

# Common Risk Mitigation Mechanism

## Feasibility Study



**"We will discuss regulatory issues and promote common standards.**

**We will attract investments and develop innovative financing mechanism."**

His Excellency Shri Narendra Modi, Prime Minister of India,

30<sup>th</sup> of November 2015

Launch of the International Solar Alliance

November 2017

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## Acknowledgments

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## Glossary

<b>Aggregation entities</b>	Aggregation Entities aggregate many project entities holding solar assets, together with the contract, rights and attached authorizations (or debts) financially homogenous (risk profile, returns, maturity, etc.). Afterwards, the Aggregation Entities will issue debt instruments (assets replicating financial flows derived from the core entities. A more detailed description is in <b>4.3.3</b>
<b>Core Entity or Project SPV</b>	The Core Entities or Project SPV are the project entities holding the solar assets, together with the contract, rights and attached authorizations (or debts) financially homogenous.
<b>Criteria</b>	A set of eligibility criteria which are mandatory to obtain the Guarantee.
<b>Developers</b>	Private entities developing solar photovoltaic (PV) projects, bidding for Governments' tenders.
<b>Equity</b>	The amount of equity invested in the Entities.
<b>Existing Instruments</b>	The Existing Instruments refer to the instruments of risk mitigation currently existing and available in the market for Guaranteed Risks.
<b>Founders</b>	The Founders are the private and public shareholders forming the initial capital of the Guarantor Entity.
<b>GCF</b>	Acronym for "Green Climate Fund": a UN financial mechanism launched during the COP17 in Durban.
<b>Guarantee</b>	The Guarantee is a first demand guarantee covering all the Guaranteed Risks, issued by the Guarantor Entity for the benefit of Solar PV debt holders.
<b>Guaranteed Risks</b>	The Guaranteed Risks are (i) FX risks, (ii) transfer and inconvertibility risks, (iii) off-taker risk, and (iv) political risk.
<b>Guarantor Entity or Guarantor</b>	The Guarantor Entity (or Guarantor) is a specialised structure created with the purpose of issuing Guarantees. Its capital is to be sourced from States, Development Finance Institutions and any other private or public investors willing to take part (The Founders) monetary-wise or sovereign-guarantee-wise.
<b>IRENA</b>	The International Renewable Energy Agency (IRENA) is an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international cooperation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy
<b>ISA</b>	Acronym for "International Solar Alliance": an alliance of 121 countries, located totally or partially between the tropics, and led by the Governments of India and France, launched during COP21 which aims at increasing the solar electricity production.
<b>Investors</b>	Private or public investors providing capital for project companies or investing in the securities issued by the Aggregation Entities.
<b>Keys</b>	A dynamic tool for transparently and securely tracking the evolution of risk and its pricing, from the initial tender phase, through construction and operations.
<b>LTL</b>	Acronym for Long Term Loans, which corresponds to loans with terms higher than 7 years.

<b>Mandate</b>	The Mandate corresponds the missions and prerogatives given to the Platform by the Supervisory Board of the Guarantor Entity as described in <b>4.3.1</b> .
<b>MDB</b>	Acronym for “Multilateral Development Bank”: It corresponds to a supranational institution formed by a group of countries comprised of both donor and borrowing nations. Its purpose is to provide financing for national development in developing countries.
<b>Mechanism</b>	The Mechanism's main aim is to allow governments to secure their desired quantity of electricity at the optimum conditions. This will help them to meet their international and national commitments.
<b>Particular Conditions</b>	A set of specified conditions allowing the Developer to benefit from the Guarantee when moving from the tender phase to the development and construction phase.
<b>Platform</b>	The Platform is the proposed manager of the Guarantor Entity described in <b>4.3</b>
<b>Premium</b>	Expressed in percentage, the premium is the price of the Guarantee paid by Aggregation Entities.
<b>Pricing</b>	Calculation method for the Premium, which can either be in local or hard currency.
<b>Residual Risks</b>	Part of the risks taken by the Guarantor Entity and not covered by the Existing Instruments.
<b>Technical Committee</b>	A committee constituted from internal and external experts, the Technical Committee will aim to monitor the socio-economic impacts of the Guarantee and the Platform. These elements will be part of the annual integrated report.
<b>Securities</b>	All the securities issued by the Aggregation Entities. These securities represent the aggregated debt of the Core Entities or Project SPVs.
<b>Study</b>	The Feasibility study defined by the Terms of Reference of ISA Letter of Mission. It corresponds to the overall framework for the implementation of the mechanism, the platform and the guarantee.
<b>Supervisory board</b>	The governance of the Guarantor Entity will be entrusted to a Supervisory Board. The Supervisory Board's main mission is to ensure compliance with of the Mandate.

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# 1. Context

This feasibility report on the Common Risk Mitigation Facility (“CRMM”) (the Study) has been driven by governments of seventeen (17) nations with strong solar potential - Argentina, Australia, Brazil, Burkina Faso, Cameroon, Ivory Coast, India, France, Mali, Namibia, Niger, Nigeria, Senegal, Seychelles, Chad and Yemen – as a way for scaling investments in solar power generation in their countries and in other developing countries. In May 2017, these nations mandated a multi-stakeholder task force consisting of the Terrawatt Initiative, The Currency Exchange Fund (TCX), the World Bank Group, the Council on Energy, Environment and Water (CEEW), and the Confederation of Indian Industry, (the “Task Force”) to conduct a study on the feasibility of implementing CRMM, including broad based consultation with relevant stakeholders (see Annex 1 : Draft Concept note.).

The main objectives were stated in this extract taken from the Office Memorandum:

The Task Force will attempt to develop a **Common Risk Mitigation Mechanism (CRMM)** which would strive to:

- Develop a concept document on a Common Risk Mitigation Mechanism (CRMM), which will provide feasibility to create guarantee mechanisms both globally and at regional levels;
- Create a secure environment for affordable private institutional investment in solar assets;
- Operate as platform to aggregate, structure and channel key risks to existing guarantee mechanisms in a cost efficient manner;
- Underwrite key risks, namely off-takers’ default, foreign exchange (FX) and currency inconvertibility risks and other risks if any;
- Distribute through a partners network a user-friendly product designed to make complex risk mitigation instruments universally accessible for solar energy assets;
- Maximize the impact of public investment;
- Provide its service at affordable prices;
- Raise projects to international investment grades to attract private capital;
- Facilitate and accelerate the dissemination of higher quality standards and international best practices (contractual standardization, modernization of the legal and regulatory framework, etc.);
- Any other identified perspectives by the Task Force.

The study is in line with the framework of the International Solar Alliance (ISA); and specifically addresses its mandate to aggregate and harmonize frameworks for investment.<sup>1</sup> In particular, this study aims to operationalise ISA's programme for “Affordable Finance at Scale” initiated by both India and France. This is open to all nations on a voluntary basis, and as part of this initiative, participating countries propose to<sup>2</sup>:

- Share and aggregate their financing needs for solar production assets through a common platform;
- Harmonize their contractual and regulatory frameworks to adopt best international practices to the extent necessary for attracting investments;

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1 Article 2.1 of the formation treaty for establishing the International Solar Alliance

2 [http://isolaralliance.org/docs/Affordable\\_Finance\\_at\\_Scale.pdf](http://isolaralliance.org/docs/Affordable_Finance_at_Scale.pdf)

- Pool risks of eligible portfolios of solar assets, and mitigate these risks through a common mechanism.

The Study was carried out between May 18<sup>th</sup> and October 23<sup>rd</sup> of 2017, and submitted to the Secretariat of the International Solar Alliance on 24 October 2017. The Taskforce found that all stakeholders (PV solar developers, Institutional Investors, Commercial Banks, Development Finance Institutions, etc.) are keen to be part of this concerted approach, and expect to benefit from a significant reduction in overall costs of energy as a result of its success.

The study outlines the economic, legal and operational feasibility conditions for the successful implementation of CRMM. It is based on the following findings of the Taskforce:

- Financing of solar power generation assets in the majority of developing countries suffers from inadequate availability of risk management tools, a high perception of risk, high transaction costs, small project sizes (granularity) and lack of scale;
- Investors, developers, and other stakeholders require transparency and clarity of process – which in some countries often is missing.
- The international development community and private commercial financiers are eager to participate in the creation of a global solar market.
- Development Finance Institutions have created a successful track record in leveraging private sector capital through risk mitigation mechanisms, and are now seeking to scale-up this leveraging to even larger levels under the theme of “billions to trillions”, including mainstream deployment of local capital and savings.
- Private and institutional capital markets have successfully deployed green bonds and innovative structures for securitising receivables from various sources, including renewable power investments.

In fact, we have found that all the ingredients for expanding access to affordable solar energy in developing countries already exist. These efforts could accelerate more rapidly for the benefit a large number of countries, if they are conducted in a coordinated manner at scale, and within a common platform.

### Box 1. Cheaper Solar PV Energy – The Virtuous Cost Reduction Cycle

Having improved access to risk-management products and a better understanding of risks and the costs of their mitigation will allow for more efficient bidding and reduced financing margins. Higher investment volumes will result in a more competitive environment among technology suppliers and along the entire logistical chain, which will further benefit final consumers. Estimating these long-term dynamics is challenging and subject to many assumptions.

The Taskforce estimates that in the medium-term the total life-long energy costs at consumer level could fall **45-55 percentage points**. Optimising finance (interest rate margins and reducing the equity requirement) accounts for **10-15 percentage points**. These savings will be achievable in the short-term, while the remaining **35-45 percentage points** are likely to materialize in the medium term in form of cost savings to be derived from expanding the market for equipment, construction and services, and giving these stakeholders transparency and certainty.

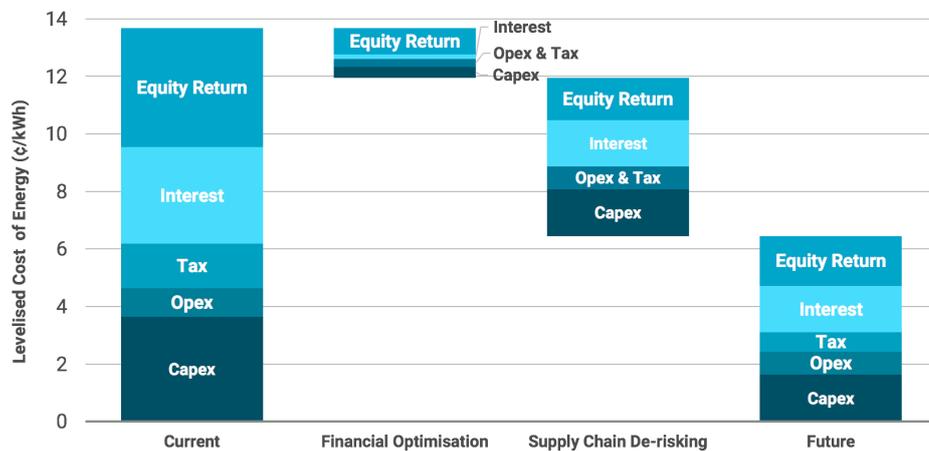


Figure 1. Tariff Impact of Risk Mitigation

The graph above shows these two elements of cost reductions, using actual data from public sources and assuming normal financial structuring parameters such as leverage, tenor, capital pricing, and taxation.

Taking the example of the recent Nigerian Solar Programme – where **12 PPA totalling 975 MW** were signed by Nigerian utilities at levelised tariffs of **13.7 ¢/kWh**, against capital costs of **\$ 2.0/MW**, the figure below demonstrates the benefits in tariff reduction from the application of the concepts set out in this Study:

This same dynamic holds true for grid connected utility scale projects, as well as for micro-grids (levelised tariffs are around **50¢/kWh**) and standalone solar systems (levelised tariffs are **2.0-5.0 \$/kWh!**).

## 2. Key Recommendations

The Task Force is pleased to make the following recommendations for formulating and implementing the Common Risk Mitigation Mechanism;

1. Develop an easily accessible first demand financial guarantee instrument (comprising a bundle of different risk management instruments ranging from guarantees, insurance, to swaps, which will cover risks in both local currencies and hard currencies) (the **Guarantee**) intended to provide private institutional investors (investors) in Solar PV investments in developing countries with a high level of security against (i) the risks of currency exchange, (ii) the risks of transfers and inconvertibility, (iii) the risks of electricity purchasing counterparties, and (iv) the political risks (**together the Guaranteed Risks**) while crowding-in existing specialized instruments for risk mitigation (the **Existing Instruments**);
2. Establish a Guarantor Entity (the **Guarantor Entity**) benefiting from a strong investment grade credit rating, and which is well capitalized by public and private funds (including from States, Development Finance Institutions and any other public or private investor wishing to participate) with cash, lines of credit and sovereign guarantees.
3. Establish an independent company (the **Platform**) which operates a digital platform with a management mandate (the **Mandate**) from the Guarantor Entity, including with the following missions:
  - a. Promote (i) the harmonization of regulatory frameworks, (ii) the standardization of contracts and (iii) the scale-up of project development processes and their financing;
  - b. Propose to the Guarantor Entity **eligibility criteria** for the Guarantee and implement those (**Criteria**);
  - c. Propose, to the Guarantor Entity, a methodology for determining the price of the Guarantees (in both local and hard currency) (the **Pricing Methodology**) for pricing each tender to be realised pursuant to this mechanism, and ensure wide communication of this methodology to ensure transparency and clarity for all stake-holders;
  - d. Support and assist member countries in the organization and implementation of international auction and tender processes, including providing transparency on risk pricing and available insurance capacity;
  - e. Create and implement a dynamic risk tracing tool (the **Keys**) which allows for visibility and tracking of the evolution of risk from early stages of development, through construction, and long term operations of projects, along with efficient allocation of capital (local and hard currency, debt and equity) for each of these stages. Keys allow to successfully pull capital through the various stages of development, construction and operations of solar PV projects.
  - f. Issue Guarantees to qualifying operational projects, which meet pre-specified eligibility conditions; and re-insuring or syndicating these Guarantees with Existing Instruments;

- g. Manage warranties, appeals, payments, subrogation and use of Existing Instruments through the life of the Guarantees;
  - h. Develop a system of **data collection, covenant compliance, and dissemination of information** of all the assets insured by the Guarantor Entity in order to improve the market knowledge of Guaranteed Risks, their management, their Pricing, and the prediction of failure; all of this in-order to increase the crowding-in effect of **public capital**;
  - i. Develop in consultation with stakeholders a system of indicators for **monitoring** socio-economic impact and **shared value**.
4. Launch a **pilot project in 2018**, which will be compiled within 3-5 years from inception. The aim of the pilot is to achieve a critical size and demonstrate its cost effectiveness in pooling and aggregating capital, and mitigating risks at an international level. Its progressive deployment will target an ultimate USD 1 billion Guaranteed Entity capitalization and an underlying asset portfolio of approximately USD 15 billion in some twenty volunteer countries by the end of the Pilot Project. Simulations in median scenarios demonstrate limited requirement for the capitalisation of the Guarantee during the first 2 years (MUSD 18 the first year and 180 the second).
5. Designate a **multi-stakeholder working group** to prepare a detailed project implementation plan and implement it within 9 to 15 months.

## 3. Objectives & General principles

The study aims to define the conditions under which a common risk mitigation mechanism (the Mechanism) would enable nations to obtain solar electricity at scale, on the best terms and paid for in local currency, taking into account their frameworks and specific system characteristics, and to enable them to meet their international and national commitments for sustainable development and climate change.

### 3.1. Sub-optimal market functioning

The fundamental question underlying this Study goes far beyond solar energy. How can we raise our energy system and more broadly our infrastructures at the qualitative and quantitative levels corresponding to the United Nations Sustainable Development Goals and in particular to Objectives 7 (Access to Energy) and 13 (Combating climate change) and the objectives of the Paris Agreement?

All stakeholders agree that all resources necessary for building a sustainable future are now available globally (in terms of natural resources, human skills, technological, and financial). The exploitation of solar energy is well underway. In particular solar PV is still expected to make strong technological progress before it will achieve its full potential.

Under these conditions, how can governments lower the price of solar electricity? How can development finance achieve its objectives? How can industry better manage risks, innovate, and scale-up to deliver the required capabilities? How can capital markets invest in large scale in these markets?

The answer to each of these questions can be summed up in one single idea: **insufficient information sharing**. Each of the players in this complex market is subject to a high degree of information asymmetries and consequentially a high level of uncertainty. This dynamic prevents a large number of players from even considering the possibility of entering this market, thereby reducing competition, and adversely impacting market activity and leading to high costs. The impact of this dynamic is even stronger on small-scale decentralized infrastructures such as solar power generation assets in low- and middle-income countries. A high level of transparency and competition will generate more investment activity which in turn will allow for more data analysis and risks quantification. It will create a virtuous cycle between volume growth and reducing the costs of equipment, transactions and finance. Innovation will be incentivized. This phenomenon has been demonstrated in the past in many economic sectors.

Many initiatives have been launched over the last several years to address these challenges:

- Governments have already successfully taken important steps to simplify and harmonize their regulation, and reduce and manage risks. For example, in India (Implementing single point off-takers such as NRVN / SECI, UDAY – utility financial re-capitalisation and Solar Parks Policy), Argentina (Renovar Program);
- Development finance institutions have implemented successful risk mitigation tools to catalyze private capital, such as KfW (GetFit program), or even comprehensive programs such as the IFC (Scaling Solar Program);

- Private institutional investors structure dedicated teams and investment tools specific to renewable infrastructures such as Blackrock (Blackrock Alternative Investor).
- Green bonds and listed IPPs are thriving in organised financial markets such as Paris (Finance for Tomorrow), London (Green Finance Initiative), New York (Nasdaq), Frankfurt, Singapore (Collaborative Initiative for Green Finance in Singapore), and Luxemburg, and these cities are actively pursuing strategies to scale this success.

These efforts are a rich source of experience at national or regional levels highlighting the potential positive impact of harmonization of regulations, standardization of contracts and pooling of risks.

Benefiting from these experiences, the Study proposes to create a new global market organisation to address these issues; not replacing but complementing existing structures, based on the creation of a common risk mitigation mechanism in accordance with the mission given to the Task Force.

## 3.2. Organising a Global Market

The Taskforce proposes to implement a collective and systemic approach based on market principles.

The objective is to reduce the costs of solar energy for end-consumers mainly by reducing uncertainty about financial services, both risk-management and funding, required to meet this demand, in particular in the low and medium income countries (see Box 1).

### 3.2.1. Organization of solar electricity demand

We need investments which generate solar electricity at an “*affordable price*”.

In order to allow a global market to emerge and function effectively, demand for solar energy needs to be scaled-up beyond individual countries, not only by increasing the volumes of each market but by the global harmonization of national and regional markets. We have several levers to make this happen:

- Harmonization of legislation, which provides a common framework at the international level for the structuring of a collective request, and which does not replace but complements national legislation;
  - Standardization of power purchase agreements and associated procurement contracts, making it possible to standardize the terms and allocations of risks on an equitable basis. IRENA and TWI have initiated the Global Solar Energy Standardisation Initiative, a process to develop a set of standardized project documents to be launched in the first half of 2018. This will provide a basis for CRMM;
- Mutualisation of residual risks through a common guarantee mechanism to homogenize the risk profiles of the financial flows used as a basis for financing.

This structuring of international demand can be improved by integrating, into the tender processes and making available

- tools for management, aggregation, pooling of risks and determining their prices; and
- the provision of a management service, and continuous monitoring and evaluation, during the of calls for tenders; providing the various participants and stakeholders the highest possible visibility of the real risk associated with tenders, and eventually the different components of production costs.

### 3.3. Key Success Factors

In interviews with Stakeholders (Financiers, Developers, DFIs, pension funds, actuaries), we have identified 11 success factors for the Guarantee and the Platform (Refer to Annex 2) including:

- Diversify the number and nature of market participants to increase competition and innovation;
- The Guarantee needs to be priced at cost- or risk-reflective levels to ensure the long-term sustainability and financial soundness of the Guarantor Entity.
- The Guarantor Entity must have a strong credit rating;
- Ensure true independence of the management of the Mechanism vis-à-vis Stakeholders;

Effectively manage claims and provide the required amount of liquidity for PV projects and lenders.

### 3.4. Benefits from Stakeholders' Perspective

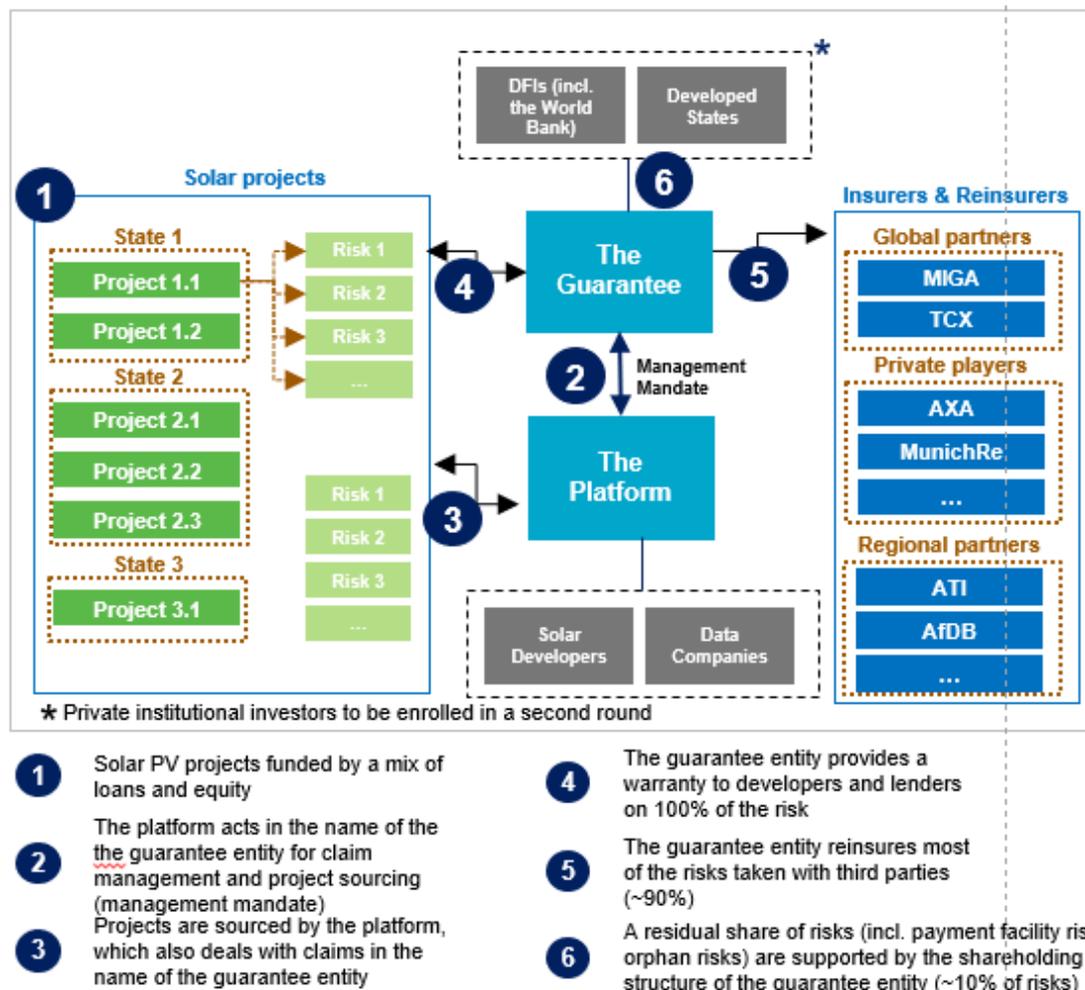
The benefits of each Stakeholder are summarized in the table below (refer to **Annex 2: Identification and detailed design of an international risk mitigation system for solar projects**).

Layers	Type of players	Rationale for integrating the system	Roles & Responsibilities
<b>Industrial Layer</b>	Solar Project Developers	<ul style="list-style-type: none"> <li>Decreased cost of capital / Ability to finance at a lower cost / Decreased LCOE</li> <li>Access to new geographies and volumes</li> </ul>	<ul style="list-style-type: none"> <li>Secure a pipe of projects in the long term</li> <li>Payment of a subscription to CRMM</li> </ul>
<b>Financial Layer</b>	Lenders (banks) Investors in equity (private and institutional)	<ul style="list-style-type: none"> <li>Cash flow security on solar PV projects</li> <li>Simplified processes (underwriting, claims)</li> <li>Access to new geographies / new countries, that are usually hard to invest into</li> </ul>	<ul style="list-style-type: none"> <li>Fund / Invest in solar PV projects</li> <li>Ensure lower costs of funding (risk premium and/or interest rates that usually inflate the cost of capital for such PV projects)</li> </ul>
<b>Final risks takers</b>	<ul style="list-style-type: none"> <li>Int'l development banks</li> <li>Public agencies</li> <li>Insurance / Re-Ins companies</li> </ul>	<ul style="list-style-type: none"> <li>Access to important volumes of solar projects to be reinsured, leading to larger revenues and economies of scale</li> <li>Reduction of asymmetry of information</li> <li>Streamlined processes</li> </ul>	<ul style="list-style-type: none"> <li>Re-insure CRMM on the 4 main types of risks identified at efficient market conditions</li> </ul>
<b>States / Governments</b>	Low & Middle Income Countries	<ul style="list-style-type: none"> <li>Develop their energy infrastructure network</li> <li>Decrease cost of energy</li> <li>Positive impact on carbon footprint</li> </ul>	<ul style="list-style-type: none"> <li>Engage with solar developers (PPAs*)</li> <li>Improve local investment conditions (legal and regulatory framework in particular)</li> <li>Potentially invest in CRMM and/or get financially involved, so as to avoid moral hazard</li> </ul>

## 4. New Tools for a Market Place

Institutional Investors, both national and international, prefer large scale investments while being very conservative in taking risks. For example, they do not like project development or construction risks, and like to see trading liquidity in their investments. However, solar development programmes in developing countries do not offer such investment opportunities at this time.

On the other hand, developers of solar projects are required to assess all aspects of capital costs, capital sources and cost of capital, and deliver a firm price for electricity in tenders very early in the development process. However, in calculating their bid price, they face multiple uncertainties: (i) the cost of equipment that will depend on the volumes developed, (ii) the availability of short-term credits to finance the development-construction working capital requirement which in turn depends on the certainty of long-term refinancing, (iii) the long-term cost of re-financing expected of Investors which is not known at this time, (iv) the availability and price of risk management instruments which are generally only available for long-term financing.



The project capital originally provided by the Developers (**Equity**) is seen as the first risk mitigation instrument by lenders. A high level of uncertainty forces up the size of equity cushion. As expected equity return in developing markets is high, this pushes up electricity prices or, at the extreme, make developers stay away from bidding.

The proposed Mechanism is intended to bring transparency to the entire solar asset development process starting from Tender process, through construction, till long term financing by deploying a powerful credit enhancement instrument (the **Guarantee**) for the benefit of the Stakeholders. It would be supported by an effective service market platform (the **Platform**).

## 4.1. The Guarantee and the Guarantor Entity

The cornerstone of an internationally efficient market organization is the existence of a collective Guarantee universally recognized by the markets. The Guarantee would effectively homogenize to the largest possible extent, the cashflows derived from the underlying solar PV assets and consequently preparing the ground for their aggregation and securitization. (see 4.3 for further details).

## 4.2. Principles

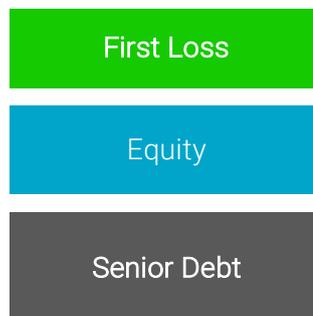
The Guarantee needs to be sufficiently strong to provide institutional investors (the **Investors**) confidence and ability to invest in solar PV assets either on an individual SPV or in a bond instrument backed by an aggregation of Solar PV assets.

The Guarantee must cover all the risks affecting the ability of Solar PV borrowers to fulfil their obligations (i) foreign exchange risks, (ii) the risks of transfers and inconvertibility, (iii) counterparty risks (off-taker risk), and (iv) political risks associated with countries (**Guaranteed Risks**).

The Guarantee should be issued by a **Guarantor Entity** with a high rating.

### 4.2.1. Financial structure of the Guarantor Entity

The Guarantor Entity must be capitalized by the States (developed countries and countries in whose territory the financed assets will be installed), DFIs and any other public or private investor, through contributions of cash, lines of credit and sovereign guarantees. A three-tier funding model is proposed.



### 4.2.2. First loss

A "**first loss**" tranche corresponding to funds and guarantees that are highly risk-tolerant at concessional or zero rates provided by:

- Developed and industrialized states, as part of their climate and development objectives<sup>3</sup>;
- States wishing to protect solar investments in their territories<sup>4</sup>;
- Funds specializing in investing in low-carbon energy such as the Green Climate Fund (GCF);
- Impact investors.

The constituting documents of the Guarantor Entity will define the conditions of the “first loss” tranche.

### 4.2.3. Equity

An equity tranche provided by:

- Development Finance Institutions, in particular Multilateral Development Banks (MDBs);
- Impact investors;

The existence of the first loss tranche will allow them to accept a reasonable risk-adjusted return. The nominal rate of return will be fixed above the financing costs of the Development Finance Institutions.

### 4.2.4. Senior Debt

In addition to its own funds, we expect that the Guarantor Entity will raise from development finance institutions and impact investors who cannot, or do not wish to contribute to equity, a tranche of "senior debt" (funded or unfunded) to meet the needs liquidity (Refer to Appendices 3: Risk Assessment Report). In order to enable the Guarantor Entity to offer its services at the lowest rates, the senior debt tranche can only offer investors a nominal return equivalent to the financing costs of the Development Finance Institutions.

### 4.2.5. Sizing

In order to limit capitalization needs, the Entity must rely on existing specialized instruments (**Existing Instruments**) while optimizing their use, both in terms of volume and leverage, without substantially modifying the object, geographical target and specific features in the form of guarantees, derivatives, hedging instruments or insurance products.

The Mechanism allows projects of all sizes in low- and middle-income countries to indirectly access international risk mitigation instruments such as MIGA, and will also allow to generate a first level of risks diversification for Existing Instruments.

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3 As such, one of the main justifications for free or low capital remuneration is the social cost of carbon avoided, at least as long as there is no universal carbon price

4 These states would also benefit from the opportunity to join the regulatory framework harmonization process and would be encouraged to use standard contracts in their tenders, simplifying and reducing the cost of processing projects in the Platform.

The extent of the Guarantee is therefore largely determined by the current and future abilities and risk-carrying capacities of Existing Instruments (partners and resources) to reinsure the Guaranteed Risks. Some Existing Instruments, for example TCX, will seek to increase their capital in order to provide sufficient de-risking services to CRMM.

The Guarantor Entity will bear residual risks (the **Residual Risk**), and its capital Guarantor Entity will be sized accordingly. Residual Risk corresponds to the portion of Guaranteed Risk, which is not borne by Existing Instruments. The Guarantor Entity will also need working capital<sup>5</sup> facilities as explained in Guarantor Entity 6.4.1 below.

### 4.3. The platform and mandate

In order to manage the Guarantees in an efficient and independent manner, the Guarantor Entity will mandate a specially set up Management Company to develop and operate an **independent digital platform** (the **Platform**) and other services (the **Mandate**).

#### 4.3.1. The Mandate

The Mandate will include the following responsibilities for the Platform:

- a. Promote (i) the harmonization of regulatory frameworks, (ii) the standardization of contracts and (iii) the organization and execution of transparent and efficient auction processes for solar tenders in participating countries;
- b. Propose to the Guarantor Entity **eligibility criteria** for the Guarantee and implement those (**Criteria**);
- c. Assist participating nations in the **upstream assessment** of the Guaranteed Risks related to any tendering project for solar electricity generation capacity (or quantity of solar energy) and accompany them in the eligibility process to warranty ;
- d. Search on behalf of the Guarantor Entity for Existing Instruments, have them price the Guaranteed Risks for proposed tender processes;
- e. Propose to the Guarantor Entity a method for fixing the price of Guarantees (in local currency and in hard currency) (**Pricing**) in order to determine the amount of the corresponding premium (the **Premium**) for each call for tenders and to enforce it;
- f. Create and implement a **dynamic traceability tool** (the **Keys**) (refer to 4.2.2);
- g. Stimulate the creation of **aggregation vehicles** (**Aggregation Entities**) with a view to the issue of securities (the **Securities**) representing the aggregated debts of the eligible entities holding the production assets (the **Project SPVs**);
- h. Manage warranties, appeals, payments, subrogation and use of Existing Instruments until the expiry of the Notes;

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<sup>5</sup> Due to the time delays between the payment of claims to the Aggregation Entities and the recovery of the sums paid by the Existing Instruments.

- i. Develop a system of **data collection** and supervision of all the assets financed in order to improve the knowledge of Guaranteed Risks, their management, their Pricing, the prediction of failure;
- j. Develop in consultation with stakeholders a system for **monitoring** social-economic and environmental impacts and creating **shared value**.

The Platform provides services on behalf of the Guarantor Entity and under the supervision of the latter, using state-of-the-art digital, financial and legal technologies.

### 4.3.2. An Innovative System of Upstream Management of Guarantees, Keys

In recognition of the dual challenge of addressing developers' need for 'certainty', and the need for scale and risk mitigation by Institutional Investors, the Taskforce proposes an innovative instrument in the creation of "**Keys**". These Keys are intended to track the development and mitigation of risk and their pricing in a 'transparent' and 'secure' manner for all stakeholders including Governments, Developers, off-taking Utilities, financiers and investors.

As part of the design of the Guarantor Entity and the process of issuance of Guarantees, It will be mandatory to provide, as early as the initial call for tenders by a country, a predictive instrument containing the estimate of the Premium as well as the compliance conditions for the Developer.

Keys make it possible to publish the Price and benefits of the Guarantee from the start of the solar tendering process, through construction, and eventually refinancing of the debt during operations of these assets.

Each tender will be awarded a **Key** that will follow each project until the aggregation of its debt within an Aggregation Entity.

### 4.3.3. The project debt aggregation process

The Developers or Projects SPVs (and more precisely the shareholders of the Project SPVs) may refinance the short-term debt of the development-build cycle with an Aggregation Entity or Institutional or Commercial Investor. The Key would demonstrate that the holder is eligible for the Guarantee. After verifying the Key with the Platform, the Aggregating Entity will grant a standardized long-term loan (**LTL**) to the Project SPV and would issue on the local or international market debt instruments (the Securities) representative of financial flows from the LTL.

The Guarantee subscribed by the Aggregating Entity ensures, for specific risk, that the Investors pay the contractually agreed coupon (or interest rate) and repay the principal at maturity.

Aggregating Entities are most likely to be incorporated in low risk countries, and benefit from scale, liquidity and risk diversification – which is not possible for any one developing nation to achieve. This is the key innovation of the Guarantee.

### 4.3.4. An Effective System for Implementing Guarantees

To avoid the need for Investors having to deal with recovery post default by a Project SPV in respect of the Guaranteed Risks, the Aggregating Entity will make claims under the Guarantee, and this will be settled on demand by the Platform, acting on behalf of the Guarantor Entity (other than administrative treatment). The Platform will then pursue, in the name and on behalf of the Guarantor Entity, all the recourse for which it benefits both under the Existing Instruments, and the long-term loan agreements concluded between the Aggregating Entity and the Project SPV.

The Guarantee and the Platform together will make available to developing countries a means to centralise and manage claims and guarantees at a scale and with an efficiency which cannot be achieved by investors or by Project SPVs.

## 5. Structuring

### 5.1. The Guarantor Entity

#### 5.1.1. Governance of the Guarantor Entity

A transparent governance structure of the Guarantor Entity will protect the interest of participating countries and investors. The Guarantor Entity will also control the smooth execution of the Mandate by the Management Company of the Platform. It will periodically set and update Criteria for the Eligibility and Pricing within the framework of the original Mandate, in order to improve the impacts of the Guarantee.

It is expected to be governed by a supervisory board (the **Supervisory Board**) constituted equally by representatives of the Founders, and by independent directors drawn from a wide cross sections of stakeholders (including the private sector - finance, industry, utilities, technologies, civil society (local authorities, NGOs, professional organizations) and international organizations).

### 5.2. The Platform

The Platform is the entity that carries the technical mission to organize the market in an efficient way in completion of the Mandate given by the Guarantor Entity.

#### 5.2.1. Structure

The platform is envisaged to be a private-law entity that insures the independent Guarantor Entity Company's management company functions under the Mandate. Essentially developing a service business, its capital needs are limited. Its legal nature and the rules that will apply to it will be determined essentially by its place of registration.

#### 5.2.2. Governance

The Platform is to be administered by a Board of Directors composed of representatives of its shareholders / founders. The Chairman of the Supervisory Board of the Guarantor Entity Unit

attends the Board of Directors of the Platform without voting rights but has the widest rights of information and communication to ensure the proper execution of the Mandate.

The Platform will be held to the highest standards of ethics, social and environmental responsibility and governance. It will take all reasonable measures to identify conflict of interest situations arising in the management of the Guarantees or the Mandate. And it should establish procedures to identify and manage any conflicts of interest.

## 6. Pilot Project

The Taskforce is proposing the implementation of a Pilot over a nine to fifteen month period, subject to raising necessary capital. We recommend that the Pilot project be progressively launched for a period of 3 to 5 years in order to fully demonstrate the feasibility of the CRMM.

### 6.1. Sizing of the Pilot Project

#### 6.1.1. US\$ 14 billion of assets

The Taskforce recommends that an ambitious pilot project (the Pilot Project) at sufficient scale should be launched as soon as possible. We recommend that the Pilot Project should include coverage of risks in a diversified portfolio of solar assets with a capacity of approximately 15 GW located in approx. twenty eligible countries on a voluntary basis. We expect that this will amount to about USD 14 billion of investment volume at current costs. This corresponds to about 10 billion of senior debt to be progressively covered by the Mechanism.

At this scale, the Pilot Project would best;

- demonstrate the positive effects of pooling risk and capital between countries,
- achieve a sufficient level of risk diversification,

amortize the initial investments and fixed costs of the Mechanism,

demonstrate the sustainability of the Platform and the Guarantor Entity model,

provide sufficient data to assess the positive effects of the dynamics generated, including demonstrate the leveraging of public capital.

Target Pilot Countries

##### 6.1.1.1. Initial Geographical Coverage

Geographical coverage of the Guarantee is limited to countries (i) where all the risks Guaranteed can be covered (green) and (ii) those where they could only be partially covered (yellow) by the Existing Instruments:



resources. The impact of these trust funds monitored by the Technical Committee. This flexibility and monitoring will allow the more countries into CRMM, than may be possible purely on the basis of commercial principles.

### **6.1.1.2. The Key Role of ISA**

The proposed action plan is aligned with ISA's mandate for exploiting solar resources in countries between the tropics. ISA is best placed to mobilize political support from the governments of these countries to take concerted action towards increasing solar electricity volumes at the lowest cost possible. We propose that ISA should, in accordance with the directions of His Excellency Narendra Modi Honourable Prime Minister of India, promote the establishment of a Pilot Project for a common market framework in consultation with other stakeholders.

### **6.1.1.3. The facilitative role of IRENA**

IRENA has been a long-time advocate of a risk mitigation facility dedicated to Renewable Energy technologies and contributed its expertise to the development of the initial concept. It will contribute the results of the Global Solar Standardisation Initiative to the CRMM effort. With its global membership and convening power in the renewable energy sector, it can facilitate the participation of countries worldwide and of the main industry players in the implementation of the CRMM, starting with the IRENA Assembly in January 2018.

### **6.1.1.4. The technical role of IEA, IRENA and OECD**

The IEA, IRENA, and OECD have promoted the principles of common risk mitigation and developed a body of technical knowledge essential to the success of the Mechanism. They have also provided important inputs and suggestions for this Feasibility Study. Their continuing support will be important for rapid adoption and implementation.

### **6.1.1.5. Assumptions of "Ramp-Up"**

Tendering processes and specific country characteristics impose certain deadlines for the implementation of the Guarantor Entity and the Platform. Three deployment scenarios are set out below;

Year	Optimistic case			Nominal case			Pessimistic case		
	Guaranteed cumulative capacity (GW)	Covered debts (MMUSD)	Number of countries covered	Guaranteed Solar Cumulative Capacity (GW)	Covered debts (MMUSD)	Number of countries covered	Guaranteed Solar Cumulative Capacity (GW)	Debt are covered (MMUSD)	Number of countries covered
1	1	0.6	5	0.3	0.18	3	0.1	0.06	1
2	6	3.6	12	3	1.8	6	1	0.6	3
3	15	10	20	8	4.8	12	3	1.8	6
4	End of Pilot Phase			15	10	20	8	4.8	12
5				End of Pilot Phase			15	10	20

## 6.2. Preparation Phase

### 6.2.1. Creation and Capitalisation of the Guarantee Entity

The creation of the Guarantor Entity and its capitalization are decisive steps and will determine progress of all other processes. The main objectives of the preparatory phase are the creation and capitalization of the structure as well as its rating by recognized rating agencies.

In order to deliver the entire de-risking volumes, existing risk-mitigation providers such as TCX, will also need to be re-capitalized.

#### 6.2.1.1. Structure

The Credit Rating of the Guarantor Entity will be a function of its capital structure and risk profile, and it will be critical to achieve consensus amongst its Founders on the capitalisation of the Guarantor Entity, towards achieving a strong credit rating.

#### 6.2.1.2. Pricing Model

The pricing model for the Guarantee, being developed with input from Cardano BV, will be used to price the surcharge of the Guarantees in addition to the premium of instruments of Existing Entities. In-principle the pricing of Guarantees should allow for the recovery of the Guarantor Entities fixed costs, residual risk, variable costs of issuance and management of guarantees, and possible credit losses on certain risks.

From the point of view of the Guarantor Entity, its major cost derive from its cost of capital. This could be very low if the Founders (in particular the first loss tranche) do not require a significant cash return for the capital contributed by them. We have determined preliminary premiums based on risk modelling conducted by Cardano BV (see **Annex 3: Risk Assessment Report**).

We estimate that the Guarantee surcharge ranging from **0.3%** to **2.0%**. These estimates are used in the business plan (see 7.3.2).

#### 6.2.1.3. Rating

A strong credit rating of the Guarantor Entity is a key requirement, and clearly highlighted during our stakeholder consultation conducted by the Task Force (see Annex 2:). It is also a significant driver of the cost of capital and consequently to the Premiums of the Guarantees.

Initial discussions will be established with recognized rating agencies (such as Moody's, S&P, Fitch) on the basis of the Guarantor Entity capital structure and rating of the Founders, and detailed ratings discussions will take place during the preparation phase in order to obtain a rating of the Guarantor Entity.

## 6.2.2. Creation and Capitalisation of the Platform

### 6.2.2.1. Technology Development

#### 6.2.2.1.1. Core Process

The Platform must implement, within the framework defined by the Terms of Reference, the application of Macro Process described in **Appendix 5: Description of the Macro Operationalisation Process** and will contain the sequence of operations related to (i) call for tenders of solar production rates, (ii) risk evaluation in relation to the Existing instruments, (iii) the pooling of risks (iv) the issuance of Guarantees, (v) the management of claims, (vi) expanding relations with Aggregating Entities.

Consultations with the different Stakeholders, including Governments and Existing Instruments, as well as the definition of the Mandate will also be taken into account.

#### 6.2.2.1.2. Security

The development of the platform should ensure full data security throughout the process, both in relation to their confidentiality and their access.

Respect for business secrecy and transaction security will be ensured while being subject to audit by regulatory authorities or by independent auditors designated by the Guarantor Entity.

Safety tests will be conducted during development and will be an integral part of the Platform's operations.

#### 6.2.2.1.3. Technical Compliance

Compliance with applicable regulations within the Guarantor Entity will be a high priority.

The technical features and constraints related to regulatory compliance will be incorporated into the technical specifications upstream of the development.

At the end of the development phases, the Guarantor Entity and the Platform will be tested for compliance with the technical specification of the Mandate, and compliance with the regulatory requirements in effect pursuant to applicable laws.

An external independent auditor under the supervision of the Board Members of the Guarantor Entity will carry out these tests.

## 6.2.2.2. Structure

### 6.2.2.2.1. Corporate & Regulatory

The expected benefits of the mechanism apply to all Stakeholders (see 6.2), and we propose that all stakeholders should be given an opportunity to participate in the capitalization of the Platform.

Nevertheless, the legal form of the Platform will depend on its location, and applicable laws (see **Annex 6a: Legal Aspects**).

From a regulatory point of view, a presence in Europe, will require the Platform to comply with AIFM Directive (Alternative Investment Fund Managers), or with the insurances regulation depending of the legal form of the Guarantor Entity, and on the relevant Laws of the country of its incorporation.

A more detailed study will have to be undertaken as soon as the jurisdiction of the Platform and the Guarantor Entity is chosen.

### 6.2.2.2.2. Mandate

The Mandate is the key determinant of the relationship between the Guarantor Entity and the Platform, and this will result from an agreement between the Founders of the Guarantor Entity.

We expect that the Mandate will have to be negotiated concurrently with the capital raising exercise of the Guarantor Entity. We expect that the Mandate will establish the rules governing the relationship between the Platform and the Guarantor Entity in terms of reporting, risk management, and issuance conditions of Guarantees.

### 6.2.2.2.3. Guarantee

The following points of diligence will have to be addressed during the Preparation Phase, with regard to the issuance of the Guarantees (see **Annex 6a: Legal Aspects**) :

- Designing Guarantees issuance procedures to increase the effectiveness of the Guarantor Entity based on established Guarantees mechanisms;
- Project development processes of solar project developers;
- The input of DFIs in the design process.

### 6.2.2.2.4. Contracts

The automation of procedures in the Platform will require the establishment of (i) model contracts for long term loans, (ii) framework contracts with the various Partners and Existing Instruments, (iii) contractual document templates for Business Developers and (iv) draft contract proposals for Governments (e.g. Power Purchase Agreements).

## 6.2.3. KPI and Dashboard

The key indicators of the Platform, or KPIs, will be identified in collaboration with the Founders

of the Guarantor Entity and the members of the Technical Committee, and included in the functional specifications of the Platform. They are likely to address both - the effectiveness of the Platform as well as the extra-financial and socio-economic indicators identified. Follow-up through dashboards will be provided in the Terms of Reference. The Technical Committee and the Founders of the Guarantor Entity will be the sole entities who may modify these KPIs.

### 6.2.4. Recruitment and Outsourcing

The international nature of this project should be reflected in the recruitment of high quality specialists from the finance, insurance, and energy sector to encompass skills in IT, legal, finance, fundraising, government relations, and other relevant functions.

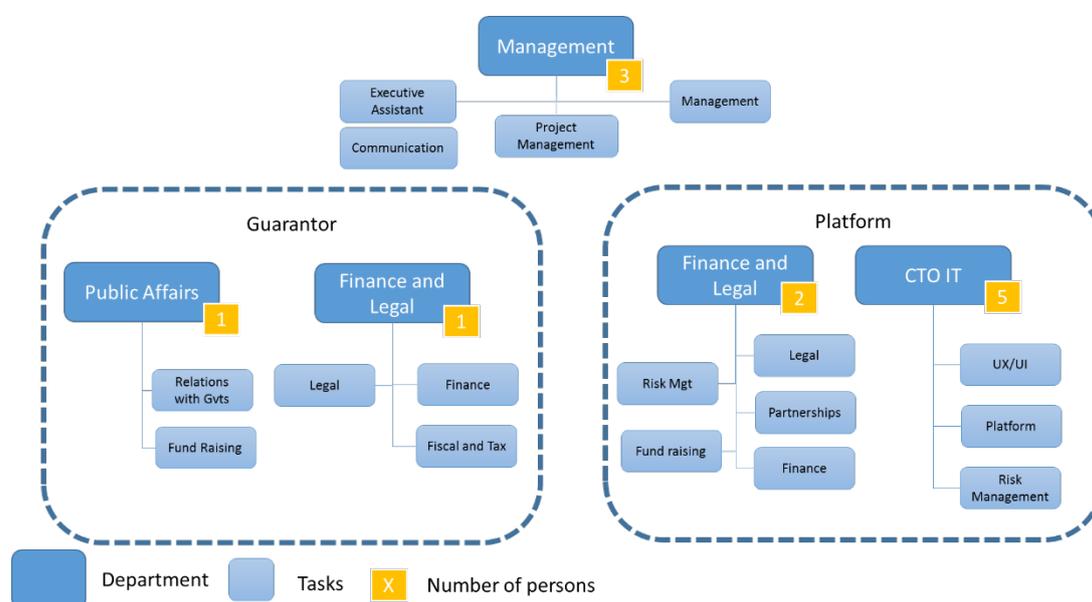
Some experts from participating DFIs could be allocated to support the project team, in order for the Pilot Project to benefit from the expertise of existing stakeholders.

In the start-up phase, the Platform may outsource key functions to third parties in agreement with the Guarantor Entity.

### 6.2.5. Project Staffing

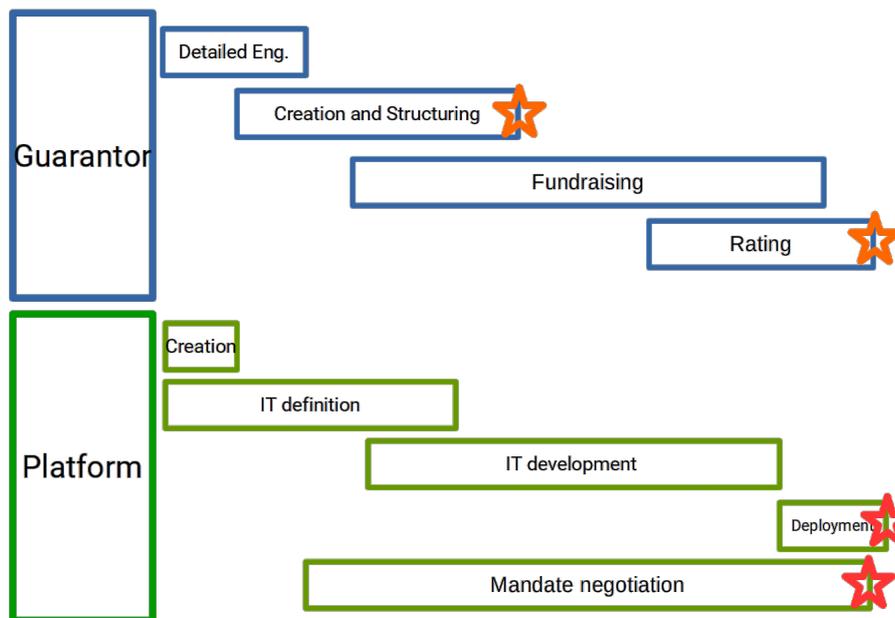
A project team representing all the Stakeholders should be mobilized around a dozen people. Each team will develop the Entity for which it is responsible, while being supported by the management, which will coordinate and communicate.

To minimize the resources for that phase, the legal, contractual, operational principles and risk policies will be carried out with the help of external partners and project partners.



### 6.2.6. Planning

The duration of the preparation phase is expected to be between 9 to 15 months depending on the process of creation of the Guarantor Entity and its rating.



### 6.2.7. Budget

The preparation phase will require significant focus on (i) the legal, fiscal aspects related to the implementation of structures, (ii) IT developments for the Platform, (iii) dissemination and communication around the Mechanism to initiate the start of operations.

An estimate budget of between EUR 7.7 and 10 million is deemed necessary.

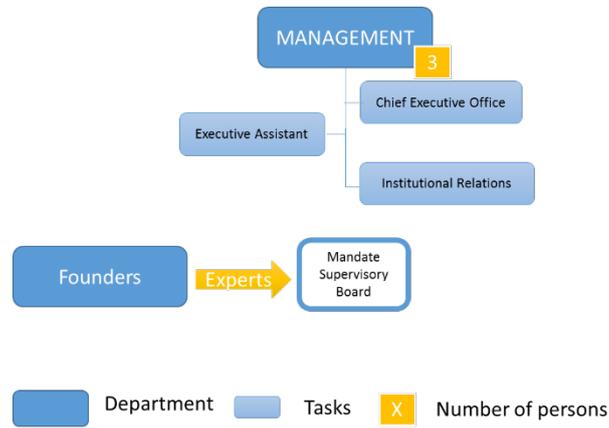
## 6.3. Operational Phase

### 6.3.1. Organisation

#### 6.3.1.1. Guarantee Entity

Once created, the main functions of the Guarantor Entity will be the execution of the Mandate, fundraising and reporting progress to the Founders.

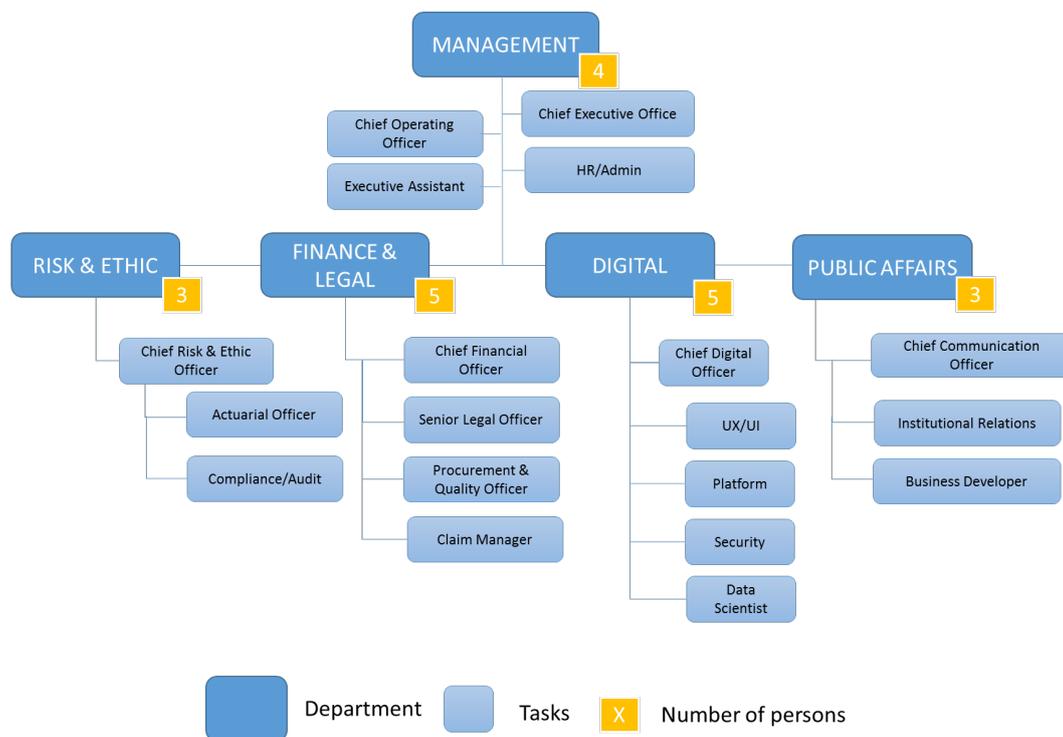
We expect that the fund raising function will be outsourced on a success fee basis. The execution of the mandate will be performed by the Platform under the supervision of a board constituted from nominees of the Founders and Partners.



### 6.3.2. The Platform

The platform will be articulated around 4 strong axes:

- the digital platform:
  - IT developers will maintain and perform specific features of the digital platform
  - Data scientist in close coordination with academic researchers will extract relevant KPI from the data collected
- the development of institutional relations, the promotion of the Mechanism and the search for funds:
  - a function of strong relations with institutions (Governments, DFI)
  - additional services to Stakeholders might be investigated upon their request (data analytics, ...).
- the deployment of model contracts and framework contracts with Existing Instruments:
- risk calculation and internal audit:
  - compliance with the Mandate will be maintained and enhanced
  - risk analytics will be fine-tuned.



### 6.3.3. The Business Plan

The assumptions used for the business plan are as follows :

- Budget for the preparation phase: 6,5 M€ ;
- Budget for the Project Pilot 7,9 M€/year ;
- Deployment plan according to the three scenarios described in 6.1.1.5;
- Commission on loan rates :
  - Guarantor Entity : 55 bps ;
  - Platform: 30 BPS (included in the 55 BPS for the Guarantor Entity)

These results are based on the preparatory work of the CRMM Task Force team (IT estimates, Employees, Board, Legal, etc.), assisted by the Partners, having reviewed the figures of the Business Plan.

### 6.3.4. Context and methodology

This document summarizes the different cumulative capacity assumptions of the pilot phase to express the average commitment by country, according to the three identified cases: central, optimistic or pessimistic.

The objectives of the pilot phase of 15 GW are supposed to be reached after 4 years in the central scenario, 5 years in the worst case scenario, and after 3 years in the optimistic scenario.

The commitment amounts were calculated on the prudent basis that the Guarantor Entity would retain a residual risk share between 5% and 10% of the total amount of Guarantees issued (the Existing Instruments would be taking 90 to 95 % of the risks).

The calculated leverage between the capital of the Guarantor Entity and the debt guaranteed has been assumed conservatively at 10.5x, as calculated in **Annex 3: Risk Assessment Report**.

In each of the scenarios, the cumulative commitment amount is divided by the number of countries that have joined CRMM, to give the average commitment amount per country, and per year.

The revenues of the Platform are based on a commission of 30 bps per annum (close to the "non-profit" operation) on issued Guarantees, to cover the costs of the Platform, and a commission of 25 bps per annum dedicated to the Guaranteeing Entity during the first 5 years of operation (2019-2023).

Estimation of applicable premiums to cover the structural costs of the Guarantor Entity and the Platform over the 2019-2023 period:

Costs	Premium required estimate	Entity entitled to receive the Premium
Cost of capital	10 bp	Guarantor Entity
Cost of liquidity	10 bp	Guarantor Entity
Operational costs	30 bp	Platform
Premium for credit risk	5 bp	Guarantor Entity
Total	55 bp	

The amounts of commitments are presented year by year in each scenario.

## 6.4. Results

### 6.4.1. Capitalisation necessary for the Guarantee Entity

As set out in **Annex 3: Risk Assessment Report**, in order to mitigate the risks associated with \$ 10 bn of debts on solar projects (equivalent to approximately \$ 14 bn of investments), the Guarantor Entity will keep a venture capital approximately \$ 1 bn. In addition, capitalisation of Existing Instruments will be required; especially for the currency hedging. The Guarantor Entity may also need to consider becoming a member of some of the suppliers of Existing Instruments – for example TCX.

Capitalisation required might be progressive in accordance with the amount of guarantees emitted by the Guarantor Entity.

In the central scenario, capitalisation requirements are about MUSD 18 during Year 1, 180 during Year 2 and 480 during year 3 to only finally reach MUSD 1000 at the end of the Pilot Project.

Phasing and upscaling of the Project required fundraising allow close monitoring of the Pilot and adjustments to the actual Guarantees issued.

Liquidity Requirements

In addition, to hedge the liquidity risk, a 40% capital ratio is required. An additional \$ 4bn will be required to cover the Guarantor Entity's liquidity needs at the end of the Pilot Phase, mainly associated with foreign exchange hedges. Liquidities will be gradually mobilised in accordance with the Guarantees' emission.

## 6.4.2. Capitalisation of the Platform

The capital requirement of the Platform will depend on the different scenarios considered. According to our estimates, it will be between EUR 15.5 million (for the optimistic case) and EUR 26.3 million (in the pessimistic case) or between USD 18.5 million and USD 31.1 million.

For the optimistic scenario, we expect that the breakeven point will be reached in year 2, and the capital requirement is expected to amount to approximately EUR 15.5 million (USD 18.5 million).

For the central scenario, we expect that the breakeven point will be reached in year 3, and the capital requirement is expected to amount to EUR 19.4 million (USD 23.3 million).

For the pessimistic scenario, the breakeven point is expected to be reached in year 4, and the capital requirement is expected to account to EUR 26.3 million (US 31.5 million).

These results are very sensitive to the applicable tax regime in the country of domicile of the Platform. Taxes have not been considered at that stage, and are expected to extend breakeven periods.

## 7. Annexes

### 7.1. Annex 1 : Draft Concept note.

This Annex incorporates the terms of reference of the engagement letter, presents the positive impacts of regional systems for lowering the price of electricity and the guidelines and evaluations of existing systems as well as the structure of the work produced as part of the Study.

### 7.2. Annex 2: Identification and detailed design of an international risk mitigation system for solar projects

This report "Identification and detailed design of an international system for risk mitigation of solar projects" includes an overview of the market challenges facing CRMM and an assessment of the main expectations of the various stakeholders involved in the mechanism.

It also provides a detailed overview of the key success factors to be achieved to ensure significant support for the initiative.

Finally, it includes a presentation of potential solutions to explore to enrich the current state of the system and successfully transform this new marketplace.

### 7.3. Annex 3: Risk Assessment Report

A study regarding risk modelling, pricing and required capital for the intended structure was carried out by Cardano.

The capital and liquidity leverage factor are important drivers for the pricing of the CRMM product.

The main factors that determine the capital leverage are the credit quality of SPVs and off-takers and the fraction of local currency loans that will be edge. The higher the capital leverage, the lesser the amount of required capital to cover USD 10 billion of solar loans. Current estimates for this leverage range roughly from 4 to 10, implying that each dollar of capital could cover 4 to 10 dollars of solar loans.

The dominating factors for the liquidity leverage are the fraction of local currency loans that will be hedged and the fraction of currency derivatives (removing local currency risk for SPVs) for which no credit guarantees are in place. If this combined fraction is 100% then the liquidity leverage will be about 2, meaning that every dollar of liquidity would cover 2 dollars of solar loans. Bring down the fraction to e.g. 75% would increase the liquidity leverage to 2.5%.

Please note that capital and liquidity may be decoupled when financially structuring the vehicle. For instance, capital does not need to be fully funded and liquidity may come in the form of (committed) liquidity lines.

The pricing, i.e. the costs on top of the insurance premium of the external insurance provider, is highly dependent on the capital and liquidity leverage factors but also on the required return and cost of liquidity facilities. Assuming 'accommodating conditions' – required return of 1% and cost of liquidity 0.25% – the price may be as low as 0.3%-point (30bp). When assuming more commercial conditions – required return of 4% and cost of liquidity of 1% – the price may be as high 2%-point (200bp). Please note that those are marginal prices that come on top of the insurance premium.

### 7.4. Annex 4: Governance

This governance note sets out the possible structure for the Guarantor Entity together with the constitution of its Supervisory Board. The governance of the Platform, is based on a private entity with a Board of Directors, (including the Chairman of the Supervisory Board of the Guarantor Entity), a management team and a Scientific Council.

### 7.5. Appendix 5: Description of the Macro Operationalisation Process

The Macro Operationalisation Process of the Guarantor Entity is focused around the notion of 'digital keys' which is a transparent and secure process of allocating risk, pricing and other conditions to solar investments, and tracking the progress of risk from the early stages of development through construction, and eventually to the long term financing of solar assets. This is expected to be the main basis of contract between the Guarantor Entity, debt holders and borrower participating through the Platform

## 7.6. Annex 6: Note on Legal and Tax Aspects

### 7.6.1. Annex 6a: Legal Aspects

The legal note prepared by Allen & Overy highlights the requirements with regards to the location of the Guarantor Entity in particular the Platform.

### 7.6.2. Annex 6b: Tax Aspects

The tax note prepared by Deloitte presents the fiscal environment in different European countries and highlight some key tax related points (to be considered in the design and establishment of the Guarantor Entity and the Platform).

## 7.7. Annex 7: Shared Value Added Report

This report presents the methodology used in the global surveys carried out amongst Stakeholders in the solar sector.

Surveys aimed to identify and classify the risks associated to the solar projects for each kind of stakeholder.

One survey for the business developers and one for the banks and lenders were proposed.

Durations of the surveys should not exceed 10 minutes in order to achieve a good return rate.