POLICY RISK IN RENEWABLE ENERGY INVESTMENTS IN DEVELOPING COUNTRIES

A STUDY BY CAMBRIDGE ECONOMIC POLICY ASSOCIATES FOR THE DEPARTMENT OF ENERGY AND CLIMATE CHANGE (DECC)

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FINAL REPORT

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EXECUTIVE SUMMARY

This report presents the results of a study commissioned by the UK Department of Energy and Climate Change (DECC) on policy risk in renewables power generation, which has been undertaken by CEPA during the latter half of 2013 and early 2014.

Context

As affirmed by the Copenhagen Accord[1] and Cancun Agreements, many, if not most, developed and emerging economies are seeking to limit global temperature increases to less than two degrees Celsius by reducing carbon and other greenhouse gas emissions.

As part of this global low-carbon transition, developed countries have committed to jointly mobilising US$100 billion of climate finance a year by 2020 for developing countries, from both public and private sources. Governments such as the UK have committed development finance in response[2], but given the scale of this ambition, public resources will not be sufficient to address the challenge alone, so it will be necessary to mobilise private finance. In turn, private finance will not be forthcoming unless it faces acceptable project investment risks.

As many renewables technologies are currently typically more expensive that fossil fuels[3], in most countries they need support from subsidy mechanisms, such as Feed in Tariffs (FITs)[4] to make them commercially viable and to attract investors and lenders. This form of support is paid to owners of renewable generation over long periods of time with rules for its allocation and determination of its level often being enshrined in the government policies of each country providing such support.

High profile events, however, such as the retrospective reduction in FITs for renewable generation in countries such as Spain, where solar FITs have been cut drastically[5], has led to so-called "policy risk" becoming an increasing concern for investors in renewable generation, where governments or regulators can unilaterally reduce levels of support by changing either the policy or its application. Several observers have also noted that, in Europe at least, renewable support regimes are established in law and that there is no insurance currently available for governments changing such laws within their own sovereign capacities.

[1] 18 December, 2009

[2] https://www.gov.uk/government/policies/taking-international-action-to-mitigate-climate-change/supporting-pages/international-climate-fund-icf

[3] Not including the negative externalities created by greenhouse gas emissions and in some countries not accounting for fossil fuel subsidies, both of which lead to an understatement of their true economic costs.

[4] Forms of renewable support vary from country to country; currently the UK employs Renewable Obligation Certificates.

[5] For example: *Spain's Solar Market Crash Offers a Cautionary Tale About Feed-In Tariffs*, New York Times, 18/8/2009

In the context of providing climate finance to support low-carbon development and efforts to use public finance to mobilise private investment, the focus of our study has been on developing countries in **Africa** and **Asia**[6], rather than on developed or transition countries. A number of groups and analysts have identified 'policy risk' as a barrier to investment in low-carbon development[7].Our findings on the extent to which policy risk is an issue in these countries and how it might be best addressed by the international donor community are summarised below.

How great a barrier is policy risk to investment in renewable energy projects?

To a greater or lesser degree, all infrastructure projects in Africa and Asia are at risk from governments changing their policies, even if this involves reneging on previous government commitments. However, the incidence of such risks materially impacting renewables generation projects is generally less than in Europe due to a combination of factors – including the structure of electricity markets, subsidy payment arrangements and the public ownership of off-takers – which means that projects can more easily access political risk insurance (PRI) and the guarantees of Multilateral Development Banks (MDBs).

- All projects are at risk from government legitimately changing its policies. Projects can, however, be more at risk where they are seen as offering poorer value for money than other projects. However, in Africa and Asia, the observed levelised cost differentials between renewables and other projects are often less pronounced than in Europe.
- All Independent Power Producers (IPPs) will seek to protect themselves through contracts which pass on the impacts of changes in policies to power purchaser off-takers as a way of protecting against governments changing their policies.
- Most power sectors in Africa and Asia are yet to be unbundled: private sector investments are limited to investments in generation, with power off-take from publicly-owned purchasers through power purchase agreements (PPAs). As with other IPPs, securing a robust bankable PPA is the primary objective of renewable generation projects, irrespective of size.
- As made clear to us by the renewables developers interviewed, securing a PPA is the single most important protection required as it is critical to securing third party finance.

[6] Although both areas are covered, including specific case studies on Kenya and Indonesia, there is proportionately more focus on Africa.

[7] For example; members of the UK Capital Markets Climate Initiative identified policy risk as a barrier to investment during discussions on development finance; the United Nations Environment Programme chaired a working group to identify options to address policy risk in Kenya; the Climate Policy Initiative identified risk (including policy risk) as a major barrier in their work 'Risk Gaps' http://climatepolicyinitiative.org/publication/risk-gaps/

- Unlike in Europe, where subsidies are enshrined in laws that can be changed, in Africa and Asia the level of the FIT is typically set out in PPAs and other contracts which cannot be so easily changed. Contractual rights are enforceable through courts, creating a first order protection for projects.
- Because contracts are between *private* power producers and *public* state-owned off-takers, at least in theory, they are in a position to access PRI as well as MDB guarantees; this means that uninsurable risks associated with governments changing their policies become insurable 'breach of contract' risks.
- The view of the developers and investors interviewed during the course of this study, was that after negotiating a PPA the main concern was not governments reneging on FIT and other commitments, but rather delays in payment from off-takers, due to their poor financial health, which can create liquidity problems for projects. Where governments had established strong payments records investors were either content to rely on government guarantees, or else were prepared to use the existing instruments available.

What are the problems in using PRI and MDB guarantees?

There is already a high degree of protection against policy risk through insurance and guarantees. The two main routes for protection are PRI and MDB guarantees which work in different ways in order to deal with key issues such as moral hazard. Although working the way they do for good reasons, the different approaches do pose difficulties in terms of the nature of the cover provided, as well ease of access, and may be of insufficient scale to address the significant financing challenges of larger renewables projects.

- PRI and MDB guarantees seek to protect investors and lenders in renewables and other projects through compensating them if governments renege on their contractual commitments.
- Both PRI and MDB guarantees are ultimate protections, rather than first order defences. The approaches have been developed to address problems of moral hazard[8], which is a particular issue where the protection is against government reneging on its commitments.
- PRI and MDB guarantees deal with moral hazard in different ways. PRI providers look for a strong alignment of interests between the different parties concerned so as to reduce the chances of the policies been drawn on; they also look for objectively verifiable events to determine risk crystallisation. As sovereign obligations, MDB guarantees ensure that it is government that ultimately bears the financial consequences of a guarantee being called, thus creating a major disincentive if they

[8] Moral hazard involves different entities undertaking inappropriate actions that they would not otherwise do in the absence of the insurance provision.

were to renege on their commitments. These approaches create challenges in the use of both:

  - Of all the potential issues identified, the ones that concern investors most are those which can cause liquidity issues for projects. The two main potential drivers of this are: first, in the event of a dispute, the time taken for providers of PRI either to recognise that an event has crystallised (for instance, an expropriation or else contractual breach) or for arbitration to take place; and second, payment delays caused by the poor solvency of off-takers. Before paying out, most PRI providers look to the parties to resolve their differences before policies can be drawn on; such arbitration processes can be long and drawn out, creating problems for the projects insured with the potential to create severe liquidity issues. Moreover, private insurers are less willing to create or back the liquidity mechanisms that most projects need to deal with delayed payments.
  - Providing MDB guarantees is both onerous and bureaucratic; governments may not be willing to enter into them; they take a long time for the MDBs to appraise and process (especially for smaller projects); and they can also eat into the scarce concessional resources made available to poorer countries by donors – for instance through the International Development Association (IDA) – which can be used for other developmental purposes, thus creating difficult choices in their use.

- Because of their scale, as large regional carbon displacement projects in Africa such as hydro-electric and geothermal projects, together with their transmission links come on stream, the available MDB guarantee resources available may not be sufficient to provide the quantum of guarantee cover required, depending upon how quickly such complex projects reach fruition.

How could policy risk be better addressed?

A range of measures are required to address policy risk, of which the provision of insurances and guarantees is only one. As a first step, as with all major infrastructure investments it is imperative that projects are well structured with a sensible allocation of risk and that they are implemented within a robust policy regime which government is clearly committed to. This will help projects to access the insurance and guarantee protections available. However, there are several ways in which existing provision of these instruments can be improved, including through greater availability of PRI policies that can address liquidity issues created by delayed payments by off-takers and which also recognise the crystallisation of events more quickly. As regards MDB guarantees, it would be beneficial for a greater range of MDB providers to ramp up their programmes as well as implementing more streamlined deployment approaches. To resource their guarantees cost effectively, MDBs need to be able to access both existing and new concessional resources.

- The starting point for creating a favourable investment climate is the development of robust, well designed government policies that help mitigate risks faced by investors and lenders. These need to be credible if governments are to be believed when they commit themselves to them. There is also a need to increase the capacity of institutions to be able to design and package renewables projects opportunities which the private sector can bid for.
- Projects and commercial arrangements need to be structured in such a way that is fair to all participants. In the case of renewables generation, developing credible ways to deal with intermittency is challenging but arguably essential in demonstrating that such investments represent value for money (through, for instance, greater trading of electricity through wider and deeper power pools).
- Both support regimes and contractual regimes need to be structured in ways that allow projects to access the available insurance and guarantee protections. Trying to create a new class of insurance based on a form of "policy change" protection, would be extremely challenging, if not impossible, not least in terms of defining the "insurable event" that was to be protected against.
- PRI and MDB guarantee approaches could be better tailored to reflect the liquidity requirements of differing scales of projects in order to help mitigate *delayed* payment risks, which may encourage greater market entry:
    - PRI policies and approaches could better address the potential liquidity requirements of projects through the provision of appropriately scaled credit support themselves; or else through working with other participants in a given financial structure to back-stop liquidity provided by others. As many private insurers do not wish to provide credit themselves, this may need to be led by public insurers rather than private, building on what the Overseas Private Investment Corporation (OPIC) in particular has already built into its policies.
    - In addition, guarantee 'series' approaches in which an agreed volume of guarantee capacity is agreed upfront by an MDB, rather than on a project by project basis, can be used to improve the access of smaller projects to support and can be rolled out in countries across the developing world. By demonstrating greater government commitment to support for smaller renewables generation projects in this way, it is possible that this may increase confidence of smaller local developers leading to greater market entry by a wider range of local project developers.
- The Africa Trade Insurance Agency (ATI) should be strengthened further, building on focused and local delivery of PRI and a model which strongly incentivizes participating member governments to honour their commitments, effectively addressing the problem of moral hazard.

- MDB guarantees require guarantee reserves; this creates competition for scarce concessional resources which can be used for other developmental purposes. As well as bringing Development Fund resources, such as those of the African and Asian development banks into play, the greater use of Climate Trust Funds for guarantee purposes should continue to be investigated, as these resources will typically be lower cost than the cost of MDBs using their own capital (thus reducing costs to customers).
- In future, it is more than likely that the MDBs will need to draw on additional guarantee reserve resources to provide the volume of cost effective guarantee support required by large carbon displacement projects.
- Overall, most of the recommended improvements in the provision of MDB guarantee and PRI are incremental in nature. There is no one single transformative option that should be focused on in isolation to all others; what is required is improvement across the piece, which taken together help to reduce barriers to investment. Many other and arguably more important barriers will also need to be addressed if investment on the desired scale is to be realised.

Could further donor financial interventions help address policy risk?

Though not specific to renewables, there is a strong case for investing in ATI's capital base to increase both its underwriting capacity and its ability to retain business, as well as to support the reinsurance capacity of the African Energy Guarantee Facility (AEGF). There is the potential to target renewable investments specifically through providing additional resources to the MDBs' guarantee programmes. The development of a new financial institution, focused purely on the issues identified, which would be extremely time-consuming and expensive to create, would not appear to be justified; however, the creation of a bi-lateral development bank by the UK government could create potential opportunities for co-guaranteeing approaches.

- ATI is structured in a way that addresses moral hazard, as its member governments face severe penalties if they fail to reimburse it in the event of a pay-out in their own countries. Some interview respondents have found it to be more responsive than the larger institutions; and because of its unique structure it may also be able to provide more tailored policies than larger institutions. Increasing ATI's capacity through investing in its capital base means that it can retain more business in-house rather than ceding premiums to more expensive international reinsurers, which should help reduce the overall costs of premiums to projects.
- The AEGF is being created to improve access by African-based providers of PRI to cheaper reinsurance capacity than is currently available. As ATI would be a founding member of this captive reinsurance arrangement, it would benefit from more cost effective reinsurance, with the potential to further reduce the costs of its policies.

- Because of their considerable influence on governments, the MDBs can play a significant role in ensuring that projects do not experience payment difficulties. Their concessional guarantee programmes are extremely cost effective, especially when it comes to larger projects. However, additional resourcing for their guarantee programmes may be required as the as different projects in the pipeline reach financing.
- The identified initiatives can either be addressed singularly or collectively. A collective approach would be especially useful if several donors were interested in supporting such initiatives. It is likely that one or more of the existing Climate Trust Funds could be used for these purposes, otherwise if this were not possible a new Trust could be considered for this purpose. Donor resources granted to Trusts typically qualify as overseas development assistance (ODA).
- Creating new financial institutions from scratch is extremely costly, time-consuming and, in the case of an insurance entity, technically challenging in terms of establishing a diversified portfolio of risks, in order to enable a sound credit rating and the ability to gear capital. As such, we would not recommend the creation of such a new institution just to address the issues identified, which could take a long time to break-even. If, however, the UK were to establish a development bank with a guarantee programme, there would be the potential to co-guarantee with the established MDBs, increasing their reach whilst benefiting from their significant powers of influence.

1. INTRODUCTION

This report presents the results of a study commissioned by the UK Department of Energy and Climate Change (DECC) on policy risk in renewables power generation in developing countries, which has been undertaken by CEPA during the latter half of 2013 and early 2014.

1.1. Study objectives

The study's first aim is to assess how much of a deterrent risk is to private investment renewable electricity projects in developing countries, particularly in Africa but also in Asia, and the extent to which existing insurance and guarantee instruments provide adequate mitigation against these risks to investors and lenders. Where any issues have been identified, the second aim has been to identify options for remedial actions in the provision of insurance and guarantees so as to facilitate greater mobilisation of private finance. This includes addressing any gaps in provision of, as well as increasing the flow of resources to, insurance and guarantees, especially from donors. This builds on the significant work that has already been undertaken in the area, including that by Climate Policy Initiative (CPI) and the United Nations Environment Programme (UNEP), as well as others.

1.2. Approach

1.2.1. Country focus

Whilst policy changes have created concerns for investors and lenders in some European countries, the country focus of this study is on developing countries in Africa, in particular, but also several in Asia, which are already perceived to be more risky for investors and lenders than more developed countries. In addition to official flows, such as overseas development assistance (ODA), these countries need to attract significant amounts of private finance if they are to realise the potential that renewable generation offers them in terms of economic and social development as well as to the global community through delivering lower carbon growth and thus reducing pressures on global temperature increases.

1.2.2. Methodology

In order to address each of the above points, in undertaking the research we have relied on a mix of desk research (including review of different reports and data on renewables projects, insurances and guarantees) and interviews with developers, lenders, insurers and development banks as part of a three phased approach in which we reviewed the current situation, tested our understanding of issues and gaps, and finally proposed solutions. Each of these phases is discussed below.

Review of the current situation

The first phase of our study involved gaining a thorough understanding of the current situation, in terms of understanding of the nature of the risks facing renewables projects in Africa and Asia as well as investigating the insurance and guarantee instruments that are currently available to address such risks. The analysis was conducted from the perspective of both providers of insurance and guarantee products and those who use or might potentially use them.

The extensive desk-based research of insurance and guarantees focused on those instruments that can be used to address the risks identified. This included current political risk insurance products, both those provided by private insurers and those provided by public providers such as Multilateral Investment Guarantee Agency (MIGA) and national Export Credit Agencies (ECAs)[9]. We also reviewed sovereign support instruments, specifically the Partial Risk Guarantee (PRG) product provided by, for example, the World Bank.

At the same time, we conducted a series of interviews with insurance providers, developers, investors and other interested entities. This supplemented our research on the supply of insurance, and provided us with an understanding of the demand for insurance from those active in renewable energy in Africa and Asia. In total, we conducted around 40 interviews. (A list of interviewees can be found at ANNEX A[10].)

A crucial part of this phase of the study was an identification of how power projects and markets are structured and financed in Africa and Asia, which is typically different to the more complex market arrangements typically found in Europe. This allowed us to clearly identify the nature of the risk(s) faced by investors and lenders in renewables projects.

Testing our understanding of issues and gaps

The first phase of our work highlighted some issues regarding the nature and accessibility of existing insurance and guarantee protections. We summarised the key issues, by project type, and outlined how these might be addressed.

The results of our research and identification of the issues and gaps were set out in a presentation to the Capital Markets Climate Initiative (CMCI) group in mid-October, 2013. The presentation was also circulated widely. We took on board the comments received from this group, and conducted a number of follow-up interviews with developers, insurance providers and other parties to further test our emerging thinking.

[9] The term ECA is used here with respect to both the provision of guarantees to exporters as well as to overseas investments.

[10] In addition, we also drew on CEPA's extensive experience of infrastructure financing in Africa and Asia.

Assessing potential solutions

The final stage of our work has been to propose possible solutions to the issues identified. This has involved considering ways in which the existing approaches and support offered by different insurance and guarantee providers can be improved to better address the challenges faced by renewables generation projects. Several of the solutions have also involved identifying where the international donor community could usefully deploy greater funding to support enhanced cost effective insurance and guarantee provision, for instance in future to address the emerging needs of large scale carbon displacement projects as they come on stream.

1.2.3. Evidence base

Our main sources of data and information collected have been through desk research and interviews with project developers and financiers of renewable generation in Africa especially, but also in Asia (specifically Indonesia and the Philippines). These were on the whole, however, investors and financiers of medium and small-sized projects. We have also spoken to officers from key development institutions, as well as insurance brokers. Whist we believe that a largely consistent story emerges from this, it is possible that alternative views also exist that have not been fully captured.

1.3. Intended audience

This report is not aimed at insurance specialists, but it does assume some knowledge of basic financing concepts and of different types of support mechanisms utilised in renewable energy investments such as Feed in Tariffs (FITs). It assumes familiarity with insurance at the level of the average educated layperson, but does not assume any specialist knowledge of the financing of energy projects. Key concepts are introduced and discussed in the early sections of the report.

A glossary of terms used is in ANNEX B.

1.4. Structure of report

Following this brief introduction, the report is structured as follows:

- Section 2 introduces several *key concepts* which are critical to an understanding of the rest of the report.
- Section 3 analyses *the extent to which policy risk impacts on projects* in particular in Africa and to a lesser extent Asia, based on an analysis of the observed structure of power markets, their renewables support requirements and the views of interviewees.
- Section 4 looks at the *types of insurances and guarantees* that can currently be used to address policy risk.

- Section 5 considers some of the *current issues* faced by projects in accessing insurance and guarantees.
- Section 6 provides *options for improving the nature and extent* of provision of insurances and guarantees.
- Section 7 examines the *institutional options* as to how greater public financial resources could be channelled to providers.
- Section 8 provides our *summary and conclusions* as to how policy risk is best addressed.

The report also includes a number of Annexes, as shown in **Error! Reference source not ound.** below.

Table 1.1: Annexes

Letter	Contents
A	List of interviewees
B	Glossary of terms
C	Messages from developers
D	Sample Power Purchase Agreement (PPA) from Kenya
E	Case study of the Kenyan market
F	Case study of the Indonesian market
G	Information on publicly provided insurance and guarantee products
H	Description of the Feed In Tariff insurance offered by OPIC
I	Description of the African Trade Insurance Agency (ATI)
J	What makes a robust, bankable PPA?

1.5. Acknowledgements

We would like to thank the renewables developers, insurers, international financial institutions and others, as well as of course DECC and the Department for International Development (DFID), who took the time to speak to us about this report and to provide helpful background, advice and comments. However, it should be made clear that this report and any conclusions are CEPA's alone.

2. BACKGROUND AND KEY CONCEPTS

In this section we first set out the context to this project and the approach we have taken. We then provide an overview of the key concepts involved, including that of policy risk and key issues involved in the provision of insurance. This serves as important background for our analysis of the significance of policy risk and how it is addressed, which is considered in detail in later sections.

2.1. Context

As affirmed by the Copenhagen Accord[11], many, if not most, developed and emerging economies are seeking to limit global temperature increases to less than two degrees Celsius by reducing carbon and other greenhouse gas emissions. One of the major sources of carbon emissions is fossil fuel electricity generation. A key means of reducing this is to replace fossil generation with generation from renewables.

Under the Copenhagen Accord and also the Cancun Agreement, developed countries have also committed to jointly mobilise US$100bn per year by 2020 in climate finance, which will be used to support investment in renewables. Given the scale of this ambition, public resources will not be sufficient to address the challenge alone, so it will be necessary to mobilise private finance. In turn, private finance will not be forthcoming unless it faces acceptable project investment risks.

As many renewables technologies are currently typically more expensive than fossil fuel generation[12], in most countries they need support from subsidy mechanisms, such as FITs[13], to make them commercially viable and to attract investors and lenders. This form of support is paid to owners of renewable generation over long periods of time with rules for its allocation and determination of its level often being enshrined in the government policies of each country providing such support.

High profile events, however, such as the retrospective reduction in FITs for renewable generation in countries such as Spain, where solar FITs have been cut drastically[14], has led to so-called "policy risk" becoming an increasing concern for investors in renewable generation, where governments or regulators can unilaterally reduce levels of support by changing either the policy or its application. Indeed, the CPI has defined policy risk as: *"…the possibility that national governments — acting in their sovereign capacity — amend policy environments in ways that adversely impact the financial stability of renewable energy projects*".

[11] 18 December, 2009

[12] Not including the negative externalities created by greenhouse gas emissions and in some countries not accounting for fossil fuel subsidies, both of which lead to an understatement of their true economic costs.

[13] Forms of renewable support vary from country to country; currently the UK employs Renewable Obligation Certificates.

[14] For example: *Spain's Solar Market Crash Offers a Cautionary Tale About Feed-In Tariffs*, New York Times, 18/8/2009

Retrospective reductions are of most concern to investors as these take place once they have committed to an investment[15]. Whilst renewables investments are not necessarily the only ones directly or indirectly at risk from this and other adverse policy changes, they are potentially more exposed, not only because of their long term subsidy requirements in which time policies will be more prone to change, but also because of observed cost differences with less expensive alternative fossil fuel generation.

Several observers have also noted that in Europe at least, renewable support regimes are established in law and that there is no insurance currently available for governments changing such laws within their own sovereign capacities.

2.2. Key concepts

In order to analyse and address this problem it is important to understand some relevant key concepts. We begin with an overview of policy risk in general. As a strong element of policy risk arises from governments reneging on their commitments, we also consider the various potential forms of government commitments to projects as well as the issues involved in insuring against governments reneging on such commitments, particularly as regards the role of moral hazard and adverse selection.

2.2.1. Policy risk

A number of institutions such as CPI and UNEP have recently been drawing attention to 'policy risk' in the context of renewables generation investments and the inability of existing organisations and instruments to provide adequate mitigation for it.

Policy risk has been described as a risk that arises from *legal policy actions* – as opposed to *illegal government actions* – that adversely impacts the financial stability of renewable energy projects[16]. The examples of policy risk commonly cited include:

- removing FITs;
- increasing import tariffs on renewables equipment;
- reducing the price paid for electricity or late payment; or
- imposition of discriminatory and/or stealth taxes or charges on renewable energy projects.

However, any investment in a country is at risk to a greater or lesser extent from government changing its policies; this is something that is not necessarily unique to renewables investments. For instance, any investment could be subject to new import tariffs or discriminatory charges. Capital intensive infrastructure projects with long term financing requirements are likely to be especially exposed, not least due to the fact that

[15] CPI, 2013, *Risk Gaps: Policy Risk Instruments*
[16] CPI

their longevity means policies are indeed likely to change over their lifetimes. However, any project whose revenues are largely determined by policies which are relatively easily changed by government, such as a subsidy payment supported *only* by a policy commitment[17], is at particular risk.

In the first instance, the degree of risk faced and the amount of protection is governed by the strength of the government's commitment to its policies.

2.2.2. Government commitment

Government commitment to projects can come in different forms, ranging from political statements made by governments which are easily repudiated, particularly where there is a change in government, to a *contractual* commitment where government can be taken to court if it fails to honour the commitments contained within it.

As illustrated in Table 2.1, between these, there are varying degrees of commitment that can be made by governments, with differing implications as to how each can be relied on.

Table 2.1: Nature of government commitments and their implications

Nature of commitment	Implications
Policy statement	Any government commitment is likely to start with a statement by a Minister. The consequences to government of changing policy commitments are typically minimal, apart from possibly some political embarrassment.
Policies enshrined in national laws	At the next level of commitment, government might write the level of a subsidy, or something equivalent, into its national law. For example, in the UK, the level of the FIT for small scale renewable generation is written into secondary legislation. This is published annually as a Determination by the Secretary of State for Climate Change, as required by the Feed-in Tariffs (Specified Maximum Capacity and Functions) (Amendment No. 2) Order 2012[18]. Changing national law involves some difficulties, in that it requires at least tacit agreement from the national legislature. However, it does not have direct financial penalties to government in the event that laws are changed.
Regulatory principles and practice	As regulators are, in theory, independent from governments, regulatory commitments might be seen as being more substantive than legislative ones – as undermining a regulator's authority can have significant longer term implications due to the message it sends would-be investors. However, in other instances, regulatory commitments can be weaker than policy commitments, depending upon the independence of the regulator.
Letters of support	A letter of support issued by a government is not a formal binding commitment but is often relied on by developers and lenders. Letters of

[17] Note that subsidies that hold down costs can also be changed such as any provided on fossil fuel inputs.

[18] See https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/feed-in-tariffs-scheme and http://www.legislation.gov.uk/uksi/2012/1393/contents/made

Nature of commitment	Implications
	support from the Kenyan government have been issued for projects including the 300MW[19] wind farm at Lake Turkana[20].
Binding contract	The highest level of commitment is a contractual commitment. In this situation, the commitment is specified precisely, and there are well-understood penalties for failing to honour the commitment. The two parties to the contract are bound its terms, which cannot be changed without the agreement of both parties.

Contracts play an important role in allocating particular risks to different entities and therefore provide at least a first order protection and one which effectively transforms 'legal' policy changes into 'illegal' breaches of contract if contractual provisions are not honoured by the contracting parties. Indeed, most infrastructure project financing transactions will contain mechanisms for addressing the impacts of any changes to policies – including pass through of the additional costs arising from policy changes to ultimate customers.

2.2.3. Appropriate risk allocation

As we will discuss presently, contractualising government commitments is therefore an important first step in protecting against policy risks, as this represents the strongest form of government commitment. There are good reasons for having governments commit that they will not change policies. *Such policy risk is – ultimately – under government's control, since it is driven by governmental decisions*. An optimal risk allocation sees risks being borne by those best able to manage them. Policy risk should therefore sit with government, and *governments should bear the consequences of their own actions*.

2.2.4. Insurable events

Insurance approaches have been developed over the years to reflect the specific challenges faced by the existence of policy risk. In providing cover, insurers will look for what they term "insurable events". This is an event whose crystallisation is clear and one where there are strong alignments of interest which reduce the chance of such an event actually occurring.

Related to this is the fact that policy risk is fundamentally different from many other forms of risk, which has implications as to how it is mitigated. By its nature, its incidence is not random as would be the case with say, certain weather or some natural disaster occurrences: it is essentially based on political choices, which gives rise to particular challenges in providing insurance.

[19] Source: Lake Turkana Wind Power, http://ltwp.co.ke
[20] Source: Project Finance magazine, March 2013

2.2.5. Moral hazard and adverse selection

The two key issues of particular relevance given the nature of policy risk are those of *moral hazard* and *adverse selection*, both of which providers of insurance will seek to avoid.

Moral hazard

Moral hazard involves different entities undertaking inappropriate actions that they would not otherwise do in the absence of the insurance provision. Most insurance arrangements involve a degree of moral hazard; however, they are amplified in the situations under consideration.

Moral hazard can be thought of as the risk of undesirable outcomes because parties are insulated from the consequences of their actions. In the case of policy risk, *it is the role of the entity whose actions are being insured against which is key*. If the developer is insured, the government may be more likely to make unfavourable policy changes, because the risk is being covered by a third party insurer, with relatively limited consequences for the insured and for the government itself.

Moral hazard is clearly much more of a concern in this context than, say, when compared to insuring against *random* events where the determinants of a risk – or so-called "peril" – occurring are determined by nature rather than human decisions. In such a situation there is a much clearer economic case for risk "pooling" approaches – as there is a high degree of randomness involved – whereas where outcomes are ultimately controllable by government, it is more appropriate that the consequences are borne by those who have control.

Adverse selection

We also need to consider another classic problem in insurance: *adverse selection*. This refers to the fact that the provision of insurance that nobody else would provide means that the insurer ends up with the worst risks. Put simply, those who seek insurance will tend to be more likely than average to need to call on the insurance. A typical example would be medical insurance. Young, healthy individuals may choose not to purchase insurance, meaning that on average those purchasing insurance are older and less healthy than the population as a whole – in other words, more likely to need medical care[21].

This would likely to be a problem for say, a catch-all "policy risk insurance" which protected against any changes in government policies. Investors in countries where the government has not fully committed to renewables support, or where the government is unstable or has a record of changing direction, will be more interested in insuring themselves than other, more typical, investors. Any organisation that offered insurance to such investors would find

[21] There is extensive literature on this issue. See for example: Browne, 1992, *Evidence of Adverse Selection in the Individual Health Insurance Market*

itself with the most risky projects – meaning that at the very least it would have to charge a very high premium, if indeed it were to offer any such products at all.

2.2.6. Political risk insurance and Multilateral Development Bank guarantees

Whilst insurance and guarantees are often used interchangeably, in this context we consider two specific types of instrument:

- sovereign Multilateral Development Bank (MDB) guarantees; and
- political risk insurance (PRI), provided either by public or private institutions.

These are often confused as being the same, but each has quite distinct features. MDB guarantees provide confidence to those guaranteed not only because of their scale of resources in the event of a guarantee being called, but also because of their influence with host governments which can promote a strong alignment of interests. The host government also needs to indemnify (counter guarantee) the MDB in the event that a guarantee is called, which creates a strong incentive for it to honour its commitments and obligations. Moreover, should a government fail to repay the MDB it will be treated as being in default on all of its sovereign obligations to that institution and will receive no further access to financial support. This provides strong protection against moral hazard on the part of governments.

Private and public insurers do not require the same explicit counter guarantee from host governments, nor do they have the same degree of influence with them as MDBs; instead they will look for an alignment of interest that mitigates the chances of a cover being drawn on. Insurance will rarely be provided in the absence of such an alignment of interests.

2.3. Summary

In this section we have introduced some key economic and insurance concepts which will be drawn on in the rest of the study. In the next section we begin to show how these apply in practice, particularly in terms of the role that contracts play in mitigating policy risks.

3. POLICY RISK IN RENEWABLE GENERATION PROJECTS IN AFRICA AND ASIA

3.1. Introduction

In this section, we begin by discussing the role of Power Purchase Agreements (PPAs) and their role in protecting investors in and lenders to renewables as well as other power projects. We then explore some of the underlying drivers which can *potentially* accentuate policy risk in African and other contexts. Following this, we show why the incidence of policy risk is lower in these countries relative to Europe, due particularly to a combination of the structure of electricity markets and the form of typical support regimes for renewables generation. Where appropriate, we draw on the observations of market participants set out at ANNEX C, as regards the risks that they perceive in these markets to support the conclusions arrived at.

3.2. The role of the PPA

A PPA is a binding commitment which *purchasers* of wholesale power make to those *generating* the power.

Typically, given power sector structures in most developing countries, power is sold to a single, state-owned monopsony[22] bulk purchaser of power[23]. In order to ensure a predictable revenue stream, which is an essential pre-requisite to securing finance, the renewables project will seek to agree such a contract with that customer[24]. This will provide the project a secure and predictable revenue stream from the power company (known as the "off-taker"). Such contracts, because they relate to the purchase of power, are called PPAs. The PPA should set out the price that the project will receive per unit (kWh) of electricity as well as other key commercial arrangements. An extract of a typical Kenyan PPA is in ANNEX D.

The distinguishing feature of most power sectors in Africa and Asia is the limited level of privatisation and unbundling, in which typically *privately owned*, independent power producers (IPPs) – irrespective of the form of power generation – sell power through a PPA to a *publicly owned* off-taker. Table 3.1 provides examples of such arrangements within Africa[25].

[22] A monopsony is a single purchaser as opposed to a single seller, which is a monopoly.
[23] In some instances, this may be to an alternative state entity, such as a municipality.
[24] The conditions for so-called merchant arrangements in which generators have do not have such an off-take arrangements do not typically exist in the markets in question.
[25] IPPs in Sub-Saharan Africa: determinants of success. Anton Eberhard and Katharine Gratwick 2010. This also provides information on guarantees and insurance covers as well as other credit enhancements used in IPP projects, both renewable and non-renewable.

Table 3.1: PPAs in Africa

Project (country)	Technology	Off-taker	PPA details and support arrangements
Kribi Power Plant (Cameroon)	Natural gas. 216MW	AES-Sonel	20-year PPA. World Bank partial risk guarantee
Cabeolica (Cape Verde)	Wind. 25.5MW	Electra	20-year PPA.
Azito (Cote d'Ivoire)	Non-renewable: Natural gas (288MW)	CIE	23-year PPA World Bank partial risk guarantee. Sovereign guarantee.
CIPREL (Cote d'Ivoire)	Natural gas (210MW)	CIE	The PPA contract duration is 19 years, and is with the Government as opposed to the physical off-taker, CIE.
IPTL (Tanzania)	Heavy fuel oil (100MW)	TANESCO	Sovereign guarantee, liquidity facility equivalent to a 4 months capacity charge (but not yet established). Monthly capacity charges were lowered post arbitration.
Sunon Asogli PP (Ghana)	Gas combustion. (200MW)	GRIDCo and ECG	20-year PPA. No sovereign guarantee.
Iberafrica (Kenya)	Heavy fuel oil (46MW)	KPLC	15-year PPA (second PPA). Iberafrica reduced the capacity charge of its first PPA by 37% in April 2002 and then to 59% of the original PPA in September 2003.
Rabai (Kenya)	Heavy fuel oil (90MW)	KPLC	20-year PPA.
Jorf Lasfar (Morocco)	Coal (680+680MW)	ONEE	30-year PPA. World Bank partial risk guarantee.
Kounoune I (Senegal)	Heavy fuel oil (68MW)	Senelec	15-year PPA. Government Guarantee, a letter of credit from Senelec
Mtwara (Tanzania)	Natural gas (12MW)	TANESCO	Interim PPA entered into in 2006.
Songas (Tanzania)	Natural gas (180MW)	TANESCO	Escrow account: for first 115 MW, with the government matching every US$1 spent by the project company; liquidity facility equivalent to 4 months capacity charge for the first 3 years, declining to 2 months starting in year 4 through the remaining years of the contract
Bujagali (Uganda)	Hydro 250MW	UETCL	30-year PPA. Government Guarantee, MIGA, PRG/IDA

Project (country)	Technology	Off-taker	PPA details and support arrangements
Kabalega[26] (Uganda)	Hydro (9MW)	UETCL	n/a
Itezhi-tezhi (Zambia)	Hydro (120MW)	ZESCO	25-year PPA.

Sources: CEPA analysis; Eberhard and Gratwick

Payment streams can be ultimately funded by either customers or public resources, but flow to the IPP through a payment from the publicly owned entity to the privately owned ones.

The level of tariff stated in the PPA may be fixed or else subject to periodic review, where the latter is the case it is typically by a third party independent regulator[27].

As made clear to us by the renewables developers interviewed, securing a PPA is the single most important protection required as it is critical to securing third party finance.

3.3. Factors increasing policy risk

Factors that increase policy risk essentially relate to factors that mean government is more likely to renege on its commitments. It is not difficult to see why a government may do so. Often a new government has a different policy view or does not wish to be bound by unpopular commitments made by its predecessor(s); or in other instances what might have been a good arrangement at one point in time (for instance, a new albeit, expensive source of power) might not be at a later point in time when there are other cheaper or more technically advanced options available. Where commitments involve public resources, these can come under pressure, particularly in times of economic difficulty.

Within the energy sector in the countries under consideration, these risks can be generic to the sector or renewables specific.

3.3.1. Period of commitment

Where government has agreed to make a payment to investors, this is at greater risk the longer the period over which it is delivered. This is easily explained in the sense that the longer such a period, the more likely a reason will arise for government to change its mind, particularly in the light of other budgetary pressures. As such, payments are more risky the longer dated that they are, irrespective of the form in which that commitment comes. The key risks facing large-scale infrastructure is that payback periods are longer, increasing the risk that policies may change over the life of the project.

[26] Renamed after completion: previously known as Buseruka/Hydromax

[27] Although we are, aware of one project (an 81MW wind farm) in the Philippines that is being developed without a PPA, this is only because its developers expect one to be secured by the time it starts producing power. See: http://www.gmanetwork.com/news/story/317515/economy/companies/ayala-s-ac-energy-partner-upc-philippines-to-develop-wind-farms-for-luzon-grid

As we discuss below, whilst not being an issue necessarily specific to renewables, such investments can stand out the more costs are out of line with other sources of generation.

3.3.2. Renewables specific risks

There are, of course, specific risks that renewables projects face which mean that there is greater chance that there will be a contractual dispute, for instance, as regards the performance of the renewables asset.

Technology related risks such as non-dispatchability

Many forms of renewable energy[28] are "non-dispatchable"; that is, the output cannot be controlled but is dependent on the prevailing sun and wind conditions. This means that output from renewables is less valuable to electricity purchasers than that from dispatchable or controllable fossil fuels, since it cannot be guaranteed to be available at times of high demand and may also be generated when it is not required. It also means that there is some need for backup generation[29] in case output from renewables is too low, which can complicate system balancing and adds to generation costs.

This can also create impressions of non-reliability that have the potential to lead to contractual disputes. Take or pay arrangements, in which the off-taker needs to purchase the power produced by the generator, even when it is not required, can be particularly problematic as the off-taker may end up purchasing power or constraining generation when it is not needed (such as having to purchase power at times of the day when there is little demand).

Higher renewable costs

In Europe, the levelised costs of renewable energy are usually greater than the conventional, fossil-fuel, alternatives, if environmental costs are excluded, requiring substantial levels of support[30]. In Africa, as elsewhere, this can also give rise to a need for additional subsidies for renewables generation, which are over and above those required for other sources of generation[31]. These subsidies are paid from taxation receipts, unlike in the developed world where it is more usual for consumers to fund any additional costs of renewables. Whilst one government is willing to enter into such agreements there is more than a possibility that future governments will think differently.

The difficulty created is that there are many other calls on tax revenues or a given country's available fiscal space. When budgets are squeezed, it may well appear more politically attractive to cut subsidies for renewables – especially if it is international investors and lenders who are impacted rather than domestic ones – than to cut spending on say, health

[28] We exclude biomass and hydro here.
[29] Or interconnection, or (theoretically) storage
[30] As evidenced, for instance, by different levels of ROC banding the UK.
[31] However, fossil fuels can also receive subsidies which can distort differences further.

or education, especially where renewables tariffs are higher than those for other generation and particularly in the event of a surplus of generating capacity. In short, because renewables rely on a subsidy that is unlikely to be a government's top priority, they are at constant risk of the subsidy being cut.

A further risk is that as renewables technologies improve, subsequent generations of generators are a significant improvement both in cost and performance terms, than previous ones, calling into question the value of such older assets.

3.4. Crystallisation of policy risk in Africa and Asia

The incidence of such risks materialising and impacting projects is, however, arguably less in Africa and Asia. This is because often many of the factors which either increase risks to renewables projects in Europe or else mean that robust protections against policy risk cannot be accessed are less prevalent, less pronounced or do not apply in these contexts.

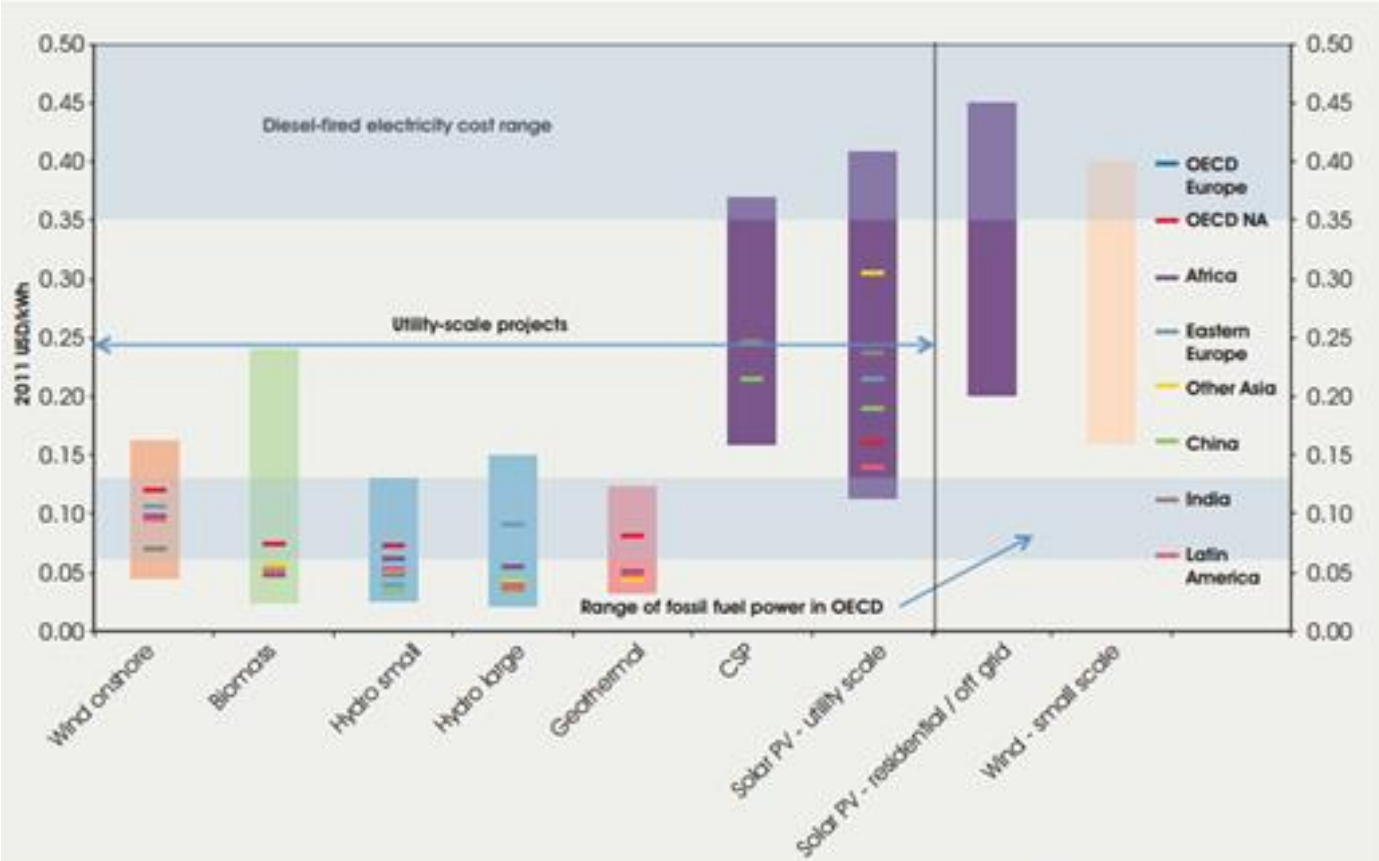
As regards underlying drivers, this may be, to a degree, because of less extreme observed cost comparisons when compared to Europe or prevalence of more traditional technologies, such as dams. However, regardless of these factors, a combination of the structure of power markets and the manner in which the subsidy is delivered, which provides both a first order contractual protection as well as enabling access to traditional political risk insurances, means that the context is materially different to that prevailing in much of Europe.

3.4.1. Differences in drivers of policy risk

Cost comparisons

When compared to Europe, the difference in costs between renewables and the most immediate counterfactuals would appear to be less pronounced; indeed, in these contexts in some instances renewables may not always more expensive than the counterfactual (even without taking account of negative carbon externalities and possible fossil fuel subsidy distortions), as Figure 3.1 overleaf shows.

Figure 3.1: Levelised cost of renewable energy compared to fossil fuel and diesel-fired power[32]



IGURE 2.1: TYPICAL LCOE RANGES AND WEIGHTED AVERAGES BY REGION FOR RENEWABLE POWER GENERATION TECHNOLOGIES, 2012

Note: *All LCOE data assume a 10% cost of capital. The large coloured bars represent the typical LCOE range by technology and the coloured horizontal lines the weighted average LCOE by country/region if enough individual project data are available.*

SOURCE: IRENA RENEWABLE COST DATABASE.

[32] Source: International Renewable Energy Agency
http://www.irena.org/DocumentDownloads/Publications/Overview_Renewable%20Power%20Generation%20Costs%20in%202012.pdf

As this illustrates, where the counterfactual is diesel generation, renewable energy can in fact be cheaper.

Moreover, counterfactual costs are not only driven by fuel costs, but also the costs of connecting new customers to power. In countries characterised by vast geographies and low levels of existing grid connections, off-grid, stand-alone household or micro-generation solutions can be much more cost effective than seeking to expand existing grid networks.

In these cases, renewable specific risks can be significantly lower as they are indeed the least cost solution.

It also needs to be remembered that all new electricity generation will be more expensive than older, fully depreciated plant. Faster growing economies will typically have a greater proportion of newer energy assets in which again the cost differential between renewables and other new plant will be less than in Europe, where comparisons are often made against older plant.

Choice of technology

It should also be noted that many renewables projects in Africa utilise different renewables technologies to those being brought on stream in Europe. In particular, given Africa's vast geography and lower population density there is more potential for hydroelectric power[33], which often does not normally face the same degree of intermittency as, say, wind (although prolonged droughts can be problematic, which has recently caused problems in, for example, Ghana). The perceived reliability of such technologies, as well as the favourable impact of the availability of such technologies on cost per unit of electricity produced, may help reduce any unfavourable treatment of such renewables by policy makers.

3.4.2. Structure of subsidy support

As illustrated in Figure 3.2 in Europe renewables support is typically determined by law[34], and often provided as a *separate* revenue stream to any wholesale price received through a PPA[35], whereas in most of the countries in question, as illustrated by Table 3.1 above, it is determined in the PPA with any additional support flowing through as part of a single payment stream.

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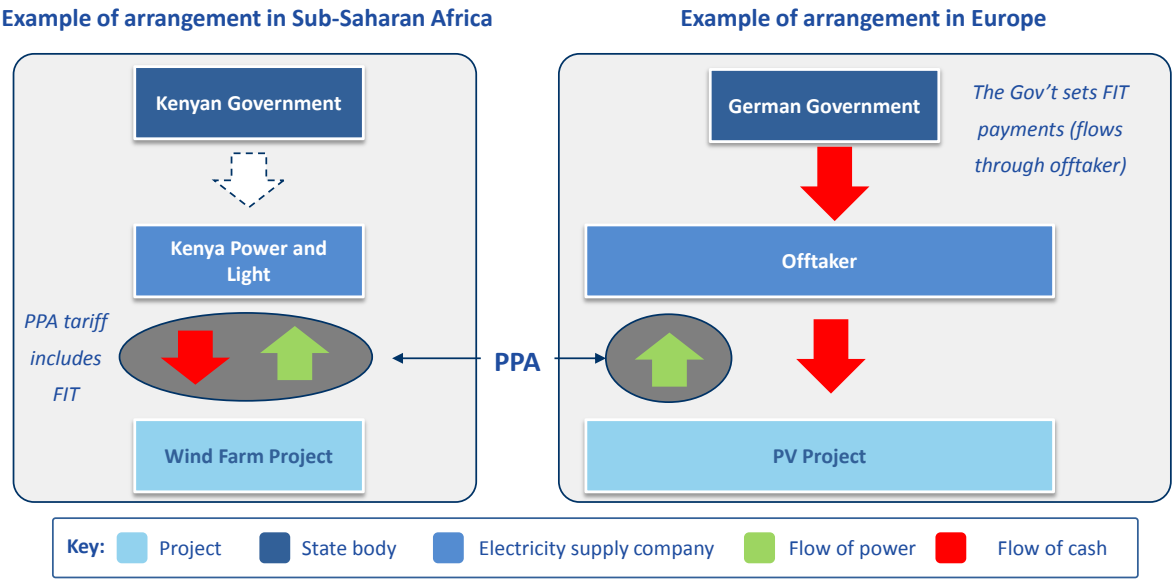
[33] See http://www.saber-abrec.org/hydro

[34] For example, the German renewable Energy Sources Act (EEG) provides for both a fixed FIT and *"…a market premium that allows power producers to sell [renewable] electricity on the electricity market*". In Spain (until 2012) generators were paid a FIT "*…a **state regulated** minimum tariff…differentiated by type of technology and size of the project, and adjusted to inflation yearly. In addition, the remuneration scheme is subjected to modification in case capacity targets are exceeded…*" (source: Ecofys et al, 2011, *Renewable Energy Country Profiles*)

[35] See the following for form of European support regimes which sets out the nature of support instruments and who pays for them: Status Review of Renewable and Energy Efficiency Support Schemes in Europe. http://www.ceer.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Electricity/Tab2/C12-SDE-33-03_RES%20SR_25%20June%202013%20revised%20publication.pdf

Figure 3.2: Comparison of renewables project arrangements in Africa vs Europe



This difference is key in understanding the nature of the risks faced by renewables projects in Africa and Asia, when compared to Europe. As regards the latter, whether or not the support is through a Renewables Obligation Certificate (ROC) or, say, a premium FIT, it is still a separate payment (albeit one paid by customers rather than governments). In part this reflects the structure of many European markets in which there is *no single public off-taker* with, in many markets, payment contracts and payment flows being *between two privately owned participants* in a given electricity wholesale market[36]. As such, any renewable support arrangements are an additional revenue flow from a separate source (a customer levy set by government rather than being contractualised within the PPA[37]).

The state off-taker arrangement (in which both wholesale power payments *and* subsidy flow through the PPA) not only creates a *contractual right*, but, as will be discussed in the next section, also makes available insurance products and guarantee instruments, which can provide further protection to investors and lenders *specifically because the off-taker is state-owned*. As such, what might otherwise have been an uninsurable policy risk becomes a potentially insurable political risk.

More detailed descriptions of the power markets and related contexts for two particular countries (Kenya and Indonesia) are provided ANNEX E and ANNEX F respectively.

[36] Comprising multiple bi-lateral PPAs or contracts for difference, depending upon the specific market structure in question.

[37] However, the new FIT/Contract for Difference arrangements in the GB market will essentially set up a contractual relationship between renewables generators and the Contract for Difference counterparty.

3.4.3. Mitigating regulatory risk

In some contexts, a separate energy regulator has a role in the determination of tariffs, either in terms of the PPA or FIT. This can complicate the picture slightly.

Where such regulation is seen to be impartial it can offer protection to investors, in the sense that government has committed to independent, impartial regulation. However, in many contexts the regulator is not seen as being autonomous from government and therefore under political pressure to do as government wishes. As such policy risk can be seen to arise where the regulator is subject to undue influence either by government or consumers in a way that contradicts the regulatory principles upon which the investment decision was initially made.

A way of addressing such a risk is again to employ contracts which can have the effect of *reducing regulatory discretion* and which are also insurable. Box 3.1 below illustrates how the regulator has been constrained in India so as to minimise regulatory risk.

Box 3.1: Addressing regulatory risk in India

At the federal level in India, a scheme was launched in 2010, with the ambitious target of deploying 20,000 MW of grid connected solar power by 2022, offering revised and more attractive feed-in tariffs than had been available previously. In February 2010, the Central Electricity Regulatory Commission (CERC) announced a feed-in tariff for financial year 2010–2011 of INR 17.9 (USD 0.36) per kWh for PV and declared that PPAs would be valid for 25 years. CERC will revise the tariff every year through a benchmarking process. This can then be adapted by the various State Electricity Commissions.

As part of this benchmarking process, the CERC takes into account:

- Capacity Utilisation Factor. (19% for FY13-14);
- Capital cost (Rs.8 cr. per MW for FY13-14);
- Debt-equity ratio (assumed 70:30);
- Interest on loans;
- Depreciation;
- Pre-tax return on equity of 20%;
- Interest on working capital; and
- O & M expenses.

The levelised tariff is computed over useful life of the project and will be applicable for 25 years.

It is assumed that at current cost levels, the tariff will allow equity investors to achieve an internal rate of return of about 16%–17% after taxes.

As such, this means that there although there may be regulatory risks in which renewables projects could be discriminated against, there will still be an underlying contract, unlike in Europe where the most vulnerable regimes have the least contractual underpinning[38].

[38] ROCs and premium FITs are at the greatest risk from policy changes. Contracts for difference provide much greater contractual protections.

3.5. Key risks faced by renewables projects

Although renewables projects in Africa and Asia are not exposed to changes in renewables support policies in the same way that they are in much of Europe, this does not mean that they do not face meaningful risks to project revenues. Although such projects are better placed than those in Europe to access insurance and guarantee protections, these are not always as complete, easy to access or at the scale desired by different investors and lenders. As such the nature of the threats to project revenues are not so much renewables specific, but rather ones that are common to most power generation, as set out below.

Depending upon the extent of their incidence, risks which impact upon project revenues can cause a project to default on its borrowings or at a minimum severely impact upon equity investor returns.

Each of the main risks to revenue streams that projects are at least perceived to face is discussed below, together with the views of those interviewed on such risks.

3.5.1. Non-payment and reduced payment risks

Off-taker non-payment risk is the risk that the off-taker simply does not pay, and has no intention of paying in future. As discussed above, a renewables project needs to sell its power to an off-taker through a PPA. The project is therefore exposed to the risk that the off-taker does not honour the PPA. This is an extreme risk which if it were to materialise would lead to a project defaulting on its loans and both lenders and equity investors subject to substantial financial losses.

Whereas the above risk is only likely to occur in very extreme circumstances, for instance, a conflict or off-taker insolvency, an associated risk is that of *reduced payments*, in which payments to the project can be reduced to varying degrees. This might be more likely to happen where equity returns were perceived to be too high, with resulting revenues being sufficient for the project to meet its borrowing loan covenants and thereby avoiding default, but with equity returns being significantly lower than anticipated[39].

Although it is not difficult to see how such risks might arise, it was not seen to rank that highly by the renewables project developers consulted, as it is seen as being a relatively rare occurrence.

3.5.2. Delayed payment risk

Rather than this being a deliberate action on the part of the off-taker, payment risk can manifest itself due to an *inability* to pay. A key reason for this is that much electricity

[39] A commentator on an earlier version of the report has suggested that this may be more likely where debt was being provided by international development finance institutions with which the host government would not wish to come into conflict with, but where relations with equity providers were less important. Such a risk is often mitigated by the fact that it is not unusual for such institutions to also participate in a project structuring as equity investors too.

production is subsidised in many African and Asian countries, with it being sold below its production cost[40]. For instance, the African Development Bank (AfDB) estimates that the average cost of producing electricity in Africa is 18 US cents per kWh, but that it is sold for an average of 14 cents per kWh[41]. Public off-takers are therefore reliant on government payments to address the gap, which undermines their solvency, often resulting in an inability to pay on a timely basis.

Again, however, this does not mean that the off-taker does not pay eventually, but rather that it does not pay on time, because of the reduced liquidity created by the mismatch between input and output prices and the consequent reliance on budgetary support. This is of much greater concern to the developers because it can be unclear when payment will occur and again puts the project at the risk of default if it does not have sufficient stand-by sources of liquidity. **The developers and insurers interviewed saw this as the most likely risk to materialise although it does so less than might be expected given the desire of off-takers not to breach agreements[42].**

3.5.3. Contract frustration

Contract frustration is where the project is unable to perform the contract because of certain types of actions by the host government or off-taker. Examples of such actions include revocation of necessary permits or embargoes, which can mean that the project cannot execute its obligations or realise its entitlements, all of which can impact upon a project's revenues. Where such government actions are deliberate and sustained they could potentially reduce a project's returns to such a degree that it is abandoned. However, such extreme actions can amount to *expropriation*, or even *creeping expropriation*, which are again forms of political risk, for which there are, at least in theory, protections. As with the other risks identified, however, the developers we interviewed did not raise this as a significant risk.

3.6. Incorporating change in law provisions in contracts

Whilst the above analysis has concentrated on the role of non-payments on projects, it is also important to consider how the other policy risks identified are addressed, which can also impact upon a project's finances.

Before investors and lenders commit large sums of finance to a project at financial close, significant effort will have been put into structuring the transaction, such that they have a high degree of confidence that the risks identified above, as well as a whole range of other risks, have been successfully mitigated, or that there is recourse to independent arbitration

[40] Another major source of risk is a significant exchange rate realignment where the tariff is set in a currency such as dollars which appreciates significantly against the currency of the country hosting the investment.
[41] Source: African Development Bank, http://www.afdb.org/en/blogs/afdb-championing-inclusive-growth-across-africa/post/the-high-cost-of-electricity-generation-in-africa-11496/
[42] There are very few instances of, say MIGA policies being drawn on and none of PRGs.

or review in the event of a dispute. If agreeable terms cannot be negotiated in the PPA or other project documents it typically will result in investments not going ahead. This is a barrier to energy investments in general which if not addressed in a given country will negatively affect investment flows as projects will not be bankable.

As with any other form of long term infrastructure projects, tax and other laws can change over the life of the project. Sometimes these changes can be sector specific (for instance, the imposition of a new levy), or at other times economy wide (such as a change to the level of corporate taxation).

In order to guard against such changes that can materially impact upon a project, investors and lenders will seek to protect themselves to the extent possible through so-called 'change in law' provisions in contracts so that they are protected against laws that can adversely affect them. The main aim of these provisions is for any material cost or other implications of changes to laws to be borne as far as possible by the contractual counterparty (that is, the off-taker who in turn will aim to pass on any cost implications to the final customer)[43]. As such, this is a main way in which projects seek to protect themselves against unknown future changes to the law. If such arrangements set out in the contract are not honoured by the off-taker, as with changes to tariff levels, protections can be found through political risk insurance.

3.7. Conclusions

A key protection for renewable generators in Africa and Asia is the fact that additional support for renewables is provided as a contractual revenue stream through an agreed PPA, unlike in Europe where it is provided as a separate government-mandated revenue stream. Even where regulators have a role in setting support prices, this is often curtailed in order to reduce regulatory risks, as in the case of India. In a typical project financing investors and lenders will require as many protections as they deem necessary before committing finance; in Africa in particular, these will be considerable, but not necessarily greater for renewables than for other power projects.

The most significant risk of concern to project participants, once a PPA is in place, is that of delayed payment, which is largely a generic one arising from the poor creditworthiness of the off-taker; again a risk that is not unique to renewables[44].

Key elements of project structuring are political and other risk insurances, especially for large cross border investments. The availability of a contract means that, at least in theory,

[43] A difficulty that can arise is whether a change in law is specific to a type of investment, or whether it affects the whole economy (such as a change in the level of corporate taxation). The former can be easier for governments to agree to than the latter – which can protect renewables, although the latter can be just as damaging to an investment even though it is not meant to discriminate against a particular sector.

[44] It should also be remembered that a significant risk facing many non-renewables power generation projects in Africa is breach of a fuel supply agreement. Although this can be insurable it is not a risk faced by renewable generation projects.

such renewables projects can access the different types of political risk insurances and guarantees that have been established to protect investors and lenders in more challenging environments, especially those with less developed judicial systems.

It is to an analysis of these forms of support that we now turn. Contracts confer rights which can be protected through the courts. However, where legal systems are less developed and trusted, it is sometimes possible to utilise other national laws. One of the main purposes of political risk insurance is to protect *international* investors operating in less robust legal environments to ensure that they have access to impartial justice.

4. MITIGATING RISKS THROUGH GUARANTEES AND INSURANCE

As set out in the preceding section, the risks identified are not exclusive to renewables and a number of existing insurance products and guarantee instruments seek to address them (see ANNEX G for examples). In this section we consider how these arrangements work and which types of entities are involved, differentiating between *political risk insurance* provided by public and private sector insurers and the types of *guarantee* provided by the *MDBs*, which bind governments to their contractual and even policy commitments.

Prior to doing so, however, we begin by putting the role of these products and instruments into perspective in terms of their role in mitigating risks. We then focus on some of the key considerations in addressing the types of 'non-honouring of commitment risk' involved as this helps us understand why insurances and guarantees are provided in the way that they are. Finally, we outline some of the other ways in which policy risks can be addressed.

4.1. The role of guarantees and insurance

The interviews undertaken suggested that the whilst there were ways in which the provision of guarantees and insurance could be improved, for the most part this is not creating a biting constraint to attracting finance to many at least smaller and middle sized renewables projects in Africa and Asia. *It was found that investors and lenders are either prepared to rely on payments from power purchasers such as KPLC in Kenya which has established a good payments record, or else they are content to use the insurances and guarantees which are currently available.* It is not, however, possible to say how any perceptions of an inability to protect against such risks may be putting off other potential investors.

This tends to illustrate the fact that insurances and guarantees are seen as the ultimate back-stop for mitigating investment risks, which are an addition to all the other careful legal and financial structuring steps necessary to project investors and lenders required in a typical project financing. *They are not seen as a stand-alone alternative*.

As with many other forms of private infrastructure, the limited flow of finance to renewables projects is not due to the lack of insurance and guarantees, but rather inadequate design, preparation and procurement and underlying issues of commercial viability of projects – that is, a lack of good projects. This makes such projects less bankable from a lender perspective and, not surprisingly, uninsurable, because there is a greater chance that such insurances or guarantees would be called, because of the poor foundations on which they are built. In addition to challenges of affordability, *exchange rate risk* is one of the greatest challenges facing infrastructure investment in less developed

countries in Africa and Asia[45]. It is often not possible to mitigate the risks of currency depreciation either through hedging or insurance.

4.2. MDB guarantees

First and foremost, the types of guarantees offered by the MDBs involve the said institution exploiting its significant powers of influence to provide confidence to the guaranteed entity and to ensure a strong alignment of interest with the host government. The main form of support provided is termed a Partial Risk Guarantee (PRG)[46].

In principle, these can be used to support any form of government commitment – including a non-contractualised policy commitment – but they must be structured so that it is a credit provider that is receiving the support (that is, being guaranteed). This is effected by a credit provider (typically a bank) suffering the loss where the government fails to honour its commitment. For instance, the failure of a state entity – or government – to reimburse a bank for providing a letter of credit that is drawn on by a developer. This provides a very clear trigger for the guarantee to be called.

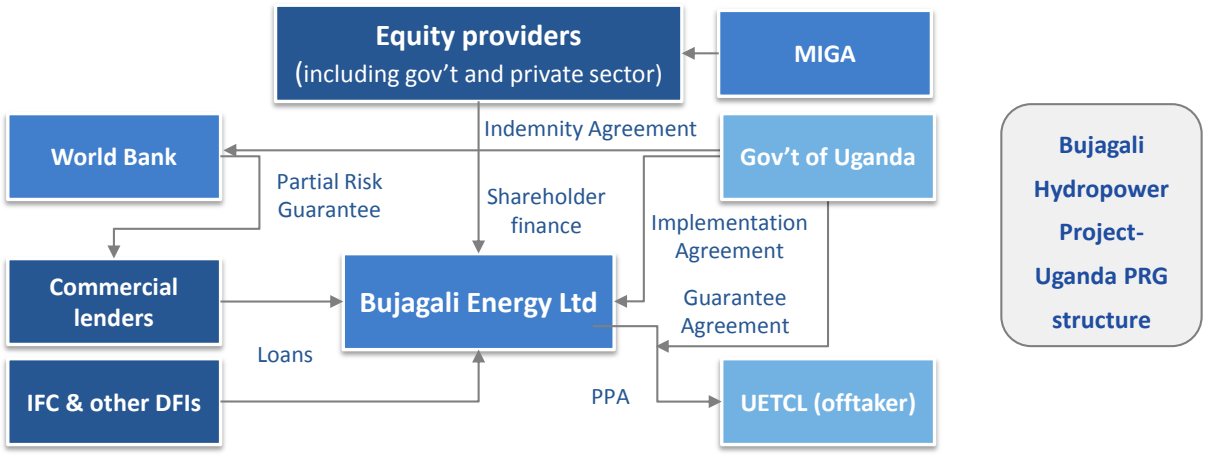
The key point is that the lender beneficiary has a major creditworthy MDB standing behind a government commitment but, more importantly, one that has considerable influence over the behaviour of national governments, which can act as a deterrent to undesirable behaviour. In addition, should the guarantee be called, the host government needs to indemnify the MDB with a failure to reimburse leading to a suspension of any further support from the MDB in question. This creates a major incentive to countries dependent on a given MDB's support not to renege on their commitments. In effect, strong alignment is created because it is the host government that ultimately bears the consequences of the guarantee being called. As such any moral hazard is fully addressed.

The operation of a PRG is best illustrated through an example; we present below a summary of the PRG used in the Bujagali hydro project in Uganda. The web of agreements – including the PRG – between the parties involved is shown in Figure 4.1 below.

[45] This arises where revenues are priced in local currency but borrowing is in foreign exchange. Where no long term currency hedging is available this can put the project at risk where there is a significant devaluation of the host country currency.

[46] Some MDBs such as the Asian Development Bank terms this a Political Risk Guarantee. However, where there is a counter guarantee from the host government it is essentially the same as a PRG.

Figure 4.1: Example of a Partial Risk Guarantee in Uganda



Under this arrangement[47], the project (Bujagali Energy Ltd – BEL) agrees to sell all its output to Uganda Electricity Transmission Company Limited (UETCL), at a price set in the PPA agreed between the two parties. UETCL agrees to buy this power at the specified price. Note the importance of the PPA in this structure.

These payments by UETCL are then guaranteed by the Government of Uganda, which will pay BEL in the event of any shortfall in UETCL's payments. This is in turn underpinned by the PRG provided by the World Bank which is counter-guaranteed by the Government of Uganda. The commercial lenders to BEL (note: not BEL itself) will be guaranteed against defaults on their debt that would arise from any of the following events:

- political force majeure events;
- *changes in law* and events making the project contractual agreements unenforceable or void, or making the performance of BEL unlawful;
- *government imposed restrictions* on the ability of BEL to be paid or to receive foreign currency or transfer funds abroad; and
- failure by the Government to fulfil its *payment obligations* relating to UETCL's purchase of power and termination payments due by UETCL.

Note that this does not cover *all* events – it is therefore a *partial* risk guarantee. However, it does act to *guarantee* that the commercial lenders to BEL will not face a default on their loans as a result of a failure to pay the agreed amounts under the PPA between BEL and UETCL.

One of the benefits of the PRG approach is that it is possible to structure the arrangements to cover any specific risk (including for example tariff or FIT levels) *as long as the host*

[47] Information in this section is sourced from the World Bank: http://siteresources.worldbank.org/INTGUARANTEES/Resources/UgandaBujagaliNew.pdf

government is willing to stand behind it. In this regard, we note that recent CPI analysis[48] concluded that "*...in theory, the [World Bank Group, including IDA and MIGA] provides coverage against most risk categories [including policy risk], particularly those faced by private debt investors…*" However, it does require the host government to indemnify or counter-guarantee the MDB providing the PRG – such that if there is a pay-out, government needs to repay the MDB as if it were a sovereign loan[49]. In other words, government needs to enter into a *binding commitment* which essentially means that there is strong alignment because it bears the impact if it chooses not to honour its commitments.

4.2.1. PRG pricing and scoring by MDBs

PRGs are offered by all of main MDBs, particularly the International Development Association (IDA) and International Bank for Reconstruction and Development (IBRD) – both members of the World Bank Group. A key issue is pricing, which will depend upon the source of the funds used to back-stop the support.

As regards the World Bank, in the case of non-IDA countries the Bank's own (IBRD) capital is used and is priced accordingly – that is, at closer to market rates. In the case of IDA countries, IDA resources are used, or the Bank's own capital where the project supported is deemed to be an enclave project in that, for instance, its revenues are denominated in an internationally traded currency (for example, US dollars). Regional development banks (RDBs) such as the AfDB and the Asian Development Bank (AsDB) also make a similar pricing distinction between guarantees that use their own capital and those which are backed by their concessional resources; that is African and Asian Development Funds (AfDF and AsDF) respectively.

Table 4.1 shows costs for IBRD and IDA PRGs.

Table 4.1: IBRD and IDA Guarantee Pricing[50]

	Fee type	IBRD		IDA
		PRG	PRG enclave for IDA countries	PRG
Upfront charges (one-time fees)	Front-End Fee	0.25% of maximum exposure under guarantee		N/A
	Initiation fee	0.15% on guaranteed amount or US$100k, whichever is greater		0.15% on guaranteed amount or US$100k, whichever is greater
	Processing fee	Up to 0.50% of guaranteed amount		Up to 0.50% of guaranteed amount

[48] CPI, September 2013, *Mapping the World Bank Group Risk Mitigation Instruments for Climate Change*
[49] Although these can only support debt, it is possible to structure arrangements such that it is the equity that is supported, although this does add to the complexity of the arrangement.
[50] Source: World Bank presentation, Get FiT East Africa/ Uganda Stakeholders meeting, January 2012

	Fee type	IBRD		IDA
		PRG	PRG enclave for IDA countries	PRG
Recurring charges	Guarantee Fee			
	Average Maturity up to 12 years	0.5%	2%	0.75%
	Average Maturity 12-15 years	0.6%	2.1%	0.75%
	Average Maturity 15-18 years	0.7%	2.2%	0.75%

As this shows, the fees are in most cases well under 1% of the guaranteed amount. In short, the fees quoted are not particularly high.

A historical deterrent faced by host governments to using a PRG, was that is used to count for the same amount of a country's IDA allocation as a full IDA credit. However, in the past decade it has been determined that the PRG only takes up 25% of the IDA headroom that an equivalent loan would do (which has a series of implications that are discussed presently).

4.2.2. Deconstructing the PRG approach

Further analysis of the MDB guarantee mechanism shows that it can be deconstructed into two main components. The first of these is the *source of funds* or *guarantee reserve* which can be drawn on to pay the guaranteed entity in the event that the guarantee is called. As set out above, an advantage of using Development Funds such as IDA for guarantee purposes is that this only counts as one quarter of the IDA allocation that would be used if there were to be a full IDA credit provided to the host government. As such, *IDA resources can be useful in leveraging private capital and at a relatively low cost,* because of the IDA terms involved. In addition to IDA, the RDBs also have access to Development Funds – such as AfDF orAsDF – which can be used in the same way.

Second, is the *role of the MDB* itself in helping to align interests or dissuading governments from reneging on their commitments and hence requiring the guarantee to be called, which is arguably an even more important aspect of the approach. On one hand, this provides the entity guaranteed with a very high degree of security because of the creditworthiness of the institution providing the guarantee; as importantly however, its degree of influence is not only important in resolving any issues should they arise, but also in preventing problems arising in the first place. Governments simply do not wish to experience the penalties associated with crossing the provider of such an important source of financial support.

4.3. PRI

Classic PRI normally covers war, expropriation and currency transfer[51] risks. Most PRI policies derive from the days of the 1950s, 60s and 70s where the main concerns for, typically, manufacturing and natural resource sector investors, were losses inflicted by wars, confiscations or expropriations and an inability to remit funds (that is, transfer money in foreign exchange out of the country).

As referred to earlier, another form of risk for which there can be cover is *'breach of contract'* in which a government (or a state-owned entity) reneges on an aspect of its *contractual* commitments. This cover requires government or a state-owned entity to be a party to a contract, whereas expropriation cover does not. A more recent extension to this is MIGA's *"non-honouring of a sovereign obligation"* in which protection is provided for instance against a government failing to honour any credit guarantees that it may have provided to lenders to a state owned enterprise.

Historically, whether provided by the private sector or public sector providers (see below), the breach of contract risk covered is typically not the breach of cover itself, as insurers do not wish to opine on whether or not a contract has actually been breached, but rather *failure to pay out on an arbitral award* or denial of a contracted for arbitration process (*'denial of justice'*). This is the case as, first of all, insurers are not experts in the operation of any particular project or in any contract between the project and government. Insurers are certainly less expert than the project developers themselves and so face an *information asymmetry* which makes it costly and time-consuming for them to challenge a project developer's view. Second, insurers recognise that their client (the insured project or lender) is unlikely to react well to being told that their claim is not valid, particularly by a party (the insurer) which has a clear interest in saying that the claim is not valid. Finally, ideally they would like the parties to resolve their differences without having to draw on the cover.

Box 4.1 below gives more detail on the content of the main four types of PRI.

[51] The inability to convert local currency into foreign exchange in order to repatriate it.

Box 4.1: Descriptions of selected risks covered by PRI

Risks covered by PRI

Currency Convertibility and Transferability. Protects against losses arising from an investor's inability to convert local currency (capital, interest, principal, profits, royalties and other remittances) into foreign exchange for transfer outside the host country.

Expropriation. Protects against loss of the insured investment as a result of acts by the host government that may reduce or eliminate ownership of, control over, or rights to the insured investment. In addition to outright nationalization and confiscation, 'creeping' expropriation, a series of acts that, over time, have an expropriatory effect, is also covered. This cover is sometimes referred to more widely as 'Confiscation, Expropriation and Nationalisation' (CEN).

War and Civil Disturbance. Protects against loss from damage to, or the destruction or disappearance of, tangible assets caused by politically-motivated acts of war or civil disturbance in the host country, but rarely includes revolution, insurrection, rebellion and terrorism.

Breach of Contract. Protects against losses arising from the host government's breach or repudiation of a contract with the investor. In the event of an alleged breach or repudiation, the investor must be able to invoke a dispute resolution mechanism (e.g. through an arbitration) in the underlying contract and obtain an award for damages. This can also cover frustration of the arbitration process in certain cases.

4.3.1. Challenges in creating a new "change in policy" cover

As set out, given the nature of PRI, in providing it, insurers will look to ensure that it is an "insurable event" – that is, one that is possible to identify when it has crystallised – and second, one that is unlikely to happen; for instance in the case of breach of contract, an arrangement in which interests are so aligned that it is unlikely that the cover would ever be called.

This also helps to illustrate some of the challenges of creating a general "policy risk" cover. First there are the extreme moral hazard risks previously identified (which militate against the second aspect of the "insurable event"; that is, a government would have a strong interest in changing its policies if someone else – the insurer – was bearing the consequences). Second, there would be the challenges of identifying what would constitute the "event"; for instance, would this be the change in policy (the reduction in FIT or other policy change), or its outcome (the resulting reduction in the project's profitability), or a combination of both? Third, at what point in terms of the extent of the reduction in profitability could the insurance be drawn, and how would such a reduction in profitability arising from the policy change be isolated from reductions arising from other factors? This is not to say that policies could be written, but they would likely be more challenging than even the already challenging creeping expropriation type covers.

In comparison, policies based around more clearly defined contractual terms and dispute resolution mechanisms would appear to constitute relatively clearer events to insure.

4.3.2. Private and public providers of PRI

There is a range of providers of PRI, each with its own distinctive way of operating. Public, especially bilateral insurers of their companies exporting to and investing in developing countries, have more than purely commercial profitability objectives, given the national priorities of promoting exports and investment involved.

Private

Such cover can be available through private sector insurers. Both private and public sector providers of such insurance often use the "breach of contract" route to covering the risk of non-payment or reduced payment arising from changes of policy or adverse actions of a regulator[52]. Unlike those of public providers, the policies of private providers tend to be more short term in nature and need to be renewed frequently over the life of the project; it is unusual for a commercial provider to provide cover for more than five years at the very most.

Private providers are also understandably more singularly commercial and conservative in their approaches than the public entities which will typically have either national policy or development objectives. They are also much more conservative regarding what they are willing to cover in terms of risks; however, they are often more willing to participate in providing capacity where a public insurer with considerable influence is involved.

Bi-lateral Export Credit Agencies (ECAs) and investment promotion agencies

On the public side, cover can be provided by a given country's investment support agency, such as with the Overseas Private Investment Corporation (OPIC[53]) in the United States.

The principal aim of such bi-lateral entities is to support exports from, or investments by, national corporations in more challenging countries.

As an arm of the US government, OPIC has considerable influence with governments in countries where it is supporting investments and has a high recovery rate of any insurance that has been paid out.

As discussed above, most providers of PRI require some form of arbitration to take place before paying out. We understand that this can take several months or even years. During this time, the project may not receive any revenue. However, OPIC's policies have been revised to help address this issue, particularly in the case of FITs (see ANNEX H for more details), such as through the loss of income cover described in Box 4.2.

[52] "Creeping expropriation" is another avenue pursued under traditional PRI policies.
[53] www.opic.gov

Box 4.2: OPIC's Business Income Loss cover[54]

OPIC provides "Business Income Loss" cover, which is intended to help insured projects with cashflow issues in the event of government non-payments. However, its specific focus is on the situation where the FIT for a project has been reduced by a specific amount. The cover will provide the difference between the revenue received under the new FIT and that that would have been received under the old FIT. The reduction needs to manifest in a way that breaches the PPA – again, this is breach of contract cover. It also will only pay out after the reduction has been in place for six months. The intention of this cover is to allow the project to restructure to deal with the new lower FIT rate.

It should be noted, however, that as with other insurance, *it is only intended to be drawn on as a last resort; insurers prefer projects and governments to try and reconcile their differences without their involvement*.

4.3.3. Multilateral providers of PRI

There are also several multilateral entities that are particularly relevant.

MIGA

On a multilateral basis, the MIGA is the major provider of PRI for both equity investors and debt providers[55]. As set out, in addition to the four main PRI risks previously identified, MIGA also provides a product that covers against the risk of "non-honouring of a sovereign obligation"[56].

This is described in more detail in Box 4.3 below.

[54] Source: OPIC
Compensation is payable for "Partial Expropriation: Reduction in Guaranteed FiT Rate", subject to the exclusions set forth in Section 4.05, the adjustments set forth in Section 5.04, and the limitations set forth in Section 5.05, if

a) the Foreign Governing Authority, through generally applicable official legislative or administrative action or other regulatory decree, reduces the Guaranteed FiT Rate to a lesser FiT rate (the "Reduced Tariff Rate") under the Renewable Energy Law in a manner which breaches the PPA and directly causes a loss of business income to the Foreign Enterprise;

b) the Foreign Governing Authority does not provide prompt, adequate, and effective compensation for the Foreign Enterprise's business income loss; and

c) *the reduction in the Guaranteed FiT Rate remains in place for at least [six (6)] consecutive months from the effective date of the action or decree.*

[55] At one time, MIGA could not provide cover for debt providers unless it was also providing cover to equity. Following a report by CEPA, this condition was relaxed in 2010.

[56] http://www.miga.org/documents/NHFObrief.pdf

Box 4.3: MIGA non-honouring of sovereign financial obligation

MIGA's non-honouring of sovereign (financial) obligation (NHSO) cover provides credit enhancement in transactions involving sovereign and sub-sovereign entities, as well as state-owned enterprises (SOEs). The primary beneficiaries that can benefit from this cover are commercial lenders that provide loans to these public sector entities for infrastructure and other productive investments. NHSO protects the lender against losses resulting from a failure to make a payment when due under an unconditional financial payment obligation or guarantee. *NHSO does not require the investor to obtain an arbitral award in order to file a claim for compensation with MIGA*.

Note that (unlike with many insurance products) this product does *not* require the insured to go through arbitration. However, it does require that the sovereign obligation is *unconditional*.

Any MIGA support requires explicit agreement from the host government. In the case of breach of contract, if a government fails to abide by an arbitral finding, including investor compensation, requiring MIGA to pay out, it will cease to provide cover for any new investments in that country, which acts as a deterrent to governments breaching their obligations. There are, however, very few instances in which MIGA insurance has had to be drawn on, due to a reluctance of governments to come into conflict with a member of the World Bank Group.

African Trade Insurance Agency

In an African context, PRI as well as comprehensive insurance (see below) is also provided by the African Trade Insurance Agency (ATI)[57], described in more detail in ANNEX I. ATI's structure provides strong alignment due to the fact that its member governments have capital at risk should government action lead to it having to pay out[58]. This capital has been raised through the member countries borrowing from IDA. Should a member government fail to reimburse ATI for a pay-out, this is treated as a cross default on all IDA loans, which countries will seek to avoid.

ATI provides credit products as well as a full range of political risk insurance products, including breach of contract cover and non-honouring of sovereign obligation covers, typically used to protect against governments failing to honour the payment obligations of sub-sovereigns (such as power off-takers).

4.4. The role of credit instruments

Whereas the discussion above has focused on examples of 'event specific' guarantees and insurance (in which only certain risks are covered), it is also possible to purchase

[57] www.ati-aca.org

[58] Whilst the capital of member countries is pooled for purposes of increasing underwriting capacity, any losses suffered need to be made good by the country concerned; that is, any losses are not shared amongst participants.

comprehensive or credit insurance and guarantees. Such cover is available to *debt providers* in a transaction; that is, lenders and bond investors. This is an insurance that is paid out when there is a default (such as non-payment of interest) on a debt instrument, such as a loan or bond, irrespective of what the underlying reason for the default is (although some risks may be carved out of such cover). Because they cover a wider range risks they are more expensive than PRI and therefore increase a project's costs.

There are private sector[59] examples of such insurance, but here we focus on the Partial Credit Guarantees (PCGs) provided by both MDBs and the Development Finance Institutions (DFIs)[60]. Again, these protect lenders and bond investors if there is a default on a loan. Normally, this support is partial in the sense that the full value of principal and interest is not covered; indeed, often it is only the back end of a loan (or bond) for which such protection is provided, aimed at encouraging the provision of longer tenors[61] by debt providers. Because PCGs are general default guarantees, they are not subject to an arbitration process; as such they are so-called "on-demand" guarantees. Given the challenge of precisely stipulating risks, and as we saw in the previous section the time taken for arbitration, such straightforward all risk cover and "on-demand" features can make them of interest to banks, especially in more uncertain markets.

A major difference between MDB and DFI PCGs is whether or not a counter guarantee is required from the host government and the focus on private or public sector led projects. The need for a counter guarantee arises because so-called "sovereign lenders" (such as IBRD) do not take project risk whereas DFIs do take project risk, for which they price accordingly. *A key role of DFIs is also to take political risks; that is, they operate without the need for PRI.* PCGs are typically provided by the World Bank only when a counter-guarantee is provided and are used to help government and public corporations borrow in private markets. DFI PCGs are used to support private sponsors borrowing from commercial lenders and capital markets.

4.4.1. Other credit instruments

There are also a number of instruments available which – while not insurance or guarantee products – can be used to help to address some of the risks identified, *specifically risks*

[59] For example, cover provided by mono-line insurers, often 100% cover for principal and interest for senior debt within a project financing or for the most senior tranches of a structured security such as a collateralized debt obligation (CDO).

[60] Institutions that provide finance and investment in support of development goals. Objectives include:
"- fostering growth in sustainable businesses
- helping to reduce poverty and improve people's lives
- contributing to achieving the Millennium Development Goals
by promoting economically, environmentally and socially sustainable development through financing and investing in profitable private sector enterprises." (source: Association of European Development Finance Institutions)

[61] That is, to lend for a longer period of time

impacting upon a project's liquidity, such as late payment[62]. These are usually developed as part of a project's structuring and can be backed by different forms of insurance. We focus on two in particular: letters of credit and escrow accounts.

Letters of credit

Letters of credit are often provided by the power purchaser to provide liquidity support to the project company. A letter of credit is an irrevocable, unconditional, 'on demand' obligation on the bank who provides it. The project developer can draw on this letter of credit provided by the bank to cover the power purchaser's tariff payments if these are in arrears. It creates a direct liability on the banker to pay the required sum. The letter of credit will be limited in time and up to a certain amount.[63] In such an arrangement, the bank providing the letter of credit then has recourse to the power purchaser (or other government entity) for repayment. This structure is now used as part of a World Bank PRG, with the World Bank providing the guarantee to the bank that provides the project the letter of credit. In turn, the letter of credit provides a degree of support to project company, thus allowing equity investors to benefit from the PRG as well as debt providers (although lenders will have first call on any liquidity received by the company).

Escrow accounts

An escrow account is an arrangement between two or more parties where the payment for a good or service is put into the custody of a third party (in this case likely to be a bank) by the recipient of that good or service. The bank will only release this payment to the seller once certain conditions set out in advance are met.

As far as PPAs are concerned, an escrow account is a bank account that collects all or part of the project's cash flow through receipt of payment from the power purchaser and channels payments to the project company, which are used to provide the project company with short term security. The escrow accounts typically hold between two and six months' debt service, covering principal and interest.[64]

4.5. Other ways of mitigating policy risks

Whilst the above has set out the role of insurance and guarantees in addressing policy risks, these should be put into context in terms of the other actions that governments can take to attract investment. These will not only make renewable projects more attractive to investors and lenders in their own right, but also means that they are more likely to be suitable for support from the insurances and guarantees that are more widely available.

[62] Although not included here, the A/B loan structures employed by DFIs such as the IFC also provide protections to lenders by enabling them to share in the de facto preferred creditor status of such institutions.
[63] Henrik M. Inadomi, 2010, *Independent Power Projects in Developing Countries*
[64] Henrik M. Inadomi (2010) loc cit

This is a massive topic which cannot be considered in detail in this report. However, we summarise some of the key points that governments seeking to attract investment in renewable generation should consider. Whilst not being a necessarily complete list, it includes:

- **Creating an enabling environment for private investment.** This comprises the development of a legal and regulatory framework which inspires confidence in investors. It includes: strong and independent institutions which can be seen as acting impartially; and legal and other processes that are transparent, fair and predictable, including planning and procurement[65]. Naturally, all of these cannot be put in place over night and setbacks in developing any of the above can undermine investor confidence[66].

- **Improving the commercial viability of projects.** A key starting point for this is good project design, whether for government or private sector originated projects. A major element in this is a cost reflective tariff which reduces the need for subsidies and a risk allocation that is bankable. Use of robust proven technologies can also improve commercial viability. Developing well designed projects which are then tendered out to the private sector through transparent and timely procurement processes is seen as being a key way of attracting private investment, as it significantly reduces the risks faced by investors.

- **Developing robust PPAs that are bankable and insurable.** As previously discussed, a PPA is a full contract which includes much more than just the power price. Whilst PPAs can be difficult to standardise for renewables and need to be developed to reflect different circumstances, in ANNEX J we set out some of the key features that are best included in PPAs if they are to attract finance and be insurable.

- **Appropriate subsidy design.** *Rather than employing FIT structures which are long-dated, creating the problems discussed in Section 3.3.1, an alternative is to buy down capital costs up front, reducing the overall financing requirement and hence the level of the required tariff*[67]. A way of doing this is to employ performance-based subsidies such as output-based aid (OBA) or viability gap funding (VGF), which link upfront subsidy payments to the successful delivery of infrastructure assets[68]. Alternatively, longer term subsidy requirements might also be addressed through *interest rate*

[65] An analysis of South Africa's recent renewable energy procurement programme has suggested that one of the factors in its success was the quality of the competitive procurement process. As a result of this process some US$14bn has been committed to renewable energy generation; with over 85% of the debt raised being from domestic sources and without the provision of guarantees. See "South Africa's Renewable Energy IPP Procurement Program: Success Factors and Lessons".
http://www.ppiaf.org/sites/ppiaf.org/files/publication/South-Africa-REIPP-Report_final_web.pdf

[66] Creating an enabling environment for private infrastructure investment has many elements. The Public-Private Infrastructure Advisory Facility (PPIAF) was established by donors to promote this: it is a source of considerable information on this topic. See www.PPIAF.org

[67] This is a key element of the GET FiT approach, arguably as important as the guarantee of the FIT.

[68] These can also be backed by PRGs.

subsidies through blended financing mechanisms which reduce government payment risk. Each context is different and there are trade-offs involved; however, *a FIT structure should not always be seen as the default option*.

- **Contractualising subsidy payments.** *Where a subsidy is a separate income stream to a PPA then it should also be set out in a contract that can be enforced through a court*[69,70]. As with a PPA, this essentially provides a first order protection to projects receiving especially longer term subsidies which can either be legally enforced or else becomes amenable to breach of contract protections[71].
- **Government provision of guarantees or support to project structures.** This can include specific credit guarantees of project debt, or else back-stopping of letters of credit, or funding escrow accounts to address liquidity risks. Again, such *contractual commitments are more insurable* through products offered by major international institutions, especially MIGA's recently introduced 'non-honouring of a sovereign obligation product'.

Incorporating the different elements set out above into policies and project structures may in some cases – particularly smaller scale domestic investments – reduce the need for insurances and guarantees and in others make it easier for either to be accessed, taking into account the considerations that providers will make in offering them. Over and above this, several of the approaches outlined will help projects access the protections that are already available.

4.6. Summary

Once the role of insurances and guarantees in back-stopping projects is understood it is then useful to consider how each of these approaches works and what might be done to improve not just the protections provided, but the ease and speed at which they can be accessed. In considering these issues, however, it is important to remember that these issues are not necessarily unique to renewables investors, but they are faced by other investors in generations projects of differing scales (and in several instances to other forms of private infrastructure provision where government is the payee). In the next section we therefore turn to an analysis of the different 'gaps' in provision, including the extent and nature of cover that exist in practice and the problems that arise as a result.

[69] OBA structures often have such contractual arrangements which provide comfort to developers that subsidies will pay.
[70] In the UK, the FIT Contract for Difference is a contract.
[71] Such contracts can also access guarantee and insurance protections.

5. CHALLENGES FACING MDB GUARANTEES AND PRI

In the previous section we considered how different insurance and guarantee approaches, as well as other credit products, can be used by renewables and other electricity generation projects to protect against government changing its policies. **Whilst for the most part, these approaches provide sufficient protection for many investors in projects, that is not to say that they are currently optimal**. There are ways in which to differing extents in both cases, the precise nature of *policy cover*, *ease of access* and the *scale of resourcing* could be improved upon, particularly in the context of the commitment to mobilise US$100bn of climate finance to developing countries for a year by 2020 to flow to developing countries, from both public and private sources..

In presenting some of the different issues currently observed by the different market participants involved in developing and financing projects, we also identify a number of new approaches that are currently being employed to improve the provision of both insurance and guarantees together with the challenges that remain, some of which are more amenable to further solutions than others.

Our analysis draws on the interviews conducted with project developers and lenders as well as discussions with providers of guarantees and insurance, both public and private.

5.1. Addressing the requirements of different projects and financiers

The precise guarantee and insurance needs of a project will differ depending upon a number of factors, such as the country context in which it is taking place, including the level of economic growth, the creditworthiness of the off-taker and its payment record and government attitudes to private investment. Whilst each project context will be different, *project scale* will be a key determinant of need, not only because of the quantum of the financing and therefore guarantees and insurance required, but also because the motivations and constraints facing the different *types of developers, investors and lenders* that are likely to provide such finance. Before discussing the importance of different project scales it is therefore important to recognise that the extent and nature of the protection required is not just a function of the inherent risk profile of the project. *It is also in part determined by several factors that determine the attitudes of those financing the project*.

First, the degree of risk averseness of different groups of investors and lenders can differ within and between projects. In general, equity investors will be willing to take more risk than lenders, who will usually be more conservative. (This reflects the fact that a range of returns above a given hurdle rate is likely to be acceptable to such investors, whereas a bank is either repaid or not repaid – that is, there is no upside, only downside.) *Domestic investors (and lenders) are likely to be less risk averse than international ones as they will typically face fewer opportunities as to where else they can invest – local political and other risks are a constant part of the environment*. Governments may also be less likely to take actions that harm domestics relative to international ones; domestic investors may also be

better positioned to influence governments more favourably as local business communities can be important political constituencies.

Second, *the attitude of lenders to the use of insurance and guarantees, in particular, may not be determined purely by project risk*. Regulatory requirements may also have an impact on their decisions and requirements. The regulatory treatment of comprehensive insurance and PCGs can have a highly favourable regulatory treatment and even a zero risk rating when the guarantee is being provided by an MDB – this has the effect of reducing the cost of providing the loan. At the same time, the latter can also assist when a lender is up against its country limits, essentially making more capital available to that country. It is difficult, if not impossible, for a bank to lend at any price when such limits are breached.

5.1.1. The characteristics of different sizes of projects

Although there are no precise limits at which a project is deemed small, medium or large, nonetheless, projects of differing scales will typically have different technical characteristics and financing requirements as well as providers of financing; all of which will impact upon insurance and guarantee requirements.

Table 5.1 provides an overview of these different features.

Table 5.1: Different scales of project

	Project features	Nature of financing and guarantee / insurance support requirements
Small project	• Single country • Private sector initiation, possibly in response to a general government solicitation for projects • Distributed generation; possibly to isolated grid (solar / small scale hydro) • <10 MW	• Local investors/ lenders • Up to c.US$30m corporate financing • Liquidity support requirements through escrow or letter of credit
Medium project	• Single country • Wind/ hydro technology • >10MW<500MW • Private or public sector solicitation • Dedicated transmission link to link to national grid	• Domestic/international finance • Guarantees to cover delays in government provision of transmission links • Project finance structures • Significant DFI debt provision • PRI for termination risks
Large project	• Hydropower / geothermal	• Significant international private sector finance requirements

	Project features	Nature of financing and guarantee / insurance support requirements
	• 500MW+ • Government sector solicitation (for example as part of a regional programme[72]) • Dedicated transmission link, possibly cross-border • Large 'anchor' creditworthy off-taker requirement	>$1bn • PRI to cover termination risks

Smaller projects

By small projects we are referring to projects of typically below US$30m. Such projects will take place within national borders and may involve distributed generation. They are more likely to be privately initiated (as opposed to a specific government solicitation) and implemented by local developers – albeit sometimes with support from external investors and other partners – and financed by local banks, typically on the developers' own balance sheets[73]. Such projects are typically too small for pure project financing[74] approaches (the transaction costs of such an approach being prohibitively high).

Key concerns for developers and lenders will be the affordability of the solution – that is, whether the tariff will cover project costs and any payment delays arising from off-takers, which might include local municipalities as well as the national utility. There will also be additional concerns as regards government's demand for renewable generation used to support isolated grids.

However, in several instances, our interviews found low demand for currently available insurance and guarantee support from developers and lenders to projects, particularly in countries where governments had established a strong track record of making payments. For instance:

- The Kenyan state power company, Kenya Power and Light Company, was described very positively ("*good credit, no need for guarantees*").
- One lender told us that PRI cover was not taken for projects in the Philippines as "*investors/ banks are comfortable with the [country] risks, given [its] history*".
- In some countries, including Uganda, local commercial banks are often willing to provide escrow accounts for smaller projects (say 20-30MW) without a guarantee.

[72] For example, the Program for Infrastructure Development in Africa.
[73] Although increasingly private equity funds are looking to support developers in sharing the equity risk in such investments.
[74] Often referred to as limited or non-recourse financing in which lenders are largely reliant on the cash flows of the project rather than having recourse to the other financial resources of the sponsor.

- There was a willingness from developers to work with payment delays (managed through escrow accounts and letters of credit) and one developer commented that African off-takers "*bend over backwards to pay*".
- Developers have commented that "*…credit risk is considered to be less of an issue for [smaller] projects*". **On the other hand, most larger projects "*...seek to have a letter of support from government…these [are] time-consuming and difficult to get*".**

As regards project fundamentals, there was a preference for countries where there was not a significant mismatch between average power tariffs and any FIT offered to renewable energy projects. This was identified as a particular risk in Indonesia. In the Philippines, on the other hand, many renewables projects are approaching *grid parity* (that is, they do not need subsidy because the price of electricity is high enough), and this will reduce reliance on subsidy and therefore reduce any risks arising from changes to the support regime.

Medium-scale projects

Mid-sized projects, covering quite a significant range in financing costs from between US$50m through to US$500m, are likely to involve investment from international developers and private equity funds. A significant proportion of their debt, although commercially priced, is likely to be provided by public DFIs (who as discussed do not require PRI). By DFIs, we are principally referring to the bi-lateral European DFIs – such as Proparco, the German Investment and Development Corporation (DEG) and the Netherlands Development Finance Company (FMO) – and the private sector lending arms of the MDBs – such as the International Finance Corporation (IFC). These are typically prepared to take project risks without the need for government guarantees or indemnities. However, their pricing is very close to, or equal to, that of private debt providers.

In Africa, a major source of protection for any international equity participants or regional lenders will be PRI cover provided by institutions such as ATI, as well as MIGA (which, as with the larger projects, provides cover for project termination risks[75]).

Large-scale projects

At the other extreme are the major hydropower renewables projects that are often cross-border, with power being generated in one country and then "wheeled" to one or more others through long transmission links. The scales of these projects, both in terms of generating capacity and cost, mean that they cannot be financed purely through sovereign loans and require substantial private financing for both the dam and transmission links. In addition to DFI financing, much of the private finance will need to be raised in international credit and capital markets, where investors and lenders will be looking for strong credit ratings. Large geothermal projects can have similar characteristics in terms of the scale of their financing requirements (including any transmission links). *The more private finance*

[75] Ensuring that contractual termination clauses are honoured in the event that a termination was to occur.

sought, especially for larger projects, the greater will be the need for protection against government payment and other risks. This will be particularly so for large regional projects including cross border transmission investments which link generation to ultimate markets.

To be bankable therefore, inter alia, these projects require PRG support of a significant scale. Although such projects might qualify for more expensive IBRD PRGs as enclave projects, it is likely that poorer countries such as the Democratic Republic of the Congo, Mozambique, and Zambia, where several of such projects are located, would seek PRGs to be provided on IDA terms; as such lower pricing will also make the projects much more affordable.

It is also worth noting that well designed mega projects will play an important role in the context of mobilising US$100bn of climate finance a year by 2020 to flow to developing countries, from both public and private sources. . Such amounts of mobilised capital can only be deployed if there is a corresponding pipeline of bankable projects to take up the financing. Such large projects can take many years to develop; however, if bankable, they can help such a target be achieved, more so arguably than many small projects.

5.2. Insurance approaches

The main continuing challenges relating to the provision of suitable insurance products relate to: the specific design of insurance policies and how they are interpreted by insurers; who can access them; and the scale of public resources available to underpin the availability of PRI capacity.

5.2.1. Policy design and interpretation

Policy designs have typically evolved incrementally to address the different types of challenges faced by those insured. The main initial type of cover provided to protect against government off-takers was breach of contract cover. However, purchasers of policies have complained that there are still weaknesses in the cover provided. There is often uncertainty regarding when particular risks have crystallised (and therefore when the policy can be drawn on); and the fact that most ECA and private providers limit their protection to much more identifiable risks such as denial of justice rather than contractual breach per se, which has given rise to delays in pay-outs when policies have needed to be drawn on.

Table 5.2 provides an overview of some of remaining issues the key issues and how they have been dealt with to date.

Table 5.2: Products by risk, with issues and potential solutions

Risk	Potentially available protections	Residual issues with cover	Recently developed solutions
Reducing FIT payments	• Breach of contract (non-honouring of arbitral award and denial of justice)	• Determining whether a risk has crystallised • Time taken for arbitration / pay-out	• OPIC's approach to recognising when a PPA has been breached
Non-payment risk by sub-sovereigns	• Government credit guarantee to lenders	• Government failure to honour its credit guarantee	• NHSO insurance (MIGA / ATI)
Delayed payment risk by sub-sovereigns	• Letter of Credit, backed by government guarantee	• Government failure to honour its guarantee	• NHSO cover for credit provider / PRG protection for letter of credit provider
Non-honouring of a sovereign financial obligation (NHSO)	• NHSO insurance (e.g. from MIGA)	• Not widely available to domestic investors	• Provision by local insurers e.g. ATI

The table shows how the main public providers of PRI such as MIGA, OPIC and ATI in Africa have sought to make incremental improvements to their policies to try and address problems. Such improvements are not, however, universal even amongst public providers (who would, on the whole, prefer different parties to reconcile their differences before seeking to draw on the insurance).

We explore some of these more intractable problems and their potential solutions below.

Determining whether a risk has crystallised

A major difficulty with both expropriation and breach of contract PRI covers – the main route through which protections are sought – is issues associated with determining whether a risk has materialised.

Expropriation cover protects against government actions which deprive the owners of a project of their right of ownership or control of the project. In the extreme, this could be actions that require the project to be abandoned. A more insidious version is so-called "creeping expropriation", in which a series of government actions taken as a whole effectively result in expropriation. This can be difficult to define and hence to determine whether it has occurred. Indeed one insurer we interviewed considered that it had never been adequately defined.

Recent innovations by public providers as regards these issues involve the clearer *stipulation* and *recognition* of crystallising events. MIGA's non-honouring of a sovereign financial obligation (NHSO), whilst arguably being an elaboration of its traditional breach of contract cover, involves much clearer triggering events – that is, the failure to honour contractual or guarantee obligations, which better suits the financial structures of many IPP transactions. OPIC has made improvements in terms of when risks are seen to have crystallised, particularly as regards breach of PPAs, without the need for arbitration processes. OPIC has deemed that where more than one project is affected by a government change in policy, this will count as a trigger for breach of support cover to be activated. As such OPIC is covering the contractual breach rather than merely providing typical policy support such as denial of justice. In addition, in Africa we understand that ATI is also more willing to make a judgement on whether or not a risk has crystallised than other PRI providers as well as providing its own NHSO product.

Differentiating between political and commercial risks

Private insurers can be reluctant to provide PRI for what they see as being quasi-commercial risks. In their view, this can specifically include purchase or supply by sub-sovereign entities (for example, state-owned electricity transmission and gas supply corporations, upon which IPPs can be totally dependent). As noted earlier, the tendency to date has been for insurers to cover non-payment in case of arbitral award. This remains a real grey area for most private insurers, but it means that it can be difficult to cover off some key risks faced in many projects.

Time taken for pay-out

There can be a significant period of time between a triggering event and the resulting pay-out. For example, under OPIC's new FIT cover, if a claim is to be made through the expropriation route, the policy requires that any "*expropriatory acts*" continue for "*at least six months*" before a claim can be made. OPIC then has "*a reasonable time in which to complete processing of any application…*" and once it has determined that a claim is payable, will pay that claim within "*60 days"*. It can therefore be more than eight months between the start of the project's difficulties and any pay-out. During these periods, the project may receive reduced (or even no) revenue if the issue is non-payment.

It would seem likely that this issue will never be fully addressed to the satisfaction of both policy providers and holders. The potential solution would seem to lie in ensuring that projects have sufficient liquidity to be able to cover such eventualities, achieved through an availability of stand-by facilities to provide for long periods of liquidity support whilst the necessary processes take place. Whilst short term liquidity can be provided, the credit currently available under such facilities will be exhausted relatively quickly.

As indicated in Table 5.2, this is likely to involve the wider availability of NHSO-type products which can be used to back-stop a higher level of support offered by liquidity providers, as an

alternative or addition to the PRG product offered by MDBs. However, it is likely that it is the public providers who are better placed to provide such support because of the moral hazard facing private providers and their reluctance to be drawn in to providing credit. Indeed, we understand that OPIC and MIGA are willing to support longer term liquidity arrangements[76].

5.2.2. Eligibility

There may be certain nationality requirements that mean that cover is not available for all projects. For example, OPIC has conditions regarding US ownership[77] that must be fulfilled before it can offer cover, which means that the improvements that it has developed in its policy cover are not more widely available to non-US investors.

Other national ECAs and investment insurers can have similar restrictions regarding national context and project sponsorship; however, their policy support is less flexible than OPIC's.

Smaller, national developers

Even though, for the reasons set out above, domestic investors in particular are less likely to seek PRI covers, they are ineligible for MIGA PRI which targets support on cross border investments.

However, the creation of ATI in Africa, which is much more able to support smaller projects, including those supported by local investors and lenders, offers potential in being able to support projects that multilaterals such as MIGA find more difficult to reach, given its on the ground expertise.

5.2.3. Cost

Another issue is cost: the desired cover may be prohibitively expensive. This can be for a number of reasons including the degree of risk, and the administrative cost of providing the cover. Administrative costs, for example, may not vary significantly by size of project, but the relative size of the costs compared to the project is a different issue. However, it may be that some insurers quote high premiums because they simply do not want the business.

For political risk insurance, ATI states that: "*…the premium is based on the country risk assessment. [It] ranges between 2 - 3.5% per annum of the transaction or investment value*"[78]. In part, this reflects the fact that as ATI needs to reinsure a large proportion of its exposure, so it needs to be able to offer attractive premiums to international reinsurers that otherwise would be less interested in its business.

[76] Source: CPI interviews with MIGA and OPIC.
[77] To be eligible for OPIC insurance cover the applicants must be: U.S. citizens; corporations, partnerships or other associations created under the laws of the United States, and more than 50% owned by U.S. citizens; and foreign corporations that are more than 95% owned by one or more such U.S. entities or U.S. citizens.
[78] Source: ATI http://www.ati-aca.org/index.php/products-and-services/cost

There is also the issue of the transaction costs of obtaining the cover. Issues here include the time required to obtain the cover, and the need for expensive legal advice.

5.2.4. Implications of calling insurance

There was also a message from some developers regarding the implications of calling insurance, in terms of destroying the relationship with the off-taker and the country government. Developers really do not want to do this – calling insurance is very much a "*last resort*". In this regard, we note that in many cases, calling the insurance means that the insurer will assume all rights to the project (so-called "subrogation"). This means that calling the insurance effectively ends the developer's control of the project – emphasising that it is only used after all other avenues have been exhausted.

5.2.5. Scale of ATI's underwriting capacity

As discussed, the creation of ATI has been a major step forward in terms of developing an Africa based investment insurer that can provide PRI cover for policy risks associated with renewable generation projects, as long as project structures facilitate the use of such instruments. However, whilst ATI is expanding both in terms of country membership and with a recent investment by the AfDB further increasing its equity by US$15m, its limited scale still creates underwriting constraints and knock-on impacts on its operational efficiency.

Due to its small scale ATI can only retain a small proportion of its exposures and needs to cede the rest to international reinsurance markets. Specifically, ATI is limited in that while it can provide cover for up to $100m per project, it can only retain $10m of that and must reinsure the other 90%. Whilst on one hand reinsurance is desirable as it is a way in which projects in Africa can access international underwriting capacity – an objective of ATI – the extent of it at the moment is not optimal.

There can also be potential issues as regards a mismatch between what it is willing to insure and the appetite of reinsurers for such risks. Reinsurers may be less familiar with the African renewables market, or may only wish to provide reinsurance for policies that pay out on an arbitral award. Even premiums of the levels of those currently charged to try and attract reinsurance may be insufficient. By way of comparison, whilst MIGA has an exposure limit of $220m of cover for any individual project, and $720m per country, it has a highly active reinsurance programme – the Cooperative Underwriting Programme – with private reinsurers, which both increases its reach and helps private insurers access opportunities that they would otherwise find it more difficult to do so. MIGA therefore plays an important role in providing reinsurers with the level of confidence necessary for them to support projects. The larger ATI becomes the more it will too be able to increase the extent of reinsurance capacity available to projects in Africa, which is important in the context of seeking to mobilise large volumes of private finance for renewables projects.

A further problem faced by ATI currently relates to the tenor of its cover. At the moment it can only offer ten years, whereas many projects need cover for some 15 years. However, ATI has been working with DFI's to find ways of lengthening the tenors that it can offer the market.

5.3. Challenges in the use of MDB guarantees

Several problems have been noted as regards the challenges of securing an MDB PRG:

- They are not typically seen as being widely available.
- Dealing with the requirements of MDBs in terms of detailed appraisal of guarantee opportunities and the need for a host government to provide an indemnification to the MDB lead to challenges in deploying PRGs as well as increasing processing times.
- Given what is involved, the usual approach of appraising each project seeking a guarantee is largely incompatible with the needs of smaller projects, and is largely discounted as a form of protection by developers of such smaller projects.

As the main provider of PRGs – at least in Africa – is the World Bank, many of these issues relate to the provision of World Bank PRGs. Indeed, an immediate issue is that there is arguably too much reliance on the World Bank for this kind of support, whereas as we will discuss, there are others, particularly the regional development banks, who could provide such support more systematically than they currently do (although the AfDB has started to issue guarantees).

Whilst the World Bank's Independent Evaluations Group (IEG) has also identified several issues associated with the deployment of World Bank PRGs, there are also issues as regards how the instrument is viewed by those seeking its protection, which do not recognise that it is an inherently different approach to PRI.

5.3.1. Availability of World Bank PRGs

For smaller projects in particular, there was a clear message from the developers interviewed that a PRG was not currently attractive, in terms of the effort and complexity required to secure it. It is considered as adding "*18-24 months*" to the [transaction] process. As each individual use of the World Bank PRG requires its Board approval, which itself will be based on thorough appraisal, it is not surprising that utilising this mechanism will add to a project's timetable when compared to PRI cover.

In addition to the feedback that we received from developers, there have also been well publicised examples where the World Bank has withdrawn from the provision of a PRG, such as in the case of Lake Turkana. As the World Bank is currently the main provider of such support in Africa, this can cause further delays to projects as alternative solutions are sought.

There is, however, perhaps a misunderstanding amongst stakeholders as to what the MDB guarantee approach really is. It is arguably wrong to see PRGs as "off the peg", stand-alone insurance products – although this is often what different investors, lenders and governments would ideally like. In reality the PRG is back-stopping government's commitment – it is government that is providing the guarantee and it is government that has to bear the consequences of the guarantee being called. In this sense the MDB is an intermediary that provides credibility to a government's own willingness to stand behind its commitments.

Thus, when considering whether to provide the PRG an MDB will inevitably take into account other considerations, not least the fiscal risks to the country of signing up to the obligations inherent in the guarantee. This is because if the project is unaffordable and leads to the guarantee being called, this could have highly damaging impacts on the country's economy, especially when it is remembered that the arrangement allows the country's exposure to be leveraged. In other words, whilst powerful, such commitments should not be entered into lightly. It is arguable that these issues are not widely understood as regards the nature and form of the support provided.

Independent Evaluation Group report and subsequent developments[79][80]

That is not to say that the World Bank has not been looking at ways in which it can improve the functioning of the PRG. The IEG recently conducted a review of the World Bank's guarantee products. Whilst it found that many of the delays in preparing guarantees were related to the inherent challenges of the nature of the approach, it also found that delays were also influenced by internal World Bank constraints, including a scarcity of the relevant financial skills required to prepare guarantees. There were also observed differences within the World Bank on the relative merits of using guarantees as opposed to providing loans.[81] Further issues included whether a sovereign counter-guarantee was always necessary and whether World Bank instruments should always be used as a last resort after MIGA and IFC instruments were deemed to be inappropriate, rather than evaluating their use on their own merits[82].

Following a consultation paper that sought views on potential improvements to its guarantee programme, the World Bank has recently submitted proposals to its Board aimed at improving guarantee operations, through different ways of addressing the problems identified by the IEG. A more explicit recognition of the need to align guarantee use with good policy was also recommended.

[79] http://siteresources.worldbank.org/EXTGUARANTE/Resources/guarantees_eval_full.pdf
[80] Modernizing the World Bank's operational policy on guarantees – approach paper. January 2012.
[81] Particularly PCGs for borrowing by public entities.
[82] In other words, PRGs are typically only turned to when it is not possible for MIGA or IFC to deploy their instruments.

As recognised, a substantive remaining challenge is to ensure that staff members are fully aware of the PRG's potential, given the greater technical challenges in its deployment – a challenge facing most MDBs. This relates specifically for the need for Bank Task Team Leaders to have specialist support in the preparation of guarantees.

Supporting smaller scale projects

Of particular relevance to guarantee support for smaller scale projects, recommendations for 'guarantee series' were also made in order to streamline the approvals process for smaller scale projects. *This involves the pre-agreement of an overall envelope of capacity upfront without having to have every individual guarantee approved by the World Bank's Board.*

This approach is being piloted in Uganda through the GET FiT programme (which the UK supports through the International Climate Fund) – in which an IDA PRG provides a back-stop to investors investing in smaller scale renewables projects, by providing a guarantee to banks providing letters of credit to such projects. This is a country programme which comprises a number of different elements targeted on addressing many of the underlying problems of such projects, not least upfront subsidies which help buy-down the costs of renewables solutions. Such an approach has the potential to be rolled out in counties in both Africa and Asia, albeit not necessarily with the same donors providing the same support in each instance. For example, the World Bank's current role could be undertaken by other entities, including the AfDB and potentially ATI (although the latter would likely be more expensive).

5.3.2. Relative scarcity of concessional Development Funds

A wider issue is the relative scarcity of Development Funds which the MDBs use to support projects in poorer countries, especially when the opportunity cost of their use is taken into account, given the alternate uses to which such resources could be put.

As set out, by Development Funds we are distinguishing between the MDBs' own capital resources and that of highly concessional IDA, AfDF or AsDF resources, which are raised periodically from different donors.

Whilst no doubt representing significant financial sums, they are relatively small compared to the range of uses to which they could be put. Their highly concessional nature makes them particularly attractive to poorer beneficiary countries; indeed, countries which are highly indebted are only allowed to borrow at concessional rates which make such financing an even more important resource. As such, there is considerable pressure on their use.

As discussed, some of the very large renewable projects in Africa – dams and their associated transmission links – require multi-billions of financing from the private sector – which will require PRG support. Table 5.3 sets out provides an impression of the scale of

financing required to finance some key projects (which typically excludes their transmission requirements).

Table 5.3: Hydropower pipeline in sub-Saharan Africa

Hydropower Project	Country	Region	Cost (US$m)
Ruzizi III	DRC / Rwanda	Central Africa	634
Rusumo Falls	Rwanda	Central Africa	380
Great Millennium Renaissance Dam	Ethiopia	East Africa	8,000
Gibe III	Ethiopia	East Africa	2,055
Give II	Ethiopia	East Africa	373
INGA 3	DRC	Southern Africa	7,600
Mphanda Nkuwa	Mozambique	Southern Africa	3,000
Batoka	Zambia/Zimbabwe	Southern Africa	2,800
Kafue Gorge Lower	Zambia	Southern Africa	2,000
Baynes	Namibia/Angola	Southern Africa	1,300
Cahora Bassa North	Mozambique	Southern Africa	700
Muchinga	Zambia	Southern Africa	315
Itezhi-Tezhi	Zambia	Southern Africa	238
Souapiti	Guinea	West Africa	850
Bui	Ghana	West Africa	800
Sambangalou	Senegal	West Africa	534
Bumbuna II	Sierra Leone	West Africa	519
Gouina	Mali	West Africa	343
Felou	Mali	West Africa	241

In comparison, as shown in Table 5.4, concessional resources available to African countries such as Mozambique and Zambia are relatively limited.

Table 5.4: Five-year average IDA and ADF flows by sector ($m)[83]

Sector	Mozambique		Zambia	
	IDA*	**ADF****	**IDA***	**ADF****
Energy	**12.7**	**7.7**	**9.7**	**7.8**
Transport	30.5	10.0	11.8	0.3
Water and Sanitation	9.0	0	4.2	0
ICT	0.2	5.1	0.0	0.0
Total Infrastructure	**52.4**	**22.7**	**25.7**	**8.1**

[83] IDA figures cover 2009-13, while ADF figures have been taken from 2008-12.

Sector	Mozambique		Zambia	
Total, all sectors	**213.9**	**68.8**	**59.1**	**35.9**
% Infrastructure on Energy	*24.2%*	*33.7%*	*37.7%*	*96.3%*

**2009-2013; **ADF 2008-2012 Source: World Bank Group, OECD/DAC.*

If a significant number of the types of projects identified above are to be supported with PRGs resourced by IDA and the ADF, without displacing other uses to which such concessional funds could be put, it is likely that additional resources necessary for backing guarantees will be required. To put into context, a PRG covering, say US$500m of debt, could involve taking up US$125m of IDA headroom, equivalent to half of Mozambique's annual average IDA allocation.

Despite the considerable political endorsement of such projects at the regional level in Africa[84], it is understandable why countries may not wish their scarce IDA allocations to be used for large scale renewables generation when the power is largely being exported to another country; that is, the host country is not the principal beneficiary[85]. This is a particular feature of hydro-power projects, such as, say Mphanda Nkuwa in Mozambique or Inga 3 in the Democratic Republic of the Congo where most of the power will be exported to South Africa. Whilst there are export earnings benefits to the countries involved, politically this is much less visible than if Development Fund resources were used to support infrastructure of more tangible use to their local populations.

Even if regional allocations of IDA (separate from each country's own allocation) were to be used, whilst helping to address this issue, the sheer scale of such projects, especially when the costs of transmission assets are added in, is such that they will still require substantial resources for guarantee reserves, as they come on stream over the next decade or so[86].

Using other resources

Given the pressures on IDA (AfDF and AsDF) resources for other uses, it is likely that more creative ways of providing the necessary financial resources for such PRGs are found. This may involve the deployment of more than one MDB's resources on a given project, as well as potentially considering other Trust Fund resources. As the rest of the world also benefits from lower carbon emissions and since such large projects (including geothermal) can make a meaningful difference, there is a strong case for using other resources to back guarantees, including those of the large climate change Trust Funds housed at the World Bank. Indeed, as part of the review of the World Bank's guarantee programme discussed above, recommendations were also made on using Trust Funds housed at the World Bank in a more flexible manner, which would also reduce the costs of providing support relative to using the MDBs' own capital.

[84] For instance, through the African Union and NEPAD.
[85] This is a common problem with renewables projects.
[86] ATI has also undertaken research into the insurance needs of Africa's large-scale power projects which also found that currently available insurance capacity would not be sufficient to address their needs.

5.4. Conclusions

The vast majority of our interviewees did not see the current availability, nature and cost of guarantees and PRI as being major constraints to investment in countries in SSA and in a more limited selection of poorer countries in Asia. This would appear to contrast with the findings of others who have considered this issue. These different findings may be due for instance, to country selection in which combinations of market structure, subsidy payment arrangements, income status, are more like Europe than our focus countries. Those interested in exploring these different results may wish to begin by analysing these different contextual differences.

However, there are still ways in which provision could be improved. In this section we have therefore looked at some of the continuing challenges of employing insurance and guarantee approaches to mitigating policy risks as part of wider approaches to attracting investment into renewables. It is possible to show that there have been welcome developments in each case, but challenges still remain as regards the design of PRI policies, particularly as regards the mitigation of liquidity risks arising from delayed payments or else potential delays in PRI pay-outs.

There is significant potential for ATI to play a greater role in supporting renewables projects in Africa, particularly as regards smaller and especially local investors in a way that MIGA currently finds challenging. ATI does not face the same cross border requirements as MIGA and its local presence helps it engage with smaller investors in a way that is more difficult for a Washington-based insurer, despite its stated desire to assist such clients through its small business unit. As we will discuss presently, though, a more active partnership between ATI and MIGA could be potentially beneficial for both. However, ATI's underwriting capacity remains limited, as well as its ability to reinsure on a cost effective basis. It is possible, that a more optimally scaled, larger ATI would be able to offer more attractive pricing to projects.

As regards MDB guarantees, there will inevitably be policy challenges in their use, irrespective of any operational improvements in their provision. **However, their potential to be deployed for all sizes of project – in structures which provide the non-or-delayed payment risks that face many projects – is well demonstrated. Going forward the challenge is to adopt guarantee series approaches to make them more accessible to smaller projects, whereas they are likely to require greater resourcing to fulfil their potential in the financing of mega projects.**

In the next section we set out our options for dealing with the issues identified.

6. OPTIONS FOR IMPROVING DEPLOYMENT OF PRI AND PRGs

Given the needs of different types of projects discussed in the previous section, together with some of the issues involved in the provision of such support, in this section we turn to options for improving the deployment of PRI and PRGs. Whilst many of the options are not necessarily renewables specific, they are nonetheless potentially useful in addressing the issues that renewables projects are likely to face in future, even if these are not currently seen as being biting constraints. The scope of the options focus is, however, limited to PRI and guarantee provision, not wider initiatives aimed at reducing project risks.

At this stage, we do not provide a comprehensive route-map for the implementation of different solutions as there are many different factors to be taken into account. Our aim has been to identify the potential solutions that might be considered further and the initial considerations that should be taken into account. Many of these involve detailed engagement with the relevant institutions, their shareholders and wider stakeholders.

We begin by providing a summary of our main options, grouped first by insurance and then guarantees.

6.1. Summary of options

We have grouped our options for consideration into insurance and guarantee approaches although they can both be utilised to achieve similar aims. Insurance approaches are more likely to be able to tap into private insurance capacity, even where the policies are provided by public institutions, whereas the MDB approach does not directly mobilise insurance capacity, but it can be used to mobilise equity and debt financing (including short term liquidity).

The high level options are summarised in Table 6.1 below.

Table 6.1: High level options

High level options	Rationale / benefits	Sub-options (where applicable)	Approach / next steps
Insurance approaches			
Improving PRI to address project liquidity issues	Improving policies to recognise the liquidity constraints that projects can face in the event of delayed revenue payments or else delays in arbitrations.	Having time limit clauses for arbitration before a pay-out is made.	Working with public PRI providers to introduce such rules into policies.
		Ensuring that policies are available to either support providers of liquidity (e.g. banks providing letters of credit) or else providing liquidity support as part of a policy.	Working with PRI providers and banks to develop and roll-out structures and approaches.
Increasing the capacity of ATI	Institutions such as ATI are much closer to customers in Africa and therefore often better positioned to deal with smaller projects. A larger capital base would also help ATI retain a lot more of its business, improving its profitability and potentially allowing it to lower its prices.	Increasing ATI's equity through the issue of a class of equity provided for in ATI's constitution (or an alternative approach that would achieve the same aims).	Interested donors to approach ATI's Board (it should be noted that several different donors and DFIs are already interested in supporting ATI).
		Establishment of a separate 'cell' dedicated to renewables projects	As above.
Increasing access to re-insurance for African-based institutions.	A problem facing smaller African institutions such as ATI is the ability to access cost-effective reinsurance.	Where possible, increasing ATI's access to MIGA as a reinsurer.	Engagement with MIGA on the issue.
		Supporting the AEGF initiative, whose reinsurance capacity can help support African- based institutions.	Consideration of providing 'first loss' grants for AEGF.
PRG approaches			
Increasing the availability of and improving access to PRGs.	PRGs are an effective means through which MDBs, with the support of host governments can support the mobilisation of private capital.	Helping to mainstream the use of PRGs within MDBs.	Donor shareholder engagement with the relevant institutions.

High level options	Rationale / benefits	Sub-options (where applicable)	Approach / next steps
Increasing use of 'series guarantees' to support country specific renewables programmes.	PRG use can be cumbersome for smaller projects in which series approaches can reduce transaction time and cost, especially for smaller projects.	MDBs allowing 'series' or umbrella guarantees (i.e. without having to approve each specific project).	Discussions with MDBs to roll out approach, building on the GET FiT approach.
Allowing PRGs for renewables projects to access Climate Trust Fund resources (with or without host government sovereign guarantee).	Larger diversified climate Trust Funds held at MDBs should in theory be able of use as guarantee reserves given their scale. These should be lower cost than if the MDBs were to use their own capital resources. These mechanisms could be used to channel further resources to support guarantee / insurance resources.	Trustees will need to agree the extent to which they can be used for guarantee purposes; the extent of any gearing; and whether a sovereign counter guarantee should be required.	Contributing donors will need to agree parameters with MDB hosts of such funds.
Providing bespoke resources to supplement those of Development Funds (e.g. IDA) to support renewables specific projects.	The use of Development Funds to reserve PRGs is cost effective for projects, however such resource are relatively scarce. Larger projects, with significant decarbonisation benefits may find it difficult to access them to the extent required.	Increasing availability of financial resources for PRGs, for both series guarantees and large scale projects.	Discussions with MDBs as to the likely guarantee resource requirements for such projects and whether additional funding is required. This option should only be considered further if and when additional resources are required.

6.2. Options for improving PRI

We evaluate each of the options set out in Table 6.1 for improving PRI.

6.2.1. Improving PRI cover to address liquidity concerns

As discussed, of all the potential issues identified, the ones that concern investors most are those which can cause liquidity issues for projects. The two main potential drivers of this are: first, in the event of a dispute, the time taken either to recognise that an event has crystallised (for instance, an expropriation or else contractual breach) or for arbitration to take place; and second, payment delays caused by the poor solvency of off-takers. We have identified two further approaches to addressing these problems.

Stricter time limits

In addition to the improvements recently made in policy design by institutions such as MIGA and OPIC, a further recommendation would be to have stricter time-limits within PRI policies to encourage faster recognition of when an event has crystallised. An aspect of this could involve putting much stricter time limits on the time allowed for arbitration processes to take place[87].

This is a difficult area as it tends to run counter to the approach pursued by many insurers, particularly private ones. As such, our view is that public PRI providers should take a lead in how claims processing might be accelerated. Once these norms are adopted, it may be easier for private providers to adopt them too.

PRI back-stops to liquidity product providers

As set out, OPIC has helped provide projects where there is a dispute over tariff level with business income loss protection. An alternative means of providing liquidity support is for a commercial bank to do so, in the knowledge that it is protected by insurance. This can be structured as a NHSO-type cover, in which the provider of the credit product (letter of credit, stand-by facilities, etc.) can draw on a policy when it is not reimbursed in a timely manner by the state entity responsible for doing so. With such 'on demand' protection lenders would be in a better position to provide a greater scale of liquidity support to projects. As discussed previously, this is essentially how PRGs are often structured, with the provider of the credit instrument being the beneficiary of the PRG. This can be called when the credit provider is not repaid.

From an insurance perspective, the insurer is not providing credit itself, but rather is insuring a credit provider in which there is a clear pay-out trigger event; that is, the lender not being reimbursed within a given time period.

[87] This should also be provided for in the underlying contract.

It is possible that private insurers may be less interested in providing this kind of support as they may still see it as being more credit related. Our evaluation is that it is also best explored further by public insurers being willing to insure providers of liquidity to projects; such liquidity requirements could be substantial.

6.2.2. Increasing support to ATI

A key message that came from several of the entities consulted is that locally based institutions are likely to be able to provide a quicker, more responsive service, especially to small projects, than larger internationally based ones. In addition, the transaction costs faced by international institutions, especially as regards smaller projects, can be disproportionately high.

The ATI model provides a good model for how smaller countries can group together to provide a better tailored approach to the needs of investors. Since its establishment ATI has continued to expand its country membership. We are not, however, aware of such models existing in Asia, although there is the potential to adopt the ATI template if deemed appropriate.

A challenge for such models is to reach an efficient scale of business which enables their policies to be cost effective. In part this relates to scale of operations, a further aspect, such as in the case of ATI, is the amount of business that they retain.

As regards ATI, a first approach to reducing the cost of locally provided insurance is to increase its scale so that a higher proportion of insurance premia are kept in-house. The second approach is to improve access to cost efficient sources of reinsurance.

Increasing ATI's equity base

The advantages of increasing ATI's equity base include:

- The provision of more tailored support for small to medium sized projects that are more difficult for larger institutions to service.
- A greater focus on supporting locally-based African businesses.
- The relationship that ATI has with its member governments means that it can take risks that commercial insurers cannot.
- Its ability to provide insurance to banks offering liquidity products such as letters of credit[88].
- Improving access to insurance for small projects given ATI's work with the Renewable Energy Performance Platform (REPP)[89].

[88] ATI has provided insurance to a commercial bank providing a 180 day bridging product to projects that are in dispute.

- Greater potential to access private sources of insurance capacity, relative to MDB guarantees, through reinsurance markets.

A simple way to increase ATI's overall capacity would be for donors to make an investment in its equity base which will also allow for a gearing of the capital introduced. ATI's existing structure provides for third party capital to be introduced alongside the capital of its country members. The most straightforward option would be for this to comprise an equity investment, in the same way as AfDB. Under ATI's constitution any such investment could be leveraged five times, with roughly 50% of the premiums retained within ATI. As such, an investment of equivalent size to that of AfDB would enable US$75m of business to be supported. At ATI's prevailing premium rate this would result in US$2.7m of gross revenues being generated annually, with 50% of this being retained, plus income from reinsurance commissions.

In terms of exit, one option would be for ATI to buy back the donor equity at cost, after say 15 years by which time ATI will have made accrued sufficient returns from using the donor capital, to allow the donors to exit (should they so wish). During the investment period, donors might also receive an annual dividend. In order to be counted as ODA the grant element of any such investment would need to be at least 25% on a net present value basis, after returns have been discounted at a 10% discount rate. As such it would be important to calibrate the arrangements such that the ODA classification could be achieved.

Our evaluation is that supporting ATI as a partner in the provision of insurance generally is something that makes sense to explore as the institution has the potential to support investment in Africa across a broad front. Whilst an equity injection would seem the simplest route to achieving this, other approaches such as redeemable grants, could also be explored with ATI's management.

Dedicated capital to support capacity for renewables only projects

In the approach outlined, however, any such investment could not be restricted for support to renewables projects. This could only be achieved through placing dedicated capital within a special purpose Trust or 'cell'. This capital would be used to underwrite the non-payment (and any other risks) alongside the primary insurer (in this case, ATI). There would be options around the nature of the risk sharing between the two entities as regards who would take what loss exposures and any consequent sharing of the insurance premium received. This would need to take into account that the specially created vehicle would not be able to leverage its own balance sheet, because it would be unlikely to have a credit rating, with potentially much of the capacity coming from the established insurer; that is ATI.

[89] The proposed REPP facility being developed by the EIB will be a "one stop shop" for small projects looking for advice on risk mitigation. As part of the proposed approach the intention is to seek to package up projects together in order to help them to attract insurance. Discussions have been ongoing with ATI to see how this might be achieved.

Whilst possible, our evaluation is that this approach would be more complicated than a general capital injection. However, it may need to be considered for practical reasons in the event that any capital provided to ATI needed to be restricted to renewables projects.

6.2.3. Improving access to reinsurance capacity

In addition to their own capital resources, insurers such as ATI also need to be able to access cost effective reinsurance capacity. The creation and building of partnerships between locally-based institutions and international ones is a way of achieving this.

Increasing ATI's access to reinsurance capacity through MIGA

The role of international entities such as MIGA is important in this respect as such institutions may be to provide more reinsurance capacity to entities such as ATI, as it does with some of the major bilateral ECAs[90].

Whilst ATI is structured in a manner that aligns the incentives of its member state shareholders with those insured, as discussed previously it has only limited underwriting capacity because of the scale of its balance sheet.

Although ATI has a memorandum of understanding with MIGA to conduct business together, it is not clear how actively that this happens. If MIGA were able and willing to insure the same types of risk as ATI there would be a greater potential to either co-insure or else more radically, for MIGA to provide cost effective reinsurance to ATI. It may for instance, be possible to establish a treaty reinsurance arrangement in which ATI could cede a proportion of its business to MIGA. There would appear to be a complementarity between ATI's greater ability to access smaller projects in Africa because of its local presence and MIGA's overall greater resources, enabling the latter to access smaller projects more easily than it otherwise would be able to do so. If it were possible to do, this would seem to benefit both parties and could be seen as a further extension of the World Bank Group's support to ATI.

Providing such reinsurance capacity to ATI will likely be more challenging than to more established bilateral ECAs; it would for instance, most likely only be for cross-border projects involving convertible currencies. If the risks involved were too great for MIGA an option to explore could be for donors to establish a risk-sharing mechanism with MIGA; for instance, a Trust Fund that could share in any losses, possibly on a first loss basis, as a donor has worked with MIGA to support its work in the Palestinian territories of the West Bank and Gaza.

Our evaluation of this approach is there is scope for a more active dialogue between MIGA and ATI as regards ways in which the former might be able to offer more reinsurance

[90] Examples of MIGA providing reinsurance to bi-lateral ECAs include cover to the Export Credit Insurance Organisation of Greece (ECIO) in respect of an investment made in Bulgaria; as well as to the Spanish ECA for an investment in Algeria; and the Belgian ECA for an investment in Russia.

capacity to the latter, on PRI covers which are consistent with MIGA's convention. It may be necessary, however, for donors to be willing to bear some of the risk of MIGA undertaking such a role.

AEGF

The African Energy Guarantee Facility (AEGF) is an initiative currently being developed by the European Investment Bank (EIB) which blends different types of capital to provide a reinsurance support to partner insurers in Africa as part of a mutual insurance arrangement.

In this approach, donor grant monies are subordinated to capital provided by either MDBs or DFIs, which in turn is subordinated to the capital of commercial insurers, thus leveraging these resources. Participants will form a mutual insurance company in Luxembourg, which is a low cost base for insurers. As a mutual, it is only participating institutions, several of which are based in Africa (including ATI) who will be able to access the AEGF's reinsurance capacity.

Following discussions with the EIB we understand that the AEGF is currently looking for a further development partner to contribute €5m of grant monies, alongside those of the EU-Africa Infrastructure Trust Fund (EU-ITF), in its tiered structure. This would represent a 'first-loss' in the sense that this would be the first monies used to cover any losses[91]. Further details on the AEGF approach are provided in Box 6.1.

[91] Similar approaches have been used by MIGA to support PRI provided in more difficult contexts such as Gaza and the West Bank. In this approach, donor grant monies were placed in a Trust Fund, which would be drawn on first in the event of a policy being called; that is, before MIGA's own capital. This reduces the risk exposure of MIGA and enables it to operate in contexts which it otherwise would not be able to.

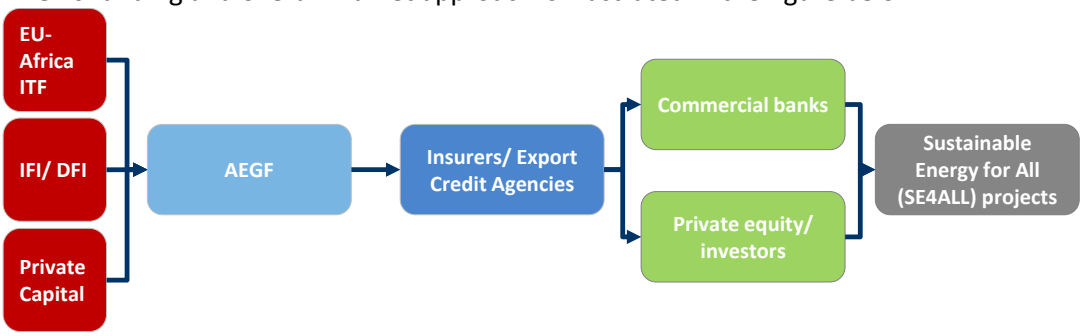
Box 6.1: AEGF

The AEGF is an initiative of the EIB, working closely with the European Commission. It was set up to support delivery of the objectives of the UN's SE4All initiative.

AEGF's specific objective is to "*provide credit enhancement/ risk mitigation products for energy sector projects in Africa*". It will provide re-insurance for existing insurers providing cover for these projects. Over time, it expects to both develop new products, and to become the centre of excellence in risk mitigation for energy in Africa, as defined by the SE4All programme.

The AEGF will be funded from three sources: grants such as from the EU-Africa ITF, investments from international financial institutions and donors, as well as private capital.

AEGF's funding and overall market approach is illustrated in the figure below



AEGF will provide reinsurance and technical assistance for insurers and ECAs, which already have the delivery channels for insurance in Africa. This insurance will be taken up by both commercial banks (providing loans) and equity providers, to support SE4All projects.

By supporting both ATI and AEGF donors would be helping to provide both additional insurance and reinsurance capacity.

Our evaluation is that AEGF has the potential for increasing the provision of reinsurance in Africa, although this would not be restricted to renewables investments. However, there may be some issues regarding the AEGF being essentially captive to the insurance participants in its financing structure, given the use of any grant money, which would need to be considered.

6.3. Options for increasing the availability of and access to MDB guarantees

The options and recommendations for improving the availability of and access to MDB guarantees is for all MDBs to ramp up their programmes in a flexible manner, including in terms of using series guarantees. Successful programmes should also be able to access a greater range of financial resources, including from climate technology funds.

6.3.1. Increasing the use of PRGs by MDBs

A first option is for all MDBs to use their guarantee programmes more systematically and flexibly than they currently do. This includes not only the World Bank, AfDB and AsDB, but

also other RDBs outside of the immediate focus of this study, including the Caribbean Development Bank and the Inter-American Development Bank.

Systematic use

Whilst being the main provider of PRGs in poorer countries, as identified in the IEG report, the World Bank should be seeking to deploy its guarantees more systematically. Whilst it faces challenges in doing so by taking a strong lead and demonstrating how the instrument can be used is likely to encourage other institutions to do the same.

AfDB's guarantee programme, which would appear to be largely based on that of the World Bank, is still embryonic. The AfDB is clearly the most obvious institution which could develop as an alternative source of such guarantees within Africa as it becomes an increasingly influential player. Respect for the AfDB amongst African governments may also make them more willing to enter into the necessary indemnification agreements with it.

There may also be potential for some of the regional African development banks, such as the East and West African development banks to co-guarantee with the AfDB, although this would be more of a longer term ambition.

The Inter-American Development Bank whilst being a leader in the provision of guarantees, has issued fewer in recent times and could also potentially use guarantees more to support projects.

There are inevitable challenges in rolling out such programmes, but they have the potential to support the mobilisation of significant amounts of private capital, including for renewables investments. Shareholders in these institutions can use their influence to promote such programmes.

Our evaluation is that increasing the number of providers of guarantees would considerably assist in improving access to such support by renewables, as well as other projects, raising the availability of private capital. All institutions will, however, need to enhance their processing capabilities through appropriate recruitment, secondment and training policies.

Flexible use

One of the constraints in utilising the PRG has been its lack of suitability for smaller projects. The GET FiT programme in Uganda has demonstrated how the instrument can be used for smaller scale projects, through the use of series guarantees.

A greater number of MDBs providing series type guarantees would be in a position to support developers of and lenders to smaller scale projects, in the event that such support became necessary – for instance, to provide liquidity in the event of delayed payments. As most developing countries are supported by one or more MDBs this could be an effective way of rolling out support to projects in all countries.

6.3.2. Allowing Climate Trust Funds to be used to resource PRGs

As well as increasing the number of institutions that can offer such guarantee products, a complementary approach is to look at the different types of funds that can be used to resource such guarantees. As set out, this is based on the fact that it is the role of the institution providing the guarantee that is likely to be more important than the source of funding for it. In short, the role of the MDB is essential in ensuring alignment and addressing risks of moral hazard. This logic would suggest that MDB's might be able to provide a greater volume of guarantees if they were able to access other sources of funding. This also involves the issue of whether there are circumstances in which such PRGs – or indeed PCGs – can be deployed without the need for a government counter guarantee. This is usually used to address moral hazard risks, but there can be situations in which incentives are already sufficient to avoid the need for this[92].

With a counter-guarantee

All of the major MDBs are hosts to significant Trust Funds, in addition to their concessional Development Funds. These can be for their exclusive use or often in the case of the World Bank, it performs the fiduciary trustee role, with other approved implementing entities having access to the resources. Many of these trusts are of significant scale – such as the Global Environment Facility (GEF) and indeed be accessed by several different institutions[93].

Just recently, other climate specific trust funds have been used to back-stop arrangements. This was the case in a non-IDA country, the Philippines which would otherwise have had to seek an IBRD guarantee, which was able to access the multi-billion dollar Clean Technology Fund (CTF) for second loss support[94]. As IBRD guarantees involve the World Bank using its own capital, this would be more expensive than using CTF resources.

We understand that donors are content for such resources to be used in this way, as long as there is a counter-guarantee.

Without a counter-guarantee

The formal counter guarantee or indemnification that is required in using IDA and other Development Funds can sometimes be seen as being the "belt and braces" which secures full alignment of interests. However, as long as strong alignment can be achieved in other

[92] The CTF is being used in the Philippines by the World Bank to reserve a partial credit guarantee provided to a local institution which provides credit guarantees to lenders to renewable energy projects. There is no host government guarantee as it is considered that sufficient alignment between the parties already exists, given that the CTF is being used to provide 'second loss' support. The alignment is therefore created by the fact that the local credit guarantee provider will take a first hit in the event of a guarantee being called.

[93] These so-called Financial Intermediary Funds (FIFs) are typically the largest trust funds located at the World Bank. Whilst the World Bank undertakes a fiduciary trustee role, other international institutions are accredited implementing entities that can access the available funding.

[94] First loss support will be provided by an existing institution which provides partial credit guarantees for energy efficiency projects.

ways, it may not always be the case that such an indemnification is required. For instance, if a host government were to have much at stake through putting itself in a first loss position in the issuance of a guarantee, an MDB hosted trust fund could potentially take the second loss position as there is a powerful incentive for the government to ensure that the guarantee was not called, as it would be a significant loser in such an event.

IFC is currently exploring ways in which CTF monies could be used to support private sector sponsors and lenders by helping to mitigate policy related risks, without having formal counter-guarantees in place[95]. Although moral hazard risks cannot be mitigated as successfully as through a sovereign counter-guarantee, where a strong alignment of interest can be demonstrated, such risks can be reduced considerably.

In evaluating this option it would seem that climate change Trust Funds have the potential to supplement either MDBs' own resources or else Development Funds such as IDA and the AfDF and AsDF, in order to increase the volume or scale of the guarantee offered, thus reducing pressure on relatively scarce resources. This will also be more cost effective than using MDBs' own resources. Moreover there may be some instances where a strong alignment of interests can be structured, which may reduce the need for full sovereign counter-guarantees, although these would need to be approached on a case by case basis. The extent of any allowed gearing, risk and fee-sharing with the MDB (or DFI) would also need to be agreed in particular contexts.

6.3.3. Increasing resources for renewables focused guarantees

Notwithstanding any actions to improve *access* to climate change funds, depending upon how strong demand from renewables projects for support becomes, additional resources may need to be made available to support activities that reduce both carbon as well as having major development impacts, especially in poorer countries. These are:

- **Improving rural energy access:** resourcing guarantees that backstop country initiatives aimed at improving access to electricity in rural communities through development of mini-grids supported by renewable sources such as biomass, hydro, solar, etc.
- **Large scale carbon displacement**: providing resources to co-guarantee projects that will have the greatest impact on carbon emissions, particularly large privately financed hydroelectric schemes and potentially geothermal in poorer developing countries.

Increasing access

Most large scale generation schemes are of most relevance to those households and businesses currently connected to national grids. Within Africa overall, whilst varying by

[95] An example of this is in Ukraine where IFC has been looking at subordinating its senior position in the event of a regulatory change to the level of support for renewables projects.

country, rates of access to mains electricity remain low, particularly outside of the main urban areas. Moreover, because of the scale of the geographies involved, the extension of national grids across vast distances to reach remoter areas is prohibitively expensive, with a consequent need for household-based, or mini-grid solutions.

It has been estimated that, of the over one billion additional people in sub-Saharan Africa requiring electricity by 2030, over 600 million people (close to 60%) will be best served with a grid connection, whilst over 400 million people (over 40%) will be best served by decentralised energy solutions. This will involve the development of isolated, mini-grid or distributed generation solutions. Renewable energy solutions will often be preferable to fossil fuel alternatives, in terms of lifetime costs and reducing the need for fuel imports.

Such programmes are, however, very challenging. The GET FiT approach has been useful in providing a route map for how such a programme can work, which has the potential to be rolled out to many different countries, not just in Africa but also in some Asian countries, although the institutions involved and the precise calibration of the model will undoubtedly need to be flexed to meet the requirements of the specific contexts.

If such an approach is to reach scale it is likely to require additional resources, given pressure on existing Development Fund resources. As such, an option is to set out a dedicated resource pool to supplement these funds to assist in the role out of the GET FiT approach to other countries.

Our evaluation of this option is that the GET FiT approach provides a model that can be rolled out in many countries, with the potential for different MDBs to participate. However, it is possible that additional resources will be required to provide guarantee reserves. This could be achieved by channelling more resources to the Climate Trust Funds for these purposes, otherwise more bespoke resourcing may be required, if Climate Trust Funds cannot be utilised for such purposes.

Large scale carbon displacement

Whilst all renewables projects to varying degrees will help reduce carbon emissions, it is the larger projects which will have the greatest impact, as regards displacing fossil fuels, given the economies of scale in both renewables projects themselves as well as in their project preparation and transaction costs. To be specific, despite the ecological challenges that need to be addressed, large dams and their associated transmission links can play an important role in, say, replacing the thermal plants currently responsible for generating a significant degree of South Africa's power. Most of these hydro schemes would need to be built in Mozambique and Zambia, at considerable distance from South African users[96].

Whilst donors could provide support in different ways, one approach would be to set aside a given amount of resources, which would be used as a reserve for the MDB providing the

[96] Tanzania also has a number of potential hydro schemes currently being developed, albeit not of the same scale and more for the East African market.

PRG alongside its own resources, although the optimal structuring and risk sharing of such approaches would need to be agreed with the MDBs.

As set out, to some degree this is already being considered in terms of use of the CTF for co-financing alongside the resources of the different MDBs offering PRGs. However, in addition to our proposal that Climate Trust Funds are accessed to support the provision of contingent support to projects, there may be a need for donors to provide additional funding for guarantees in the future when several large projects enter their financing phase, as these requirements are likely to be immense and unlikely to be met through existing Development Fund resources.

6.4. Summary

In the discussions above we have explored a number of options for improving the provision of PRI and MDB guarantees which can address the types of risks of most relevance to renewables generation investors. These have ranged through improving the design of PRI policies through to providing bespoke resources to increase the capacity of PRI and guarantee providers. In the case of the latter, in the next section, we consider how such resources could be channelled to providers.

7. INSTITUTIONAL OPTIONS

The preceding analysis has shown that the deployment of insurance and guarantees could be improved through changes to existing policy covers, more active and flexible use of MDB guarantees, as well as through allowing the latter to access climate change Trust Funds. None of these requires the creation of a new institution, although in theory a new institution could be created to provide either insurance or guarantees to clients.

Several of the initiatives require additional funding and there are choices as to how this could be provided. In this section we therefore consider two institutional options. In the first, new resources could be channelled to existing insurance and guarantee providers through the establishment of a new Trust Fund, which would act as a 'wholesale funder'. In the second, a new institution would be created which could either provide support at wholesale or retail levels. The differences between the approaches include the form of the support, for instance whether this is funded or in the form of a guarantee, the ease of establishment, running costs and the likely ODA treatment of resources committed. Whilst we do not believe that there is strong evidence to suggest a need for the latter approach solely for the scope of purposes covered in this study, it useful to show the additional complexities in pursuing it as an option.

7.1. Creating a new Trust Fund to provide resources for insurance and guarantees

All of the three main initiatives requiring funding, set out above could be undertaken separately, which, for instance, would likely be the appropriate route if different donors wished to support different underlying activities (support to ATI, AEGF etc). If donors wished to work collectively, any additional resources to support a higher level issuance of insurance and guarantees could most likely be channelled through an existing vehicle, such as the CTF, thus avoiding the set-up costs of a new arrangement. This would also be a preferred route in that the scale of the CTF allows it to both absorb and allocate risks across a broader portfolio.

If, however, for some reason this was not possible, alternatively, a new single vehicle could be set up, established, again most likely as a Trust Fund[97]. This would work with all investments being channelled through such a Trust, in the sense that donors would provide grants to the Trust which could then either be held there as:

- direct *equity* investments, with or without pre-agree exit arrangements, such as through a put option (which could form an approach for an investment in ATI);
- *callable capital*, in which resources were held as a guarantee or as insurance reserves, which could be drawn on in the event that a guarantee or insurance was

[97] Whilst it could be established as a FIF at the World Bank, its scale may not make this an appropriate option, with an approach such as the PIDG Trust being an alternative option. MDB Trust Funds are typically established before individual uses are identified, whereas the donors have typically only granted money to the PIDG Trust once specific uses – largely investments – have been identified.

called (which could be an appropriate way of working with the MDBs on either larger scale guarantees and guarantee series, as well as on specific renewables opportunities with ATI);

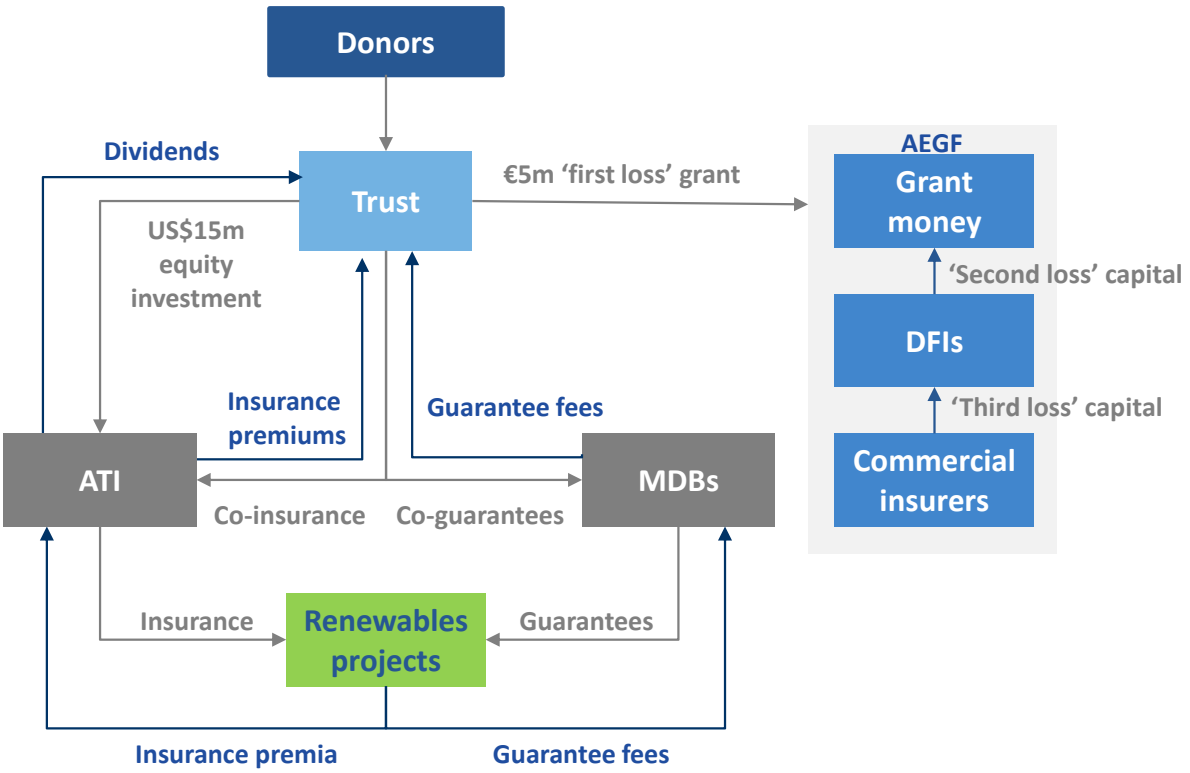
- *redeemable grants*, which would be returned to the Trust where certain conditions were met – for instance if there were no call on the grants (this could be explored as an alternative to equity investments); and
- *grants,* where pure subsidy was required to address affordability issues or clear market failures, as well as any technical assistance requirements.

Donors would only capitalise the Trust when they wanted to support a particular initiative; that is, they would not need to fund ahead of need. Any dividends earned or capital released or repaid could be used for additional grant activities; for instance, donated to another climate Trust Fund. The funds granted would then most likely qualify as ODA, as the funds would not return to donor governments.

Depending upon the nature of the support provided, funds could be kept under the Trust's management – for instance in the case of a guarantee reserve – or else transferred to the recipient entity; for instance, by way of an equity investment.

These potential arrangements are illustrated in Figure 7.1.

Figure 7.1: Trust operations

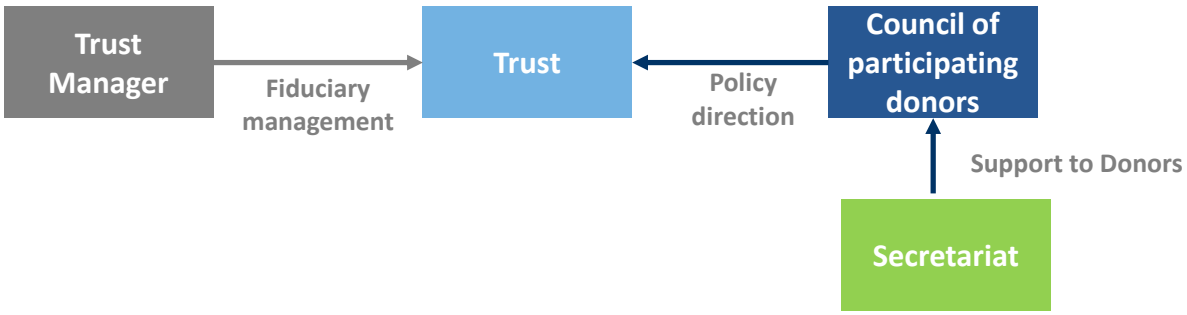


This would essentially be a source of 'wholesale' funds which could be provided to other established institutions, and would utilise their balance sheets, thus avoiding the need to create a new institution to gear the capital provided. In other words, the balance sheets of the institutions in question would provide the gearing[98], therefore avoiding the challenges in the case of establishing a new institution.

The Trust would have Trustees, who would have a fiduciary responsibility to manage the funds in trust, with donors having the final say as regards which types of commitment to support, through an appropriately constituted donor council or equivalent.

Such a structure is illustrated in Figure 7.2.

Figure 7.2: Trust governance arrangements



Each of the activities supported and illustrated in Figure 7.1 would, however, have a different risk and return profile; the arrangements would also have differing potentials in terms of their ability to mobilise capital for renewables projects.

[98] Gearing involves having net exposures – ie maximum losses – which are greater than the amount of capital, either paid in or callable. Profitability increases with gearing as premiums or fees are paid on all exposures.

7.2. Creating a new financial institution

The type of Trust Fund arrangement discussed above would avoid the need to create a completely new institution as the resources could be used to support existing institutions and arrangements. Whilst there is the option of creating a new institution there are several reasons as to why this would be difficult.

Most of the ways of mitigating policy risks have involved using existing institutions that have developed ways of dealing with moral hazard and adverse selection risks over a period of time. They have also had the time to develop well diversified portfolios of risks, reducing exposures to particular categories of risk (such as would be the case for an insurance institution focused purely on the types of risk considered in this study). In this instance, there are several further challenges in creating a new institution, including the time taken to establish one and the relatively more complex structures of insurance vehicles when compared to other financial intermediaries.

The example of ATI is instructive in considering the time taken to set up a new institution. ATI was founded in 2001 (that is, more than a decade ago). It is still struggling to reach an optimal scale which has implications for its profitability and its operational efficiency – because of its relatively small scale it still cedes a very high proportion of its business. This suggests that it takes a long time to build up a new institution – particularly a multilateral one – with any benefits only being realised well in the future. The example of another new institution, Africa Risk Capacity (ARC), also suggests that at best a new institution would take several years to establish.

Relative to fully cash collateralised financial entities, establishing insurance vehicles can have particular challenges. We note that an insurer typically has a mixture of "paid in" and "callable" capital. The former is liquid capital which as the name suggests has been deposited in the insurer's bank account by shareholders. "Callable" capital, on the other hand, has not been paid in, but is available to the insurer if required in the event of claims exceeding the insurer's immediate paid in resources. For example, the World Bank can call on $178 billion[99] of callable capital from its member governments around the world, although in practice it has never done so[100].

To be economically efficient, it is usual for an insurer to gear both its paid-in and callable capital base (that is, its total subscribed capital). This occurs when the insurer's net retained exposure exceeds its paid-in capital base. Because in such an instance the insurer has less capital than its total exposures, for the insurer's policies to be credible, it is necessary for the insurer to have a credit rating. In issuing a credit rating, a ratings agency will consider issues such as the institution's available capital – paid in and callable – and the extent of the

[99] Source: World Bank.

[100] The balance of paid-in to callable capital required differs between types of insurances. Sovereign risks – faced by the World Bank – typically require a lower proportion of paid in capital relative to more commercial risks.

diversification of risk within its portfolio of covers. In addition, an investment grade credit rating plus a minimum capital requirement are required in most legal jurisdictions for an insurance licence to be obtained, a necessary condition to provide insurance.

If, however, there was a desire by the UK government to set up a bilateral development bank[101] to provide a wide range of development services, that would be a different matter as its sovereign lending activities would be likely to comprise a mix of paid-in and callable capital, if it were to follow the model adopted by the MDBs. It would also have a very high credit rating if it were backed by the UK Government. In terms of some of the approaches outlined, such an institution could, for instance, either provide a PRG by itself or else co-guarantee alongside the MDBs on a pari-passu basis.

Setting up a new institution makes best sense if it were part of something larger which would justify the costs involved.

[101] Or even an international division of the Green Investment Bank.

8. SUMMARY AND CONCLUSIONS

8.1. Introduction

We conclude by summarising our findings under the following headings:

- the *extent of policy risk* for renewable energy projects in developing countries in Africa and Asia;
- the *usefulness of existing instruments* in addressing policy risk in renewables investments;
- our *recommendations* on how policy risk is best addressed; and
- how *new donor resources* could increase the provision of insurance and guarantees.

8.2. The extent of policy risk in Africa and Asia for renewables projects

All investors and lenders in any context are aware of the risks of governments changing their policies. Creating a predictable environment for investment is therefore a long term imperative for attracting investment. This has many aspects and creating such enabling environments for infrastructure remains a major challenge. 'Policy risk' per se, is not unique to renewables generation; indeed, uncertainty regarding the investment environment is one of the reasons why there are so few international infrastructure project developers operating in Africa, in particular.

The feature, however, that potentially puts renewables projects at greater risk to non-renewable IPPs is the fact that they are likely to require subsidy support in which projects are at risk from legal retroactive changes to levels of that support. In most African and Asian contexts, unlike in many European ones, however, subsidy support is contracted as part of a PPA with a state-owned off-taker. This means that in the first instance, projects have contractual rights to the support which they can seek to have honoured through the courts, rather than just the policy commitments often observed in more developed economies.

All projects will seek to protect themselves against other changes in policy or law that governments may make over the life of the project. This will typically involve an allocation of such risks, in which the IPP will seek to ensure that the contracts pass through the impacts of unfavourable policy changes to the purchaser of the power. These can even include changes to corporate tax rates. Investors and project financiers will not finance projects unless they believe that such legal protections against unforeseen policy changes are sufficient.

Ensuring appropriate contractual protections for projects, including but not limited to a PPA, is therefore the first thing that project developers will seek prior to making an investment. The interviews undertaken with a range of active developers in both Africa and Asia emphasised the primacy of securing a PPA.

8.3. Usefulness of existing instruments in addressing policy risk

Whilst lenders may seek full comprehensive cover for their loans, which can be drawn on if there is a default on their loan, international project developers will seek two main forms of support: PRI or MDB guarantees, both of which have been designed to protect international investors and lenders where they cannot achieve fair legal redress. The World Bank PRG[102] is also able to support domestic investors who are otherwise excluded from the cross border support provided by most PRI providers. Both are typically additions to and not alternatives to contractual protections. Whilst many of the investors and lenders interviewed during the course of this study were not overly concerned regarding non-payment risk, most closed IPP projects of any scale will have either MDB guarantee or PRI support.

Whilst in principle both PRI cover and MDB guarantees are available there is a range of reasons why securing such protections is not always straightforward:

- First, a key reason why support may not be available is because the provider does not believe the risk is something that *can* or indeed *should* be insured or guaranteed. Private and public insurers may not provide support because the underlying risk is not adequately addressed in the project's structure, for instance, if the incentives of the different parties are not sufficiently aligned. Moreover, in the case of MDB guarantees, where such risks pose such significant budgetary risks to government MDBs may not provide them for policy reasons. Ultimately, insurances and guarantees are not substitutes for good project design, but rather back-stops to be drawn on as a last resort, when all other avenues have been exhausted – which is reflected in the nature of the support provided. Thus, good project design which de-risks projects is a first step in attracting finance and insurance or guarantee support.
- Second, the public institutions may not have the reach, capacity or even interest to provide such support. For instance, ATI in Africa has limits as regards the scale of support that it can offer to any one project, which has affected its cost effectiveness. As regards smaller projects, the transaction costs involved for a major international institution can be disproportionate.
- Finally, the detail of the policy may not reflect the precise manifestation of the risks faced by investors. Often, these are around temporary liquidity issues created by the poor solvency of state owned power purchasers. Whilst these might be addressed through the provision of different types of credit instruments (such as letters of credit, escrow accounts or stand-by credit facilities), the extent of these resources can be limited in the absence of insurance protections for the credit providers.

It is difficult to say the extent to which, amongst many other factors, these issues prevent investments taking place; not least because different ways of mitigating project risks can often be found. However, at a minimum they are likely to slow down project development

[102] See for example CPI's review of World Bank guarantee instruments, which reaches the same conclusion

and financing processes and most likely increase financing costs, with benefits arising from addressing them.

8.4. Recommendations

Our high level recommendations have a number of strands, comprising:

- The *creation of an enabling environment* for renewables projects.
- *Seeking to address underlying risks* in project design so as to make the projects more insurable.
- Focusing on *building on existing initiatives and approaches* rather than trying to create new ones.
- Finding ways of *increasing the amount of capital available* to create insurance and guarantee capacity.

8.4.1. Creating an enabling environment

As set out, government policy changes can impact unfavourably on any investment, irrespective of the technology involved. The main longer term approach to be pursued by governments to increase investor confidence needs to be one of creating a predictable investment environment. This is the same as for other infrastructure investments. Creating such an environment is based upon many measures, not least the long term commitment of government to such. The Public-Private Infrastructure Advisory Facility (PPIAF) promotes this and is a wealth of information on such issues.

8.4.2. Addressing underlying project risks

Our second recommendation is to seek to improve project fundamentals to reduce project risks and thereby increase their ability to attract insurance and guarantee support. Whilst renewables generation projects do have a different risk profile to non-renewable generation projects, with both positive and negative aspects, the more robust the underlying commercial arrangements, the more likely the potential to attract insurance and guarantee support. This is because the better the underlying project fundamentals the less likely governments are to be tempted to make policy changes that negatively impact on projects. Badly designed solutions and interventions are especially unlikely to be sustainable over time[103].

Two of the key challenges facing renewables generation are the need to address their perceived *higher costs* and their *non-dispatchability*. If these underlying challenges can be addressed they will be much more sustainable arrangements.

[103] This also illustrates the considerable need for resources to assist project design and development so that such challenges can be adequately addressed.

In the case of the former, reducing a reliance on FIT "top up" payments over the life of the project should be considered more routinely in support regime design. For instance, over the long life of a project, there is less risk of a PPA being breached or disputed if its costs are lower as a result of any capital costs being 'bought down' through upfront grant or else donor-provided patient capital support at financial close. A key aspect of the GET FiT approach has been to do just this, thus reducing the chances of PPAs being breached.

Clearly, different technologies can give rise to different risk profiles. Renewables projects are non-dispatchable and therefore need commercial agreements that reflect this. A particular challenge is that PPA off-takers may not wish to enter into take-or-pay arrangements as it can leave them paying for power when they least need it. As regards providers of MDB guarantees, the implications of the Lake Turkana take-or-pay arrangements were cited as being the main reason why the World Bank withdrew its offer of a PRG. In the absence of this, some of the benefits of the PRG would appear to have been addressed through an alternative escrow structure that provides liquidity to the project. Thus, the challenge is to find arrangements that work for all sides. This is not easy, but the better the underlying project structuring the easier it will be to secure further insurance and guarantee protections, from both public and private providers.

Whereas many renewables projects face such challenges, on the other hand, many non-renewables projects can face significant fuel supply availability and pricing risks, which are not faced by renewables. Such arrangements can also involve significant policy risks, for instance were government to change its tax or subsidy treatment of fuel inputs which would change underlying project economics. However, the way that such projects seek to address such risks is through ensuring that such potential changes are captured in the PPA or other project documentation, which can then attract support through PRI or guarantees, if providers assess that what is being supported is acceptable from a risk and, in the case of MDBs, public policy perspective.

In several ways, all generation projects, irrespective of technology share similar challenges in securing guarantee and insurance support. As such, ways of improving insurance and guarantee support for renewables investments will typically involve many of the same things as for other forms of generation; that is, it is important not to overstate the uniqueness of renewables generation either from the perspective of the challenges they face, nor from the perspective of the solutions required, including the provision of guarantees and insurance.

8.4.3. Building on existing approaches rather than creating completely new ones

The different insurance and guarantee approaches, particularly in the area in question, have evolved the way that they have for good reason. Whilst they are not perfect and need to be enhanced, they should be built on rather than pursuing alternative approaches which face more significant challenges. It is important that support regime design and project structures take into account what may be available from and insurance and guarantee

perspective rather than relying on insurances and guarantees to adapt to support arrangements that they find it difficult to do so.

One common feature of all PRI and MDB guarantees is that it is essential to identify objective and specific events which trigger losses. A second is that such events are, however, only insurable if there is sufficient alignment of interests to protect against risks materialising such as, but not limited to, moral hazard. Therefore, whilst risks from changes in government policies exist, broad-brush "policy risk" as a concept appears to be extremely challenging from an insurance perspective as insurers will look to write policies around clearly identified future eventualities, that have a low probability of materialising. As such we believe that creating a "policy risk" type cover is beset with challenges on both these counts.

If the evolution of PRI is considered, it is possible to see how approaches have been incrementally improved upon to reflect the changing concerns of investors and lenders. The traditional requirements of investors in manufacturing plant (protection against war and expropriation) have been added to by private investors in infrastructure, often where there is a high dependence on state entities to supply inputs or to purchase outputs. Insurers have responded to this through new covers such as breach of contract and more recently, NHSO cover, as well as refining existing policy covers to better reflect emerging requirements, as in the case of the tailoring of OPIC's policies to reflect the specific needs of investors in renewables. Similarly, the MDBs have developed the PRG project to reflect a move to private financing of infrastructure, and have developed structures to make it accessible to equity as well as debt providers.

But these approaches will all need to evolve as well as being broadened out to a greater range of providers. It is also important to assist smaller projects. In doing so, whilst in some instances renewables projects may have specific challenges, in many instances their concerns are similar to those of other IPPs; as such the solutions will not necessarily be unique to renewables generators.

The most significant concerns raised by developers were potential liquidity challenges faced as a result of either delayed payments under PPAs or long drawn out arbitration processes. These can all be addressed through improvements to PRI and PRG policy design and approaches.

Improving and disseminating PRI policy design

Public investment insurers such as OPIC and MIGA are seeking to improve the relevance of their policies, both generally and for renewables generation. The former has developed policies to address the challenges faced by reductions in FITs, in terms of providing liquidity support to projects where payments have been reduced, whereas MIGA recently introduced a new NHSO cover which can protect projects against governments reneging on their commitments. OPIC has also taken a more pragmatic approach to risk crystallisation in the

case of breach of contract, in which this is assumed to have crystallised where more than one project has been affected, rather than following an arbitration process.

A wider take up of all of the above amongst insurers should be encouraged. In addition, there is a case both for seeking to 'time limit' arbitration processes, as well as using the NHSO product to back-stop larger scale liquidity facilities provided by lenders.

Improving the availability of MDB guarantees

In addition, the challenges in accessing MDB PRG support were recognised. All MDBs should be encouraged to utilise their PRG programmes more effectively. In particular, greater availability of series guarantees – as is the case with the GET FiT approach in Uganda, which in theory can be replicated in any other country – could help, particularly with smaller scale programmes, in instances where local investors and lenders were concerned about off-take risks. This should greatly improve developers' access to such protections. This approach could be rolled out, not only in Africa where it is being piloted, but also in countries across the developing world, where in addition to the World Bank, different RDBs could provide the same 'series guarantee', if they all adopted more flexible guarantee policies.

8.4.4. Improving the flow of existing and new resources to PRI and guarantees

If the large scale renewables projects in developing countries such as in Africa are to be supported, this could very well strain the existing underwriting and guarantee capacity of the public institutions providing support. Such institutions play a significant role in supporting flows of private capital required to finance renewables projects in the countries in question, as the private sector will often look for a public institution to be involved to help align interests, as evidenced by the popularity of MIGA's cooperative underwriting programme (CUP). In other words, such institutions play a critical role in mobilising private finance.

There is therefore a case for finding ways in which the quantum of resources can be increased. On one hand this involves a greater utilisation of existing resources such as the Development Funds housed at different MDBs as well as CTFs.

However, is it more than possible that these resources may not be sufficient, especially as regards supporting larger projects; hence there is a case for channelling new resources to support enhanced insurance and guarantee provision.

8.5. Channelling additional donor resources to insurance and guarantees

8.5.1. Insurance

The two main insurance approaches identified involve increasing insurance and reinsurance capacity, particularly within the African market. However, these approaches tend not to be renewables specific.

ATI

Increasing ATI's capital will improve its efficiency and build upon its existing presence in the market, which is particularly helpful to smaller projects. ATI's planned partnership with REPP will potentially extend this reach even further. Developing ATI as a locally based African insurer is arguably something that should be supported irrespective of any climate specific objectives.

Although difficult to measure, anecdotal evidence would seem to suggest that most of the direct contingent (that is guarantee and insurance) support flowing to renewables projects, particularly in Africa, seems to be coming from public resources, with private insurance markets being accessed for reinsurance purposes. At the moment, there would not appear to be immediate resource constraints, although the scale of ATI means that it is not yet at an efficient scale where it can retain levels of business that would impact favourably on its level of profitability.

AEGF

The EIB has been looking to create a new vehicle to improve cost-effective reinsurance capacity for Africa – the AEGF. As well as assisting private sector insurers in Africa, it also has the potential to improve ATI's access to reinsurance, which could help reduce the cost of its policies.

An advantage would be the leverage of private capital created by the approach. As a proposed mutual, a downside to the approach would be the constrained access issues.

8.5.2. MDB guarantees

By their nature, MDB guarantee arrangements are relatively onerous for governments to enter into. This does not just relate to the implications of a guarantee being called, but also the fact that, especially for poorer countries, there are considerable opportunity costs in using development fund resources for guarantee purposes, rather than directly to fund assets or services. This issue is more acute where the benefits of the infrastructure investment are seen to accrue elsewhere.

To date, it would appear that all of the MDBs have had limited success in realising the full potential of their guarantees. In Africa, the AfDB is just beginning to roll out the approach. Whilst demand-side issues are a factor in this for all MDBs, there have been internal operational constraints as well. A key issue is the availability of the right financial skills to assist operations. The increased ability of the World Bank to provide guarantee 'series' could be particularly beneficial to providing back-stops to smaller scale projects, through for instance protecting providers of letters of credit.

However, it would seem that there are likely to be more biting constraints for larger projects involving international developers and lenders who are more risk averse than domestic

ones, who are more used to and are perhaps better at managing, such policy risks. Even if just a small proportion of planned large hydropower and geothermal projects come on stream they will place significant pressure on development fund resources. Though placing lower demands on such resources, even smaller projects will also eat into available resources.

Any funding made available for guarantees could be deployed specifically in support of payment risks associated with renewable generation projects, including for both guarantee series and for large scale hydroelectric and geothermal projects.

8.5.3. Institutional approach

We considered the case for a new institution, and for several reasons concluded against it being set up purely for the purposes of those activities which form the focus for this report. However, this conclusion should be revisited if, for instance, a UK policy was to create a new bilateral development bank (or indeed an international role for the Green Investment Bank).

Especially where several donors would be interested in supporting the same type of activities, a preferred approach would be to utilise the existing CTF. If this were not possible then there would be a case for creating a new wholesale provider of funding to increase the volume of support available through different insurance and guarantee approaches. The precise way in which this would interact with the existing MDB programmes would have to be explored in greater detail if this were to be pursued. PRG support is an effective means of helping to mobilise the significant amounts of capital that such projects would need to mobilise.

ANNEX A INTERVIEWEES

Type	Name of organisation	Name of interviewee
Legal Adviser	Trinity	Paul Biggs
Development Finance Institutions	CDC	Michael Reyser, Mark Pay
	IFC	Andrey Shlyakhtenko Kruskaia Sierra-Escalante
	European Investment Bank	Gunter Fischer, Silvia Kriebiehl, Peter Coveliers
Climate Organisations	Chatham House	Kirsty Hamilton
	Climate Policy Initiative	Barbara Buchner Gianleo Frisari
	UNEP	Dean Cooper
Developers	Berkeley Energy	TC Kundi
	DI Frontier	Daniel Schultz
	Globeleq	Paul Kunert
	SolInvest	Thijs Sablerolle
Investment insurance agencies	Export Credit Guarantee Department (now UK Expert Finance)	Robin Ogleby
	MIGA	Jason Lu
	ATI	Jef Vincent
	OPIC	John Morton Ruth Ann Nicastri Stephen Johnston
Insurance industry	Aspen	Bernie de Haldevang
	Parhelion	Julian Richardson
	Willis	Richard Wheeler
Insurers (donor backed initiative)	AEGF	Jean-Marie Masse
	ARC	Joanna Syroka
Lenders	JP Morgan	Richard Folland
	Standard Chartered	Brad Sterley
Fund managers	Actis	Lucy Heintz
	Armstrong Asset Management	Andrew Affleck

Type	Name of organisation	Name of interviewee
	Berkeley Energy	Andrew Reicher
Development Banks	African Development Bank (guarantees)	Emeka Oragunye Neema Siwingwa
	Inter-American Development Bank	Gerard Duffy
	KfW (role in GET FiT)	Jan-Martin Witte
	World Bank (use of PRGs and PCGs)	Mustafa Hussain
		Alan Townsend
Bi-lateral donors	USAID	Jaoko Hancox

ANNEX B GLOSSARY OF TERMS

Term	Meaning
AEGF	African Energy Guarantee Facility
AfDB	African Development Bank
AfDF	African Development Fund
ARC	African Risk Capacity
AsDB	Asian Development Bank
AsDF	Asian Development Fund
ATI	Africa Trade Insurance Agency
CMCI	Capital Markets Climate Initiative
CPI	Climate Policy Initiative
CTF	Clean Technology Fund
CUP	Cooperative Underwriting Programme
DECC	Department of Energy and Climate Change
DEG	Deutsche Investitions- und Entwicklungsgesellschaft (German Investment Corporation)
DFI	Development Finance Institution
DFID	Department for International Development
ECA	Export Credit Agency
ECGD	Export Credit Guarantee Department
EIB	European Investment Bank
EU-ITF	EU-Africa Infrastructure Trust Fund
FIT	Feed in Tariff
FMO	Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden (Netherlands Development Finance Company)
GEF	Global Environment Facility
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IEG	Independent Evaluations Group
IFC	International Finance Corporation
IFI	International Financial Institution
IPP	Independent Power Producer
MDB	Multilateral Development Bank
MIGA	Multilateral Investment Guarantee Agency

NHSO	Non Honoring of Sovereign Financial Obligations
OBA	Output Based Aid
ODA	Overseas Development Assistance
OPIC	Overseas Private Investment Corporation
PCG	Partial Credit Guarantee
Power Purchase Agreement	A contract between a generator and an offtaker for the sale of the generator's power
PPA	See *Power Purchase Agreement*
PPIAF	Public-Private Infrastructure Advisory Facility
PRG	Partial Risk Guarantee
Political Risk Insurance	Insurance cover against risks such as war, civil unrest, expropriation and currency inconvertibility
PRI	See *Political Risk Insurance*
RDB	Regional Development Bank
REPP	Renewable Energy Performance Platform
ROC	Renewable Obligation Certificate
UNEP	United Nations Environment Programme
WB	World Bank

ANNEX C MESSAGES FROM DEVELOPERS

This annex brings out the key themes that emerged from our discussions with developers in Africa and Asia. These were on an anonymous basis and so we do not attribute comments to individuals or organisations. We are, however, very grateful to everyone who gave their time for this project.

The key themes are:

- importance of the PPA;
- policy risk not major concern – delayed payment is key;
- off-taker financial viability;
- PRGs unattractive for small projects;
- attractiveness of ATI;
- time taken for arbitration; and
- insurance being seen as a last resort.

We discuss each in turn below.

C.1. Importance of the PPA

This theme was probably the strongest message emerging from our discussions. It was not always put as bluntly as "*no serious developer proceeds without a PPA*", but almost without exception the PPA was mentioned as being key. The PPA creates a binding contract between the project and the off-taker. Crucially, this contract covers how much the project will be paid for its output. It will also typically cover issues such as the project's grid connection, and include provisions such as what happens if there is a change in law or taxation that negatively affects the project. Without it, the project has no guaranteed route to market, and no guarantee of payment. It is therefore essential for making the project bankable as well as insurable. Comments included "*PRI doesn't matter that much unless you have a good PPA*".

Some developers suggested that standardisation of PPAs would be helpful, particularly for smaller projects. There was support for the work that the GET FiT programme has done in Uganda on improving the standard Ugandan PPA. This was beneficial because where no standard PPA exists, or where it is not of high quality, more time needs to be spent negotiating it. This can also bring significant legal costs.

There are though still problems with existing PPAs. The "*lack of a workable PPA*" in the Philippines is proving an issue, according to one developer. As noted in our report, this has led at least one project to proceed without a PPA, but this has been funded entirely through equity. There is also an issue with the standard PPA for small projects in Indonesia, which has been described to us as "*internationally unbankable*" – that is, banks outside Indonesia

are unwilling to lend against it. Finally, one developer told us that they had decided against investing in two African countries, in part because of "*a lack of transparency on the history of [PPA] awards*". There was also a problem in some countries with a "*lack of clarity of the PPA procurement process*".

In short, developers made the point to us that for many reasons, a project will look to have a sound PPA in place, and will be wary of situations where the standard PPA is not of high quality.

C.2. Policy risk not major concern – delayed payment is key

Another strong theme emerging was that policy risk (as defined) was not a major concern to developers. There are real *political* risks in some countries – such as threats of nationalisation – but these are not the same as policy risk. Taking one example of policy risk – a change in the FIT level – one developer commented to us that this is "*…not a risk they consider very much, because the [FIT] is set out in the PPA…*". This ties back to the theme outlined above, of the importance of the PPA. Since the tariff level is in a contract, it can be covered by standard breach of contract PRI cover, and developers are "*…happy to rely on this*" and are "*…happy with the pricing/terms [of the cover]*". Ideally, there will be change of law and tax provisions in the contract and so changes to law or tax can be dealt with the same way. In some countries (e.g. Kenya) larger projects will also have a letter of support from the Government.

There is also (in some countries) a surprisingly low concern about the likelihood of the off-taker not paying – that is, off-taker risk is seen as being low. One developer commented to us that while getting the contract agreed could be difficult, once it was signed, off-takers "*bent over backwards*" to pay.

Indeed, in some countries local banks were willing to bear policy risk, by lending to projects that did not have an explicit government guarantee or PRG. The view appears to be that those banks are already heavily exposed to government risk because they are in-country, and the additional risk from lending to smaller to medium sized projects (for example, up to 30MW) was bearable. It was pointed out to us that DFIs were also in the business of taking political risk, and often do not require PRI cover.

This leads to the question of what the major concerns are, if not policy risk. The main risk highlighted was delayed payment. Non-payment was seen as much less likely, and would be covered by the contract. Where an off-taker had temporary cash-flow issues, it might delay payments for a limited time. While technically this would be a breach of contract, enforcing it would take months, by which time the issue might have been resolved and payments might have resumed.

It should be said that developers' perception of this risk varies hugely by country. For example, the Kenyan state power company KPLC is seen as "*trustworthy*", while there is less

comfort that the state power companies in Tanzania or Uganda can and will pay. There is much more need for insurance cover in the latter two than the former.

The next section looks at one reason why there might be cash-flow or funding problems at the off-taker, namely the mismatch between the money the off-taker receives from retail prices and the money it is obliged to spend on wholesale power and FITs.

C.3. Off-taker financial viability

Under the PPA, the FIT is paid by the power company off-taker. Developers pointed out that these off-takers are often in financial difficulties. The reasons for this include having a retail[104] electricity price that is capped below the cost of production – that is, the off-taker must by law sell power at a loss. Clearly this is not sustainable, and will require regular support (in the form of cash injections from Government). If this support is delayed or not forthcoming the off-taker may be unable to pay, or at least unable to pay on time. This risk is exacerbated with the introduction of FITs, which by design pay renewable generation at a higher rate than typical power production.

The most obvious long term solution is to make retail electricity prices reflect the cost of production. This has a number of other benefits in terms of economic efficiency and a reduced call on taxation revenue. However, it does mean that electricity prices for consumers will rise, and this can put pressure on household budgets. It is therefore politically very unpopular. Some countries are considering it, or have announced the intention to move towards it, but it is unlikely to happen overnight.

C.4. PRGs unattractive for smaller projects

A message emerging from our analysis, and that of the CPI[105], is that in theory at least, policy risk can be covered by securing a binding commitment from the host government, and backing this with a PRG, such as those available from the World Bank. The difficulties are practical rather than theoretical.

Taking the first issue, of securing a binding commitment, we note elsewhere in our report that in fact this is desirable in terms of allocating policy risk to the correct party (government). Turned it around, the question becomes why developers or lenders should rely on a "commitment" that the government is unwilling to bind itself to. One developer suggested to us that governments might be constrained by organisations such as the IMF from making too many binding commitments (although it is possible that the IMF takes a more lenient view when the contingent liability is to an MDB).

[104] That is, the price that appears on consumers' bills.

[105] Climate Policy Initiative, September 2013, *Mapping the World Bank Group Risk Mitigation Instruments for Climate Change.* Available at: http://climatepolicyinitiative.org/sgg/publication/mapping-the-world-bank-group-risk-mitigation-instruments-for-climate-change-2/

Taking the second issue, the fundamental difficulty is that it is "*a lot of organisation*", particularly for small projects, to source a World Bank PRG. It can also be time-consuming (one developer suggested to us that it adds "*18-24 months*" to the process) and this is unattractive since it delays revenues from the project. Smaller developers often felt that it was not worth the effort: it would "*make things a bit cheaper*" but not enough to justify the effort, is how one developer described it.

These messages do not necessarily apply to other forms of cover. Developers commented to us that they have bought standard PRI cover from MIGA and others and are "*pretty happy*" with it.

These issues with the World Bank's PRG lead us to a theme emerging about another institution offering insurance in Africa, namely the ATI.

C.5. Attractiveness of ATI

In discussions with developers about whether they might buy insurance, ATI was mentioned several times. Not all developers have dealt directly with ATI, but there was a consensus that it is seen as "*quick and flexible*", as well as less bureaucratic than the MDBs. ATI had been useful in providing "*quasi-letters of credit to cover KPLC liquidity issues*". It was though somewhat more expensive than the WB or MIGA, and one developer suggested that it would benefit from help to reduce these costs. It also has quite tight insurance limits ($10m per project) which means that it must make use of reinsurance for all but the smaller projects.

ATI did have "*decent levels of internal capacity*" although there was a theme emerging that these could usefully be increased.

It should be said that the general theme of ATI being an appealing choice particularly for smaller projects did not mean that other insurers are unappealing. OPIC's cover for FITs was described to us as "*attractive*" but we note that it has not yet been used in practice. It does cover breach of a PPA, and one developer we spoke to suggested that it would not be used until the PPA issues (see earlier) had been resolved.

Other developers said to us that they were quite happy to rely on "*standard PRI cover from entities like … MIGA*" and were "*…happy with the pricing/terms*". It is likely that the best option for a project depends on the project's characteristics, particularly size. For larger projects, which will already take significant time and effort to negotiate and arrange, the additional effort of a World Bank or MIGA product may not be prohibitive. Such a product does come with the weight of the World Bank Group behind it, which should provide significant comfort. We understand for example that MIGA has only paid out six[106] times in its 25-year history, suggesting that the presence of MIGA cover is enough to dissuade almost all governments from failing to pay or to honour their contracts.

[106] Source: MIGA

The MIGA products (although normally seen as quite expensive) are also significantly cheaper than those from ATI. MIGA quotes a figure of around 1% of the covered amount per year, whereas ATI cover can be more than double this price. Clearly this will be attractive, if the initial hurdles in obtaining the cover can be overcome.

Finally, there was a process issue that emerged in relation to most cover – namely the need for and time taken for arbitration.

C.6. Time taken for arbitration

As noted in the main body of this report, many insurers have a preference for paying out only based on the decision of an independent arbitration body. However, as a number of developers pointed out to us, projects "*… [continue] to face economic losses due to the time taken for arbitral awards*". In short, developers and lenders face difficulties because they may not be paid during the arbitration process.

There are options in place for managing this risk, such as arranging letters of credit and structuring escrow accounts into the transaction, both of which can provide liquidity. However, they may not cover the whole period of arbitration.

Finally, developers emphasised to us the importance of seeing insurance in its proper place – as a last resort.

C.7. Insurance as a last resort

While there was general support from developers for the provision of good insurance cover, they were clear that it needed to be seen as a backstop, and not as a substitute for other essential protections such as the PPA.

The key point here is that to claim on the insurance you will in most cases need to go through arbitration proceedings and ultimately "*…walk away from the PPA*". However, "*no developer wants to do this because it destroys their relationship [with the government or off-taker]*". We understand that there are "*…cases in [sectors other than renewable energy] when companies haven't been paid, but haven't drawn on the ATI cover because they didn't want to upset the respective department/parastatal*".

In short, while it provides an important backstop, insurance should not be seen as the most important means of mitigating project risks.

ANNEX D EXTRACT OF KENYAN PPA

Standardised PPA for large renewable energy generators (greater than 10 MW)

THIS AGREEEMENT is made this ……..day of ……20…

BETWEEN

…….a company incorporated in the Republic of Kenya [a limited partnership incorporated under the Limited Partnerships Act, Chapter 30 of the Laws of Kenya] with its registered office at ……, and of Post office Box Number……..(hereinafter referred to as "the Seller"), which expression shall, where the context so admits, include its successors in title and assigns) of the one part ;

AND

THE KENYA POWER AND LIGHTING COMPANY LIMITED, a company incorporated in the Republic of Kenya with its registered office at Stima Plaza along Kolobot Road in Nairobi and of Post Office Box Number 30099 – 00100, Nairobi,(hereinafter referred to as "the Buyer" which expression shall, where the context so admits include its successors and assigns" of the third part.

WHEREAS:

1. The Buyer is licensed to purchase, transmit, distribute and supply electricity in the Republic of Kenya;

2. The Seller intends to construct a ……..MW ……..power generation plant at …… of which …….is for captive use and the rest for sale to the Buyer and

3. The Seller and the Buyer have agreed to enter into an power purchase agreement (being this Agreement) for the sale of ……..MW to the Buyer pursuant to the Feed – In – Tariffs Policy.

NOW IT IS AGREED AS FOLLOWS

1. DEFINITIONS AND INTERPRETATION

1 Defined Terms

In this Agreement, unless the context requires otherwise, the following words shall have the following meanings –

"Appendix A": Description of the Plant

"Appendix B (1)": The standardised tariffs and escalators for purchase and sale of Net Electrical Output applicable to this Agreement.

"Appendix B (2)": The computation of Deemed Generated Energy Payments.

"Appendix C:" Designation of the Interconnection Facilities and Requirements

"Appendix D:" Contents of Seller's Invoice

"Appendix E:" Designated address and contact persons for each Party.

"Appendix F:" Transfer Amount specified in Clause 11.3

"Appendix G:" Particulars of the Lenders

Annual dependable output:

"*Change in Law*" means any of the following events occurring after the Signature Date, and which despite the exercise of Prudent Operating Practice by the Seller or THE BUYER (i) results in a material increase in the operating costs or capital expenditure incurred by the Seller in performing its obligations under this Agreement or (ii) imposes requirements for the design, construction, ooperation or maintenance of the Plant or the Buyer's System that are materially more onerous than the requirements in effect as of the Signature Date, and that affect the Seller's performance under this Agreement, , or that affect the Buyer's performance under this Agreement:

a. a change in, or in the interpretation (by a governmental authority), application or enforcement of, or the enactment or adoption of or promulgation, bringing into effect of, repeal, amendment of, any legal requirement; or

b. any change in any authorization required in connection with this Agreement or any additional requirements or conditions imposed by any governmental authority in connection with the issuance, extension, replacement, variation or renewal of any authorization required in connection with this Agreement provided that in respect of the issuance, extension, replacement, variation or renewal of any authorization required in connection with this Agreement, the Party requiring the relevant authorization has first diligently attempted to obtain such authorization and if the processes required by such duty of diligence have not been exhausted, such processes have been and are still being diligently pursued by that Party;

"*Commissioning:*" Conduct of tests necessary to put a unit or the Plant (as the case may be) into operation and the term "*Commission"* shall be construed accordingly;

"*Deemed Generated Energy*": The electrical energy expressed in kWh that as a result of the Buyer's

System Interruption is not generated and/or delivered to the Buyer at the Delivery Point;

"*Deemed Generated Energy Payments*" has the meaning given in Clause 6.16;

"*Default Rate:*" Two percentage points above LIBOR;

"*Delivery Point:*" The point of common coupling as shown in Appendix C at which the Net Electrical

Output from the Plant is delivered to the Buyer;

"Emergency:" A condition or situation that in the reasonable opinion of either Party does materially or adversely, or is likely materially or adversely to –

a. Affect the ability of either Party to maintain a safe, adequate or continuous supply of electrical energy to its customers; or

b. Does or is likely to present a physical threat to persons or property or security integrity

or reliability of the Buyer's System or the Plant;

"*Effective Date:"* Has the meaning subscribed to it in Clause 3.1;

"*Environmental Attributes*": Any and all Carbon Credits and any and all fuel, emissions, air quality or other environmental characteristics, credits, benefits, reductions, offsets and allowances arising out of any international, national or other laws or regulations (and whether now existing or enacted in the future), including any such laws or regulations relating to oxides of nitrogen, sulphur or carbon, particulate

matter, soot or mercury, resulting from the generation of energy or the avoidance of the emission of any gas, chemical or other substance to the air, soil or water attributable to such generation;

"Feed – In – Tariffs Policy:" The Feed – In – Tariffs Policy on Wind, Biomass, hydro, Geothermal,

Biogas and Solar Resource Generated Electricity first issued by the Ministry of Energy on March

2008 and subsequently revised;

"*First Commissioning Date:*" Has the meaning subscribed to it in Clause 5.6;

"*Force Majeure:*"Has the meaning ascribed to it in Clause 10;

"*Full Commercial Operation Date:*"The date notified by the Seller in accordance with Clause 5.7;

"*Generating Licence:*" Has the meaning ascribed to it in the Energy Act, (or any similar licence or other authorisation pursuant to legislation replacing the Energy Act;

"Interconnection Facilities:" The point where the Seller's Net Electrical Output line or electric system feeds into the Buyer's electric system and facilities required to connect the plant to the buyers system;

"*Interconnection Point*": the point at which the interconnection equipment and protection equipment is located as shown in Appendix C.

"*the Buyer's System:*" The transmission system operated by the Buyer and the distribution systems, and ancillary plant and equipment connected to such transmission system;

"*kW:"* Kilowatt;

"*kWh:*" Kilowatt hour being three million six hundred thousand (3,600,000) Joules as defined in ISO

100.1992(E);

"Lenders:" The financial institutions specified in Appendix E, which term includes their successors and assigns;

"LIBOR:" Means in respect of any day –

a. The rate per annum equal to the arithmetic mean (rounded upwards, if necessary, to the nearest whole multiple of one sixteenth of one percent (1/16%) of the offered rates per annum for deposits of a principal sum equivalent to the sum in question in US Dollars for a period commencing on such day and ending seven (7) days later which appear on the Dow Jones Markets Screen at or about eleven o'clock in the morning (11.00a.m) London time two (2) business days prior to such day, provided always that at least two offered rates appear on the Dow Jones Markets Screen Page; or

b. If at least two (2) offered rates do not appear on the Dow Jones Markets Screen Page as contemplated by the proviso to paragraph (a) of this definition, the rate per annum,(rounded upwards if necessary, to the nearest whole multiple of one sixteenth of one percent (1/16%) per annum of the interest rate per annum offered at approximately eleven o'clock in the morning (11.00a.m) London time by at least three (3) reference banks (selected by the Party entitled to receive the payment due)two (2) business days prior to such day and for delivery on such day, to major banks in the London Interbank Market for deposits in US Dollars in the amount of the sum in question;

Non – Default Rate:" LIBOR;

"*Parties:"* the Buyer and the Seller;

"*Plant:*" All the Seller's electrical prime movers and generators, together with all protective and other associated or auxiliary equipment of the Seller, and rights to own or use land associated with the electrical prime movers and generators, necessary to produce the Net Electrical Output pursuant to this Agreement;

"*Prudent Operating Practice:*" In relation to either Party, standards of practice obtained by exercising that degree of skill, diligence, prudence and foresight which could reasonably be expected from a skilled and experienced person engaged in the same type of undertaking;

"Scheduled Outage:" An outage at the Plant which is scheduled in advance for the purpose of performing maintenance of the Plant;

"*Signature Date*": The date of this Agreement;

"*Large FIT Power Project:*" A project of any capacity that generates electric energy from renewable energy sources and sells pursuant to this Agreement over ten (10) MW of such output;

"*Target Effective Date:*" …….. (*Insert actual date*);

"*Term:*" The period from the Effective Date until the expiry of this Agreement in accordance with

Clause 2 or earlier termination;

"*Tariff:*" The charge rate per kilowatt hour (kWh) defined in the FITs tariff policy and specified in

Appendix B: (1)*;*

"The Energy Regulatory Commission:" The Energy Regulatory Commission established under section 4 of the Energy Act; and

"*The Energy Act:*"The Energy Act, No.12 of 2006, of the Laws of Kenya.

ANNEX E KENYA COUNTRY STUDY

E.1. Economic and political situation

Kenya is a lower income country (DAC II[107] list) with a Gross National Income (GNI) per capita of US$820. Kenya's Gross Domestic Product (GDP) growth has fluctuated dramatically over the past decade. As a result of the 2008 crisis, it dropped from 7% in 2007 to 1.5% in 2008, although it has subsequently improved and was 4.4% in 2011. Growth has recently been constrained by macroeconomic instability including high inflation, depreciation, high energy costs, and a decline in aggregate food production in 2011. Inflation fell to just over 10% in 2012, having hit 14% in 2011.

Kenya was ranked 129th out of 185 countries in the 2014 'Doing Business' survey[108], with particular issues identified as being payment of taxes (where Kenya ranks 166th because of the high number of payments required per year and the relatively high tax rate), registering property (ranked 163rd, because registration takes an average of 73 days in Kenya and requires 9 separate procedures), and getting electricity (ranked 166th, because this takes 158 days and has a typical cost around 10 times average per capita income). Kenya's positive image and outlook, both domestically and internationally, was severely shaken by the violence following the 2007 election. However, between that election and the one held in March 2013, there have been significant reforms to key Kenyan institutions. Devolution was enshrined in the new Constitution, has divided the country into 47 counties, to which both political power and government functions will be devolved. Such reforms are seen to have been behind the smooth running of the elections in March this year.

E.2. Energy market in Kenya

Infrastructure contributed half a percentage point to Kenya's annual per capita GDP between 2000 and 2010. Nevertheless there is a significant infrastructure gap, with infrastructure constraints estimated to reduce productivity in Kenyan firms by approximately 30%. There are restrictions across all infrastructure sectors, but these are most severe in the power sector.

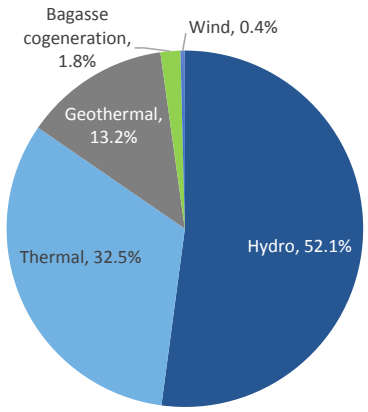
Significant improvements have been made in the power sector in Kenya in recent years, with the overall electrification rate more than doubling over eight years, reaching 30% in 2011. The state-owned electricity company was unbundled into generation (KenGen) and transmission and distribution (KPLC) in 1998. In the run-up to the introduction of a management contract, KPLC significantly improved revenue collection, increasing from 81% to 100% over two years. It also reduced distribution losses, and tariffs became more cost

[107] The Development Assistance Committee (DAC) classifies countries that are eligible for Overseas Development Aid (ODA) into four lists, depending on the income level. DAC I contains the least developed countries, and DAC IV includes the upper middle income countries. These were revised in 2012

[108] http://www.doingbusiness.org/data/exploreeconomies/kenya

reflective.[109] These efficiency savings are equivalent to more than 1% of GDP. However, generation and supply remain significant problems. Kenya's installed generation capacity is only 33MW per million people, compared to a Middle Income Country average of 796.2 MW per million people[110], and growing demand and droughts have led to frequent power interruptions, which are estimated to cost the economy the equivalent of 2% of national GDP. To meet the demand, Kenya would need to nearly double again its current capacity in the next decade, and while positive steps have been taken (installed capacity expanded by 8.6% from 1,412.2 MW in 2010 to 1,534.3 MW in 2011) meeting this target will prove extremely challenging. Figure E.1 below presents the energy generation mix for 2012; the lack of solar power at this point reflects the limited incentives to support grid solar panels until FITs were revised in December 2012.

Figure E.1 Kenya electricity generation mix[111]



Overall, it is estimated that to meet its most pressing constraints and catch up with other developing countries, Kenya would have had to spend US$4bn per year between 2010 and 2015, comparable in GDP terms to what China invested in its infrastructure in the 2000s. Of this, US$1bn per year would be required to increase generation capacity. Currently Kenya spends approximately US$1.65bn on all infrastructure every year, suggesting there is an annual infrastructure gap of US$2.35bn.

E.3. Infrastructure and PPI activity

The World Bank's Public-Private Investment (PPI) database indicates that in Kenya 21 public-private partnership (PPP) projects reached financial closure between 1990 and 2011, more than half of which (12) were in the energy sector. PPPs in Kenya are considered to have been a success story, and at the end of 2012 the World Bank Group committed to provide more support to Kenya's PPP activities through a US$40m IDA loan. The Kenya Vision 2030 national strategy document has identified the private sector as key for reducing the infrastructure deficit and to delivering high quality infrastructure services, and accordingly it

[109] African Infrastructure Country Diagnostic (2010) 'Kenya's Infrastructure: A Continental Perspective' p14
[110] Ibid. p16
[111] Friends of the Earth, et al., (2013) 'Powering Africa through feed-in-tariffs'

is expected that PPPs will become a larger part of Kenya's infrastructure provision in the future. In December 2012, a presentation by the head of the PPP Unit calculated that by early 2013, five further IPP projects with a capacity of 600MW would have reached financial close in Kenya, with a further 1,595 MW of renewable energy IPPs in the pipeline. A summary of these transactions is set out in Table E.1.

Table E.1: Summary of recently closed IPPs and renewables project pipeline

Project Title	Size (MW)	Status	Political risk insurance (PRI)/ partial risk guarantees (PRG)?
Closed			
ThikaPower, oil plant	87	Closed Oct 2012	MIGA PRI
Triumph Kitengela oil plant	82	IPP signed, Nov 2012	MIGA PRI
Gulf Power oil plant	80	IPP signed, March 2012	MIGA PRI
Orpower geothermal plant	52	Closed, Nov 2012	MIGA PRI,
Lake Turkana	300	Close expected Nov 2013[112]	AfDB PRG
Pipeline			
Geothermal IPPs, Menengai	400	In development	None to date
LNG, Mombasa	495	Feasibility	
Wind power in Ngong	140	PPA Negotiations	
Geothermal IPPs, Olkeria	560	Bidding	

Source: Adapted from PPP Unit (2012) 'Kenya's PPP experience and pipeline projects'

The Lake Turkana project is an important development for the Kenyan energy sector, and is the largest single private investment in Kenya's history. The project will comprise 365 wind turbines and the associated infrastructure, as well as upgrading of the existing road from Laisamis to the wind farm site (part financed by the Dutch government) and a transmission line being constructed by the Kenya Electricity Transmission Company Ltd (Ketraco), with concessional funding from the Spanish government.[113]

E.4. Institutional arrangements

Kenya currently has three relevant legal frameworks that support its renewables policy (excluding its framework for biodiesel licensing).

[112] The government of Kenya signed a letter of support for the project in February 2013, meaning the project can enter the final stage of financing.

[113] See: http://www.megaprojects.co.ke/articles/188/government-of-kenya-signs-letter-of-support-for-lake-turkana-wind-power/#.UiRbZza1HNw

2006 Energy Act

The 2006 Energy Act sets up the Energy Regulatory Commission (ERC), an independent regulator. Its role is to formulate licensing procedures, issue permits, make recommendations for further energy regulations, set and adjust tariffs, approve power purchase agreements (PPAs) and prepare national energy plans. The Ministry of Energy meanwhile is given the responsibility to plan increased sustainable renewable energy production, set distribution and commercialisation frameworks, and provide specific incentives to the renewables markets. The aim is to increase international cooperation on support for renewables.

Renewable energy support tools included in the Act are:

- an authorisation for 4MW capacity (or a minimum of 30% of the co-generation plant total capacity) renewable energy systems to produce energy without a licence;
- income tax holidays for relevant generation and transmission projects; and
- full custom and import duties exemption for exclusive renewable energy equipment.

The Act also created the Rural Electrification Program (REP) for promoting locally available, sustainable and efficient renewable electricity generation in rural areas.

FITs for Renewable Energy (2008, revised 2010, 2013)

In 2008, the Kenyan government published new FITs to provide investment security to renewable electricity generators, reduce costs and encourage investment. These were developed through a four year process, with much input from the World Bank, the government, regulator, KPLC and KenGen. The FITs aim to:

- promote the uptake of renewables and increase the power production in general;
- promote smaller electricity projects; and
- open up the energy market and shift more power generation to the private sector.[114]

However the 2008 tariffs were seen as favouring projects developed by KenGen (70% owned by the Kenyan government). The financial models that were used as a basis for the FIT policy assumed that the financing costs were those of the state-owned entity, and therefore did not allow for the higher borrowing costs that private sector project developers would face. Accordingly, in 2010 the tariffs were revised, increasing the maximum rates and supported additional technologies. To make the tariffs even more attractive to investors, and increase the opportunities for solar power, these were revised upwards again in 2012.

This FIT policy is subject to review every three years: however, the Ministry of Energy reserves the right to undertake a policy review earlier in exceptional cases (as it did in 2011). Its 2012 revision however makes it clear that any changes made during such reviews would

[114] Friends of the Earth, et al., loc cit

only apply to renewable power plants that were developed *after the revised guidelines were published*, clarifying that FIT values applying to PPA contracts entered into previously would remain unchanged.[115]

The tariffs apply to grid-connected plants and are valid for a **20-year period** from the signing of the PPA, and include an indexed component that covers operation and maintenance costs. This varies according to the US Consumer Price Index. PPAs linking power producers to grid system operators must meet prior approval from the Energy Regulatory Commission. The detail of the FIT design is provided in Table E.2.

Table E.2: FIT design

FiT design	
Payment based on	Generation costs plus return on investment (18% post tax on equity)
Payment duration	20 years
Payment structure	Fixed ceiling
Cost recovery	Pass through to consumers: 85% for PV and 70% for all other eligible technologies
Interconnection guarantee	Guaranteed provided the interconnection meets KPLC's standards
Interconnection costs	Paid by the generators
Purchase and dispatch requirements	Guaranteed purchase if requirements are met, and priority dispatch
Purchasing entity	KPLC
Triggers and adjustments	Policy revised every three years
Contract issues	Negotiated case-by-case, though there are standardised PPAs for small and large projects.
Payment currency	FIT denominated in US$, payment in US$, €, Ksh.

Source: Adapted from Friends of the Earth, 2013

The tariffs set vary by generation capacity. In the 2008 and 2010 versions, the maximum power tariff at the interconnection point differs for firm (i.e. a fixed amount of energy that must be generated agreed between the IPP and KPLC) and non-firm (i.e. has no fixed amount of energy it must generate set in the PPA) generators, though this appears to have been removed in the 2012 version.

It should be emphasised that Kenya's tariffs are negotiated for each project, based on the actual cost for the project's development and the rate of return for investors. This negotiation process can take up to two years. The figures provided below in Tables E.3 and E.4 are the standard tariffs.[116]

[115] MoE (2012) 'FITs policy' http://www.erc.go.ke/images/docs/fitpolicy.pdf
[116] In 2008, 2010 these were maximums. It is not obvious this is the case from 2012.

Table E.3: Maximum tariffs for large scale renewable technologies, as set in 2012

Technology	Installed Capacity (MW)	Standard FIT (US $/ kWh)	Indexed portion of the Tariff
Wind	10.1-50	0.11	12%
Geothermal	35-70	0.088	20% for first 12 years, 15% after
Hydro	10.1-20	0.0825	8%
Biomass	10.1-40	0.10	15%
Solar (grid)	10.1-40	0.12	12%

Table E.4: Maximum tariffs for small scale renewable technologies, as set in 2012

Technology	Installed Capacity (MW)	Standard FIT (US $/ kWh)	Indexed portion of the Tariff
Wind	0.5-10	0.11	12%
Hydro*	0.5	0.105	8%
	10	0.0825	8%
Biomass	0.5-10	0.10	15%
Biogas	0.2-10	0.10	15%
Solar (grid)	0.5-10.0	0.12	8%
Solar (off grid)	0.5-10.0	0.2	8%

**For values between 0.5-10MW, interpolation shall be applied to determine tariff for hydro.*

KPLC must guarantee connection and priority purchase, transmission and distribution for electricity from renewable energy sources, though the connection costs are borne by the IPP and are recovered through the tariff negotiated. Each project is subjected to a mandatory Preliminary Project Feasibility Assessment conducted by the Ministry of Energy to decide whether the project is financially viable.

While the Kenyan government has made a significant effort to set up a robust FIT programme, a number of challenges remain. In early 2013, only two projects were operating under the FIT: a 920kW hydro plant owned by the Kenyan Tea Development Association, and a 5MW geothermal plant operated by KenGen, though there was thought to be a pipeline of 60 projects that had been approved.

In their African FITs review, Friends of the Earth noted that currently few projects proceed beyond the feasibility study, mostly due to the challenges for securing project financing at interest rates suitable for the FITs tariffs that are seen to be reasonably low. However, as Kenya – unlike many of its neighbours – does not subsidise electricity, the tariffs can be seen as being restrained by affordability.

Other challenges include the limited local technical capacity and expertise in renewable technologies, the length of time it takes to negotiate a PPA, the requirements for upgrading the grid, as well as risks surrounding land tenure.

The Government is trying to overcome these issues, for example through new tariffs introduced in late 2012, as well as other efforts in the sector such as developing a wind atlas to reduce the costs of feasibility studies. It is also working with Munich Re to provide insurance for geothermal exploration risks.[117] With regards to financing, banks are becoming more confident and are beginning to accept PPAs as a secure investment, without needing further guarantees from the utility.[118]

Solar water heating regulations 2012

These regulations require premises with hot water requirements above 100 litres to install solar heating. New ones will have to do so as part of the building process, while existing properties have five years to install them.

E.5. PPP framework

Kenya has a relatively well developed legal framework for PPPs. The Public Procurement and Disposal (Public Private Partnerships) Regulations (2009) set up the PPP Unit in Kenya. This is made up of the *PPP Steering Committee* – a committee of civil servants and private sector representatives, which is responsible for awareness raising, establishing guidelines and procedures, and approving projects – and the *PPP Secretariat* – which sits within the Ministry of Finance and is headed by the PPP Secretary, and serves as a resource centre for PPP best practices in Kenya.

Earlier this year Kenya agreed the Public Private Partnerships Bill. This will provide the legal capacity to government bodies to enter into PPP contracts, address legal gaps and remove conflicts in existing laws, clarify the roles and responsibilities of various bodies involved in PPPs, and establish legal institutions to prepare and approve PPP projects. The law will also provide for a procurement process for both solicited and unsolicited bids, and will establish a Project Facilitation Fund to provide for project preparation funds, viability gap funds and any government subsidies. This Project Facilitation Fund will support contracting authorities in preparing a project and project appraisal, and also provide viability gap funding to publicly desirable projects as well as liquidity to meet any contingent liabilities and settle transaction advisors' retainer fees.

E.6. Risk distribution in Kenyan IPPs

Below is a case study of how the Kenyan government has dealt with risk allocation in one of its recent successful IPPs.

[117] See Munich Re (2013) 'Exploration Risk Insurance – Way to support Financing'

[118] Friends of the Earth, et al., loc cit, p40

Olkaria III PPA[119]

The Olkaria III transaction was closed in late 2012 and was one of four IPPs to receive a World Bank PRG in 2012. This is a 36MW expansion to an existing 48MW geothermal plant, for which the PPA was agreed with KPLC in 1998.

Under this PPA, OrPower was required to :

- develop the geothermal reservoir; and
- design, procure, construct, operate and maintain the generation facilities and interconnector, and sell the output to KPLC.

KPLC will make capacity and energy payments in USD dollars, thus bearing the foreign currency risk, and it also has the obligation to make capacity payments to the IPP in the event of either natural or political force majeure events, regardless of the availability of the plant.

The expansion cost US$212m in total, with 15% financed through a new equity injection, 78% through a loan from the Overseas Private Insurance Corporation (OPIC) and the remaining 7% through internal cash flow.

MIGA provided US$134m of Transfer Restriction, Expropriation and War and Civil Disturbance coverage for Ormat's equity. This will provide termination cover for KPLC's Breach under PPA and Political Events under the Government of Kenya's Letter of Support, which enshrines the Government's commitment to support the project company. The World Bank approved a Partial Risk Guarantee for US$26m, which would be equivalent to four months' capacity payment and energy payments plus contingencies. This will back KPLC's ongoing payment obligations only under the PPA and GoK's ongoing payment obligation under its Letter of Support.

Figure E.2 sets out the project structure and the role of the Partial Risk Guarantee for the Olkaria project.

[119] This section has been adapted from ESMAP (2013?) 'Renewable Energy Training Program: PPAs and Tariff Design'

Figure E.2: Olkaria III project structure

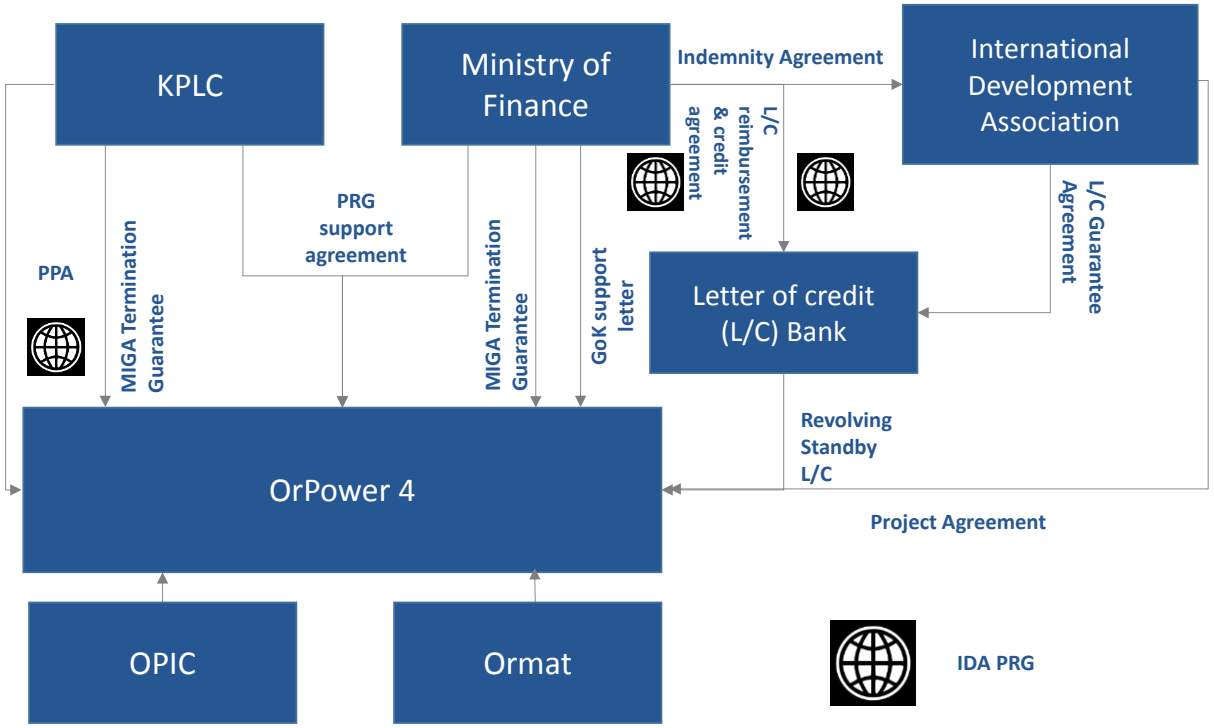


Table E.5 below shows the allocation of risk within the contract and how selected risks are mitigated.

Table E.5: Allocation and mitigation of project risks

Risk/Obligation	Contractual Responsibility			Risk Mitigation	
	IPP/ lenders	KPLC	GoK	PRG	MIGA
Preconstruction					
Site		✘			
Plant design	✘				
Debt & equity financing	✘				
Construction					
Cost overruns	✘				
Construction delays	✘				
Operation					
Operation & maintenance	✘				
Power Capacity Availability	✘				
Output quality specifications	✘				
Concession term					
KPLC system availability		✘		✘	
Payment of energy & capacity		✘	✘	✘	

Risk/Obligation	Contractual Responsibility			Risk Mitigation	
	IPP/ lenders	KPLC	GoK	PRG	MIGA
payments					
Force majeure events affecting KPLC		✘	✘	✘	
Currency devaluation		✘			
Currency, convertibility, transfer	✘				
Political event			✘		
Other force majeure	✘	✘		✘	
Termination payments due to KPLC		✘			✘
Termination due to political event			✘		✘

ANNEX F INDONESIA CASE STUDY

F.1. Economic and political situation

Indonesia is a lower middle income country (DAC III) with a GNI per capita of US$3,557 in 2012. After a decade of strong economic performance when it had one of the fastest growth rates in the world and in which Indonesia received investment grade ratings from Fitch and Moody's, it has faced some real problems in 2013. However, as a result of slowly-reducing commodity prices, the move in China away from investment to consumption, and the shock effect of the US Federal Reserve's proposed 'tapering' of quantitative easing, Indonesia's trade deficit widened to a record US$2.3bn, which has been compounded by the Government's subsidisation of fuel and electricity (see below). In addition to this, the Indonesian rupiah's position has recently weakened. Since the beginning of 2012, the rupiah has lost a third of its value against the dollar and there has been a consumer credit and property bubble.[120]

In addition, while Indonesia has been a relatively stable democracy since Suharto fell in the late 1990s, earlier this year the country's most senior judge was arrested, along with a member of parliament, on suspicion of taking bribes, and there are ongoing calls for independence from a number of regions.

F.2. Energy market in Indonesia

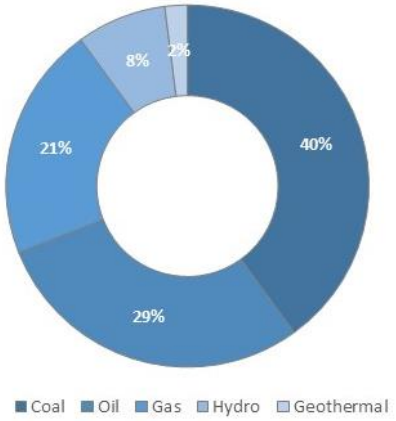
The electrification rate in Indonesia was around 65% in 2009, but over the next decade, demand is expected to increase significantly, at approximately 7% per annum. This poses a significant challenge for the country, as growth in supply has not matched growth in demand. The current situation is untenable, with the country experiencing daily blackouts lasting on average four hours a day, and it is 25 percentage points behind its electrification target rate of 90% by 2020, with electrification falling by two percentage points between 2008 and 2010. The Indonesian average capacity factor[121] is 66%, compared to approximately 43% in the UK. Following the sharp increases in oil prices in the mid-2000s, Indonesia has been moving away from a dependency on oil and now coal is the largest fuel stock for electricity generation in the country. However, at the same time the share of renewables has also fallen, dropping from 15.9% in 2000.

Figure F.1 shows Indonesia's total installed on grid generation in 2010.

[120] See: http://thediplomat.com/2013/10/indonesias-economic-bubble/2/

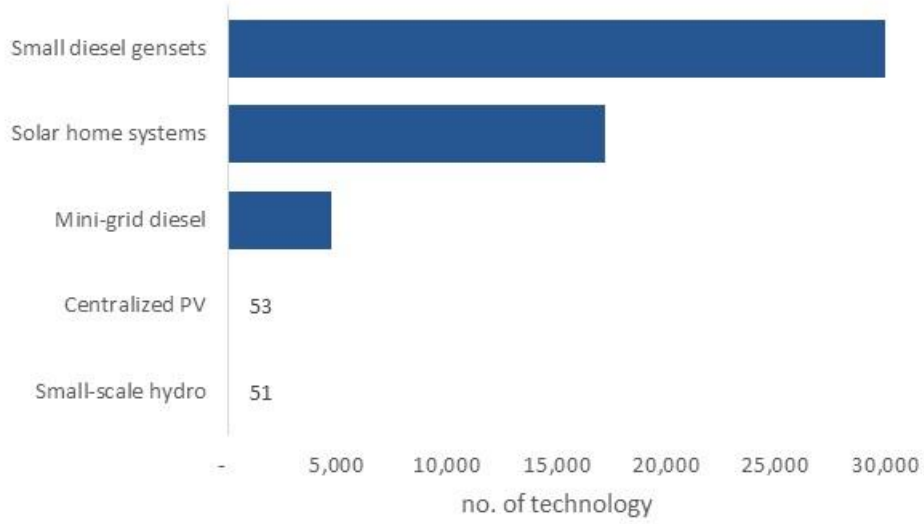
[121] The net capacity factor of a power plant is the ratio of its actual output over a period of time, to its potential output if it were possible for it to operate at full nameplate capacity indefinitely. Such a high capacity factor reflects the limited spare capacity in the Indonesian market.

Figure F.1:Total installed on-grid generation, capacity by technology for Indonesia in 2010[122]



Due to Indonesia being an archipelago, its grid is fragmented, consisting of four connected systems and 600 isolated grids. There is also significant off-grid support, as is shown in Figure F.2 below.

Figure F.2: Number of installed off-grid generators in 2008



Due to this, regional electricity tariffs have been introduced, as alternative to a uniform national electricity tariff, reflecting the fact that universal tariffs did not provide sufficient revenue to PLN[123]. The process for tariff setting is as follows: the central government sets the tariff for electricity sold to customers by holders of licences to provide electricity for public use. For "regional scope", the relevant provincial government will specify the tariff in accordance with these guidelines from the central government. The central and regional governments also approve the sale price of electricity from a power producer to the holder of a licence to provide electricity (if relevant) and the fee for use of a transmission line.

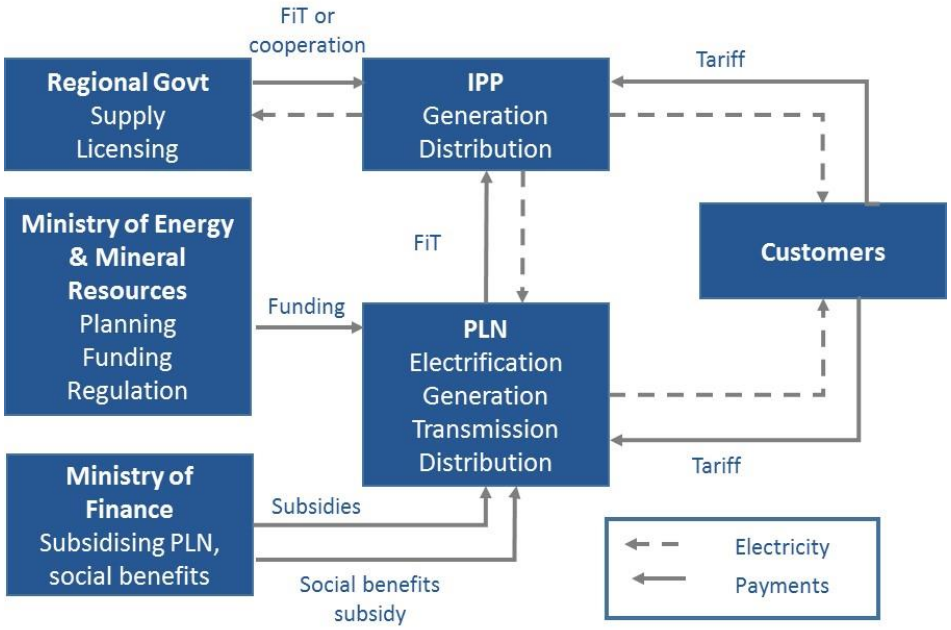
[122] Differ (2010) 'The Indonesian electricity system - a brief overview'

[123] For more detail, please see World Bank (2005) 'Electricity for all: Options for increasing access to electricity in Indonesia': "*Outside of Java-Bali, the current universal tariff structure (TDL) cannot provide Indonesia's national power provider, PLN, with sufficient revenue for achieving long-term financial sustainability….*"

Alongside these reforms, the central government has begun to remove subsidies as sustaining an artificially lower price is no longer sustainable. Commercial and industrial users pay on average twice as much as retail customers. Efforts to reduce subsidies have been challenging, and were delayed to this year from the proposed implementation date of 2011. In 2009, PLN received US$4.9bn in subsidies, meaning that the average subsidy per kWh was just above 40%.[124] By 2011, electricity subsidies were equivalent to 1.2% of GDP.[125]

The structure of the electricity sector is summarised in Figure F.3.

Figure F.3: The organisation of the Indonesian electricity sector[126]



F.3. Infrastructure and public-private investment (PPI) activity

Since 2000, Indonesia has undertaken 46 PPP projects, more than half of which (24) have been in the energy sector, making up US$8.1bn of the total US$32.4bn of investments. The majority of these projects have been greenfield (92%).

A range of projects are currently in the process of being developed or have recently been completed. For example, The Asian Development Bank has provided a US$49m loan to the government of Indonesia for the construction of a cross-border transmission line to Malaysia, which is in addition to a US$49.5m loan provided by Agence Francaise de Development, and a US$2m grant from the Clean Energy Fund. Construction of the transmission line is due to be completed by December 2014. In addition, a large project that has been developed for a while is edging close to close. The Bhimanese Power Indonesia

[124] Differ loc.cit.
[125] OECD Economic Surveys: Indonesia 2012
[126] Differ loc. cit.

consortium for the Central Java coal-fired power project hopes to raise the US$4bn in debt by October 2014.

There have been some developments in renewables as well. In November 2013 Armstrong Asset Management reached final close on its South East Asia Clean Energy Fund, raising $164m from PROPARCO and Unigestion, a Switzerland-based asset management company. Other investors include IFC, DEG, FMO, IFC Catalyst Fund, and Armstrong. The fund has already invested US$30m in Annex Power to fund a pipeline of PV and biogas projects in Thailand, the Philippines and Indonesia.

However, the development of renewables projects has been slow. A consortium led by Medco negotiated its power purchase agreement for a 330MW geothermal plant for seven years. An offtake agreement was originally made in 2007, but the price was amended in 2010. The project is estimated to cost US$1.5bn. The final deal has agreed a price of at $0.0679 per kWh.[127]

F.4. Institutional arrangements

Market reform has however been an ongoing process. The state electricity company (*Perusahaan Listrik Negara*, PLN) began a restructuring process from 1994, with PLN converted from a state enterprise to a government-owned limited liability company. In 1995, PLN's assets were unbundled into two wholly owned subsidiaries. A number of attempts have been made to liberalise the sector and introduce competition but to date these have not been successful. In 2002, the government attempted to open up to competition, but this was overturned in 2004. The Electric Power Law in 2009 was a second attempt to end the special status of PLN. It aimed to change the industry structure and also share responsibility and decentralised authority to local government. The Law permits power generators to sell electricity to entities other than PLN, however, most independent generation continues to be sold to PLN or is off grid.

In 2010, the 2009 Act was expanded to support cooperation between PLN and private companies to construct power plants. This has some restrictions: power generation projects under 10MW must be held 100% by Indonesian entities or individuals; for projects over 10MW, this figure drops to 5%.

Procurement of projects

Currently, PLN procures new IPPs under a number of strategic programmes. The main scheme is the Fast Track II programme to Accelerate the Development of Renewable Energy, Coal and Gas Fired Power Plants, which includes 44 projects producing 3,097 MW of new capacity what have been pencilled in as IPPs. Through the Fast Track Programme, the government expects a 56% increase in overall energy investment by 2014. In addition, some IPPs are procured under Indonesia's PPP programme.

[127] Adapted from Project Finance Magazine,

There is a shortfall between the money recovered through retail tariffs and the costs of generation for the PLN, which is addressed through subsidies. These are provided through the Public Service Obligation (PSO) payment, and are critical to PLN's solvency. As a result of this, developers and lenders have sought confirmation from Government that the PSO will continue to be paid, so that PLN will be able to meet the commitments made through the PPAs. Currently, Government support on this issue is only available for projects within the Fast Track II or PPP programmes, through either the Ministry of Finance or Indonesian Infrastructure Guarantee Fund (IIGF).

The 2,000MW Central Java project, which was the first IPP procured through the PPP programme, is one of the few projects with a guarantee (issued in 2011). This guarantee does not give project companies direct recourse to the Government, but covers payment obligations for power purchase (though not termination payments).

Projects can be procured under two types of tender processes:

- **Direct appointment:** restricted to renewable projects, purchase of excess power and situations where the local power system is in critical condition. Such projects must be approved by the Ministry of Energy and Mineral Resources.
- **Public auction process:** a standard procurement process, and more common than direct appointment.

Under both methods, the key parameter is the price PLN pays for the electricity. However, this does not usually include any form of FIT – apart from a few localised and small-scale schemes, there are generally no FITs in Indonesia.

A significant issue that is unique to Indonesia in comparison to the other countries we have studied is the global value of its forests. This is a real challenge as the most appropriate locations for many renewables projects are in these forest areas. Indonesian law distinguishes between conservation forests, protected forests and production forests. Power projects are permitted in production forests and protected forests; however for the latter, project developers must obtain a 'Forest Borrow Permit' from the Ministry of Forestry to "borrow" the forest area. These permits are granted for a period of 20 years – as opposed to 25 or 30 years for standard PPAs – and can be revoked if they are breached.[128]

Renewables in Indonesia

In 2006, the Ministerial Decree 112 was published, which requires PLN to purchase renewable energy from projects sized between 1MW and 10MW. For low voltage projects, this must cover 60% of the generation costs, while this increases to 80% for medium voltage projects.

[128] Norton Rose (2011) 'Indonesian power projects: ten things to know'

In 2010, the Indonesian climate investment plan submission to the CTF[129] was approved, with the CTF providing co-financing of US$400m to support Indonesia's goals of providing 17% of total energy use from renewable energy by 2025. Specifically, the plan proposed funding for two programmes:

- scaling up of large-scale geothermal power (expected to almost to double); and
- accelerating initiatives to promote energy efficiency and renewables (especially biomass).

The plan hoped to leverage additional financing of up to US$2.7bn. It was revised in March 2013, but broadly appears to have been successful to date.

F.5. Risk distribution in Indonesian IPPs

To date, the PLN does not use a standard form PPA, evolving from project to project with a similar risk allocation. The types of risks that are accepted include:

- take-or-pay;
- force majeure and change in law relief;
- termination payments for PLN default and political force majeure;
- international arbitration;
- assignment to lenders is permitted; and
- an agreed form of direct agreement between lenders and PLN.

However, key areas for negotiation that remain include:

- components of termination payment;
- deemed commissioning;
- deemed dispatch payment;
- triggering events for cost increases; and
- fuel cost pass-through.[130]

[129] One of the Climate Investment Funds, the US$5.2bn CTF provides middle income countries with resources to explore options to scale up the demonstration, deployment, and transfer of low-carbon, clean technologies.
[130] Norton Rose loc. cit.

ANNEX G PUBLICLY PROVIDED RISK INSURANCE AND PARTIAL RISK GUARANTEES

Case Study: World Bank (IBRD and IDA)	
Feature	**Description**
Insurance/ guarantee	Partial Risk Guarantee (PRG).
Eligible party	Private lenders on projects approved by the World Bank.
Requirements for scheme	New investment in a developing member country.
Coverage of a) principal, b) future earnings	Up to 100% of both principal and interest on debt only.
Risks covered	Political and regulatory risks, including standard political risks and breach of contract.
Cost of coverage	IBRD: Total fees of up to 80 bps for initiation fee, processing fee and front-end fee. Recurring fee from 50 bps to 90 bps depending on average maturity period, including a guarantee fee. IDA: Total fees of up to 65 bps for initial fees. Recurring fees 75 bps[131]
Project size limits	Nothing specific noted.
Coverage period	As required.
Relationship with govt & cost recovery method	Indemnity agreement with host government.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Not clear.
Burden of proof	Claimant.
Case study examples	Hydro-electric project in Sierra Leone with breach of PPA by public body in 2005. Haripur Power Co, Bangladesh.

[131] Source: World Bank presentation to GETFIT East Africa/ Uganda Stakeholders meeting, January 2012

Case Study: World Bank (IBRD and IDA)	
Feature	**Description**
Total exposure	Nothing specific noted.
Other notes	Only issued eight times since inception for renewable energy projects, but noted an increase in demand in the energy sector given more recent developments. Can complement other insurance.

Case Study: IFC	
Feature	**Description**
Insurance/ guarantee	Partial Credit Guarantee
Eligible party	Private lenders on technically sound and potentially profitable projects in developing member countries.
Requirements for scheme	New investments (including expansion, privatisation and concessions) and existing assets may be eligible for Risk Sharing Facilities.
Coverage of a) principal, b) future earnings	No percentage limit given.
Risks covered	Credit risk from borrower.
Cost of coverage	Market based fees.
Project size limits	Not specified.
Coverage period	As required.
Relationship with govt & cost recovery method	Acknowledgement by host government.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.

Case Study: IFC	
Feature	**Description**
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: MIGA	
Feature	**Description**
Insurance/ guarantee	Political Risk Guarantee (PRG)
Eligible party	Commercial entities from a MIGA member country, both debt and equity.
Requirements for scheme	New cross-border investments and project viability.
Coverage of a) principal, b) future earnings	Up to 90% on equity plus 500% of earnings losses, 95% of the debt principal, with 135% of the principal to cover accrued interest losses.
Risks covered	Four choices for types of risk to cover: currency inconvertibility, expropriation, war and civil disturbance, and breach of contract. Expanded to cover non-honouring of sovereign obligations of payment from state-owned entities too in 2013.
Cost of coverage	Based on project and country fee, with application fee of $5-10k and processing fee of $25k.
Project size limits	Recovery up to $200m.
Coverage period	Up to 15 years (20 years in exceptional cases).
Relationship with govt & cost recovery method	Host country approval required, including counter-guarantee from host government to MIGA. In the situation where MIGA pays out and the host government does not reimburse, the country would be "off-cover" for MIGA in future. MIGA has only failed to be reimbursed on six[132] occasions since it was founded in 1988.

[132] Source: MIGA

Case Study: MIGA	
Feature	**Description**
Requirement for negotiation and dispute resolution	Undertake pre-claim efforts, but only with the consent and participation of the claimants.
Time to recover funds	Aim to provide compensation within 6-14 months of the loss. In reality, has been 2-3 years from the event date.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	MIGA has a per country limit of $720m.
Other notes	MIGA has paid out six claims since its inception in 1988, but has acted as a facilitator on over 90 projects. Issuance totals have been increasing FY2010 = $1.5bn, FY2013 = $2.8bn. Net exposure up from $4.3bn to $6.4bn in this time. Indonesia represents the country with MIGA's seventh largest exposure.

Case Study: Africa Trade Insurance Agency (ATI)	
Feature	**Description**
Insurance/ guarantee	Political Risk Insurance (PRI).
Eligible party	Investors from an African state.
Requirements for scheme	Does not specify between new or existing products.
Coverage of a) principal, b) future earnings	For PRI, it covers up to 100%.
Risks covered	Expropriation, transfer restriction, war and civil disturbance, arbitral award default, comprehensive non-payment.
Cost of coverage	Country specific, but around 2-3.5% per annum of the total investment value.
Project size limits	Up to $100m (although ATI can only keep $10m per project on its own books and would reinsure the rest).

Case Study: Africa Trade Insurance Agency (ATI)	
Feature	**Description**
Coverage period	Up to 10 years.
Relationship with govt & cost recovery method	Host countries are equity investors in ATI. In the event of a pay-out, the country must reimburse ATI or its equity is drawn on.
Requirement for negotiation and dispute resolution	Payment on outcome of arbitration
Time to recover funds	Time taken for arbitration
Burden of proof	As above
Case study examples	A selection of projects is available at: http://www.ati-aca.org/index.php/projects/sector/energy-sector.
Total exposure	$706 million[133]
Other notes	Members include African governments, insurers, AfDB and the Italian ECA[134]

Case Study: AfDB	
Features	**Description**
Insurance/ guarantee	Partial Risk Guarantee (PRG).
Eligible party	Private lenders eligible for AfDB funding.
Requirements for scheme	Can be any public or private sector that meets the environmental requirements for debt.
Coverage of a) principal, b) future earnings	For the private sector, this is 33% of total project cost, or 50% of shareholders' net worth.
Risks covered	Currency inconvertibility, expropriation and breach of contract.

[133] Source: ATI 2012 annual report.
[134] Full list at: http://www.ati-aca.org/index.php/member-relations/current-members

Case Study: AfDB	
Features	**Description**
Cost of coverage	Public sector projects: standby fee of 0.75% and a guarantee fee covering lending spread and risk premium. Private sector projects: front-end fee and standby fee each 1% of max exposure, guarantee fee for lending spread and risk premium, and an appraisal fee to cover legal and other expenses including the bank and underwriters.
Project size limits	Not specified.
Coverage period	Up to 20 years for public sector, 15 years for private sector. In case of bullet repayment, maximum is 15 years.
Relationship with govt & cost recovery method	Normally requires a counter guarantee from the member country.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: AsDB	
Feature	**Description**
Insurance/ guarantee	Political Risk Guarantee (PRG)
Eligible party	Any commercial lenders, including public and private insurers & reinsurers.
Requirements for scheme	Public or private operations on greenfield and expansion projects for debt holders.

Case Study: AsDB	
Feature	**Description**
Coverage of a) principal, b) future earnings	Up to 100% of principal and interest. If no counterindemnity then $150m or 50% of project costs.
Risks covered	Currency inconvertibility, expropriation, war and civil disturbance, and breach of contract (includes frustration of arbitration process). Board can approve other forms of coverage.
Cost of coverage	Front end fee of 1% for public sector, market rates for private. Guarantee fee of 40 bps with counterindemnity, market rates without.
Project size limits	No limit.
Coverage period	15 years, but up to 32 years with Board approval.
Relationship with govt & cost recovery method	Counterindemnity required for public sector projects only.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Not available. AsDB approved three guarantees totalling $700m in 2010, four guarantees totalling $416.6m in 2011[135] and two guarantees totalling $403m in 2012[136]
Other notes	-

[135] Source: Asian Development Bank Financial Profile 2012
[136] Source: Asian Development Bank Financial Report 2012

Case Study: EBRD	
Feature	**Description**
Insurance/ guarantee	Political Risk Guarantee (PRG)
Eligible party	Private sector, financial institutions or sub-sovereigns.
Requirements for scheme	For infrastructure, financial sector strengthening or capital market development, for debt holders.
Coverage of a) principal, b) future earnings	35% of project cost.
Risks covered	Currency inconvertibility, expropriation, war and civil disturbance, licence revocation and breach of contract.
Cost of coverage	Case by case basis, market based.
Project size limits	Maximum pay-out of $150m.
Coverage period	15 years.
Relationship with govt & cost recovery method	No sovereign counter guarantee.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: IADB	
Feature	**Description**
Insurance/ guarantee	Political Risk Guarantee (PRG)
Eligible party	Private lenders located in member countries.
Requirements for scheme	Includes greenfield and expansion projects, loans and refinancing, and capital markets for debt holders.
Coverage of a) principal, b) future earnings	Up to 50% of project costs.
Risks covered	Currency inconvertibility, expropriation, and breach of contract.
Cost of coverage	Guarantee fees, commitment fees and certain upfront fees on a case by case basis.
Project size limits	Maximum pay-out of $200m.
Coverage period	No limit, dependent on assets.
Relationship with govt & cost recovery method	In the Peru example noted below, any government disbursement would be converted into a loan from the IDB to the host government.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Peru toll road concessions.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: EIB	
Feature	**Description**
Insurance/ guarantee	Political risk carve-out[137] on guarantee for loans.
Eligible party	Outside of the EU for debt holders.
Requirements for scheme	Long- and medium-term debt (both in foreign and domestic currency).
Coverage of a) principal, b) future earnings	50% of project cost.
Risks covered	Non-transfer of currency, war and civil disturbance, expropriation and denial of justice.
Cost of coverage	Case by case basis, market based.
Project size limits	Typical range is up to $100m.
Coverage period	Up to 25 years for infrastructure projects.
Relationship with govt & cost recovery method	No counter guarantee from government required. Security required may though include third party guarantees, pledge of assets and accounts.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

[137] That is, political risks such as war, civil disturbance and expropriation would be covered by the EIB product rather than the existing guarantee.

Case Study: Andean Development Corp (CAF)	
Feature	**Description**
Insurance/ guarantee	Partial Credit Guarantee (PCG)
Eligible party	All lender types, not in real estate or military transactions.
Requirements for scheme	Public and private infrastructure projects, for debt.
Coverage of a) principal, b) future earnings	Covered up to 33% of a debt issue.
Risks covered	Credit risk from the borrower.
Cost of coverage	Case by case basis, market based.
Project size limits	Up to $80m.
Coverage period	15 years.
Relationship with govt & cost recovery method	No explicit need for a counterguarantee.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: Inter Arab Investment Guarantee Corporation (IAIGC)	
Feature	**Description**
Insurance/ guarantee	Insurance.
Eligible party	Arab nationals or Arab-owned banks.
Requirements for scheme	New investments in Arab countries, equity investments and loans for new investments over 3 years in maturity.
Coverage of a) principal, b) future earnings	Up to 90% for inconvertibility, 85% for other risks.
Risks covered	Currency inconvertibility, expropriation, and war and civil disturbance.
Cost of coverage	c. 0.5% for guarantee and commitment fees and $350 registration fee.
Project size limits	Not given.
Coverage period	Not given for loan guarantee. Direct investment profile over ten years.
Relationship with govt & cost recovery method	Nothing specific noted.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: World Bank (IBRD and IDA)	
Building block	**Description**
Insurance/ guarantee	Partial Risk Guarantee (PRG).
Eligible party	Private lenders on projects approved by the World Bank.
Requirements for scheme	New investment in a developing member country.
Coverage of a) principal, b) future earnings	Up to 100% of both principal and interest on debt only.
Risks covered	Political and regulatory risks, including standard political risks and breach of contract.
Cost of coverage	Total fees of 80 bps for initiation fee, processing fee and front-end fee. Recurring fee from 50 bps to 90 bps depending on average maturity period, including a guarantee fee.
Project size limits	Nothing specific noted.
Coverage period	As required.
Relationship with govt & cost recovery method	Indemnity agreement with host government.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Not clear.
Burden of proof	Claimant.
Case study examples	Hydro-electric project in Sierra Leone with breach of PPA by public body in 2005. Haripur Power Co, Bangladesh.
Total exposure	Nothing specific noted.
Other notes	Only issued eight times since inception for renewable energy projects, but noted an increase in demand in the energy sector given more recent developments. Can complement other insurance.

Case Study: IFC	
Building block	**Description**
Insurance/ guarantee	Partial Credit Guarantee
Eligible party	Private lenders on technically sound and potentially profitable projects in developing member countries.
Requirements for scheme	New investments (including expansion, privatisation and concessions) and existing assets may be eligible for Risk Sharing Facilities.
Coverage of a) principal, b) future earnings	No percentage limit given.
Risks covered	Credit risk from borrower.
Cost of coverage	Market based fees.
Project size limits	Not specified.
Coverage period	As required.
Relationship with govt & cost recovery method	Acknowledgement by host government.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: MIGA	
Building block	**Description**

Case Study: MIGA	
Building block	**Description**
Insurance/ guarantee	Political Risk Guarantee (PRG)
Eligible party	Commercial entities from a MIGA member country, both debt and equity.
Requirements for scheme	New cross-border investments and project viability.
Coverage of a) principal, b) future earnings	Up to 90% on equity plus 500% of earnings losses, 95% of the debt principal, with 135% of the principal to cover accrued interest losses.
Risks covered	Four choices for types of risk to cover: currency inconvertibility, expropriation, war and civil disturbance, and breach of contract. Expanded to cover non honouring of payment from state-owned entities too in 2013.
Cost of coverage	Based on project and country fee, with application fee of $5-10k and processing fee of $25k.
Project size limits	Recovery up to $200m.
Coverage period	Up to 15 years (20 years in exceptional cases).
Relationship with govt & cost recovery method	Host country approval required.
Requirement for negotiation and dispute resolution	Undertake pre-claim efforts, but only with the consent and participation of the claimants.
Time to recover funds	Aim to provide compensation within 6-14 months of the loss. In reality, has been 2-3 years from the event date.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	MIGA has a per country limit of $720m.
Other notes	MIGA has paid out six claims since its inception in 1988, but has acted as a facilitator on over 90 projects. Issuance totals have been increasing FY2010 = $1.5bn, FY2013 = $2.8bn. Net exposure up from $4.3bn to $6.4bn in this time. Indonesia represents the country with MIGA's seventh largest exposure.

Case Study: Africa Trade Insurance Agency (ATI)	
Building block	**Description**
Insurance/ guarantee	Political Risk Insurance (PRI).
Eligible party	Investors from an African state.
Requirements for scheme	Does not specify between new or existing products.
Coverage of a) principal, b) future earnings	For PRI, it covers up to 100%.
Risks covered	Expropriation, transfer restriction, war and civil disturbance, arbitral award default, comprehensive non-payment.
Cost of coverage	Country specific, but around 2-3.5% per annum of the total investment value.
Project size limits	Up to $100m.
Coverage period	Up to 10 years.
Relationship with govt & cost recovery method	Nothing specific noted.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Nothing specific noted.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	Nothing specific noted.

Case Study: AfDB	
Building block	**Description**
Insurance/ guarantee	Partial Risk Guarantee (PRG).
Eligible party	Private lenders eligible for AfDB funding.
Requirements for scheme	Can be any public or private sector that meets the environmental requirements for debt.
Coverage of a) principal, b) future earnings	For the private sector, this is 33% of total project cost, or 50% of shareholders' net worth.
Risks covered	Currency inconvertibility, expropriation and breach of contract.
Cost of coverage	Public sector projects: standby fee of 0.75% and a guarantee fee covering lending spread and risk premium. Private sector projects: front-end fee and standby fee each 1% of max exposure, guarantee fee for lending spread and risk premium, and an appraisal fee to cover legal and other expenses including the bank and underwriters.
Project size limits	Not specified.
Coverage period	Up to 20 years for public sector, 15 years for private sector. In case of bullet repayment, maximum is 15 years.
Relationship with govt & cost recovery method	May require a counter guarantee from the member country.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: AsDB	
Building block	**Description**
Insurance/ guarantee	Political Risk Guarantee (PRG)
Eligible party	Any commercial lenders, including public and private insurers & reinsurers.
Requirements for scheme	Public or private operations on greenfield and expansion projects for debt holders.
Coverage of a) principal, b) future earnings	Up to 100% of principal and interest. If no counterindemnity then $150m or 50% of project costs.
Risks covered	Currency inconvertibility, expropriation, war and civil disturbance, and breach of contract (includes frustration of arbitration process). Board can approve other forms of coverage.
Cost of coverage	Front end fee of 1% for public sector, market rates for private. Guarantee fee of 40 bps with counterindemnity, market rates without.
Project size limits	No limit.
Coverage period	15 years, but up to 32 years with Board approval.
Relationship with govt & cost recovery method	Counterindemnity required for public sector projects only.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: EBRD	
Building block	**Description**
Insurance/ guarantee	Political Risk Guarantee (PRG)
Eligible party	Private sector, financial institutions or sub-sovereigns.
Requirements for scheme	For infrastructure, financial sector strengthening or capital market development, for debt holders.
Coverage of a) principal, b) future earnings	35% of project cost.
Risks covered	Currency inconvertibility, expropriation, war and civil disturbance, licence revocation and breach of contract.
Cost of coverage	Case by case basis, market based.
Project size limits	Maximum payout of $150m.
Coverage period	15 years.
Relationship with govt & cost recovery method	No sovereign counter guarantee.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: IADB	
Building block	**Description**
Insurance/ guarantee	Political Risk Guarantee (PRG)
Eligible party	Private lenders located in member countries.
Requirements for scheme	Includes greenfield and expansion projects, loans and refinancing, and capital markets for debt holders.
Coverage of a) principal, b) future earnings	Up to 50% of project costs.
Risks covered	Currency inconvertibility, expropriation, and breach of contract.
Cost of coverage	Guarantee fees, commitment fees and certain upfront fees on a case by case basis.
Project size limits	Maximum payout of $200m.
Coverage period	No limit, dependent on assets.
Relationship with govt & cost recovery method	In the Peru example noted below, any government disbursement would be converted into a loan from the IDB to the host government.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Peru toll road concessions.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: EIB	
Building block	**Description**
Insurance/ guarantee	Political risk carve out on guarantee for loans.
Eligible party	Outside of the EU for debt holders.
Requirements for scheme	Long- and medium-term debt (both in foreign and domestic currency).
Coverage of a) principal, b) future earnings	50% of project cost.
Risks covered	Non-transfer of currency, war and civil disturbance, expropriation and denial of justice.
Cost of coverage	Case by case basis, market based.
Project size limits	Typical range is up to $100m.
Coverage period	Up to 25 years for infrastructure projects.
Relationship with govt & cost recovery method	No counter guarantee required. Security required may though include third party guarantees, pledge of assets and accounts.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: Andean Development Corp (CAF)	
Building block	**Description**
Insurance/ guarantee	Partial Credit Guarantee (PCG)
Eligible party	All lender types, not in real estate or military transactions.
Requirements for scheme	Public and private infrastructure projects, for debt.
Coverage of a) principal, b) future earnings	Covered up to 33% of a debt issue.
Risks covered	Credit risk from the borrower.
Cost of coverage	Case by case basis, market based.
Project size limits	Up to $80m.
Coverage period	15 years.
Relationship with govt & cost recovery method	No explicit need for a counter-guarantee.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

Case Study: Inter Arab Investment Guarantee Corporation (IAIGC)	
Building block	**Description**
Insurance/ guarantee	Insurance.
Eligible party	Arab nationals or Arab-owned banks.
Requirements for scheme	New investments in Arab countries, equity investments and loans for new investments over 3 years in maturity.
Coverage of a) principal, b) future earnings	Up to 90% for inconvertibility, 85% for other risks.
Risks covered	Currency inconvertibility, expropriation, and war and civil disturbance.
Cost of coverage	c. 0.5% for guarantee and commitment fees and $350 registration fee.
Project size limits	Not given.
Coverage period	Not given for loan guarantee. Direct investment profile over ten years.
Relationship with govt & cost recovery method	Nothing specific noted.
Requirement for negotiation and dispute resolution	Nothing specific noted.
Time to recover funds	Nothing specific noted.
Burden of proof	Claimant.
Case study examples	Nothing specific noted.
Total exposure	Nothing specific noted.
Other notes	-

ANNEX H OPIC FIT INSURANCE[138]

OPIC is the U.S. government's development finance institution, set up in 1971. It works with the US private sector companies who are active in emerging markets, providing investors with financing, guarantees, political risk insurance, and support for private equity investment funds. OPIC has reserves of US$5bn with a full faith and credit guarantee from the US Government. Given the influence of the US Government is perhaps not surprising that OPIC has managed to recover 92%[139] of claim amounts from host governments.

Since 2012, OPIC has offered PRI to cover potential losses from regulatory risk for renewables projects, in addition to its traditional covers. This covers actions such as:

- material changes to FITs;
- critical changes to taxation or other regulations affecting the project's ability to operate;
- revocation of licences or permits necessary for the operation of a project;
- improper interference with carbon credit generation (under the UN Clean Development Mechanism or voluntary standards) or sales; and
- repudiation of a concession, technical assistance, or forestry-related services agreement by a foreign government.

This is for US investments in new or existing projects where the cash-flows are being used to finance an extension. This covers a wide range of countries, although many of these are European countries where OPIC would only support projects in highly unusual circumstances and with exceptional developmental impact. Once these are removed there are 23 emerging market countries, of which only three are in Africa, as Table H.1 shows below.

Table H.1: Non-European countries and technologies eligible for feed-in tariff cover

Country	Solar	Wind	Hydro	Geothermal	Bioenergy	Not specific
South America						
Argentina	✘	✘	✘	✘	✘	
Costa Rica						✘
Dominican Republic	✘	✘	✘		✘	
Ecuador	✘	✘	✘	✘	✘	
Honduras	✘	✘	✘	✘	✘	
Nicaragua	✘	✘	✘	✘	✘	
Panama						✘

[138] Source: draws heavily upon CPI – Policy Risk Instruments and Chadbourne & Parke LLP update.
[139] Source: OPIC. http://www.opic.gov/what-we-offer/political-risk-insurance/claims-and-arbitral-awards

Country	Solar	Wind	Hydro	Geothermal	Bioenergy	Not specific
Peru						✘
Asia & Middle East						
Armenia		✘	✘		✘	
India	✘	✘	✘	✘	✘	
Indonesia	✘	✘	✘	✘	✘	
Israel	✘	✘				
Malaysia	✘		✘		✘	
Mongolia	✘	✘	✘			
Thailand	✘	✘	✘		✘	
Philippines	✘	✘	✘		✘	
South Korea	✘	✘	✘		✘	
Sri Lanka		✘	✘		✘	
Turkey	✘					
Ukraine	✘	✘	✘		✘	
Africa						
Kenya		✘	✘		✘	
Tanzania	✘	✘	✘	✘	✘	
Uganda	✘	✘	✘	✘	✘	

The cover can be both short and long term:

- Short term: business income loss cover: small changes to a FIT rate where OPIC will provide income loss compensation for one to two years while the business restructures to incorporate the change.
- Long term: real expropriation cover including abrogation of contract where the cut in the FIT rate is so extreme that the project cannot continue to operate even after it has been restructured, or where the cut causes a loan default. OPIC can also reimburse investors for arbitration costs.

OPIC will pay up to 90% of the equity investment plus 180% to cover future earnings, on projects up to $250m, should the shortfall in revenue last for over six months. This coverage lasts for 20 years. Premiums will vary by project but are likely to be 50-80 basis points of the insured investment on an annual basis.

The coverage includes claims for the following:

- income loss following a reduction to the FIT;

- claim made for complete loss of the project following a reduction or termination of a FIT;
- tariff reduction in the form of creeping expropriation of a project;
- if a claimant wins an arbitration award, but the government refuses to pay; and
- the frustration of an arbitration service.

OPIC expects such claims to be resolved within 15 months of the change of policy.

To be eligible, projects must be assessed as commercially viable and have a well-structured PPA in place with a public off-taker at a guaranteed FIT rate. This is necessary for any subsequent policy changes to be configured as breaches of contract. There are two possible routes under which a claim can be made and paid out.

The first route is a fairly standard arbitration route. The investor must pursue arbitration and then convince OPIC that the government's claim is not merited. In such a case, OPIC would pay the investor then seek to recover the funds from the responsible government. It would not though pay out in the case where the government had every right to do what it did. This latter point introduces some uncertainty over what the government has a right to do.

The second route is where the change in policy is "generally applicable" (that is, not specific to a particular project). In this situation, OPIC will not require arbitration before paying a claim.

H.1. Examples of pay-outs

In Argentina, OPIC paid a claim on the Ponderosa Project where a change in national legislation under its sovereign capacity was deemed to have repudiated a contractual obligation. The investor has lost its investment returns for six months and OPIC paid out $50m. Similar cases include MidAmerican in Indonesia and the Bank of America Dabhol project in India[140].

[140] Source; CPI – Policy Risk Instruments, OPIC

Box H.1: OPIC Insurance for a Solar Project in South Asia

OPIC provided political risk insurance for a small-scale photovoltaic solar project in South Asia. The project was developed under a long-term power purchase agreement (PPA) between a U.S. solar power developer and a state government utility. OPIC protected the power developer against a variety of risks including government default on an arbitral award and government interference with the dispute resolution process provided under the PPA. In addition, because the project is expected to generate carbon credits under the UN's Clean Development Mechanism, OPIC protected the investor against government interference in the generation or sale of carbon credits, including breaches of the carbon credit provision of the PPA or arbitrary changes in law that impair the value of the carbon credits.

Source: OPIC

OPIC developed a political risk insurance product to cover private sector investment in forestry projects, including Reducing Emissions from Deforestation and Forest Degradation (REDD) projects, as well as afforestation and reforestation. In 2011, OPIC entered its first contract for this type of coverage. The deal will provide political risk insurance to Terra Global Capital, an investor in a project that will protect large swathes of forest in Cambodia through the sale of offset credits in international carbon markets.

Box H.2: OPIC insurance helps protect the rain forest in Cambodia

Source: OPIC

ANNEX I AFRICA TRADE INSURANCE AGENCY (ATI)

Introduction

ATI was established in 2001, to fill a market gap in trade and investment risk mitigation in Africa. Before that point, risk mitigation tools for credit and political insurance were not available for many African countries, and where the cover existed, it was very costly. Currently, ATI's member countries are: Burundi; Democratic Republic of Congo; Djibouti*; Eritrea*; Ghana**; Kenya; Liberia**; Madagascar; Malawi; Rwanda; Sudan*; Tanzania; Uganda; Zambia.[141]

ATI also has received support from the donor community: its donors have supported the establishment and operating expenses of underwriting field offices in ATI's African Member States. In 2012, ATI received grants from the Tanzania Private Sector Foundation (TPSF) and USAID to support its field offices in Tanzania and Rwanda respectively. ATI also receives grants from the African Development Bank's Fund for African Private Sector Assistance (FAPA) for the enhancement of its operational effectiveness. Previously grants have also been provided by the EU. The AfDB has also recently made an investment of US$15m in ATI's equity.

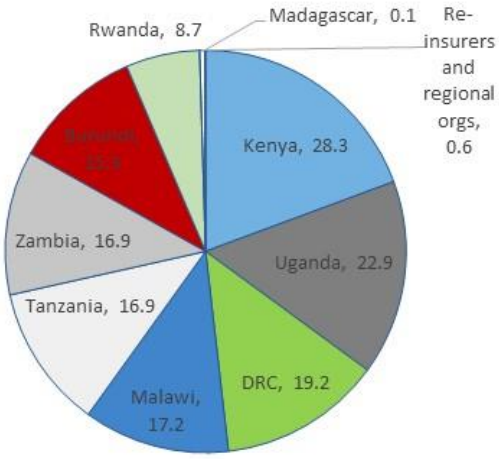
Structure

The initial financing for the establishment of ATI was raised through individual countries borrowing from the IDA to fund their equity participations, As part of the arrangement, should a member government of ATI default on its obligations to ATI, they cross default on all IDA loans. This provides a very strong incentive not to default and to honour commitments that are insured by ATI.

All member governments are shareholders, and their class of shares must at all times represent a minimum of 51% of ATI's capital stock. The level of investment by each particular government determines the amount of business that the Agency can support in that country.

[141] * A signatory to the ATI Treaty, pending ratification ; ** Accepted into membership pending signature and ratification of the ATI Treaty

Figure I.1: Paid in capital by country, end 2012



ATI has a high Minimum Required Capital (subscribed capital) to demonstrate that it can meet its obligations as they fall due. Presently the subscribed capital is placed at:

[43% of Net Exposure] + [4% of Gross Reinsured Exposure]

ATI's Operations Manual sets out that it can leverage its paid-in capital and reserves by five times. As of 31 December 2012, ATI's net exposure amounted to US$373.4m, which only represents 50% of its underwriting capacity. The maximum retained exposure by ATI on any insurance is US$10m. As a result, on larger transactions, ATI cedes a considerable amount of its exposure, typically to the Lloyd's reinsurance market.

Product offerings

Despite being set up in 2001, ATI saw low take up of business in early years (only four policies in first two years), which led to the product offering being revised in 2006, which led to a significant benefit. Currently it offers:

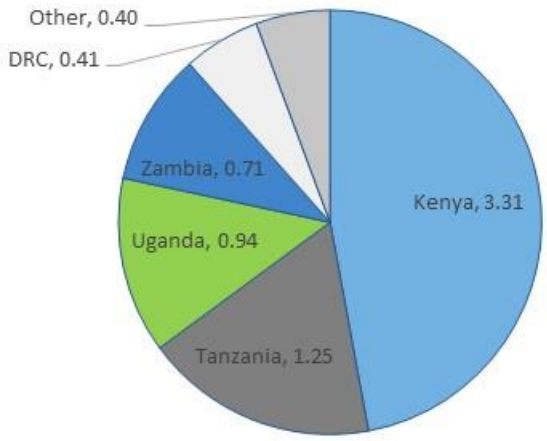
- *Trade credit insurance*. Risks covered: a corporate buyer or borrower who refuses to pay or is unable to pay due to insolvency or deteriorating financial circumstances, or who pays later than agreed. Cover is either for whole turnover or single obligor.
- *Political Risk Insurance (PRI)*. Risks covered: expropriation of assets; inability to convert or transfer currency; business interruption or damage due to war or civil disturbance; sanctions imposed by UN; non-payment by host governments or its agencies; default by a host government on an arbitration award; breach of contract by a host government; contract frustration (e.g. unilateral cancellation of operating contract or license).
- *Political violence, terrorism & sabotage insurance.* Risks covered: damage to property and loss of income or revenues due to business interruption.
- ATI also offer surety bonds.

To be eligible for cover, the investment or project must be in at least one of the ATI member countries. Coverage is for up to ten years. The costs of this cover are country specific, but usually around 2-3.5% per annum of the total insured value. The standard application process is set out below:

- Application Step I: The prospective client (or their authorized representative) submits an insurance enquiry form.
- Application Step II: Once the enquiry is approved, ATI will then issue a non-binding indication (NBI) within 48 hours.
- Application Step III: If the terms and conditions quoted in the NBI are acceptable to the client, they will submit the application, and all other relevant documents for ATI to underwrite the deal.
- Application Step IV: ATI will underwrite the deal and issue the policy within 2-4 weeks after all relevant information is received.

As of June 2012, ATI had supported US$7bn of business in total, with the largest share of this in Kenya, as shown below.

Figure I.2: Business by county (US$bn)



Pipeline of renewables projects

The table at the end of this appendix, provided to us by ATI's management, sets out ATI's current portfolio, as of early 2014, of pending insurance offers for renewables projects. This includes the country, technology and the risk party (that is, who the insurance protection is against), size and tenor of the total underlying transaction, the forms of risk covered, the indicative premium (most being NBIs), the length of the period covered, the currency in which the policy is written, the projected year of issuance, ATI's capacity and the balance requiring reinsurance. This illustrates many of the aspects of ATI's policies described above.

This illustrates the range of support available from ATI to address the investment risks involved in renewables projects.

Issues facing ATI

Despite its success to date, ATI faces several challenges:

- Despite a growing number of countries becoming members, its capital is still too small to enable it to retain a higher proportion of business. As set out in its portfolio, many of the projects it is considering supporting are of considerable scale, which means that much of this business has to be ceded.
- On the other hand, the amount of ATI's retained business is low relative to its cost base, meaning that its income to cost ratio is not very efficient. This can be seen to create something of a 'chicken and egg' situation.
- The costs of ATI's policies are regarded by many clients as being expensive relative to other sources of PRI cover. There is cost pressure from commercial reinsurance markets, which ATI seeks to mitigate through its preferred creditor status in member countries (which means that costs are lower than in a pure commercial insurance arrangement).
- There is however, sometimes a misalignment between the risks that ATI is willing to cover and those of its reinsurers, who are more conservative. Part of this is due to the fact that ATI is in a position to observe the underlying nature of the risk and also has a degree of influence with governments. An example of this is ATI's willingness to pay-out after 180 days on a non-payment claim in certain circumstances, whereas commercial insurers only want to provide cover for non-payment of an arbitration or denial of justice.
- It also has problems in offering policies to match the tenors required by many projects.
- As with many public insurers, underwriting skills are in short supply.

Support from donors

As set out, the AfDB has recently helped to increase ATI's capital base through a US$15m investment, although there is room for providing more capital. However, ATI's management believes that further investment would greatly help improve the scale of ATI's underwriting capacity and through this its business economics, as it strengthens the case for it to retain more business.

Improving access to more cost effective reinsurance is likely to be assisted in part through the creation of the AEGF. A DFI is also looking at ways of helping to increase the length of tenor that ATI is able to offer through providing back ended guarantees for years 11-15, with ATI rewriting its policy after five years so that the guarantee can be released[142].

[142] The EIB has also provided ATI with a grant for training.

Country	Technology	Project	Risk party	Size of potential transaction (exposure in USD)	Tenor (years)	Risks covered	Premium rate offered	Length of period	Policy currency	Projected year of issuance	ATI's capacity	Balance to reinsure
KEN	Wind farm,	300MW Greenfield wind power project	Lake Turkana Wind Power Limited	13,333,333	8.0	Expropriation, Transfer Restriction, War and Civil Disturbance, Embargo, Arbitration Award Default	1.7%-2.0%	8.0		2014	10,000,000	3,333,333
KEN	Wind farm,	300MW Greenfield wind power project	Lake Turkana Wind Power Project	72,869,900	8	PRI Equity	2.80%	8.0	EUR	2014	-	72,869,900
KEN	Wind farm,	300MW Greenfield wind power project	Lake Turkana Wind Power Project	11,106,600	8	PRI Hedge Providers	1.70%	8.0	EUR	2014	10,000,000	1,106,600
KEN	geothermal	Develop steam equivalent to 800MW at the Bogoria-Silali block	Geothermal Development Company Limited	350,000,000	7	Non-Payment by Sovereign Obligor	1.8-2.0%	7.0	USD	2014	15,000,000	335,000,000
KEN	geothermal	A 140 MW geothermal IPP project in Longonot, Naivasha about 20 kms from the Olkaria Field.	Africa Geothermal International (Kenya) Limited	150,000,000	25	Political Risk Insurance - Foreign Direct Investment (Equity):	1.7% - 1.9%	12.0		2014	10,000,000	140,000,000
KEN	Wind farm,	A wind power energy project which will be sold to KPLC	Kenya Power & Lighting Co. Ltd (KPLC)	7,000,000	8	Non-payment by sub-sovereign obligor	1.50%	8.0	USD	2014	10,000,000	
TAN	hydro	#N/A	TANESCO	16,400,000	5	Non honouring of sub-sovereign obligation	2.50%	1.0	USD	2014	10,000,000	4,760,000
TAN	hydro	#N/A	TANESCO	2,000,000	Tbd	Non honouring of sub-sovereign obligation	3.00%		USD	2014	10,000,000	
TAN	biomass	#N/A	TANESCO		8	Non honouring of sub-	1.7%-2.5%			2014		

Country	Technology	Project	Risk party	Size of potential transaction (exposure in USD)	Tenor (years)	Risks covered	Premium rate offered	Length of period	Policy currency	Projected year of issuance	ATI's capacity	Balance to reinsure
				3,737,000		sovereign obligation					10,000,000	
TAN	biomass	#N/A	TANESCO	15,187,000	8	Non honouring of sub-sovereign obligation	1.7%-2.5%			2014	10,000,000	5,187,000
UGA	hydro	Sale and purchase of electrical energy from a 50MW – 90MW thermal power generation facility	Uganda Electricity Transmission Company Limited ("UETCL")	24,000,000	5	Political Risk Insurance: Non-payment by Sub-sovereign obligor	2.00%	5.0	USD	2014	10,000,000	14,000,000
RWA	Wind farm,	A proposed 60 MW wind farm, selling power generated KPLC	Kinangop Wind Park Limited	145,000,000	21.2	Political Risk Insurance	1.5%-1.9%		USD	2014	10,000,000	32,000,000
TAN	solar	#N/A	TANESCO	1,250,000	1	Non honouring of sub-sovereign obligation	2.75%			2014	10,000,000	
TAN	biomass	#N/A	TANESCO	3,737,000	8	Non honouring of sub-sovereign obligation	1.7%-2.5%	8.0	USD	2014	10,000,000	
TAN	biomass	#N/A	TANESCO	15,187,000	8	Non honouring of sub-sovereign obligation	1.7%-2.5%	8.0	USD	2014	10,000,000	8,927,650
TAN	hydro	Tulila Hydro Power , Tanzania	TANESCO	16,700,000	14	Non-Honouring of Sub-Sovereign Obligations				2014	10,000,000	6,700,000
TAN	hydro	Mapambasi 10MW Hydro Project	tbd	11,000,000	12	Borrowers Default				2014	10,000,000	1,000,000
KEN	hydro	Construction of a 3.8 MW hydro-electric power plant on Ndunda Falls on the Rupingazi River,	Kenya Power & Lighting Company Limited	12,500,000	2	Contract Frustration	2%-2.2%			2014	10,000,000	2,500,000

Country	Technology	Project	Risk party	Size of potential transaction (exposure in USD)	Tenor (years)	Risks covered	Premium rate offered	Length of period	Policy currency	Projected year of issuance	ATI's capacity	Balance to reinsure
		Embu County										
KEN	geothermal	Drilling 20 top holes to a depth of 1,000 metres in the Steam field, Kenya	Geothermal Development Company	2,560,000	1	Non-Payment by a Sub-sovereign	1.8% - 2.0%			2014	10,000,000	
KEN	transmission	Construction of one substation and transmission line.	Kenya Power and Lighting Company Limited ("KPLC")	28,903,910	5	Non payment by the Kenya Power and Lighting Company limited	1.8%-2.2%	5.0	USD	2014	10,000,000	17,503,280
KEN	geothermal	Supply and installation of a 5 – 10 MW geothermal modular power plant at Menengai	Geothermal Development Company Limited ("GDC")	12,000,000	15	Political Risk Insurance	1.8%-2%	15.0	USD	2014	10,000,000	800,000
UGA	hydro	Sale and purchase of electrical energy to be supplied by a 16 MWhydro-electric power generation facility	Uganda Electricity Transmission Company Ltd	6,000,000	10	Non-Honouring of a Sovereign Obligation	1.80%		USD	2014	10,000,000	
UGA	solar	#N/A	Various Cooperatives/ SACCOs	7,000,000	3	Expropriation, War & Civil Disturbance, Embargo and Goods-in-Transit	1.70%	1.0	USD	2014	10,000,000	
DRC	hydro	Rehabilitation of INGA 1 hydroelectric power plant including the supply and installation of	Societe Nationale d'Electricite	4,680,000	2	Contract Frustration	2.20%	1.0	USD	2014	10,000,000	51,523,000

Country	Technology	Project	Risk party	Size of potential transaction (exposure in USD)	Tenor (years)	Risks covered	Premium rate offered	Length of period	Policy currency	Projected year of issuance	ATI's capacity	Balance to reinsure
		electromechanical equipment.										
RWA	hydro	#N/A	Energy and Water Sanitation Authority (ESWA)	26,000,000	10	Expropriation; Transfer Restriction; War & Civil Disturbance; Non-Honouring of Sovereign Guarantee	Tbd			2014	10,000,000	16,000,000
RWA	solar	Solar plant installation in Rwanda	Energy, Water and Sanitation Authority ("EWSA") formerly Rwanda Electricity Corporation & Rwanda Water and Sanitation Cooperation ("RECO & RWASCO")	3,000,000	8	Political Risk Insurance	2.20%	10.0	USD	2014	10,000,000	
RWA	Peat/Biomass fired power	A 100MW Peat/Biomass fired power project in Busoro, Rwanda.	Energy, Water and Sanitation Authority ("EWSA") formerly Rwanda Electricity Corporation ("RECO")	450,000,000	10	Non-honouring of Sovereign Guarantee	2.2% - 2.5%	10.0	USD	2014	10,000,000	90,000,000

Country	Technology	Project	Risk party	Size of potential transaction (exposure in USD)	Tenor (years)	Risks covered	Premium rate offered	Length of period	Policy currency	Projected year of issuance	ATI's capacity	Balance to reinsure
KEN	geothermal	#N/A	Afrikon Limited	783,133	1	Borrowers Default	3.25%			2015	10,000,000	
KEN	geothermal	#N/A	tbd	tbd	Tbd	tbd	Tbd			2015		-
KEN	geothermal	#N/A	tbd	tbd	Tbd	tbd	Tbd			2015		-
KEN	hydro	#N/A	Kenya Power & Lighting Company Limited	12,500,000	3	tbd	Tbd			2015	10,000,000	2,500,000
BUR	hydro	#N/A	REGIE DE PRODUCTION ET DISTRIBUTION D'EAU ET D'ELECTRICITE (REGIDESO)	55,000,000	10	Expropriation, Transfer Restriction, War and Civil Disturbance, Embargo, Non-Honouring of Sovereign Guarantee	2.1%-2.3%		USD	2015	10,000,000	39,212,000
TAN	wind farm	100MW Wind Farm, Tanzania	tbd	38,000,000	10	Borrowers Default	Tbd			2016	10,000,000	28,000,000
TAN	transmission	#N/A	Rural Energy Agency (REA) - Tanzania	15,000,000	Tbd	tbd	Tbd	1.0		2016	10,000,000	
TAN	biomass	#N/A	TANESCO	tbd	3	tbd	n/a			2016		-
ZAM	hydro	#N/A	Zesco Limited	100,000,000	10	Contract Frustration; Payment default	1.8% - 2.4%			2017	10,000,000	90,000,000
				1,674,834,876								

ANNEX J WHAT MAKES A ROBUST, BANKABLE PPA?

If the premise that a good PPA is desirable is accepted, the question then becomes: "what specifically makes a good PPA, from the perspective of insurers and lenders?". Here, we turn to a list drawn up by OPIC. This list is intended to be a "wish list" describing the ideal PPA, and it should be emphasised that a PPA does not have to have all of these characteristics to be bankable or insurable. Nonetheless, it is instructive to at least set out the ideal situation and to discuss in general terms why each characteristic might be desirable. Note that this discussion is not a legal one, but rather one approached from the perspective of why these terms improve the situation for the project developer (and the project's financiers).

Clear obligation to take power delivered

Unless the off-taker is required to take – and pay for – the power that the renewable generator produces, it may simply ignore that power in favour of cheaper power from elsewhere. Including this clause avoids that risk, and reduces the developer's *volume risk.*

Fixed tariff rate based on cost of power generation plus reasonable rate of return

The key phrase here is "fixed tariff rate". This guarantees the renewables project a known, stable, price for its power. This guarantee, together with the obligation to take the power delivered, mean that the renewables project can make a robust estimate of how much revenue it will earn even in difficult years – for example, when there is less sunlight or wind than expected. This estimate is a major contribution to making the project bankable (provided that the estimate is high enough).

Guaranteed grid connection

Any power project that delivers power to the national electricity network (or "grid") needs to be connected to that grid in some way. The guarantee of a grid connection essentially provides a guarantee that the renewables project will have a "route to market".

Adequate term for cost recovery (15-20 years)

From a project developer's perspective, there are benefits in having a contract in place until the project has recovered its costs and is profitable.

Tariff payments linked to currency of project debt

If a project borrows in, say, US dollars, but is paid in some other currency, it faces the risk that the exchange rate will move against it, making it more difficult or even impossible for the project to repay its debt. Whilst tariffs can be set in foreign exchange it can be a much better approach to borrow in local currency so as to reduce exchange rate risks.

Acceptable dispute resolution mechanism

It will be clear from the earlier discussion on insurance cover that arbitration is often crucial in determining whether a pay-out is due under any insurance arrangement. Having an agreed and appropriate way to resolve disputes – including arbitration – set out in the contract is therefore important for insurers.

Off-taker accepts change in law risk

In essence, this clause requires the project to be compensated if there is a change in law that negatively affects the project. It therefore helps to deal with much of what might be classified as policy risk.

Acceptable force majeure provisions excusing performance

These clauses exclude the developer and off-taker from penalties because they did not perform their obligations under the contract because of some major event over which they had no control and could not predict or prevent.

Acceptable termination provisions

In the event that either party wishes to terminate the PPA, primarily as a result of a default by the other party, the PPA should set out the procedure for termination and compensation. Termination provisions should comprise a clear process whereby the parties can provide a date certain notice of termination and a formulaic approach to establishing the compensation amount payable upon termination, including the terms of payment. In most cases, the termination amount would also be calculated by an independent and suitably qualified professional body. This will then minimise the risk of lengthy disputes.

Ability to assign PPA as collateral

The PPA represents the key contractual basis of IPPs that sell electricity to state utilities or private clients, setting out the project's rights to sell electricity, receive payments and meet performance targets. Investors in IPPs view the PPA as a critical element, underpinning the value of the project. Where IPPs seek to raise project debt financing, the banks will seek to include the PPA as part of the assets of the project company and collateral for long-term loans. The PPA should then include terms to enable the project company to assign its rights under the PPA to the project's lenders. The counterparty to the PPA can qualify assignment to banks of a certain credit quality, in order to ensure that the lenders are of an appropriate standing.