E3G

GREEN BANK DESIGN HUB

CASE STUDY: UK GREEN INVESTMENT BANK

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ABOUT THIS GUIDE

This case study has been captured in response to the widespread interest in Green Banks, and E3G's experience of engaging with policymakers interested in such institutions. It is hoped that presenting the 'untold story' of the UK Green Investment Bank (GIB) and capturing the key decisions and debates held in the process of developing the UK GIB will help inform policymakers looking to establish Green Banks in other countries.

A key insight from E3G's work – both in the UK and elsewhere – is that the process of founding a Green Bank follows five stages, and by understanding and following this structure policymakers can ensure that the institutions they establish are matched to the local context and well-placed to deliver transformational impact.

The structure of the case study reflects E3G's 5-stage model for development of a green finance institution, and each of the 5 states is divided into 7 parts, reflecting the fact that at each stage similar or comparable questions are raised albeit by different stakeholders or to different levels of detail.

To facilitate ease of use, the guide has been produced in an interactive format so that readers can easily move between different stages in the document or look only at the stage that they are interested in. To allow the reader to easily access other relevant materials, focusing both on the wider context of Green Banks and also the principal documents which were used to support the establishment of the UK GIB, all documents in the bibliography are hyperlinked for ease of access.

INTRODUCTION

There is growing interest in Green Banks, with more than 13 having been established globally since 2012. Further efforts are now underway to establish these institutions in South East Asia, Latin America and Europe.

Policymakers trying to set up Green Banks, however, often perceive there to be significant barriers in place to prevent this from happening. In E3G's experience, however, the process of setting up a Green Bank follows a similar pattern, regardless of the country involved. As a consequence, those looking to set up similar institutions in their own countries can draw on international experience to fast track their efforts.

To this end, E3G has created the 'Green Bank Design Hub'. The Hub leverages E3G's experience to create a simple structure for the process, along with a decision making tool for policymakers. Setting up a Green Bank involves five phases.

Each phase will be shaped and determined by a set of key decisions which will then inform subsequent phases.

In each of the phases of setting up a Green Bank, we break the process down into the *what*, the *who* and the *why*:

- **What** the key decisions are and how they are reached – Decision Making Process
- **Who** are the key actors and organisations to engage with that will inform the decision making process and will be making these decisions – Stakeholder Engagement
- **Why** are these policy decisions being made, what analysis is needed to develop the options which in turn inform the ultimate decision – Analytical Support, Standards and Frameworks.

Figure 1: Five stages of learning process in designing green finance institutions

Source: Author's depiction of the process

Ultimately, the shape of the institution will (and should) be determined by the local context. The process will be similar across national borders, but each phase may yield a different set of outputs depending on the specific political, social and economic circumstances. As policy makers from each country advance through the phases, they will move from a generic concept to a specific institution adapted to meet local needs.

From an outside perspective, the creation of a Green Bank can often seem daunting, with a broad range of actions and advocacy required across different levels of government, politicians and civil society, financiers and business community.

By explaining and illustrating E3G's role and involvement in setting up a Green Bank in the United Kingdom, this report sets out to support policymakers and NGOs in other countries to set up Green Banks. In a separate report we also explore the experience of setting up an institution similar to a Green Bank in a different jurisdiction – South Africa.

CASE STUDY METHODOLOGY

The aim of this study was to compile different perspectives and identify the pivotal decisions in each phase of setting up the UK GIB from those instrumental in helping to set it up. In order to compile this study, E3G conducted detailed desk-based research on the founding of the UK Green Investment Bank (UK GIB).

The research was supplemented by interviewing the relevant stakeholders who were involved in each phase of creating the UK GIB. Interviewees included former government ministers, other politicians, senior civil servants, academics and NGOs, as well as E3G staff members who were active throughout the process. In total we conducted 14 interviews and collated a bibliography of more than 50 documents.

To highlight the commonalities of the process across different countries at different stages of economic development, E3G has also compiled an unofficial history of the South African Green Fund – a key element in the journey of greening the Development Bank of South Africa. To do so we partnered with one of E3G's Senior Associates, Chantal Naidoo, who was significantly involved in both processes.

INTRODUCTION

The case making phase is about introducing the concept of Green Banks into the political dialogue and building a constituency of support for the establishment of such an institution in the country. Such a coalition will typically be broad, ranging from industry and finance through civil society to politicians and some policymakers. Typically, the case making phase ends when the idea is adopted by policymakers. As such, it is about the reasoning/justification for a different policy or policy instrument. In other words, what is this proposal going to achieve?

It is critical to start with the desired outcome, because starting by analysing what could be done within the existing scenario would water down any proposal.

This first phase should provide the direction of travel, the nature of the future institution/reform, and establish a proposal that it is aligned with the strategic goal(s) of the country.

In the case of the UK GIB, a combination of external factors – combined with thought leadership from E3G – set the agenda[1]. In 2008, legally binding emission targets were introduced through the UK Climate Change Act[2], which was closely followed by a financial crisis[3].

In March 2009 as a response to the crisis, E3G and Climate Change Capital published a series of papers looking at ways in which the government could grasp the economic opportunity of a low carbon transition to mobilise private funds (in a risk-averse market) in the public interest.

E3G engaged with a range of stakeholders from industry and finance, as well as government and civil society, to identify market barriers. The result of this process clearly showed that one-off policies would not be able to deliver the low carbon transition. Instead a durable institutional framework would need to be established in order to mobilise and deliver the scale of investment required.

The initial output from this process was a paper entitled '*Financing the UK's Low Carbon Transformation*'. It was the first policy paper to propose the establishment of a GIB to "catalyse private sector investment through the effective and efficient use [of] public finance to implement low carbon infrastructure investment through a variety of public/private finance approaches"[4].

Support coalesced around this idea, and a coalition of civil society, industry and finance was formed – 'Transform UK'[5]. This coalition set about lobbying government, whilst at the same time further clarifying the investment required to deliver the low carbon transition.

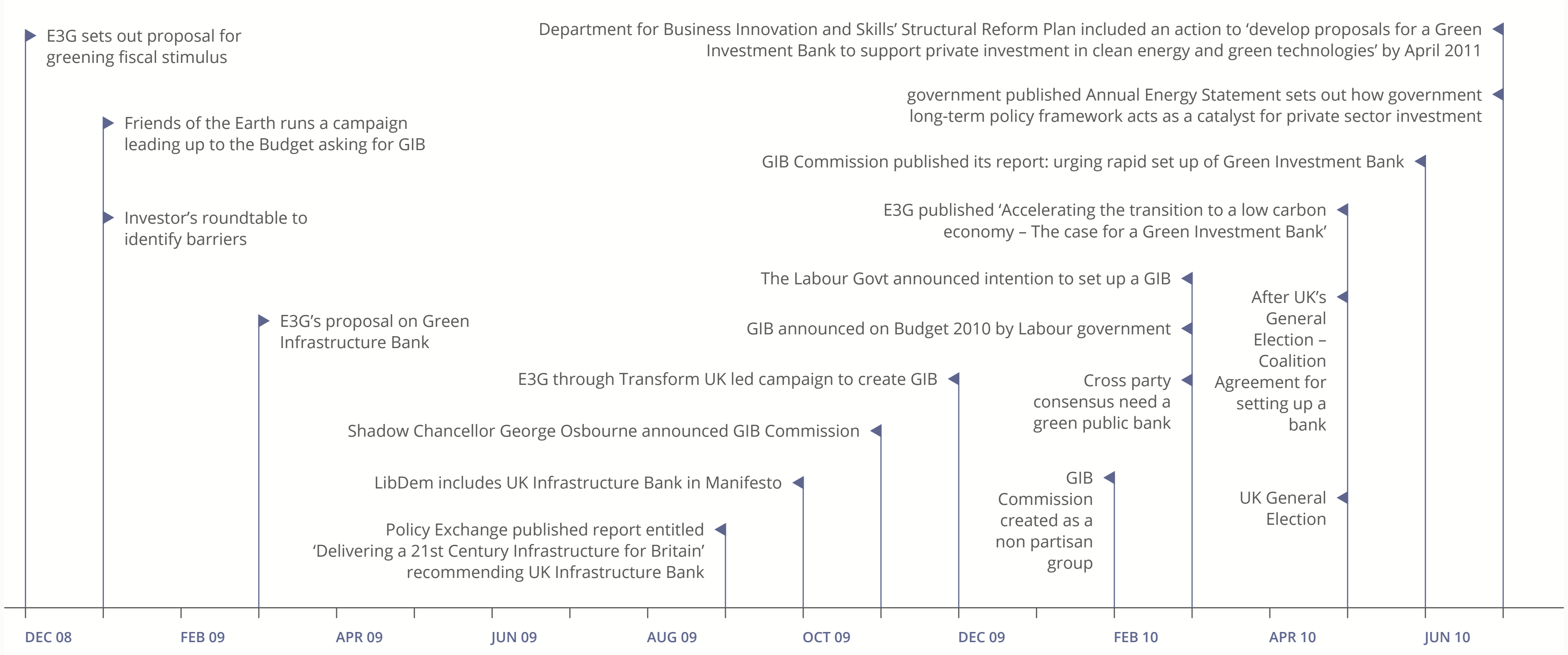
Alongside a series of workshops[6], the accountancy firm Ernst and Young (E&Y) was commissioned to quantify the scale of available finance and the likely gap between this and what was required. The E&Y report showed the financing gap to be of an unprecedented scale.

This work laid the groundwork for a full-scale political campaign. Initially this resulted in an unsuccessful attempt to influence the 2009 budget and the opposition response to it.

The focus then shifted to the upcoming General Election[7]. In an effort to showcase the Conservative Party's 'green' credentials, the Shadow Chancellor set up a Green Investment Bank Commission (GIB Commission) – principally composed of financiers and NGOs including E3G – which was perceived as a non-partisan effort to provide recommendations on how to finance the low-carbon transition.

The culmination of the case making phase in the UK context was the adoption of a commitment to create a GIB into the manifestos of all three major national political parties at the time (Labour, Conservatives, Liberal Democrats) and the inclusion of a statement of intent to create the Bank in the 2010 Budget prepared by the outgoing government[8]. Figure 1 shows the timeline for this phase.

Figure 1.1. Timeline of the case making – relevant events



KEY ELEMENTS

In this section we identify the key questions that need to be considered when designing a proposal – and what other factors influence the case making phase.

Decision making process

The decision making process is driven by a number of different factors: external events, political and policy drivers, structural issues, advocacy, or a combination of the above.

Stakeholder engagement

Stakeholder engagement ensures that the evidence base and proposals are tested with key actors, through workshops, events, interviews and other mechanisms. It also provides the basis for gathering inputs and different views to ensure the analysis is tested and refined.

Standards and frameworks

Standards and frameworks aim to gather evidence from international examples of similar institutions and compare these to the existing conditions – as well as analysing the benefits of these institutions.

Analytical support

Analytical support is focussed on building a body of evidence to ensure that decisions made in the case making phase are well informed and can set the groundwork for the next phases.

DECISION MAKING PROCESS

The decision making process is driven by a number of different factors: external events, political and policy drivers, structural issues, advocacy, or a combination of the above.

Key questions include:

> Which organisations and influencers are potential supporters of the initiative?

> How should the idea be tested?

> What coalitions of support can be assembled for the proposal?

> Who will be key in enabling the initiative to be taken forward to the next phase?

In the case of the UK, the decision making process was led by a combination of external events – chiefly the financial crisis – and thought leadership, initially from E3G. This quickly became a powerful narrative that resonated with other stakeholders.

At the end of 2008, E3G was asked to think about how, if the UK were to apply a fiscal stimulus to the UK economy, it could be used to stimulate green investment. In early 2009, E3G and Climate Change Capital proposed three ideas as part of the fiscal stimulus, including a Green Infrastructure Bank[9], "to catalyse private sector investment through the effective and efficient use of public finance to implement low carbon infrastructure investment through a variety of public/private finance approaches". The proposal was discussed with **different stakeholders to ensure a wider buy-in from the real economy experts, and also financiers** to understand the key barriers in the market, and was then refined.

With support from a number of key stakeholders – including Friends of the Earth which had been running a campaign[10] – E3G set the agenda by creating *Transform UK*; a coalition focussed on building support for a GIB, first by engaging with financiers and industrialists and then by mobilising support around the idea of such a Bank.

Figure 1.2. Members of the Transform UK coalition

A concerted effort with organisations such as Green Alliance and Aldersgate Group, an alliance of businesses, NGOs and public sector bodies, lead to a series of publications.

As a result of this effort 20 business leaders signed an open letter to the government published in the Guardian newspaper, whilst certain financiers wrote private letters of support to the Prime Minister. As well as engaging with the government, Transform UK also engaged with all the major political parties prior to the release of the 2009 budget to try to influence both its contents and the political response to it.

Even though the government at the time did not take the proposal on board, the Shadow Chancellor – George Osborne – set up the Green Investment Bank Commission, in part as a way of signalling the UK Conservative Party's green credentials. The GIB Commission was composed of key financiers and E3G. Critically, it was perceived as a non-partisan organisation providing recommendations on how to finance the low-carbon transition.

Because of the efforts of Transform UK, as well as the publicity surrounding the Commission, all three major political parties proposed some form of Green Bank in their election manifestos.

STAKEHOLDER ENGAGEMENT

Stakeholder engagement ensures that the evidence base and proposals are tested with key actors, through workshops, events, interviews and other mechanisms. It also provides the basis for gathering inputs and different views to ensure the analysis is tested and refined.

Key questions include:

> Who are the key relevant stakeholders for each aspect of the proposals?

> Which stakeholders can best be used to test and refine ideas?

> Who is best placed to help build momentum to take the proposal forward?

> What is the best way of engaging with each type of stakeholder?

Discussions within E3G on ensuring that the fiscal stimulus included a low carbon element began in 2008. There was an **initial focus on identifying market and policy barriers** through workshops[11], and an investor roundtable was held in January 2009 to identify the key issues. Key barriers identified included increased risk aversion among investors leading to: limited availability and high cost of debt capital; difficulties in delivering syndicated debt because of a lack of trust between banks; and a general decline in project finance capacity. These factors were in addition to the significant issues facing some low carbon technologies.

The feedback from the workshops confirmed that there was not a simple, single, solution. Numerous proposals on instruments were mentioned and it was agreed both equity and debt were needed. Different solutions would be required, therefore, at different stages in the project cycle – and different sectors would require a variety of instruments.

Based on this feedback, **it became clear that ad-hoc policy and fund** solutions were not going to deliver the scale of finance at the pace required, nor be able to address the complexity and variety of the barriers to mobilising capital into the low carbon economy. In other words, a set of isolated policies would not be sufficient, and it was clear that the institutional framework required to quickly and efficiently push public money into the economy was missing in the UK.

This approach resonated with wider concerns within civil society by proposing a solution that was adaptable and tailored to stimulate the low carbon economy.

ANALYTICAL SUPPORT

Analytical support is focussed on building a body of evidence to ensure that decisions made in the case making phase are well informed and can set the groundwork for the next phases.

Key questions include:

> What's the low carbon strategy? What is the total financing requirement to deliver it? What's the financial landscape in the economy?

> What is the current finance gap? How will this financing requirement be met?

> Can the current system finance the new energy market? Is there an institutional gap/a new market required?

> Is a policy solution better than an institutional one?

> What is the real versus perceived risk; who owns the risk and how can it be reduced?

In order to build the case for a GIB, the first analytical step was to understand the scale of the finance gap. The size of investment necessary was defined by the UK's strategy for the low carbon transition, which was determined by a legal and regulatory framework[12]. The mainstays of this regulatory framework were the legally binding greenhouse gas targets established by the Climate Change Act 2008; namely that the UK had to reduce greenhouse gas emissions by 80% against a 1990 baseline by 2050, with an interim target of 34% by 2020.

Another consideration was the EU Renewable Energy Directive 2009, under which the UK must obtain 15% of all energy from renewable sources by 2020. The government was also bound to a range of environmental standards, including compliance with EU waste targets, air quality and water management.

It is important to note that the Green Investment Bank was established before the Paris Agreement[13]. However, some parallels can be drawn, e.g. the low carbon strategy became the basis of the UK's National Determined Contribution.

Based on the UK's low carbon strategy, it was possible to estimate a total financing requirement by sector and over time – see table 1.1. This analysis produced some clear messages which influenced the approach to the proposed GIB[14]:

> 50% of the finance required was concentrated in Energy Efficiency
> The level of investment required was greater than in other European countries, because the UK had one of the lowest renewable generation capacities, coupled with some of the toughest carbon reduction targets
> The UK's financing requirement was frontloaded due to ageing infrastructure.

Table 1.1. Estimated economy-wide investment (£bn)

	2010–2015	2016–2020	2021–2025	Total
Energy efficiency	115	115	115	**345**
Power generation	28.3	49.8	28.3	**106.4**
Power networks	26.5	24	13.9	**64.4**
Heat	13	39.8	0	**52.8**
Waste	15	15	0	**30**
Transport	52.5	33.5	17	**103**
RD&D	12.5	12.5	12.5	**37.5**
International	3	5	0	**8**
Total	**265.8**	**294.6**	**186.7**	**747.1**

Source: E3G 2010[15]. A range of different institutions had performed similar exercises.

Once the total volume of investment to deliver the low carbon transition had been calculated, the next step was to compare this investment requirement with the available financial resources. The key question was whether the current financial system was fit for purpose to be able to deliver the necessary funding.

The biggest weakness in the system was the divergence between perceived and real risk of low carbon investments, which meant that insufficient capital was being allocated to the low carbon economy. Market participants did not trust the regulatory framework and did not believe that the government had a long-term commitment to support the low carbon transition.

The lack of historical data on the performance of renewable projects also meant that investors were unable to accurately price the risk associated with these projects, and typically assessed the risk as being higher than it actually was.

These issues were exacerbated by the fact that the bulk of private funding for renewable projects came from company balance sheets and banks. However, as a result of the financial crisis, for the first time in living memory bankers were concerned with their own ability to raise funds. As a result, the market for syndicated debt was almost closed. It was clear that the UK financial system would take a significant amount of time to return to previous lending levels, and in the interim raising project finance would be extremely challenging.

In order to enhance the credibility of the analysis, E3G commissioned Ernst & Young to calculate the shortfall – see table 1.2. It estimated that established sources of capital represented just 25% of the total required to transform the UK economy. The scale was unprecedented: the UK needed £40-50 billion per year of economy wide investment compared to historic levels at £6–7 billion (the 'dash for gas' in the 1990s, considered transformational, required £11 billion).

Table 1.2. Sources of capital estimated by Ernst & Young

Commercial Funding		Alternative Finance	
Utility companies	£2–3 billion p.a.	Pension and insurance funds	£1.6–2.7 billion p.a.[16]
Project finance (debt & equity)[17]	£1.2–1.4 billion p.a.	Retail debt (green ISAs or green bonds)	Not taken forward[18]
Infrastructure funds	£500m–£1bn p.a.[19]		

Source: E&Y (2010). Capitalising the Green Investment Bank

Once the scale of the finance gap was clear, the next step was to identify which parties would be delivering the low carbon transition, and to where the finance needed to flow. The challenge here quickly became apparent, as the obvious candidates – the utility companies – faced several barriers in raising sufficient capital to deliver the projects.

Whilst utility and technology company balance sheets represented another possible source of capital to drive the transition, these companies did not have sufficient existing financing to meet the required level of investment.
The possibility of utility companies using their balance sheets to raise additional debt was also excluded, as this would drive the utility's gearing ratio to unacceptably high levels.

On top of this, there was a challenge in terms of aggregation and scalability. It became evident that it was difficult for commercial banks to finance small projects (from less than £20 million down to household level), while alternative sources of finance were limited. In other words, even without the financial crisis it appeared that the financial system was not fit for purpose to deliver investment where it was required.

The focus then became how much of the finance gap was a result of missing markets, and how much was a result of mis-pricing risk. In the UK case, there were both. Half of the finance gap was concentrated in energy efficiency, yet, within the finance community, energy efficiency was not even considered to be a market.

There was also clear evidence that markets were not pricing risk efficiently. For example, the UK government was offering generous subsidies for offshore wind generation, but it was still perceived as too risky, in part due to concerns about whether the government would extend its subsidy programme. Thus, policy incentives were exacerbating rather than reducing risks because, whilst subsidies made investments profitable, they also become subject to policy risk.

It was clear that a longer-term approach to investment, focused on lowering risk and cost of capital was needed. In order to frame this approach, the key questions became:

> How the risk should be managed and by whom?
> What is the real versus perceived risk?
> Who owns the risk?
> How can the risk be reduced?

This analysis of risk then determined the likely success of a range of approaches to try and incentivise investment. The key insight was that government efforts to reduce risks by offering subsidies, guarantees or incentives was not limiting the risk, but simply transferring it from a financial risk into a policy risk.

Ultimately, the government could have raised the returns to such a point that investors were prepared to absorb the risks and deliver the marginal investment, but this approach would be inefficient and expensive for taxpayers.

Instead, a more efficient approach would be to remove the risk by having some ‘skin in the game.’ The solution needed to address at least two challenges – provision of finance and the coherence around policy frameworks. The different phases of project finance presented a range of challenges that also needed to be considered.

What was needed was a combination of a long-term framework, and clarity on cash flows to match investment timescales (or corresponding public sector financing and guarantees). The long-term framework would effectively eliminate policy risk, whilst the right finance and policy support mechanisms would significantly reduce the risk associated with individual projects.

Those could be created by providing energy efficiency financing, debt guarantees for low carbon projects – thus reducing the cost of borrowing – or direct government participation in sound projects to build confidence.

Traditionally, a fund would have been the solution; but in this case it was clear that a fund would not deliver because funds have finite resources – resources which would be disbursed as grants, loans or investments aimed at specific purposes. However, the transition is not static; these specific purposes would become less relevant as challenges shift as the transition moves forward.

Figure 1.2. The GIB new model for partnership

To tap missing markets, a new model was needed to:

Provide banking facilities in times of constraints
- Debt provision
- Equity co-investment
- Purchase and securitise project finance loans

Co-invest in first of a kind initiatives
- First loss debt
- Provide blended grants/debt finance
- Loan guarantees

Provide technical advice
- Specialist in low carbon technologies
- Advice to government on policy design
- Business advice to small projects

Source: E3G

STANDARDS & FRAMEWORK

Standards and frameworks aim to gather evidence from international examples of similar institutions and compare these to the existing conditions – as well as analysing the benefits of these institutions.

Key questions include:

> What international examples of institutions or organisations could be used to help demonstrate the case for the proposal?

> How can the benefits of these institutions be quantified?

In the UK case, there was no public bank. One area of research was to look at other European countries that had public infrastructure banks aimed at delivering strategic national outcomes. A key area of interest was the extent to which they were able to leverage the private sector. The table right shows some of the European examples taken into consideration.

Table 1.3. Development Financial Institution equity leverage

Caixa Geral Depositos	Portugal	€7.16bn	X17 leverage
KfW Bankegruppe	Germany	€13.1bn	X31 leverage
CDC	France	€23.5bn	X10 leverage
ICO	Spain	€2.38bn	X22 leverage

Source: E3G

As part of the case making, the view was that if government was going to design an institution this could and should be an innovative institution. E3G proposed that the bank could have two complementary pots of money.

The first pot would be public funds used to support un-bankable but strategically significant projects – the development arm of the institution. The second would be used to provide finance on commercial terms and to leverage the private sector.

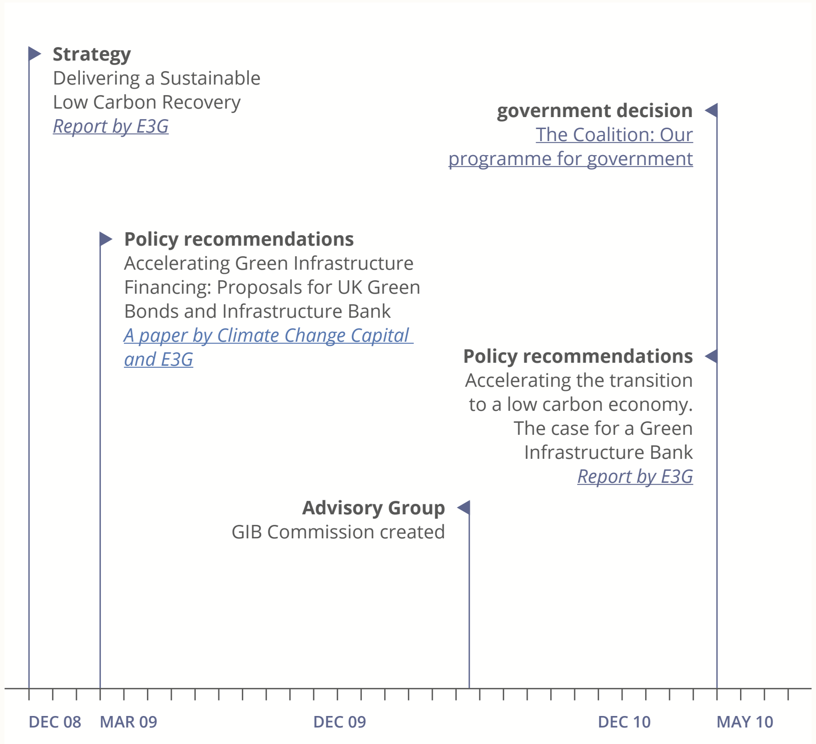
For loans the Bank would not grant reduced interest rates. This could only be provided if funded from a separate pot of capital by a government grant toward the payment of interest and, where compatible with State Aid rules, through a blended finance approach.

OUTPUTS

The case making phase yields a series of key outputs which lay the groundwork for the next phase, as well as providing the tools to mobilise the political support necessary to move the proposal forward. For reference, a checklist of the outputs of the case making phase is provided below. We also include below the specific outputs generated in the UK case.

- ✓ Mapping the current financial landscape
- ✓ Low carbon agenda, including targets
- ✓ Total infrastructure financing requirement
- ✓ Green requirements by sector
- ✓ Determine the missing market
- ✓ The objective of the Bank and a proposal of the functions based on the finance strategy and market barriers
- ✓ Market testing (finance, government, NGOs, political parties)

Figure 1.3. Outputs of the Case Making phase



INTRODUCTION

The design phase is the second phase of the process of creating a Green Bank. This phase starts once there is a certain level of consensus that the current approach is insufficient for delivering the low carbon transition at the scale and speed required, and there is agreement within government that a GIB provides a solution to this problem. The outcome of the design phase is to determine what the institution should – and should not – be doing. This phase takes the theoretical proposal and starts shaping it into a viable institution.

Depending on where the process starts for the case making phase, it is common to find the same questions recurring in the design phase. However, the level of granularity is greater and the questions that are asked focus on policymakers rather than advocacy.

The design phase in the UK GIB example began in 2010 with a clear political commitment presented in the Coalition Programme. The two political parties in coalition, however, differed on scale, focus and structure. The broader macro-economic context was not encouraging; there were fiscal concerns at the time, and the levels of public debt were considerable, which led to tax increases – e.g. VAT went up from 17% to 20%. Although there were some signs of economic recovery, the unemployment rate was at a 17-year high.

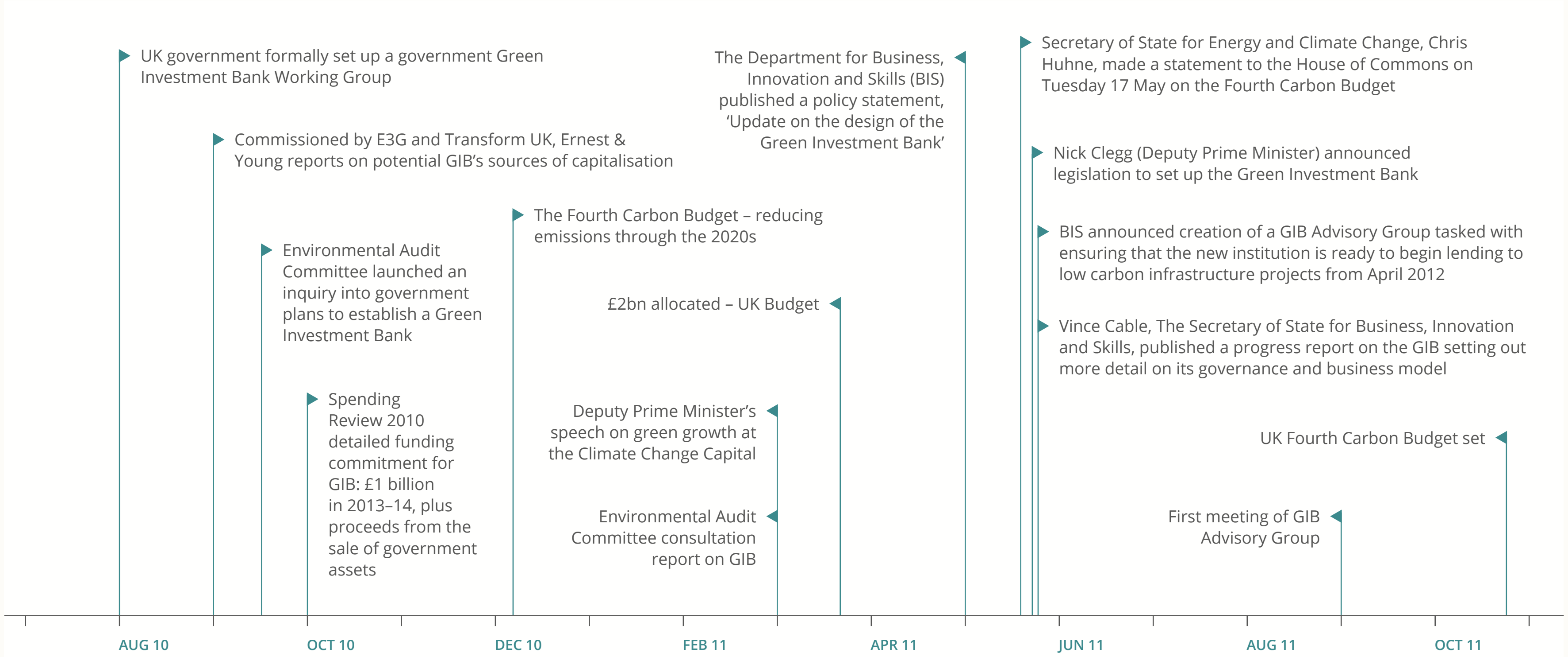
The Treasury's position was to take a wait-and-see approach, as it was expecting an economic recovery. E3G tested this idea with financiers, and their view was that it would take at least 15 years for them to feel comfortable investing in green technology. The GIB Commission[20] argued that even a return to the 'old normal', which was unlikely, would not deliver the required change, given the unprecedented scale, urgency and nature of the challenge[21]. There was a need for an institution that would have an enduring role, flexible enough to adapt to the changing markets; able to exit from sectors as technologies matured; and able to find the next frontier in the low carbon transition.

The pros and cons of designing a new institution versus reforming an existing institution were explored. It was determined by the Commission that setting up a new institution was better value for taxpayers' money.

The levels of capitalisation of the institution were determined by the functions that it needed to provide. Different sources were explored and proposed by NGOs, the finance community and the Commission, ranging from Green Bonds, merging existing quangos, and Green ISAs[22]. However, it was announced in the Spring Budget 2011 that the initial capitalisation of the GIB would be £3 billion from central government and the sale of government assets.

This phase culminated with the decision from government to publish their view on the design of the GIB, including its long-term goals and strategic and sectoral priorities – and a governance model that was aligned with its mission. It stated that: *"the mission of the GIB will be to accelerate private sector investment in the UK's transition to a green economy...working 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"*. Figure 2.1 shows the timeline for this phase.

Figure 2.1. Timeline for the design phase



KEY ELEMENTS

The key elements of the design phase are set out below. The decisions and choices of this phase will be determined by a number of elements: stakeholder engagement; the decision making process; analytical support; and standards and framework.

Their inter-linkages shape the outputs of the design phase that, in turn, are the foundations for the establishment phase of this institution.

Decision making process

In the design phase, the focus shifts from theory to process. This is important, as the form of the process will often pre-define the outcome. In this phase, the decision making process is about identifying the key decision makers and ensuring optimal outcomes are reached.

Stakeholder engagement

Whereas in the case making phase much of the focus is on the political and public spheres, in the design phase the focus is on reaching out to those involved in the operational process of government and identifying and influencing the key individuals and institutions that will shape the bank.

Standards and frameworks

This element helps to frame and contextualise the core functions of the new institution, as well as ensuring that the appropriate tools and standards are included in the bank from the outset.

Analytical support

The key function of the analytical support in this phase is to solidify the business case for the GIB, by identifying the barriers and how the institution would resolve them, as well as the scale of capitalisation and finance to be used.

DECISION MAKING PROCESS

In the design phase, the focus shifts from theory to process. This is important, as the form of the process will often pre-define the outcome. In this phase, the decision making process is about identifying the key decision makers and ensuring optimal outcomes are reached.

> What is the form of the process, and over what timeline?

> What structures can develop the institution? What is the role of Parliament?

> How was the decision reached? At what stage in the policy-making process?

In the UK, as a result of the case making phase, there was political support across the political spectrum for some form of GIB. In the run up to the election, the three main political parties all included the idea in their manifestos; however, the form of the institution was not specified and there were different views within the coalition too on its purpose and shape.

Shortly before the 2010 General Election, the Labour Chancellor, Alistair Darling stated an intention to create a GIB[23] in the Budget of March 2010. Under his proposal, the Treasury designated Infrastructure UK[24] as the entity responsible for managing the establishment of the Bank.

After the election on May 2010, the newly formed Conservative-Liberal Democrat coalition government document also identified the creation of the GIB as a key political priority[25]. The matter was assigned to the department of the Secretary of State for DECC, Chris Huhne, with the Minister of State, Gregory Baker, as the lead.

The Secretary of State for Business Innovation and Skills (BIS), Vince Cable, was responsible for the low carbon business sector. Given that the Bank was going to have implications for the private sector, it was thought that BIS should be the department to lead on its design.

BIS put in place a project management framework to ensure the engagement of all key decision-makers, at the appropriate levels. It also included routes to escalate issues to more senior management, as well as contingency planning. As this was a key policy proposal for the government, the Major Project Review Group Panels (MPRGP)[26] had to examine the Bank in a holistic manner, scrutinise the project at different stages of the design, and challenge it on deliverability, affordability and value for money. The panels are teams within the UK government who are involved with all major projects to ensure a project is delivered on time and on budget.

Table 2.1. The BIS department timeline and deliverables for the GIB project

BIS Business Plan – UKGIB	
Task	**Date**
Complete and publish GIB design	May 2011
Continuation of market testing	May – December 2011
Staff and back office systems in place	December 2011
Green Investment Bank operational	September 2012
First annual data released on the funds in, and size of investment made by the Green Investment Bank	May 2013

Source: BIS Business Plan 2011-2015

It is important to note that the timeline did not take on board the recommendations by the Commission, E3G and Transform UK to set up the GIB by 2010[27]. The reasoning for rapidly setting it up was that a delay could result in an investment hiatus as investors put off financing decisions due to uncertainty about how the Bank would operate[28].

The project was overseen by a Cross Departmental Project Board, compromising senior civil servants from HM Treasury (HMT), The Department of Energy & Climate Change (DECC), The Department for Environment, Food & Rural Affairs (Defra), The Cabinet Office and BIS. The team was primarily staffed by BIS civil servants, as well as some expert advisors with private sector banking, finance, and green economy expertise.
The work on the GIB was divided within BIS into four admin work-streams: Business Design/Strategy; Implementation; Incubation Operations; and State Aid. Each of these was composed of economics, legal and finance experts.

BIS led the development of the GIB, collaborating closely with a range of different institutions, with each institution responsible for a certain element of the structure – see below[29]:

- HMT – involvement of public money
- DECC – energy sector would be the main market for de-risking projects initially
- Defra – waste projects
- Department for Transport (DfT) – transport projects
- Infrastructure UK – helped to ensure the proposals are consistent with the government's emerging national infrastructure strategy.

This collaboration was important given that all these departments have a role in infrastructure. Every large policy of the government goes through the scrutiny of the Parliament. In this case, debates took place at the House of Commons while its Environmental Committee called for a consultation on the government proposal for creating a GIB. This concluded that there could be a risk of lack of coordination if there was not a designated lead on the design of the Bank[30].

In general, decisions were reached at the working team or ministerial level on the structure and implementation of the Bank, but it was ultimately discussed at the highest level, as this was a key proposal within the government coalition programme. The UK case was slightly unusual in that the nature of the coalition meant that any major policies had to be signed off by the senior representatives of both the Conservative and Liberal Democrat parties (a grouping known as 'The Quad').

Given that this was a large policy project and required a considerable amount of public funding, HMT was key in the approval process of the institution. The complexities and different visions within the department on post-crisis economic priorities resulted in intense discussions across different departments[31].

After the initial design proposal was agreed, many of the details were still to be worked out[32]. However, the GIB would have to comply with EU State Aid rules, which limit government funding for certain sectors without meeting stringent requirements. Therefore, the ultimate approval would be required from the European Commission.

STAKEHOLDER ENGAGEMENT

In the design phase, stakeholder engagement is about identifying and influencing the key individuals and institutions that will shape the bank. Whereas in the case making phase much of the focus is on the political and public sphere, in the design phase this is much more about reaching out to those involved in the operational process of government.

> Which government departments and key institutions are affected by the design of the institution?

> How will the decisions be narrowed down?

> Who will make the key decisions on design?

The initiative to design and structure the GIB involved several different departments, with the government process being complemented and informed by public consultations. These discussions were led by BIS, whose 2011–2015 plan prioritised the structural reforms set up by the coalition government to rebalance the economy across sectors, thereby ensuring that new businesses and economic opportunities would be more evenly shared whilst supporting growth and a low-carbon economy. DECC was tasked with working with BIS to establish the Bank according to their business plan over 2011–2015.

Whilst BIS was responsible for much of the institution's design, there was also a disagreement within government – BIS and DECC wanted a fully-fledged bank with borrowing powers, as they believed this would maximise the institution's impact[33]. However, HMT was opposed to this[34] for two reasons: firstly the question of whether the balance sheet of the proposed GIB would contribute to the national debt; and second, the Treasury was uneasy about creating an institution which would have borrowing powers and not be subject to Treasury supervision in the longer-term[35].

These discussions determined the design of the institution. Whilst all parties on the decision making process agreed on principle that this institution was needed, there was less support for establishing the development arm of the institution as recommended by the Commission (see analytical support section). Therefore, this was not taken forward by the department.

However, the consensus was that a new institution was required, rather than a series of government interventions. The new institution was required to build the necessary 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. Ultimately, this decision was approved by the Quad[36].

A range of different **stakeholders gave opinions on the potential design of the institution** – however, not all of the stakeholder engagement and consultations were carried out by the government. For example, the GIB Commission carried out a stakeholder consultation with a wide range of actors.

In addition, the UK Parliament's Environmental Audit Committee launched an inquiry into the government plans to establish the Bank; this was a wider consultation which include the participation of key government departments, civil society, academics and financiers. Furthermore, in parallel, the government was considering and market testing the options – although how this was carried out is unknown.

ANALYTICAL SUPPORT

The key function of the analytical support in this phase is to solidify the business case for the GIB, by identifying the barriers and how the institution would resolve them, as well as the scale of capitalisation and finance to be used.

> What barriers could the institution potentially address?

> Why would the finance gap not be covered by existing companies or banks?

> What form should the institution take (bank, fund etc.)? Why?

> How should it most effectively be set up: governance, shareholders? What is the scale of the capitalisation?

> How is the capitalisation going to be financed?

> What should it use its financial resources to support?

> How is the institution going to evolve?

The case making phase had already identified some of the main constraints on existing finance, but in the design phase this analysis was enhanced.

The GIB Commission, Vivid Economics and BIS identified different barriers that could be removed by this institution. Analysis, commissioned by BIS and carried out by Vivid Economics, covered possible funding from both banks and companies. Below we lay out the barriers to companies and banks bridging the financing gap.

BARRIERS TO COMPANIES RAISING CAPITAL[37]

The ability of utility companies to invest was limited. Major investment decisions were constrained by the requirement to maintain a balanced portfolio to limit risks to the company. This was compounded by the need to avoid a downgrade in credit rating, which might arise from excessive debt, whilst funding projects using a greater share of equity is restricted by limits to the support parent companies are able to provide – plus an assumed unwillingness or inability to raise new equity.

Some of those constraints could have been overcome, as an analysis on the big six utilities[38] showed that they did have the capacity to raise capital through their parent companies; however, this would not ensure that it would flow to low carbon projects. In principal, institutional investors could represent a more promising pool of capital, as the same survey found that 20% of industry experts were expecting pension funds to play an active role in renewable energy over the next 18 months[39].

However, a major barrier to equity raising by companies was the perception of inconsistent regulation. In a survey on the UK's attractiveness for renewable investors[40], 75% of respondents had committed less capital to the UK in the past than they would have done with clearer and more consistent regulation. In other words, the government needed a mechanism to credibly commit to a stable regulatory framework.

BARRIERS TO COMPANIES RAISING CAPITAL BANK DEBT[41]

The broader macroeconomic conditions placed constraints on the amount of debt that banks could provide. Following the financial crisis, banks were repairing their own balance sheets by restricting lending, partly in response to a policy requirement[42]. This increased the costs of providing corporate loans. These new lending conditions meant that the inherent characteristics of the green projects – e.g. immature technology and the lack of any track record – made them unlikely to attract capital at scale. This was a real constraint and was harming the green economy as syndicated lending accounted for two-thirds of the total capital raised by the sector.

Two other challenges limiting the provision of bank debt to the renewable sector were a lack of opportunities to recycle capital, within project finance lending, and a shortage of skills. Political risk compounded all these issues, as most green investment relied on short-term policy interventions.

As a result of these factors, without further intervention the amount of bank debt available was unlikely to be sufficient to meet the UK's ambitions. Larger deals were proving particularly hard to finance. The GIB Commission highlighted that the difficulty of attracting debt into green projects had been proven by a recent offshore wind refinancing deal which involved more than 14 banks to provide the level of debt required.

The nature of the challenges – the lack of existing capital on balance sheets, the lack of investor confidence, the need to attract smaller investors and the perception of political risk – meant that a dedicated institution was the best solution as it was the only policy innovation that could address each of these challenges. Coupled with the scale and urgency of the requirement, there was a need for bridging the gap between policy and finance, with the GIB as the best option and value for money. This institution was going to be part of overall government policy to open up flows of investment by mitigating and better managing risk (rather than simply increasing rewards to investors). Furthermore, for the GIB to be successful and deliver a lasting impact it needed to be a permanent institution established by an act of Parliament, rather than a short-term measure using existing statutory powers.

The main reason for advocating the establishment of a public bank was that the UK did not have one to begin with.

The view was that a bank was the form of institution which would be best able to leverage private capital. In turn, the requirement to leverage private capital was dictated by the sheer scale of finance required – coupled with its urgency. The GIB Commission estimated it required funding at £550 billion by 2020. In order to meet this requirement, leveraging private capital was vital.

The Commission recommended that the GIB be established, "to support the delivery of the UK's emission reduction targets as set by the Climate Change Act 2008." The support should be based on a public-private investment model and address specific market failures and investment barriers in a way that will achieve emission reductions at least cost to taxpayers and energy consumers." The Commission proposed that the GIB's mandate involved:

- Identifying and addressing market failures limiting private investment in carbon reduction activities (high priority)
- Providing coherence to public efforts to support innovation in relation to climate change by rationalising existing government-established bodies and funds (high priority)
- Advising on financing issues in central and local government policymaking.

Figure 2.2. GIB Commission recommendation on the design of the Green Investment Bank

Green Investment Bank

Established independently of HMG in the public interest; surpluses re-invested; common branding; focussed strategy; independent governance; prevent crowding out

UK Fund for Green Growth

Mission: Providing public sector funding and support for low-carbon innovation and commercialisation

Activities: Administering government grants, subsidies and low interest loans; early stage venture capital; developing low carbon incubators and accelerators; providing a unified contact point to advise businesses/investors; co-ordinating and supporting UK international climate change commitments.

Organisations, total: £185 million pa

Carbon Trust (~£100 million pa)	Energy Technologies Institute (~£55 million pa)	Technology Strategy Board (~£30 million pa)

Funds, total: £2.1 billion

International Environmental Transformation Fund (£800 million)	Ofgem Low Carbon Network Fund (£500 million)	Environmental Transformation Fund (£400 million)
Strategic Investment Fund (low carbon component is £250 million)	UK Innovation Investment Fund (£150 million)	Marine Renewables Deployment Fund (£50 million – included in ETF)

Banking Division

Mission: Catalysing private sector investment to enable Britain's low carbon transition

Activities: Identifying market failures that limit private investment in the low carbon economy; de-risking and enabling project finance (e.g. First of a kind offshore wind projects); enabling access to capital markets by aggregating discrete opportunities for a "green bond" issuance, e.g. for offshore wind and energy efficiency; providing risk reduction mechanisms; investing at commercial rates with profits reinvested; advising HMG on policy appraisal; supporting the scaling up of low carbon technologies.

Potential sources of funding:

Private Sector and state-owned bank capitalisation	UK's EU ETS auction revenue (~£40 billion by 2020)	Green ISAs (1-5% of total cash ISAs is ~£280 million – ~£1.4 billion pa)
Levy on energy bills, e.g. CERT replacement (~£875 million pa)	Green bonds	Proceeds from the sale of government owned assets

Source: GIB Commission 2010

The pros and cons of establishing a new institution were evaluated by E3G as well[43]. The conclusion was that it was a more efficient use of taxpayer money to set up a new institution, and that it was necessary to have an institution with no 'baggage' attached so that the private sector would be able to see this as a real effort from the public sector to commit to the green economy.

BIS commissioned a study by Vivid Economics to assess whether a GIB represented better value for money for the taxpayer against other policy vehicles in order to meet the stated goals. The study initially focussed on three priority sectors: offshore wind, waste treatment, and non-domestic energy efficiency, but it also covered 12 other sectors that could be an important focus area for the GIB. It assessed the impact of a GIB against separate policy solutions for each sector – increasing offshore wind subsidies, raising the landfill tax and increasing the Climate Change Levy. In all cases the GIB was more efficient and more equitable, as well as having a positive impact across all three sectors. It would also have less of a negative impact on consumer prices, as prices are more sensitive to a change in taxation than to a shift in investment policy. Finally, the study assessed whether the GIB would have a positive net present value for society as well as in the specific priority sectors – again the result was that it would[44].

It was clear that in order to establish the institution's credibility, as well as the government's credible commitment to the long-term shift to the low carbon economy, the GIB would have to operate at arms' length from the government. The GIB would have to be independent and have a clear public – and clearly green – purpose. It was important to ensure that the GIB's mandate was clear: to catalyse private investment into the low carbon economy, as well as providing advice to the government on the low carbon transition.

The mandate of the new bank was developed in part in response to the business case developed above. In the UK case, the GIB's mandate stated that its focus should be on the low carbon sector in line with the delivery of the UK's emission reduction targets as set by the Climate Change Act. It was specified that the GIB's support should be based on a public-private investment model and address specific market failures and investment barriers in the market such as in energy efficiency. **In order to guarantee the success of the GIB, it was given an explicit double mandate – both to achieve significant green impact and make financial returns: a "double bottom-line" approach.**

Once the requirement for a new public institution had been validated, the level of capitalisation – and where these funds would come from – had to be calculated. The first effort to quantify the necessary funding for the GIB came from a report that E3G commissioned from E&Y – see a summary of the options proposed in the report in Table 2.2. The report suggested that some of the funding could come from redirecting funds from existing quangos. The rest could come from the sale of bonds to leading investors such as pension funds to finance long-term projects, while individuals could be offered 'Green ISAs'. A levy could also be placed on energy bills, and money from the sale of assets such as the Channel Tunnel rail link could also be handed to the GIB. The key results are shown below.

Table 2.2. Summary of options for capitalising the Green Investment Bank

	Option A	Option B	Option C		
			Part 1	Part 2	Part 3
Funding/services provided	Short- and long-term debt and equity	Credit guarantees	Short-term risk capital during construction	Asset management for completed projects	Consolidate small loans for EE/micro generation
Key role	Directly financing projects	Lower cost of borrowing by providing guarantees at cost	Directly financing projects	Aggregating projects in the less risky operational phase to attract institutions	Consolidate small loans for securitisation
Cost of funding to borrower	Low	Higher	Low	Low	Low
Accounting of GIB debt	Consolidated on UK balance sheet	?	Consolidated on UK balance sheet	Not applicable as GIB will not provide debt in this phase	Not applicable as GIB will only securitise loans
Facilitates institutional investors taking asset exposure	Not under most lending frameworks	Yes	No	Yes	Yes
Relationship to commercial banks	Potential competitor	Facilitates bank lending by increasing recovery	Potential competitor	Neutral/facilitator	Facilitator
Sources of capital	UK government explicit guarantee and capitalisation	UK government provide initial capital plus commitment to provide additional pre-defined limited capital to GIB	UK government and other multilateral institutions for the initial capital	Insurance, Pension funds	Co-owned by a number of banks
Capitalisation required	£7 billion	£4–6 billion	£4–6 billion	£4–6 billion	£4–6 billion

Source: Author's summary from E&Y (2010). Capitalising the Green Investment Bank

It is important to notice that this exercise carried out by E&Y could be replicable in other jurisdictions to determine the different options to capitalise the institution. They based their calculations on the functions needed for the GIB.

Other organisations also made estimations of capitalisation needs. The UK Parliament's Environmental Audit Committee reviewed all the available estimates, including those by E3G and the E3G-commissioned study by E&Y. The table below shows the results:

Amount of investment required	Over what period	Level of capitalisation suggested	For what purposes	Source	Date of assessment
£234 bn	By 2025	£7 bn of additional income to fund equity share of investment	Clean energy investment to meet UK's existing energy goals	Securing the UK's Energy Future: Meeting the finance challenge, Ernst and Young	Feb 09
£500 bn, up to £50 bn per year	Over next ten years	No estimate given	Infrastructure, not just low carbon (not smart grid)	Delivering a 21st Century Infrastructure for Britain, Dieter Helm, James Wardlaw & Ben Caldicott, Policy exchange	Jun 09
Between £160 bn to £250 bn		£3–5 bn	Accelerate the transition towards a low carbon economy	The case for a Green Investment Bank, Green Alliance	Oct 09
£200 bn	2020	Does not specify	Energy investment – secure and sustainable electricity and gas	Project Discovery, Ofgem	Feb 10
Between £40 and £50 bn per year (up to £1 trillion)	Up to 2030	£2 bn	UK's economic infrastructure, low carbon sector and new energy and transport	Strategy for National Infrastructure, HM Treasury	Mar 10
At least £750 bn	Over the next two to three decades	£2 bn	UK's low carbon transition	Accelerating the transition to a low carbon economy; the case for a green investment bank, E3G	May 10
£550 bn	To 2020	Does not specify – calls for further analysis before Spending Review	To meet UK climate change and renewable energy targets	Unlocking investment to deliver Britain's low carbon future, Green Investment Bank Commission	Jun 10
£550 bn	To 2020	£4-£6 bn over next four years	Infrastructure, power generation, new and existing buildings, and new manufacturing industries	Financing the future, Aldersgate Group	Sep 10
£450 bn	2025	£4-£6 bn	UK's low carbon agenda, including all the energy efficiency programme capital requirements	Capitalising the Green Investment Bank, Ernst and Young	Oct 10

Source: Environmental Audit Committee (2011)

However, ultimately the decisions on how the GIB was funded, and how it would evolve, were made within the government. In the first instance, the government chose to fund the GIB directly. The Spending Review in 2010 announced that it would capitalise the GIB in 2013–14 with £1 billion, together with proceeds from the sale of government assets. It was initially planned that the GIB would use its own balance sheet to raise finance by 2015, or at such a point as government debt was declining as a percentage of GDP[45].

The GIB Commission in 2010 proposed that initially the GIB would focus on financing and coordination. As it established expertise and credibility it could take a greater role advising central government and subsequently advising municipalities and local communities.

In implementing the GIB, the government took a somewhat different approach to the one recommended by the GIB Commission, in part to comply with state aid guidelines as well as the views and priorities of the two political parties in government. In short, the GIB's evolution would follow three phases[46]:

Phase I – Incubation: From April 2012 until achieving state aid approval, the GIB would be in an incubation phase.

Phase II – Establishment: Following state aid approval, the GIB would evolve into a stand-alone institution. It would then become fully operational.

Phase III – Borrowing powers: From April 2015 onwards, and if public sector net debt is falling as a percentage of GDP, the GIB could acquire borrowing powers. However, there was not a deadline for this to be implemented – nor a clear pathway for the institution after 2015.

STANDARDS & FRAMEWORK

In the design phase, the standards and framework section helps to frame and contextualise the core functions of the new institution, as well as ensuring that the appropriate tools and standards are included in the bank from the outset.

Key question:

> Is a bank or fund preferable?

Creating a functioning bank was deemed by both the GIB Commission and the Environmental Audit Committee to be strongly preferable to setting up a fund. The key advantages that a bank has over a fund[47] include its ability to raise its own finance and to do so swiftly. A bank would also be able to attract a wider range of expertise from both the private and public sectors and have a more powerful set of mechanisms for distributing this expertise, as well as being able to conduct a wider range of interventions compared to a fund.

Also, from a government standpoint a bank offered significant benefits. Setting up a standalone bank would signify independence and permanence. Also, the greater flexibility present in a bank would enable it to fill the gap in the market for government-backed bonds, whereas a fund would not have the powers to issue such bonds ordinarily.

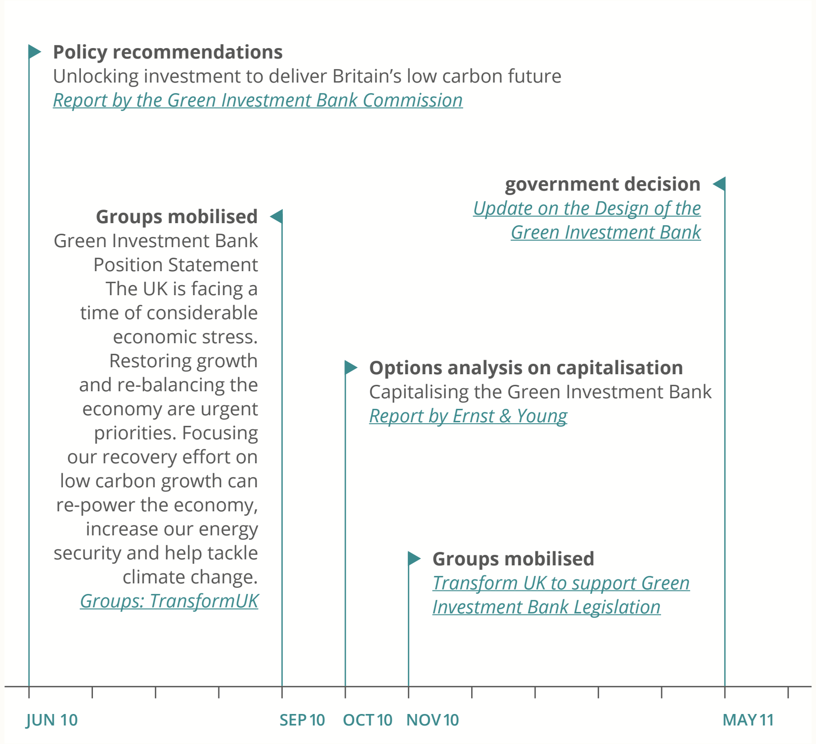
OUTPUTS

The design phase yields a series of outputs that lay the groundwork for the following "Establishment" phase.

In the design phase the institution starts taking a shape, but there is still scope for improvement. The next phase will go into more detail on how to ensure the institution design is fit for purpose. For reference, a checklist of the outputs of the design phase is presented below. We also include below the specific outputs generated in the UK case.

- ✓ Establish the vision, governance and business model
- ✓ Determine how much green funding would be delivered within the existing policy framework
- ✓ Measure the significance of the market barriers
- ✓ Objectives and roles of the Green Bank, scope of operations
- ✓ The funding structure of the Green Bank (capitalisation and leverage/borrowing powers)
- ✓ Timetable for the establishment of the Green Bank
- ✓ Decide whether new legislation is needed
- ✓ Rationale for reform versus a new institution.

Figure 2.3. Outputs for the design phase



INTRODUCTION

The decisions made during the establishment phase are key to ensuring that the institution's operations will reflect its mandate. This is a crucial stage, as it will also ensure that the institution is fit for purpose and adds value to the economy. Therefore, the question is how to ensure the governance framework of the institution provides the foundations for its success – to bridge the gap between finance and policy. Market confidence is built over time by demonstrating that the institution is not subject to political interference.

In the case of the UK GIB, it was decided during the design phase that the institution needed to be enshrined in legislation. This was to ensure that the bank's purpose, priorities and functions were secured and enforceable, given that the government would initially be the sole shareholder, and to ensure the validity of future changes within the shareholder structure. This would allow for amendments to the institutions mandate, structure or governance to be made with greater ease. Ensuring the independence and ability of this institution to operate at arm's length from the government was the key determining factor for its success.

The financial crisis was the backdrop to the legislation and establishment of the institution. The UK recovery was weaker in 2011 than expected and the economy went into its first double-dip recession since the 1970s[48]. Deep spending cuts were put in place that ran contrary to the IMF's view on the need for economic stimulus in previous years. The UK Chancellor had imposed a target of reducing the national debt by 2015-16, which was missed[49].

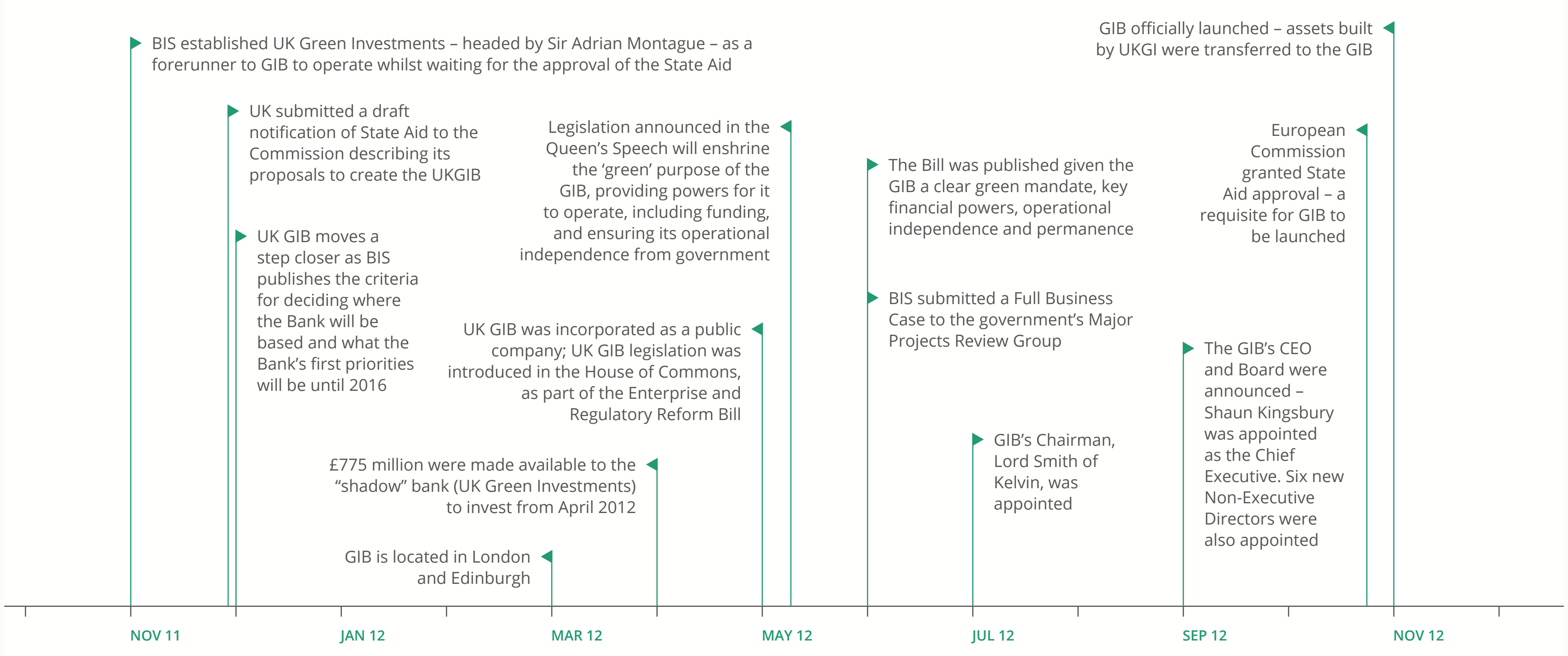
The GIB Commission recommended giving the institutions borrowing powers as a way of avoiding it becoming another government-run fund. This was the major disagreement between different government departments, particularly because the Treasury was reluctant to allow the institution to borrow off its own balance sheet (despite the fact that the then Shadow Chancellor stated pre-election "If I become chancellor, **the Treasury will become a green ally, not a foe**.")[50] Discussions were heated in the Parliament as well[51].

The ‘green community’, financiers, and real economy experts thought that the lack of borrowing power would limit the bank’s ability to have an impact and support accelerating the low carbon economy in the UK.

While the legislation and State Aid approval process was underway, BIS decided to appoint a Board and Independent Advisory Committee to support the government in the final decisions for the operating principles of the institution. Meanwhile, investments were carried out by a “shadow bank” called UK Green Investments, made up of a small team of experts within government.

It is worth mentioning that the GIB was not the only policy implemented to support the transition. Instead, the GIB complemented the 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 rollout of electric vehicles. However, the key role of the proposed GIB was to address the uncertainty around the sources of finance which could constrain the other policies.

Figure 3.1. Timeline for the establishment phase



KEY ELEMENTS

This section describes how decisions were shaped by the evidence and information available, but also by the overall policy and macroeconomic context. Even though some of the questions appear to be similar to the ones covered in the case making and design phases, the level of detail is greater and increasingly practical/focussed on delivery.

The key decisions of this phase are determined by a number of elements, from decision making process, stakeholder engagement, analytical support and standards and frameworks.

The elements covered here may unfold in a different order.

Decision making process

The decision making process focuses on how decisions are taken, who is in the room and what factors influence or shape these decisions.

Stakeholder engagement

Stakeholder engagement in this phase involves identifying and influencing the key departments/institutions that will shape the GIB, to facilitate coordination and input; this would ultimately ensure the analysis undertaken has maximum impact.

Standards and frameworks

Standards and frameworks are about evaluating existing institutions with similar roles in other jurisdictions. This can help inform best practices on project evaluation and screening, as well as comparators in terms of finance mobilised.

Analytical support

Analytical support is focussed on ensuring that the institution has the best possible structure, is financially stable and will provide complementarity to the existing financial landscape. Above all, demonstrating independence from government is key to increasing market confidence.

DECISION MAKING PROCESS

In the establishment phase, the decision making process focuses on how decisions are taken, who is in the room and what factors influence or shape these decisions.

Key questions include:

> When to recruit the senior staff of the institution?

> What is the governance arrangement and who will be responsible for it?

> How to ensure that the institution's staff is not an offshoot of the government?

> When to recruit the senior staff of the institution?

> What is the legislative process? – including the state aid approval process

> Should investments start after the institution is established? Or is it possible for the institution to start funding projects before it is fully established?

> Where to base the new institution?

In the UK example, BIS was responsible for taking the key decisions required in setting up the GIB and the legal constraints faced by the UK in setting up the GIB – particularly the requirement to seek State Aid approval from the European Commission.

Table 3.1. BIS Business Plan

Deliverables and milestones for the UKGIB	Start	End	Status
Establish the governance arrangements and design the business and operating model of the new institution		May 2011	Completed
Green Investment Bank shadow Board established	Dec 2011	May 2012	
Design of Green Investment Bank complete and published	May 2011	Dec 2011	
Continue market testing for the role of the Green Investment Bank beyond incubation phase	May 2011	Dec 2011	
Green Investment Bank	Sept 2012		

Source: BIS Full Business Case – UK Green Investment Bank

In May 2011, the UK government confirmed that the GIB would be enshrined in legislation[52]. By May 2012, it was already formed as a public company with initial funding of £3bn until March 2015[53]. In the same month, HM The Queen addressed Parliament about the legislative programme of the government, which included the announcement of the legislation[54] – the Bill was introduced in the same month[55].

Given that there was a small team of experts within BIS who started to make investments prior to the Bank being fully established, it was decided to set up the Board first, in May 2012. The view was that having the Board in place was needed for the pre-state aid clearance.

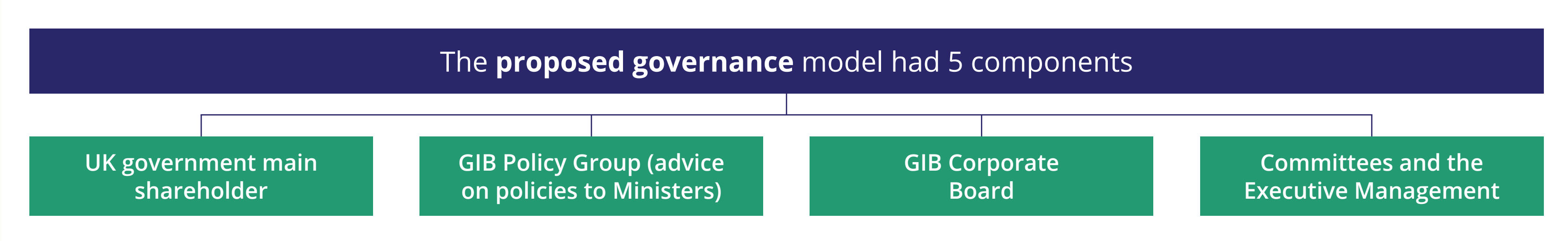
HMG used a recruitment agency (Odgers Berndtson) to develop a long-list of potential candidates for the Chairman and Senior Independent Director (SID) positions in the UK GIB – The Treasury also appointed the Shareholder Representative Director. The Secretary of State's decision to appoint Lord Robert Smith as Chairman and Sir Adrian Montague as Deputy Chairman and SID, was announced on 25 May 2012.

The Board led the process for the appointment of the other directors through its nomination committee, but all appointments were subject to the prior written consent of the government as shareholder. The Board was not making investment decisions, but they were responsible for all aspects of the UK GIB, overseeing its set up and operations. This was key during the pre-state aid clearance phase of the GIB. Ultimately, the organisational structural of the Bank was determined by the CEO, subject to Board approval.

To ensure the decisions made by the institution were well-informed, six non-executives were also appointed. They enriched and complemented the board, having a wealth of experience with backgrounds in academia, business, investment funds, equity finance and the low carbon sector[56].

The proposed governance of the GIB did evolve during the decision making process. In the first update of the GIB design phase, published by the UK government in May 2011, the governance structure proposed by the Business Design work-stream within BIS was the following[57]:

Figure 3.2. Preliminary governance model



Source: HMG Update on the Design of the Green Investment Bank, 2011.[58]

However, **this risked becoming an offshoot of the government if a wider group of civil servants was to be involved in the governance of the institution.** Eventually the decision was to have only one government representative. This could otherwise have undermined the mandate and objective of the institution.

The governance arrangement was designed to be aligned with and to support the institution's mission[59]. The Shareholder Executive would actively manage the comprehensive oversight and governance arrangements for UK GIB[60] to ensure that the government's interests, as well as the GIB's mission, were taken into account[61].

Although the legislation was announced in May 2012, it took a year to become primary legislation[62] as an Act of Parliament. One of the requirements was to produce an impact assessment on the GIB, demonstrating the economic value of the institution[63]. This was done by BIS and confirmed the economic value of the GIB[64]. In parallel to the UK process, there was the need to notify the EU Commission on the creation of the institution.

However, it was decided that these considerations need not delay starting operations, and whilst the legislative process was underway, and pre-State Aid clearance sought, investments could be undertaken on commercial terms by the government's UK Green Investments team (UKGI). This team was separated from the day-to-day operations of the department, and it was intended to function as if it were the UK GIB.

It was provided with £775 million initially to make direct green investments, an unusual function for the government[65]. Therefore, the Policy Team in charge of the GIB Project used public procurement frameworks to secure the support and skills UKGI needed[66]. The assets built up by this team were transferred to the GIB once fully established.

By October 2012 the European Commission granted state aid clearance to the institution, allowing the Bank to begin making investments on commercial terms[67]. The clearance was given until October 2016.

The legislation was a very important part of the process in the UK case, as it ensured that the functions, mission, green principles, and independence were enshrined in law.

In parallel to the legislative process, there was also a debate as to where the UK GIB should be based, and HMG launched a consultation to determine this. There were three main criteria for deciding the location of the institution: the ability to recruit and retain the specialist staff needed to run the organisation; to enable the UK GIB to work closely with other parties involved in deals as well as other investment bodies, project developers and green technology providers; and being good value for money.

There was a huge interest in hosting the GIB. Thirty-two towns and cities including Edinburgh, Cardiff and Milton Keynes bid to host the Bank's headquarters[68]. **There was considerable controversy over this issue due to the government's desire to promote economic activity outside London, as many members of the team felt that for the GIB to fully function it had to be based within the country's financial hub**. In the end, it was decided that the GIB's headquarters would be in Edinburgh, but with a large London office, where the main transaction team was going to be based, playing to the strengths of both capital cities.

It was emphasised in the Business Case that the Bank needed to develop strategies and a cohesive culture quickly. As a consequence, significant management time and effort would be required, particularly in the early days, to ensure that both offices were properly integrated to deliver the mission effectively.

STAKEHOLDER ENGAGEMENT

Stakeholder engagement in this phase involves identifying and influencing the key departments/institutions that will shape the GIB, to facilitate coordination and input; this would ultimately ensure the analysis undertaken has maximum impact.

> Who/which department ultimately could approve the borrowing powers of the GIB?

> Who/which department is ultimately responsible for approving the structure of the GIB? Who decides on the governance of the institution?

> Who would determine how the institution's debt is classified?

> Are there any regulatory bodies that need to give approval?

In the UK case there were a number of different government departments who each had significant input into the GIB process. Although the primary responsibility for the GIB was given to BIS, given that this involved high profile cross-government decision making, a Cabinet Committee – The Economic Affairs Committee – was also involved in the discussions and was chaired by HMT who had a significant locus in determining the funding and role of the UK GIB. Other Ministers who had an interest in the UK GIB, but were not part of the Committee, such as the Secretary of State for Environment, were invited to participate.

Within BIS, it was decided that the Shareholder Executive would actively lead the comprehensive oversight and governance arrangements for UKGIB[69]. BIS put in place a project management framework to work out the details for the governance arrangement but also for the green impact and monitoring framework. This project had two objectives; first, to ensure effective operations of UKGI; and second to ensure that the UK GIB would be in a position to be fully operational as soon as the State Aid clearance was approved. The key decision making bodies for the project were: the GIB Project Executive Committee, which met weekly and was made up of representatives including the Shareholder Executive, UKGI and UKGIB, chaired by the project's Senior Responsible Officer; the UKGIB Board, which was created in May 2012, and which oversaw the setup of the Bank through the UKGIB Executive Committee. There was close Ministerial attention paid to the project[70].

In parallel, BIS set up an independent Advisory Group. Its objective was to give advice to the government on the establishment of the institution and its strategic direction. The group was composed of experts in the green economy, finance, sustainable and responsible financial services, and development banking. The group was set up in summer 2011, and it operated during the incubation period of the bank for around 18 months. The group only had a consultative role, and did not make any decisions during this phase of the GIB.

The group was disbanded once the GIB was granted State Aid Approval by the EU Commission when, as planned, the GIB Board replaced the Advisory Group. The terms of reference for this group were written by BIS[71].

There were some disagreements within the departments involved on the design of the institutions. DECC, BIS, and the Cabinet Office wanted the GIB to be set up as a bank with the ability to issue bonds, whilst the Treasury opposed this (see Design Phase). The consensus was that if the GIB was not given borrowing powers at some point then its capacity to deliver the transition would be constrained. The Secretary of State for Energy and Climate Change, Chris Huhne, said in an article at the time **"Ducks quack, and banks borrow as well as lend"**[72].

This debate was also informed by decisions around how the institution's debt would be classified. In the UK the Office of National Statistics is the institution in charge of defining the classification of the debt as it determines whether the institution is in the public sector. The GIB was taking the form of a UK private law limited liability company, owned 100% by the State but with a fully independent board. However, it was decided to classify this institution as a central government body and as a Non-Departmental Public Body (NDPB). There were discussions to explore whether the UK GIB could have been classified as a Public Financial Corporation[73] – it is unclear why this was not taken forward.

The GIB was registered on the balance sheet of central government. However, the UKGIB was granted some exceptions from the standard budgeting rules that apply to the NDPB in order to operate at arm's length from the government. The classification was also reviewed by Eurostat, as it needed to understand the statistical treatment of the national development banks.

In part as a result of this decision, ultimately the Treasury view on the institution's borrowing capability prevailed – at least for the duration of the initial funding provided (until April 2015) – and so the UK GIB would not be able to borrow off its own balance sheet until that date at the earliest. This decision moved the GIB away from the initial proposal of acting like a private institution, meaning it would fund its investment by borrowing; taking on loans whilst also issuing financial products such as ISAs and green bonds[74].

ANALYTICAL SUPPORT

In this phase, analytical support is focussed on ensuring that the institution has the best possible structure, is financially stable and will provide complementarity to the existing financial landscape. Above all, demonstrating independence from government is key to increasing market confidence.

Key questions:

> What is the best structure of the governance of the institution, to give it independence from government whilst ensuring public money is spent properly?

> What is the accounting treatment required? Would it be off/on the government balance sheet?

> Why does the institution need access to capital markets (borrowing powers)?

> How does this type of institution fit within the current financial landscape?

In the UK case, there was a clear focus on ensuring that the GIB would be independent, operating at arm's length from the government despite the government being the sole shareholder. The GIB was a new form of public-private partnership, and the GIB's Articles of Association ensured it would maintain total independence in terms of operations[75].

The GIB Commission also provided key information on the governance, recommending that the GIB should be established by an Act of Parliament as a permanent institution working over the long term in the national interest. Any profits derived from public funds would be reinvested to further its mission. The Commission further recommended that the GIB would be commercially independent and therefore not accountable to ministers or to Parliament for individual investment and lending decisions. This was a prerequisite for building credibility with the markets, and furthermore would place GIB liabilities off the government balance sheet.

The Commission also recommended that the GIB would be established with a strong governance structure that clearly managed the tension between investing in the public interest and the need to be commercial. The Board of Directors would be drawn from the private sector and employees would have professional expertise.

The independence of the GIB was initially threatened by the government's proposal of a Policy Group in a similar (although more dominant) role to the Independent Advisory Committee[76]. This degree of control would subject the Bank to undue short-term political influence, which would in turn compromise the confidence of investors and other stakeholders. However, this was eventually abandoned after pressure from NGOs, and financiers, including legal experts, and scrutiny from Parliament.

The key elements included in the bill were[77]:

> Ensuring that the bank always has a green purpose
> Enabling the government to fund the Bank on an ongoing basis
> Facilitating the Bank's operational independence from government; and
> Ensuring the Bank is subject to quoted company reporting requirements.

As referenced above, **there was also considerable discussion on granting borrowing powers to the institution.** This debate was inherently linked to the GIB's accounting treatment and it's impact on the Public Sector Net Debt. The Chancellor George Osborne stated that although the GIB was not granted borrowing powers initially, … "from April 2015 and if public sector net debt is falling as a percentage of GDP, the GIB will acquire borrowing powers…"[78].

Although the Treasury was reluctant to make any exemptions on the fiscal rule, this was not an ironclad policy. In 2008, at the height of the financial crisis, HMT excluded the debts of the part-publicly-owned banks, RBS and Lloyds from Public Sector Net Debt (PSND)[79]. This was justified by the government as a temporary and extraordinary non-discretionary decision[80]. In the 2008 Pre-Budget Report, the government announced that it would "…depart temporarily from the fiscal rules until the global shocks have worked their way through the economy in full" and that "while the public sector fiscal aggregates continue to be affected by interventions in the financial sector the government will report on public sector net debt both including and excluding the impact of those interventions.
The government will base its fiscal policy, and measurement of its fiscal rules, on aggregates that exclude that impact"[81].

It was widely considered that allowing the GIB to borrow was going to be critical for its success. Given that the Bank was registered as a company under the Companies Act, the power for the GIB to borrow is theoretically 'enabled,' but this is not the same as being 'allowed' to borrow in practice[82].

The former Head of Economic Forecasting at HMT said that waiting to provide borrowing powers to GIB until 2015 – despite legitimate concerns from the Treasury – could result in a missed opportunity to "build up more productive assets"[83]. This was particularly the case as the purpose of the bank was not to borrow to finance current spending. It was argued that given the fact that economic activity was slow, this was an opportunity to address the market failures in the economy[84]. This was also supported by independent research from the IMF which recommended borrowing to fund an infrastructure stimulus in response to the global economic slowdown[85].

This discussion on the structure and borrowing powers of the GIB was particularly shaped by the fact **that the UK did not have a public bank and there was not any institution with a similar remit to focus on both mobilising the private sector and having a green impact.** This type of institutional innovation was key, as there was the need to have an institution acting in a countercyclical[86] manner given the effects of the financial crisis.

Setting up a GIB also complemented existing policies underpinning the delivery of green infrastructure such as decarbonising transport, (including the fuel duty), differentiated Vehicle Excise Duty and the Renewable Transport Fuel Obligation, reducing and recycling waste including rising Landfill tax, beyond proposed rises, and restrictions on the land-filling of wood waste and using water more efficiently (including minimum standards for the use of water in certain fittings and appliances.)

STANDARDS & FRAMEWORK

Standards and frameworks are about evaluating existing institutions with similar roles in other jurisdictions. This can help inform best practices on project evaluation and screening, as well as comparators in terms of finance mobilised.

> What is the best structure of the governance of the institution, to give it the independence from government, whilst ensuring public money is spent properly?

> What is the monitoring and evaluation framework to measure the performance of the institution?

> What are the screening criteria to be eligible for GIB support?

> What other institutions have access to capital markets?

Structured as a public limited company (PLC) 100% owned by the UK government, the GIB's Articles of Association and the Shareholder Framework ensured it would maintain total operational independence, representing a new form of public private partnership (PPP). Vested with £3bn of taxpayer capital, and the ability to structure green energy investment products across the capital structure, (from senior debt to equity), the bank was tasked with the execution of a critical government policy, one meant to ensure the UK's energy future needs were met.[87]

The GIB was the first bank to try a consistent approach to create a framework to screen projects that were both green and profitable (the double bottom line.) Its mandate was clear – as well as priority sectors there were different conditions that projects needed to be fulfilled to be eligible for support. The information below was extracted from research conducted by Imperial College[88]:

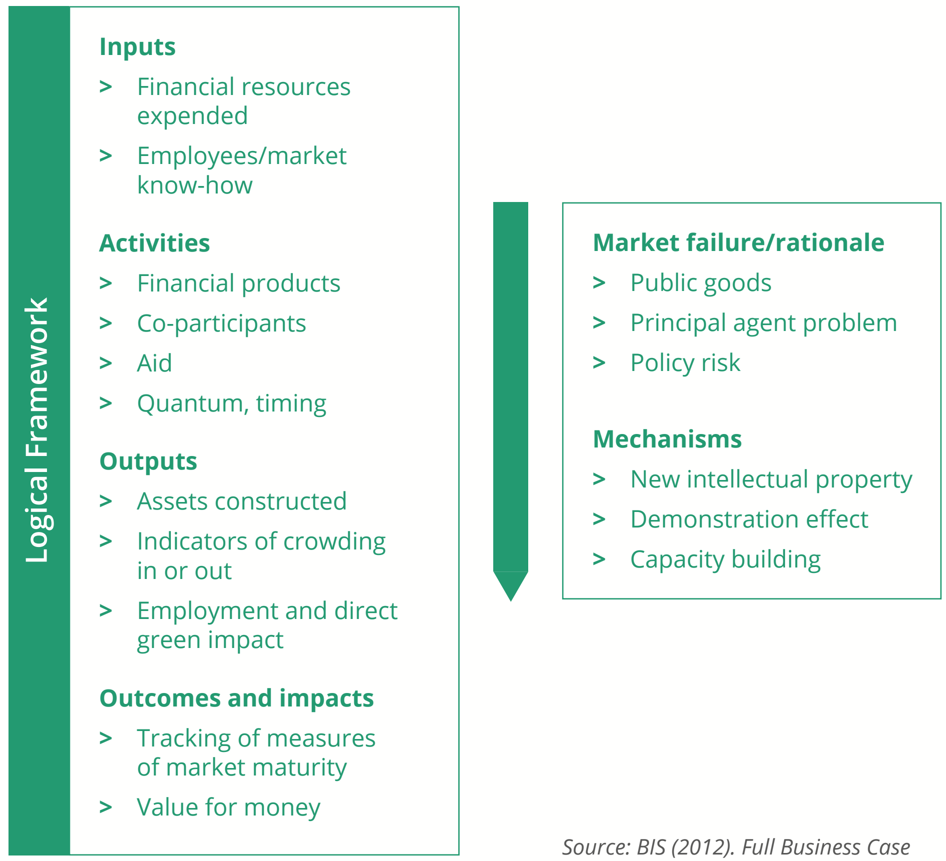
1. Fit within the state aid mandate in terms of specific 'priority sectors'
2. Be 'additional' to every project. Developers had to prove they could not obtain funding elsewhere

3. Invest at market rate in order not to undercut competition. Funding had to be provided pari passu with other investors. Or, if the purpose is to feed stock supply, it could have involved taking equity in the project and then taking additional revenues on the basis it is signed off as conforming to ‘market economy investor principle’ (MEIP) rules
4. Conforms to the five-green credentials outlined in its Articles of Association
5. Presents a suitable risk profile, which involves various models and forecasts, testing the assumptions for revenues, cost of delivery and cover ratio limits
6. Reputation was important, specifically the relationship with both the client and the developer.

The UKGIB was required to collect data about projects which will be needed for evaluation. The monitoring and evaluation programme would build a body of evidence which would inform the UK GIB’s activities and allow appraisal of the impact of the Bank.

A logical framework model was designed to monitor and evaluate the institution. It...” *follows a policy through four stages: inputs (the resources used), activities (how the resources are used) outputs (initial impact of these activities) and outcomes (wider and indirect effects of the activities)”* [89].

Figure 3.3. Proposed metrics for monitoring and evaluation – Logical Framework



Source: BIS (2012). Full Business Case

This logical framework was designed to be applied to the four objectives of the institution: sound finance – being financially sustainable, good behaviour, green and wider impact, and indirect green impact.

Given that the funding of this institution was coming from the public purse, and in order to comply with EU laws, the GIB needed to demonstrate that its investments were mobilising additional private capital and directing it to the green economy. **The UK government was expecting a return on its £3bn investment at levels below those seen in the private sector** (3.5% p.a. is a return below the acceptable level in the banking sector).

Of the public banks established in other European countries, all are allowed to borrow independently from the capital markets. For example:

Table 3.2. Leverage equity from existing National Development Banks

Country	Public Bank	Leverage Equity
Portugal	Caixa General de Depositos	X17
Spain	ICO	X14
Germany	KFW Bankengruppe	X28
Netherlands	Bank Nederlandse Gemeenten	X59

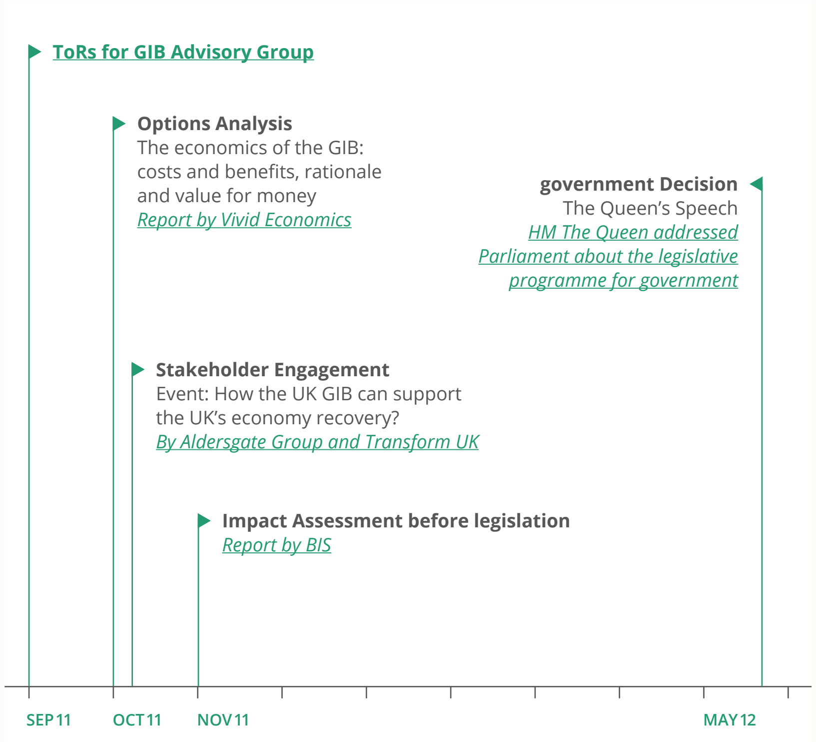
Source: BIS Full Business Case

OUTPUTS

The establishment phase yields a series of outputs that lay the groundwork for the next phase. For reference, a checklist of the outputs of the establishment phase is presented below along with the specific outputs generated in the UK case.

- ✓ Legislation form
- ✓ Regulatory framework
- ✓ Accounting treatment (on/off balance sheet.)
- ✓ Composition of the Board
- ✓ Agreement of mission, operating principles, and strategic objectives
- ✓ Risk management, rate of return
- ✓ Set out the location of the institution.

Figure 3.4. Outputs of the Establishment phase



INTRODUCTION

The operations phase translates the high-level procedures and structures put in place in the establishment phase into the day-to-day running of the institution. Whilst steps taken in the establishment phase are key to ensuring the bank's potential for green impact, it is in the operations phase that this green impact can be achieved by having the right staffing and procedures.

In the UK GIB case, the institution was officially opened for business in November 2012. Its mission was to crowd private sector investment into renewables and green infrastructure, with a mandate from government to deploy at least 80% of its capital in the following sectors: offshore wind; waste recycling and energy from waste; non-domestic energy efficiency and support for the government's Green Deal[90].

The UK GIB was operating for much of its state-owned existence under the Conservative-Liberal Democrat coalition government of 2010–2015. The Prime Minister, David Cameron, had claimed that this would be the greenest government ever. In reality, the government sent mixed signals to the markets, cutting taxes on fossil fuels whilst reforming the electricity market to promote the growth of renewables. However, the overriding focus of the government was cutting public sector net debt at a time of relatively weak economic growth.

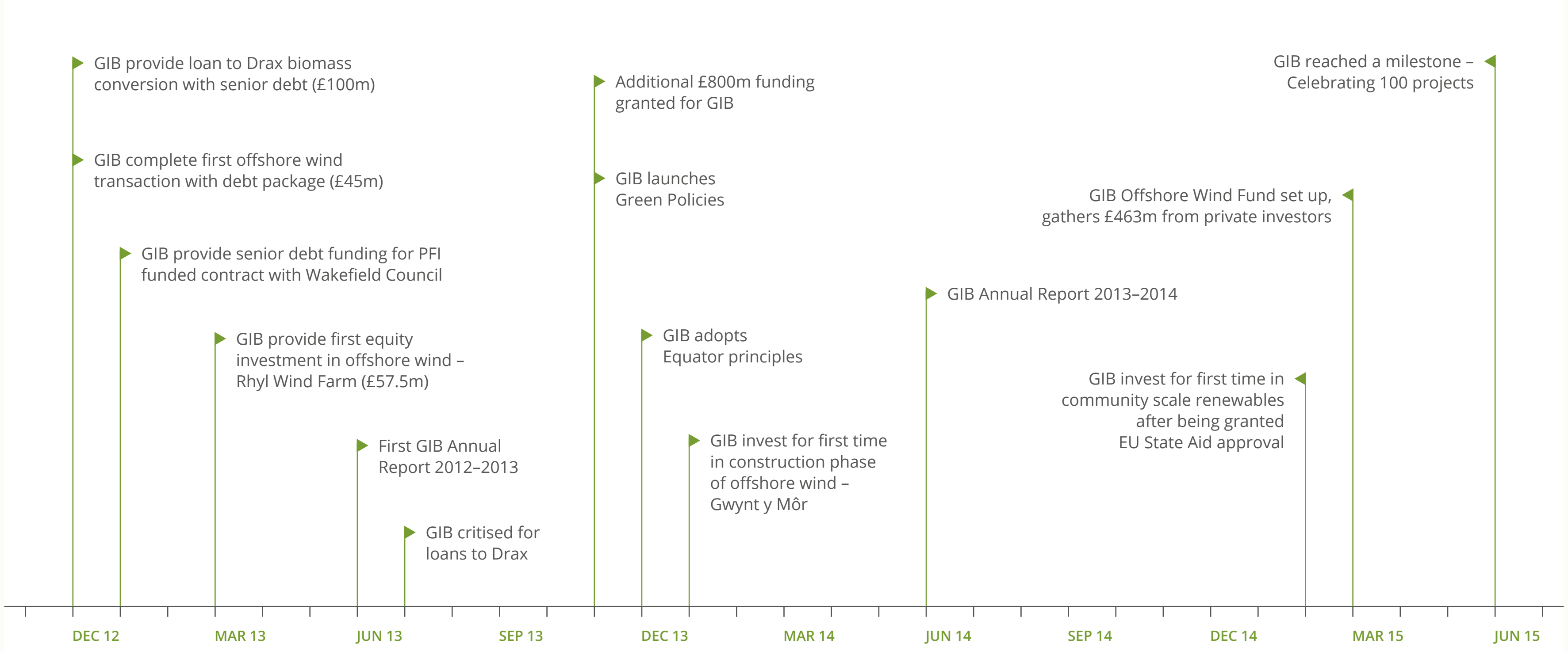
The GIB was set up as a public limited company to operate at arm's length from the government so that it could operate as a commercial profit-making company unrestricted by public sector governance, including pay restrictions. This led to the hiring of a leadership team with broad experience in clean energy investment which in turn shaped the strategy, portfolio, reputation and market impact of the GIB. More importantly, the GIB's approach incorporated the double bottom line of both a green impact and financial return, whilst adhering to their statutory role of meeting the five green purposes[91].

In order to assess projects, the GIB devised a Green Impact methodology that measured the avoidance of greenhouse gas emissions, air pollutants and fossil fuel consumption over the project lifetime. The summary of this approach has since been made public and shared through the Green Investment Handbook.[92] The GIB's investment managers had to meet criteria on State Aid, additionality, market rate equivalents, the five green credentials and risk profile, and maintain the GIB's reputation when getting projects signed off by the Chief Risk Officer.[93]

Furthermore, the GIB had several key performance indicators (KPIs) which were set by the Board of Directors and government to measure performance and progress of the Bank.
These included the amount of capital committed, the financial return on investment and the mobilisation ratio of public to private capital.[94,95]

The operational effectiveness of the GIB was judged to be a success by many observers after several years of activity.[96]
The high mobilisation ratio and engagement with new investors into green infrastructure helped address previous market failures. The institution was initially met with skepticism from the market[97]. However, by demonstrating sound judgement in its investment decisions, over time GIB financing became a signifier of good quality projects.

Figure 4.1. Timeline for the operations phase



KEY ELEMENTS

The key elements of the operation phase are set out below. The choices arising from this phase will be determined by several elements, from stakeholder engagement, the decision making process, analytical support, and standards and framework.

Their inter-linkages shape the outputs of the phase which are the foundations for the establishment of this institution and the groundwork for the next 'Evolution' phase.

Decision making process

The decision making in the operations phase of a green bank needs to ensure the institution remains aligned with its mission and mandate – as well as adhering to its green standards. The decisions may be taken inside or outside the bank, and it may require great effort to ensure that the decisions taken at senior level are fully reflected in the day-to-day procedures of the bank.

Stakeholder engagement

The stakeholder engagement in this phase is focused on the stakeholders who will interact with and shape the Bank as it goes about its day-to-day business. This will include managing its relationship with government and other shareholders, including financiers and industry, as it builds up its operations and project pipeline.

Standards and frameworks

Standards and Frameworks enable a green bank to consistently report and manage its operations, meeting its legal, risk and financial requirements.

Analytical support

Analytical support provides information to support the key decisions for the operations of the institution. These could include the type of methodology to use to ensure green impact, transparency and assessment of the portfolio.

DECISION MAKING PROCESS

The decision making in the operations phase of a green bank needs to ensure the institution remains aligned with its mission and mandate – as well as adhering to its green standards. The decisions may be taken inside or outside the bank, and it may require great effort to ensure that the decisions taken at senior level are fully reflected in the day-to-day procedures of the bank. institution.

Key questions include:

> How does the Board interact with its shareholders?

> How does the non-executive Board ensure the bank keeps to its mission?

> How does the Board set the strategy? Who approves it?

> What operations need to be outsourced? Who approves this?

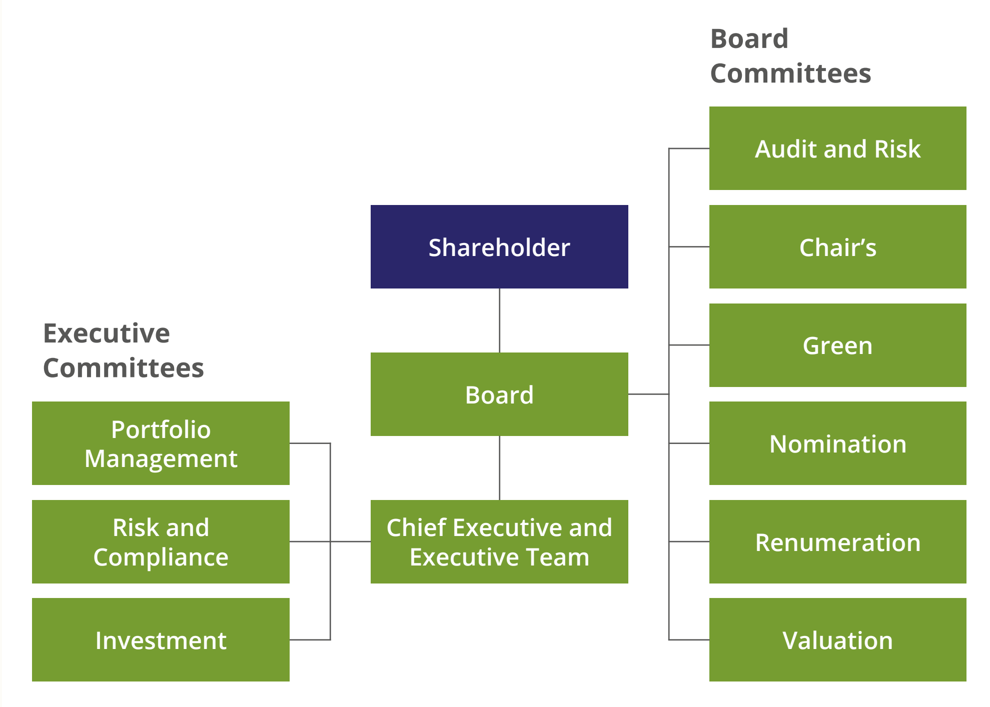
> How does the Board manage financial risk?

The Shareholder Framework document (published in 2013) set out the relationship between the GIB and the sole shareholder BIS,[98] which later became the Department for Business, Energy & Industrial Strategy (BEIS). BEIS could not interfere in the day-to-day operational, commercial or decision making activity of the GIB, or advise on specific investments or investment strategy. It did, however, ensure the GIB operated in line with the framework and principles set out in the Bank's Articles of Association.[99]

Interaction between BEIS and the GIB occurred formally through quarterly shareholder meetings between the Chair and representatives of BEIS to review GIB's activities and performance against their set objectives. The GIB was also required to provide reports to BEIS covering delivery of the Green Impact requirements. BEIS appointed the Chair, the Senior Independent Director and the Shareholder Representative Director on the GIB Board.[100]

An important element of the governance of the GIB were Independent Non-Executive Directors. They were required to make up the majority of the Board when combined with the Chairman and were required to assist the Executive Director in **assessing the performance of GIB management against agreed goals and objectives.**[101] **The non-executive directors were key in overseeing the performance of the company and ensuring the integrity of the financial information, controls and risk management processes.**[102] Furthermore, through a range of Board committees, they ensured the integrity of the financial information, controls and risk management processes. These included a Green Committee, showing the relevance of green impact evaluation at the Board level.

Figure 4.2. Board and Executive Committees



Source: Adapted from GIB Annual Report 2013, pg. 33

Transparency was fundamental to the institution; the GIB was accountable not only to its shareholders – The government – but also to the taxpayers. This was key to build confidence in the GIB's practice.

The GIB's strategy was agreed around the 'double bottom line' of generating both:

Green Impact: Meeting at least one of the Green purposes with investment

Financial Return: Generating good returns on investment.

The Board was responsible for challenging and approving the strategy which the Chief Executive Officer would then implement. The GIB's leadership set out sector specific strategies to crowd in investment and tackle market barriers and applied the seven common principles of investments. This was based on – and aligned with – its Strategic Framework,[103] and required that the GIB must: deliver a green impact with investments and assess the quantifiable and unquantifiable impacts; comply with responsible investment criteria; invest in set priority sectors; invest in line with EU State Aid; and support the Green Deal policy rolled out by the government.

The Board was responsible for setting the level of risk the GIB should take in order to achieve the strategic objectives. The Board approved risk appetite statements and three Executive Committees were set up to direct policy and oversee the management of risk and performance (as shown in Figure 4.2 on page 68). The Audit and Risk Committee were responsible for financial reporting, risk management and internal and external audit.[104] A Governance, Risk and Control Framework was developed with a three lines of defence model to safeguard the Bank. The first line put accountability on business units for identifying risk and monitoring activities through a risk and control matrix. Financial control, risk management and compliance then acted as the second line, through assistance in reporting risk management information for the Board and committees. An internal audit function then provided a third line of defence through independent verification.[105]

Through outsourcing the support services within the Bank, the GIB was able to establish itself and become operational at a faster pace than if a full support staff had been hired. UK Shared Business Services Limited were responsible for providing outsourced services including: payroll, human resources, IT, procurement and finance services.[106] Outsourced services were also provided to subsidiary UK Green Investment Financial Services Ltd (GIBFS).[107] Through the setting up of funds, the GIB was also able to outsource small deals to seed funds.[108]

STAKEHOLDER ENGAGEMENT

Stakeholder engagement in this phase involves identifying and influencing the key departments/institutions that will shape the GIB, to facilitate coordination and input; this would ultimately ensure the analysis undertaken has maximum impact.

Key questions to consider:

> To whom is the institution accountable?

> How does the bank interact with government?

> How can the institution shift the perception of green investments?

> How does the Bank interact with the financial sector and project developers?

The GIB was chiefly accountable to its sole shareholder, BEIS. The terms of the relationship were set out in the Shareholder Framework Document[109]. Due to a quirk of the UK system, the GIB was also accountable to the UK Parliament through the Enterprise and Regulatory Reform Act[110], which ensured the Bank was acting in line with its mandate. This was designed to ensure the Bank had a green purpose, enabled the government to fund the Bank on an ongoing basis and ensured operational independence from the government. It also set out company reporting requirements, including providing annual accounts and reports to Parliament.

The Chief Executive was also the GIB's Accounting Officer, who was accountable to both the company, its shareholders and Parliament. A conflict of interest for the Chief Executive between company and Parliament therefore existed. To address this, the UK government set out provisions in their Managing Public Money policy,[111] which required the Chief Executive to only comply with GIB's investment mandate and not be responsible for judging value for money in terms of the whole public sector. Responsibility for judging value for money for the public sector was held by BEIS's Accounting Officer.[112]

The Shareholder Representative Director provided a conduit for information between GIB and government. Annual reports were required to be presented by the Secretary of State for BEIS to Parliament in accordance with the Enterprise and Regulatory Reform Act 2013. During the operational phase, the GIB became a trusted advisor to the government and had regular discussions through a wide variety of lines of communication. In addition, GIB employees would be invited to government discussions on green finance topics when visited by delegations from other countries.[113]

The GIB created a set of measures of Green Impact to assess its success in this area. The development of the Green Impact methodologies involved wide stakeholder engagement, including non-financial organisations such as E3G, Aldersgate Group, Green Alliance and Friends of the Earth.[114] These groups were instrumental in defining the term 'green'.

The GIB used its teams' expertise in the market to assess risk and price appropriately to build confidence for mainstream investors. By doing this, the GIB aimed to reduce perceptions of risk, encourage investment at scale and drive down costs[115]. It took between 6 and 12 months to shift perceptions and demonstrate credible investments, but the GIB was successful in attracting new investors such as KKR & Co (a global investment firm) into the sector.[116] The communication strategy was very important at the beginning for the GIB as the market was not initially clear on the role of the GIB, since there wasn't any precedent for this type of institution.[117]

ANALYTICAL SUPPORT

Analytical support provides information to support the key decisions for the operations of a green bank.
For example, as the first green bank established in the world, the UK GIB pioneered a methodology on measuring green impacts with investments, enabling the assessment and aggregation of their portfolio. The main challenges for analytical support are listed below:

> How is the bank ensuring green impact and sustainability criteria are met?

> How is the bank ensuring financial performance?

> How should the bank attract the best expertise from the finance sector?

> How does the institution demonstrate additionality (if required)?

> How is the institution developing the pipeline and providing advice to developers?

The GIB placed green performance at the same level of importance as financial returns, following its double bottom line policy.
The GIB developed a 'Green Impact' approach, defined as the environmental returns on investment as measured against one or more of GIB's Green Purposes[118]. A lot of effort went into developing a pioneer approach setting out how to assess, monitor and evaluate green impact at all stages of the project lifecycle.

The GIB started to evaluate around 30 metrics to measure green impact. These were narrowed down to five, based on relevance in accordance to the green purpose and reflecting the country context. It was a work in progress, and they were open to suggestions – they had a digital suggestion box on their website. Initially only four metrics were published in their first annual report but the GIB settled for five metrics measured for each project and reported for the remaining lifetime and the annual average:

1. Landfill avoided;
2. Materials recycled and recovered;
3. Renewable energy generated;
4. Greenhouse gas emissions avoided and;
5. Energy demand reduced.

All investments were aggregated to produce yearly impact statements, as well as future projections in GIB annual reports.

The GIB's investments all followed seven principles[119] of green investment (as recorded in Table 4.1). This was translated into a different strategy for each of their focus sectors as set out in their Green Investment Policy[120]. The GIB openly communicated their green purposes policies to ensure understanding amongst stakeholders and the wider market. They also produced a Green Investment Handbook[121] to demonstrate to the wider market how they applied both the principles and the investment policy in practice.

In order to ensure that the data was provided, the GIB placed covenants in each deal relating to environmental monitoring.[122] If covenants were breached then the GIB could withdraw its support. As stated, the reporting requirements for the GIB were narrowed down to five key metrics. This was guided by the government's overall policy targets so metrics such as water consumption were not considered a priority in the UK. Other more water-scarce countries would benefit from tracking water consumption as a key metric for green impact. Data on green impacts was audited along with financial data so were treated with the same degree of importance. There were, however, controversial decisions made, including the funding of a biomass burning conversion at Drax, despite the GIB's due diligence efforts[123,124].

Table 4.1. Seven principles of investment

Principle	Assess	Monitor	Report
Positive contribution to a recognised green purpose	✓	✓	
Reduction of global greenhouse gas emissions	✓	✓	
Enduring green impact	✓	✓	
Clear and firm investment criteria	✓		
Robust green impact evaluation	✓		
Effective covenants, monitoring and engagement		✓	✓
Transparent reporting			✓

Source: GIB, Green Investment Principles

The GIB measured Key Performance Indicators (KPIs), as shown in Table 4.2, which were tracked and published in the annual reports as well as being provided to their shareholders, BEIS.

Table 4.2. GIB Key Performance Indicators (KPI) 2014

KPI	Capital commitment	Financial returns	Mobilisation of additional capital
Measure	Amount of capital committed to green, profitable projects	Forecast portfolio return	Portfolio mobilisation ratio on transactions
Target	Capital commitment of £1.0bn in 2013-14 and a forecast portfolio return greater than 3.5%	A minimum 3.5% annual nominal return on total investments, after operating costs but before tax	Mobilisation of private capital averaging above a 1: 2.5 ratio
Performance	£668m in capital committed to green, profitable projects in the 2013-14 year	Overall portfolio return is estimated at an 8% internal rate of return	Mobilisation rate of 1:3

Source: Adapted from GIB Annual Report 2014, page 24

The capital committed by the GIB increased yearly, although it only reached the target commitment when it was lowered in 2016-2017. The mobilisation ratio beat the target of 2.5 in three out of five years, narrowly missing the target in 2014-15. The GIB operated at a loss for the first two years before making profit in the final three years of operation. This was helped by projects coming online: only 16% of equity investments were operational in March 2016, while this increased to 36% in March 2017.[125]

Table 4.3. Financial results of the GIB

Measure	2012–13	2013–14	2014–15	2015–16	2016–17
GIB commitments (£m)	460	617	723	770	839
GIB target commitments (£m)	n/a	1,000	800	805	761
Total transaction value (£m)	2,097	2,332	2,471	3,698	1,387
Mobilisation ratio	3.6	2.8	2.4	3.8	0.7
Number of projects	7	17	22	30	24
Actual return (m)	-6.2	-5.7	0.1	9.9	24

Source: GIB Annual Reports figures and analysis adapted from the National Audit Office (2017). The Green Investment Bank. pg. 24, figure 6

The mission-driven status of the GIB as a pioneering institution helping to move the UK towards a cleaner economy, made working there attractive for those looking to make a difference through their work. Further to this, through setting a remuneration policy with rewards based on performance and loyalty, the GIB encouraged the leadership to work towards the GIB goals and requirements of the UK government. Interviews with staff have since emphasised the dedication of employees at the GIB, alongside a depth of expertise in the market[126]. Through hiring a team with a green investment background, the GIB could also gain key contacts and embed networks for building a pipeline of projects.

With the reputation of the GIB growing as a successful investor and de-risker, developers began to approach the GIB with potential projects. **This enabled the Bank to grow a pipeline of future investments and to build relationships with bigger developers who wanted the GIB involved.**

For example, Orsted (formerly DONG Energy) continued to grow in the offshore wind market and – through investing in their projects – the GIB was able to free up capital for future Orsted projects and generate new business. Furthermore, through supporting Equitix and Foresight fund managers through seed funding, the GIB could also invest in smaller scale projects and gain from the pipeline activities generated by third-party fund managers[127].

To meet EU State Aid requirements on additionality, evidence was provided by developers showing that alternative funding was unavailable or that the GIB was vital to the development project[128]. This formed part of the five-step investment process which required approval from the Investment Committee.

STANDARDS & FRAMEWORK

Standards and Frameworks enable a green bank to consistently report and manage its operations, meeting its legal, risk and financial requirements. These are detailed further in addressing the following questions:

> What is the monitoring of green performance criteria and how are these reported?

> What is the governance framework for the institution?

> What is the risk appetite of the institution, and is this legally binding?

> Which instruments provide the necessary leverage?

> Is there a requirement to demonstrate additionality?

The GIB was designated under the Enterprise and Regulatory Reform Act 2013 with a statutory role to pursue five "Green Purposes",[129] with investments required to contribute towards at least one:

1. Reduction of greenhouse gas emissions
2. Advancement of efficiency in the use of natural resources
3. Protection or enhancement of the natural environment
4. Protection or enhancement of biodiversity
5. Promotion of environmental sustainability.

A corporate governance code was used to specify requirements around operations at the GIB[130]. The Board used the code to guide their activity in the reviewing of annual reports and financial statements, ensuring they were fair, balanced and understandable.[131] The code was based on the principles of "accountability, transparency, probity and a focus on the sustainable success of an entity over the longer term".[132]

The GIB published their risk appetite statement in their annual reports, setting out the level of risk the GIB is willing to take for investment risk, operational risk, green risk, liquidity risk and reputational risk. The risk appetite was recommended to the Board by the Audit and Risk Committee who also approved risk limits.[133] At the investment level, GIB's investment managers had to meet criteria on state aid, additionality, market rate equivalents, the five green credentials, risk profile and also to maintain the GIB's reputation when getting projects signed off by the Chief Risk Officer.[134]

The GIB had the flexibility to invest using four methods[135]:

1. **Equity and debt investments:** short- and long-term investment across the full capital structure. An example of which was the Belfast energy from waste plant and offshore wind development.
2. **Fund of funds:** allowing for investment in smaller projects that would otherwise struggle to gather finance and also encouraging investment from non-specialist investors. For example, the Sheffield combined heat and power plant investment was managed by Equitix fund.[136]
3. **Fund management:** GIB raised and managed capital from other investors, again encouraging investment from non-specialist investors in smaller projects. The GIB Offshore Wind Fund brought investment from life insurance companies, pension funds and a sovereign wealth fund.
4. **International projects:** Using expertise to invest and encourage investment abroad. GIB partnered with DECC for UK Climate Investments LLP (UKCI) which was looking to invest in developing economies.

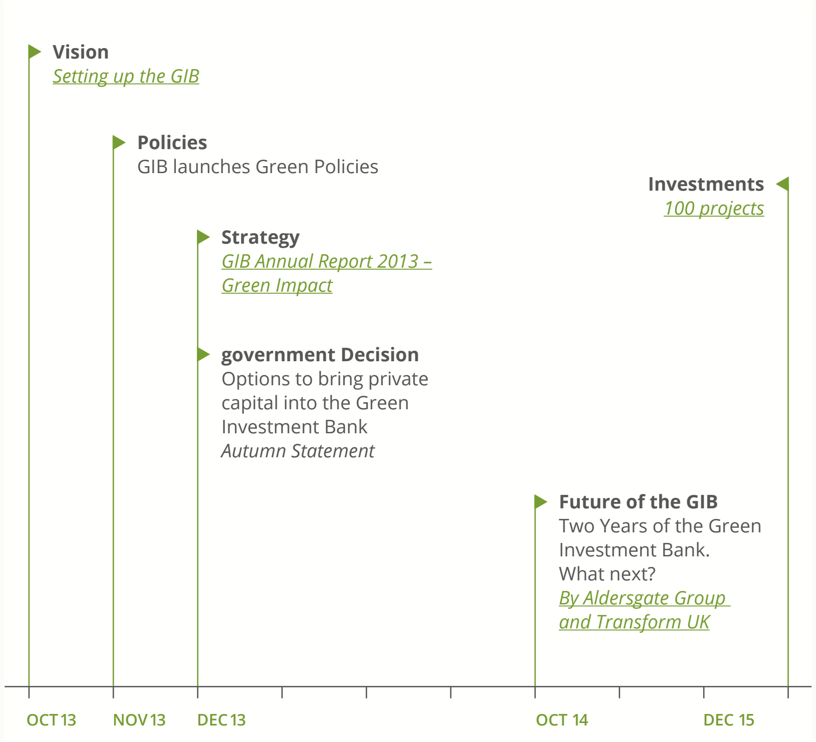
BEIS required GIB investments to provide additionality given the State Aid rules. The GIB worked with the European Commission and BEIS to guarantee requirements from both parties were met for investments.[137]

OUTPUTS

The outputs of the operational phase ensured that the GIB performed on an ongoing basis, meeting both its green purposes and operating financially sustainably. These outputs are both shaped by the establishment phase and provide the foundation for the evolution phase.

- ✓ Operational strategy
- ✓ Priority sector knowledge and investment plan
- ✓ Advice, engagement with real economy and government
- ✓ Risk management (Investment grade criteria/framework)
- ✓ Financial instruments available for the institution to use
- ✓ Monitoring and reporting of green impact
- ✓ Building the pipeline
- ✓ Additionality/mobilisation of private sector
- ✓ Stakeholder support for investable portfolio
- ✓ Stakeholder support on green criteria

Figure 4.3. Outputs of the Operations phase



INTRODUCTION

During the evolution phase a green bank must respond to changing requirements. This phase also captures how such a bank responds to formal feedback established through performance reviews, as well as continuing engagement with the stakeholders – from the private sector, government and civil society – who are key in the case making and design phases.

The evolution phase is key to the ongoing relevance of a green bank. As the bank breaks down market barriers and leverages private capital into sectors of the green economy, it will need to establish new markets and areas of investment in order to maintain its competitive speciality vis-à-vis the private sector, while continuing to have the same level of incremental environmental impact.

The bank's detailed sectoral knowledge, together with continued engagement with the market and civil society, should shape its changing priorities and its entry and exit from different market sectors. This phase may also capture shifts in the bank's ownership or sources of capital. Private sector shareholders may become more important, or other sources of capital (green bonds, retail investors – green ISAs) may be tapped to increase total funding levels.

In the UK case, in 2015 a review of the GIB's performance found that the institution was addressing the market barriers[138], and that there were other areas that could have benefitted from GIB intervention, such as energy storage, carbon capture and storage, and wave and tidal energy. The GIB Board started to evaluate its future strategy, in part as it had been granted additional EU State Aid permission to invest into additional areas in green infrastructure under slightly different conditions.[139]

The UK case was in some ways an outlier, as the UK GIB had always been set up to serve a particular political end – the Conservatives wanted to appeal to a wider audience – and the government at the time had a strong focus on overall debt reduction. As a result, after only three years of operation, in 2015, the future direction of the GIB changed according to the fiscal priorities of the UK government. This was in part linked to the UK having missed the Chancellor of the Exchequer's self-imposed debt reduction target. As a result, the UK government began to investigate a sale of the GIB, even as the GIB was signing MOUs with different governments to diffuse its experience.

This change in direction largely stemmed from the unexpected outright victory of the Conservative party in the 2015 election. The Conservatives had previously been governing in coalition with the Liberal Democrats, and had also seen their green credentials as an important part of their electoral strategy. The unexpected Conservative victory meant a renewed focus on public debt reduction and within that context, even as the UK was signing the Paris Agreement, the government was setting in train measures to sell the GIB, which was a key plank in decarbonising the UK economy.

The announcement of the sale from the government led to a period of uncertainty in the future of the Bank. The main concern was that by privatising the institution it was going to have less of a UK focus, and lose its green objectives. Additionally, the sale process itself led to disruption. The GIB was sold before the government had been able to properly assess its green impact, and in doing so it prioritised debt reduction over its green objectives.

The announcement was met with criticism amongst several of the key organisations and politicians involved in the case making and design of the GIB[140]. E3G put forward alternative ideas for recapitalising the bank.[141]

However, in August 2017 the government officially announced that the sale of the GIB to Macquarie Group[142] had been completed. The GIB name was changed to Green Investment Group (GIG) due to the protected nature of the term "bank" in many countries. GIG now invests globally.

Fast forwarding to 2018, the UK's National Infrastructure Commission recommended the establishment of an infrastructure finance institution by 2021 to replace the funding gap left by the European Investment Bank after Brexit[143]. This has demonstrated the ongoing demand for an infrastructure bank that can meet the needs of the UK's newly proposed net zero emissions target of 2050 as set out by the government in June 2019[144].

Figure 5.1. GIB Evolution phase timeline Part I

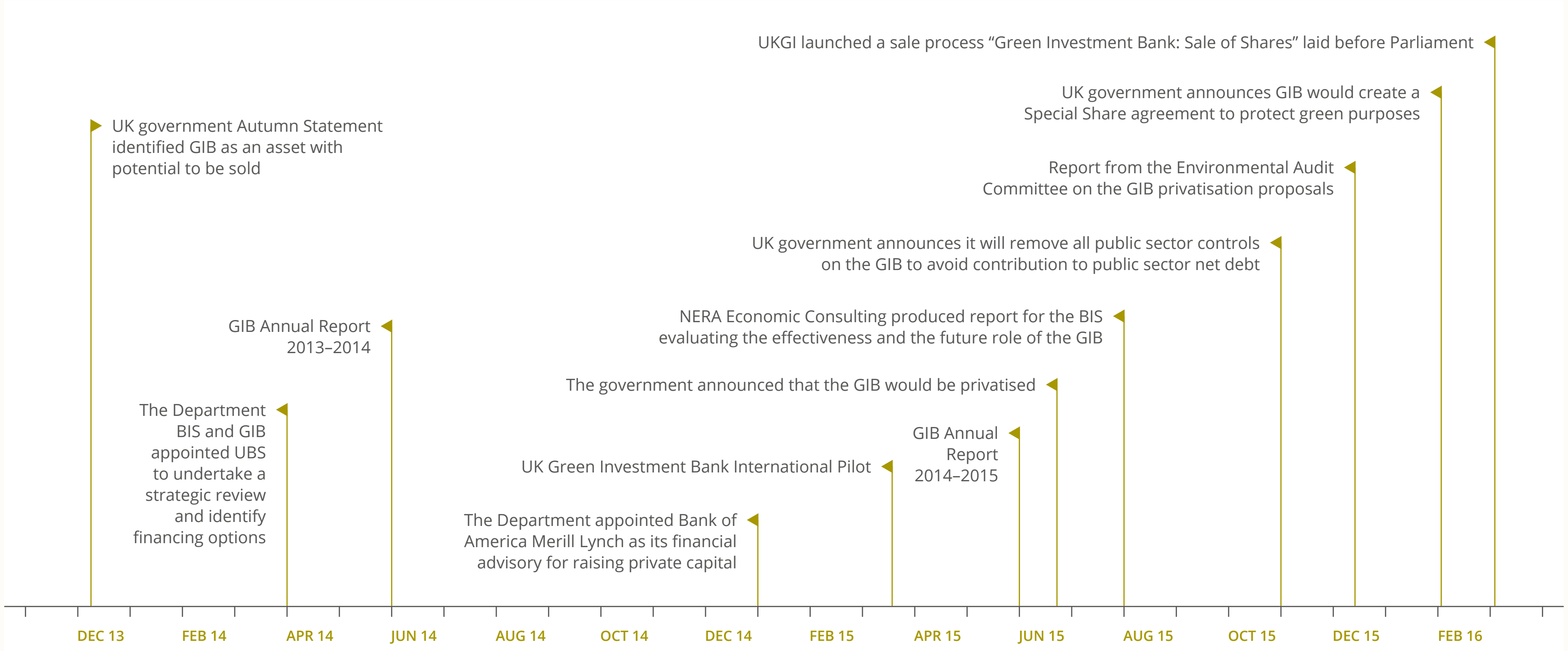
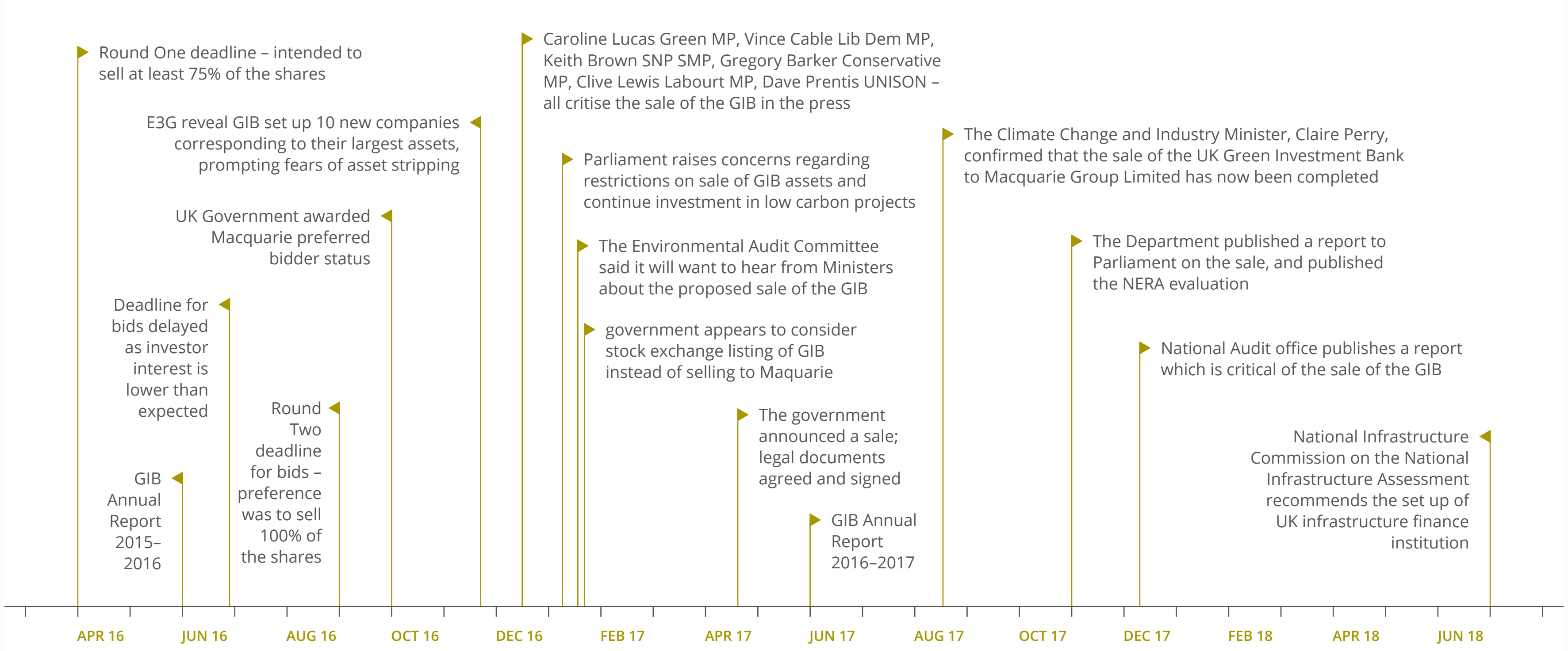


Figure 5.1. GIB Evolution phase timeline Part II



KEY ELEMENTS

The key decisions and choices of this phase will be determined by several elements, from stakeholder engagement, decision making process, analytical support and standards and framework.

Decision making process

This element captures how key decisions on the evolution of the bank are reached. These include decisions originating both within the bank itself, and how other stakeholders – government, the private sector and civil society – interact with the bank to influence its future.

Stakeholder engagement

This phase involves identifying the stakeholders who will shape the future evolution of the bank. In addition to those within the bank responsible for shaping its direction, stakeholders also include those organisations and institutions responsible for the initial case making and design phases of the institution – as well as financial institutions and those in the government responsible for supervising the institution and shaping government policy.

Standards and frameworks

In the evolution phase it is important to ensure that the institution is aligned with the best international standards and setting best practices to maintain its green credentials.

Analytical support

The decision making process for the evolution of the bank requires analytical support to evaluate the available options. This analytical capacity comes from the bank itself, alongside external advisors such as economic consultancies, NGOs and the relevant government departments.

DECISION MAKING PROCESS

This element captures how key decisions on the evolution of the bank are reached. These include decisions originating both within the bank itself, and how other stakeholders – government, the private sector and civil society – interact with the bank to influence its future. Key questions to help make these decisions are:

> What is the process to review the performance of the GIB?

> Is the level of capitilisation adequate for the bank's on-going activities? How does the bank prioritise new sectors and decide when to exit sectors?

> How is the bank going to adjust to evolving market requirements?

> How is the GIB aligning with national climate targets?

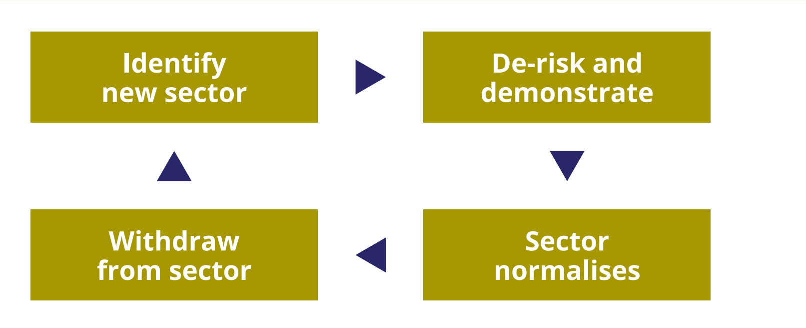
> In case of asset sale: what is the sale process of the institution?

The GIB's financial performance and green impact were reviewed by BEIS through quarterly meetings and ongoing communication. Annual reports and accounts were also presented to Parliament as part of the Enterprise and Regulatory Reform Act, allowing for greater scrutiny of the bank's performance (*see analytical support*).

The GIB began to move into new sectors in May 2014 after the European Commission granted State Aid approval to invest in community scale renewables.[145] This was an opportunity to address funding gaps in hydroelectric power and onshore wind developments. These gaps were driven by small-scale projects generally not reaching the threshold at which institutional investors typically consider investing.[146] Also, it was decided at the time to start a new pilot joint venture with the GIB and the Department for International Development (DFID) to assist in the investment of the UK government's International Climate Fund which aims to help the world's developing economies adapt to climate change and promote cleaner, greener growth. UK Climate Investments LLP (UKCI)[147] was launched in November 2015 with £200m of funding provided in addition to the domestic GIB capital.[148] This fund targeted bringing renewable energy to emerging countries.

The inherent role of the GIB is to identify sectors of the green economy where investment is not flowing due to market barriers, and through investing using its own balance sheet and leveraging private capital, demonstrate that investments in the sector are viable. As the sector normalises and private investment flows in unaided, the GIB can divest at a profit and use the capital to invest in new sectors where market barriers are preventing investment. This ongoing transformation of the Bank will mirror the low-carbon transition in the wider economy, as efforts to decarbonise one sector are successful and the focus moves to another.

Figure 5.2. Cycle of transformation



Source: The Canadian Coalition for Green Finance (2016). Green Bank Alternatives For Policy Makers.

In 2015, it was expected the institution would be provided with borrowing powers, subject to the public sector net debt falling as a percentage of GDP[149]. However, the UK was going to miss its target, as debt grew significantly from 2010 and did not look likely to decrease in the near future.

Ultimately, a decision was taken at the top level of the UK government to sell the GIB. In November 2015, BIS released a policy statement setting out the reasons for the sale:[150]

> To ensure the GIB could be re-classified to the private sector so that any borrowing would not impact on public sector net debt
> To allow the GIB to maximise private investment into green sectors
> To achieve value for money for the taxpayer in the sale.

Upon achieving these aims, the following objective was that the "GIB will continue as an institution focusing on green sectors and play an important role in further accelerating the UK's transition to a more sustainable low-carbon economy".[151] This consideration implied that some options for the government to exit its investment – such as winding down the GIB – were not considered. The main two alternatives considered were a phased sale of the government's shares or selling the entire shareholding to a single bidder.

BIS (later BEIS) was responsible for the sale of the GIB; however, the sale process was managed by the Shareholder Executive (later UK Government Investments). There were two rounds of bidding, although competition was lower than the government had hoped. The Australian investment bank Macquarie submitted the highest offer, which was still below the State Aid minimum. BEIS offered Macquarie preferred bidder status on the condition they increased their offer to the minimum level[152]. All decisions regarding the process and the selection of the buyer were made by ministers. EU State Aid restrictions required that all funds the government had provided needed to be returned as part of the sale, plus a minimum return of 2%; this set a benchmark price for the GIB sale.

A period of protracted negotiations continued over price and conditions until early 2017[153]. At this point there were discussions between the UKGI and the government on the potential change of sale to a "*phased sale*". This was eventually ruled out due to BEIS's perceived risk of it resulting in a lower price than currently offered.[154]

In April 2017 BEIS announced the sale of 100% of GIB shares to Macquarie. The final cash purchase price was £1.7 billion, with an additional £0.6 billion of future funding commitments for existing projects also to be provided by Macquarie.[155] This gave a £0.186 billion premium to the total government funding provided to the GIB (excluding financial costs), which was towards the bottom end of the UKGI valuation of the GIB.[156]

Table 5.1. Options for the GIB Sale and government decisions

Option	Description	Decision from UK government
Change in policy remit	UK government changes policy for GIB and repurposes the bank to target other sectors or levels of the markets	GIB would need to change significantly to reflect new policy remit and may no longer be the correct institution
Do nothing	Continues in 100% government ownership	Goes against the government objective to reduce the burden on the taxpayer, scale up the GIB investments and allow it access to the capital markets
Fund structure	GIB is an asset manager only, sourcing capital through a third-party fund management approach	Would take longer to fund with more smaller investors and is unlikely to raise the capital required to meet GIB's funding needs
Hybrid structure	Split into two sections: a) part owned by private investors b) remaining assets retained where risk is still considered to be high by the private sector	Wanted to ensure there was no possibility that the GIB would still be on the public national debt
Phased sale (Refocussed)	The GIB sells its debt and fund assets over two years and its equity assets, combined with the fund management platform, through an Initial Public Offering (IPO)	The GIB sells its debt and fund assets over two years and its equity assets, combined with the fund management platform, through an Initial Public Offering (IPO)
Recycling of capital	Assets are sold to the private sector and profits reinvested	Forces the GIB to sell investments to fund future investments and may result in a sale at a difficult time
Sale of GIB shares	Sold as a single entity to a private buyer	Option chosen in line with key objective to get the bank off the public debt balance sheet
Wind down (Accelerated)	Assets sold after construction is finished to maximise price and GIB closed after this	government decided that the risk associated with incomplete projects was higher than the offer then available

Source for table contents: Descriptions compiled by the National Audit Office (2017). The Green Investment Bank and government Decision summarised from Department for Business Innovation and Skills,BEIS (2016). government response to Environmental Audit Committee report "The Future of the Green Investment Bank"

STAKEHOLDER ENGAGEMENT

This phase involves identifying the stakeholders who will shape the future evolution of the bank. In addition to those within the bank responsible for shaping its direction, stakeholders also include those organisations and institutions responsible for the initial case making and design phases of the institution – as well as financial institutions and those in the government responsible for supervising the green bank and shaping government policy. Much of this engagement, particularly around the identification of market barriers and new areas for investment, may be informal.

As the institution increasingly becomes a repository of knowledge and expertise in green issues, exchanges with the government will become increasingly two-way, with bank personnel increasingly informing government policy and decision making. Key questions shaping stakeholder engagement in this phase are:

> How does the bank consult on future needs/engage with the real economy and finance sectors?

> Which institutions will shape the evolution of the bank?

> Will the bank inform government policy as well as vice versa?

The evolution of the UK GIB was determined by different actors, including the GIB Board and its shareholders; however, given the macro-economic conditions and political preferences, this was mostly driven by the HMT objective of reducing the levels of debt. The EU Commission, through the State Aid approval process, was another determinant, granting permission in specific sectors and under set conditions[157].

The GIB Board held internal discussions on the future of the institution, looking at the range of options for raising additional capital, the size and nature of the GIB's addressable market and State Aid rules for business and other sectors.[158] **During 2014 the GIB engaged with the UK Treasury, BEIS directly and external advisors UBS.** The GIB CEO Shaun Kingsbury laid out a range of options to be explored to raise additional capital.[159]

All this came to a halt once the privatisation was announced by BEIS. GIB Chairman and Kingsbury publicly supported the move with published articles.[160] The GIB did state its preference for the government to continue being a shareholder of the company to bring continuity and commitment to maintaining the GIB as an enduring institution.[161]

The announcement of the sale and the sale process that followed was met with a critical response from a range of MPs, NGOs and business groups involved with the case making, design and establishment of the GIB. **Liberal Democrat MPs from the former coalition government were outspoken in their views on the negative impact of the sale**[162] and there was also criticism from within the Conservative party.[163] Their concerns centred on the impact the privatisation would have on guaranteeing continued green investment in the UK to meet its environmental commitments.

E3G argued that a majority public owned GIB was still needed to address market failures in the low carbon sector. If left to the private sector alone, it was thought that green investment will be ad hoc, low- risk, returns driven and small scale[164].

The broad concern over guaranteeing the protection of the Green Purposes of the GIB was captured in the EAC's report on the sale.[165] It suggested that a "special share" be set up to protect the Green Purposes for investment in the privatised GIB. This prompted the government to set up the Green Purposes Company, details of which are included in Standards and Framework section.

The government argued that privatisation would free the GIB from State Aid rules. These rules ensured the GIB demonstrate additionality by crowding in private investment.

ANALYTICAL SUPPORT

The decision making process for the evolution of the bank requires analytical support to evaluate the available options. This analytical capacity comes from the bank itself, alongside external advisors such as economic consultancies, NGOs and the relevant government departments. Several key questions must be addressed in the processes:

> What was its performance? (e.g. market barriers removed?)

> What is the role of the institution moving forward? How is it aligned with national plans?

> What is the sectoral landscape and where can the bank have the most impact?

> Would a broader remit result in higher impact? Should the GIB invest at different levels of the economy?

As part of the review process BEIS commissioned a study from NERA Economic Consulting (NERA) to **review the performance of the GIB and the impact on market barriers.**

NERA found that the GIB had helped address the barriers in the market in offshore wind, waste and bio-energy sectors.[166] This had been achieved through the GIB's strategy of investment, building confidence in the market, attracting new investors and having "skin in the game". This view has since been supported by recent research from Vivid:[167]

Table 5.2. Change in the ranking of Barriers to Investment relative to when GIB was established

Barriers	OSW	NDEE	W&B	SS RES
Change since GIB entered market:				
Technology risk	↓	→	→	↓
Regulation	↑	↑	↑	↑
Inadequate transaction structures and products	→	↑	→	→
Diffuse and immature markets	→	↓	↑	→
Lack of liquidity	↓	↓	↓	↑

Source: NERA survey
OSW: Offshore Wind; NDEE: Non-domestic energy efficiency; W&B: Waste and Bioenergy; SS RES: Small-scale renewables

Table 5.3. Investment in the UK green economy by GIB and co-investors (as of May 2015 by sector)

	GIB	Private co-investment	Mobilisation rate
Sector	£m	£m	
OSW	1,095	2,881	2.6
W&B	474	2,658	5.6
NDEE	49	51	1.0
SS RES	10	15	1.5
Total investment	**1,629**	**5,605**	**3.4**

Source: NERA analysis of GIB data

However, the performance results were mixed at the sectoral level. The GIB had difficulty investing in energy efficiency and small-scale renewables[168]. In terms of the future role of the institution, the report concluded that the GIB still had a role to play in addressing market barriers in green infrastructure in each sector and identifying others for intervention such as energy storage, CCS, wave and tidal, low carbon transport and domestic energy efficiency. Some market barriers still existed including technology risk, regulation, immature markets and inadequate structures and products[169]. Aldersgate Group, an alliance of businesses, NGOs and public sector bodies, carried out interviews on the GIB after two years of operations.[170] The broad consensus across expert opinion was that the GIB had been successful in mobilising private sector capital. The interviewees[171] made proposals for the institution to move forward and evolve within the changing markets, as this would bring **greater impact, investment in different levels of the economy and alignment with national plans**:

> **Borrowing:** GIB to raise money on the capital markets in order to increase capacity and reduce their reliance on government funds.

> **New products:** set up schemes such as ISA investment and Green bonds and bring new types of investors into the GIB. Green ISAs would involve citizens of the UK and boost confidence in the market.

> **International investment:** broaden the international investment remit of the GIB, including participation and management in the UN Green Climate fund, supporting Britain's commitment to provide climate finance.

> **Energy efficiency market:** target energy efficiency schemes so that the UK's homes and businesses can be better insulated and energy bills reduced in the long term.[172] If coordinated effectively with government policies such as business rate and stamp duty incentives, this could have been a significant area for GIB investment.

When the sale was announced E3G published a series of options for **recapitalisation and investing in different levels of the economy.**[173] government responses to these options are collated together with the proposals on Table 6.[174] However, the main concern for the government at the time continued to be reducing the levels of debt.

Table 5.4. Suggested options for capitalisation

Option	Description	Comment
Citizen finance	Retail investors could provide capital for the GIB through green ISAs.	This would provide a reliable return to savers and democratise the return of investment of the GIB. However, the GIB may lack the track record to make it appropriate for public markets.
Devolved shareholding	GIB invests across the UK in cities and local authorities in return for a direct stake.	This would reduce required funding from central government and ensure local alignment. However, in itself this will not increase private sector investment.
European Fund for Strategic Investment (EFSI)[175]	The EFSI could provide a base of capital for the GIB, while privatisation plans are set in train.	"... this is primarily debt-focused at a time when GIB is increasingly investing equity into construction projects".
European Investment Bank (EIB)[176]	A direct equity investment from the EIB was considered at the GIB's inception.	This would provide the benefits of a publicly backed Bank while not impacting the government balance sheet. However, it was unclear whether the EIB would be willing to make an investment.
UK based institutional investors	Many institutional investors were divesting from fossil fuels and the GIB could have been an alternative investment.	An offer from a UK based consortium was shortlisted in the sale process but not chosen.

Source for table contents: Descriptions from E3G evidence, Environmental Audit Committee (2015). The Future of the Green Investment Bank, responses from UK government – BEIS (2016). government response to Environmental Audit Committee report The Future of the Green Investment Bank.

STANDARDS & FRAMEWORK

In the evolution phase it is important to ensure that the institution is aligned with the best international standards and setting best practices to maintain its green credentials. Some of the key questions include:

> Are the green principles and remit aligned with best practice?

> Are there other non-green criteria that need to be included (e.g. social impacts)?

During the sale process there were calls for the Green Purposes to be protected, requiring the GIB to continue to invest in sustainable activities. Recommendations were made that a "special share" be created that preserved the Green Purposes in the private bank.[177]

Research into the special share arrangement showed that although the trustees have the ability to block changes made to the Green Purposes, they have little power to enforce the purposes. **A Committee of Public Accounts report also found that BEIS have no method of monitoring the GIG's investments or how it can be linked to future policy goals or industrial strategy.**[178]

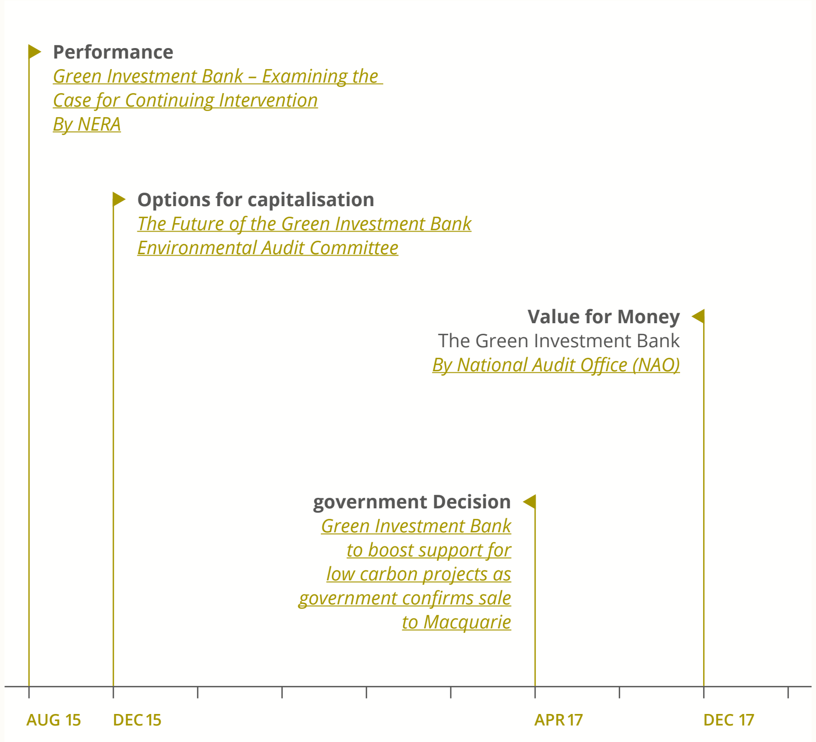
In October 2018 the Green Purposes Company published their first annual letter assessing the GIG against the Green Purposes. It found that GIG had carried out the best monitoring and evaluation that was already part of the original institution[179]. However, there is an issue around transparency of the GIG, which is particularly acute as the GIG also manages £200 million of UK government money.

OUTPUTS

The evolution phase yields a series of key outputs which lay the groundwork for the next phase. For reference, a checklist of the outputs of the evolution phase is below. We also include below the specific outputs generated in the UK case.

✓ Future needs of the transition
✓ Level of capital adequacy
✓ Performance of the institution
✓ State of the market barriers
✓ Relevance of sectoral priorities
✓ Recapitalisation of the institution
✓ Green criteria and international best practice

Figure 5.3. Outputs of the Evolution phase



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UK government (2019). government gives details on setting a UK net zero emissions target

UK HMT (2013). Autumn Statement 2013

Vivid Economics (2018). The role and impact of the EIB and GIB on UK infrastructure investment

1. CASE MAKING

[1] Agenda setting can be influenced by different factors: external events, political driver, structural issues, pure advocacy, or a combination of the above

[2] Introduced in November 2008 to ensure the UK cuts its carbon emissions by 80% by 2050. The target is set against a 1990 baseline

[3] See https://www.economist.com/schools-brief/2013/09/07/crash-course

[4] E3G (2011). The History of the GIB

[5] Transform UK was initially named Repower UK according to the Head of Transform UK. The aim of this coalition was to open the space for business support

[6] Workshops to test and refine the proposal, as well as understanding the barriers in the market

[7] The General Election took place on 6 May 2010

[8] See https://www.theguardian.com/uk/2010/mar/24/budget-green-investment-bank

[9] At the time IMF review of the literature suggested that infrastructure spending generates 3x as much in the short term as tax cuts, and nearly twice that delivered by policies such as social spending, small and medium sized enterprise (SME) support and housing market support

[10] At the moment the Lead of Climate Economics team at Friends of the Earth

[11] See https://www.e3g.org/library/green-infrastructure-bank-green-bonds-and-policy

[12] E3G, Climate Change Capital (2009). Accelerating Green Infrastructure Financing: Outline proposals for UK green bonds and infrastructure bank

[13] The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change, dealing with greenhouse-gas-emissions mitigation, adaptation, and finance, signed in 2016

[14] E3G and Climate Change Capital (2009). Accelerating Green Infrastructure Financing: Outline proposals for UK green bonds and infrastructure bank

[15] Holmes, I; Mabey, N. (2010). Accelerating the transition to a low carbon economy. The case for a Green Infrastructure Bank

[16] This is conditional on the creation of risk mitigation products to attract this type of investor

[17] Assuming supply will grow by ten percent per annum from 2008 pre-financial crisis levels. Total £20-22 billion

[18] This would have been conditional on structures that attracts long-term capital (as opposed to short-term) and liquidity/exit mechanisms are provided to retail investors

[19] Assuming five percent allocation of UK and Western Europe infrastructure funds into the UK low carbon sectors

2. DESIGN

[20] Non-partisan commission to provide independent advice on the design of Green Investment Bank

[21] GIB Commission (2010). Unlocking investment to deliver Britain's low carbon future

[22] ISA stands for individual savings account, a form of UK investment that is exempt from tax on its returns

[23] The UK for the first since 1970 was having a direct involvement in banking. See https://webarchive.nationalarchives.gov.uk/20100407215427/http://www.hm-treasury.gov.uk/d/budget2010_complete.pdf

[24] In the 2009 Pre-Budget Report, the government established Infrastructure UK to act as a focal point for the UK's infrastructure strategy and its long-term development and delivery

[25] See https://www.e3g.org/library/green-infrastructure-bank-green-bonds-and-policy

[26] The MPRG is a pool of experts, from which panels are put together to scrutinise the largest and most complex major government projects. MPRG Panels challenge projects on deliverability, affordability and value for money at key points in the HMT approvals process (SOC – strategic outline case, OBC – outline business case, FBC – full business case) and as required at other points during their lifecycle

[27] GIB Commission (2010). Unlocking investment to deliver Britain's low carbon future

[28] EAC (2011). Environmental Audit Committee

[29] EAC (2010). Environmental Audit Committee

[30] EAC inquiry recommended to set a coordination unit within the cabinet office

[31] See https://www.businessgreen.com/bg/news/1869981/treasury-locked-battle-green-investment-bank

[32] See https://www.theguardian.com/environment/2010/oct/13/treasury-battle-green-investment-bank

[33] Interview with civil servants

[34] See https://www.theguardian.com/environment/2010/oct/13/treasury-battle-green-investment-bank

[35] Interview with civil servants

[36] Interview with civil servants

[37] Vivid Economics (2011). The Green Investment Bank: Policy and Finance Context; Report prepared for the Department for Business Innovation and Skills

[38] See https://en.wikipedia.org/wiki/Big_Six_energy_suppliers

[39] Vivid Economics (2011). The Green Investment Bank: Policy and Finance Context; Report prepared for the Department for Business Innovation and Skills

[40] KPMG (2011). Index attractiveness for renewable investors

[41] Vivid Economics (2011). The Green Investment Bank: Policy and Finance Context; Report prepared for the Department for Business Innovation and Skills

[42] Basel III require higher levels of capitalisation within the banks

[43] E3G (2010). Accelerating the transition to a low carbon economy. The case for a Green Infrastructure Bank

[44] E3G requested to NAO under the Freedom of Information Act to have access to the full business case

[45] HMG (2011). Update on the design of the Green Investment Bank

[46] HMG (2011). Update on the design of the Green Investment Bank

[47] Source: EAC (2011). The Green Investment Bank Second Report of Session 2010–11

3. ESTABLISHMENT

[48] See https://www.independent.co.uk/news/business/analysis-and-features/review-of-the-economy-in-2012-this-was-not-supposed-to-happen-8424651.html

[49] See https://www.bbc.co.uk/news/business-36099314

[50] See https://www.theguardian.com/environment/damian-carrington-blog/2011/apr/22/coalition-greenest-ever-pledge-faltered

[51] See https://publications.parliament.uk/pa/cm201011/cmhansrd/chan163.pdf

[52] HMG (2011). Update on the design of the Green Investment Bank

[53] See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/86524/bis-12-1266-enterprise-and-regulatory-reform-bill-green-investment-bank-factsheet.pdf

[54] See https://www.gov.uk/government/speeches/the-queen-s-speech-2012

[55] See https://publications.parliament.uk/pa/bills/cbill/2012-2013/0007/en/13007en.pdf

[56] See https://diversityuk.org/ceo-appointed-at-uk-green-investment-bank/

[57] HMG (2011). Update on the design of the Green Investment Bank

[58] See https://webarchive.nationalarchives.gov.uk/20121205003933/http://www.bis.gov.uk/assets/BISCore/business-sectors/docs/u/11-917-update-design-green-investment-bank.pdf

[59] HMG (2011). Update on the design of the Green Investment Bank

[60] BIS (2011). Full Business Case

[61] The Shareholder Executive acted as shareholder on behalf of the Department until 31 March 2016, when it became UK government Investments Ltd (UKGI)

[62] Definition: Primary legislation is the general term used to describe the main laws passed by the legislative bodies of the UK, including the UK Parliament. For example an Act of Parliament

[63] BIS (2012). Impact Assessment for the Legislation

[64] BIS (2012). Full Business Case

[65] BIS (2012). Full Business Case

[66] BIS (2012). Full Business Case

[67] See http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_33984

[68] See https://www.businessgreen.com/bg/news/2142729/towns-cities-battle-host-green-investment-bank

[69] BIS (2012). Full Business Case

[70] BIS (2012). Full Business Case UK Green Investment Bank

[71] See https://www.gov.uk/government/publications/green-investment-bank-advisory-group-terms-of-reference

[72] See https://www.theguardian.com/environment/2010/dec/17/i-want-green-bank-soon

[73] BIS (2012). Full Business Case UK Green Investment Bank

[74] See https://www.theguardian.com/environment/2011/mar/23/budget-2011-george-osborne-green-bank

[75] Parliament (2013). Shareholder Framework

[76] Client Earth (2011) Towards the Green Investment Bank Act

[77] BIS (2012). Factsheet on the Legislation

[78] HMG, (2011). Update design on the Green Investment Bank

[79] It is worth mentioning that since then the Office for Budget Responsibility (OBR) was set up to provide scrutiny of the government's management of the public finances

[80] EAC, 2010-2011. The Green Investment Bank

[81] Pre-Budget Report (2008). Maintaining Macroeconomic Stability

[82] Client Earth (2012). Amendment to Green Investment Bank legislation: Borrowing from the capital markets

[83] See http://www.lse.ac.uk/GranthamInstitute/news/hm-treasury-hamstrings-the-green-investment-bank/

[84] See http://www.lse.ac.uk/GranthamInstitute/news/hm-treasury-hamstrings-the-green-investment-bank/

[85] See https://www.imf.org/en/News/Articles/2015/09/28/04/53/soint122908a

[86] Increasing leading in times when private sector is reducing lending

[87] Corbishley, C. and Donovan, C. (2015). Public- private Investment Partnership. New models In renewable energy finance

[88] Corbishley, C. and Donovan, C. (2015). Public- private Investment Partnership. New models In renewable energy finance

[89] BIS (2012). Full Business Case

4. OPERATIONS

[90] Five non-priority sectors: biofuels for transport, biomass power, carbon capture and storage, marine energy and renewable heat

[91] Green Purposes: The reduction of greenhouse gas emissions; the advancement of efficiency in the use of natural resources; the protection or enhancement of the natural environment; the protection or enhancement of biodiversity; the promotion of environmental sustainability

[92] Green Investment Handbook

[93] Imperial College London (2015). UK Green Investment Bank – Case Study

[94] The Department for Business, Energy and Industry Strategy (BEIS) set a minimum rate of return on investment at 3.5%. The GIB was also set a target average mobilisation ratio of 1:2.5. By March 2017 the GIB had committed £3.4 billion of its own capital, attracting £8.6 billion of private capital, resulting in a mobilisation ratio of around 1:2.5

[95] National Audit Office (2017). The Green Investment Bank. Summary Para. 8

[96] Aldersgate Group (2015). Two Years of the Green Investment Bank What next?

[97] Interview with GIB former staff

[98] Green Investment Bank (2012). Shareholder Relationship Framework Document

[99] Green Investment Bank (2012). Articles of Association

[100] The Shareholder Representative Director from 2013 till 2016 was Anthony Odgers, the Deputy Chief Executive of BEIS UK government Investments. GIB Annual Report 2016, page 61

[101] GIB Annual Report 2013, page 32

[102] Set out in the Green Investment Bank (2012). Shareholder Relationship Framework Document, Section 3. 'Operating Principles'

[103] Green Investment Bank (2012). Shareholder Relationship Framework Document

[104] GIB Annual Report 2015, pg. 64

[105] GIB Annual Report 2013, pg. 48

[106] GIB Annual Report 2014, pg. 120

[107] GIB Annual Report 2016, pg. 82

[108] From interview with GIG staff

[109] Green Investment Bank (2012). Shareholder Relationship Framework Document

[110] Enterprise and Regulatory Reform Act 2013 Chapter 24

[111] Updated by UK Treasury (2018). Managing public money

[112] National Audit Office (2017). The Green Investment Bank. Para. 1.11

[113] From interview with GIG staff

[114] From interview with GIG staff

[115] GIB Annual Report 2014, pg. 18

[116] From interview with GIG staff

[117] From interview with GIG staff

[118] GIB (2015). Annual Report

[119] See Green Investment Principles

[120] See Green Investment Principles

[121] See Green Investment Handbook

[122] GIB Annual Report 2015, pg. 75 and from interview with GIG staff

[123] From interview with GIG staff

[124] See https://corporatewatch.org/the-green-investment-banks-first-year-coal-big-biomass-and-lessons-for-climate-campaigners/

[125] National Audit Office (2017). The Green Investment Bank. pg. 24, figure 8.

[126] From interview with former GIB staff

[127] From interview with GIG staff

[128] From interview with GIG staff

[129] See Enterprise and Regulatory Reform Act 2013

[130] Green Investment Bank (2012). Shareholder Relationship Framework Document, para. 6.1

[131] GIB Annual Report 2015, pg. 42.

[132] GIB Annual Report 2015, pg. 42

[133] GIB Annual Report 2016, pg. 81

[134] Imperial College London (2015). UK Green Investment Bank – Case Study

[135] National Audit Office (2017). The Green Investment Bank. para. 2.3

[136] GIB Annual Report 2016, pg. 22

[137] National Audit Office (2017). The Green Investment Bank. para. 1.9

5. EVOLUTION

[138] NERA (2015). UK Green Investment Bank – Examining the Case for Continued Intervention, Figure 6.9

[139] European Commission (2014). Amendment of the funding and remit of the Green Investment Bank

[140] Environmental Audit Committee (2015). The Future of the Green Investment Bank

[141] E3G. Private Letter to HMG on Rational for Intervention and GIB options of capitalisation

[142] Macquarie Group Limited is an Australian multinational independent investment bank and financial services company

[143] National Infrastructure Commission (2018). National Infrastructure Assessment: Chapter 7 – Funding and Financing

[144] UK government (2019). government gives details on setting a UK net zero emissions target

[145] Green Investment Bank (2015). GIB Annual Report 2015

[146] European Commission (2014). Amendment of the funding and remit of the Green Investment Bank

[147] UK Climate Investments LLP (UKCI) has been established to invest in renewable energy and energy efficiency projects in developing countries

[148] Edward Davey MP (2015). Written Statements Tuesday 24 March 2015

[149] House of Commons (2011). Oral Answers to Questions

[150] BEIS (2015). The future of UK Green Investment Bank PLC Policy Statement

[151] BEIS (2015). The future of UK Green Investment Bank PLC Policy Statement, para. 77

[152] National Audit Office (2017). The Green Investment Bank

[153] National Audit Office (2017). The Green Investment Bank

[154] National Audit Office (2017). The Green Investment Bank

[155] UK government (2017). Green Investment Bank to boost support for low carbon projects as government confirms sale to Macquarie

[156] National Audit Office (2017). The Green Investment Bank, Para. 3.26

157 European Commission (2015). Amendment of the remit of the Green Investment Bank

158 Green Investment Bank (2017). Board Minutes

159 Green Investment Bank (2015). Annual Report and Accounts 2014–15

160 Business Green (2015). Why privatisation is the best route for the Green Investment Bank

161 BEIS (2016). government response to Environmental Audit Committee report "The Future of the Green Investment Bank"

162 Financial Times (2017). Green Investment Bank sold to Australia's Macquarie for £2.3bn

163 Financial Times (2018). MPs criticise government sale of Green Investment Bank

164 E3G (2015). Future Of The Green Investment Bank Environmental Audit Committee Written Evidence

165 Environmental Audit Committee (2015). The Future of the Green Investment Bank

166 NERA Economic Consulting (2015). The Green Investment Bank – Examining the Case for Continuing Intervention

167 Vivid Economics (2018). The role and impact of the EIB and GIB on UK infrastructure investment

168 National Audit Office (2017). The Green Investment Bank

169 National Audit Office (2017). The Green Investment Bank, Para 2.10

170 Aldersgate Group (2015). Two Years of the Green Investment Bank What next?

171 Dr Vince Cable MP, Secretary of State for Business, Innovation & Skills; Tim Yeo MP, Chair of Energy and Climate Change Select Committee, Conservative; Iain Wright MP Shadow Minister for Industry, Labour; James Cameron, Non-Executive Chair, Climate Change Capital; Emma Howard Boyd, Director, Aldersgate Group; Nick Mabey CEO E3G; Professor Sam Fankhauser, Co-Director, Grantham Research Institute on Climate Change. Member of the Committee on Climate Change; Matthew Spencer, Director, Green Alliance. See more https://www.scrt.scot/wp-content/uploads/2019/03/Two-Years-of-the-Green-Investment-Bank.pdf

172 Aldersgate Group (2015). Two Years of the Green Investment Bank What next? Pg. 10

173 Environmental Audit Committee (2015). The Future of the Green Investment Bank

[174] BEIS (2016). government response to Environmental Audit Committee report "The Future of the Green Investment Bank"

[175] The EFSI is a pot of over €21bn of off-balance sheet capital which can be used by Member States to finance energy and infrastructure projects

[176] The EIB provides finance and expertise for sustainable investment projects and invests in large infrastructure projects alongside private investors. Low carbon energy and infrastructure investment remains a priority for the Bank

[177] Environmental Audit Committee (2015). The Future of the Green Investment Bank

[178] Committee of Public Accounts (2018). The Sale of the Green Investment Bank, pg. 14, para. 18

[179] Green Purposes Company (2018). Green Purposes Company Trustees' letter

ABOUT US

E3G is an independent think tank operating to accelerate the global transition to climate safe economies and societies. We are experts in climate politics, energy policy, sustainable finance, climate diplomacy, risk and security and the global fossil transition. E3G builds cross-sectoral coalitions to achieve carefully defined outcomes, chosen for their capacity to leverage change. We work closely with like-minded partners in government, politics, business, civil society, science, the media, public interest foundations and elsewhere. In 2018, for the third year running, E3G was ranked the fifth most globally influential environmental think tank. E3G operates around the world with offices in Berlin, Brussels, London and Washington. D.C.

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