

Accelerating Green Infrastructure Financing: Outline proposals for UK green bonds and infrastructure bank

Briefing Note¹ March 2009

Summary

- In the midst of the current financial crisis, bold action will be needed to stimulate the economy, generate jobs and lay the foundations of a sustainable recovery. This will require a political road map that navigates through immediate economic problems, and lays the foundations for a sustainable and robust recovery over the next decade.
- This paper argues that low carbon markets in renewable energy, energy efficiency and infrastructure have the potential to be a major building block for UK economic recovery and future growth. However, the current financial crisis has slowed growth in many of these sectors, with the renewable energy sector in particular seeing many viable projects stalled. Without a coherent UK green financing strategy it is unlikely that the private sector will be able to deliver the necessary investment to meet UK targets and realise the potential for economic growth and job creation in these sectors.
- Such a strategy must provide a credible investment narrative to attract the private sector. It must also be credible over all the potential scenarios for the UK's financing landscape over the next decade, as private sector banks and the government focus on rebuilding their balance sheets and business and regulatory models remain in flux.
- A green financing strategy would combine targeted interventions in the short term stimulus period with new policies and mechanisms to support rapid medium term expansion from 2010-11 onwards. This would have three main elements:
 - **Short term support for renewable energy investment:** providing loan guarantees for 'good assets' and co-investing in viable strategically important renewable energy projects².

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² Detailed options on financing renewables in the short term are covered in a companion paper by E3G and Climate Change Capital (2009): Delivering Centralised Renewables: Outline proposals for scaling up UK investment.



- **Green Infrastructure Bank:** developing a new institution with the capacity to catalyse (rather than crowd-out) private sector investment through the effective and efficient use public finance to implement low carbon infrastructure investment through a variety of public/private finance approaches.
- **Raising new finance through ‘green bonds’:** developing new products for both institutional and retail investors where additional funding could be raised for public financing of low carbon infrastructure and energy efficiency programmes.
- If well designed these institutions could be self-financing in the medium term, while delivering increased confidence and growth in low carbon markets. As such they can help drive UK economic recovery while not adding to UK Government’s debt that needs to be financed from future taxation revenues. The Green Bond would also provide a unique way of directly engaging the public and institutional investors in the process of decarbonising the UK economy.
- This paper outlines the rationale for, and main design features of, these different proposals, including some illustrative modelling of the Green Bond structure applied to an energy efficiency programme. To ensure medium term sustainability these financing structures will need to be combined with new policy frameworks in key areas. Companion briefings to this paper outline complementary policy frameworks for centralised renewables and energy efficiency deployment.

1. Context: Delivering UK decarbonisation in a volatile financial landscape

In 2008 the UK became the first nation to instigate economy-wide legally binding greenhouse gas (GHG) targets and budgets through the Climate Change Act 2008. The UK also has a range of policies aimed at delivering, for example, energy efficiency (Carbon Emission Reduction Target³); renewables investment (the Renewables Obligation and the Low Carbon Buildings Programme⁴); and biofuels (the Renewable Transport Fuel Obligation⁵). These policies are, however, in danger of not delivering the scale of investment in a low carbon infrastructure that is needed to move the UK to a low carbon economy – estimated at £165bn to 2020 for centralised energy infrastructure alone⁶.

Firstly, there is a lack of private capital available to invest in critical projects in the short term owing to the turmoil in the financial markets and the continuing lack of confidence between banks. Secondly, a lack of an overall financing strategy for how these policies will release the

³ <http://www.defra.gov.uk/environment/climatechange/uk/household/supplier/cert.htm>

⁴ <http://www.lowcarbonbuildings.co.uk/news/index.cfm?articleid=18897120>

⁵ <http://www.dft.gov.uk/pgr/roads/environment/rtfo/>

⁶ Ernst & Young (2009) Securing the UK’s Energy Future: Meeting the financing challenge. Available at: <http://www.ey.com/UK/en/Newsroom/News-releases/Power---09-02-24---Energy-cos-new-investment>

scale and pace of necessary private sector investment in the medium term. Such a strategy must provide a credible and transparent investment narrative for private actors to invest against. It must also be credible over all the potential scenarios for the UK's financing landscape over the next decade as private sector banks and the Government focus on rebuilding their balance sheets and business and regulatory models remain in flux.

An investor's roundtable held in January 2009⁷ identified significant issues facing low carbon technology, specifically renewable energy, investment. They include 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. This has led to an emphasis on relationship-focused banking, known technologies and markets. For the first time, bankers are concerned about their own sources of funding. This has reduced the amount of private equity going into new ventures⁸ and led to the shelving of many consented renewables projects⁹.

Several solutions to this situation have been suggested:

- the Government should step in with co- or top-up public funding for syndicated deals;
- a public renewable energy bond issue;
- loan guarantees from the Government; or
- directing the recapitalised majority public owned banks to lend to renewable energy projects

At the same time there is a wider discussion about the need to replace and expand the UK's aging energy infrastructure¹⁰ and to accelerate spending on the low carbon economy. However, factors such as those identified above means there are substantive gaps between the policy aspiration and the ability of the private sector to deliver the levels of investment that will be required (in excess of £165bn¹¹).

This paper discusses a range of infrastructure financing ideas that could assist the Government in developing a strategic approach to addressing short, medium and long term low carbon financing challenge of delivering the next generation of low carbon infrastructure in a coherent and efficient manner.

⁷ Investors Roundtable convened by Chatham House, January 2009.

⁸ Discussions with the Carbon Trust.

⁹ Discussions with the Ventus Funds, Climate Change Capital. BWEA reported that rocketing costs and the credit crisis have opened up a funding gap of about £2 billion for 9 projects that have planning consent but haven't been built. These will cost an estimated £12 billion to complete. 'Energy firms demand £2bn to save wind farms' Sunday Times 22 March 2009.

¹⁰ Around 30–35GW of new electricity generation will be needed by 2025, over 40% of existing capacity.

¹¹ Ernst & Young estimates £165bn will be needed, but this does not include costs of CCS or other emerging technologies.

2. The rationale for Government involvement in green investment

Incentivising investment into a new low carbon energy infrastructure was a key Government aim prior to the credit crunch, although progress towards UK targets in all areas has been slower than required to meet national obligations. In the current recessionary period, low carbon investment represents a key opportunity to facilitate the UK's economic recovery through a green stimulus package which meets International Monetary Fund (IMF) suggestions on achieving for maximum stimulus impact and medium term economic sustainability¹².

There is a strong consensus in the investment community around the theoretical merits of raising green bonds and that the Government should step in with public funds to rescue failing project finance deals. It is clear that without such interventions UK low carbon investment – especially in renewables – will stall in the short term. However, these solutions are also fraught with problems.

Any Government backed finance will be competing for finite Her Majesty's Treasury (HMT) financial resources – either from public debt or taxation – and such approaches could create a moral hazard in that the Government could be asked to fund sub-optimal projects on the understanding that it bears the risk of commercial failure. There are strong information asymmetries between project developers, and the Government and neither HMT nor the Department for Energy and Climate Change (DECC) has the capacity or expertise to identify whether proposals are robust or not, especially in the short timescales envisaged. The Government has already been strongly criticised by the National Audit Office (NAO) for failing to carry out sufficiently thorough due diligence before taking the liabilities of Northern Rock onto the public balance sheet¹³.

Therefore despite the merits of the case for more directive Government financial intervention in low carbon investment, its success will depend on the competence and effectiveness of its delivery mechanism. This paper argues that the scale and complexity of this task makes the creation of a sector-specific structural bank – the Green Infrastructure Bank (GIB) – the best medium term option for the UK.

3. A UK Green Investment Bank

Sector-specific structural banks are not a new idea. Crédit Agricole is one of the oldest. Founded in 1860, it had a primary remit to supply credit to the French agricultural industry. The European Investment Bank (EIB) is another example. Created in 1958, it facilitates the integration, balanced development and economic and social cohesion of EU Member States.

¹² See IMF 2009a, Note to Group of Twenty Deputies meeting January 31- February 1 2009 IMF 2008, Fiscal Policy for the Crisis, IMF Staff Position Note, December 2008.

¹³ <http://news.bbc.co.uk/1/hi/business/7952923.stm>

It is policy-driven based on the views of its Member State shareholders and raises substantial funds on the capital market, which it then uses to provide loans and other financial products to projects furthering EU policy objectives. In Spain, the ICO (Instituto de Crédito Oficial) is a State-owned, and guaranteed, bank which delivers the Spanish Government's economic and financial policy objectives and reports to Spain's Ministry of Economy and Finance. The ICO accesses domestic and international capital markets and focuses its financing activity on boosting Spain's key policy-driven sectors such as transport, renewable energy¹⁴ and energy efficiency. Finally, the KfW Bankengruppe in Germany is a state-owned bank that supports investment in a range of sectors including environmental protection, housing infrastructure (such as delivering the national energy efficiency scheme). It also securitises loans for small and medium-sized enterprises.

A similar agent could be created by the UK Government with a specific focus on driving the transformation to a low carbon economy. The key advantages of setting up a GIB as opposed to establishing ad hoc financial solutions to policy problems as they occur are:

- **Public sector expertise:** the GIB would provide dedicated and competent public sector financial expertise to deliver public good outcomes within a commercial policy environment, eliminating the incentive problems associated with using commercial agents for these tasks. This mirrors the type of role that the UK has supported the World Bank and International Finance Corporation (IFC) playing at the international level on low carbon finance.
- **On-going innovative capacity:** the complexity of the low carbon transition means that there are likely to be multiple and changing demands for the Government to provide financial support to new markets, beyond any short term needs in the economic crisis. It is the nature of the transition that many of these needs cannot be anticipated. For example, municipal energy efficiency bonds; financing carbon capture and storage (CCS) networks; clean technology and industry incentive schemes; hedging public sector EUA price risk; managing impacts in the next economic cycle. The GIB would be capable of responding to, and in many areas anticipating, these needs and designing new and efficient financial instruments.
- **Strengthening market confidence:** Government backing its own policies through selected and strategic direct investment would act as a very powerful signal to investors that low carbon investment is still a sound proposition. In the short term, debt provision would act as a catalyst to get the syndicated debt market functioning through 'plugging'

¹⁴ <http://www.ico.es/web/contenidos/4/1017/index.html>

the gaps left by current market turmoil, which is limiting access to capital for key green infrastructure policy projects.

The GIB would not crowd out private banks but work with them. It would have a primary focus of leveraging private funds into the low carbon economy by investing public funds alongside. It would have its own legal personality and financial autonomy and carry a statutory government guarantee, but would operate within strict investment criteria, reporting to HMT, and in close collaboration with the wider banking community. The GIB could act as the agent that disburses the additional funding needed to bridge the gap between the scientific and industrial imperative to invest in new low carbon infrastructure and the current lack of Government income to finance action on climate change. It would lend within a clear framework according to a Government-mandated remit to provide financing to renewables projects and technology development as well as backing for any number of Government low carbon policy initiatives – for example a national energy efficiency programme or CCS demonstration scheme.

The GIB could also have a strategic role in furthering state interests as global markets for low carbon infrastructure expand. Because GIBs could be replicable in other countries¹⁵, they could also act as a tool for stimulating a coordinated global low carbon recovery, thereby enhancing other policy objectives around global energy and climate security.

4. Creation of the GIB

The GIB could be created from an existing institution or set up as a new institution. There are pros and cons to both approaches.

One proposal is to relaunch the Royal Bank of Scotland Plc (RBS) as a new UK GIB. This option is attractive because it would preserve RBS jobs and RBS has the requisite employee profiles and systems in place to skill the bank from the offset. However, the process could require the shutting down of some operations, while retaining the assets, and then setting in motion a major refocus of the business. Alternatively if these functions were added as an additional business there would be a need for major expansion in staffing and capital base. Change is notoriously hard to deliver and manage within organisations, especially at a large scale, and so this is a significant risk. In addition it is not suggested that the GIB have branches, take deposits or have any retail franchise (to avoid state aid and EU competition issues). There is also a concern that tax payers would not receive a full return on their investment were RBS to be relaunched in this way. Finally, a converted RBS would not be considered 'clean' by the market because of its difficult history, and this would risk its

¹⁵ On 25 March 2009 Congressman Chris van Hollen introduced a bill to establish a 'Green Bank' in the USA to catalyze the financing of renewable energy and energy efficiency projects.

acceptance among the Market Makers, industry and the public. For these reasons on closer examination this option looks less attractive, despite being quicker and (initially) easier to implement.

Instead we recommend that the Government consider setting up the GIB as a new entity but using and improving upon the ‘state policy bank’ models which already exist. With the headquarters of the GIB in the UK, the new jobs created by this bank would serve as a helpful balance to the positions being lost in the UK’s financial sector and in the current climate the GIB would be able to recruit high quality staff at reasonable pay scales. The development of the GIB could build on the momentum already created through HMT’s decision to set up a new unit¹⁶ to lend to projects at market rates alongside the banks and even initially incorporate some members of the HMT unit in key positions.

Consideration would need to be given over whether the GIB would need to be established by an Act of Parliament. However, it may be that HMT has powers to set such an operation up already – as it has done with its project finance group. This issue should be investigated urgently. From there the process of building the bank would need to start with the appointment of a Board who would work with the Government officials to develop a thesis for the bank’s financing strategy and scope – understanding what is needed in the market (e.g. energy efficiency financing, debt guarantees for low carbon projects, thus reducing the cost of borrowing, or directly participating in sound projects to build confidence) and which low carbon investment programmes would need to be developed and financed.

The wider banking community would need to be appraised of the strategy as it develops because there is the expectation that the GIB would work closely with the existing banks, especially gilt-edged Market Makers with a UK retail presence, by leveraging finance. Human and tangible assets could then be acquired from the market to build the bank, with a focus on programme initiation and funding as soon as possible.

Once established the GIB could provide multiple opportunities for the Government to deliver low carbon investment by:

- Acting as a mechanism to ensure that Government guaranteed funds are effectively earmarked for green infrastructure without a change in HMT policy on ring-fencing central Government funds;
- Holding and disbursing the debt capital raised from the issue of green bonds;
- Allowing Government to direct investment of this capital through strict investment criteria (i.e. specify which assets can be funded through GIB governance systems);

¹⁶ www.publications.parliament.uk/pa/cm200809/cmhansrd/cm090303/wmstext/90303m0001.htm#09030331000058

- Acting as loan guarantor on behalf of the Government through allocation of a Statutory Government Guarantee or GIB Guarantee Scheme;
- Facilitating a transparent communication of government policy and reporting on levels of success; and
- Facilitating, financing and syndicating a delivery of low carbon investment programmes such as a national energy efficiency scheme¹⁷.

The GIB could be set up with a preliminary issuance of green bonds, although this would not be an essential prerequisite. Conventional government funding could be used or future EU Emissions Trading Scheme (ETS) auction receipts.

5. Developing a UK Green Bond

The collapse of the UK banking sector, unprecedented levels of Government involvement in the capital markets, increased risk aversion amongst investors and rising unemployment combined with the climate change imperative means there is an increasingly strong narrative emerging requiring investment in assets for the future, to create sustainable job opportunities, stimulate local economies and deliver a new 'green industrial revolution'. The issue is how this would be funded in current circumstances. We argue here that green bonds can provide a substantial part of the solution, justified and marketed on the grounds that this additional debt-funding spending is part of a strategic and targeted effort to create jobs for the future. Therefore it is not part of a cyclical fiscal programme, but a long term programme with stimulus benefits. If funds raised are to be invested in renewable assets or a securitised energy efficiency programme, the bonds would also have been secured against future revenue streams, assisting with market confidence and not undermining the UK's overall credit position.

There is a significant gap between the amount of capital that needs to be invested in new low carbon infrastructure and the amount that is actually being invested. We believe a series of targeted Government-backed debt instruments with ring-fenced proceeds going directly into green infrastructure projects could address this gap by capturing institutional and retail investor attention¹⁸.

It is possible to argue that this need should be financed through a regular bond issuance. However, this has not happened to date, and there is a long-standing history of sub-optimal funding of the low carbon agenda. We argue that developing a specific green bond could enable the Government to achieve the following:

¹⁷ See companion paper by E3G and Climate Change Capital (2009): Delivering Energy Efficiency to the Residential Sector: The case for an accelerated national energy efficiency scheme.

¹⁸ On timescales it is worth noting here that traditionally, it takes time to develop significant demand for new retail banking offerings, therefore funds would need to be raised in the short term from institutional investors.

- Additional funds could be raised secured on future, policy-driven revenues derived from consumers and the private sector rather than general taxation.
- Confidence could be built among companies and the public in the UK's future policy direction through public announcement of a new low carbon strategy backed by the issuance of green debt.
- The green nature of the proposed gilts could assist with marketing the bond issue, not just to UK investors but to investors worldwide. In addition, they should reduce media, political and city objections to stimulus spending, because this would be strategic spending to encourage future growth¹⁹. This in turn would reduce the likelihood of increased gilts issuance depressing the Pound (Sterling) and raises the potential for the green issuance to have a positive effect across all of the gilt issuance, which should be explored further.

Green bonds have already been trialled by the World Bank and as then, institutional investors should be the immediate primary target. Green gilt issuance would engage the public in climate change issues and provide opportunities for institutional investors to make socially responsible investments that deliver long-term stable returns. But being green will not be the main focus for investors. To be attractive to the widest possible range of interest, these bonds ('or Green gilts') would need to be as conventional in structure as possible. The key difference between these and traditional gilts would be that funds raised would be ring-fenced – either directly or via the issuance of such debt via a state guaranteed GIB - the UK's GIB – to green infrastructure assets. There is high demand among institutional investors for long-dated gilts, which are traditionally scarce in the market²⁰. We believe this will remain the case provided gilts remain in the range appropriate for quantitative easing measures of 5 to 25 years.

6. What would a Green Treasury Gilt look like?

The novel feature of a Green Treasury Gilt will be simply that the funds raised are ring-fenced to green infrastructure investment. This would represent a significant deviation in the traditional HMT approach, but one that we believe is justifiable, given the urgency, priority and scale of climate change and infrastructure investment crisis. However, the specific structure of the bond does need to be considered in detail since the aim of the green bond proposal is to quickly raise public funds to leverage private investment in low carbon infrastructure,

¹⁹ King in bid to curb Budget spending, FT March 24 2009: King argues that spending should be targeted only to select areas of the economy.

²⁰ Discussions with Pension funds.

delivering a green fiscal stimulus in the short term and growth opportunities in the longer term. We make some suggestions below.

Green bonds should be structured such that they attract the largest number of potential investors possible and are made very easy for investors to understand, i.e. it is structured in as conventional a format as possible. Any non-standardised structures will require significant up-front investments in money, time, personnel and technology expertise for investors to fully understand the risk profile of the new product that will lead to delays and sub-optimal prices and levels of investment in the new product.

A green bond is likely therefore to carry the following characteristics:

- Fixed maturity date - reflecting policy design requirements for capital and likely to be long-dated (15+ years);
- Two semi-annual payments on fixed dates 6 months apart with return of the 'principal' (capital) on the maturity date;
- Fixed interest rate – reflecting the current market interest rate – and auctioned through multiple price auctions²¹; and
- Market-making responsibilities through the 16 gilt-edged Market Makers, as for any other gilt, or with GIB bond issues will be underwritten and distributed by all/selected Market Makers²².

Traditionally, the Government publishes its financing plans a year ahead in the Debt and Reserves Management Report as part of the Budget process. However, there may be a need to publish an Extraordinary Additional Report in the interim to inform the market and ensure the green bond issuance is timely and not simply delayed until the next Budget.

There are two options for disbursing funds to projects. The first option, which could be the Government's initial focus, would be for HMT to disburse funds in a non-directed way at investments with low carbon characteristics. It could do this by setting up a framework process by which the existing banks 'bid' for capital for specific low carbon projects which they would like to fund based on a set of criteria. This would enable money to get into the system quickly, and removes some of the moral hazard attached to the Government getting involved directly in these investments. However, the Government would have limited control over which projects were targeted because selection would be market led. The second option

²¹ Multiple price auctions are where bidder takes on the price risk, but price discovery is a reasonably straightforward process because there are similar gilts trading in the market and positions can be hedged using futures, swaps etc.

²² In the scenario that a GIB was created, it could also act as the Bond issuer. This would lessen the pressure on traditional Gilt auctions and provide investors with a new UK Government-guaranteed debt issuer to trade and invest in.

would be to disburse funds through the GIB in a more directed and controlled way. This is the option we would recommend although it would have a time cost attached and therefore would need to be considered as a medium-term option.

7. Determining the maturity at which is it optimal for Governments to borrow

In general, capital borrowed over a long time period is more expensive than capital borrowed over the short term. A debt issuer would normally try and match the overall duration of its debt stock to the assets into which the proceeds were being spent. In the case of green infrastructure assets, these are very long-term assets and hence the debt would normally be long-dated.

Institutional investors traditionally show strong demand for long-dated gilts (15 years or more). Thus, there will be a tension between making bond issuances attractive to the target institutional audience (i.e. long-dated) and making efficient use of capital to deliver on policy aims (i.e. borrowing in shorter maturity to reduce short term running costs). This tension will be played out around the design of policies to deliver capital for low carbon infrastructure investment, with the financing ideally being designed to be as efficient as possible i.e. linked to the timescale over which the investment is repaid.

Using the example of a £70bn energy efficiency programme and £3bn CCS programme, the all-in cost of funding is in the range of 4.5-5.0%²³. Table 1 and 2 in the shows some sample impacts of bond maturity and unit cost of upgrades on the cost of the programme. This financial modelling is explored in more detail in the companion energy efficiency paper.

²³ Using current Gilt market yields, GIB estimate issuance spreads and a mixed 5, 10 year and 30 year bond issuance strategy. The gilt yield curve take from FT on 20th March 2009, with 0.5% assumed programme delivery cost and Gilt+0.2% new issuance spread for GIB and £100mm up-front set-up costs.

Table 1. Impact of bond maturity (5, 10 and 15 years) on programme cost. Unit cost improvement of £7,500 per dwelling assumed.

(50 year levy)	5 Years	10 Years	15 Years
Total Programme Size	£73,000 bn	£73,000 bn	£73,000 bn
Whole Programme IRR	4.50%	4.89%	5.00%
Equivalent Annual Govt Payment	£2,067 bn	£3,591 bn	£3,755 bn
Estimated EE Levy per Dwelling	£221.44	£384.74	£402.31
(30 year levy)			
	5 Years	10 Years	15 Years
Total Programme Size	£73,000 bn	£73,000 bn	£73,000 bn
Whole Programme IRR	4.50%	4.89%	5.00%
Equivalent Annual Govt Payment	£2,507 bn	£4,285 bn	£4,459 bn
Estimated EE Levy per Dwelling	£268.64	£459.06	£477.79

Table 2. Impact of improvement cost (per unit) and repayment timescale on cost to households (10-year bond maturity assumed).

Avg Unit Price (£ per home)	3,000	5,000	7,500	with 50 year Levy
Total Programme Size	£31,000 bn	£50,000 bn	£73,000 bn	
Whole Programme IRR	4.91%	4.90%	4.89%	
Equivalent Annual Govt Payment	£1,535 bn	£2,465 bn	£3,591 bn	
Estimated EE Levy per Dwelling	£154.90	£257.06	£384.74	
with 30 year Levy				
	3,000	5,000	7,500	
Total Programme Size	£31,000 bn	£50,000 bn	£73,000 bn	
Whole Programme IRR	4.91%	4.90%	4.89%	
Equivalent Annual Govt Payment	£1,829 bn	£2,940 bn	£4,285 bn	
Estimated EE Levy per Dwelling	£184.61	£306.59	£459.06	

8. Moving to retail green bonds

'War bonds' were an unusual debt offering in that they are focused on cause-motivated capital from retail investors through appealing to the need to engage in a significant social good. Received wisdom is that such niche-targeted fundraising can create an additional and unique revenue stream to the Government in times of crisis or clear national interest. Instead of a war bond, could the Government consider issuing a retail green bond?

In the UK it is no longer possible for individuals to directly purchase traditional Treasury Bonds, instead Premium Bond offerings (also Government debt) are made available through



the Post Office. Premium Bonds, however do not offer a fixed income return as gilts do. Instead, holders are entered into a lottery where windfall payments are allocated randomly. We argue government-originated green retail fixed-income products should be offered to retail buyers. They would offer individuals the opportunity to preserve capital while receiving an attractive yield on that capital (perhaps 4% compared to the top-rated 2.75% AER available from ING Direct for an instant access savings currently²⁴). It would also provide individuals with an opportunity to be directly involved in addressing climate change and becoming a part of the story of how the UK economy will reinvent itself in the post-financial crisis era. This is a significant opportunity to capture imaginations and investable income, and channel them into achieving transformational public policy outcomes. It is worth noting that, traditionally, demand for new retail financial offerings takes time to develop. Demand creation could be accelerated through aggressive marketing of the new bonds, such as with US War Bonds²⁵, perhaps in amore modern setting along the lines of the successful 'Tell Sid' campaign used in the 1980s to promote the sales of shares in the UK's former public industries.

The green bonds could be modelled on the successful structure of a smaller but innovative HSBC offering (briefly described below) – which would see investors back bond issuances from Market Makers that are guaranteed by the Government from future funds.

9. Retail bonds guaranteed by promised future Government funding

In March 2009, HSBC issued a 'charismatic' fixed income offering to the retail market. It is offering investors a chance to raise money for vaccines via International Finance Facility for Immunisation (IFFIm) bonds, guaranteed by national Governments, which have pledged US\$5.3bn over 20 years to the IFFIm. HSBC is committing to a 16% total return, around 3% per annum on a 5-year tax free ISA. The money raised with these bonds will then go to providing free vaccines to millions of children in 72 low-income countries. The idea has already been trialled successfully in Japan in February 2009; the issue raised \$430m retail investors, who are essentially buying into the opportunity for relatively low risk investment returns as well as social good²⁶.

A similar approach could be adopted by the Government to channel public funds into investment in low carbon assets. The Government could appoint the traditional Market Makers – or possibly the Post Office via National Savings and Investments (NS&I) – to raise

²⁴ Data taken from Which online analysis of the Top 10 Savings Accounts in the UK at http://www.which-savings-account-4u.co.uk/?_s_ref=7sY8Z8IAS&kw=savings%20account%20uk&creative=2994320085&gclid=COqFj5D8gZsCFaYA4wodJlpVsg

²⁵ For the US Series E Bonds, marketing was ubiquitous: news of the offerings reached the public in two forms - advertisements created and endorsed by government agencies, and those created by private companies and organizations. <http://library.duke.edu/digitalcollections/adaccess/warbonds.html>

²⁶ Note that assuming a similar offering of \$430m for UK IFFIm issue, the represents a significantly <0.0001% of HSBC's overall debt stock.

debt, perhaps as 5-year 'notes' (short term gilts), from retail customers in its own name or that of the GIB. This could either be a generic issue for low carbon technology or specific to fund a particular technology programme. Banks or entities with projects can then apply for funds to invest in low carbon projects or programmes known to them – either to Govt directly, or to the GIB. The debt could be securitised against the probability of a refinancing when credit market conditions improve and revenue streams accruing from policy mechanisms designed by the Government to support specific low carbon policy measures like an energy efficiency household levy or CCS energy charge.

This latter idea is further developed in the companion paper addressing energy efficiency²⁷. In essence this approach would enable the Government to defer and spread spending, assisting with the management of debt expansion.

10. Conclusions

As the world faces the worst economic downturn in decades, the UK Government must continue to take a bold and strategic approach to recovery. But it will not be enough to simply prop up existing industries and hope that the financial markets eventually return to some normality. Instead the Government should focus on how to maximise the opportunities implicit in the necessary conversion of global economies from high to low carbon. The Government will need to invest money and political capital now to create the jobs and assets of the future, as well as position the UK effectively to benefit from this global market transformation.

As a nation, we need to ask ourselves whether the current focus of spending is a good use of public money and whether the fiscal stimulus – when it comes – is strategic enough given the potential of the green agenda that lies ahead. If the answer is 'no', we are at risk of losing out as the new low carbon industrial revolution unfolds. If the answer is 'yes', the Government will be creating today the cornerstones for investment in the industries and jobs of tomorrow.

²⁷ E3G and Climate Change Capital, 2009, Delivering Energy Efficiency to the Residential Sector: The case for an accelerated national energy efficiency scheme.