



A New Instrument to Foster Large-Scale Renewable Energy Development and Private Investment in Africa

WHITE PAPER

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About RES4MED & Africa



Renewable Energy Solutions for the Mediterranean & Africa RES4Med&Africa

Who we are: RES4Med&Africa promotes the deployment of large-scale and decentralized renewable energy in Southern-Mediterranean and Sub-Saharan African countries to meet local energy needs. Since its inception in 2012, the association gathers the perspectives and expertise of a member network from across the sustainable energy value chain.

Our work: RES4Med&Africa functions as a platform for members and partners of emerging markets to foster dialogue and partnerships, share knowledge and build capacity to advance sustainable energy investments in Southern-Mediterranean and Sub-Saharan African countries.

Our mission: RES4Med&Africa aims to create an enabling environment for renewable energy and energy efficiency investments in emerging markets through 3 work streams:

- *Acting as a connecting platform for dialogue & strategic partnerships between members and partners to exchange perspectives and foster cooperation;*
- *Providing technical support & market intelligence through dedicated studies and recommendations based on members' know-how to advance sustainable energy markets;*
- *Leading capacity building & training efforts based on members' expertise to enable skills and knowledge transfer that supports long-term sustainable energy market creation.*

At the end of 2015, RES4Med&Africa members decided to expand the geographic focus to Sub-Saharan Africa in light of the huge potentials and growth opportunities for Africa's renewable energy sector..

Members: RES4Med&Africa gathers a network of members from across the sustainable energy value chain including industries, agencies, utilities, manufacturers, financing institutions, consultancies, legal and technical services providers, research institutes, and academia.

Partners: RES4Med&Africa works with local, regional and international partners, agencies and organizations to pursue its mission and promote renewable energy deployment in the region of focus.

This White Paper takes place within the thematic framework of the 7th RES4Med&Africa Annual Conference “A call for Africa: enabling sustainable projects” held on the 22nd of June 2018, dedicated to discussing how sustainable and bankable renewable energy investments can create real value for Africa’s development and growth. The White Paper gathers the contributions of various members of the RES4Med&Africa Working Group and aims to present insights on the key market failures and best practices to be addressed by a New European Instrument operating in Africa to foster Renewable Energy development and leverage private investment, which could enable project developers, African governments and public institutions, financial institutions, and utilities to execute high impact and quality PPPs by implementing fast, simple, structured, transparent, and competitive tenders to procure, build, own, and operate bankable renewable energy projects.

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Table of content

Executive Summary	7
Introduction	10
Energy transition and climate change	10
Setting the African context	11
Investment barriers in Africa and de-risking measures	13
European-African Cooperation	18
African RE market analysis: EU financing instruments, failures and success	20
Identification and screening of the EU financing instruments	20
Assessment of EU financing instruments - Supply Analysis	22
Risk coverage matrix of the EU financing instruments - Supply Analysis	26
RE market stakeholders' perspective - Demand Analysis	29
Analysis results - EU financing instrument failures and success factors	31
Value proposition - A New Innovative European Instrument	34
Project Preparation	35
Tender Process	36
Financial Close	37
Construction and Operation	38
Annex	39
Annex 1: Instruments of the pre-screening process	39
Annex 2: Supply Analysis Risk Mitigation Tools	40

List of Figures

Figure 1: Africa total primary energy supply of 2016	12
Figure 2: Regulations and supporting schemes in Africa for RES	15
Figure 3: PPP scheme options	17
Figure 4: Share of 17 European instruments coverage by financing type	23
Figure 5: Share of 7 European Instruments coverage by risk mitigation type	23
Figure 6: Share of 17 European instruments coverage by technology type	23
Figure 7: European instruments according to the 4 Pillars approach	24
Figure 8: Risk coverage matrix of European financing instruments	28
Figure 9: IPPs and manufacturers presence in Africa	29
Figure 10: Ranking of perceived risks by IPPs	30
Figure 11: Ranking of perceived risks by Manufacturers	31

List of Tables

Table 1: The 17 selected European instruments for large-scale RE in Africa	21
Table 2: Phases and activities of large-scale RE projects	25
Table 3: Instruments coverage of the large-scale RE project	26
Table 4: Large-scale RE projects risks	27
Table 5: New Innovative European Instrument - Project Preparation Phase	35
Table 6: New Innovative European Instrument - Tender Process Phase	36
Table 7: New Innovative European Instrument - Financial Close Phase	37
Table 8: New Innovative European Instrument - Construction and Operation Phase	38

Abbreviations

ADB	Asian Development Bank
AfDB	African Development Bank
AIF	African Investment Facility
AIP	African Investment Platform
AREI	African Renewable Energy Initiative AU African Union
CAHOSCC	African Heads of State and Government on Climate Change
CCS	Carbon Capture & Storage
COP	Conference of the Parties
DFIs	Development Financial Institutions
EDF	European Development Fund
EE	Energy Efficiency
EFSD	European Fund for Sustainable Development EIB European Investment Bank
EIP	External Investment Plan
ETS	Emissions Trading System
EU	European Union
FDI	Foreign Direct Investments
FIs	Financial Institutions
IFIs	International Financial Institutions
GHG	Green House Gases
JAES	Joint Africa-EU Strategy
IDA	International Development Association IEA International Energy Agency
IPPs	Independent Power Producers
IRENA	International Renewable Energy Agency ITF EU-Africa Infrastructure Trust Fund
KP	Kyoto Protocol
MIGA	Multilateral Investment Guarantee Agency
NEPAD	New Partnership for Africa's Development
NDCs	National Determined Contributions
PA	Paris Agreement
PFI	Private Finance Initiative
PPAs	Power Purchase Agreements
PPP	Public-Private Partnership
PRG	Partial Risk Guarantee
RE	Renewable Energy
RECP	Africa-EU Renewable Energy Cooperation Programme RES Renewable Energy Sources
RETs	Renewable Energy Technologies
RfP	Request for Proposal
RfQ	Request for Qualification
RPS	Renewable Portfolio Standard
SDGs	Sustainable Development Goals
SS	Scaling Solar
SSA	Sub-Saharan Africa
TA	Technical Assistance
UN	United Nations
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
UNESCAP	United Nations Social Commission for Asia and the Pacific

Executive Summary

Nowadays, **global warming and the extinguishing of primary energy reserves** are just some of the reasons why the world is drastically changing trend and embarking on a path towards the energy transition, from fossil-based fuels to renewable and sustainable energy sources. Several international actions have been undertaken from the establishment of the United Nations Framework Convention on Climate Change in 1992 to the creation in 2015 of the 17 Sustainable Development Goals (SDGs), aiming to end poverty and fight climate change by ensuring access to affordable, reliable, sustainable and modern energy for all.

Notwithstanding increasing global awareness and efforts to mitigate global warming, African developing countries have often struggled to plan ambitious strategies and, as a consequence, investments in renewable energy sector have been limited. However, the **unprecedented population growth that Africa is facing today**, which results in a drastic increase of the energetic demand, and the **600 million people that are expected to live without electricity in 2030**, are among the main reasons to enforce a rapid change of course. Indeed, nowadays investing in renewable energy alternatives in Africa becomes crucial to meet the energy needs, limit energy import dependency, address the lack of or extinguishing primary energy reserves and provide electricity access for all.

Several barriers affecting African renewable energy market growth prevent the deployment of clean and renewable technologies, freezing their share (without hydropower) of electricity production at just 3% in 2016. **This scarce investment appetite has been interpreted as a sign of a general market unreadiness and a high level of business risks perceived by investors.** According to a large number of studies, the main existing barriers observed in the African renewable energy market are: I) political instability, II) economic uncertainty, III) outdated and ineffective policy and regulatory framework, IV) overall lack of transparency, and V) weak political will.

To mitigate this phenomenon, a combination of efforts at different levels is required. First of all, strong **political will** and commitment to the energy transition are essential to bring Africa out of its barriers trap, supported by necessary dissemination of **awareness through widespread capacity building activities**. Secondly, at law-making level, a **clear and adequate policy and regulatory framework** is an unavoidable and necessary element for creating an open, transparent and competitive market. Finally, to minimise the perceived risks of investing in African countries it becomes crucial to correctly allocate them to the suited market actors and to implement specific **financial de-risking measures**. The adoption of **competitive auctions and promoting public-private partnerships (PPPs)** are among the key tools that can potentially accelerate the deployment of renewable energy systems in the continent, attracting private investors.

In the year 2000, the Africa-EU partnership was established, forming strategic partnerships to meet the SDGs by 2030, aiming to provide Africa with financial support through blending facilities in the form of grants, high level dialogues, technical assistance, and providing risk capital, interest rates subsidies and guarantees. As a step forward, the EU External Investment Plan (EIP) was launched by the European Commission in 2017 aiming to support partner countries from the African and EU Neighbourhood regions in their efforts to meet the SDGs by 2030 by mobilizing public and private investments. Currently, **more than 100 financing instruments have been conceived to support the development of renewable energies in Africa, out of which only 17 among the European ones revealed to be significant for this study.**

After the identification and screening of the existing financing instruments, an analysis of the coverage level provided by the 17 European selected ones was carried out under the following four main areas: financing coverage (provide equity, debt, or grants), risk mitigation coverage (provide guarantees or insurances), technology coverage (applicable to all the technologies) and geographical coverage (applicable to all the countries). The findings revealed that less than half of the instruments provide a complete financing package or offer at least one risk mitigation tool; some of the technologies are penalised and don't receive much support while solar energy is covered by all the instruments, with an overall technology-neutrality of only 29%; on the geographical coverage side less than one-third of the instruments doesn't show a country limitation. From this analysis it appears that the **EU External Investment Plan is the most complete financing instrument in terms of level of coverage provided.**

Subsequently, it was investigated the level of support given during the five main phases of a large-scale project: Project Preparation, Tender Process, Financial Close and Construction and Operation. It emerged that all the instruments cover the early stages of the project, mostly in the form of feasibility studies or capacity building activities, while the last phases, such as for the negotiation, the preparation of the project documents and the implementation of a tender process, shows a large room for improvement. A final evaluation of the support given by the 17 European financing instruments have been conducted on the basis of 28 major investing risks observed in renewable energy large-scale projects in Africa. The study reveals that **all the available instruments enable support in the early stages for starting the business and to revise permitting/licensing**, while the coverage provision for capital transfer and convertibility risks, force majeure events, tax regime, inflation risks, and the assistance for dispute resolution issues, are extremely limited.

Interviews with key IPPs and manufacturers playing in the African countries were carried out to provide a business angle on the subject. The results pointed out that **wind and solar are almost the only technologies of interest for stakeholders**; there is a **substantial inequality in the geographical location of the investments**, mainly concentrated in 11 out of the 54 African countries, often attracted by the strongest economies. Subsequently, the market players ranked the 28 investing risks of the coverage matrix highlighting the most under-threat areas to be addressed by the 17 EU instruments. The results showed in the first place political risks together with policy and regulatory risks, revealing a major distrust in the government and regulatory framework, followed by capital transfer and convertibility risks and the ones related to the rules favouring market opening to IPPs, outlining a non-complete liberalisation process of the markets.

Based on the successful experiences observed, a New Innovative European Instrument has been conceived for the purpose of bridging the RE market gaps and effectively accelerating and attracting the investments in the African renewable energy field. **The scheme is designed to avoid known barriers and described failures.** The features of this innovative instrument are described according to the four main project phases:

I. Project preparation: Facilitate high-level dialogue and advice to set up the renewable energy investment environment, stimulate political will, advise local authorities strategic renewable energy objectives and to engage the private sector. This support would be complemented by technical assistance for site selection, feasibility studies, tax analysis, and early stage training (keeping in mind results will only be possible through strong support from a local champion and political will).

II. Tender process: Provide technical assistance to create structured tenders, create standardized project documents, supporting all phases of the tender (request for qualification, bidder consultation, request for proposals, proposals review, award, and signing project documents).

III. Financial close: Provide technical assistance for the financing process, negotiation, contract finalization and financial close. Provide blending finance as debt, equity, and grants. Make available pre-approved guarantees and/or insurance focusing on the main risks tailored made for the project's specific needs.

IV. Construction and operation: Provide technical assistance for monitoring and evaluating the project's development, advise on local content, foster capacity building reinforcing administrative and labour skills.

Introduction

1. Energy transition and climate change

The term “energy transition” refers to a latent change in the current energy system, production and consumption, which for the last centuries has been based on non-renewable energy resources like coal, oil, and natural gas, to a more efficient, renewable, and clean energy mix. Harnessing of fossil fuels has led humanity to achieve great development, technological breakthroughs, economic growth, and an improved quality of life, among many other things. Nevertheless, the exploitation of fossil fuels has also led to environment pollution and to the accumulation of Green House Gases (GHG) into the atmosphere, causing global warming and climate change.

During the last decades, many of the governments of the world have acknowledged the impact of the current industrial activities and consequences of the current energy system, progressively joining different efforts and measures to combat and mitigate the effects from global warming, starting with the **United Nations Framework Convention on Climate Change (UNFCCC) established in 1992** seeking the “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system”¹. The UNFCCC has now almost 200 ratified countries and since 1995 has convened annual “Conferences of the Parties” (COPs) to discuss the world’s most urgent climate challenges to find solutions and address the respective actions.

The COPs have been the key instrument to obtain commitments from the parties to engage the climate change issue. During the COP 3 in 1997, the Kyoto Protocol (KP), the world’s first GHG reduction treaty, was adopted, setting internationally binding emission reduction targets and comprehending three mechanisms to reach the objective: *a) International Emissions Trading Scheme, b) Clean Development Mechanism, and c) Joint Implementation*². It also recognized that the developed countries were the main responsible for the high levels of GHG in the atmosphere, and therefore stricter emission targets were set for them under the principle of “common but differentiated responsibilities”.

Later, in 2015, the world leaders met under a United Nations (UN) general assembly and adopted the **17 Sustainable Development Goals (SDGs)**, balancing the three dimensions of sustainable development: economic, social, and environmental. The SDGs set the course of action for the following 15 years, up to 2030, aiming to end poverty, fight inequality, and stop climate change. The latter is meant to be reached by ensuring access to affordable, reliable, sustainable and modern energy for all, by investing in more sustainable cities industries and providing adequate infrastructures³, among other measures.

Nonetheless, these targets needed to be backed by a strong financial commitment from the world’s leaders, hence, the Addis Ababa Action Agenda, an outcome of the 3rd International Conference on Financing for Development on 2015, was also committed, establishing a global framework for financing development post-2015 and affirming their strong political commitment to address the challenge of financing and creating an enabling environment at all levels for sustainable development in the spirit of global partnership and solidarity⁴.

¹ UNFCCC, “United Nations Framework Convention on Climate Change,” 1992

² UNFCCC, “KP Introduction | UNFCCC,” 2018, <https://unfccc.int/process/the-kyoto-protocol>

³ United Nations, “Transforming our world: the 2030 Agenda for Sustainable Development,” 2018, <https://sustainabledevelopment.un.org/post2015/transformingourworld>

⁴ United Nations, “Addis Ababa Action Agenda of the Third International Conference on Financing for Development Addis Ababa Action Agenda of the Third International Conference on Financing for Development Contents,” New York, 2015

The SDGs set the ground for a new outstanding agreement towards the energy transition during the 21st COP, where the Paris Agreement (PA) was adopted by consensus, which set the objective of “seeking to limit a global temperature rise in this century well to below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C”⁵. To do so, the PA required all parties to define a domestic strategy to pursue the objective of reducing national emissions and adapt to the impacts of climate change by defining National Determined Contributions (NDCs), which also allowed each country to tailor their strategy according to their development needs.

Apart from the KP and the PA, with the aim to strengthen the framework fighting the climate change on cutting missions, adopting mitigation and adaptation measures, implementing clean and renewable energy technologies, providing financial resources and investments, the parties have also agreed to further commitments during different COPs. All these joint efforts constitute the baseline of the energy transition pathway, moving towards a sustainable development through the use of renewable energy sources such as wind, solar, geothermal, hydro, and biomass, to power green and clean technologies.

2. Setting the African context

The African continent, with more than 1.2 billion inhabitants constituting the 16% of the world’s population, has been facing a radical demographic and social change in recent years. With a rapid population growth expected to represent by 2050 50% of the total world’s population growth (about 1 billion of people), it is foreseen an issue of strain on the continent’s resources and a substantial need of development in all sectors. Indeed, an accelerated rate of population growth requires a parallel and equivalent development of a series of socio-economic factors to match the households’ needs, such as an adequate economy, industry and agriculture growth, and a sufficient energy generation capacity, to mention some, entailing a huge amount of investments by the countries.

The energy sector stands among the most relevant challenges the African countries have to face, since about **two-thirds of the continent population is suffering from energy poverty**, defined as the “lack of adequate modern energy for the basic needs of cooking, heating, lighting, and essential energy services for manufacturing, services, schools, health centres, and income generation”⁶. To meet the global energy access there is an urgent need to take domestic measures and to complement the efforts with cooperation from partner nations. According to the International Renewable Energy Agency (IRENA)⁷ the growth rate of Africa primary energy supply represents the highest in the world, standing at 3% each year, mainly caused by the demographic trend.

⁵ UNFCCC, “The Paris Agreement | UNFCCC,” 2018, <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

⁶ J. A. Omojolaibi, “Reducing Energy Poverty in Africa : Barriers and the Way Forward,” *Int. Assoc. Energy Econ.*, no. 2, pp. 29–30, 2014

⁷ International Renewable Energy Agency, “Africa 2030: Roadmap for a Renewable Energy Future,” 2015.

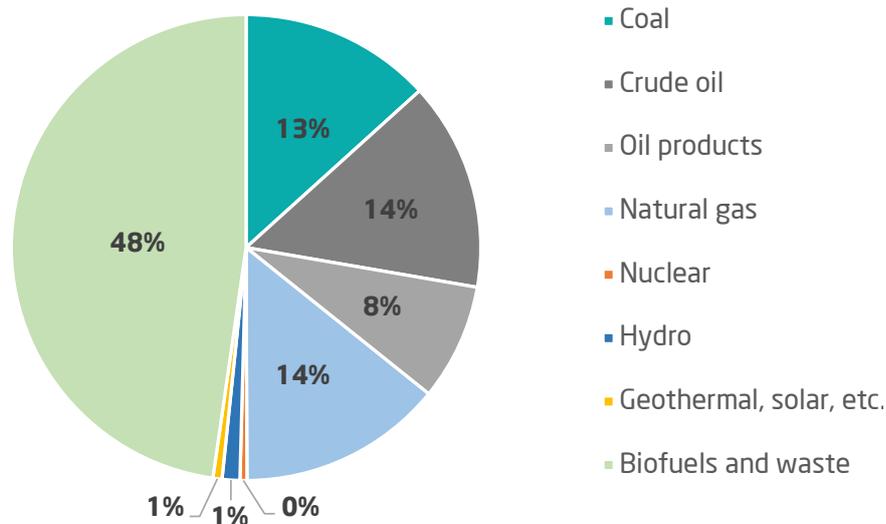


Figure 1: Africa total primary energy supply of 2016

Source: IEA, Online Database

As Figure 1 shows, today Africa’s primary energy needs are mostly covered by fossil fuels and traditional biomass and waste, accounting respectively for around 50% and 48%, while nuclear, hydro and renewable energies, such as geothermal and solar power, represent less than 2%. Despite scarce investments in deploying renewable energy systems, African countries have a huge potential in this sense, holding vast local primary reserves. Indeed, the continent benefits from high levels of solar irradiance, that can reach up to 2.5 MWh/m² per year, strong winds, particularly in the north, east and south, hydropower from the central and southern regions, geothermal energy along the Great Rift Valley, and a considerable biomass capacity.

Addressing the energetic crisis of African countries through the exploitation of local renewable resources is essential to obtain a sustainable socio-economic development, which can result in the creation of job opportunities and human empowerment, more energy independence, more equality favouring the development of isolated communities, the mitigation of environmental impact and climate change, the improvement of health and air quality. All 54 African countries signed the Paris Agreement, out of which 43 ratified their NDCs as of 2017, who are expected to reach 4 USD trillion of financing by 2030⁸. However, these NDCs contain two kinds of components, I) unconditional targets, which are expected to be fulfilled by the own country’s means considering their own situation, and II) conditional targets, which are subject to obtaining the necessary financial support from the international community.

In 2015 at the COP 21 in Paris, the **African Renewable Energy Initiative (AREI)** was launched, a sound African-owned initiative endorsed by the African Union (AU), and African Heads of State and Government on Climate Change (CAHOSCC), supported by institutions like the New Partnership for Africa’s Development (NEPAD), the African Group of Negotiators, the African Development Bank (AfDB), the UN Environment Program (UNEP), and IRENA. The AREI is meant to leverage the energy generation from renewable energy sources and set to achieve at least 10 GW of new and additional renewable energy generation capacity by 2020 and mobilize the African potential to generate at least 300 GW by 2030.

⁸ The African Development Bank, “Africa NDC Hub,” 2017Introduction.pdf

The EU together with countries such as France, Germany, Italy, United Kingdom, Sweden, and the Netherlands, among other non-EU parties have committed to mobilize at least 10 USD billion cumulatively from 2015 to 2020, from which half had already been reached in 2016.

As it can be derived from above, financing needs to address the African energy crisis and to concentrate efforts on developing renewable energy generation are tremendous and will require support from multiple sources, measures, and joint efforts. According to the International Energy Agency (IEA) Energy Outlook Report of 2017⁹, **600 million people from Africa will be living without electricity by 2030, representing 90% of the global population with no access to electricity.** To prevent this from happening, by 2030 an estimated investment amount of USD 52 billion per year would be required to increase the power generation capacity and provide electricity for all African people. This new capacity is foreseen to go mostly to RETs, pursuing the SDGs' objectives and taking advantage of the renewable energy potential of the continent, meaning that it would not cause a net increase on GHG emissions.

To succeed in this mission of accelerating energy access by boosting public and private investments, numerous sources of funding, technical support, capacity building at all levels, partnerships, joint efforts from the public and private sectors, involvement from business developers and Financial Institutions (FIs) both domestic and international, support from developed countries, and a solid commitment and political will from the African countries to enable a proper investment environment through a strong and clear policy and regulatory framework, will be required.

3. Investment barriers in Africa and de-risking measures

Despite a growing energy demand, a huge potential in electricity production from renewable energy sources (RES) and a strong international commitment to support the development of clean energetic alternatives in developing countries, the current African landscape in terms of investments in renewables is desolate. The share of electricity produced by RES without hydropower in 2016 was less than 3% of the total production. This scarce investment appetite has been interpreted as a sign of market unreadiness and a perceived high-level risk of the business environment. Researchers and evidences over the years have identified the main causes of private interest reduction in Africa¹⁰ are:

- Political instability
- Macroeconomic uncertainty, mainly due to currency crashes, inflation, inconvertibility and exchange rates
- Policy and regulatory framework unclarity and unreadiness
- Lack of transparency
- Institutional weakness

These barriers give rise to several business environment risks that limit the potential appetite of investors in the country. To tackle this issue, it is crucial that all the available regulations and supporting schemes, both national and international, related to RE investments in Africa, are designed to create a structured framework encompassing all the suitable de-risking measures necessary to allocate every perceived risk to the suited involved party. Thereby, **the more the overall business risk is minimised and covered by the so-called mitigation tools the higher is the attraction of investors in the country.**

⁹ International Energy Agency, "WEO-2017 Special Report: Energy Access Outlook," 2017

¹⁰ N. Komendantova, A. Patt, L. Barras, and A. Battaglini, "Perception of risks in renewable energy projects: The case of concentrated solar power in North Africa," Energy Policy, vol. 40, no. 1, pp. 103–109, 2012

The reason behind this trend is the correlation that directly links the risk perception and the project capital cost (encompassing the financial concepts of cost of debt and costs of equity). Indeed, when the business environment is not safe, higher interest rates from banks and higher expected returns on the investment are required from equity investors¹¹.

Minimising the risks of investing in RE large-scale project is a complex process that entails measures in different fields: at the institutional level strengthening the government will and strategy, improving the transparency and stabilising the country economy; at workforce level enabling an adequate level of skills and standardized processes; and at legislative level, providing a clear policy and regulatory framework and a series of financial de-risking tools. A synthetic description of the principal de-risking measures is presented below:

- **Political will and commitment** towards an energy policy reform comes together with the acknowledgment of the development potential that RETs can bring to Africa, and this acknowledgement can be tackled by capacity building to the public sector¹². Human and institutional capacity is critical to the development effort and the chances of success, and that some crisis in Africa have been generated by the inability to respond, because when there is a lack of capacity, there is a tendency to substitute rigidities and rules and arbitrary activity to compensate for it¹³.
- **Capacity building** is a required long-term task to be carried out in the African continent, by strengthening the knowledge, process, protocols, and reforms of the institutions and heads of state through tools such as technical advice, dialog, and engagement with the aid of stable and strong development institutions¹⁴:
- **A clear and adequate policy and regulatory framework** is one of the main drivers for investments in RE projects, since it enables a range of supporting schemes and lays the foundation for an open and competitive market. A case study carried out by Pöyry¹⁵ analysing the best practices and lessons learned in a wide sample of countries, both developed and under development, recommends diverse actions to take to improve the policy and regulatory framework, such as: i) clarity about operators' roles and about market functioning rules; ii) dedicated RES regulations such as the Renewable Portfolio Standard (RPS) and priority of dispatching and connection; iii) competitive market, the introduction of Independent Power Producers (IPPs) and the adoption of auction mechanisms (see BOX 1):
- **Financial de-risking tools** are a complementary risk mitigation forms, defined as the action to reduce the financial impact of a negative event by transferring large portions of the impact to other parties, for example, risk insurance or guarantees offered by development banks¹⁶. A RES4Med paper on de-risking RE investments¹⁷ outlines the successful cases of Angola, which used the Multilateral Investment Guarantee Agency (MIGA) political risk insurance, or the case of Kenya, which acquired the World Bank Partial Risk Guarantee (PRG) to cover the off-taker risk. De-risking mechanisms are essential to attract investors in a country since the first effect they lead is a reduction in the overall cost of energy.

A focus on auctions mechanism and PPA contract is presented in BOX 1, since there is a growing consensus that they represent essential instruments mitigating energy investments risks.

¹¹ Ross, Westerfield, and Jordan, *Fundamentals of Corporate Finance*, 6th ed. Mc.Graw-Hill/Irwin, 1976

¹² T. C. Chineke and F. M. Ezike, "Political will and collaboration for electric power reform through renewable energy in Africa," *Energy Policy*, vol. 38, no. 1, pp. 678–684, 2010

¹³ E. Jaycox, "Capacity Building: The Missing Link in African Development," 1993

¹⁴ B. Levy and S. J. Kpundeh, *Building state capacity in Africa : new approaches, emerging lessons*. World Bank, 2004

¹⁵ A. Nodari and R. Siliprandi, "ACCELERATING THE DEVELOPMENT OF RENEWABLES ON THE MV MARKET IN MOROCCO Contact details Name Email Telephone

¹⁶ T. S. Schmidt, "Low-carbon investment risks and de-risking," *Nat. Clim. Chang.*, vol. 4, no. 4, pp. 237–239, 2014

¹⁷ P. Gentili et al., "De-risking Renewable Energy Investments Addressing risks for a better market design," 2016

BOX 1. Auction and PPA

An auction is a competitive and transparent bidding process managed by public institutions that elect the players that will be licensed to develop the power plants¹⁸. To date, more than 70 countries in the world adopted this mechanism for RES, demonstrating to be a powerful tool to attract private investments and interests from IPPs. Many African countries like South Africa, Zambia, Egypt, Algeria, Uganda, and others, have successfully carried out auctions pulling world-class project developers, Development Financial Institutions (DFIs), and foreign investment.

Figure 2 illustrates the regulations and supporting schemes specific for RES currently in force in the African countries.



Figure 2: Regulations and supporting schemes in Africa for RES

Source: A. Cammisecra (2018)¹⁹

According to the UNESCAP²⁰ the three phases of a PPP project considering an auction are:

- **Project Identification:** aligned with strategic objectives and national RE targets, supported with pre-feasibility studies
- **Preparation:** conducting feasibility studies, site identification, preparing project documents
- **Tender Process:** pre-tender activities (such as preparing the bid documents, procurement strategy and the tender announcement); pre-qualification (request for Qualification (RfQ), pre-screening of the bidders); and bidding (request for Proposals (RfP) and bid evaluation)
- **Final Closure:** where the final approval and award are given.

A recent study published by IRENA²¹ with focus on RE auction in Sub-Saharan countries such as Uganda, Zambia and South Africa, states that auctions can be successfully implemented in emerging market economies and represent a very powerful tool if combined with a clear, political supported policy and transparent planning aligned with the country RE targets.

Indeed, a large range of benefits related to the application of auctions has been identified, as the following:

- **Flexibility of design** depending on each country situation
- **Potential real price discovery** lowering the prices of the electricity
- **Certainty in prices and quantities** allowing the policymakers to control them

¹⁸ IRENA, Renewable Energy Auctions Analysing 2016. 2016

¹⁹ A. Cammisecra, "Sustainable Energy in Africa EGP," in IEA RIAB Special Session Africa's renewable energy transition: What does it take?, 2018

²⁰ UNESCAP, "PPP E-learning series: Module 5 Project Cycle," no. 66, 2011

²¹ IRENA, Renewable energy auctions: Cases from sub-Saharan Africa. 2018

- **Stability and transparency** when they result on clear contracts on RE generation targets, commitments, and liabilities
- **Improved planning on grid development**, connections and production predictability.

Other advised factors for achieving successful auctions as described by RES4Med on the case study of Algeria²² are:

- Strong commitment from local institutions showing a clear allocation of roles, transparency, and stability
- Clear transparent framework throughout the tender phases involving the market players during the tender design, ensure clear and timely communication
- Flexible structure of the auction that encourages competition through clear, well-defined selection criteria and an adjustable and flexible structure
- Structured and feasible timescales
- Guarantee of feasibility on prices and volumes, risk-sharing guarantees, certain government support and involvement of International Financial Institutions (IFIs)
- Bankable Power Purchase Agreements (PPAs), even before the launching of the auction, with prices in USD and local currency backed by a stable legislation.

The Power Purchase Agreements (PPAs), that are the key element of auctions, are the main form of contract that defines all the commercial terms between the players in the electricity sale. PPAs, if provided with clear and well-designed agreements terms, have demonstrated, combined with other procurement schemes, financial de-risking mechanisms and special supporting programmes for project financing, to substantially reduce the risks associated with RE projects. Indeed, an effective risk allocation happens when every potential risk related to a RE project is covered by the most suitable party acting in the project, the one that has right the authority, the expertise, and financial capabilities²³. The PPA is the core element of a tender and considering the long-term nature of the agreements reached in it, risks from different nature must be considered covering the project life- cycle, such as the financial structuring, legal and permitting risks, construction risks, operating risks, and risks affecting the revenues.

RES4Med has outlined, in the case study on Tunisia²⁴, some recommendations to achieve a bankable PPA, which shall include coverage of dispatching risks, clarity on the electricity currency (hard or local currency), an annual adjustment of the price considering macroeconomic factors, guarantee solvency, clear termination agreements with indemnity, arbitration, a designed expert mediator, guaranteed payment, force majeure clause to cover unforeseen events, and flexibility on the duration.

Another key aspect for attracting investors in the country is to minimise an often-common factor of developing a RE large-scale project in a developing country that represents a major challenge for the governments and public institutions: the lack of available funding. Therefore, forming strategic partnerships between the public and private sector, the so-called PPPs, can represent a great alternative to obtaining additional resources to expand the RE market in Africa. Nowadays, evidences proved that the African governments are looking in this direction to radically improve infrastructure networks and enhance the energy service supply²⁵.

²² RES4MED, "Auction study: Algerian Case Study," 2018

²³ A. B. Nehme, "PPAs and Tariff Design," 2012

²⁴ RES4MED, "AUCTION STUDY Tunisian case study Mechanisms and main factors of a RES auction," 2018

²⁵ P. Farlam, Working Together: Assessing Public-Private Partnerships in Africa. 2005

Renewable energy projects in Africa normally operate under PPPs, which can represent complex structures regarding stakeholder contractual interaction and typically involve many parties such as local governments, project sponsors, project operators, financiers, suppliers, contractors, engineers, third parties, and customers²⁶. There are multiple options of PPPs schemes that can be undertaken, as illustrated in 3, depending on the allocation of risks, obligations and responsibilities, duration, and level of investment. According to the UNESCAP five main categories can be identified: I) Supply and Management Contracts, II) Turnkey Contracts, III) Leases, IV) Concession, and V) Private Finance Initiative (PFI) and Private Ownership.

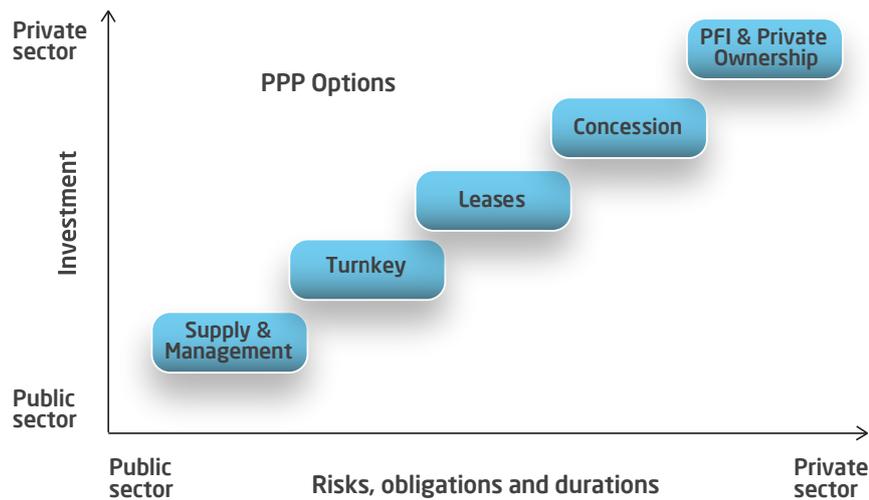


Figure 3: PPP scheme options

Source: UNESCAP (2011)²⁷

Historically, when it comes to developing a new RE power plant or installing new capacity in African countries, where a strong investment and involvement from the private sector is required, schemes such as Concessions and Private Ownership are the most common.

The Concession model comprehends rights given by a government to a private entity to build a facility and provide a service under certain conditions for a fixed period of time (in case of RE projects between 20-30 years), from which the ultimate ownership is retained by the government who also typically provides incentives to make the project commercially viable when necessary. The advantages of this model are the significant risk bearing and investments from the private sector together with high quality and efficiency on the project general development.

The Private Ownership or Private Finance Initiative (PFI) model, similarly to the Concession model, envisages that the power plant is designed, built, and operated by a private entity but with a specific goal of providing infrastructure services to the government through a long-term agreement, meaning that for RE projects the recipient country’s government will be the off-taker of the financial obligations for buying the produced electricity. The main advantages of this model are the effective risk allocation to the private entity, increased private investment, reduced time delays and cost overruns on the design and construction phases.

²⁶ UNESCAP, “PUBLIC-PRIVATE PARTNERSHIP IN INFRASTRUCTURE ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC,” 2011

²⁷ UNESCAP, “A Guidebook on Public-Private partnership in infrastructure,” p. 83, 2011

Ultimately, as already mentioned, the success of expanding the RE market in Africa is a complex process that requires both local efforts and international supports to be radically effective. In this regard, the next chapter will present a deeper focus on the story of European and African cooperation over the years.

4. European-African Cooperation

The EU acknowledges that combating climate change from within is not enough to achieve the SDGs and must extend the efforts to partner developing countries where there is still a lot of work to be done and which are also key on obtaining sound results and real improvement. Therefore, together with the own European sustainable objectives towards achieving clean energy for all Europeans and domestic efforts to tackle climate change, the EU has emphasized the importance of supporting inclusive growth and job creation on developing countries as a key priority of the EU External Policy, and recognizes that investments and financial needs are enormous, consequently, it has arranged a group of innovative financial facilities under a blending framework, also called Blending Facilities, to provide the required aid in different forms of support, such as risk capital, grants, interest rate subsidies, guarantees, and **technical assistance** (TA).

The blending facilities, as a tool for EU external cooperation, aim to attract additional funding by leveraging the investments from public and private parties to drive economic growth, which aside from providing capital would facilitate access to infrastructure projects such as RE power generation, policy support and implementation, capacity building activities, risk mitigation tools, and stakeholder's coordination. The blending facilities are operated under a regional or thematic focus, directing the support to geographical areas such as Asia, Latin America, Caribbean, Pacific, and Africa, or to specific initiatives like ElectrIFI to accelerate access to electricity, the Climate Finance Initiative, and AgriFI²⁸.

In the year 2000, during the first EU-Africa Summit in Cairo, the EU member states formed an alliance with the African continent and set up the Africa-EU Partnership, which is the main channel of cooperation between the two parties. The partnership is guided by the Joint Africa-EU Strategy (JAES), created during the 2nd EU-Africa Summit in Lisbon on 2007 and its objective is to create synergy between Africa and Europe to work closer together and to create deeper bonds, passing through the donor/recipient relationship towards a stronger cooperation framework and strengthening socio-economic collaboration based on transparent political dialogue, oriented to mutual interests, strategic objectives, and joint priorities such as mobilizing investments for African structural sustainable transformation.

Complementary to the Africa-EU Partnership strategy, European instruments were created as part of the European Development Fund (EDF) Blending Framework to provide support to African countries to achieve sustainable development, such as the African Investment Facility (AIF), also known as the African Investment Platform, and the EU-Africa Infrastructure Trust Fund (EU-AITF)^{29 30}.

²⁸ European Commission, "Innovative Financial Instruments (blending)," 2018. [Online]. Available: <https://ec.europa.eu/europeaid/policies/innovative-financial-instruments-blending>. [Accessed: 31-Aug-2018]

²⁹ African Union, "The Partnership and Joint Africa-EU Strategy," 2018. [Online]. Available: <https://www.africa-eu-partnership.org/en/partnership-and-joint-africa-eu-strategy>. [Accessed: 03-Sep-2018]

³⁰ European Commission, "Joint Africa-EU Strategy," 2018. [Online]. Available: https://ec.europa.eu/europeaid/regions/africa/continental-cooperation/joint-africa-eu-strategy_en. [Accessed: 03-Sep-2018]

The African Investment Platform (AIP) has the objective of supporting sustainable growth in Africa by attracting investments that would have a positive socio-economic impact on infrastructure, transport, environment, water and sanitation, agriculture, climate change, small and medium enterprises (SMEs), as well as in the energy sector. The support provided by the AIP is provided as investment grants to facilitate early state project development, technical assistance to support project planning and development, in the form of risk capital or risk sharing instruments to leverage loans from Financial Institutions. On the other hand, the EU-AITF aims to leverage additional finance for large infrastructure projects in Sub-Saharan Africa (SSA) through the provision of blended instruments like investment grants together with long-term financing interest rate subsidies, technical assistance, risk capital, and risk-sharing instruments.

Last year, the first release of the ambitious EU External Investment Plan (EIP) was launched with the objective of supporting EU partner countries in their efforts to meet the SDGs by 2030. It will ensure an integrated approach to boost investments in Africa and the EU neighbourhood³¹ and will help to address the funding gap by working through partnerships and finding innovative ways to mobilize public and private investments³². The EIP is a key tool for enabling the business environment for renewable energy projects, managed by the European Commission and comprised by three main pillars: I) blending finance operations and a guarantee mechanism which envisions to leverage 44 billion euros of investments, II) technical assistance to provide the know-how of project development, capacity building, and advisory, and III) investment climate with institutional authorities and relevant stakeholders to enable the right framework for business development.

The EU is the largest contributor of climate finance worldwide. Helping the developing world and in particular Africa to leapfrog into a sustainable energy future and extending access to renewable-generated electricity for all can be game changers for the development of Africa and the rest of the world³³.

³¹ EU neighbouring countries : Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Moldova, Morocco, Palestine, Syria, Tunisia, Ukraine. See the website of DG NEAR: https://ec.europa.eu/neighbourhood-enlargement/neighbourhood/countries_en

³² European Commission, "Your guide to the EU External Investment Plan," vol. Release No, 2017

³³ European Commission, "Africa Energy Snapshot in the foresight of the 5th EU-Africa Summit," SETIS Magazine No.15 International Cooperation, Oct-2017

African RE market analysis: EU financing instruments, failures and success

In pursuance of this White Paper's objective, the acknowledged methodological approach under the *Ex-ante assessment methodology for financial instruments in the 2014-2020* provided by the European Commission practice, based on the article 37-2 from the Common Provision Regulation on Financial Instruments will be carried out, following the guidelines on the Building Block 1-Market Assessment, comprehending the following activities: a) Analysis of the current market conditions, features, and failures, b) Identification of existing Financial Instruments and lessons learned, c) Identification of the value added of a new Financial Instrument according to the market conditions.

To do such analysis, a series of steps have been executed through 3 different phases:

Phase 1. European financing instruments - Supply analysis

- Identification and screening of the existing European financing instruments in Africa
- Analysis of the existing European financing instruments in Africa
- Creation of a risk coverage matrix of the European financing instruments in Africa

Phase 2. Stakeholders' perspective - Demand analysis

- Identification of key market stakeholders
- Preparation the questionnaire for the interviews
- Perform interviews with the selected stakeholders
- Analysis of the interviews' outcome

Phase 3. RE market barriers and instruments success factors - Analysis results

- Analyse the joint results of the supply and demand analysis to find market gaps
- Analysis and identification of the instruments success factors

The final outcome of this White Paper would serve to identify key market features to be addressed by an existing or new instrument to enable project developers, African governments, financial institutions, and utilities to execute high impact and quality PPPs by implementing fast, simple, structured, transparent, and competitive tenders with bankable projects to procure, build, own, and operate Renewable Energy Technologies.

In the next chapters the 3 phases of the analysis will be described.

1. Identification and screening of the EU financing instruments

Views on gathering the most complete knowledge regarding the features of the existing RE supporting Financial Instruments in Africa and to answer the first sub-question of this study, a desk research was conducted through the utilization of public databases as advised by the strategic board members of the project, mainly targeting the information contained in the Africa-EU Energy Partnership and the Sustainable Energy for All Africa Hub³⁴, and the Africa-EU Renewable Energy Cooperation Programme (RECP)³⁵.

³⁴ SE4ALL - Africa Hub, "Mapping of Energy Initiatives and Programmes in Africa," 2018, <http://eueipdf.azurewebsites.net/Initiatives>

³⁵ RECP, "Funding Database," 2018, https://www.africa-eu-renewables.org/funding-database/?_search=1

More than 100 financial instrument initiatives were found in the databases, from which a pre- screening was performed to discard the inactive ones. This activity led to a final a list of 75 instruments providing debt, equity, and/or grants in different forms, listed in Annex 1.

With the aim of selecting the most relevant instruments for a deep-dive analysis aligned with the project objectives, further research was carried out to find the main features of each of these 75 instruments, considering the key stakeholders, the geographical scope, technology coverage, fund size, advisory services, risk mitigation mechanism, capacity building activities, financial support, tendering procedures and standardized documentation.

Once the previous information was gathered, the strategic board of the project defined a “4 dimensions criteria” to be complied by the instruments to pass a screening procedure to narrow the sample identifying the most competitive instruments: I) must support large-scale RE generation (above 50 MW); II) must be an European instrument or have European support; III) must provide any type of financing (debt, equity or grants) plus any of the following elements: risk mitigation tools, technical assistance, capacity building, or involve a tendering process; IV) must be available to be used in at least 3 different African countries.

Consequently, the results of the screening phase concluded on the selection of 17 European existing instruments providing financing combined with other types of support to develop large-scale RETs in a wide selection of African countries, listed in Table 1.

Name	Financial Instrument	Fund Data	Tech. coverage	Provision of support services			
				Financial	Technical	Capacity Building	Standardized document
EU External Investment Plan (EIP)	Debt, equity, guarantee, grant	Fund Size: €4.1B	All	X	X	X	
Scaling Solar (SS)	Debt, equity, guarantee, insurance, grant	Not Specified	Solar	X	X	X	X
Public - Private Infrastructure Advisory Facility (PPIAF)	Grant	Not Specified	All		X	X	
NEPAD Infrastructure Project Preparation Facility (IPPF)	Grant	Not Specified	Wind, Solar, Hydro		X	X	
FMO Infrastructure Development Fund/Direct Investment (FMO-IDF)	Debt, equity, grants	Fund Size: €326M Investment Size: €5-50M	Wind, Solar, Hydro, Geothermal, Biomass	X	X	X	
ACP -EU Energy Facility (ACP -EU)	Grant	Fund Size: €200M	Wind, Solar, Hydro, Biomass		X	X	
EU-Africa Infrastructure Trust Fund (ITF)	Debt, equity, guarantee, insurance, grant	Fund Size: €812 M	All	X	X	X	
Southern African Development Community (SADC - PPDF)	Grant	Not Specified	Solar, Hydro		X	X	X
Clean Technology Fund (CTF)	Debt, guarantee, grant	Fund Size: €5.4B	All	X	X	X	

Climate Investor One (CIO)	Equity, grant	Fund Size: €535M	Wind, Solar, Hydro	X	X		
		Investment Size: USD 80-100M					
Danish Climate Investment Fund (DCIF)	Debt, equity, grant	Fund Size: €180M	All	X	X	X	
		Investment Size: €2-50M					
Africa Energy Guarantee Facility (AEGF)	Insurance, guarantee, grant	Fund Size: €1.4B	Wind, Solar, Hydro, Biomass, Geothermal		X		
West Africa Clean Energy Corridor (WACEC)	Grant	Not Specified	Wind, Solar		X	X	X
Energy Sector Management Assistance Program (ESMAP)	Grant	Not Specified	Wind, Solar, Geothermal		X	X	
The NEFCO Carbon Fund (NeCF)	Debt, equity, guarantee, grants	Fund Size: €165M	Wind, Solar, Hydro, Biomass, Geothermal	X	X		
		Investment Size: €4-5M					
FISEA Invest and Support Fund for Businesses in Africa (FISEA)	Equity, grant	Fund Size: €250M	Wind, Solar, Hydro, Biomass, Geothermal	X	X	X	
		Investment Size: €1-10M					
Terawatt Initiative (TWI)	Equity, guarantee, insurance, grant	Not Specified	Solar	X	X	X	X

Table 1: The 17 selected European instruments for large-scale RE in Africa

A list of the most relevant risk mitigation tools identified from the selected existing instruments is presented in the Annex 2.

In the next chapter it will be conducted an analysis of the European financing instruments following a “4 Pillars approach” and by assessing the coverage of the project main phases and steps.

2. Assessment of EU financing instruments - Supply Analysis

After the screening process of the existing EU financing instruments that enabled the identification of the 17 most relevant ones, a deep analysis of the level of coverage provided by them has been conducted following 3 methodologies: under 4 main coverage areas, under the “4 Pillars Approach” and Venn diagram, and assessment of the level of support provided during the 4 main project phases.

The first methodology consists in the identification of 4 main risk areas that can be covered by the financing instruments, which are:

- Financing coverage
- Risk mitigation coverage

- Technology coverage
- Geographical coverage

Findings on the features of the selected instruments, illustrated in Figure 4, revealed that, while all the instruments provide grants, only 41% of them provide equity, debt, and grants together as a complete financing package. Furthermore, the 41% of the instruments (7 instruments) offers at least one risk mitigation tool, out of which the 43% only in form of guarantee and the 57% in form of guarantee and insurance together, as it is shown in Figure 5.

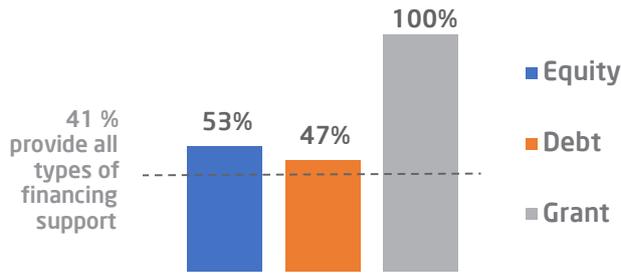


Figure 4: Share of 17 European instruments coverage by financing type

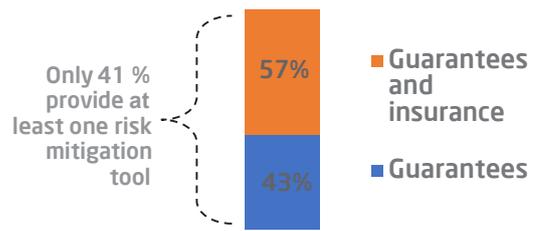


Figure 5: Share of 7 European Instruments coverage by risk mitigation type

In terms of technology, Figure 6 shows that only 29% of the instruments are technology-neutral, meaning that are available to support any type of RE technology, while solar technology is supported by all the instruments. The trend also favours wind and hydro technologies, that can receive up to 82% and 76% of financing coverage respectively.

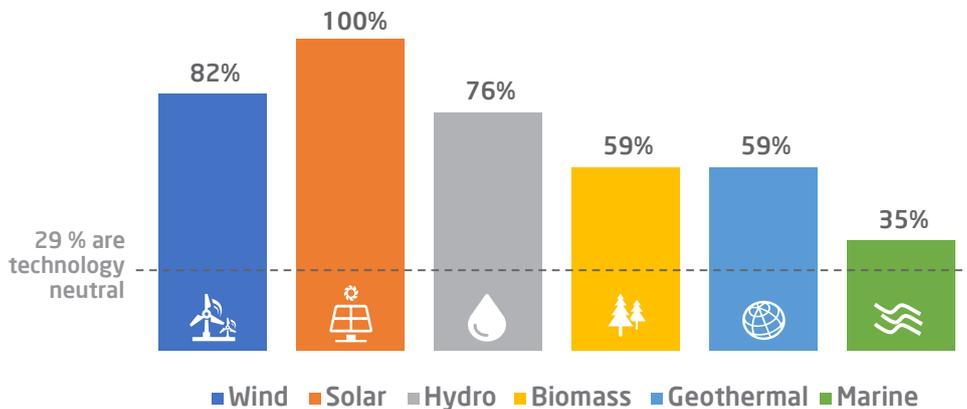


Figure 6 - Share of 17 European instruments coverage by technology type

From the geographical analysis it emerges that the instruments cover two main regions, North and Sub-Saharan Africa, and only 35% of the instruments were available for all the African territory. Also, a close relationship was found between the specific feature of providing standardized documentation and a geographical-technological coverage constraint, revealing that the instruments providing this feature were the ones focused on specific countries and/or on a single technology, with the aim of providing tailor-made solutions depending on the country profile.

The “4 Pillars approach” was conceived to gather the findings of the analysis and elaborate the interaction between the 4 main coverage areas. Figure 7 illustrates this approach in the form of a Venn diagram³⁶, where all 17 selected instruments, that fulfil completely at least one of the pillars, are placed according to their characteristics.

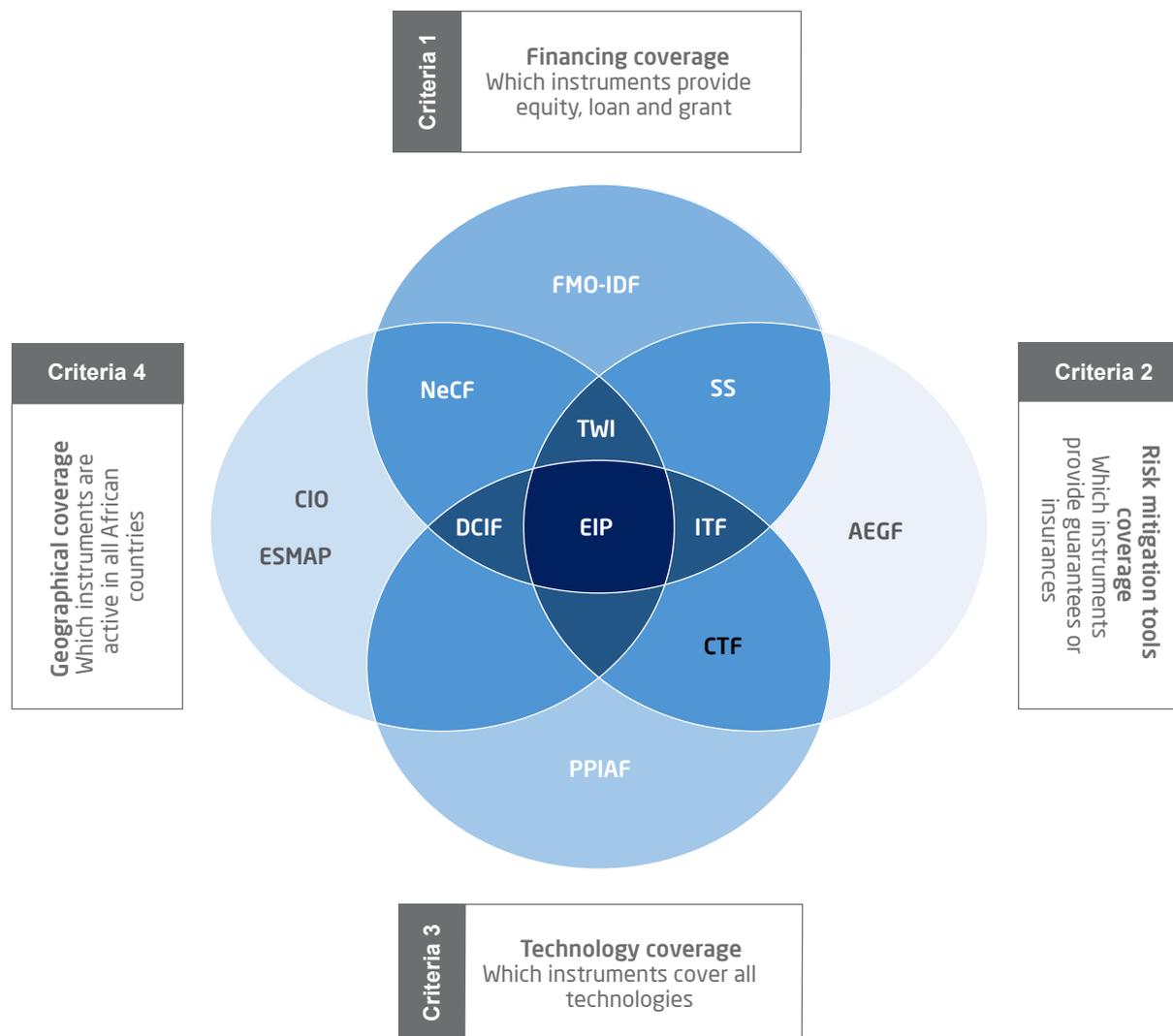


Figure 7 - European instruments according to the 4 Pillars approach

It emerges that only 70% of the selected instruments fits in the requirements of the pillars, while the remaining 30% addresses them partially. Also, it is evident that the most complete one across the 4 coverage areas is the EU External Investment Plan (EIP): it is available for all African countries, it is technology-neutral, and provides a complete blending finance package complemented with a risk mitigation tool.

³⁶ FMO-IDF: Infrastructures Development Fund/Direct Investments; SS: Scaling Solar; NeCF: The NEFCO Carbon Fund; TWI: Terrawatt Initiative; ITF: EU-Africa Infrastructure Trust Fund; EIP: EU External Investment Plan; DCIF: Danish Climate Investment Fund; AEGF: African Energy Guarantee Facility; CIO: Climate Investor One; ESMAP: Energy Sector Management Assistance Program; PPIAF: Public – Private Infrastructure Advisory Facility; CTF: Clean Technology Fund

Nevertheless, regardless of the EIP high coverage based on the 4 pillars, it doesn't provide standardized documentation for tenders and agreements procedures, outstanding again the constraint for this characteristic related to the specific country regulations and RE technologies, as it can be confirmed based on the only two instruments on the diagram with this feature, Scaling Solar and the Terawatt Initiative, which are only focused on solar energy.

Going deeper into the details of the supporting schemes, as a further step, the main phases of a large-scale RE project were identified and it was analysed the level of coverage provided by the 17 European supporting instruments. The framework of the key phases, steps, and activities of large-scale RE projects is outlined in Table 2.

Phase	Steps	Activities	Tools
Project Preparation	1 Project Preparation	<ol style="list-style-type: none"> 1. Technical analysis 2. Economic analysis 3. Legal & Regulatory analysis 4. Site/source availability analysis 	<ul style="list-style-type: none"> • Technical Assistance • Feasibility Studies • High level dialog • Capacity Building
	2 Project documents and Bid preparation	<ol style="list-style-type: none"> 1. Prepare project documents 2. Prepare tender details and location 	<ul style="list-style-type: none"> • Bankable / Standardized documents negotiation (FIs, Insurers, Guarantors, Government)
Tender Process	3 Tender Process	<ol style="list-style-type: none"> 1. Request for Qualification 2. Bidder Consultation 3. Request for Proposals 	<ul style="list-style-type: none"> • Technical Assistance • Transparent and clear tender procedures
	4 Award	<ol style="list-style-type: none"> 1. Proposals review and feedback 2. Tender Award 3. Signing of project documents 	<ul style="list-style-type: none"> • Technical Assistance • Active stakeholder engagement
Financial Close	5 Final paperwork execution of agreements	<ol style="list-style-type: none"> 1. Finalise contractual & financial structure, due diligence 2. Final Project Approval 3. Signing PPA 4. Signing loan, insurance, guarantee, risk management agreements 	<ul style="list-style-type: none"> • Technical Assistance • Transparent and clear standardized documentation • Insurance • Guarantee • Debt/Equity/Grants
Construction & Operation	6 Construct, operate, and maintain	<ol style="list-style-type: none"> 1. Construct the RE plant 2. Commissioning of the plant 3. Operation 4. Maintenance 	<ul style="list-style-type: none"> • Technical Assistance • Capacity Building Activities

Table 2 - Phases and activities of large-scale RE projects

The findings, gathered sounding statistical information about the overall coverage of the instruments, highlight the most relevant gaps throughout the different phases, as it is shown in Table 3. It emerges that 100% of the selected instruments provides support on early stages of the project, mostly in the form of feasibility studies or capacity building activities; 29% provide support on the negotiation and preparation of the project documents; only 18% of them provide support on the implementation of a tender process; 65% provide support to achieve financial close by granting advisory services or risk mitigation mechanisms; and 41% provide support on the construction & operation phases of the project by conceding technical advice, tracking project development, and arranging capacity building activities.

Phase	Steps	Number of instruments covering project phase	
Project Preparation	1. Project Preparation	17	100% Provide support on feasibility studies and/or capacity building
	2. Project documents and Bid preparation	5	
Tender Process	3. Tender Process	3	18% Provide support on implementation and tender process
	4. Award	3	
Financial Close	5. Final paperwork agreements signature	11	100% Provide advisory services and/or risk mitigation tools
Construction & Operation	6. Construct, operate, and maintain	7	41% Provide technical advice, project development tracking and/or capacity building

Table 3 - Instruments coverage of the large-scale RE project

Source: World Bank Global Economy Monitor

To conclude the analysis on the European financing instruments a conclusive risk coverage matrix was conceived and will be presented in the next chapter.

3. Risk coverage matrix of the EU financing instruments - Supply Analysis

Aiming to identify the coverability of the selected instruments over the present risks in the African large-scale RE projects, a list of 28 elements, commonly perceived as hampering factors, was obtained from "Survey on the main barriers affecting investments in RE capacity in the Mediterranean" carried out by RES4Med&Africa in 2016³⁷. This risks list has been inserted in an overall framework of risk main areas and subareas and presented in Table 4.

³⁷ RES4Med, "Survey on the main barriers affecting investments in RE capacity in the Mediterranean Focus on Southern and Eastern Mediterranean Countries (SEMCs) RES4Med Working Group led by RES4Med Survey on the main barriers affecting investments in RE capacity in th," 2016

Area	Subarea	#	Risk List	Description
Legal framework enabling investments	Business environment	1	Starting a business	Risk associated with the procedure to effectively start a new business in investing in RES plants (e.g. number of procedures, time and cost)
		2	Property/concession rights	Risk associated with obtaining and maintaining the rights of the property/concession throughout the lifecycle of the project
		3	Political risk	Risk associated with political events that adversely impact the value of investments (e.g. war, terrorism, civil disturbance, forced abandonment, nationalization, political unrest, breach of contract, expropriation & confiscation, political violence, sabotage, strikes, riots, malicious damage, coup d'état, civil war, rebellion)
		4	Dispute resolution issues	Risk associated with entering a dispute and the capacity to solve it
	Regulatory framework	5	Policy and regulatory risk	Risk associated with changes in legal or regulatory policies that have significant and adverse impacts on project development or implementation (e.g. incentive programs, interconnection regulations, permitting processes)
		6	Rules favouring market opening to IPP	Risk associated with the existing rules favouring IPPs in entering and operating in the market
		7	Grid access rules	Risk associated with the grid integration capability, reliability and rules to intake the produced power and allow grid integration procedures
		8	Institutional actors' roles and responsibilities	Risk associated with definition of roles and the correct allocation of responsibilities of institutional actors involved in the project
Risks affecting Revenues	9	Revenue stability risk	Risk associated with any factor that could affect the revenue stream	
	10	Risk of curtailment	Risk associated with the curtailment of energy supply (e.g. supply chain disruption)	
	11	Exchange rate risk	Risk associated with the volatility of foreign exchange rates that adversely impact the value of investments and arises when there is a currency mismatch between assets (revenues) and liabilities (debt financing)	
	12	Counterparty/ Sovereign risk	Risk associated with the credit and default risk by a counterparty in a financial transaction when does not cover its obligations (e.g. temporary inability, unwillingness to pay, insolvency, protracted default, bankruptcy). Both private and public counterparties are included in this category. Sovereign risk referring to the government as the counterparty	
	13	Capital transfer and convertibility	Risk associated with an investor's inability to legally convert local currency (capital, interest, principal, profits, royalties, and other remittances) into foreign exchange and/or to transfer local currency or foreign exchange outside the country where such a situation results from a government action or failure to act	
Risk affecting Costs	Construction	14	Permitting /licensing risk	Risk associated with obtaining the necessary license or permits required to construct the RES plant
		15	Grid access risk	Risk associated with limitations to have physical grid access
		16	Construction flaws risk	Risk associated with potential construction flaws due to an underperformance of the project developer during the construction phase
		17	Availability of local skills	Risk associated with unskilled labor in using and deploy nascent technology in the construction phase
	Operational	18	Logistics, security and safety risk	Risk associated with the logistics operations feasibility, the security for construction and the safety of personnel involved in the construction phase
		19	Construction flaws	Risk associated with potential construction flaws due to an underperformance of the project developer during the operational phase
Risk affecting Financial Structuring	20	Availability of local skills	Risk associated with unskilled labor in using and deploy nascent technology in the operational phase	
	21	Logistics, security and safety risk	Risk associated with the logistics operations feasibility, the security for construction and the safety of personnel involved in the operational phase	
	22	Financing availability	Risk associated with obtaining viable financial support for the project	
	23	Interest rate risk	Risk associated with fluctuations on interests' rates	
Environmental Social issues	24	Inflation risk	Risk associated with abrupt changes on the inflation rate	
	25	Tax regime	Risk associated with fluctuations on tax rates	
	26	Environmental impact assessment procedures clarity	Risk associated with environmental and resource assessments issues due to unclear procedures	
	27	Social acceptance	Risk associated with social acceptance/activism towards the project	
	28	Force majeure risk	Risk associated with the danger of prolonged business interruption due to factors beyond anyone's control- like fires, storms, or floods	

Table 4 - Large-scale RE projects risks

To perform the risk coverage analysis, a risk matrix was developed cross-referencing the key features and activities outlined in Table 3 with the risks. Consequently, the resulting matrix was applied to all the 17 European financing instruments and the collected data was utilized to obtain to highlight the existing gaps in the provided coverage, illustrated in Figure 8.

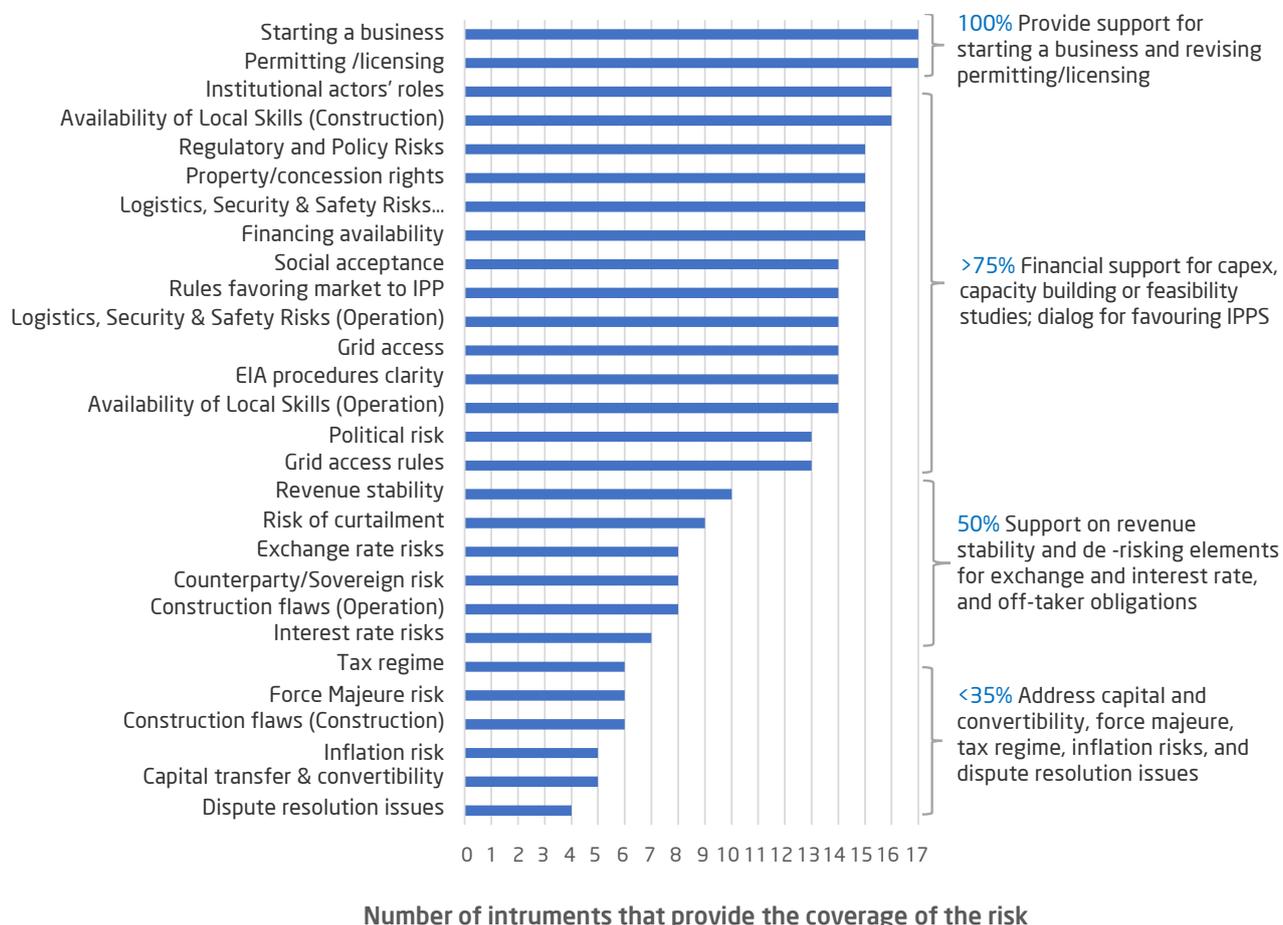


Figure 8: Risk coverage matrix of European financing instruments

Insights coming from the analysis above can be summarised as below:

- It was confirmed that 100% of the instruments provide support on early stages of the project, similarly to the results obtained from the phases coverage, helping to start a business and to revise permitting/licensing
- More than the 75% provide financial support for capital expenses, feasibility studies, and capacity building activities complemented with high-level dialog to strengthen the RES political & regulatory framework favouring IPPs
- Around 50% of the instruments contribute to maintaining revenue stability and de-risking elements for exchange and interest rates, and off-taker obligations
- Less than 35% of the instruments cover capital transfer & convertibility risks, force majeure events, tax regime, inflation risks, and provide assistance for dispute resolution issues.

Insights coming from the analysis above can be summarised as below:

As a further step, in the next chapter it will be carried out an analysis on the demand side to identify are the factors hindering the investments in the current African RE business environment.

4. RE market stakeholders' perspective - Demand Analysis

In this section the original empirical perception of the African RE business environment will be reported from stakeholders' point of view aiming to provide a business perspective on the subject.

To perform this study, it was carried out a series of interviews with key stakeholders to report on their market perception, to comprehend their financing needs, to understand whether they have the interest to invest in Africa, to know which are the trend technologies, to identify which countries are being targeted, and to obtain information about their experience on existing instruments operating in Africa and if there are actual gaps and failures that could better be addressed.

To settle the relevant stakeholders to be interviewed, firstly it was defined an audience formed by RE independent power producers and manufacturers, secondly, together with the executive board of the project a list was derived considering the stakeholders' presence and relevance in the African market.

The demand analysis focus on:

- Geographical location and the technology preference of the investors
- IPPs and Manufacturers' perception about the use European financing instruments
- IPPs perception about the support of the comprehensive programmes
- IPPs and Manufacturers' perception about the risk coverage matrix

The first target of the independent power producers and manufacturers survey was to identify the geographical location and the technology preference of the investments. The results point out that **100% of IPPs are investing in wind and solar technologies, while only 50% of them on CSP and 25% on hybrid technologies combining fossil fuels and RETs**; on the other it emerged that the manufacturing in Africa is only focused on wind and solar technologies. From a geographical point of view, the Figure 9 shows that the IPPs' investments are mainly concentrated in the countries with the strongest economies, 11 out of the 54 African countries, with a particular interest in the **Northern regions** (like Egypt and Morocco), or in the **Southern regions** (such as in South Africa). Similarly, manufacturers are mainly present in the extreme north and south, with a trend for Eastern African countries as well.

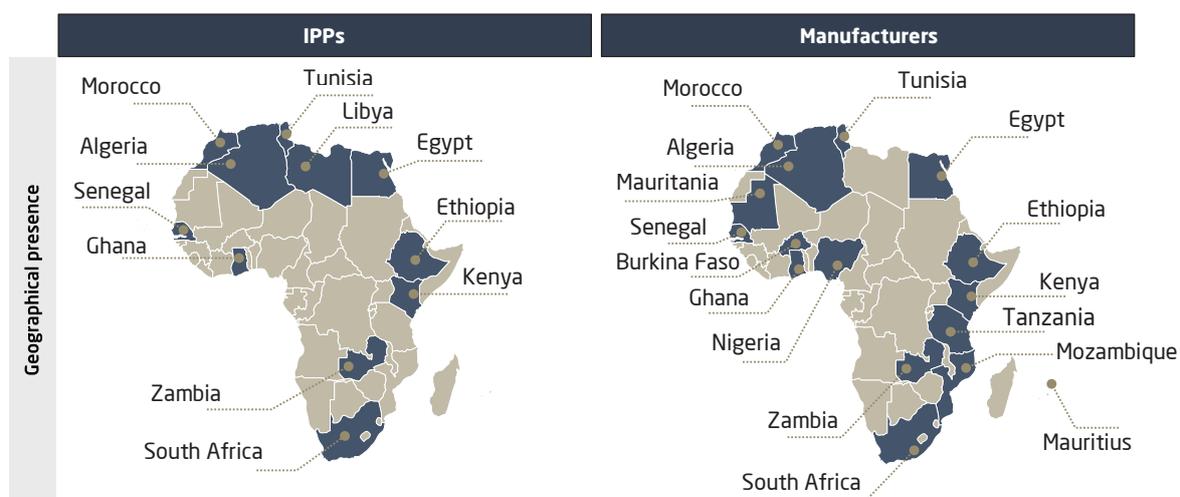


Figure 9: IPPs and manufacturers presence in Africa

The interview shows that IPPs and Manufacturers utilise all types of financing instruments, mainly risk capital and debt. Moreover, the application of blending finance was perceived as an instrument to support the project by reducing risks, utilizing grants for initial expenditures, feasibility studies, technical assistance, and even guarantees. **From the IPPs' experience on existing European financing instruments, it emerged that most of them have been successfully applied**, such as the Clean Technology Fund (CTF) as well as fully supporting programmes with auctions and staple financing like Scaling Solar (ss) from the World Bank, and GETFiT from the German bank KfW. **However**, the interviewees pointed out the existence of **a large number of instruments for Africa**, that, due to the lack of familiarity and complexity, **discourage their use and minimise their attractiveness**. Therefore, IPPs specified their preference to maintain a close relationship with IFIs such as the EIB, AfDB, ADB, Meridiam, Proparco, and MIGA, from which they can obtain financing in form of debt, equity and grants, and risk mitigation tools such as guarantees and insurances. Specific questioning was conducted to the IPP interviewees that were involved with the comprehensive programmes, to get their perception on its completeness and improvement areas, from which several comments were raised particularly on weaknesses during the preparation phase of the project. It emerged a certain level of inaccuracy during the feasibility studies and site selection, **inexistent tariff adjustment mechanisms** based on macro-variables over the elapsed time, and **delays between the bid and the financial close** (inflation, exchange rate, etc.). Moreover, it was also observed a **lack of local skilled workforce, lack of clarity about the terms and implications of the risk mitigation tools** (such as currency, repatriation, and counterparty), and staple final agreements for the financial close between private-public parties still need to be strengthened. Nonetheless, it was also remarked that such instruments structure helps to save time spent on negotiations and facilitate the project bankability³⁸. Ultimately, the respondents were asked to select and rank the most relevant risks perceived among 28 listed in the Table 4. The IPPs highlighted 9 principal risks while manufacturers identified 10. The political risk together with the policy and regulatory risk are the principal concerns coming from the market players, revealing a major distrust in the government and regulatory framework. Following the ranking, at the second place for relevance we find the risks associated with capital transfer and convertibility and the one related to the rules favouring market opening to IPPs, outlining a non- complete liberalisation process of the markets. The findings of this analysis are illustrated in Figures 10 and 11.

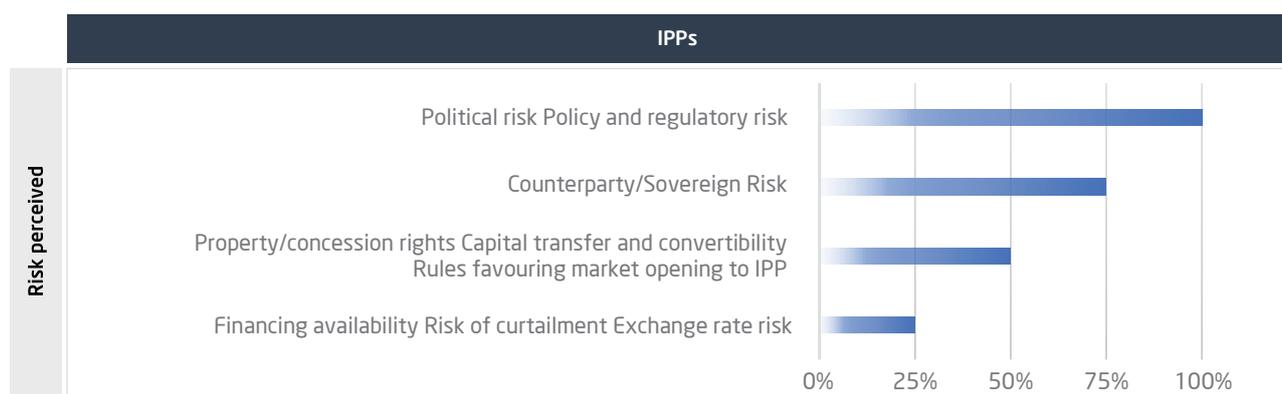


Figure 10: Ranking of perceived risks by IPPs

³⁸ The “bankability” of a project is the term used by the banks in the project evaluation process to define whether it can be financed or not, according to the risks associated with it and to their good allocation among all the involved players.

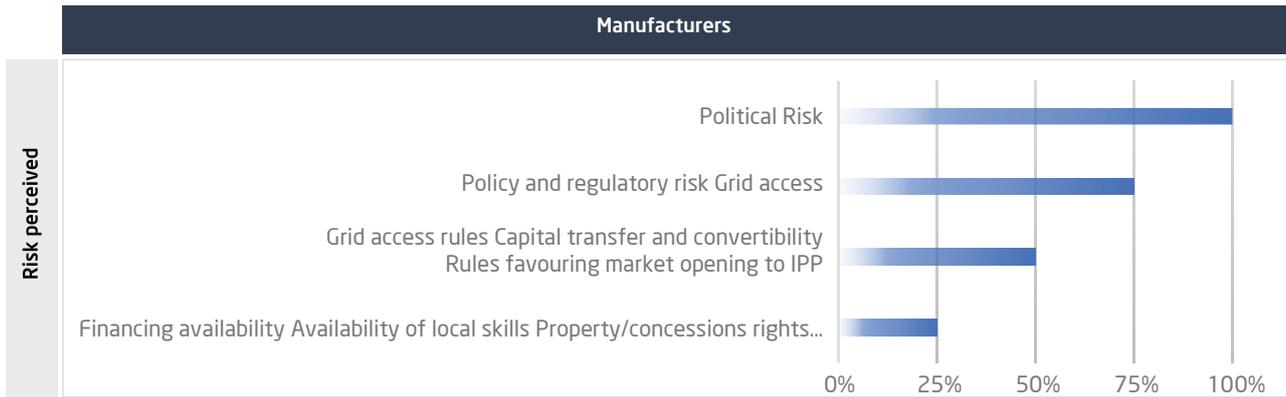


Figure 11: Ranking of perceived risks by Manufacturers

The insights coming from the joint results of the supply and demand analysis of the RE African market will be the focus of the next chapter.

5. Analysis results - EU financing instrument failures and success factors

In the previous chapters it was analysed the supply and demand sides of the RE market in Africa, describing the existing European instruments and portraying the point of view of the market players (IPPs and manufacturers). The aim of this chapter is to merge the findings of the two conducted analysis providing an overview of the current market, highlighting its gaps and the success factors of the existing financing instruments. A list of gaps will be presented following the 4 Pillars approach.

From a technology coverage perspective, less than a third of the instruments are technology- neutral and mostly provide support to solar technologies, hampering the others to reach their full potential.

From a geographical coverage perspective, only about a third of the instruments offer support to the whole African continent, which is not enough to match the energy needs and rapid demand growth happening in all 54 African countries.

From a financing coverage perspective, although interviewees mentioned financing availability as a high impact factor for investing, less than half of the instruments provide blending finance and solely offer risk capital or debt. Indeed, blending facilities represent a way to facilitate financing availability and to reduce the risk exposure faced by investors, in forms of technical assistance, as well as investment grants, interest rates subsidies, feasibility studies ensuring grid access, site availability.

From a risk mitigation tools coverage perspective, only two-fifths of the instruments comprehend at least one risk mitigation mechanism and less than one-fifth offers an aggregated package of guarantees plus insurances. The interviewed stakeholders raised concerns mainly in 12 different risks, from which most of them can be covered by the financial risk mitigation tools offered by the existing instruments such as political, regulatory and policy, counterparty/sovereign, contractual underperformance, and currency convertibility and transferability risks. Also, some of the mentioned currency-related risks can be addressed by the availability of debt in hard or local currencies offered by DFIs. Moreover, to improve the involvement of DFIs, the survey results outlined the need of guarantees provision and/or insurances with clear and well-defined terms throughout the whole project evolution, avoiding disputes, fostering and accelerating bankable projects.

On the other hand, guarantees and insurance are financial de-risking mechanisms which do not address the risks from their root. Hence there is a latent **need to establish a tailored an appropriate policy and regulatory framework** in parallel with a real long-term RE strategy and strong political commitment. Furthermore, to support such a framework it is essential to provide a **structured high-level dialogue between public and private sectors**, building awareness on the RE development gains and the investors' multiple needs, which would highly and positively impact the risk perception and attractiveness of the market.

Another discussion subject entailed during the interviews was the **lack of skilled workforce** during the construction and operation phases, notwithstanding the availability of capacity building activities is offered by most of the existing instruments, there seems to be a gap either in the training reach, volumes or quality. As a complementary tool, the analysis highlights that the comprehensive programmes, although providing support throughout the whole lifecycle of the project, **rarely include a complete standardized documentation and guidance** to execute tender procedures. Moreover, it has been noted that only one instrument combined a comprehensive package of staple blending financing, standardized tender procedures, guarantees and insurances, accompanied with technical advice end to end. The technical assistance, especially in the project preliminary phase (e.g. PPAs) is fundamental and must be particularly clear and precise, as it can have repercussions on delays and issues during the following phases.

Summarizing on the previously described gaps, the evidence reflects the existence of several market failures in different areas, which could be addressed by the development of a new instrument targeting those aspects in particular, minimizing the breach between the investors' multiple needs and the support provided by the available market tools.

The analysis carried out on the RE market demand side produced an overview of the stakeholders' point of view about the European financing instruments, their effectiveness and comprehensiveness. It emerged that **the External Investment Plan (EIP)** is the most complete EU instrument, because of its technological and geographically neutral coverage, and as it manages to convey blending finance (funded by the AIP, EU member states, IFIs, and other contributors) as well as composing the EFSD guarantee (funded by the EDF and the EU). Moreover, the EIP enables to merge financial aids with a high-level capacity building dialogue, putting in place a technical assistance mechanism to support in the preparation phase and improving the business environment. The structured dialogue tool from the EIP is backed up by the Sustainable Business for Africa platform, which targets specific country, sector and strategic levels to pull in the African and EU private sector perspective and ownership of the EIP. Nonetheless, standardized documentation and tenders do not belong to EIP scope, due to its wide technological and geographical coverage that doesn't provide enough specificity of differences between countries rules and RE technologies.

In this regard, the **Scaling Solar (SS)** programme is designed to adapt to specific technology assets and country contexts, as a procurement programme for governments to leverage Foreign Direct Investments (FDI) into the RE sector. The SS enables to combine a staple financing package including debt, equity, and grants, with one of the most complete risk mitigation packages for risk allocation and sharing supported by the World Bank Partial Risk Guarantee and the MIGA Insurance under a pre-approved documentation scheme leading to bankable projects, which apart from that, provides full support during the whole project lifecycle and enables tender procedures. The key success factors of the SS programme³⁹ focus on:

- **Strict country selection:** to ensure political support, requiring a country champion with strong political will
- **Selective private audience:** ensure reliability and competitiveness of the bidders by setting high legal, technical, financial and expertise standards;
- **Appropriate risk allocation:** composed by fully developed project agreements and credit- approved term sheets, plus the IDA Guarantee and MIGA Insurance

³⁹ S. Stritzke, "Clean energy for all": the implementation of Scaling Solar in Zambia," 2018

- **Flourishing social acceptance:** by facilitating meetings with the local communities, relocation strategies, public surveys
- **Clear and transparent procurement:** revealing all the RfQ and RfP results, including a well- established selection criterion for the RfQ and an auction scheme selection for the RfQ publishing the results.

Complementary with the elements outlined above, the interviewed IPPs who were awarded a Scaling Solar auction mentioned the high level of competitiveness between the bidders, encouraging them to enhance their bids. It was also mentioned the staple finance as a time-saving mechanism, leading to few delays. The risk coverage provided by the guarantees and insurances fulfilled the developers' needs and, even though the risk allocation within the PPA did not happen as smoothly as expected, the final outcome was successful. To date, the current European financing instruments applied in Africa have been recognized greater or lesser as successful initiatives, notwithstanding there is still much room for improvement. In the next chapter a New Innovative European Instrument will be proposed, starting from the key success of the existing ones integrated with the possible outlined improvements.

Value proposition - A New Innovative European Instrument

As a result of the RE large-scale market in Africa analysis and the observations on the market failures and key success factors of the most relevant European financing instruments currently available, the need for a new innovative European instrument has emerged with the purpose of fostering the deployment of RES in the continent and accelerating the creation of a more suitable business environment. The findings of this White Paper suggest that the African RE market has space for a new instrument that addresses the unveiled market gaps, broadening the geographical and technological coverage provided, targeting the most relevant risks for investors and offering a full staple blending finance package, complemented with the provision of standardized project documentation and procedures throughout a clear and transparent tender process. Moreover, the results have pushed RES4Med&Africa to go further in the analysis by stepping in the second phase of the project in which a structure of the new programme will be designed in order to provide private and institutional stakeholders with a more detailed programme.

The main drivers to foster FDI into African emerging markets are strictly related to the perceived risks of such investments, thus de-risking mechanisms are fundamental for turning renewable energy projects in Africa truly bankable. In this regards, the main de-risking categories here considered are:

- **Energy Policy.** Findings of this study have outlined the importance of an enabling business environment to set up the stage for FDI and RE projects development, for which political will and a solid RE policy and regulatory framework and strategy are pre-requisites for establishing fruitful PPPs. Both from the market analysis and stakeholders' point of view the necessity of instruments seeking to provide structured dialogue and capacity building activities to public institutions and governments emerged, and to promote engagement and clarity in public-private negotiations.
- **Financial De-Risking mechanism.** Instruments that provide financial de-risking tools are essential to attract investors in the country since they enable the allocation of all the risks related to a renewable energy project to the best-suited parties. Moreover, these types of mechanisms are crucial in political and economic instability contexts, enabling to achieve the project bankability. There are various instruments in the market, providing different types of guarantees and insurances, as credit enhancement tools. The most relevant ones, according to the interviewed IPPs, are the tools that guarantee the fulfilment of payment obligations and cover political and currency-related risks.

The details of the features of the New European Instrument will be described in the next chapters, according to the different project phases: Project Preparation, Tender Process, Financial Close, Construction and Operation.

2. Tender Process

In the second phase of a RE project the introduction of clear and transparent tender procedures has been identified as essential, fostering a competitive environment where several stakeholders could be involved, promoting the investment attractiveness in the sector, and ensuring the participation of the best IPPs in the market by setting high qualification standards and a world-class procurement through technical assistance. During this second phase, during which the project’s standardized documentation is arranged and the conditions of the terms and risk allocation in the PPA are defined, the second set of de-risking activities could be implemented as described in the conceptual model, financial direct incentives such as FiT can be included in the PPA terms.

The features of the New Innovative European Instrument in the Tender Process phase are described in Table 6.

Phase	Key features of the New instrument
<p style="text-align: center;">2</p> <p style="text-align: center;">Tender Process</p>	<p>Technical Assistance to:</p> <ul style="list-style-type: none"> • Provide specific training on the creation and management of an effective, transparent tender process to the appropriate governmental and public sector entities. • Support the preparation of all standardized documents necessary for the tendering process (e.g. bid documents, environmental evaluation procedures, grid connection agreement, PPA, etc.). • Support the project evaluation procedures throughout all the execution phases of the tender process, promoting clear and transparent information flows and communication, as listed below: <ul style="list-style-type: none"> • Request for Qualification (RfQ) - support on a high standard participants’ pre-qualification; • Bidder Consultation - support negotiations with all the stakeholders; • Request for Proposals (RfP) - support the evaluation of proposal submissions, both from a technical and financial standpoint; • Provide proposals review and feedback - support the revision and adaption of the Power Purchase Agreement (PPA) and other documents; • Tender Award; • Support in signing of the project documents - support on the finalization of projects documents . <div style="border: 1px dashed gray; padding: 10px; margin-top: 20px;"> <p style="text-align: center;">Best Instrument Tools Identified</p> <p style="text-align: center;">The standardized tender processes of the Scaling Solar and South African REIPPP programmes have shown positive results in terms of</p> </div>

Table 6: New Innovative European Instrument - Tender Process Phase

3. Financial Close

As a third step, after the selection process of the auction, there is the financial close of the contract, a phase that must be reached with all the involved project stakeholders. In this regard, the financial expert advice appears crucial to close the equity and debt funding. Moreover, a set of de-risking mechanisms, such as guarantees and insurance, is an unavoidable measure at this stage to reduce return rates and debt interest rates.

The features of the New Innovative European Instrument in the Financial Close phase are described in Table 7.

Phase	Key features of the New instrument				
<div style="background-color: #1a3d54; color: white; padding: 5px; text-align: center; font-weight: bold;">3</div> <div style="background-color: #1a3d54; color: white; padding: 10px; text-align: center; font-weight: bold; margin-top: 10px;">Financial Close</div>	<p>Technical Assistance to:</p> <ul style="list-style-type: none"> • Support with key components of the financing process such as corporate and contractual structure, scope of work of consultant due diligence reports, base case and sensitivities, risk analysis, term sheet, information memorandums preparation, syndication strategy, etc. • Support the negotiation process and contracts finalization with the project stakeholders. • Support the reach of the financial close, including a tariff adjustment mechanism based on macro -variables over the elapsed time between the bid and the financial close (inflation, exchange rate, etc.). 				
	<p>Debt, Equity and Grants to:</p> <ul style="list-style-type: none"> • Provide debt (senior, subordinated, soft) and/or equity, considering clear conditions based on macroeconomic variables (e.g. interest rate, commodity and currency derivatives) • Acknowledge and endeavour to integrate other kinds of financial support such as incentives, interest rate subsidies, co-guarantors/insurers, etc. 				
	<p>Guarantees/Insurances:</p> <ul style="list-style-type: none"> • Institutions have varying preferences as to whether to structure risk mitigation and credit enhancement as guarantees or insurance, or both. Lenders tend to prefer the callable nature of guarantees; therefore, the usage of such tools should be considered according to the project’s specific needs with the objective of reducing risks and obtaining a better rate of return for investors and by reducing debt interest rates. • These de-risking tools should have specific focus on the main risks considered as barriers for investing, where the guarantees and insurances can involve other DFIs and private institutions that wish to participate but may not have the same resources or expertise as co-guarantors/insurers or reinsurers, thereby enabling inclusive delivery. 				
<p>Best Instrument Tools Identified</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="border-top: 1px solid black; border-bottom: 1px solid black; padding: 5px;">Insurances</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black; padding: 5px;">Guarantees</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">ATI Insurance (AEGF) MIGA Insurance (SS)</td> <td style="padding: 5px;">EFSD Guarantee (EIP) WB PRG (SS)</td> </tr> </tbody> </table>		Insurances	Guarantees	ATI Insurance (AEGF) MIGA Insurance (SS)	EFSD Guarantee (EIP) WB PRG (SS)
Insurances	Guarantees				
ATI Insurance (AEGF) MIGA Insurance (SS)	EFSD Guarantee (EIP) WB PRG (SS)				

Table 7: New Innovative European Instrument - Financial Close Phase

4. Construction and Operation

During this last phase of the lifespan of a renewable energy project, specific measures need to be taken to promote additional capacity building activities at all levels in the energy value chain, from ministers and dedicated authorities to operators and maintainers. Moreover, it is crucial to improve the training quality, volume and expansion of the reach of such activities to stimulate the development of a local skilled workforce and to keep a high level of awareness of public authorities on the subject of clean and renewable energy sources, laying the foundations for a more independent and green development.

The features of the New Innovative European Instrument in the Construction and Operation phase are described in Table 8.

Phase	Key features of the New instrument
<div style="background-color: #1a3d54; color: white; padding: 5px; text-align: center;">4</div> <div style="background-color: #1a3d54; color: white; padding: 10px; text-align: center; font-weight: bold;">Construction and Operation</div>	<p>Technical Assistance to:</p> <ul style="list-style-type: none"> • Foster capacity building activities specifically on targeted training to reinforce the capacities of local administrative staff such as ministries, energy authorities, etc. overseeing construction phases; • Improve the quality and quantity of technical training and expand its reach to stimulate the development of a local skilled workforce for both construction and operation activities; • Provide, in the case of local content rules, clear information to the project developer about the local capacity to ensure it is qualified and reliable; in case this could not be guaranteed, provide flexibility to the project developer to choose its own workforce and/or subcontractors; • Support the monitoring and evaluation of the construction, operation, and maintenance activities of the RE plant, as well as support on the project commissioning to ensure the compliance of the project requirements. <div style="border: 1px dashed gray; padding: 10px; margin-top: 20px;"> <p style="text-align: center; font-weight: bold; color: #1a3d54;"><i>Best Instrument Tools Identified</i></p> <hr style="width: 20%; margin: 0 auto;"/> <p>The External Investment Plan (EIP) through its Technical Assistance Programme provides the know-how through short- and long-term staff placements, trainings and knowledge sharing</p> </div>

Table 8: New Innovative European Instrument - Construction and Operation Phase

Annex

1. Annex 1: Instruments of the pre-screening process

1. Renewable Energy Performance Platform (REPP)	2. Energy Access Ventures	3. ResponsAbility - Energy Access Fund
4. Seed Capital Assistance Facility (SCAF)	5. Energy and Environment Partnership South & East Africa	6. Scaling Up Renewable Energy in Low Income Countries Program (SREP)
7. EU External Investment Plan	8. Engie : Rassembleurs d'Energies Solidarity Investment Fund	9. The Renewable Energy Performance Platform
10. Global Energy Transfer Feed-in Tariffs - Uganda	11. Global Climate Partnership Fund (GCPF)	12. GroFin SGB Fund
13. Global Energy Transfer Feed - in Tariffs - Zambia	14. Impact Assets Emerging Markets Climate Fund	15. Africa- EU Renewable Energy Cooperation Program
16. Scaling Solar	17. InfraCo Africa - Sub Sahara Infrastructure Fund	18. ACP -EU Energy Facility
19. Project development programme (PDP) in sub -Saharan Africa III	20. Inspired Evolution Investment - Evolution One Fund	21. Africa Clean Energy Corridor (ACEC)
22. Public - Private Infrastructure Advisory Facility (PPIAF)	23. Lereko Metier Sustainable Capital fund (LMSC)	24. Africa Energy Guarantee Facility (AEGF)
25. Regional Technical Assistance Programme (RTAP)	26. Nordic Climate Facility (NCF)	27. Africa Enterprise Challenge Fund (AECF)
28. Africa Renewable Energy Access Program (AFREA)	29. Sustainable Energy Fund for Africa (SEFA)	30. Africa Investment Facility (AfIF)
31. Scaling Off-Grid Energy (SOGE)	32. Vantage GreenX Fund	33. Clean Technology Fund (CTF)
34. SE4ALL (Africa Hub)	35. Vital Capital II	36. Climate Investor One
37. Green Climate Fund	38. Lighting Africa	39. EU -Africa Infrastructure Trust Fund (ITF)
40. OFID - Energy Poverty Program	41. NEPAD Infrastructure Project Preparation Facility (IPPF)	42. European Union's Technical Assistance Facility (TAF)
43. Actis Infrastructure	44. Private Infrastructure Development Group (PIDG)	45. Global Energy Efficiency and Renewable Energy Fund (GEEREF)
46. African Renewable Energy Fund (AREF)	47. Acumen Fund	48. Southern African Development Community (SADC) Project Preparation and Development Facility (PPDF)
49. Apollo Investment Partnership II (Apollo)	50. Benin: Off-Grid Clean Energy Facility	51. Sustainable Use of Natural Resources and Energy Finance (SUNREF)
52. Ariya Capital Sub -Saharan Africa Cleantech Fund	53. Danish Climate Investment Fund	54. West Africa Clean Energy Corridor (WACEC)
55. Catalyst Private Equity East Africa Fund (SME)	56. DEG - Direct Investments	57. World Bank Guarantee Program
58. DEG Feasibility Study Financing	59. Electrifi	60. Energy Sector Management Assistance Program (ESMAP)
61. DEG Upscaling	62. FMO Infrastructure Development Fund/ Direct Investment	63. Energy and Environment Partnership
64. DEG: Climate Partnerships	65. GuarantCo	66. Energising Development (EnDev)
67. DfID Impact Fund	68. IRENA/ADFD Project Facility	69. Climate Technology Initiative Private Financing Advisory Network (CTI PFAN)
70. DI Frontier Investment	71. NEFCO Carbon Fund	72. East Africa Geothermal Energy
73. Emerging Africa Infrastructure Fund (EAIF)	74. Proparco FISEA: Invest and Support Fund for Businesses in Africa	75. Terrawatt Initiative

2. Annex 2: Supply Analysis Risk Mitigation Tools

The following information outlines the characteristics of the best risk mitigation tools identified from the selected existing instruments.

Available Guarantees

EFSD Guarantee (EIP):

- **GreenCo Guarantee:** GreenCo is an independently managed power intermediary set by the Agence Française du Développement (AFD) for supporting the local private and public sectors. GreenCo buys electricity from RE generation companies and sells such electricity to both state-owned and private sector companies that buy electricity ('offtakers') mitigating the risk of payment defaults. In the case of the national power utility failing to make payments and GreenCo's liquidity instruments were exhausted the AFD and EFSD guarantees would be called.
- **Room2Run Guarantee:** the EFSD guarantee supports a securitization structure that enables private investors to invest in AfDB projects by taking credit risk on a defined tranche of the private sector portfolio.

Therefore, the EFSD Guarantee covers the following risks:

- revenue instability risk;
- off-taker/sovereign risk.

World Bank IDA Partial Risk Guarantee (Scaling Solar): World Bank Guarantees catalyze private financial flows to developing countries by mitigating critical government performance risks that the private financiers are reluctant to assume. Partial Risk Guarantees (PRGs) cover private lenders, or investors through shareholder Debt, against the risk of a government (or government-owned entity) failing to perform its contractual obligations with respect to a private project.

The IDA Partial Risk Guarantee covers the following risks:

- capital transfer & convertibility risk;
- force majeure risk;
- revenue instability risk;
- off-taker/sovereign risk (e.g. periodic or termination payments, agreed subsidy payments, minimum revenue guarantees);
- political risk (e.g. expropriation, war, and civil disturbance, material adverse government action);
- regulatory & policy risk (change of law & regulations, negation/ cancellation of license and approval, non-allowance for agreed tariff adjustment);
- contractual underperformance (e.g. state-owned entities under an off-take agreement, an input supply agreement);
- property/concession rights;
- dispute resolution issues (e.g. frustration of arbitration).

CTF Guarantee: it offers two categories of guarantee products, loan guarantees and contingent finance. The loan guarantees cover the loss on account of debt service default for lenders up to an agreed portion of the actual loss; the contingent finance is disbursed to the project upon underperformance of a low carbon technology and where such risk is not commercially insurable at reasonable costs or has occurred beyond the period for which commercial insurance is available. The CTF Guarantee covers the following risks:

- off-taker/sovereign risk;
- construction flaws.

Available Insurances

ATI Insurance (AEGF): offers a full suite of products that protect against political risks covering expropriation of assets, currency inconvertibility or transfer restrictions, and trade embargoes. ATI also offers protection against non-payment risks, wrongful calls on performance bond and damage to property or loss of revenue from business interruption due to politically motivated violence or terrorism and sabotage events. In addition, ATI provides a re-insurance mechanism in order to allow the primary insurer to increase its capacity and to share liability when a loss occurs. The products are:

- **Trade Credit Insurance:** protects against non-payment risks. As an added benefit, it can also provide valuable credit information on buyers, access to financing on improved terms, help in debt collection and bringing discipline in the credit management process.
- **Political Risk / Investment Insurance:** protects investments, projects, assets and contracts against unfair political action or inaction by a government that could deprive owners of their investments, ownership benefits or use, causing financial loss.
- **Political Violence, Terrorism & Sabotage Insurance:** protects against financial losses directly resulting from politically motivated violence or terrorism and sabotage events. It insures directly on a stand-alone basis or through an insurer under a reinsurance contract.
- **Surety Bonds:** this product protects employers, which include government agencies and contracting companies, to ensure that contracts are completed according to mutually agreed terms. ATI's role is to support issuers of bonds (banks and insurance companies) with counter guarantees, in the event that a bond is called and the contractor is unable to perform or reimburse the issuer.

Therefore, the ATI Insurance covers the following risks:

- off-taker/sovereign risk;
- political risk (expropriation of assets, war or civil disturbance);
- breach of contract (unilateral cancellation of your operating contract or license and/or breach of contract by a host government);
- capital transfer & convertibility risk;
- inability to operate or damage to your assets due to war or civil disturbance;
- import/export restriction & trade embargoes.

MIGA Insurance (Scaling Solar): promotes foreign direct investment in developing countries by providing guarantees (political risk insurance and credit enhancement guarantee) to investors and lenders. MIGA's guarantees protect investments against non-commercial risks and can help investors obtain access to funding sources with improved financial terms and conditions. The agency can also mobilize additional coverage through coinsurance programs with other political risk insurers, including through its Cooperative Underwriting Program. The MIGA Insurance and guarantee cover the following risks:

- property/concession rights;
- political risk;
- dispute resolution issues;
- off-taker/Sovereign risk;
- capital transfer and convertibility;
- permitting /licensing.

