



About this guide

- CDKN aims to help decision-makers select and deploy financial instruments (such as grants, concessional loans, equity and guarantees) to fund climate adaptation and mitigation activities.
- This guide summarises the barriers to financing mitigation and adaptation activities, as well as discussing factors to consider when selecting and implementing financial instruments.
- The key financial instruments and modalities considered in this guide are discussed in relation to the Green Climate Fund, but the lessons are applicable to other channels for climate finance.

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Addressing the barriers to climate investment

1. Introduction

In June 2013, the Green Climate Fund (GCF) Board reviewed the options for financial instruments to fund action against climate change. During this meeting, the Board asked the GCF's Interim Secretariat to propose terms and conditions for grants and concessional lending made by the GCF (these will be deployed through accredited national, regional and international intermediaries and implementing entities).¹ The guiding principles and factors for determining the terms of financial instruments were considered in October 2013. The terms and conditions will be considered at their next meeting. This guide comments on the discussions so far about financial instruments for the Business Model Framework of the GCF.

The GCF's Governing Instrument² states that GCF financing "will be tailored to cover the identifiable additional cost of the investment necessary to make the project viable. The Fund will seek to catalyse additional public and private finance through its activities at the national and international levels." This explains that the level of support to a given project will cover the "additional cost" as defined above, but it does not address another difficult question – which projects should be "made viable". In other words: how can we distinguish projects that do not materialise but should (from society's point of view) from 'bad' projects (those that are not desirable from a society's point of view) or those that are too expensive and would be poor value for money if made viable?

One approach to identify which climate change projects should be made viable is to analyse the barriers that prevent investment (examples of barriers can be found in Section 2). Here, we define barriers as the factors that prevent projects that ought to materialise from a societal point of view. If these barriers are the major factor preventing the project from happening – and cannot be removed through policy measures – then support through financing instruments is appropriate and meets the GCF's aim to catalyse additional finance. If a project is not being carried out for other reasons, public support through financial instruments may not be an efficient way to make it happen. Hence, understanding the reasons for the lack of investment is essential for identifying desirable projects that have not yet taken place.

It is rarely a good idea to subsidise projects when the broader policy environment is inconsistent with project goals. For example, if consumer prices for energy are kept low by government intervention, then increasing energy efficiency through investment subsidies will be less efficient and more costly because low energy prices do not motivate users to save energy and invest in energy efficiency.

Unfavourable policy environments can also originate from external sources, which are often unintended. For example, international institutions' requirement that highly

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Box 1. Glossary of GCF terms

The **Business Model Framework** ensures that the GCF achieves the goals and objectives set down in Paragraphs 1 to 3 of the GCF's Governing Instrument.

The **Green Climate Fund** was established at the 16th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) to support adaptation and mitigation projects, programmes, policies and other activities.

The **GCF Board** governs and supervises the GCF. Functions include: designing operations; establishing funding windows; approving funding; selecting implementing agencies; defining an accreditation process for implementing agencies; developing fiduciary standards and environmental and social safeguards; and building a framework to monitor and evaluate performance.

The **Governing Instrument** is a document describing the broad framework and general direction for further design of the GCF. It was approved at COP 17 in Durban.

The **Interim Secretariat** executes the GCF's day-to-day operations and is accountable to the Board.

The **Interim Trustee** will manage the financial assets of the GCF, maintain appropriate financial records and prepare financial statements and other reports required by the Board. The World Bank will initially serve as Interim Trustee for the GCF, subject to a review three years after the GCF comes into operation.

Sources: UNFCCC, 2010;³ UNFCCC, 2011⁴

indebted poor countries minimise their debt could create comparative disadvantages for investment in technologies with high up-front capital requirements, such as renewable energy.

The next section summarises some of the barriers that frequently occur in adaptation and mitigation projects. We then outline some design elements of the major financing instruments, which will probably be used by the GCF. However, we refrain from detailed analysis or suggesting how each instrument may be designed and made operational, as this is specific to each country and project. Rather, we illustrate potential criteria for designing and applying instruments, which should facilitate an informed discussion about their implementation. This guide concludes with recommendations for selecting and implementing financing instruments.

2. Barriers to investment in climate change activities

The type and relevance of barriers to investment vary by economic sector, and between mitigation and adaptation activities. Barriers are also strongly influenced by other factors affecting the investment environment in a country or region, and by the technologies in question. Different financial instruments – such as grants, concessional loans or guarantees – have specific attributes that can tackle these various barriers.

Table 1 summarises the variety of barriers to investment in climate change activities at the project level, differentiating between mitigation and adaptation projects.⁵ This guide looks at climate-related projects and therefore attempts to include all barriers relevant in that field. However, two issues are worthwhile to keep in mind before discussing the barriers: first, other categorisations than the one we have used here are equally possible; second, most barriers are not limited to mitigation and adaptation projects but may exist for other types of project as well.

The first set of barriers relates to externalities and public goods. There are cases where markets alone – without government intervention – are not able to deliver efficient results. This means that investment is not going where it should from the perspective of overall economic efficiency (including the costs and benefits of climate-related investment). These market imperfections can be corrected through policy interventions such as taxes on emissions or carbon prices. Alternatively, investment subsidies can be used to try to compensate for market imperfections. This scenario requires financial instruments such as grants or subsidised loans.

The scale of barriers relating to imperfections in financial markets depends on the individual country. They are not specific to climate but many climate-related projects are strongly affected by these market imperfections. For example, renewable energy projects often use comparatively new technologies that need longer-term debt facilities compared to established technologies. This means loans with longer maturity periods, which banks might be unwilling or unable to provide.⁶

Monitoring externality in credit markets has a larger impact on newer technologies. A financial commitment or investment in a new technology by an informed investor can act as a signal that – if observed – attracts other potential investors and more capital.⁷

Another set of barriers occurs when new technologies compete with established ones. Sometimes these barriers overlap with – but are not necessarily identical to – barriers related to incomplete information and irrational behaviour. The next group of barriers, related to economies of scale, is prominent in the field of climate-related investments; a significant fraction of potential investment is distributed over a large number of comparatively small mitigation or adaptation projects.

The last two groups of barriers are by no means unique to climate-related investment, but are relevant for the respective investments. One large group covers the barriers that are connected to investments in developing countries, while the last group refers to risks arising from potentially unstable regulatory (support) frameworks.⁸

While the seven broad barrier categories are comprehensive, our indication regarding the relevance to adaptation or mitigation is only illustrative; individual mitigation and adaptation projects have very different features and barriers, depending on the sector or region in which they take place. In general, mitigation projects have some ‘public good’ characteristics: the effects of climate change will be felt everywhere if there is no action. Adaptation projects partly have the characteristics of a ‘club

good’: adaptation actions benefit smaller or clearly defined groups, but not the global population.⁹

At the project level, there are some similarities between barriers to mitigation and adaptation projects. Nevertheless, we separate them because of some important differences. Mitigation frequently involves large infrastructure projects with international financiers and the corresponding political risk perceptions and currency issues involved with providing a global public good (reducing emissions). Adaptation projects more frequently respond to a national or regional issue, and the benefits are usually limited to a geographic region or group. At the micro level, smaller adaptation projects often provide a private good.

Two additional comments regarding adaptation projects are needed. First, aligning climate adaptation strategies with wider development aims makes the investment worthwhile for the country, irrespective of whether the expected climate impacts materialise or not. For example, funding dams for water management in water-scarce areas will bring benefits even if predictions about increased water scarcity prove to be wrong.

Second, international discussions about adaptation have proposed that industrialised countries – responsible for the majority of past emissions – assume responsibility in line with their obligations under the UNFCCC. These obligations can justify or motivate international transfers or compensation payments that help developing countries to finance their adaptation efforts. This is sometimes used to claim that the only ‘justified’ financing instrument for adaptation projects is a grant (and not, for example, a loan).

But at the project level, the situation is viewed differently. A farmer who invests in a technology that is better suited to protecting her or his crop from climate extremes is, in effect, performing an adaptation activity. There can be little doubt, however, that in some situations a loan may be an appropriate support instrument – independent of the discussion about financial transfers at the international level. It therefore seems unwise to exclude loans from the portfolio of financing instruments to support adaptation investment.

3. Potential criteria for instrument design and application

If one or more of the barriers identified are preventing potential projects from starting, then the next step is to remove the barrier directly. If the barrier is a lack of information, then providing that information is the strategy; if the barrier is that greenhouse gas emissions have not been adequately costed (environmental externalities remain) or that fossil fuels are being subsidised,¹⁰ then implementing an appropriate policy – a carbon-trading scheme, an emissions tax or removing fossil fuel subsidies – should be the response.

If no regulatory or economic instrument to remove the barrier is available or realistic, then investment subsidies (e.g. grants, loans or guarantees) may be considered. Individual instruments for investment support need to be designed in ways that make the ‘right’ projects viable and fit the targeted project or individual barrier in an investment environment. Section 4 reviews the details to be decided for public finance instruments.

Table 1. Barriers to investment in climate change activities at the project level

Source: Ohls and Moslener, 2011;¹¹ EIB, 2012¹²

| Barrier | | Mitigation | Adaptation |
|--|--|------------|------------|
| Externalities and public goods | Environmental externalities are not internalised, e.g. countries don't introduce a carbon price or carbon tax, and therefore economic agents do not reflect the 'harmfulness' of emissions in their decisions to produce or invest | X | |
| | Lessons from technological innovation are helping other investors but the 'original' investor does not profit from this 'helping others'; as a consequence his incentive to innovate is sub-optimal from a societal perspective | X | X |
| Imperfections in financial markets | Lack of markets for certain risks or long-term capital | X | X |
| | Lack of competition in credit markets, e.g. an established customer receives a good credit rating, but could receive a bad credit rating with a new bank | X | X |
| | Monitoring externality, e.g. the readiness by one investor to provide capital is positive for other investors | X | X |
| New and unproven technologies | Project-specific risks, e.g. financing risks, operative risks, project performance | X | X |
| | Lack of expertise among local finance institutions and the public sector; lack of knowledge about public finance mechanisms | X | X |
| | Unknown risk-return profile | X | X |
| | High implementation costs | X | X |
| | Network externalities, e.g. unknown impact of renewables on stability of grid supply | X | |
| Information problems and behavioural failures | Asymmetric information, e.g. energy-saving measures in the housing sector are not equally perceived by buyers and sellers, or the buyers of climate-resilient houses cannot assess the net benefits relative to the additional costs | X | X |
| | Uncertainty about the performance of energy-saving measures or adaptation measures | X | X |
| | People don't always make rational choices, e.g. they don't assess the net savings of energy-saving measures over the entire life cycle of an investment, but only look at the higher upfront costs; in adaptation, there is an anomalous preference for the status quo | X | X |
| | Imperfect information on the future impacts of climate change | | X |
| | Insurers fail to reward preventative measures with lower premiums; investors often have no means to recoup investments that strengthen climate resilience | | X |
| Economies of scale | High project and transaction costs for small projects, e.g. renewable energy projects in developing countries are often decentralised and smaller than conventional power projects | X | X |
| | Lack of sufficient know-how to capitalise projects, e.g. finance institutions only keep in-house know-how if potential investments meet a minimum size | X | X |
| Political and economic framework in developing and emerging countries | Political instability and country risk | X | |
| | Instability of legal frameworks and bureaucracy, e.g. lack of general patent and licensing procedures, reliable planning procedures, site selection | X | X |
| | Socio-political conditions, e.g. local expertise and knowledge, business practices, culture | X | X |

Table 1. Barriers to investment in climate change activities at the project level (continued)

| Barrier | | Mitigation | Adaptation |
|--|---|------------|------------|
| Political and economic framework in developing and emerging countries (continued) | Currency risks and inflation | X | X |
| | Repatriation of profits and interests; transfer risk | X | |
| | Lack of public infrastructure | X | X |
| | Low levels of education among local workers; limited availability of skilled workers | X | X |
| | People rely on the expectation that governments will provide financial assistance in case of climate-induced emergencies and may lack sufficient incentives to insure themselves (moral hazard) | | X |
| | Lack of coordination between national-level and local-level institutions, e.g. adaptation projects are best assessed by those who are affected | X | X |
| Regulatory risk | Absence of an independent regulatory body for the authorisation of plant siting | X | |
| | Risk that subsidies for mitigation measures will be stopped, e.g. a government could end tax credits, feed-in tariffs or other benefits | X | |
| | Insufficient institutional framework for carbon markets, e.g. lack of binding emission targets leads to very low carbon prices | X | |
| | Strong market power among incumbent businesses and a traditional focus on fossil fuels and nuclear energy | X | |

There are two macro criteria to consider when determining the appropriate application of public finance instruments: the purpose of the instrument and its efficiency.¹³

Purpose of the instrument

The design of an appropriate financial instrument depends on numerous characteristics of the project (e.g. the technology in question, the development stage of the technology, the project lifetime, the transaction volume) and the environment in which it is supposed to take place (e.g. the economic or development sector).

Adaptation and mitigation projects often face different investment barriers and hence require different financial instruments. In general, mitigation projects are supported by a commercial organisation but may also involve multiple national investors, as they are providing a global public good. Adaptation projects are more commonly national or regional projects and, in the context of international cooperation, are often expected to meet the particular needs of the most vulnerable groups in society.

Given these differences, the design of each financial instrument needs to be tailored to the projects it serves. For example, if projects are located in a country where capital markets are poorly developed and access to capital is limited, then offering loans is important. Similarly, the lack of a flexible market for long-term debt can be overcome through a finance institution explicitly offering long-term loans.

If good projects look achievable and the local project developers are capable but do not have sufficient risk-carrying capacity, then an equity investment will be helpful. For technology-intensive

projects, the financing instrument should be appropriate to the development stage. If a technology is in the early stage of development, financing mechanisms such as grants or venture capital funds will be suitable; concessional loans and guarantees are more appropriate for mature technologies that are already at the deployment and/or diffusion stage.¹⁴

If the purpose of the financing instrument is to mobilise private investment, its potential to achieve this goal must be considered carefully; financial instruments can have diverse effects on the barriers to private investment in mitigation or adaptation projects. It is essential to identify the major barriers to private investment and choose the financial instruments that address them. If the public support instruments are not well targeted, then they are not actually mobilising private investment up to the level that they could; in fact, they might even displace private investment that would otherwise have occurred.

Efficiency

Analysis of the efficiency of a potential project should form the basis for a decision as to which financial instrument is desirable (if any). As a minimum requirement, the project's expected benefits should exceed the costs. Furthermore, the analysis should allow for a comparison of alternative projects, ensuring the desired impact for the lowest cost. In addition, it is crucial to analyse why the financing for the project is not being delivered by existing market sources.

Understanding these barriers helps to choose an efficient instrument. For example, if the identified barrier is the lack of long-term financing, concessional lending is an appropriate instrument. (Concessional lending is explained in more detail



at the bottom of this page.) If funds are available in principle but the lack of a market for risks is the problem, a guarantee might be a more efficient instrument.

The risks involved with new technologies or 'unknown' investment territory are frequently cited by projects as reasons for government support. For the project to be efficient in such cases, the risk must be taken by those actors who can best influence or manage it. If this is the government, then a public guarantee is helpful. However, there might be cases where it is appropriate for the private sector to deal with the risk and be remunerated accordingly, or for the private insurance industry to provide new insurance instruments. Risk sharing between public and private investment should therefore be applied if it increases the efficiency of risk management – including moral hazard concerns.

Finally, there is the risk of 'crowding out' good projects when public support for projects weakens or prevents investment by the private sector. This must be thoroughly considered when determining the most appropriate financing instrument: the 'success indicator' of an instrument (i.e. that it is well received and the money is spent quickly) is misleading if the public finance instrument is a substitute to private investment that would have happened otherwise.

Governance and operational factors

As well as these two macro criteria, several governance and operational factors affect which financing instruments should be used for adaptation and mitigation projects.

Investment decisions: It needs to be clear and transparent who makes the investment decision and takes the associated risk. To reduce the danger of misleading incentives, it helps to ensure that whoever makes the decision also takes the risk. For example, if a fund allocates a fixed budget to a country, the country has an incentive to select the 'most appropriate' projects, since using part of the budget for one project comes at the cost of limited resources available for other projects. This creates an incentive to select the projects that offer the best value for money.

Operations of financial institutions: The *modus operandi* of the GCF will be either to offer products itself (a 'retail' approach) or to work through other institutions (a 'wholesale' approach). Offering products directly would require the GCF to become a very large institution, one with hundreds of employees qualified in banking and finance and acting like a large multilateral development bank. This runs the risk of replicating structures that already exist in other multilateral development banks. However, the wholesale approach has its own challenges: it will effectively create another institutional layer between governments' funds and the final project. The experience of the Clean Investment Funds is useful here, since they have implemented the so-called wholesale approach but only allow the multilateral development banks to implement projects.

Institutional requirements of lending institution: The requirements of the lending institution largely depend on the financial instruments being used, as well as the business model and the *modus operandi*. The GCF and – depending on how it works with other financial institutions – its partner institutions in developing countries will need sophisticated risk-

control instruments. For example, in most countries a license is required for some banking activities.

How the lending institution is refinanced is also important. This is relevant for the GCF as well as the local climate finance institutions to which it lends. Is the lending institution only spending the money that was deposited by donors, or can it refinance itself through the capital markets? In the latter case, it is essential to determine if it is guaranteed or not (e.g. through state guarantees), since this strongly affects the costs of financial instruments.

Required capabilities of implementing entities: The accreditation requirements for implementing entities need to reflect the characteristics of different types of financial instruments: there are substantial differences in managing loan funding compared to grant funding. The more complex the financing instrument, the greater the capability required of the implementing entity. These institutions are the natural authorities for identifying projects that 'deserve' support and also channelling the support to the projects; the capacity and capability within these institutions is key to the efficient spending of climate funds.

4. Design elements of financial instruments

Individual financing instruments have a number of parameters that can be adjusted to tackle specific barriers. While there is no one-size-fits-all instrument, certain standards will be helpful to reduce transaction costs when the instrument is used or combined with another instrument (Box 2 gives an example of combining financial instruments successfully). In this guide, we do not provide technical guidance on how to design specific promotional instruments; rather, we make general comments on design and application to inform discussions among financial and non-financial experts.¹⁵ Further thoughts on these instruments that might have to be considered and determined when designing a financial instrument or making it operational are discussed below.

Four basic financial instruments are suggested for the GCF: grants, concessional loans, guarantees and equity investments.¹⁶

Grants

Key elements in the design of grant programmes are to decide the criteria and prerequisites for the type of projects for which grants are offered, and to decide the amount of funding that will be provided. Furthermore, simple grants have to be differentiated from performance-based grants. For the latter, payments are bound to the beneficiary's fulfilment of performance measures, which can be designed in several ways.¹⁷

Concessional loans

Compared to commercial loans, concessional loans are typically more attractive to the recipient because they have a subsidy component, such as a reduced interest rate, a longer maturity, or a longer interest-free grace period. A loan by a public promotional finance institution may also be subordinated relative to other lenders and therefore carry a larger part of the risk. As a consequence, lending becomes more attractive for other – commercial – banks. All these characteristics can be decided in the design of a concessional loan programme and

Box 2. The GET FIT concept

GET FIT (Global Energy Transfer Feed-in Tariffs for Developing Countries) is an example of combining instruments – a guarantee and a grant – to address several barriers to investment in climate change mitigation. A GET FIT pilot is currently being implemented by the Government of Uganda in collaboration with KfW Development Bank and Deutsche Bank.

There are significant barriers to private sector investment in renewable energy projects in developing countries. These include a lack of transparency in the sector, leading to higher perceived risks, and the risk of *ex post* reductions in local feed-in tariff schemes. Furthermore, current feed-in tariff levels provide investors with relatively small returns compared to alternative investments. Hence, investors are not ready to accept the regulatory risk of potentially reduced returns due to *ex post* feed-in tariff reductions. In addition, potentially delayed payments increase the risk of reduced cash flows for the project, limiting its ability to repay its loans.

GET FIT has two main instruments to overcome these barriers:

- The feed-in tariff from the developing country government or electricity regulator is topped-up with a small amount from a donor. This addresses imperfections in the financial market, for example overcoming the lack of long-term financing for renewable energy projects by ensuring stable cash flows.
- A (regulatory) risk guarantee addresses the regulatory and political risk that cash flows will be reduced, for example if subsidies for mitigation measures are stopped or reduced.

Both elements reduce the perceived risk of the project, facilitating access to the capital market at lower risk margins. This leads to lower financing costs and increases the availability of loans with longer lifetimes. The guarantee mitigates regulatory and political risks that the private sector cannot manage and that would prevent the project from being financed on purely commercial terms, while the feed-in tariff top-up closes the remaining gap to financial viability. The combination of both instruments helps to overcome financing bottlenecks, by first reducing the perceived risk and second improving the return from projects (allowing for quicker repayment of funding).

The GET FIT concept demonstrates that financing instruments are not equally capable of addressing all potential barriers, but should be used to mitigate barriers together in the most effective and efficient ways.

will determine the subsidy component of the loan. The subsidy component can be subtle and indirect. For example, if an international financing institution has a higher risk appetite in certain regions or for certain technologies, then their conditions may automatically be more favourable than what the market can offer – without the direct involvement of a government guarantee or from the government budget.

Similar to grants, loan programmes need criteria for their application and perhaps limits on the volume or individual parameters. To fully understand the way a loan carries a subsidy component, it is worth noting that identical concessional loans can differ in value for different potential debtors. If two customers with different credit ratings receive the same loan, the value of the subsidy component is higher for the customer with the lower credit rating.

Guarantees

Guarantees to loans can facilitate financing for a specific climate project. A guarantee covers a certain fraction of a loan, or the complete loan, and is given by a third party to the lending institution and the final beneficiary. Similar to grants and loans, the criteria for awarding guarantees and the maximum guaranteed loan amount (and the fraction of the losses that is covered) have to be determined. Furthermore, it must be clear which risks are covered by the guarantee.

As with concessional loans, the value of a guarantee can vary for different beneficiaries and projects. The higher the associated risk of the borrower or the project, the higher the value of the guarantee for the beneficiary. Guarantees should not be considered as costless; if a guarantee is very valuable to someone, then it probably covers a substantial risk of failure. If this failure materialises, then the costs are realised and might

be substantial. To maintain an incentive for the project not to fail, guarantees usually cover only a fraction of a loan; this way the risk is shared with the beneficiary.

Equity investments

An equity investment usually means the investor becomes one of the proprietors of a project and consequently assumes a substantially higher risk than debtors, for example. As well as considering when and how much to invest as equity, financing institutions need to clarify what type of risk is being taken by the equity stake. They also need to determine the extent to which they will actually use the rights (and perhaps duties) emerging from their equity stake. In contrast to simple loans, equity investments enable a more direct impact on the supported project or company.

5. Conclusions and recommendations

Understanding barriers related to mitigation and adaptation at the project level is important to identify those projects where investment subsidies will be most efficient. The purpose of the financial instrument needs to be clearly determined. The choice of financial instrument must be reflected in the governance and operations of the GCF and its partners (including national climate finance institutions). Furthermore, national climate finance institutions need a certain level of expertise to make optimal use of the support.

- Support schemes should not aim to make all projects financially viable, but should support projects that will be beneficial from society's point of view but which, for some reason, are not attractive to commercial investors.
- Understanding the project-level barriers to investment related to mitigation and adaptation is important to identify the 'best' projects and design appropriate financial instruments.

- Subsidies and investments cannot compensate for the absence of supportive policies; investments need a favourable policy environment to be effective.
- Individual financing instruments have a number of parameters that can be adjusted to tackle specific barriers to investment. While there is no one-size-fits-all instrument, certain standards will help to reduce transaction costs when the instrument is used. Depending on the role of the national climate finance institutions, they need a certain level of expertise to make best use of the support.

Endnotes

- 1 GCF (2013) 'DECISION B.04/07 The Board: Decided to consider the terms and criteria of the grants and concessional lending to be deployed by the Fund for mitigation and adaptation through accredited national, regional and international intermediaries and implementing entities at its September 2013 meeting.' Bonn: Green Climate Fund.
- 2 GCF (2013) *Business Model Framework: Financial Instruments (GCF/B.04/06)*, Paragraph 54. Bonn: Green Climate Fund.
- 3 UNFCCC (2010) *Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010; Advanced version, UNFCCC/CP/2010/7/Add.1*. Bonn: United Nations Framework Convention on Climate Change.
- 4 UNFCCC (2011) *Governing Instrument. Report of the Conference of the Parties on its seventeenth session, held in Durban from 28 November to 11 December 2011, annexed to decision 3/CP.17 presented in UNFCCC document FCCC/CP/2011/9/Add.1*. Bonn: United Nations Framework Convention on Climate Change.
- 5 Adaptation projects aim to reduce the vulnerability of human or natural systems to the impacts of climate change and climate-related risks by maintaining or increasing adaptive capacity and resilience. Mitigation projects contribute to the objective of stabilising greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, by promoting efforts to reduce or limit greenhouse gas emissions or to enhance greenhouse gas sequestration. See OECD (2011) *Handbook on the OECD-DAC climate markers*. Paris: Organisation for Economic Co-operation and Development (www.oecd.org/dac/stats/48785310.pdf).
- 6 Ohls, U. and Moslener, U. (2011) *Die Rolle von Förder- und Entwicklungsbanken beim Ausbau Erneuerbarer Energien*. Frankfurt: Frankfurt School Verlag.

- 7 Ibid.
- 8 Ibid; Economics Department – EIB / Bruegel (2012) *Investment and growth in the time of climate change*. Luxembourg: European Investment Bank. Similar categories are used in: BMU (2007) *Renewable energy and the Clean Development Mechanism*. Berlin/Bonn: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.
- 9 Michaelowa, A. (2001) *Mitigation versus adaptation: The political economy of competition between climate policy strategies and the consequences for developing countries*. Hamburg: Hamburgisches Welt-Wirtschafts-Archiv.
- 10 An externality is an uncompensated effect of economic activity (cost or benefit) that affects an otherwise uninvolved party. Effects are not included in the economic calculations of market agents. An efficient allocation of resources requires that the price of a good or service reflects the private and social costs of producing it (internalising the externality). The overarching aim of economic instruments is to adjust prices and, with them, the incentives for market players, to reflect the true impact of their decisions on society – including environmental costs that would otherwise be externalised.
- 11 Ohls, U. and Moslener, U., op. cit.
- 12 Economics Department – EIB / Bruegel, op. cit.
- 13 An alternative approach to assist the design of interventions at the project level is a questions toolkit that can be applied in sequence during the design phase of a given intervention. See Whitley, S. and Ellis, K. (2012) 'Designing public sector interventions to mobilise private participation in low carbon development: 20 questions toolkit'. ODI Working Paper. London: Overseas Development Institute.
- 14 See UNEP-SEFI (2008) *Public finance mechanisms to mobilise investment in climate change mitigation*. Nairobi: United Nations Environment Programme Sustainable Energy Financing Initiative (http://sefi.unep.org/fileadmin/media/sefi/docs/UNEP_Public_Finance_Report.pdf).
- 15 A more detailed description of typical applications of public finance mechanisms can be found in UNEP-SEFI, Ibid; WRI (2012) *Public financing instruments to leverage private capital for climate-relevant investment: Focus on multilateral agencies*. Washington, D.C.: World Resources Institute (http://pdf.wri.org/public_financing_instruments_leverage_private_capital_climate_relevant_investment_focus_multilateral_agencies.pdf); Kaul, I. and Condeicao, P. (2006) *The new public finance: Responding to global challenges*. New York/Oxford: Oxford University Press (www.ingekaul.net/pdf/english_new.pdf).
- 16 GCF (2013) *Business model framework: Financial instruments (GCF/B.04/06)*. Bonn: Green Climate Fund.
- 17 See UNCDF (2010) *Performance-based grant systems: Concept and international experience*. New York: United Nations Capital Development Fund.

About CDKN

The Climate and Development Knowledge Network (CDKN) aims to help decision-makers in developing countries design and deliver climate compatible development. We do this by providing demand-led research and technical assistance and channeling the best available knowledge on climate change and development to support policy processes at the country level.

About Frankfurt School – UNEP Collaborating Centre

The Frankfurt School – UNEP Collaborating Centre for Climate & Sustainable Energy Finance is a strategic cooperation between Frankfurt School of Finance & Management and UNEP. The Centre is designed to support the transformation to resilient low-carbon and resource-efficient economies by attracting new types of investors, in particular catalysing the financing of clean energy by the private sector.

About CFAS

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