

Risky business investing in the UK's low-carbon infrastructure



Contents

Executive summary	3
Recommendations	4
1 Low-carbon investment is vital for the UK	5
2 The pace and scale of investment is a barrier to success	9
3 Government must take action to set the right investment conditions	12
4 Addressing market and regulatory risk must be a priority	13
5 A Green Investment Bank can be an important investment enabler	19
References	24

Executive summary

Over the next few decades, the UK faces a unique investment challenge in its transition to a low-carbon economy. The key to hitting our stretching legal emissions targets will be our ability to generate the large and sustained investment needed to replace and decarbonise our energy infrastructure. As a global frontrunner on climate change policy, the UK government must show leadership and ingenuity in making this investment happen.

The way the UK goes about meeting this challenge will have important economic repercussions. It will impact the cost of energy for consumers and businesses, create new industries and jobs, and change our lifestyles and physical environment.

While government action is imperative, the scale of the investment required – £150bn in the power sector alone over the next twenty years – means this action will be to enable rather than fund. With existing pressure on the public finances, the government's role will be to help unlock and channel private capital towards UK investments. Setting a clear vision for the UK's low-carbon transition will identify key areas for investment and growth.

While there is sufficient private capital available, competition to secure it is fierce and global. As the UK is one of many countries making the low-carbon transition, companies and private funds will choose to invest where the risk/return profile is most attractive. The opportunities of a low-carbon economy – new industries, new jobs, and new markets – are not unique to the UK. To boost the UK's attractiveness as an investment destination, there is much the government can, and must do. Failing to secure the right investment levels would not only result in the UK falling behind its competitors and relinquishing economic advantage, but it will seriously impede our ability to hit our climate change targets.

The government has made some positive steps forward in its recent budget announcement and accompanying growth review, and the forthcoming white paper on electricity market reform will be a crucial milestone – but there is still much more to do.

The government must pinpoint the drivers and blockers for investment decisions and minimise risk in the UK by setting the right investment conditions. This report sets out recommendations on how the government should respond to this challenge.

It argues that:

- Low-carbon investment is vital for the UK
- The pace and scale of investment is a barrier to success
- Government must take action to set the right investment conditions
- Addressing policy and market risk must be a priority
- A Green Investment Bank can be an important investment enabler



Recommendations

- **Develop a long-term low-carbon growth strategy and delivery plan for the UK.** BIS, DECC and DEFRA should work together to set out a deliverable vision for the transition to a low-carbon economy, based on key capabilities in the UK. This should include the government's strategy for export growth.
- **Send the right investment signals through reform of the electricity market.** The government's forthcoming white paper on electricity market reform must deliver long-term certainty and drive investment in low-carbon energy infrastructure, while at the same time maintaining the competitiveness of the UK's industrial base.
- **Implement a planning system that will enable growth.** Ensure the Localism Bill implements a planning system that will facilitate rather than hinder growth and is delivered on time in 2011. The government should also aim to tackle the backlog of energy infrastructure projects waiting approval and ensure that the Infrastructure Planning Commission continues to make decisions on projects currently under review until the establishment of the Major Infrastructure Planning Unit.
- **Make the Green Deal for energy efficiency workable for investors.** The government should work with the private sector to design a viable financial model for the Green Deal where no party will bear a disproportionate level of financial risk. It should also develop a range of accompanying policies, such as Display Energy Certificates, to encourage take-up of the scheme.
- **Maintain the competitiveness of the UK's low-carbon industrial base.** The government should publish its strategy for energy-intensive users as soon as possible. Furthermore, all new climate change and energy policies must provide an exemption from policy costs for the sectors most at risk of carbon leakage. New policies must include analysis in their impact assessments on the cumulative cost impact for energy users, with specific analysis for energy-intensive users.
- **Establish a Green Investment Bank with the powers to issue government guaranteed bonds as soon as possible.** The government's forthcoming announcement should clarify the proposed structure and operations of the Green Investment Bank.

1

Low-carbon investment is vital for the UK

A low-carbon economy is vital to the UK's future, and will be a journey of opportunities as well as costs. If government and business succeed in attracting the investment needed for our low-carbon infrastructure, there are plenty of wins to be had for the UK's competitiveness. The coalition government has pledged to be 'the greenest government ever', but it is not enough just to be green – the UK needs to be green and growing.

Low-carbon investment will enable the UK to hit its legal climate change targets and secure energy supplies

The UK has committed to cutting its CO₂ emissions by 34% on 1990 levels by 2020 and by 80% by 2050. Alongside the carbon reduction challenge, the UK faces a huge task in replacing its ageing power infrastructure. In doing this, it needs to guarantee a secure and cost-effective energy supply.

Achieving this transition will require significant investment. The CBI's 2009 energy report, *Decision Time*, said that the power sector alone would require around £150bn of investment over the next 20 years. The report concluded that a 'balanced pathway' of new nuclear, renewables and fossil fuel carbon capture and storage (CCS), together with significant investment in energy efficiency measures, would deliver both security of supply and keep the UK on track to meet its carbon targets.



It could position the UK as a global leader in low-carbon

While successive UK governments have been progressive in their support for challenging emissions targets, they have been unable to match European counterparts in terms of economic stimulus for green outcomes. During the recession, for example, the UK spent \$3.7bn as part of its 'green stimulus package' to boost economic growth in low-carbon areas. France and Germany, in comparison, spent over \$6bn and \$13bn respectively.¹

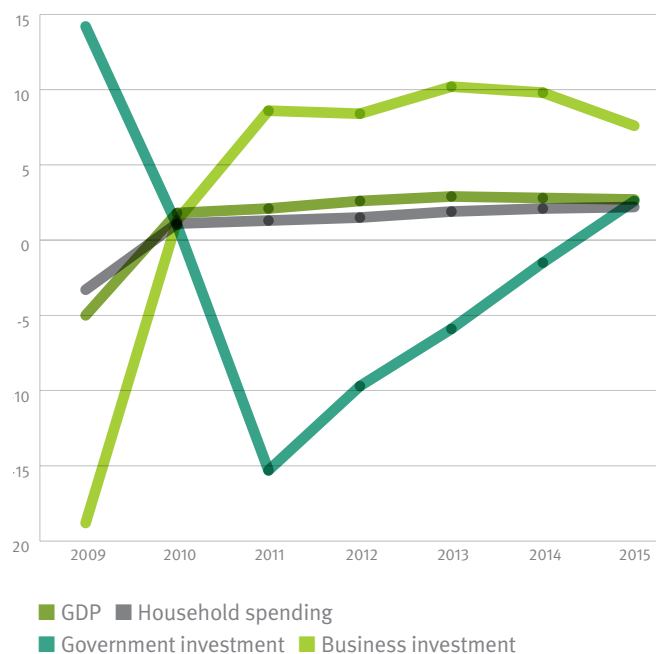
We need to acknowledge that we are not competing on an equal footing in terms of public investment: the scale of the investment needed was never going to be solely met by the public purse. If the UK government can show ingenuity in creating the right investment conditions and be smarter in using its limited public funds to leverage investment from the private sector, we will be in a strong position. We can show real leadership here in creating a transition to a low-carbon economy and positioning the UK as a global leader in low-carbon technologies.

It could provide an additional driver for economic growth

As we emerge from recession, there is growing debate about where the future growth will come from. With public sector and household spending likely to be subdued in the coming years the two main engines of growth will be private sector trade and investment (**Exhibit 1**). As noted in the government's recent growth review² the UK should see investment in low-carbon solutions as a key contributor.

We can already see how important investment in low-carbon infrastructure will be to the UK's future growth, with plenty of examples of sectors and individual companies already leading the way. Indeed, our 2009 report on low-carbon innovation, *Pulling ahead*, featured case studies illustrating business investment in low-carbon technologies. The renewable energy sector, for example, has a UK market value of around £30bn and is expected to grow by 5% this year.⁴ Recent announcements of large investments in UK offshore wind by companies including Gamesa, GE, Mitsubishi and Siemens demonstrate that this is a rapidly growing industry with the potential to provide a significant number of jobs, both directly (**case study 1**) and through the supply chain (**case study 2**).

Exhibit 1
Forecast growth in GDP, household spending, government investment and business investment (%)³



■ GDP ■ Household spending
■ Government investment ■ Business investment

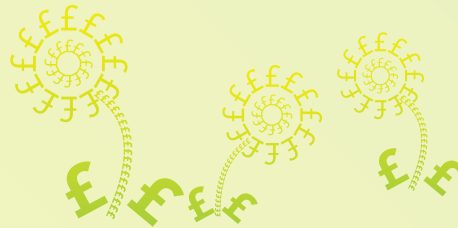


Case study 1

Siemens' investment in offshore wind

Siemens is a global leader in wind power technology, grid connections and wind turbine service. In the UK, the company is a leading provider of offshore and onshore wind power solutions, and is investing heavily in this area.

In 2010, Siemens announced plans to build a £80m wind turbine manufacturing facility in the UK. The UK is the largest offshore market in Europe, and Siemens' manufacturing plans are a part of its global strategy to get closer to the market and customers. In January this year, Siemens selected Associated British Ports and its Green Port Hull site as its preferred location for the factory. It is expected that this investment will generate around 700 jobs, providing an economic boost for the region.



Furthermore, the company currently has a 50% equity holding as part of the SMartWind consortium for Round 3 development of the Hornsea zone, off the Yorkshire coast. Siemens also has a 10% equity stake as part of Gwynt-y-Môr and a 25% stake in the Lincolnshire wind farm developments, both already under construction.

Siemens is also investing in R&D, with Centres of Competence at Manchester, Keele and Sheffield, each of which creates opportunities for highly skilled engineering employment. Siemens has invested £3m in a Wind Power Training Centre in Newcastle, and has helped launch a new wind power service technician apprenticeship.





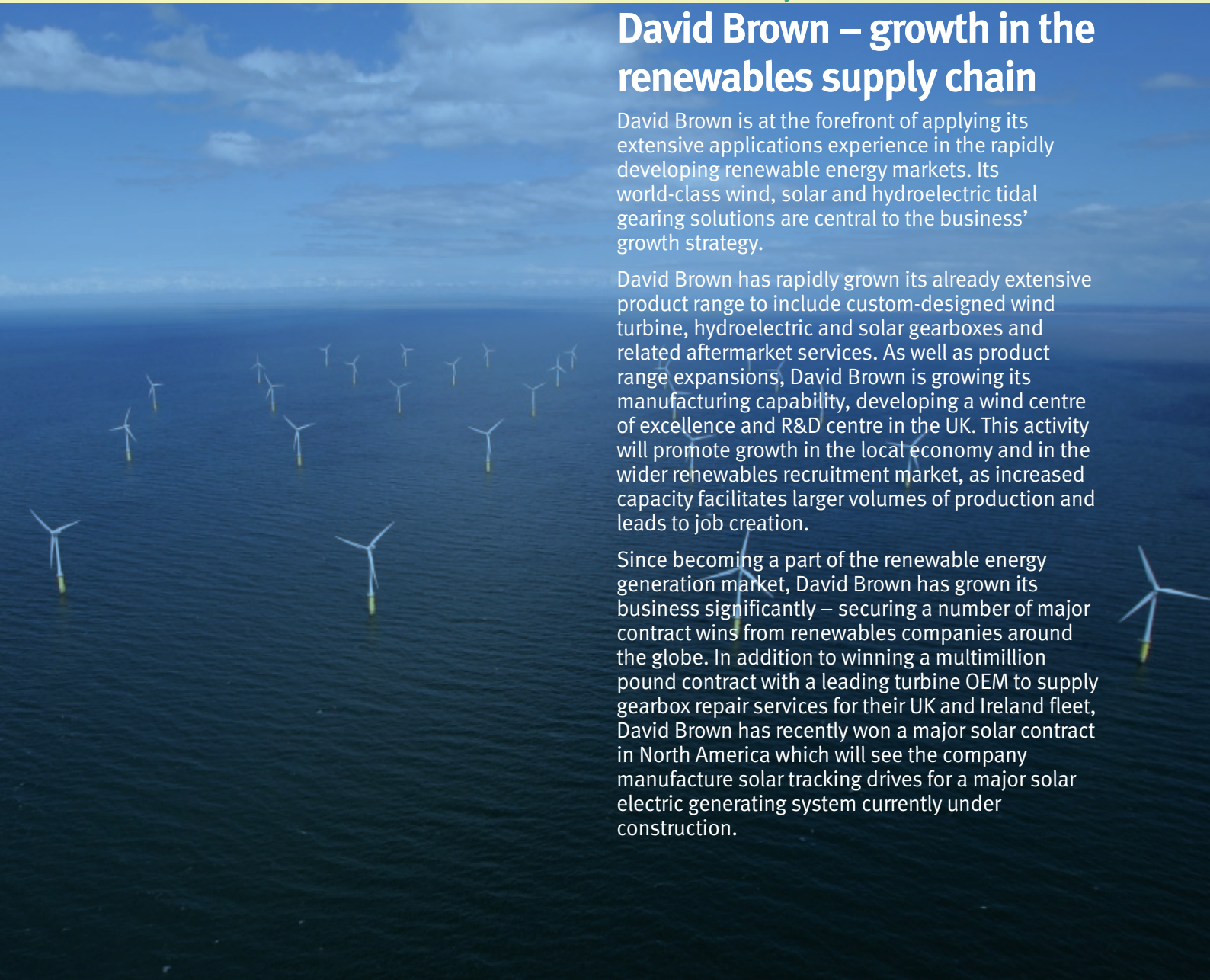
Case study 2

David Brown – growth in the renewables supply chain

David Brown is at the forefront of applying its extensive applications experience in the rapidly developing renewable energy markets. Its world-class wind, solar and hydroelectric tidal gearing solutions are central to the business' growth strategy.

David Brown has rapidly grown its already extensive product range to include custom-designed wind turbine, hydroelectric and solar gearboxes and related aftermarket services. As well as product range expansions, David Brown is growing its manufacturing capability, developing a wind centre of excellence and R&D centre in the UK. This activity will promote growth in the local economy and in the wider renewables recruitment market, as increased capacity facilitates larger volumes of production and leads to job creation.

Since becoming a part of the renewable energy generation market, David Brown has grown its business significantly – securing a number of major contract wins from renewables companies around the globe. In addition to winning a multimillion pound contract with a leading turbine OEM to supply gearbox repair services for their UK and Ireland fleet, David Brown has recently won a major solar contract in North America which will see the company manufacture solar tracking drives for a major solar electric generating system currently under construction.



2

But the pace and scale of investment is a barrier to success



Despite the clear economic and environmental opportunities presented by low-carbon investment, there remains a high degree of scepticism in the private sector whether the UK will succeed in meeting the desired pace and scale. Global availability of private capital offers the UK the potential to attract investment from all over the world – but only if the investment conditions are right. There is a perception among companies and financial investors that conditions in the UK are less attractive than elsewhere – and this is proving a significant barrier to success.

The implications of this are considerable. We know the climate change targets we need to hit by 2050 and we know the broad energy mix we will need in the decades before to meet that target – but without the right level and pace of investment in the early years our low-carbon transition could grind to a halt.

To overcome this, we need to understand what is holding company and financial investors back. The CBI commissioned research from Accenture to shed light on this problem (**Exhibit 2**). This research underpins the conclusions and recommendations set out in this report.

Exhibit 2

Accenture research – restraints on investment

The research conducted by Accenture consisted of interviews with executives from a range of CBI members including financial institutions, a variety of investors, utilities, manufacturers and property owners. The focus was to help gain an understanding of the executives' current perspectives on the major issues facing low-carbon investment, followed by their views on potential solutions.

The research was conducted by Accenture using sector-specific questionnaires on investment, power, manufacturing and building efficiency. The approach was designed to draw out qualitative insights and let interviewees give their views on potential barriers and solutions to investment. Interviews were held either face to face or by telephone with the Accenture team. The quotes used in this report have been taken from these interviews.

Accenture and the CBI used the results of the interviews to extrapolate a set of common trends and observations which formed the basis for this report.

“There’s a lot of private money that will invest if the conditions are right.”

The headline message from the research was encouraging: there are no insurmountable barriers to investment. If the government plots the right course of action, the UK should be able to fund its low-carbon transition. The cost of the transition will be shared across the economy – by both domestic and business consumers – therefore it is essential that it is affordable. But the research also found a high degree of scepticism that the UK will actually succeed, based on the following conclusions:

- Existing funding channels are insufficient to meet the pace and scale of investment
- A shift in finance and capital conditions has created a challenging backdrop to investments
- Low-carbon investments are perceived as too risky.

Existing funding channels are insufficient to meet the pace and scale of investment

The total annual investment needed in low-carbon energy alone is expected to be around £7.5bn-£10bn a year. Interviewees have suggested this level is too high to be accommodated on the balance sheets of the ‘big six’ utilities, which have a combined total annual capital expenditure of around £3bn⁵. Research suggests that project finance from the banking sector and investment from infrastructure funds will not be able to make up the difference, only offering the capacity to contribute up to a further £2.4bn per year.⁶ A recent report by Barclays and Accenture described this as a “carbon capital chasm”.⁷

Beyond these sources, there exists over £3tn⁸ in the managed funds market, of which £900bn is held by pension funds alone. Institutional investors currently fund energy infrastructure indirectly through their investments in utilities’ debt and equity. But given that the utilities are unlikely to dramatically expand their capital base, this model of financing will not be effective in delivering new low-carbon investments at the required pace and scale. Direct access to this huge pool of funds will therefore be necessary for future low-carbon projects.

A shift in finance and capital conditions has created a challenging backdrop to investments

While creating the right domestic conditions for investment is challenging enough, the situation is compounded by tougher market conditions more widely following the financial crisis.

The legacy of the credit crunch has had significant implications for debt finance, which is often a key component in financing low-carbon energy infrastructure, in the form of project finance. Availability of debt has been constrained due to reduced liquidity in the banking sector and the need for banks to repair their balance sheets. Lending activity is also likely to be constrained by increased scrutiny and tighter due diligence requirements in the financial services industry. The cost of debt has increased, with project finance fees doubling in the last two years⁹.

The research suggests that banks are no longer willing to lend for the long periods common before the financial crisis. These have been significantly reduced to around 6-7 years¹⁰, posing a particular problem for large low-carbon infrastructure projects which will have much longer timescales and will therefore need to refinance.

In addition, the CBI’s 2009 *Shape of business* report¹¹ suggested that the risk appetite of investors, including equity investors, is likely to be much lower in the future. This will have wider implications beyond creating a low-carbon energy infrastructure. Risk-aversion among investors will also have an impact on financial innovation to deliver the government’s flagship energy efficiency initiative, the Green Deal. By and large, the long, predictable revenue streams resulting from the scheme could suit a securitisation model – ie pooling the small amounts of debt (the Green Deal repayments) – in order to sell them onto investors as securities. But investors are understandably wary of this approach and its similarity to subprime lending, which instigated the financial crisis.

This tough backdrop is not going to disappear overnight – it has been suggested that these changes are structural rather than transient¹² – but there is still plenty the government can do in addressing other barriers.

“The funds exist, but under current conditions they will not flow into UK low-carbon.”

Low-carbon investments are perceived as too risky

Difficult market conditions shouldn't necessarily prevent investment – if there are returns to be made, investment will be forthcoming.

But we found a common perception among investors interviewed as part of this report that low-carbon investments are faring less well than conventional investments because they simply present too great a risk with the view that the returns are either not sufficiently attractive or are too uncertain.

Interviewees identified a range of risks associated with low-carbon investments – some of which are universal and unavoidable (eg technology risk) and some which are manageable and specific to the UK (eg policy and regulatory risk) – which create a real investment challenge. Each low-carbon technology would clearly bear its own specific risks, but interviewees identified the following common ones:

- **Market risk** – Existing market arrangements are not conducive to low-carbon investments. Gas plants are the current price-setters and can therefore pass through gas and carbon price changes into power prices. Low-carbon generators, on the other hand, are price-takers and are more exposed to volatility in gas or carbon prices.
- **Technology risk** – many low-carbon technologies (even those close to commercialisation) have no track record for investors to go by, which makes them a riskier investment prospect. For example, Round 3 offshore wind will use next generation wind turbines which are larger than existing turbines and as yet untested.
- **Policy risk** – many low-carbon technologies are reliant on government policies to make them competitive with conventional technologies, but these policies are often seen as uncertain and susceptible to political change or ongoing tinkering. A recent example would be the UK government's decision to conduct an early review of the tariff received for solar photovoltaic technology under the existing feed-in tariff arrangement.

- **Construction risk** – the capital intensity of most low-carbon infrastructure investments means that there are long and often uncertain payback periods, leaving investors exposed during the construction phase of the project. Nuclear plants, for example, require up to seven years construction, with no revenues, and may require over 30 years to reach payback¹³. Cost and schedule overruns therefore present a major risk.

Different investors are willing to take on varying types and degrees of risk, provided they receive commensurate return. But the investors holding the largest pool of capital – ie institutional investors – are usually only willing to accept very low risks, which is why they have so far generally chosen not to invest directly in infrastructure projects. This mismatch between availability of capital and risk/return profile presents a major barrier to unlocking sufficient private capital for low-carbon investments.



3

Government must take action to set the right investment conditions



The interplay between the three challenges outlined in the previous section – insufficient funding channels, difficult market conditions and perceived risk – can seriously damage the investment outlook. Left unresolved they will almost certainly increase the overall cost of investment – which will in turn make the low-carbon transition more expensive for consumers – and damage confidence in future investment opportunities.

The headline message of the research was that these challenges were not considered insurmountable by interviewees – there is action that the government can take to address them. The government does not hold all the answers: as we move from high to low-carbon technologies, there will inevitably be some false starts and set-backs, but what it can do is ensure that the environment in which these investments are made is as favourable as possible.

What is clear is the need to start tackling the issues immediately. In taking action, the government has two levers at its disposal. It can take action either to increase investor returns, or to reduce investor risks.

The first option may increase investment prospects as investment will always be forthcoming if returns are high enough, although the cost of this action will fall heavily on energy consumers, domestic and business. The CBI therefore believes the government should aim to reduce some of the risks associated with low-carbon investments.

In doing so, it should look first to reduce risk already under its control – market and policy risk. This was by far the greatest investment blocker cited by interviewees and must be addressed as a priority.

But this may not be enough to ensure the market alone will deliver the investment at the pace and scale required. Targeted intervention may therefore also be necessary to de-risk investments and enable the flow of a wider, cheaper pool of capital held by institutional investors. A combination of these actions should help to accelerate the market's response to delivering a low-carbon economy – particularly an affordable, low-carbon energy system.



4

Addressing policy and market risk must be a priority



According to business leaders interviewed by Accenture for this report, the UK is not currently providing the optimal conditions for business investment, with risks associated with the current policy and regulatory framework cited as a major concern.

These findings are supported by several sources. A recent Ernst & Young¹⁴ survey reported only 3% of respondents believed conditions for a stable low-carbon policy framework have been established to enable growth in the UK, and 77% called for urgent action to establish a clear direction and stable policy framework. These figures echo the messages of the CBI's biannual climate change tracker, which judges the government's performance and highlights the tangible progress made against its policy promises. The last evaluation, released in December 2010, highlighted several sources of concern for business. Given that the UK is just one of many countries competing for private capital, and multinational companies will simply choose to invest where the risks and returns are better, these results are difficult reading for government.

Investors do not expect government to give them all the answers. Many of these investment opportunities will span decades – it is unreasonable to expect the government to predict future policy minutiae. But what it can do is set a clear direction of travel – and stick to it. Certainty breeds confidence, and investors will value a clear current and future policy framework. As a matter of urgency the government must take decisive action to create the right regulatory conditions to secure sufficient low-carbon investment from the private sector.

“Capital moves to where risks and returns are acceptable.”

“The politics and rhetoric is miles ahead of reality.”

Set a deliverable vision for low-carbon investment and growth

The CBI's recent publication, *Making the UK the best place to invest*, indicated that, in order to successfully attract investment, the UK needs an overall vision for growth.¹⁵ This vision should set the direction of travel and ambition, including key capabilities for the future, and provide sufficient predictability and certainty for investment decision-makers without becoming overly prescriptive. The same kind of vision is needed for low-carbon investment in the UK.

While the government has gone some way to expressing its green ambition through its National Infrastructure Plan, Carbon Plan and recent growth review, research suggests that investor confidence remains low – the UK recently falling from 5th to 13th in global ranking for low-carbon investment¹⁶.

Other countries have started to articulate their ambition and the strategy to achieve it: examples include India's National Action Plan on climate change with China also demonstrating its commitment to the low-carbon transition through its new Five Year Plan (2011-15). Without a clear commitment and coherent vision, many interviewees suggested that the UK is under-performing on the global stage. The government's forthcoming green economy roadmap must address this by setting out a clear commitment and coherent vision – with a focus on translating investment into growth.

Exhibit 3

Existing UK strengths

Manufacturing and industrial capabilities – the UK has existing strengths in aerospace, automotive, electronics and ICT, offshore structures and operations and construction.

Research and intellectual property expertise – Britain has world-leading research with businesses, public and university laboratories producing groundbreaking work in sectors ranging from aerospace to pharmaceuticals to energy.

Natural assets – Britain's island status gives it an advantage in sectors such as offshore wind and marine technologies. The UK is also well placed to develop carbon capture and storage (CCS) technology given the abundance of depleted oil and gas reserves in the North Sea also presents a ready site for storage of CO₂.

A long-term vision is particularly important for low-carbon investments, given the very long lead-times for the commercialisation of low-carbon technologies. Technologies due online beyond 2020, such as wave power, are at much earlier stages of development. As such, potential investors in early-stage technologies – such as venture capitalists – would benefit from a plan that outlines the government's broad intentions for the UK's low-carbon transition out to 2050.

The Committee on Climate Change's 2010 innovation report¹⁷ confirmed that such a strategy could set out which technologies the UK could research and develop, which we could develop and deploy, and which we could just deploy. This suggestion reflects conclusions from the CBI's 2009 low-carbon innovation report, *Pulling ahead*¹⁸, that while the UK is unable to compete on all fronts, it should aim to build on its existing strengths and focus on priority technology families in sectors with the greatest potential to create wealth for the UK at home and abroad (**Exhibit 3**).

Recommendation for BIS, DECC, and DEFRA: Develop a long-term low-carbon growth strategy for the UK. BIS, DECC and DEFRA should work together to set out a deliverable vision for the transition to a low-carbon economy, based on key capabilities in the UK. This should include the government's strategy for export growth.

A low-carbon vision must be underpinned by a stable policy framework

With a high-level vision in place, investors will then look to a core framework of business-relevant policy which sends the right investment signals. Here, policy stability and longevity is key. The reliance of most low-carbon technologies on government policy to accelerate their commercialisation is a challenge to investors, who often see policy as complex, uncertain and susceptible to change – either through ad hoc tinkering or a major change in political objectives. Recent examples of this include the decision to remove the revenue recycling element of the Carbon Reduction Commitment Energy Efficiency Scheme, and the sudden increase in tax on the oil and gas sector as announced in the March 2011 budget.

While some changes are necessary to ensure the right investment signals, this must be balanced against the uncertainty caused by continual adjustments to the policy mechanisms. The latter can be seriously damaging to confidence across the investment chain, making access to finance difficult in some circumstances. Interviewees agreed, pinpointing priority areas of risk where government action could create a step change in low-carbon investment in the UK.



Send the right market signals by reforming the electricity market

One of the major obstructions to securing investment in low-carbon energy infrastructure is that the current electricity market is not conducive to delivering the necessary low-carbon investments. This is due to three major market risks cited by investors:

- Uncertainty around future wholesale electricity prices
- Uncertainty around the future price of carbon (resulting from the recession as well as the lack of progress on an international climate deal)
- A lack of value placed on security of supply given the increased penetration of wind power – and its intermittent flow of electricity into the grid.

To make the transition from high-carbon to low-carbon investments possible, the CBI has been a strong supporter of action at EU level via the EU Emissions Trading Scheme (EU ETS) which is designed to provide a technology neutral long-term market signal. We also support market-based incentives for renewable technologies to boost their attractiveness to investors.

But since the July 2009 release of our major energy report *Decision time*¹⁹, we have consistently concluded that without reforms to the UK electricity market, energy security would be harder to achieve, our ability to meet climate change targets would be jeopardised and the UK could have some of the highest and most volatile electricity prices in Europe. We welcomed the government's consultations on the carbon price support and electricity market reform and urge the government to set in motion regulation that meets CBI criteria for successful reform (**Exhibit 4**). Any changes to the existing market framework should build on the EU ETS and should:

- Remain market-oriented
- Remain technology-neutral (though specific support for key pre-commercial technologies may still be required)
- Safeguard existing investments
- Be politically durable
- Minimise the cost impact on energy users
- Enable sufficient investment in low carbon power generation and supporting technologies.

As the CBI argued in its response to the HMT consultation on a carbon price support and the wider electricity market reform consultation, the government's forthcoming white paper on electricity market reform must deliver long-term certainty and drive

investment in low-carbon energy infrastructure. At the same time it must maintain the competitiveness of the UK's industrial base.

The contract for difference feed-in tariff and the premium feed-in tariff proposals both fare well against these criteria and could work to encourage new investment, although it may be appropriate to have different models for different technologies.

Exhibit 4 Government proposals for electricity market reform

DECC's electricity market reform consultation included the following proposals:

Technology neutral feed-in tariffs for large-scale generation:

The government believes long-term contracts could provide greater certainty on revenues for low-carbon generation and make investment more attractive. The government proposes a 'contract for difference' model whereby generators would enter into long-term contracts on a fixed price basis, with variable payments to ensure the generator receives stable, but not excessive returns.

Emissions performance standard: Described as a backstop measure, this would introduce a limit on how much carbon the most carbon-intensive power stations (eg coal) can emit. The government hopes an EPS will reinforce the existing requirement that no new coal is built without demonstrating carbon capture and storage (CCS) technology.

Capacity payments: This proposal involves targeted payments to encourage security of supply through the construction of flexible back-up plants (eg gas) to ensure there is enough supply as the amount of intermittent low-carbon generation increases (eg wind).

In parallel, the Treasury conducted a consultation on a mechanism to support the carbon price:

Carbon price support: The recent budget announcement introduced a proposal for a carbon price support, designed to provide greater long-term certainty around the increasing cost of running fossil fuel-based electricity generation (and thereby encourage alternative investment in new low-carbon plants). The government proposes to do this by removing the existing Climate Change Levy (CCL) exemptions for the use of fossil fuel-based generation and introducing a new 'carbon price support rate' of tax on fossil fuel supplies.

The carbon price support proposal announced in the budget has some positive elements, but to mitigate business concerns, and in the absence of action at EU-level, the government will need to implement measures to protect industrial competitiveness by the time this tax takes effect.

The case for a capacity payment mechanism is not universally supported by businesses, but ensuring electricity system flexibility is important for energy users as the generation mix gains a higher penetration of renewables. The proposal for an emissions performance standard should be dropped, as it is an unnecessary duplication of existing policy.

Getting the right policies should help address the market risks faced by companies and their financial investors, but crucially, investors need to be confident that the new regime will last.

Recommendation for DECC and HMT: send the right investment signals through reform of the electricity market. The forthcoming government white paper on electricity market reform must deliver long-term certainty and drive investment in low-carbon energy infrastructure, while at the same time maintaining the competitiveness of the UK's industrial base.

The planning system must be fit for purpose and boost investor confidence

Investment decisions will also need to take account of stability in the wider regulatory framework, including the planning system. Businesses therefore need a regime that encourages not hampers investment. Planning delays can seriously undermine the economic viability of a project whatever its size, and there is a risk that the government's overhaul of the planning regime will cause further delays and greater uncertainty.

The recently introduced Localism Bill will look to transform the way the planning system works at national and local level. While we agree with the principle of devolving greater powers to local communities, it must not result in a negative impact on the UK's infrastructure requirements. The Bill plans to replace the Infrastructure Planning Commission (IPC), which was introduced by the previous government to speed up planning decisions for major infrastructure projects, with an advisory Major Infrastructure Planning Unit (MIPU), and return decision-making powers to ministers. To prevent delays, it is essential to keep to the three month sign-off period to maintain investment confidence and ensure other changes are minimised.

As the government pushes ahead with these revisions to the existing planning framework, it is vital to demonstrate how the revisions will work for investors. To avoid damaging confidence in the system, the transition must not further delay the UK's ability to deliver sustainable infrastructure projects and DECC must tackle the backlog of projects awaiting approval.

Looking beyond major infrastructure projects, the government's greater focus on returning planning control to local authorities has led to the abolition of regional spatial strategies. Although unduly bureaucratic and cumbersome, these were successful in identifying the sub-national infrastructure needs for an area, including energy supply and waste management – both of which will require significant investment in upgrades over the next few decades. To encourage investor confidence it will be important to demonstrate that this will not lead to duplication of resources and a lack of strategic thinking at a local level. Key to this will be the Localism Bill's duty to cooperate, which must be strong enough to ensure larger-than-local planning takes place where it is genuinely needed.





The recent budget announcement, including the presumption in favour of sustainable development, sends a clear message that the default position on planning applications must change to 'yes'. But the measure of these reforms will be determined by their detail, which is yet to emerge. Getting this right will be crucial to delivering a localist planning system that also delivers growth.

Recommendation for DCLG: Implement a planning system that helps growth. Ensure the Localism Bill implements a planning system that will enable rather than hinder growth and is delivered on time in 2011. The government should also aim to tackle the backlog of energy infrastructure projects waiting approval and ensure that the IPC continues to make decisions on projects currently under review until the establishment of MIPU.

Government must make the Green Deal workable for investors

Investors will face risks not just in deploying energy infrastructure, but in implementing energy efficiency measures as well. The government's Green Deal has clear potential to help unlock emissions reductions from buildings by removing the upfront costs for energy efficiency. But without significant action from government to develop an attractive proposition for business and households, this potential is unlikely to be realised.

With the government having made clear that the private sector will finance the scheme, it is essential that a viable financial model is designed which is attractive to investors. While a number of banks and other potential investors are interested in the scheme, it is far from certain that private sector finance will be forthcoming and at the necessary scale due to a lack of clarity about where the risks, such as default on repayments, will lie.

Financing energy efficiency measures at scale presents its own challenge. Investments in retrofitting the buildings sector, where there are the largest emissions savings still to be made, are small and fragmented and therefore unrecognisable as a viable investment opportunity for certain investors. Furthermore, the recent CBI brief *A real deal: making the Green Deal work* argued that utilities would be reluctant to hold the repayments as debt on their

balance sheets because the knock-on effects (ie on credit rating) could adversely impact their ability to invest in low-carbon energy infrastructure.

To give investors confidence, the financing model must be structured in such a way that all parties have 'skin in the game', without anyone bearing a disproportionate level of financial risk. Given the level of uncertainty as the scheme gets off the ground, it may be necessary for the government to provide an initial injection of capital to help stimulate the market in its early stages.

The government will also need to make extra efforts to stimulate demand, because without confidence in demand for the scheme, the Green Deal will not be a viable proposition for investors or potential providers. A range of accompanying policies will therefore be needed to encourage take-up. Display Energy Certificates for business properties, for example, could play a valuable role in stimulating interest in commercial buildings.

Recommendation for BIS and DECC: Make the Green Deal for energy efficiency workable for investors. The government should work with the private sector, particularly potential Green Deal providers, to design a viable financial model for the Green Deal where no party will bear a disproportionate level of financial risk. It should also develop a range of accompanying policies, such as Display Energy Certificates, to encourage take-up of the scheme.



Energy and climate change policies must not undermine the UK's low-carbon manufacturing base

While for some businesses the price signals provided by government climate change policies enable positive investment decisions, it is important to remember that these costs are ultimately passed on to the consumer – in the case of energy infrastructure investment, as part of their energy bills.

For most consumers, this may be seen as an unavoidable cost associated with mitigating climate change. For many businesses, it will have little material impact on overall costs as expenditure on energy is usually quite low compared to wage costs, for example. But for certain energy-intensive manufacturers – such as cement, aluminium and steel – the cumulative cost of policies such as the renewables obligation (RO), feed-in tariffs (FITs), and the forthcoming carbon price support will be significant.

While these costs might be manageable for some firms, for other companies operating in a global market – and in the absence of an international climate change deal – their competitiveness will be undermined as their costs rise more than those of their competitors. Interviewees identified this potential consequence of rising energy costs caused by EU and UK policies as a significant problem for government.

The risk here is that these firms will choose to locate in countries with less costly energy frameworks – hence the categorisation of such sectors at EU level as the ‘carbon leakage’ sectors.

Manufacturing occupies just over a third of overall activity in the low-carbon sector, with the highest levels in the wind and carbon capture and storage (CCS) sectors.²⁰ If we are to ensure that low-carbon investment produces economic growth and jobs – as outlined in the first section of this report – the government must ensure its climate change policies are not counter-productive to both growth and investment.

Recommendation for DECC: Maintain the competitiveness of the UK's low-carbon industrial base. The government should seek to publish its strategy for energy users as soon as possible. Furthermore, all new climate change and energy policies must provide an exemption from policy costs for the sectors most at risk of carbon leakage. New policies must include analysis in their impact assessments on the cumulative cost impact for energy users, with specific analysis for energy-intensive users.

Taking action to reduce risk across the market and policy framework – by far the biggest barrier cited by interviewees – will help to create the optimal conditions for low-carbon investment in the UK. This must be the government's priority if we are to successfully compete with other countries to secure globally mobile private capital. But the pace at which the market will respond to these actions remains highly uncertain. To accelerate this process, further government intervention may be necessary.

“Not only is [company name] competing against other manufacturers, but also against foreign branches of its own organisation, some of whom have significant cost advantages in other geographies.”

5

A Green Investment Bank can be an important investment enabler

The previous section set out what more government needs to do to reduce policy and market risk in order to provide the right investment conditions for business. But while creating a stable, transparent and predictable policy framework must be the government's priority, this will not address all the risks associated with delivering low-carbon infrastructure at the pace and scale required. Targeted intervention may be required to mitigate further specific risks that the market cannot currently hold.

The CBI believes that a Green Investment Bank (GIB) could be the vehicle for such necessary interventions, with the two key objectives of de-risking specific elements of a project and directly channelling a wider pool of cheaper capital towards low-carbon infrastructure. The government's recent budget announcement gave some clarity around what powers the bank will have, but there remain many unanswered questions. Investor confidence hangs on the government getting this right – but there are boxes that a GIB needs to tick if it is going to be effective.



A GIB should unlock private sector investment through targeted interventions

As a first principle, the GIB should have the intention of complementing the market. To this end, it should intervene only at specific points in a project's lifespan which are difficult for existing market participants to fund conventionally.

Although the GIB should remain flexible in its interventions, a particular point where interviewees have suggested that it could be valuable is during the pre-construction financing phase for large, capital-intensive low-carbon infrastructure projects.

The government's proposals for electricity market reform aim to address the market risk associated with low-carbon investments once they are operational, which should allow low-cost institutional financing to come forward at this stage. But there remains significant risk during the construction phase, which only a limited pool of investors (ie the utilities) will be willing to hold. While the utilities and/or consortia will fund the construction of *some* new low-carbon generation (**Chapter 2**), their combined balance sheets are insufficient to fund the required simultaneous build of multiple large and high-risk projects. The GIB could therefore develop the relevant financial mechanisms to take on elements of this construction-phase risk, while ensuring a high enough level of risk remains with the construction equity holders in order to avoid moral hazard (ie incentivising construction overrun).

Interviewees also suggested that the GIB could help to manage the refinancing risk that banks in particular face when lending to low-carbon projects which have long lead-times before they start producing cashflows.

The government must have 'skin in the game'

The GIB could use a range of tools to achieve its objectives – including equity participation, direct debt funding, 'first loss' guarantees or other credit enhancement mechanisms. But the crucial point for investors is that the government has 'skin in the game' – ie it will be exposed to low-carbon projects. This would ameliorate many of the policy risks set out in the previous section by making it less likely to tinker with policy mechanisms in the future.

A GIB must have a broad portfolio of investments

While it would be understandable for the bank to prioritise certain technologies – namely offshore wind – in its first few years, it must not be set up as a single technology support vehicle. It should aim to expand its portfolio to facilitate the flow of finance to a range of low-carbon technologies where specific risks exist – including industrial heat, nuclear and energy from waste.

And as the bank evolves over time, there is no reason why it shouldn't develop the financial mechanisms to support wider infrastructure projects.

It must have the power to raise funds from the capital markets as soon as possible

To have the desired outcome, the Green Investment Bank must be big enough to help unlock the £7.5bn-£10bn private investment needed each year. To this end, it must have the powers to raise funds from the capital markets. In doing this, the GIB would have the advantage of leveraging the huge capital reserves held by institutional investors into low-carbon investments that it will make.

The government's recent budget announcement confirmed that the GIB would be set up in 2012 – although it would not be able to raise finance from the capital markets until 2015. While the initial funding – £0.8bn ramping up to £3bn – is certainly a good start, it is insufficient to make a significant impact on the total investment required. The government has chosen to postpone the GIB's borrowing powers to avoid any adverse impact on its debt and deficit reduction targets. But as far as the financial markets are concerned, if the GIB is to issue debt, the timing of this is largely irrelevant. If investors are to have confidence in this important institution, it must have the powers to raise funds on the capital markets as soon as possible.

The GIB could be structured to both issue bonds itself, or to help projects raise funds directly from institutional investors by offering products at appropriate rates which allow them to obtain a satisfactory risk/reward profile from green investments (**Exhibit 5**). The latter could ultimately help to stimulate a liquid market in infrastructure bonds. The concept of an infrastructure bond is already developing in Europe (**Exhibit 6**).

Exhibit 5
How a GIB could operate

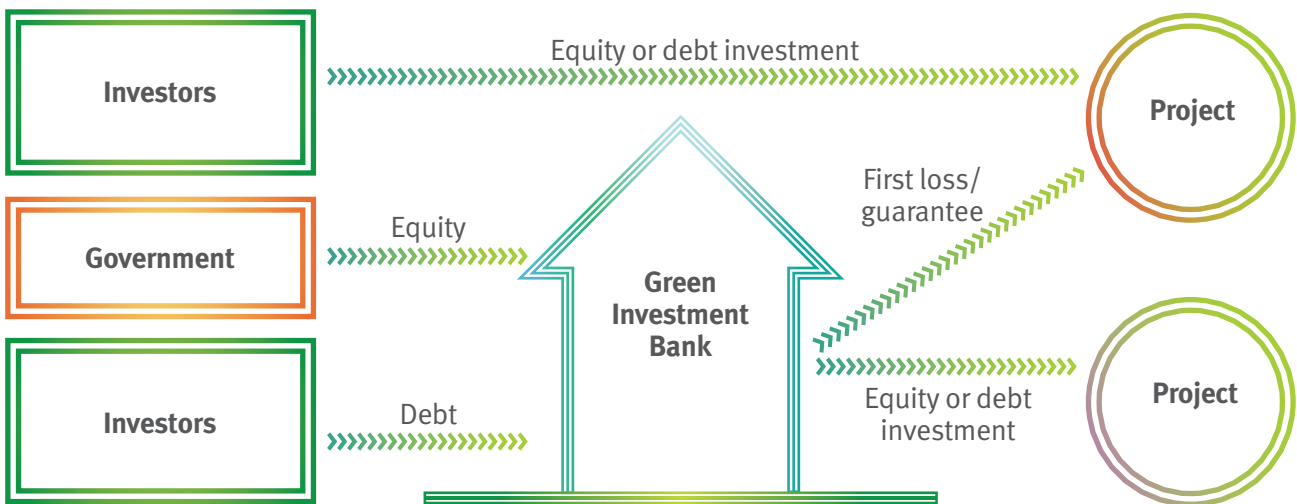


Exhibit 6
EU 2020 bond initiative

The concept of infrastructure bonds is gathering pace in Europe, with the launch of the EU 2020 bond initiative. The principal idea behind this is to provide EU support to companies issuing bonds to finance large-scale infrastructure projects. The initiative aims to attract additional private sector financing for individual infrastructure projects by improving the rating of the debt of the companies, thereby making them more attractive to institutional investors. The Commission's key role will be risk-sharing with the European Investment Bank (or other financing partners), enabling them to provide this credit enhancement. This scheme would not require any bond issuance by member states' governments, the EU or the EIB.

Source: European Commission website: www.ec.europa.eu



Exhibit 7

Impact of government-guaranteed GIB bonds on the public finances

As government guarantee is likely to see the GIB classed as a 'public corporation' by the Office for National Statistics, its assets and liabilities will lie on the government's balance sheet. This can impact on the public finances in the following ways:

- Equity investments or loans made by the bank would increase public sector net debt (PSND – the cumulative indebtedness of the public sector)
- Any payouts to investors through a GIB guarantee in the event of project failure would be classified as grants to the private sector which have to be financed by borrowing, and would therefore increase public sector net borrowing ('the deficit') and PSND.

Source: Environmental Audit Committee report on the Green Investment Bank, March 2011

GIB products must be designed to meet investor requirements

The issuance of GIB bonds would be of real benefit to institutional investors, who have been looking at new sources and diversification of investments beyond the traditional asset classes of equities, bonds, cash and real estate. Having been exposed to short-term investment volatility through marked-to-market accounting during the financial crisis, funds have been driven to look at long-term liability management through products that offer them stable returns over longer periods of time matching the nature of pension liabilities. The attraction of such approaches has only increased as scheme closures have taken hold.

While the natural answer to this demand has been seen as government bonds, evidence suggests that there is an undersupply of long-dated, index-linked securities that pension funds can hold to maturity.²¹ Green Investment Bank bonds could satisfy institutional investors' demand for low-risk, long-run investments, while enabling them to participate in the types of investments which would traditionally be seen as too risky, given their capital-intensive, illiquid and high-risk nature.

But it's important to remember that investors will not choose to invest in these bonds because they are 'low-carbon' – they will simply choose to invest in the best available products. Pension funds have a fiduciary duty to invest in the most commercially competitive bonds²², and any products issued by the GIB will be competing with asset classes that are established, liquid and well understood by the market. A government guarantee will therefore be necessary for a significant tranche of GIB bonds in order to attract investors.

While allowing the GIB to issue government-guaranteed debt will have an impact on the public finances, it shouldn't necessarily be a barrier to action: the GIB will not be a mere vehicle for government spending, but will be making investments delivering economic and societal returns (**Exhibit 7**).



The GIB must ensure value for money through operational efficiency

How the bank operates will have a significant impact on its credibility with investors and the taxpayer, with the latter ultimately underwriting the liability through the government guarantee. It is crucial that the GIB is staffed by highly skilled experts from the private sector – as is already the case with other independent public institutions, such as the Pension Protection Fund. It must be commercially driven, actively seeking to market its products to pension funds and other private sector investors.

The credibility of the GIB will be strongly founded on its ability to demonstrate efficiency and cost-effectiveness. Ensuring strong commercial practices will be crucial to attracting and retaining investors over the long-term. It will therefore be necessary for the GIB to be an informed stakeholder in projects, ensuring they are run efficiently and avoid moral hazard.

The GIB must be set up as an independent and enduring institution

While ministers should align the strategic objectives of the GIB with the UK's 2050 carbon reduction targets, beyond this it is essential for market confidence that the bank operates independently and without political interference.

Investors must also have confidence that the bank will be politically durable: it cannot be abolished by a new government, unlike the Independent Planning Commission. Pension funds would be very reluctant to purchase bonds issued by a bank that may not survive beyond this parliament. It is therefore important that the GIB is established under statute to provide assurance of its longevity.

Recommendation for DECC and HMT: Establish a Green Investment Bank through legislation with the powers to issue government guaranteed bonds as soon as possible. The government's forthcoming announcement should clarify the proposed structure and operations of the GIB.

Government must take forward these recommendations as a package

The GIB should certainly not be seen as a silver bullet. It will only be successful if it is underpinned by action to address market and policy risks, as set out in previous sections. Co-ordination and coherency must be at the centre of the government's strategy to boost low-carbon investment. Choosing to focus on one risk to the detriment of another will not lead to tangible progress. The CBI offers these recommendations to government as a package and looks forward to working together to stimulate the right investment to set the UK's trajectory towards a low-carbon economy.



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Climate change: everyone's business

The CBI climate change board:
building a low-carbon economy

The CBI climate change board was set up in 2008 to deliver the commitments set out in the CBI 2007 climate change taskforce report 'Climate change: everyone's business.' The report recognised that government, business and consumers all have a role to play in making the shift to a low-carbon economy. The board brings together senior business leaders from a range of sectors to demonstrate business commitment to managing the risk of climate change by:

- promoting business-led policy solutions to realise carbon savings
- showcasing business opportunities for green growth
- leading by example on corporate commitments to manage carbon footprint
- monitoring progress by government and business in realising the UK's carbon targets
- influencing a post-2012 international climate change agreement.



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