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A South African low carbon project development primer

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INTRODUCTION: Background, objectives and structure of this document

Background

This guide is the result of a project implemented by the National Business Initiative (NBI) to enhance private sector access to funding for low carbon projects in South Africa. The full research study, which forms an important background to this document and should be read before using this guide, is available on the National Business Initiative website (www.nbi.org.za). This project is funded by the Prosperity Fund of the United Kingdom Foreign & Commonwealth Office. The reports have been developed with the technical assistance of KPMG's Climate Change & Sustainability unit.

Objectives

The objective of this guide is to provide practical information to those developing low-carbon projects in the private sector in South Africa. The information provided in this report is designed to highlight the operating realities that project developers need to cope with, and outline the actions they can take to improve the bankability¹ of their projects. The types of project developers that this guide is aimed at include entrepreneurs for whom low-carbon projects form the sole / primary focus of their business, as well as management / employees in large corporations with the responsibility of designing / implementing low-carbon initiatives as part of the broader business. In all cases, this guide refers specifically to South Africa as the location of the project activity, although some key features may be relevant to other developing countries.

The premise of this guide is that there are barriers that impede the development of low-carbon projects in South Africa, as found in the research study referred to above. Some of these barriers are systemic in nature and require large-scale structural change to resolve. From the perspective of an individual project developer, such barriers represent operational realities that cannot be overcome with individual action, and hence require the project developer to adapt. This guide attempts to highlight these barriers and thereby increase the awareness of project developers of the need and means to adapt. Other barriers relate to the way projects are structured and presented for funding and can be overcome by the actions of project developers. This guide is aimed at bringing these issues to the attention of project developers so that projects can be designed differently to address these current shortcomings. Ultimately, it is hoped that by adopting the principles set out in this guide, project developers are able to have better, more appropriate discussions with funders, thereby creating the conditions for more low-carbon projects to receive the required funding.

This guide is not meant to be exhaustive or a one-stop-shop to project development. It is intended to supplement the ever-expanding set of literature on general project development by focussing specifically on the conditions unique to developing low-carbon projects in South Africa. It is especially relevant to individuals investigating low-carbon projects and will provide you with an introduction to important financial terminology, the general South African context and an non-exhaustive list of

¹ Bankability refers to the attractiveness of a project to secure financing. It does not pertain strictly to funding from banks and it used to describe the attractiveness of the project to a broader set of potential funders.

finance institutions operating in the region. Those looking for an all-inclusive guide to project development in the general business environment (not low-carbon projects specifically) should consult generic project development tools outlined in the final chapter.

Additionally, this guide is meant to be a living document, and it is hoped that it is kept constantly updated with fresh insights on project development and new means of funding. Should you have anything to contribute in this regard, please contact the NBI via the Climate Finance section of their website (www.nbi.org.za).

Structure of this document

This guide is split into the following inter-related sections

- **Section 1** provides an introduction to the terminology of financial instruments used along the different stages of a project lifecycle. This is intended to equip project developers with an overview of funding options to better engage financial institutions at different stages of development of their project.
- **Section 2** provides a summary of the various forms of financial support available for the development of low carbon projects in South Africa. The ever-changing nature of the low-carbon funding landscape means that such a summary can never be seen to be definitive or complete. That notwithstanding, this section provides a basis that can be built upon to create a living repository of funding options, as well as a guide to help project developers select which institutions to approach.
- **Section 3** outlines a practical synthesis of the barriers to low-carbon project development in South Africa. By distilling the barriers identified in the research study in a practical form, this section is designed to enable project developers to design their projects to adapt to systemic barriers, and overcome project-specific hurdles.
- **Section 4** concludes the report by providing reference to additional resources available to project developers in South Africa. In doing so, it aims to create momentum to continue the conversation that this guide aims to initiate, which can be enhanced through contributions by all stakeholders.

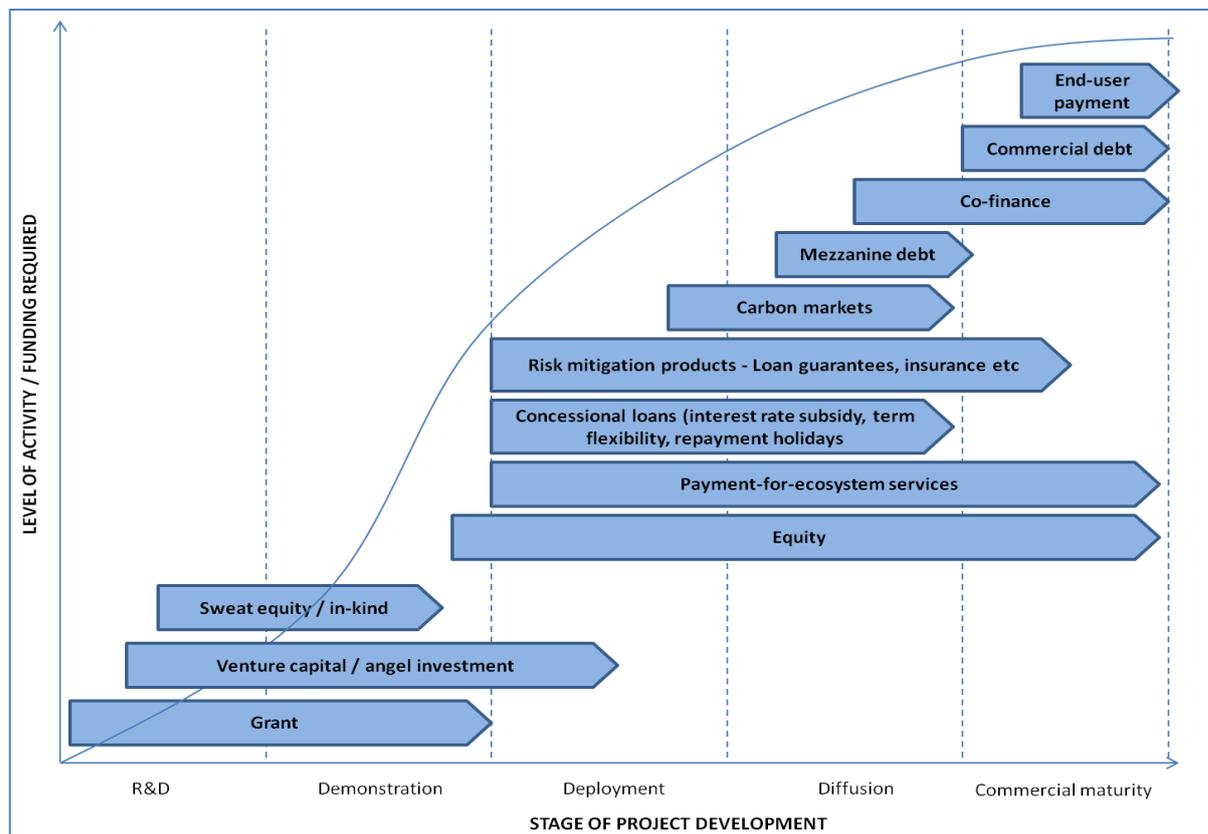
SECTION 1: GUIDE TO THE TERMINOLOGY OF FINANCIAL INSTRUMENTS ALONG A PROJECT LIFECYCLE

This section provides an overview of the financial instruments that a low-carbon project would typically access over its lifecycle. The purpose of doing so is to enable project developers to select financial instruments (and the institutions that provide them) more appropriately for the specific stage of their project and then to have a more informed discussion in structuring finance. This section explores two key concepts in this regard – the typical stages of project development, and the features of the different financial instruments matched to each stage.

Stages of project development

Projects that have an explicit low-carbon focus as their primary purpose (the focus of this guide) share a number of features in common with projects in other sectors of the economy. Yet, there are subtle differences in the nature of low-carbon projects which need to be recognised and addressed differently by project developers as compared to the normal course of project development. A framework to bring out these unique features and discuss their implications for the manner in which projects are developed is provided in figure 1 below, which shows the stages of development that a project undergoes through its lifecycle the typical financing requirements at each stage.

Figure 1: financing requirements along the project development lifecycle



There are 5 stages of project development shown along the horizontal axis of figure 1. There are a number of similar frameworks that may have a different form of categorisation of project stages, but are largely similar in essence, if not form. Each of the stages shown in figure 1 is explained below, with specific reference to low-carbon projects in South Africa

- 1 Research & Development (R&D):** This, the initial phase of all projects, involves research & development of the core product, service or concept. It may take the form of traditional R&D, which consists of deliberate experimentation under controlled environments such as testing labs (for example, the development of a new chemical to reduce emissions in a manufacturing process). Alternatively, it may take the form of applied research through existing operations (for example, a new process or production method to improve efficiency in energy use in a mining operation) or ad-hoc development of a concept or idea in semi-controlled environments (for example, the development of a new financial product or business model to deliver low-carbon goods or services).

There is usually very limited funding available for R&D in South Africa, particularly for low-carbon projects. This is because the scale at which products that are successful in the R&D phase will be able to achieve commercial success is often uncertain and limited in South Africa. This in turn is largely driven by an uncertain policy environment for the transition to a lower-carbon economy. This means that the risk inherent in R&D activities is not easily justified by the potential reward and the at-risk investment required is not often available. This is exacerbated by the under-development of the venture capital market and the misalignment between the vision for the green economy and the structure of the country's financial system and underlying skill set, both of which are explained further in the main research study associated with this report (see the climate finance section of the NBI website (www.nbi.org.za)). Project developers could also consider the R&D incentives provided by the Department of Science and Technology.

2 Demonstration

Once the proof of concept is established in the R&D phase, a project moves into the demonstration phase to establish that it is practically implementable and viable in a normal operating environment. For a low-carbon project, this could involve demonstrating the compatibility of a specific piece of equipment with an established manufacturing process (for example, how an energy efficient fan integrates with the existing switchgear in a ventilation system) or, for an entirely new innovation, how it would interact with existing consumer lifestyles and preferences (for example, how an electric mode of transport could be run with existing electricity infrastructure).

Low-carbon innovations have to overcome a major hurdle at this stage in that they often come up against non-technical barriers of consumer behaviours and preferences. To achieve the savings in emissions (or other forms of environmental impact), low-carbon projects typically require some form of autonomous behavioural change by users (for example, consumers having to physically turn appliances on and off to achieve energy savings). Whilst a particular intervention may be technically sound and work in practice, that it is dependent on the action of a user often makes it difficult to pass the test of demonstration in project evaluations.

3 Deployment

If a project clears the technical and behavioural hurdles of demonstration, it is faced with the challenge of market penetration or deployment. Low-carbon projects are often unique in this regard as they often require some form of public policy or support mechanism in order to penetrate the market (for example, a government decree on the use of energy-efficient light bulbs to replace incandescent bulbs). This is because existing carbon-intensive models of production and consumption are entrenched and lead to perverse incentives that create barriers to entry for low-carbon alternatives.

Often an effective means of deployment into the market for low-carbon products and services is through the uptake by early adopters. By harnessing the power of trends and a prevalent social movement towards a low-carbon lifestyle, developers of low-carbon products and services can utilise early adopters (preferably those that have high visibility) to increase market presence and create the pull for mass demand (for example, the use of social marketing and media to promote the market for organic vegetables).

4 Diffusion

The challenge for all projects is to achieve diffusion at scale once they have been deployed into the market because this provides the basis for commercial maturity. Low-carbon projects face particular challenges in this regard because diffusion of a product to the mass market depends on a clear economic rationale, which is often lacking or unclear due to the perverse economic incentives towards carbon-intensive products, as described earlier (for example, consumers in European markets can choose to procure their energy from renewable sources but often at higher cost than conventional electricity). The economic barrier to diffusion may not always be limited to the price of the product, but may also be affected by issues of access (for example, the practical challenges with matching the supply of bio fuels with the distributed demand points of fuel stations).

Long-term government policy to support low-carbon projects starts to play a key role at this stage of project development, and more so in commercial maturity. A long-term policy signal can often prompt consumers to adopt low-carbon products and services at scale in the expectation of a better economic return in the long-term, even in the face of high upfront costs (for example, government support for the roll-out of solar water heaters).

5 Commercial maturity

The final stage in the project development lifecycle is one where the product or service reaches commercial maturity. Often, this is a function of scale, which is a particular challenge for low-carbon projects primarily because of uncertainty in long-term policy. Without certainty of the long-term economic rationale for low-carbon alternatives, it is difficult for a market to develop at scale (for example, the lack of policy certainty for rooftop energy solutions to sell power back to the grid has stunted the development of off-grid energy solutions). This in turn, makes future cash flows uncertain and erodes the bankability of projects, highlighting the importance of long-term policy signals to create the scale to develop commercially viable low-carbon alternatives.

Against the backdrop of these 5 stages of a project through its lifecycle, the next section describes the different funding instruments that are typically used at each stage. The mapping of instruments to the project stages is shown in figure 1, and summaries of each of the instruments is provided in the following sections.

Financing instruments

There are a number of financing instruments available to address the different stages of the project development lifecycle shown in figure 1. As these are often established instruments used in global financial markets, a comprehensive overview is outside the scope of this analysis. Rather, they are briefly explained below, with specific reference to their application to low-carbon projects in South Africa;

- **Grant:** Grants represent a non-returnable investment / contribution to a project, often to provide seed capital at the very start. Low-carbon projects have often relied on grants, especially through the mandate of local and international development finance institutions to promote environmental sustainability. However, as South Africa progresses towards middle-income developing country status, the availability of grants is expected to diminish.
- **Venture capital / angel investment:** Venture capitalists and angel investors often enter into the early stages of a project with an injection of capital (in exchange for part ownership) in the expectation of achieving returns on their investment of many multiples. There has thus far been very limited venture capital involvement in low-carbon projects in South Africa due to a lack of clear policy (which constrains the scale necessary to provide the multiple returns that venture capitalists expect) and the relatively low level of commercialised breakthrough technologies.
- **Sweat equity / in-kind:** Entrepreneurs and early-stage project developers often benefit from contributions in-kind from investors (usually in exchange for part ownership or the promise of future returns), which may take the form of physical labour, intellectual capital or project development support. Many low-carbon projects are carried through this form of early-stage support, although the lack of a broad skills base in this area constrains the scale at which it can be adopted. There is a fair amount of precedent for the contribution of this form of early-stage project development support in South Africa.

- **Equity:** Projects will often have equity investors from the start, which may be the founders of the project, banks, private equity companies, other interested individuals, or some combination thereof (and proportional controlling rights), and the equity profile of the project may evolve as the project develops. Low-carbon projects are often required to have at least 30% equity (as in the case of the Renewable Energy Independent Power Producer Programme) in order to attract debt, and this figure can often be higher because of the risks inherent in many low-carbon projects. There is an active and developed equity financing landscape in South Africa, both through private equity direct injections as well as listed equity investment through the stock exchange.
- **Payment for ecosystem services:** Payment for ecosystem services can be employed at different stages of project development and with varying levels of complexity (for example, ranging from a simple user rights system for a water body to a complex carbon markets transaction for Reducing Emissions from Deforestation and Degradation). Low-carbon projects have had mixed use and success with such instruments, which often require a high level of market maturity in order to be deployed at scale. This is not a major source of funding at this stage in South Africa due to under-developed markets for natural goods and services.
- **Concessional loans:** Concessional loans are provided to projects that have positive socio-economic benefits by development finance institutions and public agencies with a developmental mandate. Low-carbon projects have benefited significantly from concessional finance, which is often channelled through existing structures (such as banks) and ring-fenced for particular projects (for example, renewable energy and energy efficiency). There is a wide array of domestic and international financial institutions that provide various forms of concessional finance in South Africa.
- **Risk mitigation products:** Risk mitigation products do not offer project financing itself, but are designed to lower the transaction costs involved in investing in projects, thereby enhancing the flow of finance. There has thus far been very limited development of risk mitigation products for low-carbon projects (some examples include listed instruments for investing in off-grid renewable energy and insurance products for investments in Clean Development Mechanism projects), primarily due to lack of scale of the low-carbon economy. This is not a well developed area of the South African landscape for the financing of low-carbon projects.
- **Carbon markets:** Carbon markets leverage the existing system of market-based financial instruments to channel funding to projects that mitigate carbon emissions. Many low-carbon projects have been fully or partially funded through carbon markets (for example, the Clean Development Mechanism and the European Union Emissions Trading Scheme), although uncertainty over prices of carbon credits and methodological difficulties in guaranteeing emission reductions have led to a decline in financial flows through carbon markets. The use of carbon markets in South Africa has thus far been limited in comparison to other developing countries, and the future prospects of this form of finance seem limited.

- **Mezzanine debt:** Mezzanine debt (also known as subordinated debt or referred equity) is used as a project matures as a way of securing the benefits of debt funding whilst allowing for a higher risk profile than standard commercial debt (and consequently commanding higher returns as it is subordinated, meaning that it is only paid after all senior obligations have been met). There has been some uptake of mezzanine debt on low-carbon projects in South Africa, particularly in large renewable energy transactions, although its exact use vis-a-vis senior commercial debt remains unclear.
- **Co-financing:** Co-financing of projects amongst two or more financial institutions often enters the realm of project finance as the project matures and increases in size. Many low-carbon projects in South Africa in the form of those under the Renewable Energy Independent Power Producer Programme have been co-financed by commercial banks and between commercial banks and development finance institutions. The need for co-financing is often dictated by the financial institutions rather than the project developer, as there is often a Lead Transactor that is the main interface with the project developer, whilst much of the detailed structuring of finance occurs between the various financing institutions.
- **Commercial debt:** Commercial debt refers to the standard loans (and their various derivatives) offered by commercial banks for the financing of projects. Commercial debt has been used extensively in large renewable energy projects in South Africa, as well as for some smaller operational projects in large organisations. To receive commercial debt financing, low-carbon projects have to meet the standard lending criteria for commercial banks, which rests on providing certainty of cash flows and/or collateral for lending, amongst other factors.
- **End-user payments:** End-user payments are used for mature, commoditised products and services where discrete transactions are possible and efficient (for example, premium payments for the disposal of different types of household waste). The market for most low-carbon products and services is not mature and hence, end user payments are not widely prevalent.

This section provided an overview of the terminology of different financial instruments used along a typical project lifecycle. This knowledge should provide the basis for project developers to have an informed discussion with the appropriate financial institution(s) at different stages of project development, or at the very least to guide further research.

The next section provides a summary of the types of funding that are known to be available in South Africa and the respective institutions that provide finance. Project developers need to consider that different funders would be more appropriate to different project phases based on funder risk tolerance and the type of instrument they predominantly offer. As a consequence a project may be funded by several different institutions at different times in the project lifecycle. Successful project developers think about the conditions and timing of switching between funding sources and instruments and work ahead of time to establish relationships with prospective funders taking cognisance of the changing information they may require.

SECTION 2: OVERVIEW OF FUNDING SOURCES AND INSTITUTIONS IN SOUTH AFRICA

This section provides an overview of the sources and institutions (as distinct from the instruments outlined in Section 2) of funding low-carbon projects in South Africa. Keeping with the theme of the overall guide, it is not meant to be an exhaustive list of all possible financing, but rather as an initial platform that can be built upon. The objective of this section is to provide direction to project developers as to the institutions that can be approached at various stages of project development to access funding.

Range of possible funding sources

The discussion of different funding instruments in Section 2 provides a good indication of the range of possible sources of funding for low-carbon projects in South Africa. This section provides a list of these potential sources, leading into the next section which focuses specifically on public funds available. It is important to note that not all of these sources will be accessible to individual project developers and many of them may not specifically identify low-carbon projects separately from their other investments. These and other details of how project developers can access finance should be sourced directly from the institutions.

The range of institutions that currently do or can potentially undertake financing of low-carbon projects in South Africa include:

- 1 Local commercial banks, which include the largest institutions / tier 1 banks and smaller institutions / tier 2 banks. In the case of the large institutions, different divisions within the bank such as personal banking, business banking and investment banking may have different funding strategies for low-carbon projects.
- 2 International commercial banks, although they may be restricted by the nature of their banking licenses in South Africa.
- 3 Local development finance institutions, who would have an express developmental mandate in their lending activities.
- 4 International development finance institutions and aid agencies, who may operate independently or through local commercial or developmental finance institutions or government departments.
- 5 Private equity companies, which can be both, local and foreign.
- 6 Asset managers, who mostly exert influence through the conduit of the companies they invest in
- 7 Insurance companies, who form an important group of institutional investors through their long-term view of investments.
- 8 Pension Funds, which includes both, private and public pension funds.
- 9 Government departments at national, provincial and local spheres whose activities are regulated by the Public Finance Management Act (PFMA) and Municipal Finance Management Act (MFMA).
- 10 Private companies, who may undertake investments on their own balance sheet or through their own funds.
- 11 International / multilateral funds dedicated to low-carbon development, which would include the Green Climate Fund and other United Nations bodies.

Public funds aimed at low-carbon projects in South Africa

There are a wide range of local and international public funds aimed at low-carbon projects in South Africa. The tables below provide a summary of the available funding sources and the relevant institutions, starting with the local entities and then progressing to international funds. Not all the funds will be available to project developers as many are dispensed through intermediaries such as government and commercial banks. Further, many of the funds have specific criteria, a detailed list of which is outside the scope of this report. Additionally, some of these funds are intended for broader socio-economic development, of which low-carbon projects form but one part. Finally we do not pretend that this list is exhaustive or complete and facts may have changes since its publication. Nonetheless, the tables below represent an attempt to define the range of public funds available and can be used as a basis for further investigation into specific funds. If you would like to make additions or corrections to this section of the report please contact the NBI through the Climate Finance section of their website (www.nbi.org.za).

Table 1: Local agencies and funds dedicated to low-carbon projects

Local funds	
Green Fund	Established by the Department of Environmental Affairs and managed by the Development Bank of Southern Africa, the Green Fund contains an initial allocation of R800 million to support the transition to a low carbon, resource efficient and climate resilient development path delivering high impact economic, environmental and social benefits. The fund dispenses funds through various thematic windows and invests across one or more project stages through a number of instruments
Industrial Development Corporation (IDC) Green Energy Efficiency Fund	The Green Energy Efficiency Fund is the result of a partnership between the IDC and the German Development Bank (KfW) to fund energy efficiency and self-use renewable energy projects. The facility, R500 million in size is only open to businesses registered and operating in South Africa for equipment and technologies across a range of sectors.

Table 2: Local agencies and funds that support broader low-carbon development

Eskom programmes	
Rebate Model	This programme provides rebates for solar water heaters (between R3280 & R8964) and heat pumps (between R3668 & R4320).
Standard Offer	Provides a subsidy for: building management systems; hot water systems; industrial and commercial solar water heating systems; process optimization; energy efficient lighting technologies; LED lighting technologies. The payout is based on kWh savings of new technology and dependant on the type of technology.
Standard Product	Replacement of commonly-used inefficient technologies with energy efficient equivalents. The payout cap is R750,000 and is paid after implementation and an auditing procedure has been completed.
ESCO Funding	Provides rebates for energy efficiency projects that achieve savings of more than 100kW, including Lighting & HVAC; Hot Water; Demand Response; Compressed Air; Process Optimisation; and other projects. Eskom supports ESCO projects by funding up to 100% of the financial

	benchmark value for viable energy efficiency projects, and the current benchmark value is between R3.9m/MW and R6.3m/MW.
Performance contract	This involves the bulk purchase of energy savings across multiple sites and technologies through contracting with a single project developer. Savings eligible for payment need to be between 06h00 and 22h00 on weekdays – savings outside this period will be compensated at a lower rate. Rates are to be determined through a competitive bidding process. The minimum project size is 30GWh over a three year period.

Table 3: Local agencies and funds that support broader economic development activities

Funds from the Department of Science and Technology (DST) and Department of Trade and Industry (DTI)	
Support Programme for Industrial Innovation	
The product process development (PPD) scheme.	For the development of new products (that have not been on the market) by small companies (total assets below R5 million and a turnover of less than R13 million as well as total employees of below 50). Financial assistance provided is in the form of a non repayable grant of between 50% and 85% of the qualifying costs incurred during the technical development stage with a maximum grant amount of R2 million per project.
Matching Scheme	<p>The Matching Scheme provides financial assistance in the form of a taxable non-repayable grant of between 50% and 75% (depending on the shareholding by Black Economic Empowerment (BEE) eligible candidates, women and persons with disabilities) of qualifying costs incurred in pre-competitive development activity associated with a specific development project up to a maximum grant amount of five million Rand (R5 000 000).</p> <p>Financial assistance under the Matching Scheme is also provided to large companies on a 50% matching basis. A large company is defined in the Small Business Act of 2003 or any act replacing it. The incentives for BEE and women participation provided under the Matching Scheme do not apply to large companies.</p>
The Partnership Scheme	<p>Financial assistance under the Partnership Scheme is provided in the form of a conditionally repayable grant of 50% of the qualifying cost incurred during development activity with a minimum grant amount of ten million Rand (R10 000 000) per project, repayable on successful commercialization of the project.</p> <p>The Partnership Scheme repayment levy is calculated as the percentage of the projected value of sales, paid bi-annually, over a specific number of years (typically for 5 years starting at the first year of recorded sales) which will give a certain nominal Internal Rate of Return (IRR). The required IRR is periodically reviewed and is currently Prime + 3%. The levy percentage and repayment period is set at the time of the award. In considering support for a project under the Partnership Scheme, there should be a clear indication of the causality (additionality) that will follow from the support.</p> <p>The grant recipient may exit from the agreement at any time after the</p>

	<p>final milestone has been reached, subject to the repayment of the support amount plus such amount that will yield the IRR referred to above.</p> <p>The Partnership Scheme is based on similar rules as the Matching Scheme. There are no BEE incentives under the Scheme.</p>
<p>Manufacturing Competitiveness Enhancement Programme (MCEP)</p> <p>The MCEP is one of the key action programmes of the Industrial Policy Action Plan 2012/13 - 2014/15. It provides enhanced manufacturing support aimed at encouraging manufacturers to upgrade production facilities in a manner that sustains employment and maximizes value addition in the short to medium term. It consists of two sub-programmes, the Production Incentive and the Industrial Financing Loan Facilities. Only the Production Incentive contains a specific low carbon component.</p>	
Production incentive - managed by the DTI	<p>The Production Incentive accounts for 80% (by Rand value) of the MCEP. Grant value is calculated on a 'MCEP credits' system, through which up to 25% of the manufacturing value added is subsidised. Credits can be applied to any of five sub-components of the Production Incentive. One of these is for Green Technology and Resource Efficiency Improvement, which is a cost sharing grant to support enterprises with green technology upgrades that lead to cleaner production and energy efficiency.</p>
Critical Infrastructure Programme (CIP) – managed by the DTI	<p>This is a cost sharing grant designed to improve critical infrastructure in South Africa. Between 10% and 30% of total development costs of qualifying infrastructure can be covered by the grant. Infrastructure for which funds are required is deemed to be 'critical' if the investment would not take place without the said infrastructure or the said investment would not operate optimally.</p> <p>This fund is not specifically for low carbon projects, but can be seen to extend to renewable energy projects under the umbrella of energy supply projects.</p>
<p>Technology Innovation Funds (Technology Innovation Agency - TIA)</p>	
Industry Matching Fund	<p>This fund is primarily aimed at driving technology innovations in companies of all sizes. Funding is typically provided as matched funding for a royalty, matching loans or preference shares.</p>
Equity Fund	<p>The Equity Fund will invest in fledging companies driving technology innovations which do not have either the capital to match the TIA's investment or the track record and balance sheet to secure loan finance. Funding is typically provided for equity, or equity in combination with convertible preference shares.</p>
Technology Development Fund	<p>This fund invests in select high potential projects undertaken by institutions for pre-competitive and end stage research and technology development. Applicants are required to contribute at least 20% of the funding.</p>
Idea Development Fund	<p>This fund provides 'modest' amounts of funding to entrepreneurs and small companies to assist with: patenting costs, technologies being incubated at any of TIA's platforms or other infrastructure initiatives, to lower risk of starting companies, and/or; enable development of a fundable proposal/business plan. Maximum fund transfer is R200,000/transaction, except for funding of intellectual property registration and maintenance costs, where the allowable maximum is R500,000/transaction.</p>

Table 4: Multilateral agencies and funds

Multilateral agencies and funds	
<i>The World Bank</i>	
<p>The World Bank comprises 187 member countries and provides low-interest loans, interest-free credits, and grants to developing countries. Specifically, The World Bank carbon finance covers a wide range of sectors, including projects relating to renewable energy, energy efficiency, urban infrastructure, waste management, forestry, and water resource management. It comprises two major funds, and is closely associated with the International Finance Corporation, which focuses on private sector lending:</p>	
Clean Technology Fund (CTF)	<p>In South Africa the CTF aims to provide R500 million of co-financing support for South Africa's goals of generating four percent of the country's electricity requirements from renewable energy by 2013 and improving energy efficiency by 12 percent by 2015. Funds are channelled through Multilateral Development Banks (MDBs). Phase 1 Renewable Energy and Energy Efficiency projects to receive funding have mostly been identified. Phase 2 of the Investment Plan will focus on the funding of low carbon transport on the basis of a transport sector greenhouse gas inventory that the government is currently undertaking.</p>
Strategic Climate Fund	<p>This consists of three programmes. The Scaling up Renewable Energy Programme (SREP), The Forest Investment Programme (FIP), and The Pilot Programme for Climate Resilience (PPCR). The three funds primarily invest in low-income countries and access for South Africans may therefore be limited. SREP focuses on renewable energy projects such as wind and solar energy, small hydropower and biomass, and geothermal energy. The total size of the SREP fund is US\$318 million.</p>
<i>International Finance Corporation (IFC)</i>	
<p>The IFC is the private sector arm of the World Bank Group and finances debt and equity for private firms in developing countries. Unlike the CTF and Strategic Climate Fund, the IFC coordinates its activities with the other institutions of the world bank but is legally and financially independent. One of the focus areas of IFC is the support of private sector development in sub-Saharan Africa with investments and advisory services programs.</p>	
In addition to the World Bank, the following multilateral programmes and funds exist that are relevant to financing low-carbon projects in South Africa.	
Funds	
Global Environmental Facility (GEF)	<p>The GEF is made up of five funds, the main one being the GEF Trust Fund.</p> <p>GEF is an independently operating financial organization which brings together 182 countries in partnership with international institutions, civil society organizations (CSOs), and the private sector to address global environmental issues. The GEF provides grants and concessional funding to projects that aim to improve the global environment.</p> <p>Since 1991 the GEF has provided \$11.5billion in grants and leveraged \$57 billion in co-financing for over 3215 projects in over 165 countries. It's Small Grants Programme has made more than 16,000 grants directly to civil society and community based organisations totalling</p>

	<p>more than \$653 million.</p> <p>The GEF Trust Fund is replenished every four years and has received more than \$15 billion in its five replenishments.</p>
Global Energy efficiency and renewable energy fund (GEEREF)	GEEREF is a fund operated by the GEEREF Secretariat and focuses on investing in private equity funds focused on renewable energy or energy efficiency projects in emerging markets outside the EU.
The European Investment Bank (EIB)	The EIB is the European Union's bank which provides finance and expertise for investment projects which contribute to furthering EU policy objectives. The EIB has been active in South Africa since 1994 and as at the end of 2009 the bank had extended funding to 38 development projects for a total of EUR 2 billion
The African Development Bank (AfDB)	The AfDB acts as an executing agency of the GEF and aims to assist African countries in their efforts to achieve sustainable economic development and social progress. The bank has adopted a Climate Change Action Plan that seeks to address mitigation, adaptation and financing. It provides loans, equity, guarantees, lines of credit and underwriting to eligible projects.
African Development Bank Sustainable Energy Fund for Africa	The Sustainable Energy Fund for Africa is operated by the African Development Bank and focuses on enhancing the commercial viability and bankability of private sector projects. Support is provided mainly via grants and equity to smaller-size renewable energy and energy efficiency players
Nordic Development Fund	Is operated by the Nordic Development Fund Secretariat and focuses on grant financing of adaptation and mitigation activities in low-income developing countries in Africa, Asia and Latin America. Participating countries are Denmark, Finland, Iceland, Norway and Sweden.
Agencies	
United Nations Environment Programme (UNEP)	UNEP is also part of the GEF Partnership and is a programme, rather than an agency of the UN. UNEP coordinates United Nations environmental activities, assisting developing countries in implementing environmentally sound policies and practices. It has developed and participated in several environment funds described in this document.
United Nations Development Programme (UNDP)	The UNDP is part of the GEF Partnership. UNDP's role is to help developing countries make investments on sustainable development economically attractive. Environmental finance is one of their key strategic themes.
Renewable Energy and Energy Efficiency Partnership (REEEP)	REEEP is operated by the REEEP International Secretariat and comprises 400 partners including 45 governments as well as a range of private companies and international organisations. Its objective is to assist governments to create favourable regulatory and policy frameworks and promoting innovative finance and business models to activate the private sector. Its current focus is on Brazil, China, India, Indonesia and South Africa.

Table 5: Bilateral agencies

Country	Bilateral agency	Description
Australia	Australian Agency for International Development (AusAID)	AusAID is the Australian Government's development agency responsible for managing Australia's overseas aid program. It focuses on the Asia Pacific region but also in Africa, the Middle East, Latin America and the Caribbean.
Austria	Austrian Development Agency (ADA)	ADA is the operational unit of the Austrian Development Cooperation (ADC). It is in charge of implementing all bilateral programs and projects in ADC's partner countries. Whilst the primary focus of the fund is humanitarian, it does support Austrian and other European Economic Area based companies that take active measures to improve the social, ecological, or economic environment in recipient countries.
Canada	Canadian International Development Agency (CIDA)	CIDA is Canada's lead agency for development assistance which focuses on Increasing food security; securing the future of children and youth; and stimulating sustainable economic growth, all of which are linked to low-carbon growth.
Denmark	Danish International Development Agency (DANIDA)	DANIDA is Denmark's development cooperation. DANIDA has four main focus areas: human rights and democracy; green growth; social progress and stability and protection. The agency's 'Climate Pool', valued at DKK500 million in 2012, funds projects related to climate change and shifting to the green economy
UK	Department for International Development (DFID)	DFID is the UK's development agency. DFID focuses on the provision of aid to address climate change and its link to development. DFID has committed £2.9 billion of climate finance from within its existing aid commitments from 2011 to 2015.
Finland	Department for International Development Cooperation	Finland's development agency engages in bilateral development with a number of African countries. The focus areas include sustainable forestry and industry, water and the environment.
Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)	GIZ is a federal enterprise that supports the German government in achieving its objectives in the field of international cooperation for sustainable development, including in many African countries, and funds significant efforts on capacity building for low-carbon development in South Africa.
Germany	German Bank for Reconstruction and Development (Kreditanstalt für Wiederaufbau - KfW)	KfW is Germany's development bank with a role to promote partner countries' projects and programs on sustainable progress in developing and transition countries. The current portfolio comprises more than 700 projects in 82 countries. Its investment focus areas include infrastructure, agriculture, manufacturing, and finance, and it offers private enterprises investing in developing countries appropriate long-term finance: risk capital, equity capital, mezzanine finance, loans and guarantees.

Germany	International Climate Initiative (ICI)	ICI, through its Energy and Climate Fund supports climate and biodiversity projects in developing and newly industrialising countries, as well as countries in transition. The fund receives funding from carbon emissions trading and has 120 million Euros available for use annually for which applications are submitted in January of each year.
France	French Agency for Development (Agence Francaise de Developpement - AfD)	AfD is the main implementing agency for France's official development assistance. AfD supports project and programs through grants, loans, guarantee funds and debt reduction-development contracts. In South Africa, amongst other activities, it is supporting renewable energy and energy efficiency projects through concessional financing to selected private sector banks and DFIs.
Ireland	Ireland Development Cooperation	The Development Cooperation Directorate is responsible for administering Ireland's overseas aid programme. One of its priorities is the reduction of poverty, inequality and exclusion in developing countries and a geographic focus on Sub-Saharan Africa. Its activities include improving resilience of vulnerable communities to climate change; promoting leadership and governance with respect to sustainable development; supporting research on climate adaptation and risk reduction.
Japan	Japan International Cooperation Agency (JICA)	JICA is Japan's development agency that aims to contribute to the development of the global economy by supporting socioeconomic development, recovery or economic stability of developing regions. It uses varied development assistance schemes. JICA's support to South Africa is primarily focused on: 1) Promotion of Human Capacity Development and Infrastructure Development, 2) Promotion of Participation of vulnerable groups in Social and Economic Activities, and 3) Promotion of Regional Development in Southern Africa; all of which are linked to low-carbon growth.
Japan	Japan Bank for International Cooperation (JBIC)	JBIC is a policy-based financial institution of Japan, and conducts lending, investment and guarantee operations while complementing the private sector financial institutions. Specifically, it provides advice for Japanese firms, foreign governments and others with respect to utilization of the Kyoto Protocol, including innovative financing for improving project revenues and reducing borrowing costs by using carbon, and on the investment climate in host countries.
Netherlands	Netherlands Development Cooperation	With a focus on Africa, the development policy of the Netherlands is implemented through the Netherlands Development Corporation, which is active in a number of African countries.

Netherlands	Netherlands Development Finance Company (FMO)	FMO is the Dutch development bank supporting sustainable private sector growth in developing and emerging markets. It predominantly invests in financial institutions, energy and agribusiness, food and water.
Sweden	Swedfund International AB	Swedfund provides risk capital, expertise and financial support for investments in the emerging markets of Africa, Asia, Latin America and Eastern Europe.
Sweden	Swedish International Development Agency (SIDA)	SIDA is Sweden's development agency. Its overall target is to ensure that those in poverty have the ability to improve their living conditions. The agency has a focus on five key areas including sustainable development, with a focus on developing countries
USA	U.S. Agency for International Development (USAID)	USAID is the USA's development agency. One of its key focus areas is around environment and climate change. Afghanistan and Pakistan are USAID's two largest assistance programs but they also provide assistance in other developing regions including Africa. The agency has funded 227 Environment and Global Climate Change projects in Africa.
USA	Overseas Private Investment Corporation (OPIC)	OPIC is the U.S. Government's development finance institution. It mobilizes private capital to help solve critical world challenges. It provides investors with financing, guarantees, political risk insurance, and support for private equity investment funds.

Whilst the previous two sections provided a theoretical overview of how financial markets should function and a selection of the type of funding that should be available for project developers to access in South Africa, the next section explores some of the practical reasons why markets may not function as expected, and the barriers that project developers need to adapt to or overcome in order to increase the chance of securing funding.

SECTION 3: PRACTICAL SYNTHESIS OF BARRIERS TO LOW-CARBON PROJECTS IN SOUTH AFRICA

The research study upon which this guide is based revealed a number of barriers that impede investment in low-carbon projects in South Africa. These barriers can lead to sub-optimal outcomes in the availability and application of financial instruments and access to financial institutions described in the previous sections. From a project developer's perspective, these barriers can be grouped into two categories; those that are systemic in nature and require structural change, and those that are related to how low-carbon projects are constructed and require a change in approach from project developers. Each of these categories are described below, with the objective that knowledge of these will allow project developers to adapt or change to produce projects with the greatest chance of attracting funding.

Structural barriers

There are a number of structural barriers in South Africa that individually and collectively present challenges for developers of low-carbon projects to secure the required funding. The defining feature of such barriers is that they require systemic change to overcome them, and that the actions of any one individual actor are unlikely to create lasting change. They often require the intervention of institutions that have some form of public mandate, including government, sector bodies and civil society organisations. From the perspective of a project developer, such barriers need to be viewed as operational realities that need to be operated within and adapted to, rather than something that can be changed by individual action. The following inter-related structural barriers can be identified:

- 1 Funders often do not make a distinction between low-carbon projects and projects in other sectors:** In many cases, funders, including commercial banks, development finance institutions and private equity investors will not make special provisions for low-carbon projects, but rather treat them in the same manner as projects in other sectors. Whilst there are some instances of dedicated funding lines, special deal origination teams and dedicated lending facilities for low-carbon projects, often they are treated in the normal course of business of these funding institutions. It is rare, although possible, for funding institutions to adjust their lending and pricing criteria to favour low-carbon projects.

This means that project developers need to show their projects to be bankable and financially viable as would any other business venture, ignoring any positive social or environmental benefit that cannot be monetised. This requires demonstrating certainty of cash flow, putting up collateral (assets as security for a loan) if required and demonstrating the strength of the project developer's and/or the implementation partner's balance sheet. A good idea is a necessary but insufficient condition to secure financing; it needs to be backed by a defensible business plan in order to secure funding.

- 2 Even where there are dedicated financing facilities for low-carbon projects, the criteria for accessing them may not always be clear:** Financial institutions, particularly commercial banks, that have dedicated facilities for funding low-carbon projects (such as dedicated credit windows or preferential lending terms) may not always be in a position to openly disclose the criteria for accessing such funds (the criteria may go beyond the traditional financing requirements by requiring additional due diligence or restricting the type of projects that can receive funding). There are a number of practical reasons for this, including the fact that the funding institution often manages such facilities with small teams, that the institution may not have clarified the criteria in itself, or if this has been done, that it is unable to cope with large numbers of funding proposals that open disclosure of such criteria may invoke.

This requires project developers to be prepared to operate under conditions of uncertainty as to the terms of access for finance for low-carbon projects. Ensuring that the project is bankable and feasible in its own right, as described in the point above will help project developers establish a solid base, from which any additional criteria required by the funding institution based on the nature of the project can be met. It also requires project developers to be proactive in dealing with the funding institutions to identify the criteria for funding on a case-by-case basis.

- 3 Funding institutions are more inclined to deal with their current clients than develop new clients:** Funding institutions, particularly those dealing with project developers themselves (for example, commercial banks) are likely to be biased towards developing projects with their existing client base rather than attempt to develop new clients. This is because the transaction costs with dealing with an existing client are significantly lower than those involved in finding, loading and vetting a new client. Additionally, the trust between a funder and an existing client, developed through a track record of past transactions is an important factor in overcoming the uncertainties inherent in low-carbon projects, increasing the appetite of funders to allocate capital to such projects with existing clients.

Low-carbon project developers would thus be well served to first approach institutions with which they have existing relationships or credit lines. The chances of securing finance are higher in these cases than with a new funding institution and the transaction costs for all parties involved are likely to be lower. Consequently, developing a portfolio of relationships across a range of institutions would be worthwhile investments for project developers. There is no substitute for the effort and investment required in building these relationships.

- 4 There may be significant time elapsed between submitting a proposal for funding and receiving an answer:** Many funding institutions manage funding low-carbon projects with small teams and consequently, there can often be significant time elapsed between the submission of a proposal for funding by a project developer and the decision and communication of an outcome. This is true for both private and public institutions but is perhaps more common in public facilities. During this time, the funding institution completes the necessary due diligence on the project and follows its internal process governing the award of funding.

This extended time period can have important implications for the cash flow for project developers. As most funding lines do not provide cash flow support during the time that they are evaluating proposals, project developers need to account and provide for such possible delays to prevent being negatively affected.

- 5 There are often high costs of Monitoring & Evaluation (M&E) attached to particular types of funding, much of which needs to be borne by project developers:** Many funders, especially those with a developmental mandate (such as development finance institutions) and/or those that invest public funds and are accountable to tax payers (such as government agencies) prescribe strict and extensive requirements for monitoring and evaluating the results of the funding disbursed. This can take the form of due diligence prior to funding, compliance with various standards as a condition of funding, and the requirement for frequent reporting. Often the onus of such M&E and the ensuing costs rests with the project developer and if not sufficiently accounted for, can reduce the viability of projects.

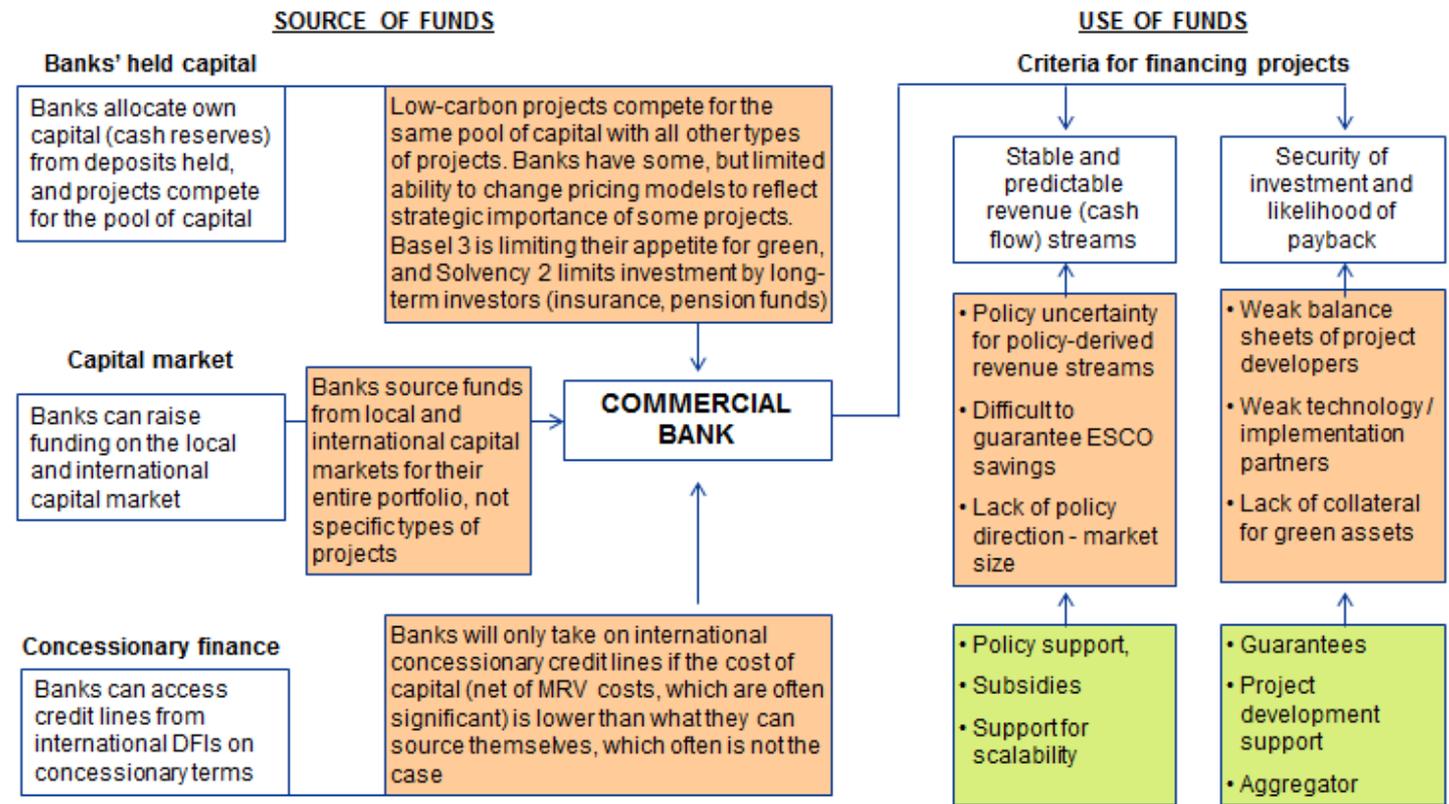
Project developers need to clarify and take account of these M&E requirements prior to accepting funding. Where possible and feasible, project developers should limit their exposure to different types of M&E requirements by consolidating their funding in fewer sources. In addition, they can look to access funding that allows them to harmonise the M&E requirements across different types of funders. Finally, there may be opportunities to automate the collection of information required for M&E and streamline internal project process to reduce the time an effort required for compliance.

Barriers related to the structuring of projects

Projects may fail to attract funding as a result of factors related to the manner in which they are structured and presented for funding. These represent instances where a change in approach from project developers can enhance the likelihood of securing funding. The following barriers can be identified:

- 6 Projects need to be structured to meet the requirements of funders:** As indicated in previous sections, there are different financial instruments and institutions that are relevant at different stages of the project lifecycle. Each instrument and institution has different requirements in order to provide funding, and project proposals need to be structured to be relevant to and meet these requirements. Using the example of debt funding provided by commercial banks, figure 2 highlights the requirements that project developers need to comply with and the framework that should be used to structure proposals for such funding.

Figure 2: requirements for accessing debt funding from commercial banks



Source: National Business Initiative & KPMG

Similarly, other institutions and instruments have specific requirements for providing funding, and project developers need to structure their projects to satisfy these requirements. It is worth reiterating that project developers need to consider that different funders would be more appropriate to different project phases based on funder risk tolerance and the type of instrument they predominantly offer. As a consequence a project may be funded by several different institutions at different times in the project lifecycle. Successful project developers think about the conditions and timing of switching between funding sources and instruments and work ahead of time to establish relationships with prospective funders taking cognisance of the changing information they may require.

7 The size of proposed projects needs to be matched to the appetite of the funding institutions:

The size of projects put forward for funding is an important determinant in the success of finance being granted. However, this does not imply that bigger or smaller projects are always more favourable, but rather that the size of projects needs to match the appetite of the funding institution. Many local and international development agencies (or commercial banks dispensing funds on their behalf through dedicated credit lines) have a limit on the size of projects that can be financed, and this size would often be considered small in comparison to traditional project finance. Similarly, grants awarded by local and international Development Finance Institutions are often subject to a maximum limit, which may be fairly low in comparison to the size of bank-financed deals. Commercial banks have a general preference for larger projects (most large commercial banks would not easily consider project finance for deals less than R500 million in

value) to ensure adequate profits and to justify the transaction costs involved in the deals (which tend to have a large fixed cost component and hence require a minimum critical size).

This requires project developers to carefully consider the manner in which they package and present projects for funding. It may involve splitting the project into different components in order to qualify for funding from sources that have limits on the quantum of finance provided per project. Conversely, it may involve combining projects, either within their own portfolio or that of other developers in order to achieve the critical mass required for the larger funding facilities. Ultimately, matching the size and structure of the project being proposed to the funding appetite of the institution is an important factor in the success of receiving funding. The role of sector organisations or formal project aggregating bodies can be important here.

- 8 The choice of funding institution applied to should be appropriate for the stage of project development:** As outlined in this guide, depending on the stage of project development, different funding instruments can be adopted, which in turn are originated by different sources / institutions. Project developers need to match their funding applications, based on the stage of development of their project, with the instrument and source that is best suited to their needs. A mismatch between these factors often causes funding institutions to reject applications for funding, because their appetite for funding and the instruments they can supply are unsuitable for the stage at which the project applying for funding lies at the time. This is most commonly seen in the case of commercial banks receiving applications for funding early stage, high-risk R&D type expenditure, whereas their appetite and operating profile is suited to projects that are in diffusion or commercial maturity stages.

Project developers need to have a good understanding of their project's place in the lifecycle of project development and the instruments and sources of funding most appropriate to their needs. Once this has been established, the quality and structure of the funding application needs to be at the level required by the different institutions, which points to the need for projects to be bankable and based on a sound business plan, as described in earlier sections of this report.

The final section of this guide builds upon the recommended guidance for project developers introduced here by providing references to additional resources available to project developers.

SECTION 4: RESOURCES AVAILABLE FOR PROJECT DEVELOPERS

This section provides references to the resources available to developers of low-carbon projects in South Africa. The information presented here is intended to be the basis upon which stakeholders can contribute additional links to resources that would contribute to the ultimate aim of enabling greater financing of low-carbon projects.

If the structure of the business plan is not yet in place and project developers require assistance to start planning your project from the very start, please consult the following recommended resources:

Step 1: At the outset, project developers follow the SME Business Guide developed by the International Finance Corporation (IFC), which is available at: <http://www.smetoolkit.org/smetoolkit/en/>. This is an objective, independent one-stop-shop that explains the basics of project development along the entire project lifecycle. It contains toolkits, case studies and examples of business plans to help project developers get started.

Step 2: Once a basic project structure is in place, developers should supplement it with the requirements that are required / desirable for any project in the general business environment in South Africa. Consult the South Africa business and investment information available at <http://www.southafrica.info/> for readily available advice on setting up a business in South Africa.

Step 3: Once the basics of a robust and locally relevant business plan are in place, the developer should tap into public resources available to incentivise project development and entrepreneurship in South Africa. Use the Department of Trade and Industry (DTI) as the focal point of your efforts, which is available at www.thedti.gov.za and contains an overall view of business development support available. Also consult with the Small Enterprise Development Agency (SEDA) available at www.seda.org.za for specific public support for small enterprises, as well as regional support through institutions like the Gauteng Enterprise Propeller, available at www.gep.co.za (other provinces have similar agencies).

Step 4: Developers could derive value from consulting with private entities and informational resources to help support the establishment of a business or project in South Africa. Entities that provide such services include lawyers, accounting & auditing firms and business incubators, and can be used at different stages of the project development lifecycle. Developers should carefully evaluate the merits of using any private sources of project development support as some of them may attract a fee.

Please read this report in conjunction with the research report that underpins this advice. The full “Barriers to private sector access to climate finance in South Africa (2013)” is available on the NBI website (www.nbi.org.za). All figures and supporting findings referenced in this document are attributed to the original research report (National Business Initiative and KPMG).