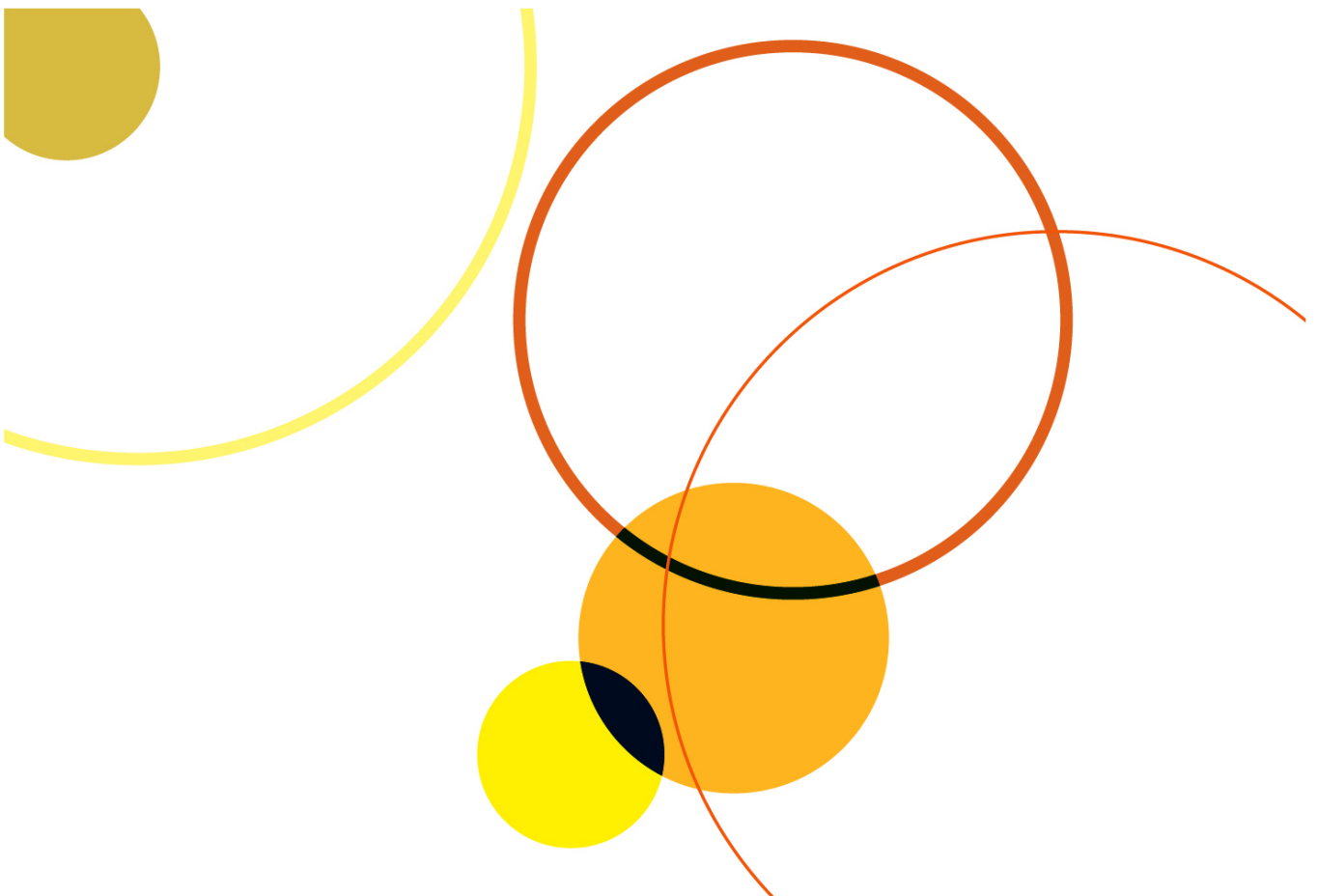


Delivery options for the International Climate Fund

Report prepared for ICF spending departments

Final Report
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Executive Summary

The International Climate Fund (ICF) of the UK government is considering new delivery options for the disbursement of its resources in order to achieve a range of benefits that it does not feel are fully met through its current approaches. The benefits it hopes to achieve from considering new delivery options, as set out in the Terms of Reference are to:

- support the scale up of private finance flows,
- achieve stronger climate and development benefits,
- increase the visibility of UK climate finance; and
- make the best use of UK climate finance expertise.

The report identifies how the ICF might use the UK Green Investment Bank, the Private Infrastructure Development Group (PIDG) and CDC¹ as potential delivery vehicles for some of its resources. Subject to sufficient resources being available, each of these options could be pursued in parallel: they each have the potential to tackle different gaps in the current climate finance architecture and both individually and collectively they could offer significant advantages to the ICF. Each, however, carries important risks and uncertainties.

The proposed options have the potential to deliver these benefits (to differing extents) while also taking account of the key gaps in the climate finance architecture and the institutional capacities of the respective organisations. The remainder of the executive summary identifies important findings with respect to gaps in the climate finance architecture and institutional capacities. This analysis informs the proposed design and focus for each of the three delivery options subsequently presented. These delivery options are assessed against a number of criteria:

- the extent to which they could help fill a gap in the existing climate finance architecture;
- the extent to which they meet the criteria specified in the Terms of Reference;
- and whether or not they provide opportunities that cannot be met through the Climate Investment Funds (the UK's current main means of delivering climate finance).

A review of the key risks, barriers and uncertainties is also provided. This assessment is only preliminary. All of the options would need to undergo a further ICF approvals process to assess, among other aspects, affordability and opportunity costs. Therefore, **the value for money of the different delivery options considered is unknown and not considered in this report; rather the report seeks to improve the understanding of the options.**

¹ The options are presented in this order throughout the report as this reflects the findings of the research as to the amount of resources that it may be appropriate to channel through these vehicles (with GIB being the largest).



Gaps in the current climate finance landscape

Delivery vehicles that are well-designed to tackle gaps in the current climate finance landscape are particularly attractive. They can ensure that the delivery vehicle is genuinely additional, rather than crowding out other forms of support. A clear focus on tackling acknowledged gaps will also lead to fewer concerns among recipient countries about development partner fragmentation.

There are a number of particularly prominent investment gaps in the current climate finance landscape. Absolute flows of climate finance in developing countries are significantly lower than those that will be required in future. However, even within this context, some particularly large gaps stand out. For mitigation, investments in energy efficiency, transportation and carbon capture and storage (CCS) are notably lower than most analyses suggest is needed for climate stabilisation goals. Forestry and agricultural investment is also problematic. Although renewables investment is more robust, significantly further investment will be required, at all stages of technology development and deployment will be required, especially if other technologies such as CCS are slower to mature than originally anticipated. Meanwhile, current flows and investments in relation to all forms of adaptation are lower than will be required in future.

In terms of investment types, this analysis focuses on the delivery vehicles that might support renewable power and energy efficiency investment. This reflects the ICF Low-carbon Development Investment Strategy which focuses, in particular, on energy supply (for example, on-grid and off-grid low-carbon generation) and energy demand (for example, energy efficiency) interventions. Energy efficiency investment appears to be a clear gap in current climate finance landscape and while progress on renewables may be stronger, substantially further investment will be required in future. A complementary report prepared by Vivid Economics considers the role for international climate finance for adaptation in more detail.

A further key gap relates to the limited role of the private sector in climate investment in developing countries compared to developed countries. At present, the available data suggests that the private sector may only account for around 57 per cent of climate investment in developing countries, compared with around 88 per cent in developed countries. Although further detailed geographic breakdown of which specific countries in the developing world this private sector investment is flowing in or to is not available, it is plausible that there are particularly acute shortages of private capital for climate investments in many low-income countries.

There are also well-documented gaps with respect to the types of public support provided to support climate investment in developing countries. Three prominent gaps are:

- shortages of support for early-stage investment opportunities that are a long way from financial close, especially renewable energy projects
- shortages of support for small and medium sized projects (which may be broadly characterised as being in the USD 1m-USD 20m range)
- an insufficient diversity of financial instruments.



Institutional capacities

To draw recommendations about the appropriateness of different delivery vehicles, our research identifies the institutional capacities that a delivery vehicle should possess. Some of these capacities are generic; capacities that all vehicles delivering climate finance in developing countries might ideally possess. Others are more specific and will depend on the investment focus of the vehicle.

Four generic characteristics are particularly important. A climate finance delivery vehicle delivering high quality ODA in developing countries should ideally:

- *provide value for money* – as can be achieved by recruiting highly qualified staff, having a strong results culture, by maintaining low administrative overheads and by leveraging further public and private sector resources;
- *foster national ownership* – for instance by ensuring that investments are consistent with national priorities, making use of in-country systems and processes where possible, and by providing complementary technical assistance where necessary;
- have a strong focus on *delivering climate benefits* – which requires that the vehicle be able to measure and transparently allocate resources based on the climate return on investment, focus on transformational change and have the skills to engage in both policy dialogue while also understanding the specific aspects of low-carbon technologies;
- *possess processes and the capacity for learning* – this relies on the implementation of strong monitoring and evaluation regimes and the ability to widely disseminate key lessons.

Beyond this, other skills and capacities may be required depending on the focus of the vehicle. For instance, different capacities will be needed depending on the institutional and regulatory context (that is, strength of the enabling environment); to support early-stage development compared to investing at financial close; to invest in renewables compared to energy efficiency; to invest in large versus small and medium-sized projects; and depending on the type of financial instrument that is being offered. The same delivery vehicle can possess the capacities to have multiple foci.

Option #1: Undertake a pilot scheme for the UK Green Investment Bank to deploy ICF resources with a view to increasing private sector investment in developing countries

The UK Green Investment Bank was set up as a public limited company in 2012, wholly owned by the UK Department for Business, Innovation and Skills. Its mission is *‘to accelerate the UK’s transition to a green economy and to create an enduring institution, operating independently of Government’*.

The report finds that the UK Green Investment Bank (GIB) could play an important role in delivering some of the ICF’s resources. A long-term vision for the GIB would see it directly investing ICF resources (strictly ring-fenced from its resources for UK investment) in high-quality ODA that would catalyse further



private sector investment into energy efficiency and renewables projects in developing countries. Its commercial acumen, ‘fleetness of foot’, and ability to deploy a diversity of financial instruments could help to address the limited flows of private sector capital into low-carbon projects in developing countries; a key criteria that the ICF has identified as being important in any new delivery vehicle option. The climate expertise of its existing personnel, and its institutional mandate, give confidence that it would be able to generate significant climate benefits, although this would need to be ascertained on a transaction-by-transaction basis. As an exclusively UK Government owned organisation it could enhance the visibility of the UK’s climate finance flows and make use of the climate finance expertise located in the UK.

The institutional capacities of the GIB suggest a particular focal area and design. Its skills and expertise would be best focussed towards bringing well-developed medium or large-sized transactions to financial close in countries with a strong enabling environment. Its expertise in energy efficiency financing could help to address this gap, in particular.

This geographic and sectoral focus could mean that the developmental and poverty reduction benefits of this option may be lower than for other options considered in this report or available to the ICF, but will need to be considered on a case-by-case basis. The strong enabling environments in which the GIB is more likely to be effective, are also likely to be Middle-Income Countries in which it may be more difficult to demonstrate clear developmental benefits. Similarly, a focus on medium to larger investments is likely to imply a focus on grid-connected renewables that, while generating significant emission reductions, will not typically contribute to changes in levels of energy access. On the other hand, there could be significant developmental benefits, even in middle-income countries, from energy efficiency investments that improve productivity and boost growth and employment prospects or from renewable energy investments that improve grid reliability. As with the climate benefits, the realisation of developmental benefits could only be addressed when appraising individual transaction opportunities.

There are significant risks associated with this approach, as well as a range of further barriers that mean that the GIB could not deliver this immediately. Institutionally, the UK GIB does not have a track record in delivering ODA. As such, it has few relationships with in-country institutions necessary to help deliver this vision and it is not yet clear whether the GIB could develop these contacts, although key personnel within the GIB do have some relevant contacts and experience. If these contacts cannot be developed then there is a risk that this option would draw largely upon the pipeline of the Multilateral Development Banks (MDBs) and hence closely resemble elements of the existing approach of the Clean Technology Fund of the Climate Investment Funds, to which the UK already provides significant resources. Furthermore, the GIB’s current Articles of Association, which could only be changed with Parliamentary approval, require it to focus on activities which make a contribution to the UK, while, more generally, there is a concern, expressed by GIB stakeholders, that a focus on developing international activities may distract it from its core UK mandate and dilute the identity of GIB as a commercially-minded ‘for profit’ investor.

This report recommends that if the GIB is pursued as a possible option for deploying ICF funds then a pilot study to understand whether the potential benefits can be realised and the risks mitigated would be needed. The key aspects of a pilot would be the following.



- The GIB would help develop international financing opportunities. These investment opportunities would be appraised using the GIB’s existing commercial due diligence infrastructure with some additions, but in close collaboration with ICF officials, and with the final approval for any investments resting with the relevant ICF spending departments.
- There would be an expectation that, although these opportunities may include co-investment alongside Multilateral Development Banks (MDBs) at the beginning of the pilot, by the end, the GIB would be identifying significant opportunities outside of the MDB pipeline. This would help ensure the additionality of the intervention within the climate finance architecture and is reflective of the comparative advantage of the GIB in working with private sector investors.
- There would be an assessment of the success of the pilot in meeting its objectives – especially around catalysing private sector investment from deal-flow opportunities outside the MDBs – that would be used to determine the appropriate next steps.

Up to £200m of ICF resources could be invested through these mechanisms and a pilot could last for 2 to 3 years. This would allow the GIB to provide advice in relation to between four and twenty investments in the range of £10m to £50m, although a smaller number of investments towards the upper end of the investment value range is more likely. In view of HMG’s current capacity to develop, implement and oversee projects, between four and ten investments is a more likely range. Targeting significantly fewer resources than this (for example, £100m), given the likely size of the average deal, could make it difficult for the pilot to provide meaningful information to assess the appropriate next steps.

There may be options to use the pilot to explore whether a more refined mandate for the GIB would be effective. ICF may wish to explore in further discussions with the GIB whether the pilot could be used to assess the feasibility of the GIB targeting medium-sized deals (perhaps in the £10m to £20m bracket) and/or to dedicate a certain (significant) percentage of its international activity to developing energy efficiency opportunities.

Provisional discussions indicate that such a pilot would require the GIB to recruit eight new team members at an approximate additional administrative cost of £0.8 to £1.6m per year. These are almost exclusively the salary costs associated with the team that might be established to run the pilot.

Further legal advice is required to assess whether a pilot of this nature could be undertaken without a prior change to the GIB’s Articles of Association.

Option #2: Provide resources to Infraco Africa (part of the PIDG) to support low-carbon project development activities

The Private Infrastructure Development Group is a multi-donor organisation funded by and under the governance of nine development agencies. Its mission is to mobilise private sector investment to assist developing countries in providing infrastructure vital to boosting their economic growth, and combating poverty. There are a number of companies operating under the PIDG umbrella including Infraco Africa; a



company that manages project developers providing early-stage project development capital and expertise in Africa.

To help address the gap in low-carbon early stage project development, the ICF could provide resources to Infraco Africa, to fund a dedicated developer team focussing on low-carbon project development in Africa. This proposal marries a well-established gap in the climate finance architecture (early stage project development) with an organisation (PIDG) that has capacities in this area and that is widely considered to be an effective delivery vehicle with a good track record of delivering high-quality ODA. In particular, the DFID Multilateral Aid Review and its Australian equivalent both find that the PIDG is a cost-effective organisation with a good capacity for learning and M&E. This proven track record means that a pilot scheme to test the appropriateness of Infraco Africa as a delivery vehicle would not appear to be necessary.

There are several advantages in using the existing Infraco Africa vehicle rather than developing a new vehicle under the PIDG umbrella. In addition to the fact that Infraco Africa is already specialised in the activities where there is a gap (early stage project development), it would be considerably easier and quicker to make use of an existing vehicle than develop a new vehicle from scratch. This is further reinforced by the fact that Infraco Africa already has plans in 2014 to increase the number of developer teams through which it works; this proposal could use ICF resources to ensure that one of these developer teams focuses exclusively on low-carbon opportunities. By contrast, at the time of writing, the other early-stage project development company under the PIDG umbrella, Infraco Asia, appears to be more focussed on bringing its current pipeline of projects to financial close.

This option would score against most of the ICF's criteria for any new delivery option. The PIDG generally, and Infraco Africa specifically, appears to deliver well against its mandate on delivering private sector investment: the PIDG Annual Report implies that Infraco Africa has achieved a private sector leverage rate of almost 1:14. Its focus on Sub-Saharan Africa indicates a strong potential to deliver development benefits, as corroborated by DFID's Multilateral Aid Review of PIDG as a whole which identifies its 'critical role in supporting growth' and its well-targeted assistance to poorer states. While the PIDG is a multilateral vehicle and hence may not deliver as much visibility to the UK's climate finance flows as other options, stakeholders confirm that the UK is considered an influential donor within the PIDG. Infraco Africa is currently headquartered in the UK and has close links to the climate finance expertise within the City of London. There is also no immediate parallel to this option within the current Climate Investment Fund framework.

There are some risks with this option. In particular, project development is an intrinsically high risk activity. This, of course, explains why the gap is present in the first place and increases the likelihood that the deployment of public funds will be additional. However, it does mean that the returns on ICF investment – both financial and climate/development related – are uncertain and only likely to be realised over the medium-term. For instance, to date, Infraco Africa has brought eight projects to partial equity or financial close over the period since 2004.



In addition, by using Infraco Africa to deploy ICF resources, this proposal may mean that other development priorities could no longer be pursued through the same vehicle. The success of the PIDG has led to recent rapid growth in the organisation, with further planned growth in the near future. This has led some stakeholders to express concern about whether it would be prudent to programme further expansion of PIDG or Infraco Africa's activities. The corollary is that if ICF resources were to be used to support a low-carbon project development team through Infraco Africa then other ODA that might otherwise have been programmed through Infraco Africa would now be less likely to be able to go ahead. The activities that could be displaced include infrastructure investments in the water or agri-industry sectors, or more conventional transport and power generation investment.

The support of one investment team through Infraco Africa might require £10m-£30m of resources that would be spent over a three year period. While the administrative costs of Infraco Africa were high when the organisation was established, these have declined as a proportion of committed resources to around 2 per cent a year. While, in principle, it would be possible for ICF resources to support more than one developer team, the concerns about crowding out other development spending may make this unattractive.

Option #3: Use CDC's relationships with its portfolio companies to offer energy audits and finance for energy efficiency opportunities

CDC is a Development Finance Institution (DFI) wholly owned by the Department for International Development. It seeks to achieve developmental goals through investment in the private sector within developing countries.

At present, CDC does not appear to be a strong candidate as a delivery vehicle for significant amounts of ICF resources. The organisation has a number of strong institutional capacities especially relating to cost effectiveness. However, pursuing low-carbon investment through funds – the conventional CDC approach – seems unlikely to generate sufficient deal-flow, but direct low-carbon investment currently only accounts for a modest, if growing, amount of CDC's current and expected future strategy. Channelling a large quantity of ICF finance through CDC would require additional restructuring in CDC, for which interviewed stakeholders have expressed little appetite given that the organisation has only recently completed an earlier restructuring.

However, there may be an opportunity for CDC to use its existing client relationships to promote energy efficiency investment. An arrangement could be reached between CDC and the ICF such that, upon CDC making direct investments in relevant sectors, it would introduce these companies to ICF (or an ICF delivery vehicle partner, including potentially the GIB). Building on the successful model implemented by the EBRD, the ICF (or its delivery partner) could then arrange for an energy audit to be undertaken at no charge to the portfolio company. If energy saving opportunities are identified, additional ICF finance could be offered – directly from the ICF or via a delivery partner - at concessional rates to encourage take-up. It would be expected that, in most cases, the ICF would only provide part of the capital needed for the investment; the remainder could be financed from the internal resources of the company and/or lending from



commercial financial institutions. Over time, CDC's role might evolve to become the delivery vehicle for ICF resources under this model.

This approach could help redress the current gap in energy efficiency investments observed both globally and within the ICF portfolio. The global gap in energy efficiency reported above is also observed in the ICF portfolio where explicit support for energy efficiency projects accounts for only 6 per cent of DECC's ICF spending through bilateral channels. The relatively modest nature of the activities proposed also means that a pilot scheme would not be necessary.

It could also score well against the ICF's criteria for a new delivery vehicle. Under this model, any ICF resources would be explicitly aimed at leveraging capital from enterprises in developing countries towards energy efficiency. This could deliver significant climate benefits; while CDC's strategic focus in Africa and South Asia, and more challenging business environments and labour intensive sectors within these regions, implies that the development gains from any resulting investments could be high. Furthermore, a focus on energy efficiency, by reducing costs, could help boost business performance and contribute to higher levels of economic activity (although this would reduce the emission reduction impacts associated with this option). This model helps to enhance the visibility of the UK's climate finance flows and draw on the climate finance expertise within the country.

The approach has two key risks. First, only some of CDC's investments are likely to be in sectors that would benefit most from energy efficiency. Second, this model would require significant input from within ICF spending departments to manage the process from the point of initial contact being provided from CDC, through the contracting and provision of any energy audits and then subsequent financing of the opportunities identified. The project sizes are likely to be considerably lower than typical for the ICF. From the perspective of ICF spending departments, this risk would be mitigated if these activities were outsourced to a delivery vehicle such as the UK GIB.

The provision of energy audits may incur direct costs of £100,000 to £150,000 in the first instance but, if successful, could form the basis for up to £7.5m to £10.5m in financing demand, of which perhaps 50 per cent could be provided by the ICF. The cost of energy audits depends upon the nature of the company being audited, but they generally lie in the region of £5,000 to £20,000. If CDC only made introductions to the companies in which it made direct investments, and it made seven to eight direct investments a year, and all of these took up the offer of energy audits, then the direct costs are likely to be £100,000 to £150,000 per year, plus CDC and ICF management time. Examples from the EBRD suggest that approximately £70 worth of lending was disbursed for every £1 spent on audits although this is likely to form an upper bound on the leverage that might be achieved. The EBRD examples suggest that perhaps 50 per cent of this financing demand might be met from public sources, with the remainder coming directly as balance sheet financing from the organisations subject to the energy audit.

Table 1 below summarises the key options against a range of issues considered within the report.



Table 1. Each of the options considered identifies different gaps but scores well against the criteria in the Terms of Reference

Vehicle	Suggested focus	Gap			Criteria in ToR				Comparison to CIFs	Risks and challenges	
		Energy efficiency	Early stage project development	Support for small and medium project	Diversity of financial instruments	Scale up private finance	Climate & development benefits	UK visibility			Use of UK expertise
GIB	identifying investment opportunities that might leverage private investment at financial close for both energy efficiency and renewables, primarily in MICs	✓ - possibly through fund managers	x	(✓) – more likely in the £10-20m; possibly through fund managers	✓ - able to provide range of financial products	✓ - mission of GIB, good track record	✓ - 'double bottom line'; project-specific development benefits	✓ - UK govt. sole shareholder	✓ -based in UK;	potentially similar country focus, similar investment focus to CTF if origination from MDB pipelines	inability to source deals outside MDBs, diverts focus from UK mission, no experience in foreign investment, crowding out private advisory services
PIDG (Infracore Africa)	early-stage project development support in challenging enabling environments in Africa	x	✓ - specific focus of vehicle	(✓)- as early stage development requires less capital	x	✓ - explicit focus, good track record	✓ - RES investment mandate, project specific development benefits	(✓) - multilateral status, but with UK influence	✓ - largely based in UK	different approach to CIFs with early-stage project development	generating deal flow, development speed, UK visibility, crowding out other donor funding
CDC	CDC providing introductions to its portfolio companies to allow energy audits and ICF financing of energy efficiency opportunities	✓ - strong network of businesses	x	(✓) - given size of enterprises in which CDC invests	x	✓ - direct engagement	✓ - EE plus focus in Africa and South Asia	✓ - UK government owned	✓ - based in UK	overlap with CTF's EE investment, but limited country overlap	not ideal sectoral focus of CDC companies, high transaction costs

Note: a tick in brackets indicates limited or indirect success against the criteria

Source: Vivid Economics

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1 Introduction

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This section explains the objectives of the report, the methodology it uses and the structure of the rest of the analysis.



1.1 Terms of reference and objectives of the report

Evidence on different delivery options for the ICF

The UK'S climate finance commitments are managed by the International Climate Fund (ICF). The Fund will provide £3.87 billion² of resources between April 2011 and March 2016 to support developing countries in efforts to grow in a low-carbon, climate resilient fashion. The ICF is managed by three departments: the Department for Energy and Climate Change (which contributes £1.33 billion), the Department for International Development (£2.4 billion) and the Department for Environment and Rural Affairs (£140m, exclusively for forestry), hereafter collectively referred to as the 'ICF spending departments'. The ICF aims for a balanced allocation between adaptation (50 per cent), low-carbon development (30 per cent) and forestry (20 per cent).

At present, the ICF uses a number of disbursement channels for its resources. This includes multilateral channels, such as the Climate Investment Funds (CIFs), as well as World Bank programmes like the Partnership for Market Readiness or the International Fund for Agricultural Development's Adaptation for Smallholder Agricultural Programme; bespoke programmes developed and implemented by delivery vehicles dedicated to that programme, such as Green Africa Power; and bilateral in-country work such as forestry work with the Government of Colombia. An overview of the ICF portfolio conducted in March 2013 indicates that on current plans, 58 per cent of resources would be programmed bilaterally and 39 per cent multilaterally³.

As part of a broader strategic review, the ICF is considering expanding its range of delivery options, including the possibility of using a UK international climate finance delivery vehicle. The ICF expects to continue to use all of the disbursement channels described above. However, it has also expressed interest in considering whether an alternative mix of delivery vehicles and disbursement channels may be appropriate in future. One of these options may include a dedicated delivery vehicle. This study aims to facilitate discussion within the ICF about alternative delivery options and their strengths and weaknesses.

The Terms of Reference for this study identify four key objectives that any new or alternative delivery options would help meet. These are to:

- support the scale up of private finance flows,
- achieve strong climate and development benefits,
- increase the visibility of UK climate finance; and
- make the best use of UK climate finance expertise.

² This includes the £969m agreed for spend in 2015/16.

³ No record provided for three per cent of resources.



These reflect some of the challenges that the UK government currently perceives exist with relation to the current climate finance architecture. Collectively, they form part of a consistent set of criteria on which the different delivery options explored in this report are assessed.



1.2 Methodology

A consistent assessment of three delivery options

The report considers three delivery options for UK international climate finance resources: the UK Green Investment Bank (GIB); the Private Infrastructure Development Group (PIDG) and, within this, Infracore Africa in particular; and CDC. These delivery vehicle options were chosen as options that were most likely to score well against the criteria outlined in section 1.1. It should be stressed that, subject to sufficient resources being available, these options are not mutually exclusive and could be taken up in parallel. The choice of three delivery options is consistent with the requirements in the Terms of Reference.

We identify the possible comparative advantages and/or possible areas of focus for each of these delivery options. As discussed in more detail in section 3, there are certain features (or ‘institutional capacities’) that any climate finance delivery vehicle might ideally possess. We review the current and potential future performance of the delivery vehicle options against these institutional capacities. However, there are also certain institutional capacities that are particularly important for delivering different types of climate finance. For instance, the institutional capacities required to promote early-stage project development may be very different from those required to undertake large scale project finance deals. Likewise, skills required for financing renewables are somewhat different from those that may be required for supporting energy efficiency. Therefore, as well as looking at the overall strengths and weaknesses of the delivery vehicle options, we also identify a particular focal area and associated design that the different organisations may be best suited to focus on. This largely involves an assessment of the current and possible future institutional capacities of the different delivery vehicle options. However, it also takes into account various other factors, including the existing objectives and strategy of each organisation. We also identify the possible costs for each delivery vehicle, with the associated focal area and design characteristics.

For each delivery vehicle option and their respective focal areas, we then undertake a consistent assessment of the option across a number of different dimensions. These dimensions are as follows:

- First, the report considers the extent to which the option could fill an important gap in the current international climate finance architecture. This assessment is important as the UK’s international climate finance resources are more likely to be ‘additional’ – that is to deliver climate and development goals that would otherwise not be achieved – if they are targeted in areas where there is known to be a deficiency;
- Second, it addresses whether the option scores well against the four criteria established in the Terms of Reference;
- Third, the option is compared to the Climate Investment Funds⁴, as these represent one key alternative, or counterfactual, for the UK when considering how to programme its international climate finance resources; and
- Fourth, some of the possible risks and uncertainties associated with the delivery option are discussed.

It is recognised that in carrying out this assessment for some of the delivery vehicle options there can be a degree of overlap across these different dimensions of the assessment – for instance, if an option fills a gap

⁴ As discussed later in the report, due to the focus on energy efficiency and renewables, the comparison is targeted specifically on the Clean Technology Fund and the Scaling Up Renewable Energy Program (SREP).



in the current climate finance architecture then it is likely to be different from the Climate Investment Funds (as these are a key part of the current climate finance architecture). Nonetheless, the adoption of a systematic approach aids a transparent assessment.

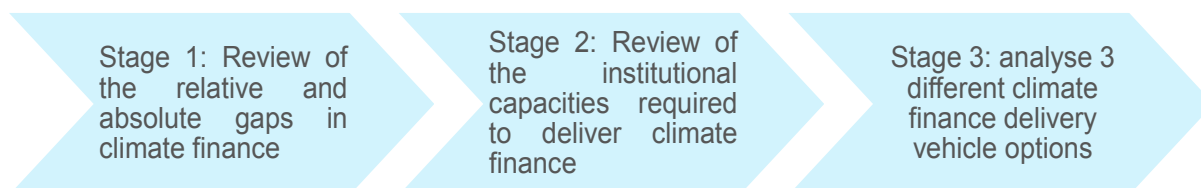
Further analysis of all of the options will be required. The intention of this report is to provide ICF spending departments with an initial assessment of a range of options for their consideration. Further work, in particular on value-for-money, will be required before they can be implemented.



1.3 Structure of the report

The study consists of three stages of analysis. These are set out in Figure 1 below.

Figure 1. The work is divided into three stages



Source: Vivid Economics

The first stage (section 2) provides a stocktake of current flows of climate finance in developing countries. This identifies where the greatest absolute and relative gaps in flows are, given an assessment of the likely investment needs for developing countries to adopt low-carbon, climate resilient growth. This analysis is crucial because, as discussed above, the desirability of a particular UK delivery vehicle option will depend on whether it is likely to be able to fill an existing gap in the climate finance architecture. In addition, awareness of the key gaps can help identify the appropriate design and focal area for any UK delivery vehicle.

The second stage (section 3) addresses the institutional requirements that climate finance delivery vehicles might ideally possess. It considers both the overall generic characteristics that these vehicles may need as well as how these characteristics may vary depending on the types of investment and financial flows that the vehicle supports. This analysis provides a framework that facilitates comparisons of the different delivery vehicle options and identification of their potential focal areas.

The third stage (sections 4-8) applies the framework developed in the second stage to develop a series of options for delivery vehicles for the ICF. Section 4 provides an introduction to the assessment analysis while section 5 analyses the Climate Investment Funds (as an important alternative option for the programming of the UK's international climate finance resources). Sections 6-8 then analyse each of the three delivery options (GIB, PIDG/Infracore Africa and CDC), on each occasion using the fourfold assessment framework discussed above.

2 Climate finance gap analysis

An assessment of where the needs for further climate finance support may be greatest

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2.2	A comparison of the patterns of current climate finance and future needs.....	25
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This section provides an assessment of the current flows of climate finance and how these may differ from those that may be required to deliver on key climate related goals. It demonstrates both that the absolute levels of climate finance flows are lower than will be needed in the future and that current patterns of allocation are likely to be different from those that will be required in future. It also looks at the key gaps in the current provision of public support.



2.1 Introduction

This section aims to map the current gaps in climate finance flows to and within developing countries, which may inform the UK's choice of a new delivery vehicle. A UK delivery vehicle is more likely to generate additional climate and development benefits if it is able to address existing gaps in the current climate finance architecture. Therefore, this section sets out an overview of the current pattern of climate finance flows and how these compare with what might be required in future, to identify the greatest gaps. It focuses both on how the absolute flows of climate finance may differ from those that may be required in the future as well as how the current composition of climate finance flows may differ from future needs.

Data limitations mean that the analysis should be treated as only indicating broad trends. Many commentators note that climate finance data has gaps and other weaknesses (Buchner, Falconer, Hervé-Mignucci, & Trabacchi, 2012). The models from which future investment needs are derived have varying underlying assumptions. There are also issues in aggregating and comparing data from different sources which may use different categorisations of sectors or regions. This results in a significant degree of uncertainty in the numbers presented in this section, warranting careful interpretation of the results. It should also be stressed that this analysis looks, in so far as possible, at aggregate/gross investment and financial flows, and compares these with aggregate or gross investment needs; it does not consider the extent to which these climate finance flows may be new or additional or meet other criteria regarding climate finance flows that have been discussed in the international negotiations⁵.

The section has three further parts. Section 2.2 looks at patterns of investment and financial flows comparing estimates of current flows with various analyses of future needs. This identifies where the largest gaps in investment and financial flows may be. Section 2.3 provides a more qualitative discussion as to the types of public support that are currently used to try and support (private) climate investment and what some of the biggest gaps in terms of this support might be. Section 2.4 summarises the implications of this analysis and explains the focus adopted in the remainder of the report.

⁵ Similarly, it does not attempt to identify the geographic source of the climate finance flow. In other words, both North-South and South-South flows are included.



2.2 A comparison of the patterns of current climate finance and future needs

Current climate finance flows are far below those that will be needed

2.2.1 Total investment required and sectoral breakdown

The average annual incremental climate finance needs in developing countries⁶ for mitigation may be between USD 180 and 540 billion a year between 2010 and 2030. Table 2 presents an overview of several studies that model future incremental investment needs in developing countries – that is, investment needed in developing countries to support climate stabilisation goals of limiting average global temperature increase to two degrees Celsius – across various sectors. The indicated range of USD 180 to 540 billion a year reflects investment needs across both energy supply and other sectors. The table also includes some studies of investment needs in the energy sector only, ranging between USD 110 and 160 billion.

⁶ The value of the additional capital investment needed in developing countries to move towards climate stabilisation goals compared to if no efforts were made to reduce emissions.



Table 2. The range of incremental future investment needs is USD 180 to 540 billion per annum

Study	Sectors covered	Regions covered	Incremental annual investment (USD billion)	Time period
<i>Studies of energy supply and demand, and other sectors</i>				
International Energy Agency (2011)	Energy supply: RE, nuclear, CCS, biofuels, extraction. Demand: buildings, transport, industry	Non-OECD	533	average 2010-2029
McKinsey and Company (2009)	Energy supply: RE, nuclear, CCS. Demand: buildings, transport, industry. Other: forestry	Non-OECD	415	average 2010-2029
UNFCCC (2008)	Energy supply: total plants. Demand: buildings, transport, industry. Other: forestry	Developing countries	177	in 2030
OECD/IEA (2012)	Energy supply: total power. Demand: buildings, transport, industry	Non-OECD	538	average 2010-2050
IIASA (2012)	Energy supply: RE, nuclear, CCS. Demand: total energy demand	Developing countries	264	in 2030
<i>Studies of energy supply only</i>				
CFM (Carraro, Favero, & Massetti, 2012)	Energy supply: RE, nuclear, CCS	Non-OECD	109	average 2010-2029
AME (Calvin et al., 2012)	Energy supply: RE, nuclear, CCS	Non-OECD	167	average 2010-2029
LIMITS (McCollum et al., 2013)	Energy supply: RE, nuclear, CCS	Non-OECD	168	average 2010-2029

Note: Average annual investment needs 2010-2029 to reach 450ppm or similar target by 2100. R&D expenditure needs are excluded.

Source: Cited in table, Vivid Economics

A midpoint estimate for future investment needs is around USD 360 billion per annum; this appears to be dominated by investment in renewables and energy efficiency investment. The midpoint of the future investment needs of the studies reported in Table 2 that cover a wide range of sectors is approximately USD 360 billion per annum. Table 3 presents a breakdown of investment needs per sector for the studies that have sufficient details. This suggests that transport and buildings require the most investment on the demand side. Incremental investment needs on the supply side are primarily in renewable energy and CCS.



Table 3. Investment needs are concentrated in renewables and CCS on the supply side; transport and buildings on the demand side

Study	Renewables	Nuclear	Other energy	CCS	Bio-fuels	Buildings	Transport	Industry	Forestry	Total
IEA/GEE	118	18.7	0	17.8	7	133	192	46		532.5
CFM	2.1	23		84						109.1
AME	90	21		56						167
LIMITS	65	58	9.7	35						167.7
McKinsey	87	23		4.4		88	90	94	29	415.4
UNFCCC		46.5*				16	39	22	23	177.4
Range per sector	2.1-118	21-58	0-9.7	4.4-84	7	16-133	39-192	22-94	23-29	109.1-532.5

Note: Only those studies that provide a detailed breakdown across sectors are reported. Sector definitions, time periods and model assumptions may not match; results are indicative only. All figures in USD billion. * No breakdown of nuclear and RE investment is provided.

Source: See Table 2 for cited sources, Vivid Economics

Climate change adaptation related investment needs are lower than mitigation needs at the outset, but could reach USD 100 billion per annum by 2030. Figure 2 presents a comparison of two key studies on adaptation costs: the Economics of Adaptation to Climate Change (EACC) project by the World Bank (2010) and UNFCCC (2007) Investment and Financial Flows analysis. The range of estimates is wide, from USD 30 to 100 billion per annum by 2030⁷ reflecting, among other things, differences in sectoral focus (the UNFCCC does not consider extreme weather events), methodological differences, and different approaches taken to aggregating costs within and between countries (see note to Figure 2). Nonetheless, both studies identify that the main costs are associated with infrastructure investment, and improving the resilience of water resources and coastal zones.

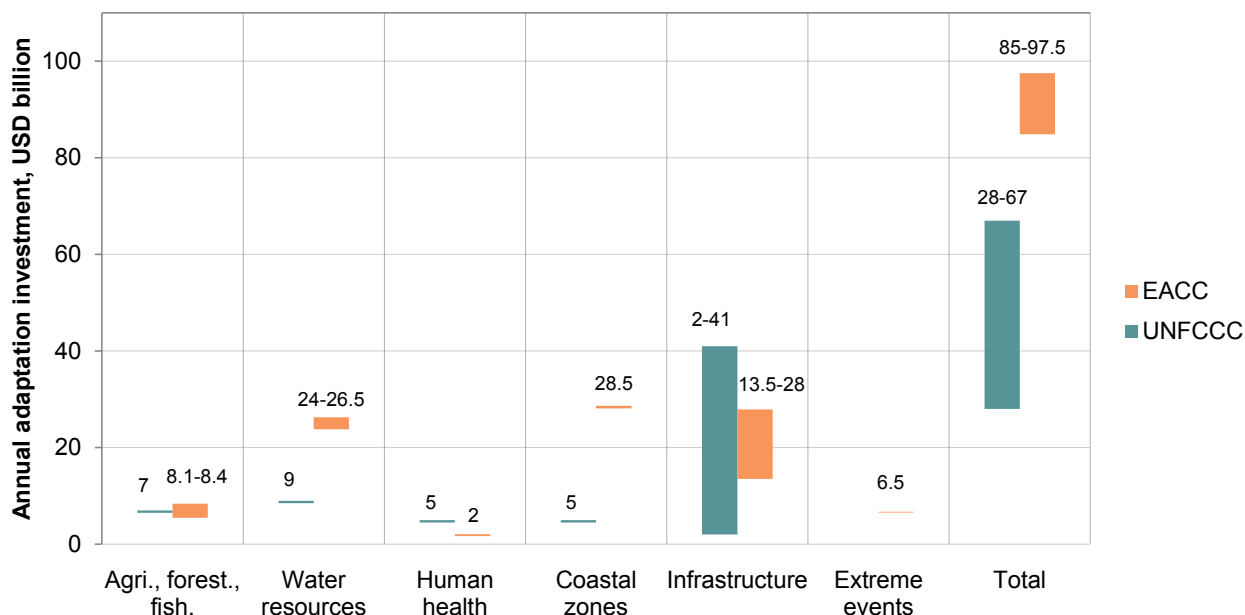
Both studies assume implicitly or explicitly a moderate degree of warming. In particular the World Bank EACC study assumes 2°C warming by 2050. Lower mitigation effort that resulted in higher warming would correspondingly increase optimal adaptation costs, although the bulk of any of these additional adaptation costs would only be incurred after 2050.

We adopt a range for the costs of adaptation in developing countries of USD 60 – USD 100 billion by 2030. This range covers the estimates from the World Bank EACC study plus the top end of the range from the UNFCCC study. As such, it takes into account some of the methodological weaknesses associated with the UNFCCC study that are considered to have resulted in an estimate that is too low (Parry et al., 2009).

⁷ The UNFCCC (2007) study provides estimates for the year 2030. The World Bank EACC study is an annual average over the period 2010-2050.



Figure 2. Developing country adaptation costs a year by 2030 may be between USD 30 and 100 billion



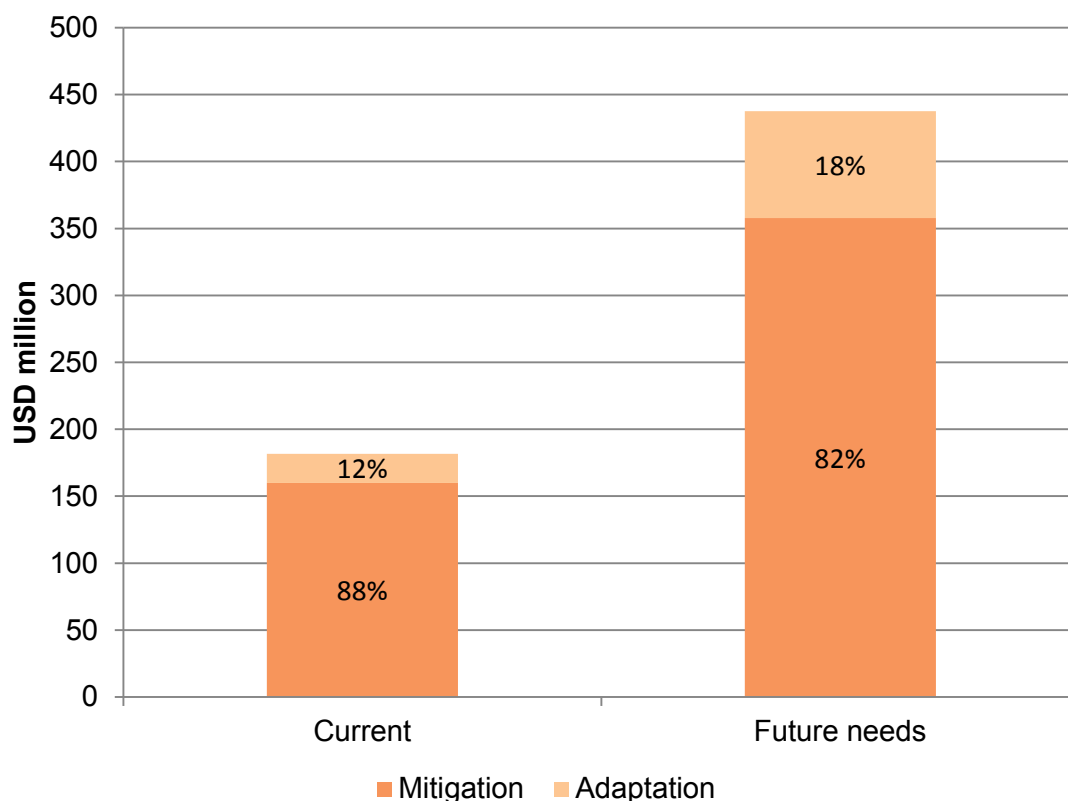
Note: If shown, ranges are dry and wet scenarios for EACC, low and high estimates for UNFCCC. The EACC cost estimates reported here are based on the gross aggregation method. This sets negative costs in any sectors to zero before costs are aggregated for the country. The EACC also reports aggregates using the X-sums and the net aggregate method. The X-sums method nets positive and negative costs within countries but not across countries and includes costs for a country in the aggregate, as long as the net cost across sectors is positive for the country. This gives a cost estimate of USD 71.2 billion to USD 81.5 billion (NCAR). The net aggregate measure nets negative costs within and across countries, and yields a cost estimate of USD 69.6 billion (CSIRO) to USD 81.1 billion (NCAR). These different estimates lead to the overall range of costs for the EACC study to be between USD70 billion and USD100 billion.

Source: World Bank (2010), UNFCCC (2007), Vivid Economics

A comparison of overall future climate finance needs and current flows shows that a large increase in climate finance flows is needed; and that a higher proportion may need to be allocated to adaptation in future. Figure 3 presents a breakdown of current climate investments in developing countries, and future needs. Of the current estimated USD 180 billion in climate investment in developing countries each year, it is estimated that around 12 per cent flows to climate change adaptation, and 88 per cent to mitigation. Future needs are significantly higher; with a midpoint estimate of mitigation and adaptation needs summing to USD 440 billion per annum, around 2.5 times greater. In addition, the point estimates for future investment needs suggest that some 18 per cent of future flows may need to be allocated to adaptation, a somewhat higher proportion than currently observed. It should be noted that some of the explanation for this discrepancy may be explained by the fact that adaptation needs are expected to increase over time and because of some of the difficulties associated with tracking climate adaptation investment, especially that by providers of private finance.



Figure 3. **Best estimates of current climate finance flows are only around forty per cent of what may be required by 2030**



Note: We assume that all of the adaptation flows reported in Buchner et al. (2013) flow to developing countries. Testing sensitivity of the outcomes shows that, in case the low end of the mitigation needs range and the top end of the adaptation needs range materialises, total future needs would be USD 275 billion of which 35 per cent would flow to adaptation. With the top end of the mitigation range and the low end of the adaptation range, total needs would be USD 600 billion of which 10 per cent would be needed for adaptation.

Source: World Bank (2010), various sources listed in Table 2, Buchner et al. (2013), Vivid Economics

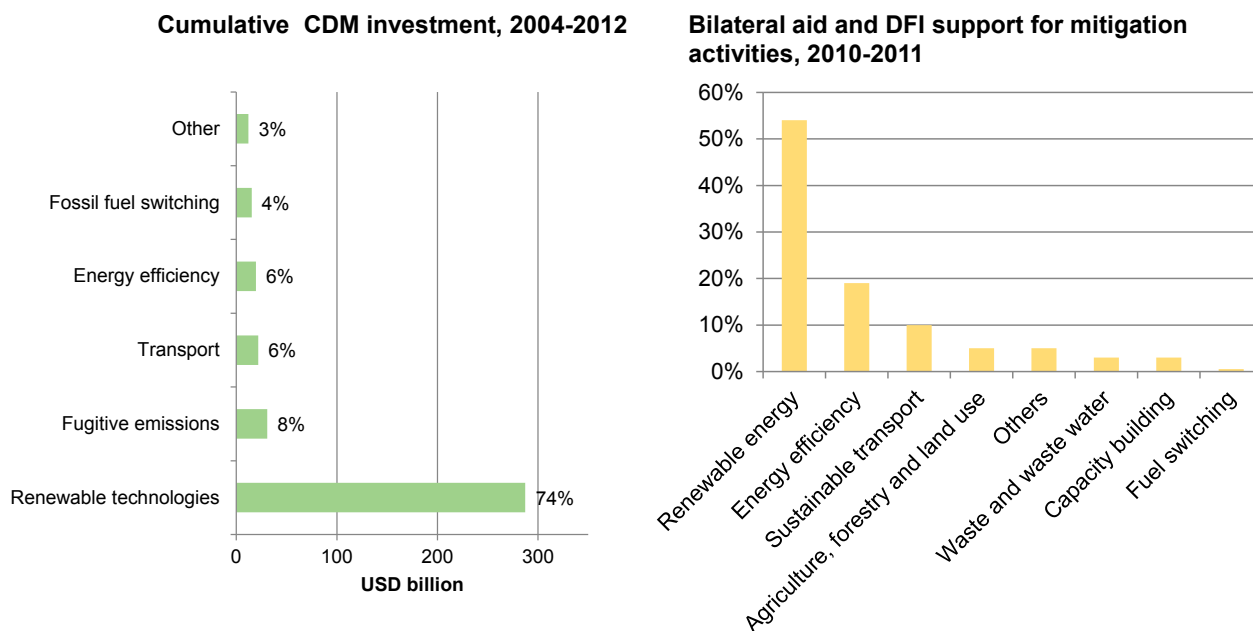
2.2.2 A further breakdown of mitigation investment needs across sectors

A further breakdown suggests that renewable energy investment takes up the largest proportion of current mitigation investment in developing countries. Figure 4 presents two pieces of evidence: a breakdown of the cumulative investment associated with Clean Development Mechanism (CDM) projects along with analysis based on Buchner et al. (2012), which looks at the sectoral allocation of countries’ bilateral aid and DFI support for mitigation activities⁸. In both cases, renewable energy dominates total flows, representing 74 and 54 per cent of the total respectively. While neither measure perfectly captures mitigation investment in developing countries – for example it is significantly easier to register some types of mitigation project in the CDM than others, while it is possible that some of the DFI support for mitigation activities may be in developed countries – the dominance of renewables investment in both datasets is notable.

⁸ It also includes public funds tracked that support project finance transactions.



Figure 4. **Three quarters of the investment stimulated by the CDM has been in renewable energy technologies, and more than 50% of the sum of government bilateral support and DFI financing has been to renewables**



Note: The CDM investment analysis is based on the sample of PDDs that include investment cost estimates.

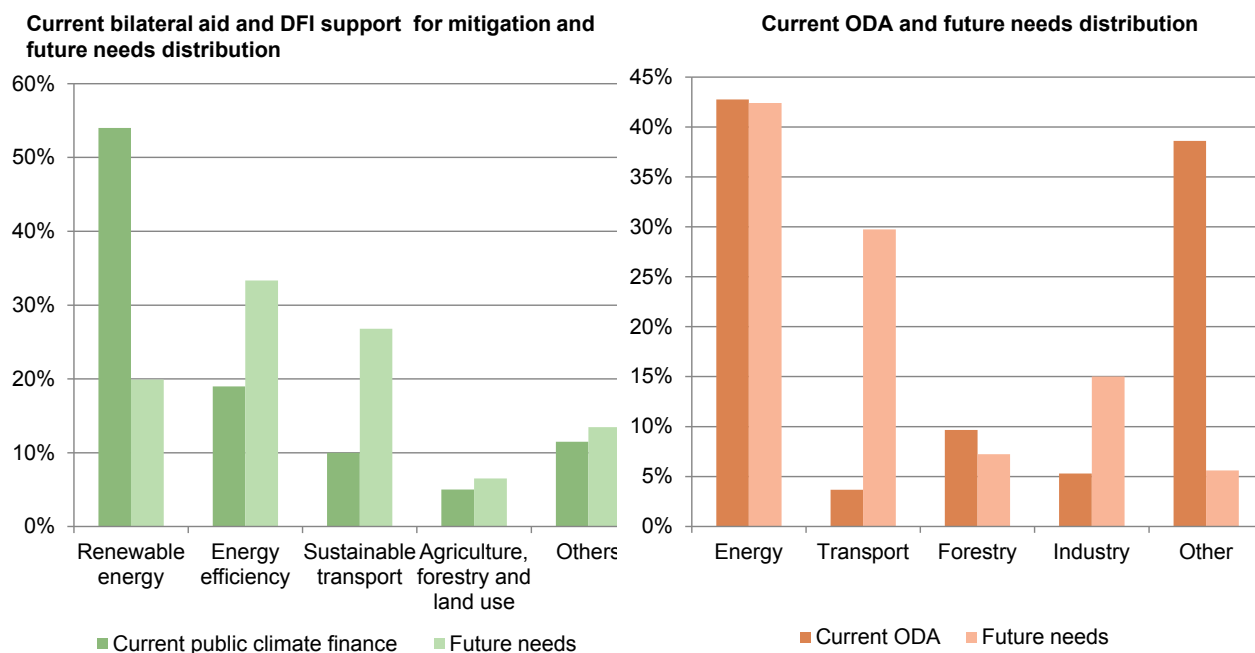
Source: UNEP Risoe Centre (2013) CDM pipeline as of July 2013, elaborations based on Buchner et al.(2012). Buchner et al. (2013) do not provide an update of this data.

A comparison of different measures of public mitigation finance in developing countries with future investment needs suggests that transport and energy efficiency sectors may require more support in future. Figure 5 presents breakdowns of (i) bilateral aid and DFI support to mitigation (the same data as presented in Figure 4) and (ii) mitigation marked ODA, with the sectoral distribution of future finance needs from the IEA’s Energy Technology Perspectives study (IEA, 2012). While care is needed in interpreting these comparisons, as they compare total future investment needs - that may be met by both public and private providers of finance - with current public support (only), both datasets suggest that transport and energy efficiency investment and support may be under-represented at present⁹.

⁹ Furthermore, this conclusion is supported by the IEA analysis discussed below.



Figure 5. **Transport and energy efficiency appear relatively under-represented in both current public climate finance and ODA**



Note: ODA flows are those marked in OECD DAC database as having climate change mitigation as a 'principal objective'. Current ODA category 'other' comprises other mitigation marked items including cross-sectoral investment and agriculture – it is conceivable that some of this accrues to transport and industry.

Source: Buchner et al. (2012), OECD (2013), IEA (2012), Vivid Economics. Buchner et al. (2013) do not provide an update of this data.











Broadly consistent with this broad analysis, the IEA’s Clean Energy Ministerial (International Energy Agency, 2013) identifies that, from a global perspective, to reach their ‘2DS’¹⁰ scenario, out of ten sectors, only renewable energy and electric vehicle investments¹¹ are ‘on track’. This is shown in Table 4 and the result is broadly in line with the data reviewed above.

¹⁰ These are the investment needs in each sector that the IEA estimates is needed to provide an 80 per cent chance of limiting average global temperature increases to two degrees Celsius.

¹¹ The electric vehicle investment largely relates to development activities often taking place in developed countries. By contrast, the transport related investment needs and flows identified above covers a much broader range of initiatives including, in particular, public transport infrastructure projects.



Table 4. The IEA projects that globally, investment in most sectors is not on track to meet a 2DS scenario

Sector	Assessment	Notes/comments
Renewables	 on track	differs by technology & region
Nuclear	 off track	little change in capacity since 2000
Gas	 improvement needed	significant regional differences
CCS	 off track	industrial CCS particularly weak
Industrial energy efficiency	 improvement needed	differences across sectors
Fuel economy	 improvement needed	lack of policy in non-OECD regions
Electric vehicles	 on track	rapid growth from low base
Biofuels	 off track	advanced biofuels need attention
Buildings	 off track	policy weaknesses
Smart grids	 improvement needed	data challenges

Source: IEA (2013)

The finding that renewables is ‘on-track’ does not mean that there is no need for future investment.

While this analysis does suggest that investment in renewables is less of a challenge than investment in other sectors, being ‘on track’ implies a need to sustain investment momentum in future – renewables therefore still require substantial additional future commitments. Furthermore, if other technologies fail to achieve sufficient scale, most notably CCS, then this may need to be compensated for by additional renewables. Similar trade-offs between energy supply and energy efficiency are also possible. Furthermore, as this represents a global perspective, it should also be kept in mind that renewables investment may be globally on track but is still lacking in certain regions. In particular, more disaggregated IEA analysis identifies a particular challenge in relation to renewables in India.

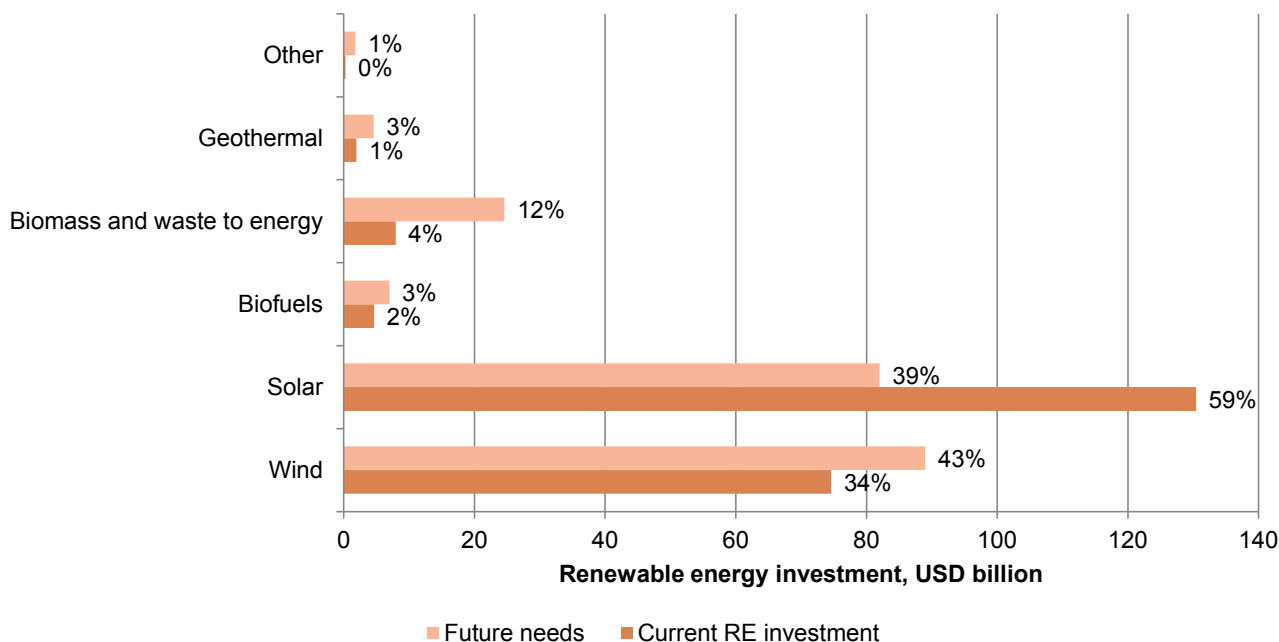
Within the renewables category, there may be a need for increasing the diversity of renewable technologies receiving investment. Figure 6 presents the distributions of current global renewable energy investment and future needs¹². It shows that solar investment is facing the largest gaps in investment as a proportion of total investment. The IEA (2013) identifies geothermal energy and concentrated solar power as particularly in need of more global investment if climate stabilisation objectives are to be met. In many

¹² Data on developing country investment is not available.



places, for example geothermal power in East Africa, these technologies can also support development objectives of providing additional low-cost additional capacity.

Figure 6. Globally, renewable energy investments are mostly in wind and solar, yet there is a need for greater diversification of technologies



Note: Hydro investment is excluded from both distributions for consistency. Percentages refer to the sum of either current investment or future needs accordingly. Current RE investment is adjusted by common factor to account for estimated equipment manufacture and technology development.

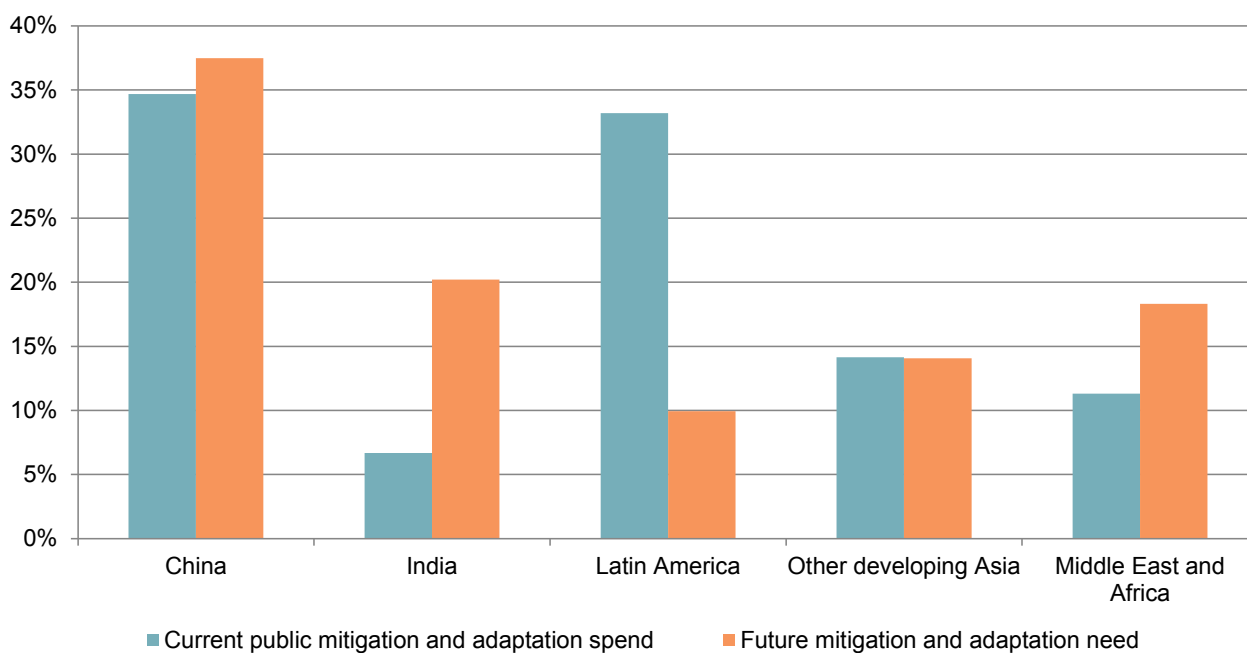
Source: IEA (2012), UNEP & Bloomberg New Energy Finance (2013), Vivid Economics

2.2.3 Breakdown of investment needs across geographies

The current proportions of public climate finance flows in India and the Middle East and Africa are lower than the proportion of future climate investment that these regions might require. Figure 7 presents the relative shares in current public climate finance flows (both domestic and international) with estimates of future investment needs for mitigation (IEA, 2012) and adaptation (World Bank, 2010) in each region. It suggests that the proportion of public climate finance in China and other developing Asia is proportionate to future needs, that there may be particular challenges in relation to the Middle East and Africa, but that Latin America accounts for a greater share of current public climate finance flows than its estimated share of future investment needs. Note again that these conclusions hold for proportions of finance – in absolute terms, climate finance in all regions needs to increase.



Figure 7. **Current total public climate finance, both mitigation and adaptation, is underweight in India and overweight in Latin America when compared to future mitigation finance needs**



Source: Buchner et al. (2012), IEA (2012), World Bank (2010), Vivid Economics. Buchner et al. (2013) do not provide an update of this data.

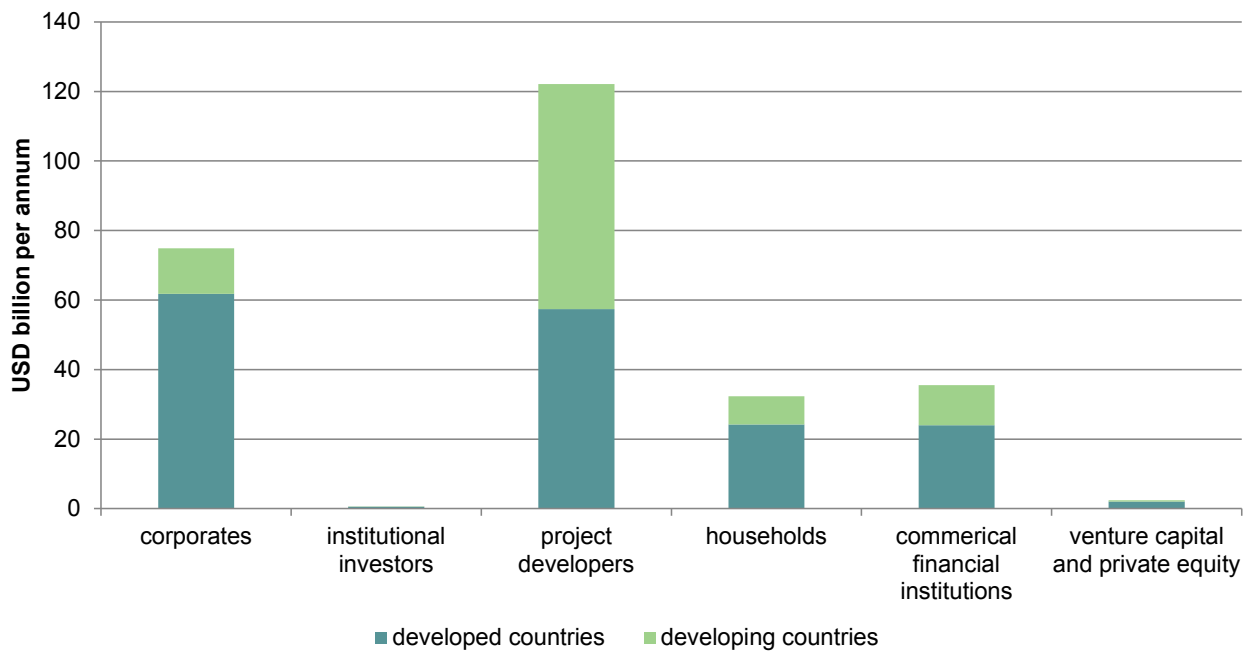
The data on geographic shares of private climate investment flows is not readily available but proxies indicate a broadly similar geographic distribution. In particular, more than 60 per cent of the investment associated with the CDM has been in China, compared with less than 5 per cent in the Middle East and Africa. CDM-related investment in India has been closer than public climate finance flows to the share of expected future investment need.

2.2.4 Public versus private flows

Private finance in developing countries is a relatively smaller source of climate finance compared to developed countries. This can be seen in Figure 8. In total, the best estimates suggest that private financing accounts for 170 billion per annum of investment in developed countries, equivalent to 88 per cent of the total; compared with 98 billion (57 per cent) in developing countries. In particular, mobilisation of corporate investment and bank lending is lagging compared to developed countries. In developing countries most financing comes from project developers.



Figure 8. **Banks and corporates do much less climate related investment in developing countries than developed countries**



Source: Buchner et al. (2012). Buchner et al. (2013) do not provide an update of this data across all categories.

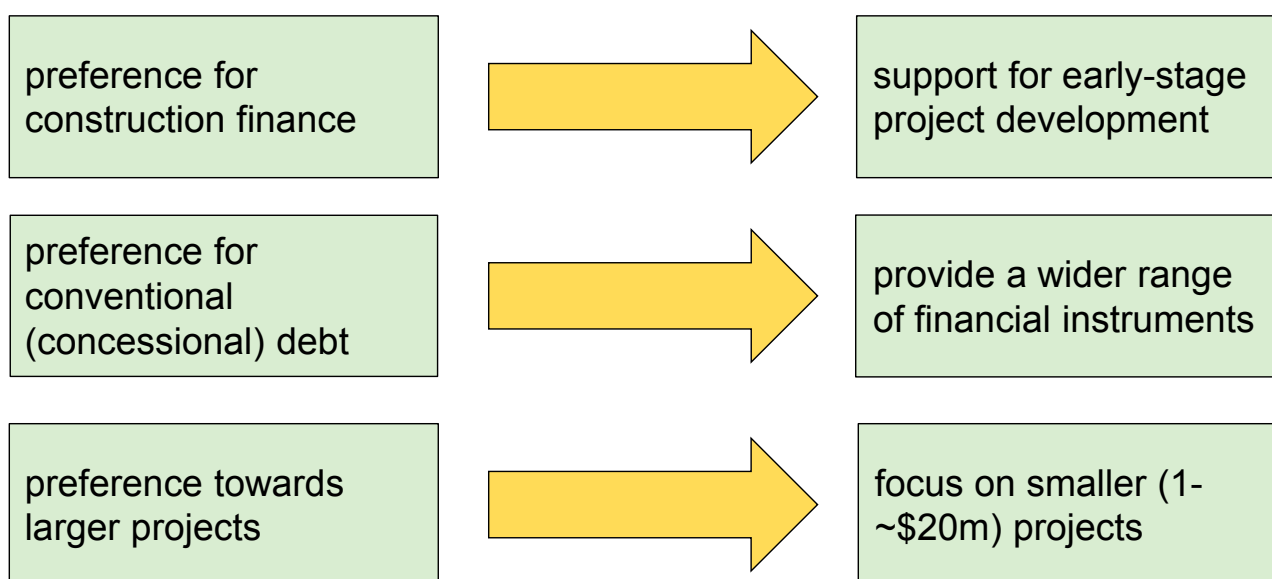


2.3 Forms of public support

There are also gaps in the type of public support required. Apart from whether patterns of investment that are observed match the desirable future patterns of climate finance, there is a question of whether the type of public climate finance that is currently delivered is of the appropriate form to help deliver on future investment needs. This includes issues such as the type of financial instruments, the size of investments, and the targeted stage in the project cycle. In contrast to the analysis in section 2.2, it is not possible to derive a quantitative baseline against which current practice can be assessed – which makes the exercise relatively subjective – but the available grey literature and interviews with ICF spending departments’ staff seem to indicate a number of common concerns that are reflected upon below. In addition, the focus is on the gaps in public support that limit private investment in developing countries consistent with the ICF’s ambitions for the new vehicle¹³.

The literature suggests three particularly prominent gaps in the types of public support: a preference for construction finance (over early stage project development); a preference for providing conventional (concessional) debt products (compared to a wider range of financial instruments), and a preference for supporting larger projects of, for example, USD 20m or more (compared to projects below this threshold). This is schematically depicted in Figure 9. The three identified gaps are further elucidated below.

Figure 9. **There are a number of gaps in the types of support provided by the current climate finance architecture**



Source: Vivid Economics

First, a failure to support early-stage project development could threaten long-term deal-flow. Early stage project development involves feasibility studies, advisory costs, project agreements, public disclosure and liaison, acquisition of licences and approvals, and environmental studies, all of which are high risk

¹³ For this reason, the analysis does not, for instance, consider gaps in the types of public support that may be needed to stimulate research and development and innovation that will be best undertaken globally.

activities. Most of these relate to infrastructure assets, but manufacturing facilities would face similar early stage development activities. UNEP (2011) estimates that the public sector provides 39 per cent of construction financing for non-OECD renewable investment, but only 18 per cent of early stage project development finance. Some of the commonest explanations for this lack of attention include the high risk involved, high transaction costs, and a fear of ‘picking winners’. The problem may be particularly acute in Africa (Chatham House, 2011), an observation which was further confirmed through discussions with stakeholders as part of this study. In particular, it was noted that projects in Sub-Saharan Africa are still characterised by very long development periods and project success rates are low. This is believed to be down to a number of factors including limited or constrained financial capacity of early stage developers, a lack of government commitment and weak regulatory framework coupled with (in the case of renewables generators) offtakers who are often financially weak, and high development costs that are not directly correlated to project size and therefore lead to a strong focus on large projects.

Secondly, there may be merit in extending the range of financial instruments provided by public climate finance actors to include more use of, for example, guarantees and equity capital. In a review of the Global Environment Facility (GEF), Clean Technology Fund (CTF) and World Bank Group (WBG), Venugopal, Srivastava, Polycarp, & Taylor (2012) find a strong preference for the deployment of conventional concessional debt. According to the study, incentives were ‘skewed’ against the use of guarantees due to cumbersome and complex fee structure arrangements, and that many WBG guarantees require counter-guarantees from host governments. The study therefore recommends expansion in the range of financial instruments to include equity and guarantees that mitigate specific risks faced by providers of private finance. In addition, it suggests that the new Green Climate Fund and its Private Sector Facility should be capitalised with grant funding to allow for more flexibility in the deployment of financial instruments. Similar concerns were recognised by an Independent Evaluation Group, (2010) review of the World Bank’s climate change support in its offering of guarantees, noting that further assessment of the potential for increased use of partial risk-guarantees, to support renewable energy investment in particular, would be warranted. Likewise, Frisari, Hervé-Mignucci, Micale, & Mazza (2013) identify instruments for policy risk and liquidity risk as key gaps for low-carbon investment in developing countries.

Thirdly, small and medium-sized projects may be neglected in much of the current climate finance architecture, creating a risk that public money is competing with rather than complementing private capital. Polycarp, Brown, & Fu-Bertaux (2013) report a ‘bias’ in much of the current climate finance architecture towards larger scale infrastructure projects due to transaction costs, higher visibility and employee compensation incentives. This preference may result in climate finance missing the catalytic effect of pilot projects and duplicating rather than complementing private investment patterns. Based on roundtables with providers of private finance, Chatham House (2011) identifies investments in the USD 1-20m range, particularly between 1 and 10m as one particular area of concern. For projects below this size, the report suggests that microfinance and other donor initiatives are often available; while above this, transaction costs of the deal are manageable for conventional public climate finance delivery vehicles.



2.4 Summary and implications

2.4.1 Summary of findings

This section has identified a number of gaps in the current climate finance architecture. Some of the most important are the following.

- Current flows of climate-related investment in developing countries are significantly below what will be required in future: current flows may be only around 40 per cent of what is required by 2030.
- Although both mitigation and adaptation flows need to increase significantly, flows of finance associated with adaptation measures may be somewhat under-represented compared with future needs.
- Within mitigation activities, energy efficiency, transport and CCS appear to be attracting a significantly smaller proportion of investment than most analyses of future needs indicate will be needed. By contrast, globally, investment in renewables is believed to be broadly on track with expectations with what would be required to limit average temperature increases to 2°C. However, diversification away from solar and increased investment in regions that are currently not on track, such as India, is warranted. In addition, if other technologies (such as CCS) fail to deliver in line with expectations then further increases in renewables investment will be needed. There may also be scope for similar substitution between energy supply and energy demand investments.
- Geographically, India and the Middle East and Africa stand out as regions which are receiving insufficient amounts of public climate finance, given future needs. Of these two regions, there has been relatively greater investment associated with the CDM in India, although the current state of carbon markets makes further investment from this source unlikely in the near-term.
- Private climate finance flows in developing countries are smaller than in developed countries, both in absolute terms and as a proportion of total climate finance investment. Looking at sources of private finance, the biggest differences between developed and developing countries is in relation to finance provided by commercial financial institutions and balance-sheet financing by corporates. This may reflect elevated perceptions of risk of climate investments in developing countries that inhibit debt capital. Consistent with this, there is similarity in the amount of capital invested by project developers (typically providing equity capital) in developed and developing countries.
- There are a number of gaps in the types of support offered by developed countries in support of (private) climate finance flows in developing countries. Three particular gaps stand out: support to early stage project development; support for smaller-scale projects (<USD 20m); and a lack of diversity in the financial instruments provided.

2.4.2 Implications for the study

In terms of investment types, the remainder of the analysis in this report focuses on the delivery vehicles that might support renewable and energy efficiency investment. This takes account of the ICF Low-carbon Development Investment Strategy which focuses, in particular, on energy supply (for example,



on-grid and off-grid low-carbon generation) and energy demand (for example, energy efficiency) interventions. This focus is consistent with the finding that there is a substantial gap in relation to energy efficiency investment. While recent renewables deployment appears to have been more robust, there will nonetheless remain an important need to continue these trends in the future, especially if other mitigation technologies fail to deliver as much emission reductions as may originally have been anticipated. Renewables can also play a crucial role in supporting energy access, an ICF Key Performance Indicator (KPI), particularly in off-grid contexts. Consistent with the findings of this gap analysis, the report focuses on delivery vehicles that might, in particular, support further investment flows by the private sector (both debt and equity).

Complementary analysis on adaptation flows has been pursued in a separate report. Consistent with the finding that there may be a gap in relation to adaptation flows, ICF spending departments requested an additional piece of work that elaborates current adaptation finance flows and future needs and the role that public finance can play in supporting these needs. Findings from this work will be published separately in due course.



3 Institutional capacities of climate finance vehicles

An assessment of the key qualities that delivery vehicles should possess to provide different forms of climate finance

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This section considers the institutional capacities of climate finance delivery vehicles, which will have a crucial role in determining the quality of the climate finance that they provide. Some of these qualities are generic and would ideally be held by a vehicle regardless of the intervention the vehicle planned to make. However, other qualities will be more or less important depending on whether, for instance, the vehicle is operating in a strong or weak regulatory environment, is supporting early-stage or late-stage investments, the size of the project, the technologies being supported or the instruments being provided.

‘The intention is to help set out what may make a delivery vehicle particularly effective or ineffective in the different possible areas of specialisation’



3.1 Introduction

This section considers the institutional capacities of climate finance delivery vehicles wishing to deliver high quality ODA, which will have a crucial role in determining the quality of the climate finance that they provide. Each delivery vehicle will possess a unique set of institutional features that affect the quality of public finance. High quality vehicles will create a greater impact for every pound of finance provided, whereas low quality vehicles may even be detrimental to the long-term goal of promoting low-carbon development.

However, quality is multi-dimensional and difficult to define. Different stakeholders will value different aspects of a delivery vehicle. For instance, there may be a trade-off between creating a vehicle that fosters transformational change versus a vehicle that achieves abatement at the lowest possible cost. Depending upon which objective is prioritized, the desirable features of a delivery vehicle may vary (Ellis, Caruso, & Ockenden, 2013a).

Nonetheless, there is an emerging literature on the institutional features of high quality climate finance vehicles. For instance, this issue is tackled by, among others, Bird et al., (2013); Buchner et al., (2011); Ellis et al., (2013); Sierra et al., (2013); Zou & Ockenden (2013). For this project, the findings from the literature were built upon with interviews conducted with climate finance experts (see Acknowledgements).

The discussion of climate finance quality will be structured around ‘generic’ desirable features, which improve quality in all contexts and environments, and ‘specific’ desirable features, which are only helpful within particular contexts or environments. Section 3.2 first considers the evidence on generic desirable features. Section 3.3 then narrows this to determine how an ‘ideal’ delivery vehicle would vary depending upon a variety of factors such as whether it intends to work within weak or strong enabling environments, specialize in early or late stage financing, and so on.



3.2 Generic qualities

Some characteristics are ideal regardless of the investment supported

It is possible to identify four key generic desirable features of climate finance delivery vehicles. A review of the literature plus stakeholder interviews suggests that a climate finance delivery vehicle providing high-quality ODA should:

- provide value for money;
- foster national ownership;
- possess the capacity and infrastructure for learning, including processes and systems for monitoring and evaluation and subsequent dissemination; and
- have a strong focus on climate impacts.

The first three of these desirable features apply to any vehicle providing ODA; only the focus on climate impacts relates specifically to vehicles disbursing climate finance. For each of these broad features, there are a number of different aspects that will be important, as explored below.

3.2.1 Value for money

A vehicle should choose investment opportunities, and engage as appropriate in design and implementation, so as to deliver expected benefits on time and to budget. As noted in existing studies that evaluate the effectiveness of different delivery vehicles (see, for instance, MOPAN Secretariat, 2013), this requires, among other things:

- a strategic focus on results;
- strong local knowledge and understanding of the situation on the ground;
- technical competence and professionalism of staff; and
- policies and procedures to ensure financial audits, manage risk and combat fraud.

Low administrative costs and efficient internal procedures will also increase value for money. The higher the proportion of climate finance absorbed by administrative costs, the less finance will be available to deliver climate outcomes. The longer that procedures take, the longer these outcomes will take to realise.

Co-financing with other public sector bodies can create economies of scale. Co-investment will allow a vehicle to participate in a greater range of projects and, in particular, invest in large scale projects or programmes that would be infeasible otherwise. By co-ordinating finance on the donor side, a delivery vehicle is able to lower recipient transaction costs. However, co-financing may also reduce finance vehicle visibility, add to legal and organisational complexity, and may increase the difficulty of demonstrating additionality.

Leveraging private finance will greatly increase impact for every pound of public finance provided. A number of studies have identified the crucial importance of engaging providers of private finance to support public resources both in relation to climate finance (AGF, 2010; UNEP, 2009) as well as more generally to meet development goals (DFID, 2011a). In addition, the Terms of Reference for this study identify the desirability that any delivery vehicle makes the best use of UK climate finance expertise; much of this UK



expertise will reside in the commercial finance sector. To leverage providers of private finance, streamlined governance and ability to make quick decisions will be important. Institutional culture, though not clearly defined, is also key to engagement with providers of private finance; public finance vehicles that have successfully leveraged the private investment, such as the EBRD, are often staffed largely with employees that have commercial banking, private equity or similar expertise.

3.2.2 Ability to foster national ownership

Creating national ownership is crucial to ensure legitimacy and long-term success. Achieving long-term goals, such as transformational change, will be impossible without national ownership of low-carbon projects and programmes. There are a number of aspects to this but in general terms it can be facilitated by country intelligence and credibility that, in turn, can be helped by in-country presence.

Investment choices should be linked to national priorities. Delivery vehicles are more likely to succeed if they have mechanisms in place to ensure that their finance is supporting the key climate priorities within the country. A recent practitioner survey identified this as a key pre-requisite for effective climate finance in particular (Zou & Ockenden, 2013b).

The delivery vehicle would ideally have experience with using the national systems of the countries that it invests in. Delivery vehicles that have developed processes and mechanisms that allow use of national systems (such as procurement systems) and avoid parallel implementation structures have the greatest chance of becoming self-supporting in the long-run (Ellis et al., 2013a). In-country presence may be particularly helpful in achieving this and to mitigate policy risks more generally.

Investment vehicles that can make long-term commitments will be better at fostering national ownership. Especially for long-term projects, vehicles which provide greater long-term certainty of financial support will allow recipients to plan better. They will also send a stronger signal from those providing the finance regarding the importance they attach to climate investments.

Capacity building support can also be important. Developing local capacity to both implement investments and develop policies can increase the probability of ensuring that the initial investment fits the local context and to catalyse future investments that are not financed by the delivery vehicle in question (Ellis et al., 2013a). This can be particularly crucial in unlocking local financing, as demonstrated, for instance in the IFC Lighting Africa programme.

3.2.3 Capacity for learning

Strong monitoring and evaluation processes are necessary to enable a vehicle to learn from its experiences. A vehicle should have the capacity to monitor – and amend – projects and programmes in real time as lessons are learnt. This requires both the ability to undertake high-quality, systematic evaluations and to track implementation of evaluation recommendations. The outcomes from monitoring and evaluation should be reported internally and externally (Chaum, Faris, Wagner, & Brown, 2011). While strong monitoring and evaluation are necessary components of best practice, there is likely to be some tension with the desire to keep administrative costs low and to engage private finance. The management of this tension requires careful design to minimise the data burden while still collecting the necessary information.



3.2.4 Climate focus

Some organisational aspects of a delivery vehicle are particularly important for realising climate objectives. Value for money, national ownership and capacity for learning are important for *any* public finance delivery vehicle. In addition to these requirements, there are some institutional features that are particularly important within the climate space.

A finance vehicle should be able to measure and transparently allocate resources based on the climate return on investment. This will promote cost effectiveness and ensure a consistency of vision across the delivery vehicle¹⁴. Linked to this, within organisations which have a broad remit, it will be important to have the capacity to undertake climate evaluation of investments outside the climate portfolio. Some studies (for instance, (Chaum et al., 2011) have indicated that some delivery vehicles only consider the climate benefits and costs of their identified ‘low-carbon’ activities and ignore whether their other interventions increase or decrease emissions. This may limit the effectiveness of the delivery vehicle in causing a significant reduction in emissions and also harm the credibility of the organisation.

Both tools and incentive mechanisms within the vehicle should focus on the transformational impact of investments. A common concern expressed by interviewees is that incentives within many climate finance delivery vehicles are not focussed on supporting transformational change. Rather, the focus is on maximising value of ‘safe’ lending or maximising short-run emission reductions. This will limit the long-term impact of the vehicle.

The vehicle should be able to engage in policy dialogue. The sensitivity of climate investment to policy means that delivery options that can support policy dialogue have greater probability of achieving a long-term increase in investment. Numerous studies point to the importance of a change in the policy landscape to support low-carbon investment (Buchner & Heller, 2012).

Relevant engineering and other technical skills can be important given the relative novelty of many mitigation technologies. Interviewees emphasised that strong technical/engineering expertise is required for due diligence and supporting project development.

¹⁴ However, it is important to stress that the climate return on investment need not and, indeed, should not be constructed exclusively on a narrow interpretation of emissions reduced per unit of financial input.



3.3 Specific qualities

Some of the appropriate institutional features of a delivery vehicle vary depending on context and objectives

The importance of different characteristics varies according to the focus of the vehicle. It would be unlikely that any climate finance delivery vehicle would score well against all of the criteria listed above. Given this, it is important to think about how the ideal characteristics of a delivery vehicle might differ according to the investments it is supporting and the instruments it is using. In turn, this will depend to a significant extent upon the market failures associated with the different types of investment.

This section reviews how an ideal climate finance vehicle may differ depending on the specialisation of the climate finance it provides. Based on a review of literature, stakeholder interviews and internal deliberation, and taking into account both the desired investment focus of any delivery vehicle and the gap analysis presented above, five types of specialisation are considered:

- weak versus strong enabling environment
- early versus late stage investment
- small to medium (very roughly between USD 1m to USD 20m) compared to projects larger than this
- energy efficiency versus renewable energy
- different types of financial instruments

These distinctions are stylised in order to highlight how a delivery vehicle may need to vary depending on the specialisation. The intention is to help set out what may make a delivery vehicle particularly effective or ineffective in the different possible areas of specialisation. In practice, it may not be necessary for a delivery vehicle wishing to specialise in a certain area to have all of the characteristics and features described below. Furthermore, in larger organisations, it will be possible for multiple areas of specialisation.

3.3.1 Weak versus strong enabling environment

Table 5. **Weak enabling environments require a stronger focus on TA and hands-on implementation; strong enabling environments require more developed financial and analytical skills**

Weak enabling environment	Strong enabling environment
Lots of need for technical assistance, covering both policy dialogue and implementation	Less need for TA but where provided focus more likely to be sophisticated/specialised, especially on financial market issues
Good country risk management requiring strong local relationship	Still good risk management but more focus on managing commercial risks that can be mitigated by strong analytical knowledge
Patience, concessionality and subsidies important	Often (close to) normal returns

Hands-on project implementation

Hands-off project implementation



Weak enabling environment	Strong enabling environment
No need for difficult products (plain vanilla offerings); less technical knowledge on EE, RES	Need to be able to offer sophisticated financial products good RES/EE knowledge needed
Less risk of intervention not being additional	Worry about additionality, crowding out; need to be able to work closely with providers of private finance

Source: Vivid Economics

The enabling environment for a low-carbon energy sector depends both on policy and institutional conditions, as well as conditions within industry and the financial sector (Polycarp et al., 2013).

A weak enabling environment, which may be more likely in low-income countries, would typically exhibit:

- lack of plans and targets;
- weak institutions (including rule of law), with government and CSO capacities leading to concerns over corruption;
- undeveloped legal and policy framework;
- no independent regulators;
- lack of information on resource availability and energy conservation options; and
- lack of project developer technical and financial skills.

A strong enabling environment, more typical of middle-income countries, would typically exhibit:

- existence of achievable plans and targets;
- effective institutions, planning capacity with government and CSOs;
- active stakeholder engagement;
- laws in place with appropriate regulatory and fiscal instruments;
- independent regulators;
- adequate provision of information on low-carbon options;
- project developers' with good technical and financial capacities; and
- mature financial markets and financial products tailored to low-carbon projects.

Within a weaker enabling environment, it will be important for a vehicle to be able to provide long-term technical assistance, policy dialogue and stakeholder engagement. Programmes such as GET FiT in Uganda focus explicitly on improving the environment through extensive political and policy support. Detailed local knowledge and understanding is critical (Polycarp et al., 2013).

A strong enabling environment allows the amount of technical assistance to be provided to decline, and for it to be more targeted to deal with specific barriers. For instance, ADB's technical assistance to the Industrial Development Bank of India (IDBI) has focussed on its capacity to assess energy efficiency projects. UNDP's support to South Africa's wind sector, which was initially broad, but was narrowed to develop a wind resource atlas once specific barriers were identified.

Local knowledge and relationships are particularly important in weak enabling environments. Political and commercial risks are likely to be higher. Any project will face significant uncertainty about the long-term regulatory and political environment, as well as poor infrastructure and other business environment



factors that are likely to increase commercial risk. Relationships with local stakeholders and government officials can help mitigate political and commercial risk (Polycarp et al., 2013).

In a stronger enabling environment, political and commercial risk will be lower. Expertise in the local commercial and regulatory environment will still be important, but it is likely to be easier to project future developments. Risk levels may be less dependent on relationships with local stakeholders, and more dependent on the ability to undertake detailed market and technical analysis.

Internal incentives within a vehicle targeting weak enabling environments must make allowances for slow project cycles. In a weak enabling environment, a vehicle must have a high tolerance for slow moving deals and project failure. Capacities on the side of counterparties will need time to develop, so the vehicle may need to be less focused on short term returns. The internal incentives need to be set to enable departments to pursue projects that experience significant delays in reaching financial close. Simultaneously pursuing a wide portfolio of projects may be necessary to ensure that a sufficient quantity of projects reach late stage.

More streamlined procedures and tighter timelines are necessary in a strong enabling environment. Local counterparties as well as other co-investors will expect an investor to be 'fleet of foot'. Delivery vehicles wanting to operate in relatively strong environments can – and should - deploy incentives that reward rapid preparation, appraisal and implementation that would be inappropriate in weaker environments.

Counterparty capacity is likely to be lower in weaker enabling environments, which requires proactive and strong involvement in all stages of project development from (some) public finance providers. This could include development guidance and technical advice, both at the project and the policy level. On the other hand, detailed, advanced technological expertise may not be as needed, as a weak enabling environment is less suitable for early stage technologies.

Higher counterparty capacity in strong enabling environments may allow for a more 'hands-off' approach. There is less need for hands-on management of project implementation. However, technical expertise is needed on a larger set of specific, mature and new and emerging products, both technological and financial (GIZ, 2011).

Finally, in stronger enabling environments, there are greater opportunities to engage private investors and project developers but also greater risks of crowding out. To help combat crowding out, strong procedures need to be in place to demonstrate additionally. This can include the principle of providing resources on the least concessional terms possible needed for the project or programme to proceed, although this, in turn, can conflict with the criteria associated with ODA-eligibility¹⁵. Remuneration should also not be narrowly linked to the disbursement of finance, to prevent perverse incentives encouraging crowding out.

¹⁵ In particular, loans provided, other than through designated multilateral organisations, must be 'concessional in character and convey a grant element of at least 25 per cent' (OECD DAC, 2008).



3.3.2 Early versus late stage investment

Table 6. **Early stage investments require delivery vehicles to bear higher administrative costs and slow project cycles; late stage investment requires sophisticated risk mitigation**

Early stage	Late stage
Project preparation skills (e.g. engineering, engagement etc)	Banking/finance skills: financial engineering, risk mitigation
Slow project cycle (and willingness to accept this)	Ability to process fast
High admin costs but smaller capital requirements	Ability to outsource some admin, greater levels of capital required
Take risk in project preparation; willingness to accept project failure	Take risk on the projects themselves; with good risk management procedures can avoid high risks
Detailed local knowledge (for project preparation, etc)	Less local knowledge needed (especially if only financing existing projects)
Project preparation skills (e.g. engineering, engagement etc)	Banking/finance skills: financial engineering, risk mitigation

Source: Vivid Economics

In this analysis a stylised breakdown of the project life cycle is applied, distinguishing between early stage and late stage investment. Using the specification of the various project development cycle stages identified by UNEP (2011), early-stage investment is defined as investment in support of:

- early stage development activities, including development from project concept to the establishment of feasibility
- mid-stage development and late stage financing activities, associated with preparation for construction start and financing activities before financial close

Late stage investment is any investment in support of activities that take place after financial close which include construction, commissioning and operation. This also includes refinancing of stakes.

Any direct investment vehicle involved in the early stage of projects must be able to provide technical and financial implementation support, which will require detailed knowledge of the local environment and counterparty operations (UNEP, 2011). For example, funding for the ADB's ClimaTech VC round was directed towards established VC funds, which could exploit existing local knowledge, rather than new initiatives (Asian Development Bank, 2011). The Seed Capital Assistance Facility (SCAF), a collaboration between UNEP, ADB and AfDB, that offers seed capital and business development support to entrepreneurs through energy investment funds that are active in developing countries and want to include a seed investment window (SCAF, 2013). Stakeholder consultation has confirmed that on-the-ground knowledge and implementation support is essential for early stage investment, and can be sourced either in-house or through local partners.

Direct investments in the later stages of projects will instead require sophisticated financial structuring and risk mitigation skills. When making later-stage investments, risks emanate primarily from



the project and related contractual arrangements, such as construction, performance of the underlying asset (for example, buildings in case of energy efficiency), or the power purchase agreement. The key skills required to process these transactions relate to the ability to assess these risks and, as appropriate, to design financial structures that allocate these risks appropriately. Compared to early-stage investing, less local knowledge may be needed.

Early stage projects require a tolerance of slow development and higher risk of project failure, whereas late stage investments can achieve faster project cycles and lower administrative costs. Any early stage vehicle will need to be capitalised in a way that allows it to have a high risk appetite, such as grants or (very) patient equity. It may be necessary to operate a wide portfolio to ensure that enough projects reach late stage. In addition, the labour and administrative costs are likely to be high, with relatively smaller capital requirements. Late stage investments, on the other hand, are likely to have lower administrative costs but require higher capitalisation.

3.3.3 Small versus large projects

Table 7. **Small projects require decentralised business structures to ensure sufficient deal flow; large projects are better handled within a centralised structure**

Small-medium (USD 1m – USD20m)	Large (>USD20m)
Ability/willingness to absorb high admin/transaction costs: preparation/due diligence, monitoring, etc	Admin costs less significant but need bigger balance sheet to absorb risks
Ability to work with local partners or intermediaries	Ability to syndicate
Large local presence and a decentralised business model	Less local presence, centralised business model
Less sophisticated clients (needs TA, patience, slow project cycle)	More sophisticated clients and deals, less need for TA

Source: Vivid Economics

Small projects require work to be conducted in close collaboration with local partners and intermediaries. With smaller projects it will be necessary to build a broad base of stakeholder support and a deep client base. The EBRD's credit lines (EBRD, 2013) and the IFC's China energy efficiency finance program (World Bank, 2010) do this by working through local banks that have an established client base and the capacity to process deals. An alternative is to have an explicitly decentralised business model with an organisational structure that allows local units to make investment decisions. In either case, it is likely that higher administrative costs will be incurred related to project preparation and due diligence, monitoring, stakeholder engagement and so on.

A vehicle specialising in large deals will need less of a local presence. Large deals can be assessed on a case by case basis, and a centralised fund structure can help achieve economies of scale. Local partners may be necessary to provide additional information when assessing a project, but relationships need not be long term.



Large projects may require sophisticated financial skills. Financial deals are likely to be complex and involve many sophisticated counterparties. To handle deals of this type will require a large balance sheet and the capacity to syndicate loans; a non-climate specific example is the complex EBRD/IFC deal on the Baku Tblisi Ceyhan pipeline, which was a project finance investment with many parties to the deal providing different debt tranches and equity investment (UNEP, 2009). Vehicles specialising in small projects can operate with a relatively small balance sheet and fewer financial skills, though as smaller projects often imply less sophisticated counterparties, greater capacity to provide technical assistance may be necessary.

3.3.4 Energy efficiency versus renewable energy

Table 8. Energy efficiency vehicles require technical knowledge across a wide range of sectors; renewable energy vehicles require deep knowledge of the political and regulatory context

Energy efficiency	Renewables
Ability to cater to a diversity of business models, vehicles, structures with good technical and industry knowledge across a wide variety of markets; this may also require comprehensive legal knowledge	Less diversity in business models requires strong knowledge in energy & RES but not outside of this sector
Technical assistance needs more likely to be related to industry related issues (both in end use sector and financial institutions) rather than policy advice, with an important exception in relation to energy pricing and standards	Technical assistance needs to focus on understanding policy/regulatory context
Corporate lending often with short tenors	Project finance lending, longer tenors more likely to be needed
Relatively high labour intensity especially as a result of monitoring and market-making (audits etc) efforts	Less labour intensive
Can often be difficult to develop a dedicated energy efficiency team within an existing financing vehicle/organisation as financing vehicles are typically organised on a sectoral basis while energy efficiency requires a cross-sectoral focus. At the same time, the wider client base provided by an existing financing vehicle can be crucial to successful delivery of energy efficiency investment.	Relatively easy to include a renewables team within an existing financing vehicle or organisation (assuming that vehicle already has an energy team)

Source: Vivid Economics

Within energy efficiency, a vehicle will have to operate across a wide diversity of sectors, business models, project types and deal structures. This requires a flexible approach, good industry knowledge (Taylor et al., 2008) and a legal team comfortable in a range of sectors. Detailed engineering and technical knowledge of energy efficiency opportunities in different sectors can also be extremely helpful; stakeholder interviews identified that part of EBRD’s success in financing energy efficiency projects can be explained by hiring engineers to help identify financing opportunities.

The standardisation of energy audits could help unify the approach. Stakeholders have highlighted that energy efficiency projects are varied and energy audits will often produce different results for similar



projects. Standardisation of audits could greatly increase investor confidence and leverage additional private finance. Some attempts to do so, for instance through the Investor Confidence Project (2013), are already underway.

By contrast, renewable energy requires detailed knowledge of a single sector. Technical assistance can focus on understanding the policy environment and risks, rather than detailed knowledge of a wide variety of industrial processes or the heating and lighting of buildings.

Leveraging existing client relationships is often the key to successful energy efficiency programmes for public sector delivery vehicles, where the main barriers to investment are often lack of information and weak capacity to source finance (Investor Confidence Project, 2013). An important market failure in relation to energy efficiency investments is the lack of knowledge and understanding of the energy efficiency opportunities available. Climate finance delivery vehicles focussing on energy efficiency investments will need to be structured to overcome this barrier. One option to achieve this is ‘piggybacking’ on the deal flow of an organisation already involved in the providing of corporate loans or equity. For instance, energy efficiency programmes at the EBRD originally used the existing pipeline of investment opportunities to originate energy efficiency deals. Combined with the offer of free energy audits, being able to originate through existing contacts can effectively overcome informational barriers.

Renewable energy is a much more natural fit within a traditional institutional structure, organised by sector and geography, whereas energy efficiency is cross-cutting. Existing investment institutions are often structured with dedicated teams related to particular sectors or geographies. Consultation with stakeholders has suggested energy efficiency is often side-lined because it fits into neither category. Integrating an energy efficiency mandate into an existing vehicle may therefore require the institutional structure to be altered; for instance, in the EBRD the energy efficiency team was given mandate to assess energy efficiency potential across all projects in the pipeline. Renewable energy, on the other hand, is a natural fit within sector/geography structures.

Energy efficiency investments require corporate finance skills; renewable investments may require project finance skills. For most energy efficiency investments, it is very challenging to isolate the savings of the project from the broader financial health of the company. The suitability of a company for a loan therefore on broader financial performance, and energy efficiency financing is often provided as short tenor corporate loans. Within renewable energy, investments generate additional revenues that can be isolated from the other cashflows of the project sponsor. Expertise in structuring project finance deals may therefore be helpful for vehicles undertaking renewables investments, but is less common than expertise in corporate lending.



3.3.5 Debt versus equity investment

Table 9. **Debt investment requires strong evaluation of the downside risk; equity investment requires a more hands-on approach and broader understanding of both upside and downside risk**

Debt	Equity
Banking skills e.g. skills in syndicating, determining tenor, determining risk profile/interest rate and covenants based on past and projected performance of asset	Determining risk profile based on uncertain cash flow projections and 'soft' assessments, with more interest in upside potential
Skills for restructuring and refinancing debt	Skills in project identification and development as well as investment/project management, determining exit strategy
Lower risk appetite with incentives for team structured accordingly	Higher risk appetite with incentives for team structured accordingly

Source: Vivid Economics

Equity investments are characterised by a different risk-reward profile than debt investments. In carrying out equity investments, the team needs to appraise the upside potential, as well as ensure that downside risk is not 'too' great. This will require investors to assess both cash flow projections and the 'soft' skills of the project developer, and investors are more likely to take a hands-on role. In extending debt, the focus is instead on minimising downside risk. Syndication capacity, debt restructuring and refinancing skills may be required, but the investor is less likely to be actively involved in either identifying the investment opportunity or its subsequent management.

3.3.6 Direct versus fund investment

Table 10. **Direct investment requires detailed technical knowledge of projects; fund investment requires the appraisal of fund manager skills**

Direct investment	Fund approach
Requires more detailed (technical) knowledge of project implementation for successful strategic investment	Focus on controlling risk through diversifying portfolio and appraising competence of fund managers
Strong local knowledge and contact with local project developers	Contact with existing and emerging PE/VC investors, infrastructure funds, and fund managers etc
More need for local presence	Less need for local presence

Source: Vivid Economics

A direct investment approach requires more project specific management compared to a fund approach. For instance, direct investment requires more detailed (technical) knowledge of projects, which will need to be sourced through strong ties with local project developers. A fund approach, on the other hand, requires risk to be controlled by portfolio diversification and appraisal of fund manager skills.



4 Delivery option assessment: introduction

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This section provides an introduction to the assessment of the different climate finance delivery options. It discusses briefly the three delivery options that are analysed in subsequent sections and why, given the Terms of Reference, these options were chosen. It also provides a fuller description of the way in which the delivery option assessment is undertaken.



4.1 Three delivery options

Assessing the GIB, PIDG and CDC

This section provides a brief introduction to the approach to assessment of the different delivery options. This subsection provides a rationale for the choice of the three options subject to detailed investigation. The following subsection sets out the methodology used for this assessment.

Three delivery options were identified in conjunction with ICF spending departments: the UK Green Investment Bank, the Private Infrastructure Development Group (PIDG) and CDC¹⁶. The choice of three delivery vehicle option is consistent with the requirements of the Terms of Reference.

These options were chosen as those most likely to be able to meet the criteria identified by ICF spending departments in the Terms of Reference. To recap, these criteria are to:

- support the scale up of private finance flows,
- achieve stronger climate and development benefits,
- increase the visibility of UK climate finance; and
- make the best use of UK climate finance expertise.

Prior to the detailed assessment, it appeared that each of these three organisations could potentially score well against some or all of these criteria.

At first pass, the UK Green Investment Bank appears to have the ability to score well against most of these criteria. The GIB is an organisation, wholly owned by the UK government, currently focussed exclusively on delivering climate and, green (for example, waste) investments in conjunction with providers of private finance. An international expansion of this mandate might allow it to continue to deliver climate benefits in a way that leverages private finance flows while simultaneously increasing the visibility of the UK's climate finance contributions and making use of climate finance expertise located in the UK.

The PIDG is also explicitly focussed on scaling up private finance flows and has a strong track record in delivering development benefits. The PIDG website states that the PIDG '*mobilises private sector investment to assist developing countries in providing infrastructure vital to boosting their economic growth, and combating poverty* (emphasis added).' It also received a strong assessment from DFID in its Multilateral Assessment Review (DFID, 2011b). Although it is not exclusively a UK-based organisation, as discussed in more detail below, it is closely associated with the UK and much of its expertise resides in the UK.

CDC is the UK's Development Finance Institution; it focuses on making investments in private enterprises in Africa and South Asia. This indicates a scope for scaling up private finance flows in a way which delivers development benefits. As it is wholly owned by the UK Department for International Development (DFID) it is a delivery vehicle option that could enhance the visibility of UK flows, with most of its expertise located in the UK.

¹⁶ The ordering here, and for the remainder of the document, reflects the subsequent assessment as to the likely scale of UK climate finance resources that could be programmed through the respective delivery vehicle options.



Beyond these options, there would appear to be few other organisations that would be likely to score well against these criteria. In particular, there would appear to be few other UK-based organisations (and hence which might increase the visibility of UK climate finance flows and use UK expertise) that also have experience in financing climate and development goals in conjunction with private investors. Another potential option might have been The Carbon Trust, although it has a wide mandate of which only one aspect relates to financing low-carbon technologies¹⁷.

The report has not focussed on an entirely new delivery vehicle. The ICF is primarily interested in identifying delivery vehicles that might be able to absorb and programme resources in the period to 2015/16, as an important intermediate step in ensuring that the UK makes an appropriate contribution to the global goal of mobilising USD 100 billion of climate finance a year by 2020. This places an onus on making use of existing delivery options¹⁸.

It should once again be emphasised that these three delivery options could be pursued in parallel; they are not mutually exclusive. Subject to sufficient ICF resources being available, there would be nothing incompatible in the ICF using more than one of these delivery vehicle options.

¹⁷ Its website identifies three key themes: providing advice to businesses and the public sector; carbon footprinting services; and implementation and financing of low-carbon technologies.

¹⁸ As an indication, there was a two year window between the Coalition Agreement of May 2010 (HM Government, 2010) which includes reference to the establishment of a Green Investment Bank (GIB) and its establishment in May 2012. The GIB became fully operational in October 2012.



4.2 Methodology assessment

We adopt a common approach to reviewing each of the three delivery vehicle options. This enhances the transparency of the analysis and increases the comparability between the different options.

Initially, an assessment is provided against the key generic institutional capacities that a climate finance delivery vehicle would ideally possess. As set out in section 3.2, these four institutional capacities are that they should provide value for money, that they should foster national ownership, that they should be tailored to be able to respond to the specific challenges associated with climate investments and that they should possess the capacity and infrastructure for learning. Each of these four institutional capacities has a series of different elements that capture different aspects of these capacities.

We then identify a particular focus, and associated design features, for each delivery vehicle. The proposed focus and associated design takes account both of the generic institutional capacities and of the analysis in section 3.3 identifying how desirable institutional capacities may vary depending on the type of climate finance that the vehicle delivers. It also takes account of a wider range of contextual factors including institutional or political requirements that may shape how the delivery option would need to be structured in order to be able to absorb ICF resources in the short-term.

The proposed focus and design of the delivery vehicle option is then analysed along four dimensions:

- First, an assessment is made of the extent to which the delivery vehicle option would be likely to be able to fill any of important gaps in the current climate finance architecture, as set out in section 2.
- Second, we build on initial screening discussion in section 4.1 to identify the extent to which the delivery vehicle option would be able to meet the criteria set out in the Terms of Reference; namely that it should support the scale up of private finance flows, achieve strong climate and development benefits, increase the visibility of UK climate finance; and make the best use of UK climate finance expertise.
- Third, we provide a comparative assessment of how the delivery vehicle option may compare with programming resources through the Climate Investment Funds (CIFs) and, in particular, given the focus on renewables and energy efficiency, on using the Clean Technology Fund (CTF) and/or the Scaling Up Renewable Energy Programme (SREP). This is considered to represent a proxy for the counterfactual option for the disbursement of the UK's climate finance.
- Finally, we identify some of the key risks and uncertainties associated with the delivery vehicle option that will need to be taken into account as any further design work is taken forward.

In order to facilitate the comparison with use of the CIFs, the following section provides an assessment of this delivery option against the four generic institutional capacities. Each of the delivery vehicle options is then analysed, using this structure, in the three subsequent sections (section 6-8).

Further analysis will be required. This methodology provides an opportunity to consider a range of delivery vehicle options. Further work on, for instance, including a detailed value-for-money assessment, would be required before any option could be implemented.



5 Climate Investment Funds

The bulk of the UK's current climate finance commitments are disbursed through the CIFs

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The Climate Investment Funds are currently the UK's primary delivery vehicle for the disbursement of its international climate finance resources. They consist of two funds: the Clean Technology Fund and the Strategic Climate Fund with the Strategic Climate Fund consisting of three programmes: the Scaling Up Renewable Energy Programme; the Pilot Programme for Climate Resilience and the Forest Investment Programme.

This section reviews the institutional capacities of the CIFs, in particular the CTF and SREP, to provide a basis on which to compare the alternative delivery vehicle options.



5.1 Introduction to the CIFs

The Climate Investment Funds (CIFs) are multilateral vehicles that provide financing to support low-emissions and climate resilient development. There are two funds:

- the **Clean Technology Fund (CTF)** which promotes scaled-up financing for demonstration, deployment and transfer of low-carbon technologies with significant potential for long-term greenhouse gas emissions savings
- the **Strategic Climate Fund (SCF)** which consists, in turn, of three programs
 - **Scaling Up Renewable Energy Program in Low-Income Countries (SREP)** designed to demonstrate the economic, social and environmental viability of low-carbon development pathways in the energy sector in low-income countries
 - **Pilot Program for Climate Resilience (PPCR)** which aims to pilot and demonstrate ways in which climate risk and resilience may be integrated into core development planning and implementation
 - **Forest Investment Program (FIP)** which supports developing countries' efforts to reduce deforestation and forest degradation (REDD) and promotes sustainable forest management that leads to emission reductions and the protection of carbon reservoirs

In the context of this report, the CTF and SREP are the most relevant aspects of the CIFs as they focus on energy-related mitigation opportunities. As of June 2013, the CTF had approved almost USD 1.9 billion of resources and disbursed USD 579m across 11 countries/regions¹⁹ and SREP had approved USD 37m of resources and disbursed USD 1.8m across five countries²⁰ (Climate Investment Funds, 2013a).

A key feature of the CIFs is that they are implemented by the Multilateral Development Banks (MDBs). The implementing agencies for the MDBs are the World Bank Group, Asian Development Bank, African Development Bank, European Bank for Reconstruction and Development and the Inter-American Development Bank.

The UK has committed significant resources to the CIFs. At current exchange rates, the total value of its pledges and finalised contribution to the CTF is USD 951m – making it the third largest contributor after the US²¹ and Japan (Climate Investment Funds, 2013b). It is easily the largest contributor to the SCF with the current value of its contributions summing to USD 699m. Of this, the current value of its contributions to SREP is USD 154m more than twice as high as the contribution made by the next largest contributor (The Netherlands, which has contributed USD 76m)²² (Climate Investment Funds, 2013c).

¹⁹ Colombia, Egypt, Kazakhstan, MENA region, Mexico, the Philippines, South Africa, Thailand, Turkey, Ukraine and Vietnam.

²⁰ Ethiopia, Honduras, the Maldives, Mali and Nepal.

²¹ If the USD 600m of outstanding pledges from the US is discounted then the UK would be the second largest contributor to the CIF.

²² In contrast to other countries whose contributions to SREP are made as grants, the UK resources are provided as a capital contribution.



5.2 Assessment of institutional capacities

5.2.1 Value for money

The CIFs are perceived to be capable institutions with the ability to utilise competent staff and excellent networks. Evaluations of MDBs, such as those conducted through DFID's Multilateral Aid Review or the Multilateral Organisations Performance Assessment Network, tend to find that they have strong financial accountability, high quality staff and a strong emphasis on strategic and performance management (DFID, 2011c; MOPAN Secretariat, 2013). The 2011 Multilateral Assessment Review concluded that the CIFs represented 'good value for money for UK Aid'.

The total administrative costs of the CIFs appear moderate, although there are some concerns about incentives for efficiency at the project level. The recent Interim Evaluation notes that the sum of administrative and project implementation costs amounted to around 3.3 per cent of the total funding approved by the CIF committees to date. For the CTF the percentage is 1.4 per cent and the SCF it is 7.5 per cent, reflecting, mainly, the larger amount of approvals made by the CTF to date. Although noting the challenges in benchmarking against other organisations, it reports that an equivalent value for the Global Environment Facility (GEF) is around 3.0 per cent. The 2011 MAR also noted that the CIF Administrative Unit had very low administrative costs but that, at the project level, MDBs may lack incentives to reduce project implementation costs.

DFID has previously identified concerns about the speed of disbursement of the CIFs, although action to improve this has been taken, and there may be trade-offs between faster disbursement and greater national ownership. There are two elements associated with the disbursement of funds in the CIFs:

- The development and endorsement of an investment plan, identifying the rationale for the involvement of the CIFs in the country and the projects/programmes to be financed in pursuit of this rationale;
- The approval of individual projects within this investment plan, requiring approval by the relevant Trust Fund Committee²³ and then by the MDB responsible for implementing the project.

In the case of the former, a recent interim evaluation report notes that getting investment plan endorsement has taken on average 21 months, although it also notes that 'faster is not necessarily better' given the need to ensure full national ownership of investment plans and their implementation (ICF International, 2013). From the point at which investment plans are approved, CIF analysis indicates that around 80 per cent of the cumulative CTF resources that might have been expected to be disbursed by now have been disbursed; the equivalent figure for SREP is around 25 per cent. However, in both cases, the bulk of cumulative resources are expected to be disbursed beyond 2013. This assessment is based on the 'typical' length of time for approval of MDB projects; if this benchmark was considered to be too slow, as was suggested by some of the representatives of private capital providers interviewed for this report, then the implied disbursement performance would be worse.

The CIFs are designed to attract considerable co-financing. A key feature of the CIF model is that it provides resources, if necessary on a concessional basis, such that other providers of capital (either from the

²³ In principle, approval by the Trust Fund Committee is expected to be a relatively light-touch exercise, taking only a few weeks, although there have been instances where approval has taken significantly longer such as in projects in the Philippines.



MDBs, the public sector in the host country or private investors) are willing to provide finance when they otherwise would not. The CIFs appear likely to be successful in this regard: the 2012 Annual Report indicates that of the USD 7.6 billion of funds pledged to the CIFs, a further USD 43.6 billion of co-financing is anticipated. Projected co-financing appears to be relatively higher for the CTF and SREP than the other programs. These figures are based on projections and, as with all climate finance flows, there can also be difficulties in attributing the co-financing to the provision of specific resources.

There have been some successes in leveraging private capital, especially by the CTF; the range of financial instruments that the CIF does (and can) provide may restrict the ability to leverage greater private finance flows. The CIF attempts to leverage private capital both by providing resources directly to the private sector arms of the relevant MDBs and by trying to attract private capital into public investment programs. Data provided from the CIF Administration Unit suggests that across projects that have been approved by the MDBs, every dollar of CTF funding is expected to be associated with more than 2 dollars of private sector investment; the small number of projects approved under SREP makes a comparable figure for this program unavailable. The CIF also aims to promote private investment through a demonstration effect; aiming to demonstrate the commercial viability of some investment types to private capital providers; the CTF's interventions in the wind sector in Mexico appear to have been a successful example of this model. At the same time, it has been suggested that the lack of diversity in the financial products that the CIF can offer, and their terms, has restricted its ability to leverage private finance (Venugopal et al., 2012). This is a finding echoed in some of the CIF's own literature (Climate Investment Funds, 2011). To try and expand its engagement with the private sector, the CIF has recently announced explicit earmarked funding for private sector operations. This will take the form of two Dedicated Private Sector Programs in the case of the CTF, to which USD 150m of resources have been allocated, and private sector 'set-asides' in the case of the SCF, to which USD 135m of resources have been provided.

5.2.2 Ability to foster national ownership

Investment plans are a key mechanism for fostering national ownership within the CTF and SREP.

The investment plans that determine the intervention points for the CIFs, are intended to be developed as a joint exercise between recipient country and the relevant MDBs, under the leadership of the recipient country. It is expected that, where possible, they will build on existing national strategies and plans.

This approach has generally been considered to be successful at fostering national ownership.

Independent evaluations have found that investment plans tend to reflect national priorities with, for example 15 of the 16 CTF investment plans explicitly co-ordinated with national climate plans (ICF International, 2013). A review of the CIFs by the Australian government finds that: '*The process of developing national investment plans also involves strong working relationships with country partners ... to ensure investment plans are tailored to the specific circumstances of individual states ... The result of this support is investment plans that respond to country needs*' (Australian Aid, 2012a). However, on some occasions, there have been criticisms that the engagement of the MDBs have played in developing investment plans may sometimes be at the expense of country ownership (Patel & Brown, 2013).

There have been criticisms that, in some cases, non-governmental stakeholders are not fully engaged in the development of investment plans and oversight of the subsequent project cycle. Under the CIF model, primary responsibility for engaging with non-governmental stakeholders, as part of the development of the investment plan, lies with the national governments responsible for developing investment plans. Some authors have found that this approach has led to civil society being marginalised from investment plan development and oversight. For instance, there have been concerns about the limited role that civil society



has played in the development of a range of countries' investment plans including the Philippines, Vietnam and Indonesia (Nakhoda, 2011). In light of these challenges, it has been argued that the CIFs should have been doing more to ensure that a broad-base of different stakeholders are fully engaged throughout the investment plan and project/programme cycle approach. Recent changes have been made to the CIF processes to try to ensure this.

5.2.3 Learning and M&E

The CIFs have developed a comprehensive results framework for both the CTF and SREP. ICF spending departments have worked extensively with CIFs and the resulting framework specifies particular indicators that must be generated across countries in order to make inter-regional comparisons possible. This is a notable achievement given that the monitoring and reporting of climate change results is a new area.

At present, implementation of the results framework within existing investment plans is mixed. For instance, the Interim Evaluation notes that while 30 of the 33 investment plans in the SCF have a results framework in place, only one out of 16 of the CTF investment plans do. Stakeholder interviews have also raised concerns that some of the early CTF investment plans do not place sufficient emphasis on development benefits.

The CIFs have also developed a wide-range of learning products and contributed to sharing of international best-practice. At the end of 2012, 52 learning products had been developed by the CIF Administrative Unit; while the CIF also helps to build informal international communities of practice, for instance on the impact of wind power on birds and bats. DFID (2012) reports that '*CIFs are getting better at learning lessons, and sharing information and best practice at the country and programme level.*' However, other commentators have suggested, at least in relation to the CTF, that more could be done to disseminate learning experiences, including a need to be better at '*grappling with the difficult realities of project implementation.*' (Nakhoda & Amin, 2013b).

5.2.4 Climate focus

Both CTF and SREP have an explicit focus on the climate impact of their investments. All CIFs include various measures of abatement and low-carbon development among their investment criteria. For example, CTF evaluate investments based on both total greenhouse gas abatement and the cost effectiveness of abatement, only investing in projects that are expected to yield savings at a cost no higher than USD 200 per tonne CO₂e (Climate Investment Funds, 2009).



A key feature of the CIF approach is the use of a programmatic approach. This seeks to transform a whole sector or economy, rather than simply deliver individual projects. In the case of the CTF this seeks to build comprehensive and coordinated planning in a given sectoral or thematic area; in the case of SREP, the programmatic approach leads to a focus on capacity building and advisory services including support for policy changes. Institutional innovations to give effect to this programmatic approach, in the form of country coordination mechanisms, have been introduced.

The MDBs also have access to a wide variety of climate and energy specialists, and are in principle able to provide extensive technical assistance.



However, various challenges may have prevented the CIFs from delivering on this mandate as much as had been hoped. For example, the limited resources available in the CTF for providing technical assistance has meant that it has often been necessary to find other sources of finance to provide this advice in CTF programs (Nakhooda & Amin, 2013a). This reflects a broader concern that the nature of the capital resources provided to the CIFs by some donors has restricted its flexibility. The CIFs also have to grapple with the tension between delivering investments and early results versus developing investment plans that have more ambitious long-term objectives.

Table 11. The CIFs have a strong record on national ownership, but are weaker at cost and climate effectiveness

Criterion	Positive aspects	Negative aspects	Overall	Strength of evidence base
Cost effectiveness (e.g. quality of staff, admin costs and speed of disbursement, ability to leverage other public and private sources)	<ul style="list-style-type: none"> – MOPAN and MAR have consistently found high quality of staff and robust financial accountability in MDBs – Low administrative burden on ICF spending departments, relative to the quantity of capital invested – CTF has been able to achieve moderate success at leveraging the private sector with an average expected leverage ratio of 1:1.5 across approved projects 	<ul style="list-style-type: none"> – Disbursement for both CTF and SREP has been perceived as slow, although improvements have been put in place – Difficulty in providing a wide range of financial products to engage providers of private finance given the nature of the financial contributions received 		Medium
Foster national ownership	<ul style="list-style-type: none"> – Investment plans for CTF are led by recipient country governments and well aligned with national priorities – ODA compliant – Significant capacity for technical assistance through partnership with MDBs 	<ul style="list-style-type: none"> – CTF has been criticised for not doing enough to support engagement with non-governmental stakeholders. DFID reports improvement in recent years 		Medium



Criterion	Positive aspects	Negative aspects	Overall	Strength of evidence base
Learning and M&E	<ul style="list-style-type: none"> – Extensive work has gone into improving and refining results frameworks in recent years leading to reasonably close alignment with UK approach – Relatively easy for lessons learnt to be disseminated globally 	<ul style="list-style-type: none"> – Developmental benefits of investment are sometimes unmeasured – Some consider that insufficient attention has been given to incorporation of information sharing and lesson-learning within programming 		Strong
Climate effectiveness (e.g. allocate resources according to climate impact, ability to support transformational change, low-carbon technology expertise)	<ul style="list-style-type: none"> – Explicit climate focus – Programmatic approach and ability to undertake large scale projects that potentially create transformational change – Access to significant low-carbon expertise, both technical and policy orientated 	<ul style="list-style-type: none"> – Loan capital contributions from other donors limit potential for innovation and support to improving the enabling environment – Potential tension between desire for quick disbursement of resources and generation of transformational change 		Strong

Note: the more shading in the circles, the higher the score

Source: Vivid Economics, other sources mentioned in text



6 The UK Green Investment Bank

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This section presents an assessment of the possibility of the UK Green Investment Bank (GIB) as a delivery vehicle for ICF resources. It finds that there is potential for the GIB to play an important role in delivering ICF resources. Its explicit focus on private investors and ability to use a wide range of different financial instruments could help to fill some of the key gaps in the climate finance architecture. These are likely to be best deployed in countries with strong enabling environments to support both RES and EE deals reach financial close. There is potential for further focus to be provided to the GIB's investment mandate over time.

However, this option also carries some significant risks. Most notably, the GIB has no international experience and therefore its ability to catalyse additional investment flows is unproven. Its appropriateness to strong enabling environments may mean that it is less likely to assist with delivering development benefits, although this would differ across transactions. There is also a concern that without sufficient resources to support its overseas activities, the GIB may be distracted from its UK activities. It therefore recommends a pilot phase of two to three years to develop learning on whether and how the GIB can support private investor led, low-carbon investment deals in relevant ICF countries.

The GIB could help to increase private investor contribution to climate finance flows in developing countries



6.1 Introduction

This section presents an assessment of the use of the UK Green Investment Bank (GIB) as a delivery vehicle for ICF resources. The GIB was set up as a public limited company in 2012, wholly owned by the UK Department for Business, Innovation and Skills (BIS). It was allocated funding of £3 billion to March 2015 for which it received EU State Aid approval, 80 per cent of which is to be invested in offshore wind, non-domestic energy efficiency, and waste and waste-to-energy projects in the UK. A further £800 million was allocated for 2015-16. Its mission is *'to accelerate the UK's transition to a green economy and to create an enduring Institution, operating independently of Government'* (UK Green Investment Bank, 2013). It has a 'double bottom line', such that its green impact and financial returns are equally important. The GIB headquarters are in Edinburgh and it has a secondary office in London, with headcount expected to reach 100 by end-2013.

In its first year, the GIB committed £635m to waste, non-domestic energy efficiency, off-shore wind and Green Deal projects in the UK, supporting a total transaction value of £2.32bn. These investments are 'additional' to the market – the GIB must avoid crowding out providers of private finance, avoid distorting markets, and avoid conferring unfair advantage on particular market participants (UK Green Investment Bank, 2012). It has various procedures and processes in place to manage these risks.

The outline of the section is as follows. The GIB is assessed against desirable features of a new vehicle in section 6.2. Section 6.3 elaborates a suggested focus, design and costs of a GIB overseas investment arm, explaining in detail both a possible long-term vision for the GIB with respect to international activities and the possible dimensions of a short-term pilot phase. Section 6.4 reviews the gaps in the international climate finance architecture that the GIB may be able to address. Section 6.5 provides an assessment against criteria in the Terms of Reference. Section 6.6 compares the vehicle option with the CIFs. Section 6.7 elucidates key risks associated with this option.



6.2 Assessment of institutional capacities

Overall, the GIB performs well when assessed against the four generic criteria (as outlined in section 3.2). However, since the GIB's business model has not been tried and tested in relation to overseas investment, the strength of the evidence base is deemed to be weak in many cases.

The GIB scores well on most cost-effectiveness aspects in its operations to date. The GIB disbursed £635m in its first year of operation. Stakeholder interviews suggest that this has been driven by a strong results culture and experienced senior leadership. Operational expenditure was £8.2m, or 6.4 per cent of total fund utilisation of £127.6m (UK Green Investment Bank, 2013), which is comparable or lower than the CIFs in the same stage of the life cycle²⁴. The GIB has a strong focus on working with providers of private finance, reporting leverage of its investment to private investment of 1:2.6. By comparison, data provided by the CIF Administrative Unit suggests that projects approved for CTF funding are anticipated to achieve a leverage ratio of 1:2.0 when measured as cumulative CIF funding to private sector investment, or 1:0.34 as total public to private sector investment, although the CTF is operating in more challenging enabling environments²⁵.

The GIB may face challenges when investing overseas. The GIB, being a UK-focussed organisation, may face challenges in translating its good performance in the UK into good performance internationally. Although stakeholders indicated the existence of a network of contacts at international climate finance institutions that could help provide relevant contacts, the GIB depends on a small number of key staff for these contacts rather than having established institutional linkages.

There is a lack of evidence on the GIB's capacities to foster national ownership, but its current structure and activities may not be well suited to this. The GIB would be able to make long-term commitments (as necessary) and has the potential to build strong relationships with partners. However, its relatively limited (institutional) contacts in developing country governments may make it difficult to ensure alignment with host government priorities. The GIB is not currently geared towards providing the necessary technical assistance in developing countries. It also has no institutional experience in providing ODA – although this may, in the context of cost-effectiveness, also be interpreted favourably as it implies an institutional drive to avoid over-subsidisation and a lower risk of crowding-out other finance²⁶. Furthermore, the entry of the GIB alongside other climate finance providers may lead to an increase in the fragmentation of climate finance.

The GIB has strong procedures for monitoring and evaluation (M&E) and is committed to learning, but these structures have yet to be stress-tested. Extensive M&E procedures are in place involving the National Audit Office (NAO), a Parliamentary Committee Review, and green monitoring review by an external party (PwC). The GIB implements strong real-time portfolio monitoring processes with monthly reports to senior management and quarterly reports to the Portfolio Management Committee. It also

²⁴ In its first year of operation, the percentage of program and project-related costs to project approvals across the CIF as a whole was 9.4% (ICF International, 2013). Details of the costs of individual funds under the CIF are not available.

²⁵ Total public finance includes all investment apart from private sector investment, including government, MDBs, bilaterals and others.

²⁶ For instance, the European Commission, in explaining its clearance of the GIB under state aid rules notes that 'whenever possible, funding provided by the GIB will come in addition to market financing. This should allow green projects to materialise while minimising potential distortions of competition' (European Commission, 2012).



incorporates an early-warning risk system in its monitoring activities. The youth of the organisation means that these procedures have yet to be fully stress-tested. The GIB's limited relations with other climate finance providers may make it less likely that lessons are disseminated across the international community.

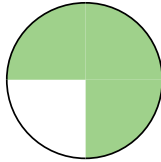
The GIB scores well against the criterion of climate effectiveness. It is a dedicated 'green' investor, reflected in its 'double bottom line', that is, attaching equal weight to green impact and financial performance. Consistent with this, its recruitment strategy has emphasised attraction of talented staff in the area of renewable energy and energy efficiency investment. Furthermore, it explicitly aims to develop innovative financing models which can attract private investment in target sectors, with stakeholders indicating some early successes such as supporting BIS to become a cornerstone equity investor in the Greencoat UK Wind fund – a novel approach that has been replicated by other funds recently. However, despite stakeholders indicating that there has been some UK experience in this regard, it is less clear whether the GIB would perform well at providing policy advice in a developing country context. Furthermore, especially in the early stages of any overseas investment activity, it could struggle to develop a programmatic approach with the likelihood of a greater focus on supporting individual transactions.



Table 12. The GIB performs well when assessed against all criteria except fostering national ownership

Criterion	Positive aspects	Negative aspects	Overall	Strength of evidence base
Cost effectiveness (e.g. quality of staff, admin costs and speed of disbursement, ability to leverage other public and private sources)	<ul style="list-style-type: none"> – good first year of performance with over £600m disbursed – strong results culture – confidence in senior leadership teams – admin costs comparable to or lower than CIFs at same stage of life cycle – strong focus on working with private investors with reported leverage of 1:2.6 	<ul style="list-style-type: none"> – limited institutional local knowledge placing emphasis on key individuals – yet to establish institutional relationships with other international public climate finance providers – no institutional experience in providing ODA 		Weak
Foster national ownership (e.g. alignment with national priorities, use of in-country systems, ability to provide TA, ODA eligibility)	<ul style="list-style-type: none"> – could make long-term commitments, depending on arrangements 	<ul style="list-style-type: none"> – limited contacts in developing country governments may make aligning priorities difficult – increase in fragmentation of climate finance – not geared to provide technical assistance – no institutional experience in providing ODA 		Weak
Learning and M&E	<ul style="list-style-type: none"> – extensive M&E scrutiny provided by NAO and Parliamentary Committee Review and green monitoring reviewed by external parties (PwC) – strong real-time monitoring of investment portfolio with monthly reporting to senior management and quarterly reporting to PMC – early-warning risk system 	<ul style="list-style-type: none"> – as a young organisation, these procedures have yet to be fully stress-tested – relatively weak relationships with other int'l climate finance providers creates risk that it will be difficult to disseminate lessons across int'l community 		Medium



Criterion	Positive aspects	Negative aspects	Overall	Strength of evidence base
Climate effectiveness (e.g. allocate resources according to climate impact, ability to support transformational change, low-carbon technology expertise)	<ul style="list-style-type: none"> – strong focus on green impact with 'double bottom line' – incentivised to develop innovative solutions with some early successes (e.g. cornerstone equity model in Greencoat UK Wind) – recruitment strategy has focussed on developing expertise in RES and EE 	<ul style="list-style-type: none"> – limited experience in providing policy advice in developing countries (some UK experience) – may struggle to develop programmatic approaches in developing countries 		Medium

Note: the more shading in the circles, the higher the score

Source: Vivid Economics, other sources mentioned in text



6.3 Suggested focus, design and costs

This section first elaborates a long-term strategic vision for overseas investment in low-carbon infrastructure by the GIB and, secondly, a proposal (and rationale) for a pilot phase for overseas investment that aims to validate this strategy. As with the other delivery vehicle options, this is only a preliminary assessment and further work, in particular examining value-for-money, would be required.

6.3.1 A possible long-term vision

If GIB were to assist in the delivery of ICF resources, the most plausible long-term vision would be for it to focus explicitly on leveraging private finance at financial close for both energy efficiency and renewables investments, primarily in middle income countries. This strategic focus is further elaborated below.

GIB international activities could help to increase the flow of private finance to low-carbon infrastructure in developing countries. The GIB's mission is to catalyse private investment into its target sectors in the UK. Rolling out the GIB business model internationally with a similar mission could benefit the international climate finance architecture through attracting new and additional private investment into target sectors. The policy requirement that ICF resources are ODA-compatible would mean that the GIB would achieve this goal primarily through the provision of concessional capital, helping to reduce the overall financing costs of its target projects.

The GIB is likely to be more cost effective in countries with strong enabling environments, which may point to greater activity in middle income countries (MIC) than low-income countries (LIC). The GIB's skills and acumen pertain to leveraging private finance, but it has limited track record in providing technical assistance and engaging in policy. This suggests that it may be more effective in countries with a strong enabling environment where the greatest gaps may relate to financing and structuring increasingly complex deals. The GIB also lacks a 'core offering' of technical expertise and policy advice that may be needed to operate in the institutional context of less developed countries (see Section 3.3.1). The GIB's less extensive network of local contacts compared to the CIFs will likely be less of a handicap in strong enabling environments where country risk is typically lower. Using Middle Income status as a (rough) proxy for the strength of the enabling environment, the countries that the ICF has identified as low-carbon development priorities where GIB engagement may be most productive are: Brazil, Chile, China, Colombia, India, Indonesia, Malaysia, Mexico, Nigeria, Peru, South Africa, Thailand, Uruguay and Vietnam.

Late-stage financial investments are more suitable for the GIB than early-stage investments. The GIB's commercial and banking skills mean that it is more appropriate to focus on late-stage investments, where financial structuring becomes more important. In addition, the GIB does not have the project development expertise required for early-stage interventions and it would also be likely to suffer from a comparative lack of the local knowledge that is required for early-stage interventions. The GIB furthermore appears to have a cultural focus on doing quick deals and little appetite for committed long-term involvement in project development.

The GIB could invest in projects of various sizes. In-house capacities of the GIB are focussed towards larger deals, with a typical deal size of around £50m. However, it has effectively run competitions to select fund managers in waste and energy efficiency to support smaller-scale projects. It may take a period of several years to build networks to do this outside of the UK. As discussed further below, and bearing in mind the gap analysis discussed in section 2.3, there may be merit in using a pilot phase to assess the feasibility of



GIB gearing its international activities towards investments falling within the lower end of the feasible size range identified below, between £10m and £30m. However, it is acknowledged that this may be challenging for the GIB given its current institutional capacities compared to those needed to invest in projects of this scale²⁷.

The GIB has experience in both renewable energy and energy efficiency investments. The GIB may be able to tap into energy efficiency investment opportunities abroad; however in the UK it appears to have been easier to do RES deals than EE deals to date. In its first financial year the GIB invested £1.30 in renewables for every £1 in energy efficiency projects (£2.88 in renewables for every £1 in energy efficiency if the Green Deal is excluded) (UK Green Investment Bank, 2013). Notwithstanding this early evidence, the gap analysis discussed above suggests that it may be desirable to try and exploit the GIB's skills in relation to energy efficiency financing.

The GIB would be able to provide a wide range of financial instruments. The management team has the skills and experience to providing a range of different financial instrument. Instruments committed to date include a term loan facility for Drax as well as advising on BIS's investment of 'cornerstone' equity in the Greencoat deal (UK Green Investment Bank, 2013). It would be desirable for the full range of the GIB's financial structuring skills to be exploited in any overseas activity.

The GIB might execute this long-term vision by directly investing ICF resources itself, which could bring reputational and procedural advantages to any ICF investments. The GIB's mission is to attract private investment into its target sectors. This is assisted by a decision-making process that is explicitly commercial and where potential co-investors are not concerned about the scope for political interference. In addition, using the same framework and internal infrastructure that the GIB uses for its domestic investments could help expedite disbursement (which as well as being a benefit in its own right, could make the vehicle more attractive to potential co-investors).

6.3.2 Pilot phase

If the GIB were to be taken forward it is suggested that in order to test the GIB's capacity to invest ICF funds abroad, a pilot phase of two to three years would be needed as it tries out its business model for an overseas investment arm. At present the GIB does not invest outside of the UK (and is not permitted to under its Articles of Association). As Table 12 illustrates, this necessarily means that the strength of the evidence base on which to judge the likely success of the GIB as a climate finance delivery vehicle can be assessed. A pilot could therefore provide a much firmer basis for establishing the viability of this model as a means of achieving the long term goals of the ICF. It may also reduce the risks, discussed further below, concerning the possible detrimental impact on the GIB realising its UK mandate.

In the initial stages of the pilot, the GIB may need to place some reliance on co-investment with MDBs, building on the significant deal flow that their pipelines represent. The MDBs have significant pipelines of low-carbon infrastructure deals, which are accessible through the contacts that the GIB currently has. The GIB could potentially bring some of its commercial skills to these deals and broaden the variety of instruments used.

²⁷ Although, in turn, this could be overcome by the use of competitively procured fund managers as the GIB is already doing in relation to smaller projects in the UK.



However, relying on MDBs for deal origination implies that the GIB risks duplicating other climate finance flows and may attract the least attractive deals in the pipeline; neither does it exploit the core expertise of the GIB. As discussed in section 5, the CIFs have been established to work closely with and through the MDBs; they predominantly achieve their objectives by using concessional financing to help improving the ‘bankability’ of deals to which the MDBs can provide co-finance. This suggests a clear risk of duplication between the CIFs, especially the CTF, and any model in which the GIB relied heavily on pipeline from the MDBs. Such a model would also raise concerns about whether the GIB would only have access to less attractive deals that could not be financed through the existing CIF-MDB architecture. Other aspects of such a model that may be undesirable include that:

- it would not necessarily match the core mission and comparative advantage of the GIB to work alongside providers of private finance,
- it might increase the amount of the UK’s ICF resources used to fund administrative/transaction costs as fees would be levied both by the GIB and by the MDBs for project implementation (although some administrative costs are also paid when the UK programmes its resources through the CIFs)
- there would be questions as to whether the GIB would be able to speed up the pace of disbursement (one of the key concerns about the current MDB-CIF architecture, as discussed in section 5), and
- it may not provide as much visibility to UK climate finance flows as other approaches might.

Therefore, if the use of the GIB does proceed, it is proposed that opportunities for originating deals outside of MDB pipelines are explored in this pilot phase to establish whether this is a feasible business model. A pilot would test how easy it was for the GIB to develop and finance a pipeline of investment opportunities that did not originate from within the MDB architecture. If, at the end of the pilot phase, a (significant) majority of financing was being co-invested alongside the MDBs then the pilot would be deemed a failure.

There may be more scope for the GIB to work alongside the MDBs in Brazil, China, Malaysia and Peru. These are the middle income, low-carbon development ICF priority countries that do not have a CTF programme.

During any pilot, it would be preferable for investments to be off ICF spending departments’ balance sheets to avoid a number of procedural delays. In this arrangement, the GIB would provide investment advice to ICF spending departments rather than making investments itself. The possible processes involved are further elaborated in Box 1. Although further legal advice is required, this approach may reduce the likelihood that there would be a need to seek Parliamentary approval for a change in the GIB Articles and further State Aid approval from the European Commission, both of which would slow down, or indeed prevent, implementation. It would also have the benefit that it would allow both GIB and the relevant ICF spending department to understand more about the approaches and consideration that each make when deciding whether to grant approval to a project, which could increase learning in the respective organisations and build trust for a potential subsequent phase where resources were invested directly by the GIB. It would, however, need to be established that this approach was consistent with government procurement rules. It would also likely reduce the speed and efficiency with which resources could be deployed during a pilot. If a pilot were successful then a subsequent phase could see the GIB investing resources directly, as outlined in the long-term vision above.



Box 1. A possible model for GIB/ICF co-operation on project approval processes during the pilot phase

The processes in the GIB investment advisory to ICF spending departments model could be as follows.

- Potential investments are initially screened by GIB, which prepares a short concept note outlining key features of the deal. The GIB already prepares such ‘preview papers’ as part of the due-diligence process for its own investments.
- This document is shared with ICF for an initial assessment of the alignment of the proposed investment with the ICF objectives including Value for Money considerations and compatible choice of project partners.
- Subject to the consent and guidance of one or more relevant ICF spending departments, the GIB will pursue further work on the deal, progressing the work through its own team
- As per the GIB’s current processes, when the due diligence is substantively complete, the deal goes to GIB’s Investment Committee for review (as a ‘pre-final’ paper). The Investment Committee would need to satisfy itself that the deal met all the commercial considerations that it would normally apply to a deal. In addition, it could satisfy itself of the ODA-eligibility of the deal (although this would be a new requirement for the GIB Investment Committee, it is not anticipated to be particularly onerous) and also confirm whether the deal met certain benchmarks that had been pre-agreed with ICF related to expected performance from the ICF resources in terms of, for instance, emission reductions and private finance leverage. These benchmarks would be set by reference to the current performance that the ICF achieves and would help provide assurances that the deal was preferable to a reasonable alternative.
- If the Investment Committee approves the deal, an investment report is sent to the relevant ICF spending department(s) for final approval. Subject to this, and any residual due-diligence, the deal would proceed.

A pilot phase could last for two to three years and be associated with perhaps £200m of investment capital. A pilot phase of less than two years would make evaluation difficult due to the lead-up to securing deals, especially in light of the suggestion that there is a transition during the pilot to originating deals outside of MDB pipelines. Assuming an average deal size of £10m-£50m, this level of resources would allow between four and twenty deals to be undertaken, with eight to twelve deals being the most likely range, which it is anticipated would yield a sufficient evidence base for the purpose of evaluating a pilot (see below).

There are a range of additional considerations that could be explored as part of a pilot. Taking into account the gap analysis in section 2, the pilot could also be used to test whether, in any future phase, it is feasible and desirable for the GIB:

- to develop a business model that allows it to work largely on smaller deals (perhaps in the £10m-£20m bracket) that has been identified as a particular gap, and
- to dedicate a certain (significant) percentage of its resources to energy efficiency programmes.

However, further discussions between GIB and ICF would be needed to strike the optimal balance between providing the GIB commercial flexibility to respond to market conditions and targeting identified gaps in the climate finance landscape.

Any pilot phase should be explicitly assessed. This could be incorporated into the existing independent evaluation framework that exists for the ICF. Table 13 sets out some of the suggested key features that could



be assessed as part of this evaluation. The third column provides an indication of how the pilot's success could be determined.

Table 13. Suggested focus, motivation and determinants of GIB overseas pilot success

Suggested focus	Motivation	What determines pilot success?
Catalysing private finance flows at speed	Current lack of private climate finance flows, with concerns that providers of private finance are put-off by slow speed of public delivery	High leverage ratio (e.g. exceeding CIF's leverage ratio or that obtained elsewhere in ICF portfolio), success in disbursing agreed funds in the pilot timescale
Region: Middle Income Countries (MICs)	GIB organisationally aligned for quick transactions in strong enabling environment	[70]** per cent of resources invested in ICF priority countries
Broad set of financial instruments	Current lack of diversity in the financial instruments provided by other climate finance vehicles	Evidence of a wide range of different instruments considered and some non-standard instruments deployed
Small-medium sized transactions*	Lack of attention in current climate finance architecture	[50]** per cent of investments in large projects, [50]** per cent of investment in smaller projects perhaps through funds
Energy efficiency*	Lack of attention in current climate finance architecture	All investments in low-carbon of which [30]** per cent to EE

Note: * subject to further discussion with ICF. ** Indicative percentages only, would need to be further elaborated in ICF Business Case.

Source: Vivid Economics

This would be in addition to the on-going monitoring of GIB performance that would be provided through the dual decision making process outlined above in Box 1.

6.3.3 Funding amounts and costs

A pilot could have a mandate of investing up to £200m over two to three years. £200m would allow the GIB to provide advice in relation to between four and twenty investments in the range of £10-50m. Targeting significantly less resource mobilisation than this (for example £100m), given the likely size of the average deal, could make it difficult for the pilot to provide meaningful information to assess what should be the appropriate next steps. If the GIB was to leverage private finance in its international activities at the same rate as it has in its UK operations to date, then £200m of investment support by the GIB could be associated with private investment of up to £520m.

Provisional discussions with GIB indicate that such a pilot would require a team of 6 – 12 people (most of whom would be new recruits) at an approximate cost of between £0.8 - £1.6m per year. This relates to the costs of the staff that would be required to run the pilot including a senior executive, directors, analysts and a portfolio manager. There would be additional time and cost associated with the involvement of the senior management of the GIB in relation to time spent by the investment committee and risk and legal teams but it is anticipated that these would be absorbed within the day-to-day costs of operating the GIB at present. These would be ongoing operating costs; it is not anticipated that there would be substantial upfront costs. Assuming a 3 year pilot that aimed for £200m of investment, this would imply administrative costs of 1.2-2.4 per cent of disbursements. This seems broadly comparable with the costs and resources of other vehicles considering direct investments in developing countries: CDC's recently established direct equity team has 14 direct staff plus a further 4 support staff at a total cost, including allocated overhead, of £3m a



year which it expects will provide it with the capacity to make 5-7 direct deals a year as a co-investor²⁸. Time spent on approval of investments by ICF spending departments is not accounted for as it can be roughly assumed that alternative investment of ICF resources would require equivalent, or potentially greater, approval processes and time commitments.

In addition to these administrative costs, there would also be project specific transaction costs. These would consist of the following elements and approximate ranges for each transaction:

- Legal costs: £0.3m-£0.5m
- Technical advice (including yield assessment, for instance): £0.05m-£0.07m
- Ensuring compliance and managing risks associated with environmental and social guidelines (in line with the Equator Principles): £0.03-£0.07m

²⁸ We also sought to benchmark these costs with evidence from KfW and AFD. However, KfW no longer makes direct investments in developing countries and so is not a directly relevant comparator. At the time of writing, no further information had been provided by the AFD.



6.4 Gaps addressed by the proposed option

Section 2.2 highlighted the limited role played by private investors in climate finance, which the GIB may be particularly suitable to address. The GIB's mission is to catalyse private finance into its target sectors in the UK and, therefore, its institutional design and staffing are fully aligned to achieve this. Its international activities could build on the experience and capacities that have been accumulated through UK activities.

The GIB may be able to address the gap in the breadth of financial instruments, although careful consideration of ODA-eligibility rules will be needed. The GIB has been able to deploy a reasonably wide variety of instruments in the UK. It has experience with equity investment – for instance, its successful cornerstone equity model – that may be replicable overseas. Its senior management reports that across the team there is experience in providing a wide range of other instruments including guarantees and risk mitigation instruments. However, any investments that the GIB makes would need to take into account rules on ODA-eligibility and the commitment that the UK government has made to allocating at least 0.7 per cent of GNI to ODA-eligible overseas aid.

There is also a gap in financing for smaller sized projects, between USD1-20m in size, which the GIB may be able to address. Section 4.3.2 highlighted the possible role that a pilot stage could play in learning about the feasibility of the GIB supporting smaller-scale projects. One option would be for the GIB to make use of its experience with running competitions for fund managers in the UK (in relation to waste and energy efficiency) to run similar competitions for fund managers in other regions overseas²⁹. There are various private equity and venture capital funds in middle-income countries (see Asian Development Bank, 2011, and UNEP, 2011, for examples) that focus on smaller-scale RES and EE projects that GIB could invite to tender. The pilot phase would be a good opportunity to establish whether this is feasible.

There is also a lack of financing for energy efficiency projects in MICs which the GIB may be able to address. These gaps are apparent both at the international level and also within the ICF itself: recent analysis of the ICF portfolio indicates that only 6 per cent of the DECC portfolio of ICF resources are exclusively dedicated to energy efficiency. The specific skills and experience of the GIB team that has been explicitly tasked with supporting energy efficiency in the UK could provide valuable experience in the GIB's international activities.

²⁹ Although some interviewees noted that following the successful appointment of such fund managers, these fund managers have had challenges in disbursing funds.



6.5 Assessment against the criteria in the ToR

An overseas investment arm of the GIB could potentially perform well against the criteria set out in the Terms of Reference. Its mission is to scale up private finance flows for low-carbon infrastructure. Such investments can have various development benefits in a developing country context. Being an entirely UK-based institution with the UK government as its sole shareholder, it would improve visibility of UK climate finance abroad. Its offices are located in the two most important financial centres in the UK – London and Edinburgh – and it is staffed with a significant number of former private financial sector employees, enabling it to tap into the UK’s private sector climate finance expertise.

The GIB’s mission is to scale up private finance flows for low-carbon infrastructure, at which it has been relatively successful to date. As reported above, the GIB has been able to leverage its investment with private finance at a ratio of 1:2.6 to date. Discussions with the GIB suggest that much of these leveraged private capital flows are either from institutional investors (providing equity) or commercial banks (providing debt). The latter, as noted in section 2, represents an area where developing countries’ flows are disproportionately lower than in developed countries, while the former is a source of capital largely untapped in both developed and developing countries. A key question that the proposed pilot would address is the extent to which the GIB would be able to use this expertise to replicate this success outside of the UK.

The GIB’s focus and incentives on its ‘double-bottom line’ provides confidence that it will deliver climate benefits. The GIB is developing increasing experience in using its financial expertise to deliver climate benefits: its total capital commitments of £635.4m in its first year of operation³⁰ was associated with transactions that are expected to reduce emissions by 43 megatonnes of CO₂e over the project lifetimes, implying a ‘simple’³¹ cost-effectiveness metric of £14.80 per tonne of CO₂e.

The scope for developmental benefits will vary by transaction. Given the suggested focus on Middle Income Countries, the developmental and poverty alleviation benefits from this option may be somewhat lower than for some of the other options discussed in this report. Similarly, a focus on medium to large scale transactions will tend to imply some focus on grid-connected renewables that typically will be unlikely to lead to changes in improvements in energy access. Nonetheless, as is well documented elsewhere, there are various co-benefits associated with renewable energy and energy efficiency investments (see, for example, Ward et al., 2012, and OECD, 2011), including employment generation and increases in energy security in the host country, as well as a reduction in harmful externalities such as air and water pollution. The precise extent of these will depend on the transactions that are developed by the GIB.

A potential benefit of appointing the GIB for investing ICF funds would be an increased visibility of the UK’s climate finance commitments. This may help in supporting the vision that the UK articulates at the international negotiations regarding the benefits and opportunities from developing countries adopting a low-carbon development path.

³⁰ Note that some of this investment has been in the waste sector where the motivation for the investment is often not (only) emission reductions.

³¹ In practice, many of its investments are in sectors covered by the EU ETS. In these cases, the net emissions savings from the immediate investments is zero.



As a UK-based institution, the GIB is positioned well to tap into the wealth of financial expertise in the City of London and Edinburgh. The UK's financial centres attract financial expertise that the GIB can tap into, both directly through recruitment of skilled staff as well as through cultivation of contacts and other benefits associated with being located in a 'cluster' (Rice & Venables, 2004). This may provide the GIB with a comparative advantage in providing climate finance.



6.6 Comparison with the CIFs

Of the CIFs, the Clean Technology Fund would be most similar to any GIB overseas investment arm.

The Clean Technology Fund (CTF) targets middle-income countries and aims to scale up the demonstration, deployment, and transfer of low-carbon, clean technologies.

The proposed focus of using the GIB pilot to develop late stage, large scale investments is very similar to the focus of the CTF. The CTF focuses on the provision of (concessional) financing for both public and private low-carbon investments including energy efficiency and renewables (as well as public transportation projects). Except for when it provides finance to local financial intermediaries, the bulk of the projects and programmes that the CTF finances are relatively large-scale projects. These projects are implemented by the MDBs. The GIB would similarly focus on large scale, late stage investments (but not public transport projects). If the GIB opts for an investment strategy sourcing deals from MDB pipelines, the two investment models could be very similar.

The CTF focuses on certain middle-income countries – avoiding this group would more likely enhance the additionality of the investments that the GIB sources. As discussed above, ICF low-carbon development priority countries with middle-income status that do not have CTF investment plans are Brazil, China, Malaysia and Peru.

The GIB's commercial acumen may provide a comparative advantage compared to the CTF, especially in supporting private climate finance. The CIFs and their activities are managed by MDBs, which have sometimes been criticised, including in stakeholder interviews for this project, for a lack of flexibility and speed in deal making compared to providers of private finance. The GIB was set up to avoid procedural delays and a lack of commercial skills often associated with public sector institutions. In this sense it may have a comparative advantage in providing climate finance compared to the CTF, as it would be able to process deals faster and potentially attract new sources of private sector capital. The advantage of the GIB in this regard may come at the cost of it being less likely to develop programmatic, sector-wide change and rather focussing more on individual transactions. This is less likely to be problematic in countries that have already developed national climate change strategies/action plans, including Nationally Appropriate Mitigation Actions (NAMAs)³². As discussed above, if the GIB would depend on MDB pipelines for deal origination and invest alongside MDBs, its advantages in doing deals quickly is less likely to materialise.

³² In this sense the use of the GIB is complementary to the existing ICF Nationally Appropriate Mitigation Action support facility which aims to support the development and implementation of NAMAs (UK Government, 2013).



6.7 Key risks associated with this option

A key risk for any GIB overseas investment arm would be an inability to source deals outside of MDBs. If the GIB fails to source deals outside of the MDB pipelines, it is, to a large extent, replicating the strategy of the CTF. Unless the current MDB pipelines have a high number of viable projects that lack financing, which discussions with stakeholders suggest is not the case, then this investment model would lack additionality. The discussion above highlighted some further risks that would surround reliance on the MDB pipeline including failure to increase the speed of disbursement and less likelihood of engaging the providers of private finance. The pilot scheme is explicitly designed to attenuate this risk, although it is acknowledged that a reasonably significant proportion of ICF resources would need to be put ‘at risk’ before the extent of this risk can be observed.

An overseas investment arm of the GIB may divert resources away from, or have to compete with, the principal GIB mission of catalysing private finance in its target sectors in the UK. An overseas investment arm would require recruiting additional personnel to avoid diversion of existing human resources from the GIB’s principal mission in the UK. However, even with new resources in place, the overseas arm will be embedded in the larger GIB structure and make use of its Investment Committee and specialised teams for legal and other services. There will also be time expended by the GIB’s senior team in establishing any international activity. Collectively, this could compromise its UK activities and may represent a significant source of concern to some stakeholders. The best mitigant for this risk is to ensure that sufficient resources are devoted to the pilot and any subsequent phases of activity (see section 4.6). Furthermore, there may be some diminishment of the ‘brand value’ of the GIB, as it seeks to forge a clear identity and value proposition within the UK, as discussed in Box 2 below.

Box 2. The risk of detracting from the brand value of the GIB by making concessional investments

One of the key justifications for the GIB’s UK-based activities is to demonstrate that it is possible to undertake commercial transactions in the ‘green economy’. Consistent with this, its state aid clearance requires it to invest on the Market Economy Investor Principle (MEIP basis); in other words on a commercial basis.

By contrast, for the GIB’s investments to qualify as Overseas Development Aid (ODA), its investments will need to meet various criteria. One of these is that the flow is ‘*concessional in character*’ which, for loans requires that it ‘*conveys a grant element of at least 25 per cent (calculated at a rate of discount of 10 per cent)*.’ (OECD DAC, 2008). Different rules apply in relation to equity, guarantees and other financial instruments.

ODA eligibility rules for multilateral bodies are different such that it is possible for such bodies to provide financial instruments at commercial terms and yet for the resources allocated by donors to these bodies to be classed as ODA, so long as there is some concessionality in relation to the resources that the donor provides (for example, the resource might be provided as a subordinated equity product). However, discussions with the OECD have confirmed that under the current rules it is not possible for these procedures to apply for bilateral vehicles such as the GIB.

This creates a possible tension between the GIB’s UK activities – where it is strongly focussed on demonstrating the commercial potential of its deals and works to encourage private sector investment partly through reducing perceived policy risk – and its international activities – where it would have to



demonstrate the concessionality of its support and where it would have little or no impact in reducing policy uncertainty. Some stakeholders have suggested that this might diminish the brand value of the UK's operations and create confusion regarding its mandate.

During the pilot phase, this risk can be partly addressed by the fact that the GIB would not be directly investing resources off its own balance sheet. In any possible longer term GIB involvement, there may be merit in creating very clear operational divisions between the UK and international activities (Chinese walls) although these should be established so as to allow the international activities to share some of the common services that both divisions might require, for example, human resources and legal capacities.

Linked to these issues, legal advice would be required as to whether a pilot could proceed without a change to the objects clause in the GIB's Articles of Association which stipulates that GIB is to carry out activity which 'the board considers will or is reasonably likely to contribute in the United Kingdom' to a range of green objectives such as reducing CO₂ emissions or enhancing biodiversity. A change in this document would require parliamentary approval.

The development benefits of this delivery vehicle option may not be as high as for alternatives. As noted above, the suggested focus on Middle Income Countries implies that the developmental and poverty reduction benefits from this option may be somewhat lower than for some of the other options discussed in this report, although this will vary between transactions..

There could be a risk of crowding out private or other sources of finance. If the investment terms offered by the ICF on GIB-sourced investments are concessional in order to comply with ODA requirements, this may potentially crowd out private investors such as commercial banks, DFIs and other institutions who may be able to offer financing at prevailing market rates. As noted above, this risk may be particularly prevalent if the GIB sources projects from well-capitalised MDBs. This risk may be mitigated by the GIB making use of the same procedures and processes that it uses to ensure that its UK investments do not crowd out other sources of finance. The same principle can apply even in cases when the capital is ultimately provided on concessional terms.

Another risk would be a failure to build the institutional capacities and team that are capable of investing in low-carbon infrastructure in MICs. A capacity to invest in the UK, with a strong enabling environment that staff is familiar with, requires a different focus from investment in developing countries. The GIB would need to choose any new staff to support these activities with care, and would require a very clear direction from the ICF on what it expected the GIB to achieve during the pilot.

Finally, during the pilot phase there is a risk of crowding out other private advisors. It is possible that other private advisors³³ could support the ICF along the lines suggested in the pilot phases, although it is possible that there would be benefits from the ICF working with the GIB in terms of the close understanding between the GIB and the UK government. Concern about this risk is significantly reduced if the long term vision is one in which GIB comes to manage ICF resources off its own balance – as, in this case, any crowding out is anticipated to only be transitory and a necessary requirement in helping to establish the

³³ Various investment managers are active in the climate finance space. For example, the Global Climate Partnership Fund (GCPF) appointed Deutsche Bank as its investment manager.



processes needed to realise the longer term vision. The extent of this risk will need to be managed through discussion with the relevant procurement teams linked to the ICF.



7 Private Infrastructure Development Group

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This section is dedicated to an assessment of the potential for channelling funds through an existing or new vehicle under the Private Infrastructure Development Group (PIDG) umbrella. It identifies that there may be an attractive opportunity in relation to Infracore Africa to provide resources to support a new project developer contract focussing on low-carbon investment opportunities. This matches a key gap in the climate finance architecture with an organisation that has strong evidence of successful delivery. It also evaluates this option against the criteria identified in the Terms of Reference, finding a strong performance on certain criteria; compares the option with the CIFs; and identifies some of the key risks and uncertainties associated with this option.



7.1 Introduction

This section is dedicated to an assessment of the potential for channelling funds through an existing or new vehicle under the Private Infrastructure Development Group (PIDG) umbrella. The PIDG is a multi-donor organisation funded by and under the governance of nine development agencies (as of end 2012)³⁴. The PIDG's mission is to mobilise private finance to assist developing countries in providing infrastructure vital to boosting their economic growth, and combating poverty. To that end, the PIDG aims to mobilise and increase flows of local, regional and international investor capital and expertise for infrastructure investment. In doing so it seeks to address the lack of capacity from the public sector and demonstrate the potential for private investment in low- and lower middle-income countries.

The PIDG has invested USD 1.42 billion in 130 projects and works through seven facilities. Figure 10 presents the PIDG facilities that fall into three broad categories (PIDG 2013:11):

- facilities that provide **technical assistance, affordability and capacity-building support** to PIDG projects (TAF) and to public authorities seeking to deliver projects with private investor involvement (DevCo)
- facilities that provide early-stage **project development capital and expertise** in Africa and Asia (InfraCo Africa and InfraCo Asia)
- facilities that directly provide **long-term debt finance** both in foreign currency (EAIF, ICF-DP) and local currency through guarantees (GuarantCo).

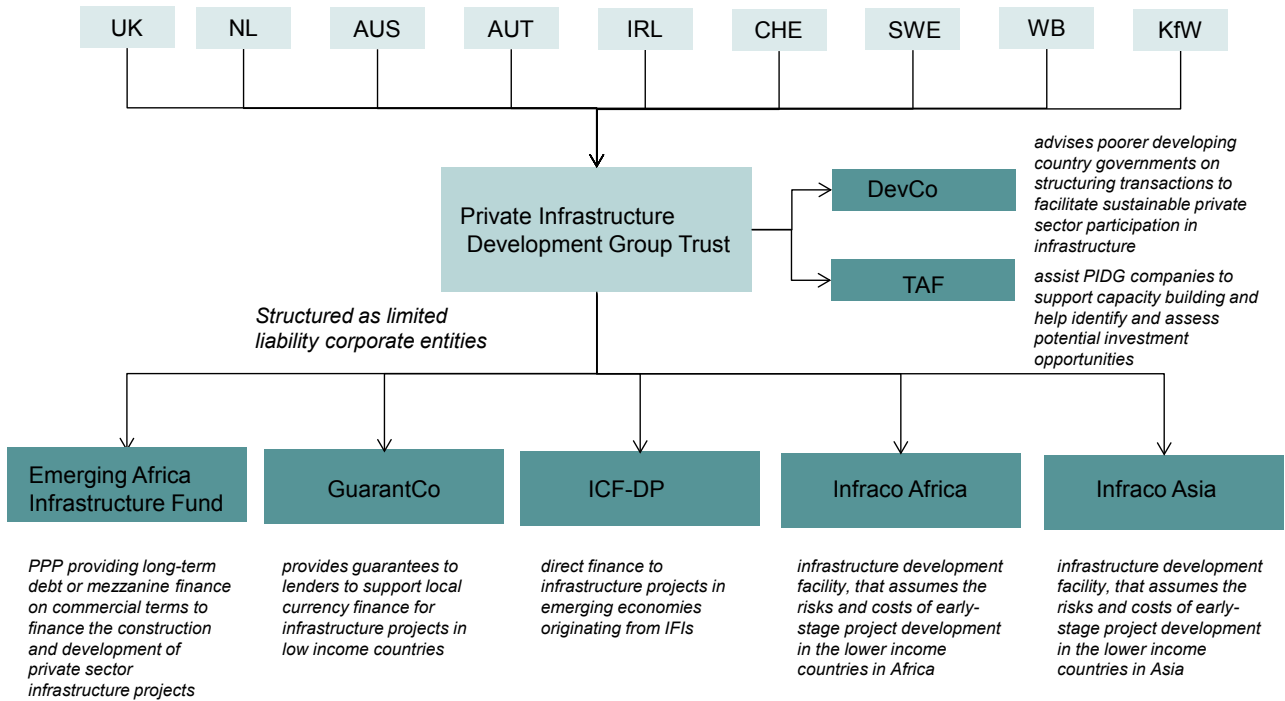
A new facility in the process of being developed under the PIDG umbrella is Green Africa Power, which will aim to stimulate private investment in renewable energy projects in Africa. This will be capitalised with money from the ICF.

The section follows an identical structure to that for the GIB. Section 7.2 provides an assessment of the PIDG vehicle against the desirable institutional capacities of a new climate finance vehicle. These insights help to identify a particular investment and design focus for a PIDG vehicle, this is described in section 7.3, along with associated costs. In section 7.4 the gaps in the existing climate finance architecture that the option may address is explored. Section 7.5 provides an assessment against the criteria in the Terms of Reference while section 7.6 compares the option to the CIFs. Key risks associated with a PIDG vehicle are assessed in section 7.7.

³⁴ These include AusAID, the Austrian Development Agency, KfW, Irish Aid, DFID, DGIS/FMO, SECO, SIDA, and the World Bank



Figure 10. The PIDG has nine members whose funds are routed to seven Facilities, each with their own target area of investment and support



Note: UK is United Kingdom, NL is The Netherlands, AUS is Australia, AUT is Austria, IRL is Ireland, CHE is Switzerland, SWE is Sweden, WB is the World Bank Group and KfW is KfW Entwicklungsbank

Source: www.pidg.org, Vivid Economics



7.2 Assessment of institutional capacities

The PIDG is a cost-effective organisation delivering strong development benefits with a good capacity for learning and M&E, but, according to existing reviews, is slightly weaker at fostering national ownership and achieving climate effectiveness of investments. The assessment that follows is summarised in Table 14.

The PIDG has been praised for being a cost-effective organisation with high quality staff, reasonable administrative costs, and a proven ability to leverage other sources of investment. DFID's Multilateral Aid Review (DFID, 2011b) notes that the PIDG achieves good delivery against challenging objectives and that its strong results focus is enhanced by incentives for management. Admin costs are low at 1.9 per cent of donor commitments (DFID, 2013a). By the end of 2012, PIDG reports that every USD 1 contributed by members to PIDG had mobilised USD 39 of finance for projects from commercial investors and DFIs (PIDG, 2013). We deem the evidence base for cost-effectiveness to be strong.

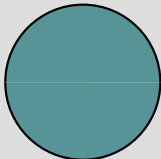
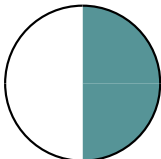
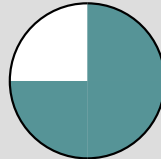
The PIDG could do better at fostering national ownership. PIDG supported projects are required to be in line with national government priorities and policies (Australian Aid, 2012b). Its portfolio of investments appears to be committed for the medium to long-term and is ODA compliant. However, the MAR indicates that the PIDG needs to improve partnerships with developing countries – particularly with civil society. In addition, although the PIDG has a small technical assistance facility (TAF), apart from Green Africa Power, this is not part of the core offering of its facilities. Stakeholders noted that the PIDG has traditionally eschewed offering technical assistance. The evidence base for national ownership is strong.

The PIDG has strong institutional practices of learning and monitoring and evaluation (M&E). The PIDG has a results-based system of monitoring at both program and project-levels (Australian Aid, 2012b), which have been further strengthened between the first MAR assessment in 2011 and the MAR update in 2013 (DFID, 2013b). The Program Management Unit monitors, updates and publishes both ex-ante and ex-post development impact indicators (Australian Aid, 2012b). Stakeholders flagged that some challenges arose in the case of the M&E requirements for GAP, where there were some discrepancies between the indicators conventionally used by PIDG and the results framework for the ICF, but these appear to have been overcome. The evidence base on learning and monitoring and evaluation is considered to be strong.


The PIDG is currently not a dedicated climate finance vehicle. PIDG vehicles have made a significant number of investments in low-carbon projects. These include the four Cabeolica wind farms in Cape Verde, the Muchinga hydro power project in central Zambia, and the Gul Ahmed wind power project in Pakistan. However, at present, only Green Africa Power has a specific low-carbon mandate and has yet to be made operational. The PIDG has no experience in providing technical assistance to governments in the form of low-carbon policy advice. The facilities do monitor emissions impact regardless of whether the investment is designated as low-carbon or not (DFID, 2011b), and boast a track record of offering innovative financial instruments such as local currency guarantees which may be useful in future climate specific investment. The strength of the evidence base for its climate effectiveness is judged to be medium; reflecting that much of the relevant evidence comes from investments and vehicles without an explicit low-carbon mandate.



Table 14. The PIDG performs well against two criteria and reasonably well against the other two

Criterion	Positive aspects	Negative aspects	Overall	Strength of evidence base
Cost effectiveness (e.g. quality of staff, admin costs and speed of disbursement, ability to leverage other public and private sources)	<ul style="list-style-type: none"> Strong evaluation in DFID MAR: 'good delivery against challenging objectives, its strong results focus is enhanced by incentives for management' PIDG overall costs are 1.9% of total donor commitments Strong at leveraging private investment: 11 PIDG projects that reached financial close in 2012 expected to mobilise an additional USD 3.9bn investment from domestic and international private sources, (cf. USD1.5n from DFIs) from USD0.3bn of PIDG commitment 	<ul style="list-style-type: none"> Concern about whether further rapid growth could undermine the success of the current business model 		Strong
Foster national ownership (e.g. alignment with national priorities, use of in-country systems, ability to provide TA, ODA eligibility)	<ul style="list-style-type: none"> All PIDG supported projects are required to be in line with national government priorities and policies Funds can be committed to PIDG over the medium term ODA compliant 	<ul style="list-style-type: none"> DFID MAR identifies need for more partnership with developing countries, especially civil society Small technical assistance unit but (aside from GAP) not a core offering 		Strong
Learning and M&E	<ul style="list-style-type: none"> PIDG has a results-based system of monitoring at both program and project-levels which DFID reports has been 'further strengthened' both ex-ante and ex-post development impact indicators are monitored, updated and published by the Program Management Unit 	<ul style="list-style-type: none"> experience with GAP shows that some challenges in matching ICF results indicators with those typically used by PIDG, but these have been overcome 		Strong



Criterion	Positive aspects	Negative aspects	Overall	Strength of evidence base
Climate effectiveness (e.g. allocate resources according to climate impact, ability to support transformational change, low-carbon technology expertise)	<ul style="list-style-type: none"> – monitor emissions impact of all investments (regardless of whether designated as low-carbon or not) – proven record of delivering innovative financial instruments 	<ul style="list-style-type: none"> – only GAP has a specific low-carbon mandate and this has yet to make investments so likely to be limited – no experience in providing low-carbon technological knowledge – no experience in providing low-carbon policy advice 		Medium

Note: the more shading in the circles, the higher the score
Source: Vivid Economics, other sources mentioned in text



7.3 Suggested focus, design and costs

This section elaborates the potential investment focus, vehicle design and costs of a potential PIDG vehicle. As with the other delivery vehicle options, this is only a preliminary assessment and further work, examining, in particular, value-for-money, would be required.

7.3.1 Investment focus and vehicle design

There are three main options for a delivery vehicle under the PIDG umbrella. Each which would have different implications for the investment focus:

- the EAIF would have a focus on late stage investments;
- InfraCo Asia/Africa would have early stage project development expertise; and
- a new vehicle could have any focus.

The time and expenses of setting up a new vehicle would significantly exceed those of providing earmarked resources to an existing Facility. Stakeholder interviews suggested that if an existing facility was used then it may be possible to allocate additional resources within a month. By contrast, the creation of a new platform would probably take at least nine months. GAP, for example, took two years to set up, although there were exceptional circumstances surrounding this. In addition, using an existing Facility would be less likely to further stretch the management resources of the PIDG Trust, of concern to some stakeholders given the recent significant growth of PIDG. The provision of earmarked funds would require consent of all PIDG members, but this is not anticipated to be a significant barrier as long as the investment goals are in line with the members' interests.

A strong case can be made for placing additional ICF resources through an InfraCo vehicle. Both InfraCo Africa and Infraco Asia are dedicated Facilities that have expertise in tackling one of the main identified gaps in the climate finance space, early-stage project development. Discussions with HMG confirmed that this would be a natural focus for PIDG. It would also be consistent with the PIDG's revised strategic focus that places more emphasis on early stage-project development (PIDG, 2013). The private sector representatives in the Capital Markets Climate Initiative also identified Infraco vehicles as an attractive option.

There is a window of opportunity in relation InfraCo Africa. InfraCo Africa is currently concluding the selection of a new developer team, who will manage up to £10m under a three year contract. Using the template created by this process, it may be possible to undertake a future developer procurement in 2014 or 2015 and specify that this team (these teams) should only focus on low-carbon opportunities. By contrast, InfraCo Asia is currently focusing on bringing its existing pipeline of projects to financial close and has little room for extra commitments.

7.3.2 Costs, leverage and funding potential

Providing earmarked funding to InfraCo Africa which is used to support a project developer with a focus on low-carbon infrastructure opportunities in Africa, would minimise set-up costs. As InfraCo Africa is an existing institution, it has all necessary processes in place and is already in the process of running a competition for new project developers.



Each project development contract offered by Infraco Africa is likely to be for £10m-£30m over a period of three years. In the first instance, one dedicated low-carbon project development contract would appear to be sensible in order for lessons to be learned and bearing in mind that this would either crowd out other development activities (section 7.7) or, if it were to be additional to other Infraco Africa activities, that there are questions concerning the capacity for further growth of Infraco Africa/PIDG. Existing Infraco Africa commitments range from between £200k to £5m with an average commitment of around £1.9m, suggesting that up to 15 commitments might be possible for £30m, depending on administrative costs. Based on the leverage rates that Infraco Africa has achieved to date, £30m of ICF funding might leverage around £420m of further investment (PIDG, 2013).

Administrative costs of Infraco Africa, are an ongoing basis, relatively modest. Data provided by Infraco Africa for this report suggests that its administrative costs are on an ongoing basis around 2 per cent of disbursed donor contributions (shareholder equity). The historic figure is higher, at around 10 per cent of shareholder equity, but this reflects both the high administrative costs of the organisation in its early years and that its expansion has allowed it to realise economies of scale. These costs comprise of salaries for staff and directors, travel expenses, professional expenses (legal and consultancy) and office overheads. The bulk of the costs are salaries and professional expenses.



7.4 Gaps addressed by the proposed option

Section 2.2 highlighted a gap in the current climate finance architecture concerning investment in early stage project development. This view was further corroborated in stakeholder interviews who indicated that there is no urgent lack of preparatory and feasibility studies, but there is a lack of long term financing for project developers who can progress these projects from the ‘idea’ stage to financial close. This involves a range of activities including commissioning tailored advisory services, acquisition of licenses and approvals and seeking financial commitments, all of which are high risk activities. The ICF currently provides modest resources to the United Nations Environmental Program (UNEP) Seed Capital Assistance Facility (SCAF), as part of the £20m technical assistance facility for CP3, but the stakeholder discussions undertaken as part of this report indicate that a sizeable gap in this area remains.

Infraco Africa would be well placed to address this gap. For example, Infraco Africa was the lead project developer for the Cabeolica wind farm in Cape Verde. InfraCo Africa took on its development in 2006, after the Cape Verdean government had twice failed to complete a public procurement process. InfraCo Africa provided assistance in relation to technical, legal and regulatory issues, which Infraco Africa claims results in a model for wind project design and financing in sub-Saharan Africa that has the potential to be replicated elsewhere. As noted above, PIDG’s recent strategic review concludes that it will *‘increase the scope, investment rate and coverage of its activities and so enable greater project development activity in sub-Saharan Africa’* (PIDG, 2013:50).



7.5 Assessment against the criteria in the Terms of Reference

The PIDG option would score well against some of the criteria specified in the Terms of Reference. It has a proven track record of mobilising private finance from commercial investors and DFIs in developing countries, including least developed countries. Infraco Africa, has been involved in various renewable energy projects in recent years. Although the PIDG is a multilateral vehicle, the UK is perceived as an influential donor both within the overall PIDG and Infraco Africa. PIDG has offices both in the UK and a selection of target countries, through which it ensures the possibility of building on UK financial expertise as well as maintaining a local presence.

Channelling earmarked ICF funding through Infraco Africa could leverage significant amounts of private finance. As discussed above, addressing the early stage financing gap is critical for scaling up climate finance, as there are relatively few projects that progress from the ‘idea’ stage to financial close. Infraco Africa, in particular, has been a successful catalyst of private finance in this area in the past, with the PIDG Annual Report (PIDG, 2013) implying a cumulative private sector financing to donor commitment leverage ratio of 1:13.8³⁵. Apart from directly leveraging private finance through its own climate projects, there is potentially also a wider demonstration effect of its undertakings that may result in more private investment in new projects.

The PIDG is explicitly focussing on achieving development impact in its projects. The PIDG has received a favourable assessment in the DFID Multilateral Aid Review in this respect (DFID, 2011b). Infraco Africa invests in some of the most challenging environments where developmental impact has been realised, as noted in case studies in its annual report (PIDG, 2013). Six out of the current 11 Infraco Africa projects are in Least Developed Countries (three in Uganda and three in Zambia). As mentioned above, the PIDG’s 2012 strategic review reinforced the strategic focus on investment in the most challenging markets.

Although the PIDG is a multilateral financial institution, much of its funding to date has been provided by the UK government, as a result of which it is generally perceived as an institution that is strongly linked to the UK. More than 60 per cent of cumulative disbursements to the PIDG Trust have come from the UK (94 per cent of new funding in 2012), and more than 55 per cent of InfraCo Africa contributions have come from the UK (PIDG, 2013). Stakeholders suggest that there is a general perception that the UK is an influential country within the PIDG. This perception would only be strengthened by additional earmarked ICF funding. Furthermore, there is scope for UK financial institutions to get involved in providing later stage financing to projects that come to financial close, although to date many InfraCo Africa exits have been to local investors and/or multilateral financial institutions.

The PIDG employees and fund managers consist of a strong combination of experts from the UK and elsewhere, operating from offices in the UK and in a selection of target regions, allowing it to benefit from financial skills and expertise available in the UK whilst ensuring strong local presence. The PIDG is headquartered in London, as are some of its important investment managers such as eleQtra. At the same time, it ensures strong local presence by having local offices. A cursory screening of staff, board members’

³⁵ Discussions with Infraco Africa indicate that this is an underestimate of the leverage achieved by Infraco Africa as not all of the public resources allocated to the organisation has been drawn down.



and fund manager profiles, and corroborated by stakeholder interviews, suggests that key decision makers associated with the PIDG maintain strong ties to the UK financial sector through their employment histories.



7.6 Comparison with the CIFs

The closest comparator within the CIFs to the Infraco Africa option is the Scaling Up Renewable Energy programme (SREP). SREP aims to scale up the deployment of renewable energy solutions and expand renewables markets in low income countries and hence to pilot and demonstrate the economic, social, and environmental viability of low-carbon development pathways. Within Africa, SREP operates in Ethiopia, Kenya, Tanzania and Mali, of which the first three are ICF low-carbon development country priorities. However, there are at least four other ICF priority countries in Sub-Saharan Africa (and which could therefore be an investment priority for any Infraco Africa model) that are not SREP countries: Malawi, Mozambique, Nigeria and Rwanda³⁶.

More significantly, Infraco Africa has a fundamentally different investment strategy compared with any of the CIFs, presenting an option for the ICF to expand its portfolio of interventions. Although there may be some geographic and sectoral overlap between the use of Infraco Africa and SREP, none of the CIFs place a particular focus on early stage project development. This could make inclusion of Infraco Africa a strategic addition to the current ICF portfolio.

³⁶ South Africa is also an ICF low-carbon development priority country but is not a country in which Infraco Africa operates. Nigeria has a CTF programme.



7.7 Key risks associated with this option

The key risks associated with adopting a PIDG vehicle relate to the potential for generating deal flow, the speed of project development, the scalability of activities, the visibility of the UK in investments, the risk of funding agencies withdrawing funds, and risks related to the challenging operational context such as political risk and site acquisition. These are further elucidated below, along with possible mitigating measures.

The potential for generating deal flow depends on whether the vehicle can find skilled and dedicated local partners and viable project leads. InfraCo Africa has a mandate to invest in difficult markets (OECD DAC I&II, post conflict and fragile states in Sub-Saharan Africa), without competing directly with private investors such as either project developers (who may self-finance), equity funds³⁷ or other public sources of funds³⁸ to ensure additionality of its activities.³⁹ This may restrict potential deal flow, especially given an additional focus to look exclusively at low-carbon investment opportunities. However, expert interviewees suggested that this risk may not be too great, arguing that in many countries, especially those with supportive policies, there are good project leads and experienced local partners that can support project development. In addition, carefully choosing a new project developer team with an existing track record of low-carbon project development could mitigate this risk.

Project development is a slow and risky process; any returnable capital the ICF provides will be at significant risk. A vehicle of the size suggested (see section 7.3) is likely to only be able to bring a small selection of projects from its pipeline to financial close over a period of 5 years⁴⁰. InfraCo Africa operates in difficult markets, sending its teams to negotiate infrastructure projects, often first of a kind, with fledgling and under-resourced governments and government-owned entities. This is a challenging investment environment, in which compliance and corruption issues may arise. While it is precisely these features that enhance the additionality and leverage potential of the public capital that is provided, it does place this capital at considerable risk. The Facility aims to mitigate this risk by a rigorous selection process for developer teams, governed by long term contracts under the PIDG Operating Policies and Procedures, and a focus on compliance training for all developer teams under the terms of the UK's 2010 Bribery Act. Other risks stemming from the local institutional context include difficulties in site acquisition, resource measurement and general risk management. To be able to see it through this period, activities must be financed through a capital structure that is heavy in equity with sufficient risk appetite.

The visibility of the UK in investments through this vehicle may be limited by the multilateral status of the PIDG. With nine members from various countries, the PIDG is not a UK-based vehicle. However, this concern is partly allayed by the UK's current significant part in PIDG funding, as mentioned above.

InfraCo may be close to its maximum growth potential and face serious challenges if another lot of funding is to be channelled through the Facility. In stakeholder interviews for this work, concerns were

³⁷ Such as, for instance, DI Frontier Market Energy & Carbon Fund.

³⁸ Such as the AfDB managed Sustainable Energy Fund for Africa.

³⁹ This implies that, for example, InfraCo may refrain from responding to tenders.

⁴⁰ As an example, eleQtra, Infraco's principal developer, has been able to invest in 11 projects since its establishment in 2004 (PIDG, 2013).



raised as to whether further rapid growth of the PIDG might be sustainable. There was a concern raised that success of the current business model could be undermined by a rapid and significant expansion that would stretch its institutional capacities: between 2002 and 2011, DFID provided a total of £150m, whereas in the most recent spending review it provided £700m. However, this risk is significantly lessened if the low-carbon focus is given to a project developer team that would have been contracted anyway (although at the cost of crowding out the alternative project development activities that would have taken place, see section 5.7).

Some stakeholders suggest that a number of these key risks could be managed by adopting a narrower geographic focus than has been customary for Infraco Africa to date. They argued that low-carbon infrastructure projects are highly dependent on political support and that a focus on a smaller number of countries enables stronger local presence, learning, and engagement with the host government; all of which are key to the successful management of political risk. The downside of this would be the additional risk and challenge associated with finding a sufficient number of high-quality projects in a narrower geographic area. ICF may wish to discuss this further with Infraco Africa should it decide to proceed with this delivery vehicle option.

A wider risk associated with using this delivery vehicle for ICF resources is that it may displace other development spending planned by the UK. As noted above, the recent rapid growth of PIDG, plus further planned growth in the near future, led some stakeholders to express concern about whether it was prudent to programme further expansion of PIDG or Infraco Africa's activities. The corollary of this is that if ICF resources were to be used to support a low-carbon project development team through Infraco Africa then other ODA that would have flowed through Infraco Africa will be displaced. Bearing in mind the findings from the recent PIDG review, the most likely activities to be displaced might be either water sector activities or agri-industry investments. However, a more radical reappraisal of the Infraco Africa portfolio could lead to alternative activities (road or air transport infrastructure, for example) being displaced.



8 CDC

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This section considers the possible role that CDC could play as a delivery vehicle for ICF resources. It finds that, despite a number of positive characteristics, it is unlikely to represent an important vehicle for ICF resources in the short term.

This is because despite some recent focus on renewables investment, this does not reflect the core expertise within the organisation, coupled with the fact that it is still working through the implications of a recent far-reaching strategic review.

However, it suggests that CDC could act as a broker between its portfolio companies and the ICF (or an ICF delivery vehicle). CDC would facilitate dialogue between the ICF and the CDC investees, with the possibility of the ICF offering free energy audits. These audits would identify profitable energy efficiency investments that could then be financed by ICF resources. A similar model adopted by the European Bank for Reconstruction and Development (EBRD) has generally been considered as extremely successful. This would, in a modest way, help to address some of the key gaps in both the international climate finance architecture and in the balance of the ICF's portfolio of mitigation activities.



8.1 Introduction

CDC is a Development Finance Institution (DFI) wholly owned by the Department for International Development. It seeks to achieve developmental goals through investment in private enterprises within developing countries. Until recently CDC operated a fund of funds approach across a wide range of developing countries; over the past few years, its mandate has been narrowed to focus only on Africa and South Asia, but its available financing modalities have been widened to include direct debt and equity investments (International Development Committee, 2011). Simultaneously, the organisation has been reformed with an explicit focus on job creation (International Development Committee, 2011).

CDC's portfolio was valued at £2.25 billion at the end of 2012 (CDC Group, 2012). This included investments in 1,250 businesses across 77 countries, though many existing investments are outside their current focus areas of Africa and South Asia (CDC Group, 2012).



8.2 Assessment of institutional capacities

CDC is cost-effective and generally has performed well in aligning aid to national priorities, but its limited current climate focus is a significant barrier to its viability as an ICF delivery vehicle in the short-term. The assessment of CDC against generic desirable features of climate finance institutions is summarised in Table 15.

CDC is a cost-effective body, with strong historical financial performance, low operating costs and a good record on leveraging co-finance. CDC have consistently earned good financial returns, generating £250m profit in 2012 (CDC Group, 2012). However, rapid disbursement has, at times, been challenging. The latest Annual Report indicates that CDC is holding £590m in cash; in recent years cash holdings have been greater than portfolio value (International Development Committee, 2011). Stakeholder interviews have indicated that this problem is likely the result of transition to a new business model and that, as CDC builds the capacity to engage in a broader range of investments, cash holdings should diminish. While operating as a fund of funds, they successfully co-invested with other private and public sector investors with an average leverage ratio of 1:3.5 between September 2008 and September 2010 (International Development Committee, 2011). The extent to which these results will continue within the new business model are yet to be established, with the absolute value of third party capital mobilised declining from £511m in 2011 to £252m in 2012 (CDC Group, 2011, 2012).

CDC investments are generally in line with national priorities, although its investment framework does not explicitly prioritise this. QUODA ranked CDC 3rd of 103 institutions for alignment of aid to recipients development priorities, based on their disbursements in 2008 (Center for Global Development, 2009a). It was also ranked 5th of 113 institutions for share of aid to partners with good operational priorities (Center for Global Development, 2009b). This appears to reflect a good overall understanding of emerging markets, and sound commercial practice, rather than as a result of an explicit framework. Reflecting its status as an organisation focussed on providing capital to private enterprises, the criteria set by DFID that influence CDC investment behaviour relate to the strength or weakness of the enabling environment in which the investment takes place, and the average job creation capacity of the sector to which the investment belongs (CDC Group, n.d.). The differing priorities of stakeholder groups, including national or local government, within the country are not explicitly integrated within this framework. CDC also currently has no capacity to provide technical assistance, although this is under review.

A new measurement and evaluation framework is under development; the current framework considers job creation, mobilisation of third party capital and tax revenue generated for the recipient country. CDC has been ranked highly by QuODA for provision of aid to partners with strong M&E (Center for Global Development, 2009b). However, their current framework has little consideration of additionality (in the sense of demonstrating that the benefits associated from CDC making an investment would not otherwise be realised), nor does it have systems in place to assess the climate impact of investment.

Although CDC is developing expertise in some low-carbon investments, especially renewables, there is limited climate focus within CDC. CDC is developing a power team that intends to explore opportunities for direct financing of renewables plants. This is partly motivated by an explicit incentive provided to CDC by DFID towards the renewable power sector. In addition, CDC's Code of Responsible Investment and its Coal Policy – which rules out financing coal-fired power stations – do require it to pay attention to climate issues and, in particular, consider the emissions impact of its investments during its due diligence. However, at present, and as discussed above, resource allocation is focussed heavily on job creation with incentives




structured to encourage operations within weak enabling environments. Furthermore, discussions with senior management at CDC suggested little appetite to redirect some or all of CDC’s investments in this direction in the short-term, given that the organisation has only recently completed an earlier restructuring. Finally, the project-based approach of CDC may limit their capacity to achieve transformational change.

Table 15. CDC has been cost-effective in ODA disbursal, but has limited track-record in green investments

Criterion	Positive aspects	Negative aspects	Overall	Strength of evidence base
Cost effectiveness (e.g. quality of staff, admin costs and speed of disbursal, ability to leverage other public and private sources)	<ul style="list-style-type: none"> – Excellent financial performance from fund investments (9% profit in 2012, outperformed emerging market equity indicators in previous years) – Operating costs of 0.6% net value – Strong record on leveraging co-finance; from Sept 08 to Sept 10 leverage was 1:3.5 	<ul style="list-style-type: none"> – Financial performance has been less strong as focus has shifted to more difficult countries – CDC have run up significant cash balances due to difficulties in disbursal of returns, but this seems to be improving 		Medium
Foster national ownership	<ul style="list-style-type: none"> – Ranked 3rd of 103 in QuODA for alignment of aid to recipients development priorities, 5th of 113 for share of aid to partners with good operational priorities – Net annual investment counts as ODA 	<ul style="list-style-type: none"> – No current capacity to provide TA – Under the new framework investments are intended to target job creation, regardless of recipient priorities 		Medium
Learning and M&E	<ul style="list-style-type: none"> – Ranked 5th of 113 agencies by QUODA for provision of aid to partners with good M&E framework – Improved M&E framework, with more rigorous and broad ex-post measurement, is currently in development 	<ul style="list-style-type: none"> – Current M&E framework is limited to (i) job creation (ii) third party finance leveraged (iii) taxes generated for recipient government – Appears to be greater scope for assessing CDC additionality 		Strong



Criterion	Positive aspects	Negative aspects	Overall	Strength of evidence base
Climate effectiveness (e.g. allocate resources according to climate impact, ability to support transformational change, low-carbon technology expertise)	<ul style="list-style-type: none"> – Direct investment team has experience in power, and is seeking direct investments in renewables 	<ul style="list-style-type: none"> – No explicit climate focus, with direct investment team also considering opportunities in gas – Project rather than programmatic approach, with limited capacity to push for large scale transformational change – Limited, if growing, experience in low-carbon investments 		Strong

Note: the more shading in the circles, the higher the score

Source: Vivid Economics, other sources mentioned in text



8.3 Suggested focus, design and costs

8.3.1 Focus and design

CDC is unlikely to be a strong candidate to deliver a significant quantity of ICF resources in the short-term. Pursuing low-carbon investment through funds seems unlikely to generate sufficient deal-flow, while making direct investments according to their climate benefit would not currently reflect CDC's comparative expertise. Channelling a large quantity of ICF finance through CDC would also require additional restructuring, for which there is currently little appetite.

The fund of funds model is difficult to extend to low-carbon investment. Applying the fund of funds model, given the restrictions placed on ICF finance and CDC's geographic scope, would require identifying high quality funds within Africa and South Asia that specialise exclusively in low-carbon investments. It is unlikely that a sufficiently large number of such funds could be found.

This leaves direct investments as the primary outlet for ICF money, but the direct investment capacity of CDC, especially in renewables, is embryonic. CDC has only recently moved into direct investment. Interviews with the organisation have confirmed that, while they are already acting as a lead investor on equity deals, they are unlikely to act as a lead investor in relation to debt transactions over the next few years. Furthermore, although there is emerging renewables experience in CDC, the direct investment team built over the last two years has been primarily selected to provide expertise in sectors that will support its strategic objectives around job creation, not emissions reductions. In particular, most direct investment deals in the short-term are expected to be operating businesses, rather than the infrastructure deals typical of renewables investment. As a result, suggesting that CDC develops a strong focus on emission reduction investment opportunities in the short-term would not optimally reflect the current skills and expertise of the organisation.

There is also little appetite within CDC for further structural changes, given the significant refocus that has taken place since 2009. The current long term strategy of CDC is to have investment flows of £500m per year by 2018, with approximately half provided by funds and half provided by direct investment. ICF capital could therefore significantly increase total investment flows and, given the change in focus, would necessitate further changes in resourcing and institutional structure. Such changes could compromise CDC from its recently agreed core mission of promoting job creation.

However, there may be an opportunity for CDC to use its existing client relationships to develop a pipeline of energy efficiency investments that the ICF could finance. As part of its direct investment strategy, CDC anticipates making around 5-7 direct investments per year in businesses in South Asia and Africa. Its sectoral areas of focus include construction, manufacturing, food processing and infrastructure, all of which can be expected to be relatively heavy energy users⁴¹. An arrangement could be reached with the ICF that, upon making direct investments in relevant sectors, CDC would introduce these companies to ICF (or an ICF delivery vehicle partner, including potentially the GIB). Building on the successful model implemented by the EBRD, the ICF (or its delivery partner) could then arrange for an energy audit to be undertaken at no charge to the portfolio company. If energy saving opportunities are identified, additional

⁴¹ For instance, recent transactions include debt finance to help build and operate a fertiliser production plant in Nigeria and an equity investment in an agribusiness.



ICF finance could be offered – directly from the ICF or via a delivery partner - at concessional rates to encourage take-up. It would be expected that, in most cases, the ICF would only provide part of the capital needed for the investment; the remainder could be financed from the internal resources of the company and/or lending from commercial financial institutions. Further work would be required to look in detail at the opportunities provided by this model, including a value-for-money assessment.

This relatively modest energy efficiency programme could pave the way for a more ambitious engagement in low-carbon growth in the longer-term. Although CDC appears unlikely to be a suitable candidate as a large scale delivery vehicle for ICF resources in the short-term, this may change over the longer term, when the impacts from the recent restructuring have been bedded down. Equivalent organisations, such as PROPARCO in France, play an important role in relation to France’s support for international climate finance, including through a commitment for at least 30 per cent of its investments to support low-carbon activities (AFD, 2012). The programme described above could sensitise CDC to adopting a more ambitious programme in the medium-term.

8.3.2 Costs

Energy audits usually cost a small fraction of final investment. Early energy audit schemes in Central and Eastern Europe required around €1.2m in funding to leverage lending of €87.3m (Institute for Industrial Productivity, 2012). EBRD credit lines have been similarly successful; a credit line specialising in energy intensive industry leveraged €141m in total financing from €2m of technical assistance (UNEP, 2009). Interviews with stakeholders suggest that the cost of audits depends upon the nature of the company being audited, but that they generally lie between £5,000 and £20,000. This is corroborated with indicative figures published by the EBRD, suggesting energy audit costs of between €15,000 and €20,000 (EBRD, n.d.). These are the costs associated with hiring consultants to undertake site visits and draw up recommendations. There would be further costs associated with CDC making the requisite introductions and management costs within the ICF, or its delivery partner, in managing the process of hiring consultants.

Assuming that CDC are involved in five to seven direct investment deals per year, the total cost of providing energy audits would likely be below £150,000 and could form the basis for up to £7.5m in demand for finance from public and private sources, potentially split 50:50 between public and private finance. The leverage numbers identified above suggest approximately £70 worth of financing was disbursed for every £1 spent on audits. This financing could come from a combination of both public ICF resources (at concessional rates) and/or from commercial financial institutions: in a selection of previous programmes managed by the EBRD approximately 55 per cent of subsequent financing came from public sources and 45 per cent from private sources (UNEP, 2009). These total investment figures are likely to form an upper bound on the leverage likely to be received from energy audits via an introduction from CDC, as the available evidence is from energy audits specifically targeted at energy intensive firms who were likely to be able to realise significant savings. By contrast, CDC’s portfolio of investments may contain some heavy energy users but also some more modest energy users, such as companies in the health, education and financial services sector⁴².

⁴² In some of these cases, it may not be considered appropriate to offer the energy audit to the investee company, or it may decide to not take up the offer. This would reduce the direct costs associated with this option.



8.4 Gaps addressed by the proposed option

As identified in Section 2.2, energy efficiency is currently underfunded relative to current and future needs. Only around 19 per cent of public finance is invested in energy efficiency programmes, compared to future needs of over 30 per cent. The IEA (2013) has found that current energy efficiency funding is not ‘on-track’ relative to the amount needed to keep increases in temperature below two degrees. The ICF portfolio of activities also only provides a modest proportion of its support to dedicated energy efficiency programmes.

One of the main difficulties in promoting energy efficiency is providing sufficient deal-flow. There are large information barriers that prevent decision makers within firms from being aware of potential energy saving investments. Efficiency investments are also often incorrectly perceived as high risk by local lenders with little technical knowledge, leading to inefficiently low lending. Energy efficiency programmes need to overcome these barriers.

Coupling an energy efficiency programme with CDC may offer a strong opportunity to overcome some of these funding gaps within Africa and South Asia. Successful energy efficiency programmes, such as those run by the EBRD, have relied upon sourcing deal-flow from existing institutions that have significant contact with the private businesses within the relevant geography. There are few such institutions operating in weaker enabling environments. CDC may therefore be relatively well positioned to promote energy efficiency.



8.5 Assessment against the criteria in the Terms of Reference

Although the scale of resources that may be mobilised by this option may be modest, it has the potential to score well against all four of the criteria initially specified in the Terms of Reference. It could mobilise private investment, primarily by corporates, into climate related projects and in regions where development benefits could be high. As any investments would be brokered by CDC and invested in directly by ICF (or a delivery partner), it would lend visibility to the UK's climate finance commitments and make use of the expertise within the UK.

The model would increase the flow of private finance into energy efficiency. CDC's investment focus, and hence the contacts that it would provide to the ICF, would be private businesses in a range of sectors. While the energy audit and (potentially) part of any associated financing would be provided by the ICF as public resources, it would also be expected that the businesses would contribute to the financing of the identified energy efficiency improvements. This financing would most likely be from the retained earnings of the business or via loans from commercial financing institutions. In addition, by increasing the exposure of commercial financial institutions to energy efficiency lending opportunities, it might increase their willingness to extend loans to other companies as well.

In addition to the emission savings associated with the energy efficiency investments, this model could deliver significant development gains due to the incentives CDC faces to invest in companies operating in challenging environments where employment potential is greatest. As discussed above, CDC's recent strategic refocusing has led to its new investments being made only in South Asia and Africa. Within this, CDC executives are particularly incentivised to make investments in countries where business environments are more challenging⁴³ and where the potential for employment generation is greatest. In turn, this means that the cost reduction benefits from making energy efficiency improvements – that would be allocated between owners and employees in the firms making the improvements and that could stimulate further expansion in the firm's activities⁴⁴ – would also be more likely to take place where development needs are greatest and where employment potential is high. Likewise, at a macroeconomic level, recent econometric analysis has tentatively suggested a causal link between energy efficiency improvements and economic growth (Vivid Economics, 2013).

The model would increase the visibility of the UK's international climate finance flows. Both the introduction and any subsequent energy audit and financing of energy efficiency improvements would be made by organisations that are owned by, or part of, the UK government.

It would make use of UK-based expertise. All CDC staff except two relationship managers are based in London, although those firms undertaking any energy audits could, appropriately, be drawn from an international pool of experts.

⁴³ Specifically, countries (and Indian states) are ranked using four criteria: market size, income level, access to finance and ease of doing business.

⁴⁴ Although this would involve additional energy use that could offset some of the initial energy savings.



8.6 Comparison with the CIFs

The closest comparator to this model within the CIF would be the Clean Technology Fund. The Clean Technology Fund aims to scale up the demonstration, deployment, and transfer of low-carbon, clean technologies, including energy efficiency technologies. To date, 14 per cent of project approvals, with a cumulative value of USD 21.9 billion, have been for energy efficiency investments and a further 10 per cent has been allocated to joint renewable energy/energy efficiency programmes (Climate Investment Funds, 2013d). None of the other CIF programmes focus on energy efficiency.

However, the geographic overlap between the CTF and CDCs is limited. The CTF is focussed on a selection of middle income countries around the world; while CDC focuses only on countries in South Asia and Africa. The only countries where both CDC and the CTF might both operate are: Egypt, Nigeria, South Africa, India and Morocco and Tunisia (as part of the CTF Middle East and North Africa programme). Furthermore, all of these countries are in the two tiers of country that are ranked in CDC's development grid as relatively 'easy' countries in which to invest, and for which there is therefore not so much incentive for CDC to operate⁴⁵. Of these, Nigeria, South Africa and India are ICF priority countries for low-carbon development.

As such, with a few exceptions, the CIFs do not provide a means of facilitating energy efficiency investments in the countries in which CDC is most likely to be able to provide contacts to the ICF.

There is also some evidence that, in line with the broader climate finance architecture, the CTF has found it more difficult to promote energy efficiency investment. The latest data from the CTF suggests that 28 per cent of the renewable energy capacity identified in project approvals has been installed, only 5 per cent of the energy savings anticipated on project approval documents have been realised to date (Climate Investment Funds, 2013e). The CIFs do not speculate on the reasons for this discrepancy in performance but it may well reflect some of the broader challenges associated with supporting energy efficiency investments identified in section 3.3.4.

⁴⁵ This excludes India where the analysis for CDC's development matrix is undertaken at the state level.



8.7 Key risks associated with the option

Whether this would be a viable model to apply within CDC should be determined through the on-going consultation between DFID and CDC. There are several potential risks that need to be considered.

First, only some of CDC's investments are likely to be in the energy intensive sectors that would benefit most from energy efficiency. The sectors that CDC preferentially targets for investment are construction, food processing, manufacturing, public services and textiles. In weaker enabling environments they also place a strong preference on investments in financial services, microfinance, power, renewable energy and mobile telecommunications. Some of these sectors, such as manufacturing, food processing, textiles and power, are strong candidates for energy efficiency investments. Efficiency savings will be available in the other sectors, but are less likely to generate large quantities of abatement. Although the set up costs of this option are expected to be low, as the costs of facilitating contact between CDC and the ICF (or its delivery partner) is low, it is nonetheless the case that greater partnership between CDC and the ICF should only be pursued if there is a reasonable expectation that emissions savings and development benefits can be realised.

Second, the model could impose significant resource pressures on ICF spending departments. Under this approach, CDC would only be responsible for providing initial contact between the ICF and its portfolio company. Beyond that, all of the additional workload would remain with the ICF spending departments who would be responsible for organising the energy audit as well as developing the investment plan for any associated energy efficiency improvements that it wished to help finance. This may be problematic given that the likely investment amounts could well be relatively small – the data presented earlier implied a typical investment amount per portfolio company of around £1m. This would be in tension with the recent trend towards ICF resources being devoted to large projects or programmes. From the perspective of ICF spending departments, these pressures would be substantially reduced if the responsibility for managing the energy audits and financing subsequent investments was given to a dedicated delivery vehicle (which could include the UK Green Investment Bank, or a dedicated fund manager that it or the ICF selects).



9 Conclusion

A selection of options tackling different gaps while offering significant opportunities

This section concludes the analysis by showing how individually and collectively the proposed options score well against the criteria identified in the Terms of Reference for this study as well as against the gaps in the climate finance architecture. At the same time, it recaps some of the key risks and barriers associated with each of the options. It also shows how these options could provide an investment focus and other benefits that are not available from the Climate Investment Funds (CIFs) but how the CIFs are also likely to remain crucial to the UK realising its climate finance ambitions.



This report identifies and provides an initial assessment of three options that could be used to programme some of the UK's international climate finance resources. The suggestions for potential further development are:

- A pilot to use the **UK Green Investment Bank** to identify and help appraise investment opportunities that might require ICF capital to leverage private capital in energy efficiency and renewables investments. A pilot would be needed to help understand the potential for this option, which might be associated with the programming of up to £200m of ICF resources. If successful, this pilot could lead to the GIB directly investing ICF resource off its own balance sheet (clearly ring-fenced from its other capital) to the same purpose.
- The provision of £10m-£30m resources to a project developer team managed by **Infraco Africa** to support early-stage low-carbon project development in Sub-Saharan Africa.
- Utilising the contacts that **CDC** has with its portfolio companies so that the ICF (or a delivery partner) offers these contacts energy audits which could then lead to partial financing of the energy efficiency investments identified. The sums associated with the provision of the energy audits may be as little as £150,000 which might form the basis of demand for finance of around £7.5m from public and private sources, perhaps half of which (£3.25m) might come from public sources such as the ICF.

Table 16 summarises the key findings in relation to each of these three options. It identifies a possible design and focus of each of the delivery vehicle options, the gaps that it might help fill in the current climate finance architecture, the extent to which they score well against the criteria in the Terms of Reference, the extent to which the options overlap with the CIF as well as key risks and uncertainties.

As they address different gaps, each option can be pursued in parallel, subject to sufficient ICF resources being available. Each option could help to tackle a different gap in the existing architecture; they do not compete with each other. The GIB could help to address the finding that private capital flows towards low-carbon opportunities are disproportionately lower in developing countries than in developed countries. It might achieve this by focussing its activities in particular in late stage medium- and large-scale energy efficiency and renewable energy projects in middle-income countries. The Infraco Africa option would also aim to enhance private sector flows but would do this in relation to a very specific activity, early stage project development, specifically in Sub-Saharan Africa (where discussions undertaken as part of this work suggest that the gap is most acute). Utilising CDC's contacts to identify and potentially finance energy efficiency opportunities in Africa and South Asia could help address the current lack of focus towards energy efficiency that is apparent both in the global climate finance architecture and in relation to the ICF.

The options all have the potential to score well against the criteria that the ICF has set itself in relation to any new delivery option. All three options would look to work with providers of private finance providers (GIB) and/or directly with companies (Infraco Africa and CDC) to encourage increased private capital flows into energy efficiency or renewables. As such, they could also deliver climate benefits. The geographic and/or sectoral focus of Infraco Africa and CDC's operations imply that the options using these organisations would also deliver significant development benefits; in the case of the GIB, the extent of these benefits may be more modest but would vary by transaction. All three of the options could increase the visibility of the UK's climate finance flows, although this would be more tangential in the case of Infraco



Africa due to its multilateral status (but where the UK is perceived as having strong influence). All of the options would make use of expertise based in the UK.

However, all three options carry risks and challenges that would need to be managed carefully. The nature of these risks, and the way in which they could be best mitigated, varies across the options.

- The GIB option would require the largest amount of ICF resources, yet the organisation has low experience in relation to international climate finance and delivering ODA, hence the risks of this option appear greatest. A significant uncertainty is whether the GIB could generate deal-flow outside of the MDBs which will be important to maximise leverage potential and for the GIB to be able to demonstrate the advantages it provides in terms of flexibility and fleetness of foot. Domestically, there is also a concern that a focus on developing international activities may distract it from its core UK mandate and dilute the identity of GIB as a commercially-minded ‘for profit’ investor. To lessen these risks this paper proposes a pilot be adopted. However, it is unclear whether a pilot with the characteristics suggested in this paper could be undertaken within the provisions of the current Articles of Association with the GIB. Any adjustment to these articles would require Parliamentary Approval.
- In the case of Infraco Africa, a lot of the risks relate to the difficulties of acquiring low-carbon deal flow in what are typically challenging business environments. These are risks to which, generally speaking, Infraco Africa and its current developer team are well accustomed. They have developed procedures and processes to mitigate these risks, although to date these have been applied to a vehicle that has a wide investment mandate, which provides more flexibility than is possible for a vehicle with a specifically low-carbon focus. There are also likely to be concerns that programming ICF resources through Infraco Africa could displace other ODA that the UK could otherwise deploy through the same vehicle.
- In relation to the CDC option, the risks relate primarily to the extent to which the significant energy saving potential could be generated, and the fixed transaction costs that would likely be incurred for relatively small-scale investments. From the perspective of ICF spending departments, these challenges could be substantially mitigated by outsourcing these transaction costs to a delivery vehicle, such as the GIB.

Despite these risks, each of these options presents the ICF with an opportunity to realise an investment focus or other benefits that would not be available from programming resources through the Climate Investment Funds. In the case of the GIB, this relates to the potential benefits of using an organisation to assist with the disbursement of climate finance that could (over time) focus largely or exclusively on leveraging private capital. By contrast, partly as a result of their design and partly as a result of the nature of the financial resources that has been provided by other donors, the CIFs are not able to provide such a unique focus. Likewise, there is no focus within any of the CIF programmes explicitly on early-stage project development as Infraco Africa provides; nor do the CIF programmes provide an opportunity for supporting energy efficiency investments in predominantly low-income countries in the way that using CDC contacts might.



At the same time, it is also clear, across a number of dimensions, that the CIFs will remain crucial for realising the UK’s ambitions on international climate finance. First, while the GIB shares a similar geographic and sectoral focus to the Clean Technology Fund, none of the options evaluated appear to have strong comparative advantage in SREP’s target areas. The maximum scale of the investment opportunity also differs: drawing on funds from many different sources and seeking extensive co-leveraging, means that the CIFs are able to invest in much larger projects than appears viable for any UK delivery option in the near term. There are also sectoral differences, with transport projects in particular, outside the reach of any UK climate finance vehicle. Combining all these with the intangible benefits that involvement in the CIFs brings – for example, playing a leading role within the CIFs has allowed the UK to influence international standards for climate investment performance indicators – strongly suggests that any new delivery option will need to be a complement to, rather than substitute for, the current support provided to the CIFs.



Table 16. Each of the options considered identifies different gaps but scores well against the criteria in the Terms of Reference

Vehicle	Suggested focus	Gap			Criteria in ToR				Comparison to CIFs	Risks and challenges	
		Energy efficiency	Early stage project development	Support for small and medium project	Diversity of financial instruments	Scale up private finance	Climate & development benefits	UK visibility			Use of UK expertise
GIB	identifying investment opportunities that might leverage private investment at financial close for both energy efficiency and renewables, primarily in MICs	✓ - possibly through fund managers	X	(✓) – more likely in the £10-20m; possibly through fund managers	✓ - able to provide range of financial products	✓ - mission of GIB, good track record	✓ - 'double bottom line'; project-specific development benefits	✓ - UK govt. sole shareholder	✓ - based in UK;	potentially similar country focus, similar investment focus to CTF if origination from MDB pipelines	inability to source deals outside MDBs, diverts focus from UK mission, no experience in foreign investment, crowding out private advisory services
PIDG (Infracore Africa)	early-stage project development support in challenging enabling environments in Africa	x	✓ - specific focus of vehicle	(✓)- as early stage development requires less capital	x	✓ - explicit focus, good track record	✓ - RES investment mandate, project specific development benefits	(✓) - multilateral status, but with UK influence	✓ - largely based in UK	different approach to CIFs with early-stage project development	generating deal flow, development speed, UK visibility, crowding out other donor funding
CDC	CDC providing introductions to its portfolio companies to allow energy audits and ICF financing of energy efficiency opportunities	✓ - strong network of businesses	X	(✓) - given size of enterprises in which CDC invests	x	✓ - direct engagement	✓ - EE plus focus in Africa and South Asia	✓ - UK government owned	✓ - based in UK	overlap with CTF's EE investment, but limited country overlap	not ideal sectoral focus of CDC companies, high transaction costs

Note: a tick in brackets indicates limited or indirect success against the criteria

Source: Vivid Economics

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Company Profile

Vivid Economics is a leading strategic economics consultancy with global reach. We strive to create lasting value for our clients, both in government and the private sector, and for society at large.

We are a premier consultant in the policy-commerce interface and resource- and environment-intensive sectors, where we advise on the most critical and complex policy and commercial questions facing clients around the world. The success we bring to our clients reflects a strong partnership culture, solid foundation of skills and analytical assets, and close cooperation with a large network of contacts across key organisations.

