- **Appointment of the Board:** GIB Corporate Board members will be appointed by ministers.
- **Agreement of mission, operating principles and strategic objectives:** The GIB Policy Group will agree these with the GIB Corporate Board.
- **Recruitment:** The GIB Corporate Board will start recruiting the senior staff, including the CEO and other key officers. They, in turn, will recruit additional staff.
- **Strategic and operational planning:** The Executive Management will prepare the detailed business plan for the GIB, including its areas of focus, product suite, routes to market, operating model, forecast financial results and recruitment and compensation plan. An efficient process will need to be put in place for funding and cash management activities, including with the Government Banking Services.

- **Transition management:** The financial interventions made in the incubation phase will be handed over to the GIB.

Phase III – The GIB borrowing phase

Phase III will see the GIB obtain borrowing powers. Preparations for this phase will take place during Phases I and II and will include developing the case for scaled-up interventions, including the state of market failures and value for money. This will help to determine the likely required level of GIB borrowing as well as the case for any additional equity contributions.

Any borrowing by the GIB while it is in the public sector will score against Public Sector Net Debt. In parallel, therefore, the Government will need to come to a view on the affordability of borrowing and to determine a limit accordingly. This decision will need to be taken in the context of the wider fiscal position and spending plans for the next Spending Review period.

Work that needs to take place in this phase includes:

- **Defining the borrowing mechanism:** The GIB will need to determine which borrowing mechanism to use. A range of options have been identified which include the following:
 - Directly from the market with a Government guarantee
 - Directly from the market without a Government guarantee
 - Via the National Loans Fund
 - Via standard Debt Management Office borrowing
 - Via the Debt Management Office's issuing special 'green gilts' with proceeds ear-marked for use by the GIB

Each of these different borrowing mechanisms will need to be judged according to criteria that weigh up their relative costs and benefits.

- **Developing operational capability:** The GIB Executive Management will need to develop additional capabilities to manage a scaled-up, leveraged institution. These could include mechanisms for asset-liability management in order to manage the interest rate and liquidity risks resulting from the typical lending/borrowing maturity transformation activities of a bank and scaled-up capabilities to manage increased resource, legal and regulatory compliance and risk management.
- **Credit rating of institution:** Depending on the chosen borrowing mechanism, work will begin in earnest on developing the credit rating of the institution, including preparing detailed future business plans to assess its potential credit rating implications. This might involve the release of a shadow credit rating in advance of borrowing, to build confidence in capital markets prior to the first raising of debt by the GIB and otherwise build confidence in the products of the GIB.

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