Addressing financial risks in RE investment in East Africa. Focus on Ethiopia and Kenya

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Abstract

The cost of renewable energies technologies has decreased rapidly in recent years, making them more competitive with fossil fuel technologies. Despite this, global investments in renewable energies remains below its potential, above all for the perception that private investors have about potential financial risks. This paper identifies the potential financial risks and how to address them, focusing in guarantees and hedging instruments, that can reduce or reallocate investment risks. Furthermore, the paper assess the main criticalities to consider when structuring the project financing, ensuring the proper conditions for bankability.

Introduction

The electricity sectors of Sub-Saharan countries, which have historically suffered from a lack of efficiency, are progressively taking the path of the transformation towards a more competitive, sustainable and affordable model. This process is led mainly by two factors: first, the need to increase power generation capacity in order to sustain the growing demand and to extend the electricity access to all; second, the need to find new competitive and sustainable ways to ensure this growth. Due to the high potential in these regions, renewable energies (RE) are at the core of this process. Renewable technologies, especially wind and solar PV, are becoming more and more competitive with fossil fueled power generation and their costs are expected to further decrease in the next future. Such competitiveness has already been achieved in different countries and, globally, direct public support is becoming less fundamental for the development of renewables. Moreover, such technologies, in particular solar PV, are interesting options for allowing electricity access in remote areas. In fact, due to its scalability, solar PV, fits perfectly with different types of off-grid solutions for the electrification of rural areas,

from households systems to larger hybrid systems combining solar energy with diesel generators or storage solutions. Those factors explain the recent growth of RE in developing countries, which are progressively investing in such technologies: for example, Bolivia, Honduras, Senegal and Jordan are today among the top-five countries in terms of RE investments in proportion to national GDP. However, the large investments required to face the increasing energy demand have to deal with the limited public expenditure capabilities of such countries. Therefore, private investors can play a pivotal role becoming the real enabler of the development of electricity sector in such geographies.

In fact, because of their high renewable potentials and captive local demands, developing countries are progressively gathering private investors' interest. There, however, investors have to cope with higher risks, which may undermine the bankability and profitability of their projects. In fact, the investment framework for renewables is at its preliminary stages, particularly in Sub-Saharan region, and there is still space for improvements.

As far as today, for instance, financial risks in Sub-Saharan countries remain particularly high for private investors, which struggle to find good conditions from moneylenders. In particular, country risk evaluations of African states remain mostly negative due to the general perception of local political and financial instability. Unstable legislative and regulatory frameworks also contribute to raise the risk perception of commercial money lenders about investments in developing countries. Moreover, the weaknesses of local financial sector reduce the possibility to find easy access to local banks. From an investor perspective this situation results in a higher risk price required from the money lenders, affecting the competitiveness of the potential projects. In particular, this situation becomes more impactful for renewable generation with respect to conventional one. In fact, comparing the cost of generation (the so called Levelized Cost of Electricity, LCOE) of renewable and thermal plants, we notice that the former depends mostly on the investment costs while the latter is largely influenced by the costs of the fuel used for generation.

As a result, thermal power plants competitiveness, which depends mostly on the costs of fuels, is less exposed to the variability of the financing arrangements of the project than renewables. Therefore, when looking at these two type of investments in a developing country where cost of equity and debt is significantly higher, the impact on the LCOE results much higher for a renewable plant putting at risk the competitiveness of RE and pushing them out from those markets.

Since its beginning, RES4AFRICA has pointed out that efficient and well-targeted de-risking strategies are key to enable RE development in Sub-Saharan countries. This paper goes in the same direction and investigates the financial risk environment in the East Africa Region, mainly in Ethiopia and Kenya, in order to illustrate the best practices and the efficient strategies that public authorities and private investors could adopt to ensure the development of renewable in this region.

Ethiopia and Kenya at a glance

Africa's economy is progressively recovering from the slowdown of the last two years: economic growth is expected to be around 3.4% in 2017, against 2.2% in 2016, and the outlook for 2018 is highly positive, +4.3%. Despite the recent slowdown, African countries continued to diversify their economies, moving from a model based on export of raw materials and agriculture products to a more balanced economy system. The services sector and a stronger domestic demand have become the new drivers of the Africa growth. Moreover, an improved macroeconomic governance and a more attractive business environment helped the African economies to become more resilient in front of the recent instabilities of the raw material and energy markets.

The East Africa region is the best example of this new resilience of Africans economies: the region has maintained its leading position in terms of economic growth with a real GDP growth around 5.3% in 2016, against 0.4% in West Africa, 1.1% in Southern Africa and 0.8 in Central Africa.

Among East African countries, Ethiopia and Kenya are certainly leading the way (Figure 2). Ethiopia, the second most populated state of Africa with over 102 million inhabitants, has experimented a tremendous GDP growth (+10% on average) during the last five years and has become the first economy of the region in terms of GDP. Meanwhile, Kenya's GDP has grown at an average rate of 5.6% since 2010 and the country remains the first economy of the region in terms of GDP per capita. Led by their respective National Development Plans towards 2030 (NDP), both countries have undertaken important public investments in telecommunication, energy and transport sectors, modernizing their infrastructures and benefiting from deeper regional integration and improved business climate.

ETHIOPIA AND KENYA AT A GLANCE

	Ethiopia	Kenya
Government type	Federal Parliamentary Republic	Parliamentary Republic
Population	102.5 million; growth rate ~2%	35.3 million; growth rate ~2%
Currency	Birr (ETB)	Kenyan Shilling (KES)
Index of political stability	-1.57 (on a scale -/+ 2.5)	-1.33 (on a scale -/+ 2.5)
Index of corruption perception	Score 34/100; Ranking 108/176	Score 26/100; Ranking 145/176
Economic freedom	Ranking 142/185	Ranking 135/180
OCSE country risk rating	7 (on an increasing scale 0-7)	6 (on an increasing scale 0-7)
S&P's rating (outlook)	B/B (stable)	B+/B (stable)
Moody's rating	B1 (stable)	B1 (negative)
Fitch rating	B (stable)	B+ (negative)

Sources: CIA, IMF, World Bank, Transparency International, Heritage Foundation, OCSE, S&P's, Moody's, Fitch

Considering their investment-led growths, both countries must pay attention to the sustainability of their fiscal deficit in the medium term. The main priorities in terms of financial governance remain: increasing the efficiency, transparency, and accountability of public spending and safeguarding financial stability. Macroeconomic outlooks (Figure 3) for next years are positive with GDP growths expected to stabilize around 8% for Ethiopia and 6% for Kenya.

ETHIOPIA AND KENYA MACROECONOMIC FUNDAMENTALS

	Ethiopia	Kenya
Total GDP 2017*	$ 79.7 billion	$ 78.4 billion
Per capita GDP 2017*	$ 860.5	$ 1,680
GDP growth rate 2017*	+ 8.5%	+ 5%
Expected GDP growth 2018	+ 8.5%	+ 5.5%
Expected GDP growth 2019	+ 8.1%	+ 6%
Inflation rate 2017	+ 7.3%	+ 6.3%
Expected inflation rate 2018	+ 8.1%	+ 8%
Public debt 2017/GDP*	59.7%	56.2%
Public net lending/borrowing*	-2.4%	-8.4%
Current account balance/GDP*	-8.3%	-6.1%

*Estimations

Sources: CIA, IMF, World bank

In order to feed this economic growth, both countries will need to continue to invest in the development of their energy sector. In particular, electricity demand of Ethiopia is expected to rise from around 16 TWh in 2016 to 65 TWh in 2030; in Kenya demand will increase from around 10 TWh to 26 TWh in 2030. Both countries are endowed with high renewable energies potential and plan to foster their development of RE even if PV and wind contribution to national energy mixes is currently limited.

Under certain conditions, Ethiopia and Kenya may build up to 2.9 GW and 1 GW of wind farms respectively and 2 GW and 1.5 GW of PV farms to 2030. These technologies could therefore play a prominent role in order to meet the expected demand growth, meanwhile ensuring energy security and reducing fossil fuel contribution. Therefore, the implementation of de-risking strategy for RE investments will be fundamental to achieve this goal.

Financial risks analysis

Investment in renewable energies require significant upfront investments. From an investor's perspective, this means in case of investments in developing countries they need to have mitigations in place against different risks. Investors usually prefer to have sixty to eighty percent of the investment financed through project finance.

Risk mitigation becomes paramount and the use of financial de-risking instruments coupled with a sound policy can reduce the financial overall costs of renewable energy investments and help attract both debt and equity capital at scale. Project risk can be of different nature: political and regulatory risks, credit and counterparty risks, operational risks (grid, transmission and resource), financial risks (currency, liquidity and funding). This chapter will be focused on financial risks affecting the structuring phase and, commonly, divided into the following categories:

- Counterparty Risks
- Long/short term financing availability
- Interest rate risks
- Exchange rate risks
- Currency convertibility
- Inflation risks

Counterparty Risks (Off-taker)

One of the main issues to be considered when presenting a project for financing is the analysis of creditworthiness of the off-taker (counterparty) of the PPA. For ensuring best financing conditions minimizing financial risks and reducing financial cost, it is fundamental that the counterparty has a good credit quality (credit rating), normally measured by external rating agencies.

A good counterparty financial health ensures the possibility of giving the necessary guarantees, in terms of payment delays, termination clauses etc, requested either by the financing institutions or by the energy producers.

It is possible, that the counterparty is lacking or having an insufficient official rating. In this case, it is necessary to provide the proper guarantees, being possibly issued by state institutions, assuring the risk mitigation in case of an unexpected change in counterparty's solvency.

Long/short term financing availability

Normally the limited availability of local project finance is a key obstacle in investing in renewable energy, especially in developing countries where the RES investments are a first time. This manifest itself through less favorable lending terms such as high cost, short tenor and variable rates along with corporate guarantees from the equity sponsors of the project.

In order to improve the access to affordable capital, multilateral finance institutions may provide loans for renewable energy projects in developing countries. Development Finance Institutions aim to leverage private investment for projects that are close to commercial viability, have large potential developmental impacts, but are in sectors or countries where commercial banks are reluctant to invest due to perceptions of excessive risk. By investing their own resources in projects, Development Financial Institutions seek to mitigate these risks and so give private investors the confidence to invest. A number of instruments are employed to achieve this: investment (loans and equity), risk mitigation (for example loan guarantees), advisory services (to governments), and project preparation and development services.

Another type of mitigation could be the use of institutions as MIGA and IDA Parent Risk Guarantee:

- MIGA is an international financial institution, an arm of the World Bank group which offers political risk insurance and credit enhancement guarantees helping investors to

protect foreign direct investments against political and non-commercial risks in developing countries;

- IDA, another arm of the World Bank Group through its Partial Risk Guarantee, covers private lenders or investors against the risk of a government (or government –owner entity) failing to perform its contractual obligations with respect to a private projects.

Given the nature of the RES projects with PPA from Government fixed for a tenure of 20 to 25 years, the investors prefer having long-term project finance available through the Development Financial Institutions for their investments.

The right government policies could help encourage more long-term investment in productive activities, but these activities should be managed in a way that mitigates the need for additional financing sources, as there is no guarantee that a shortage of liquidity can be compensated by drawing new debt during the lifecycle of the investment.

A shortage of liquidity can happen for bad management or, likely, for low counterparty creditworthiness reasons. Moreover, in emerging Countries, there is a real possibility that revenues denominated in local currency cannot be converted into the functional currency having convertibility complications. This issue could be faced by entering into commercial agreements providing revenues denominated or indexed in the functional currency. For the reasons mentioned above, one of the most significant financial risks is the liquidity risk, which is the risk that a company, while solvent, would not be able to discharge its obligations in a timely manner or would only be able to do so on unfavorable terms owing to situations of tension or systemic crises (credit crunches, sovereign debt crises, etc.) or changes in the perception of company riskiness by the market. The risk management policies should be designed to maintain a level of liquidity sufficient to meet the obligations over a specified time horizon without having recourse to additional sources of financing as well as to maintain a prudential liquidity buffer sufficient to meet unexpected obligations. In addition, in order to ensure the discharge of its medium and long-term commitments, the company should pursue a borrowing strategy that provides for a diversified structure of financing sources to which it can turn and a balanced maturity profile.

Interest rate risk

The main source of exposure to interest rate risk is the variability of financial terms, in case of new debt, or the fluctuation in the interest flows associated with floating-rate debt. Investors can mitigate interest rate risk through financial contracts like forward contracts, interest rate swaps and futures. The main scope is to reduce the uncertainty of changing rates affecting the value of their investments. Forward contracts are agreements between two parties with one party paying the other to lock in an interest rate for an extended period of time. This is a prudent move when interest rates are favorable. Of course, an adverse effect is the company cannot take advantage of further declines in interest rates. Interest rate swaps are agreements between two parties in which they agree to pay each other the difference between fixed interest rates and floating interest rates. Basically, one party takes on the interest rate risk and is compensated for doing so. Futures are similar to forward contracts and interest rate swaps, except there is an intermediary. This makes

the arrangement more expensive but there is less chance of one party failing to meet obligations. This is the most liquid option for investors.

Foreign exchange risk

Loans in foreign currency could appear more attractive given that seemingly cheaper, long term, fixed-rate have the potential to reduce the cost of financing renewable energy investments significantly. When financing a renewable energy project by a foreign loan, the mismatch between the currency of debt obligations and the Power Purchase Agreement (or tariff revenue), normally denominated in local currency, exposes the project to the risk of devaluation of the local currency over time. The devaluation could imply lower returns for the project and, more important, the reduction of investments in the country due to currency risk.

Moreover, there could be also other currency risk coming from the following activities:

- cash flows in respect of dividend from foreign subsidiaries or the purchase or sale of equity investments
- financial liabilities assumed by developing company or the individual subsidiaries denominated in currencies other than the currency of account or functional currency of the company holding the liability
- financial assets/liabilities measured at fair value

It is necessary to use a currency hedge with a third party provider to protect against currency risk. Hedging solutions, usually in form of financial derivatives on over the counter markets, can be limited in availability but also expensive in emerging countries, increasing the financial cost of debt and therefore offsetting the initial benefit coming from cheaper foreign loans. Additionally, there are cases when counterparty risk and foreign exchange risk interact in a way that can make the hedging transaction ineffective (wrong way risk): in case of a severe currency shock, due to economic, financial or political reasons, the whole financial system might be affected and local banks could face difficulties in meeting their obligations under the derivative contracts. Governments in emerging countries need to recognize the role of currency hedging mechanisms could play in expanding renewable energy capacity and contribute to develop currency markets accordingly.

Inflation risk and TAX risk

There are country-linked risks affecting the financial performances, though they do not lay completely within the financial risk management boundaries. Inflation risk (or Purchasing Power risk) is the chance that the value of the cash flows from an investment will change in the future because of changes in purchasing power due to inflation. In emerging Countries, inflation can be high and increasing, with a significant volatility, which in turn could drive the volatility of the returns. The most effective way of mitigating this risk is indexing the revenues to inflation.

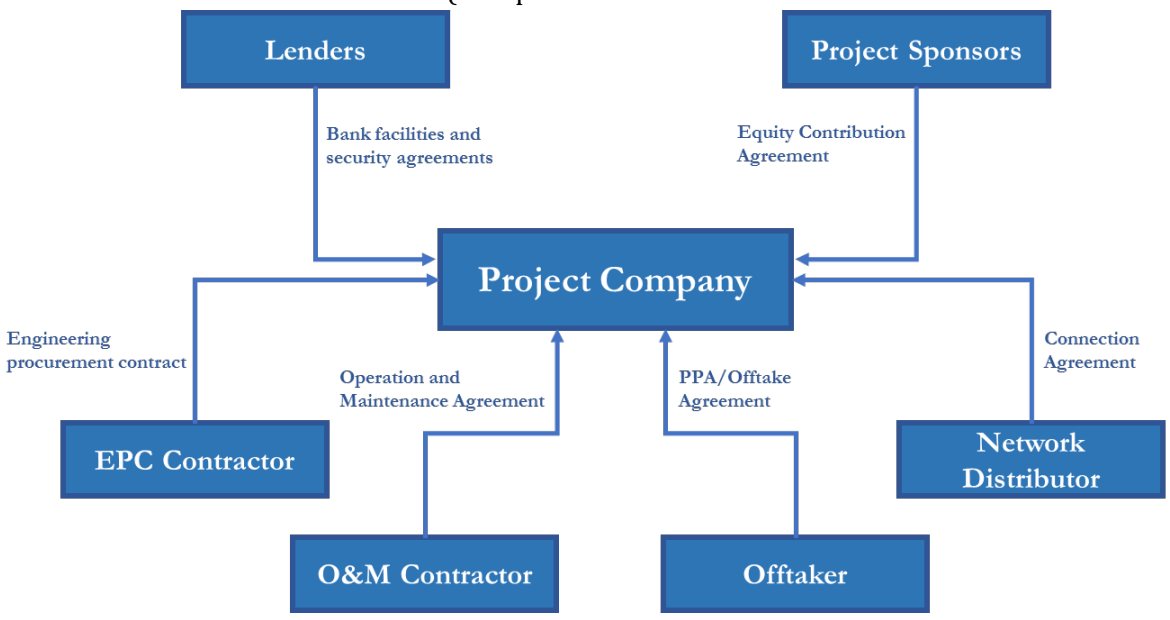
Tax risk is the chance that the cash flows will suffer unforeseen tax consequences, such as additional tax payments, higher tax administration costs or lower deductibility of costs. Tax risk can arise from existing tax laws, from future changes in tax laws or from company practices. In emerging Countries, the tax risk is often linked to a political instability (political risk). The basic principles of tax risk management are seeking to address potential issues as soon as possible and allocating the

proper Change in Law clauses in the formulation of the PPAs.

Bankability issues in project finance

Securing financing for a renewable energy project in a developing country depends on a careful analysis of the bankability issues that will be faced throughout the project, i.e., from construction to operation. Although many structured finance mechanisms and capital market instruments are available, the most common form of financing large scale renewable projects in a developing country remains project financing. A project is bankable if the construction (or pre-completion) and the operational (or post-completion) risks have been appropriately allocated to the various players, in form and substance satisfactory to the lenders. To assess the bankability issues, lenders take a comprehensive view of the contractual network to be implemented by the project company. Lenders focus not only on the content of contracts but also on how they interplay (e.g., EPC and O&M), since many project risks may not be fully mitigated within the scope of just one contract.

Every project has its own contractual structure: the chart below shows a typical contract framework for a renewable project.



It is essential for a project sponsor to clearly identify the project risks after duly considering the peculiarities of the market where the project is to be developed (regulatory and political environment, foreign exchange volatility, transmission infrastructure, etc.) and to correctly allocating these risks in the contractual framework to limit the lenders' recourse to the sponsor and limit the financing costs as much as possible. This section analyses the main bankability issues – from a project finance perspective – that need to be addressed in the key contracts during the construction and operation phase and the impact on the financial structure if not correctly mitigated or appropriately allocated. For the purpose of this section, the analysis will be limited to the Engineering, Procurement and Construction Contract and the Power and Purchase Agreement, which by their nature are critical for the construction and operation phase of a renewable project.

Engineering Procurement and Construction Contract (EPC)

The EPC Contract is a turnkey agreement by which the project company allocates the construction risks of the project to a third party, the EPC contractor. There are many contractual structures that a project company may consider for the construction phase, which will be influenced on a number of factors such as timing, whether the project costs will be financed by equity or through a debt financing, or whether the sponsor has the capability to perform part or all of the work. If the purpose of the facility is to finance the project costs rather than refinance costs already paid by the project sponsors, having only one EPC Contract is – from a strictly legal perspective – the preferable way to transfer, in one integrated package, all the risks that lenders want to see addressed before considering a project contract actually bankable. The following table lists some of the key risks that EPC contracts aim to cover, together with possible mitigations, which may trigger recourse to the project sponsors, or higher financing costs, if not satisfactory to the lenders.

Risks	**Key concern**	**Mitigation in case the risk is not addressed in the EPC Contract**
Single point of responsibility	The lenders want the project company to deal with a single point of responsibility	If the EPC contractor is represented by a consortium: all members must be jointly and severally liable. If there is a split EPC Contract (e.g. balance of plant contract and supplying and commissioning contract) the following mitigations may be put in place: • wrap-up guarantee to be issued by one of the contractors guaranteeing the obligations of all the contractors • interface and coordination agreement to, among other things, deal with the interference risks among the contractors and to resolve and settle any disputes that arise in performing the works
Completion date	A fixed completion date or a date within a fixed period of time from the execution of	Delay liquidated damages (DLDs) to compensate the project company

	the EPC Contract shall be guaranteed by the contractor. The project company shall often comply with timing obligations provided in other contracts (e.g. finance documentation and PPA)	for loss and damages due to the delay in completing the work. The payment obligations for DLDs shall be secured by a bond or a retention on each payment or a parent company guarantee.
Fixed price	Avoid cost overrun	Specific provisions to prevent the revision of the contract price, as far as technically and legally possible, save for variations which will be subject to the approval of the lenders (so called reserved discretions).
Performance	Ensure that the plant performs as foreseen in terms of reliability and output	Performance liquidated damages (PLDs). Right of rejection if the plant performs below the minimum level. The payment obligations for PLDs must be secured by a performance bond, a retention on each payment or a parent company guarantee.
Cap on liability	To benefit from a large cap on the contractor's liability as most contractors refuse to accept an unlimited liability under the EPC contract	The cap should be at least equal to the contract price with a sub-cap for DLDs and PLDs to be appropriately allocated taking into account the features of the project.
Warranties	In renewable projects, it is essential that the project company directly benefits from the manufacturers' warranties and have them assigned on the project completion date or in case of contractor's default or bankruptcy.	Agreement by and between the contractor, the project company and the manufacturer. Security over the warranties for the benefit of the project company and the lenders.

		Insurance products that guarantee the required output to be considered if manufacturer warranties are not obtainable.
Serial defects	In renewable projects, which often use a large number of same components, it is critical to be protected against the same defect that may affect a group of components.	Provisions in the EPC contract specifically addressing this risk (e.g. testing procedure and replacement obligations at the cost and expense of the contractor).

Power Purchase Agreement

The other key contract which has a critical impact in the financing structure of a renewable project in a developing country is the Power and Purchase Agreement (PPA). A PPA is a long-term contract aiming at mitigating the market risk reducing the volatility of the expected cash flows from the operation of the project. The following table lists some of the key risks that shall be addressed in a PPA to consider it bankable:

Risks	**Key concern**	**Mitigation in case the risk is not addressed in the PPA**
Offtake	Cover fixed costs of the plant, return on investment of the project sponsors and debt service	Off-taking obligations on a take-or-pay or take-and-pay basis
Foreign exchange	Protect the project from a currency risk to the extent the off-taker's payment obligations are in a currency different from the project company's financial debt	Off-taker's payment obligations denominated in or linked to the exchange rate of the same currency of the power producer to avoid/mitigate the currency risk
Change in law (including tax)	Protect the cash flow of the project from change in law that may reduce it	Allocate to the off-taker any change in law (including tax)

Termination	Inability to repay the financial debt in case of termination / revocation of the PPA	Termination payment at least equal to the outstanding amount of the project financing and, in case the termination occurs due to a default attributable to the offtaker, the termination payment should also cover a return on equity
Connection to the grid	Failure / delays in providing the connection to the transmission system or to provide sufficient load and dispatch for plant testing	Clearly allocate this risk to the off-taker

The creditworthiness of the off-taker is another important bankability issue to be considered in a PPA. An inadequate creditworthiness of the off-taker, depending also on the size of the project and the maturity of the energy sector in the relevant country, may require a sovereign guaranty or other form of financial support (e.g. a short-term liquidity facility) to support the off-taker's payment obligation. In certain projects, in particular those guaranteed by and export credit agency, a sovereign guarantee will be the only instrument to enhance the bankability of a project when the reference energy market is at an initial phase of its development and when there is not enough confidence on the creditworthiness of the government entity that will purchase the energy.

Impact on the financial structure

Bankability issues in a project, such as those mentioned above, have a direct impact on the financial structure of a given project in terms of higher recourse over the project sponsors, worse terms and conditions of the facility agreement and higher financing costs related to the project.

Recourse on the project sponsors

In principle, whatever risks that is considered excessive by the lenders or that cannot appropriately be assessed or mitigated within the contractual framework of a project must be backed by the project sponsors. The recourse on the project sponsors may be less or more limited - in terms of amount and tenor - depending on the nature of the risk to be mitigated. It may be in the form of a sponsor guarantee or in the form of equity contributions either by way of subordinated debt or capital injections. By way of example, an equity contribution may be used to cover overrun costs or in case of underperformance of the plant, to reimburse part of the outstanding debt to bring the debt to equity ratio to a more acceptable level for the lenders.

Deterioration of terms and conditions of the facility agreement

The terms and conditions of the facility agreement reflect the assessment of the overall riskiness of the project by the lenders. Risks that cannot appropriately assessed or allocated may result in a deterioration of the terms and conditions of the facility agreement such as:

- More conservative debt to equity ratio;
- Shorter tenor of the debt;
- Need for a stand-by facility;
- Higher arranging and commitment fees; and
- Stringent representation and covenant.

Financing cost related to the project

The risk mitigation strategy may also result in an increase of the overall costs of the financing arrangement of the project.

By way of example: complex set of performance securities or other coverage strategies may be needed during the construction and operation phase of the project.

Conclusion

Renewable technologies, especially wind and solar PV, offer a cost-effective and environmentally sustainable tool to satisfy the growing demand of energy and to accelerate the pace of rural electrification. However, financial risks in the Sub-Saharan countries remain particularly high for private investors and, unless mitigated appropriately, they may have a negative impact on the bankability, the size and profitability of RE projects. A sounded financial de-risking strategy together with a careful analysis and mitigation of the key bankability issues, will be fundamental to secure the financing for the development of RE projects.