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Abridged Report

Feasibility Study Credit Guarantees as an Effective Instrument for the Promotion of Cleantech Ventures

Transferring a Swiss success case to India

Details

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Table of contents

Executive summary

India is the third largest emitter of greenhouse gases (GHGs) in the world and as an emerging economy, it is one of the key players that will determine the fate of the global ambition to limit climate change. In this context, there is an urgent need for India to develop its cleantech sector, which includes areas of sustainable development such as clean energy, transport and buildings, waste management and sustainable agriculture practices. While the Indian cleantech sector is relatively nascent, the Paris Agreement and ambitious policy targets have accelerated its growth in recent years, meaning India is poised to become one of the largest markets for cleantech solutions in the world. At the heart of this development are the Indian ventures (start-ups and micro-, small- and medium-sized enterprises [MSMEs]) that drive the commercialisation of cleantech solutions in regional and global markets. However, a recent market study conducted by South Pole and ETHZ reveals that there is a dearth of financing available, both equity and especially debt, for growth-stage cleantech ventures in India. This poses a major challenge to the growth of the sector and thereby to long-term sustainable development in India.

Several factors contribute to this issue, the most important being a vast knowledge gap in the Indian banking sector in lending to cleantech businesses, the lack of domestic venture capital and the highly risk-averse nature of the lenders. Similar conditions have been found to exist in several major economies worldwide. To address this challenge in Switzerland, in 2014 the Swiss Federal Office for the Environment implemented the Swiss Technology Fund, a cleantech-specific credit guarantee instrument. In just five years, the Swiss Technology Fund issued guarantees in excess of CHF 145 million, leveraged more than CHF 100 million in private investments, and successfully demonstrated the power of guarantees in improving lending conditions for cleantech ventures, creating jobs, and stimulating post-COVID green recovery and the development of the sector.

With no cleantech-specific public instrument currently in operation in India, there is a unique opportunity for filling this gap by transferring the learnings from Switzerland to India and supporting the domestic cleantech sector. Realising this opportunity, the Swiss Agency for Development and Cooperation (SDC) has commissioned a feasibility study with the aim being to design and suggest an implementation strategy for a similar credit guarantee instrument in India that addresses the needs of the Indian cleantech SME space and fits the local legal and regulatory context.. This report summarises the key findings of the study and present main results and insights. The report covers 3 sub sections as below:

- Cleantech market study: India has a huge equity and debt market for clean technologies, each estimated at USD 63 billion per year from 2025–2030. However, a landscape assessment of the cleantech sector has identified a significant gap in the availability of both equity and debt financing for cleantech SMEs in India. While efforts are being made to bridge this gap, most of them are concentrated on the equity side. The market study elaborates on the financing barriers and establishes the need to develop and implement a cleantech credit guarantee instrument to address those gaps.

- Stakeholder consultations: Several consultations have been held with relevant national and international public and private sector entities. These consultations have: revealed the underlying reasons behind the inefficiency of existing guarantee schemes in India; reaffirmed the need for a new cleantech-specific credit guarantee instrument with an adjoined due diligence expert for appraisal of guarantee requests; helped identify potential lenders, funders, host institutions, facilitators and beneficiaries (SMEs) of the instrument; and informed the identification of feasible structures for the instrument and the specifications on the design elements (such as coverage ratio, guarantee fees, etc.) of these feasible structures.

- Design and mechanism of the instrument: Six viable structures for the new cleantech guarantee, which borrow elements of the Swiss Technology Fund and yet fit the Indian legal and regulatory settings were identified. Out of these, based on stakeholder consultations, two structures have been chosen as the most feasible candidates for the new guarantee instrument. First is the Trust structure, which can be implemented with either public sector facilitating entity. Second is the USDFC guarantee structure. For conducting the due diligence process of guarantee request, inclusion of a cleantech expert in each of these structures is highly recommended.

1. India's Cleantech Market

1.1. India's cleantech sector and path to sustainable development

India is well on its way to meeting its nationally determined contributions (NDCs) under the Paris Agreement, i.e. improving the emission intensity of its GDP by 33%–35% by 2030 compared to 2005 levels and generating 40% of its electricity from non-fossil sources by 2030. India also has ambitious targets for 2030 which include: 450 GW of renewable power capacity, a 15% share of natural gas in the primary energy mix, a 30% share of passenger car sales for EVs and a 20% blending of biofuels in petrol (IEA, 2021a). Sub-national targets have also been announced by state governments, especially in the case of electricity, EVs and energy efficiency. Although these targets assert India's commitment to low-carbon development, the achievement of these targets does not ensure a sustainable future for India. This is because an expanding economy, rising population and rapid urbanisation and industrialisation will result in India witnessing the largest increase in energy demand of any other country by 2040 – roughly one quarter of the global energy demand growth (IEA, 2021a). Even if India achieves its stated targets, it will still become the second highest emitter of CO_2 after China by 2040.

While the power sector is being transformed rapidly by ambitious policy targets with regard to the deployment of renewables, the challenging task is to decarbonise the industrial, residential and transportation sectors, which would require concerted efforts in terms of innovation, partnerships and capital flow for the clean energy sector. In this regard, the India's cleantech sector has a big role to play towards the country transitioning toward net zero.

1.2. Cleantech market potential by sub-sector and need of financing

Currently, over 80% of India's primary energy needs are met by coal, oil and biomass. In the power sector, coal is responsible for 70% of electricity supply, whereas renewables – solar PV, wind and biomass – account for just 10% (IEA, 2021a). The share of renewables is, however, expected to increase as clean energy takes the lion's share of total energy-related investments in India. In 2019, the energy sector accounted for 10% of investments in India, totalling USD 85 billion, the majority of which flowed to clean energy and specifically to the deployment of renewables. On the other hand, spending on other sub-sectors, such as energy efficiency, electric mobility and the direct use of renewables, accounted for just over 10% of energy investments (IEA, 2021a).

Given its size and need for clean energy technologies, India was ranked as the most attractive emerging market for clean energy investments by Climatescope in 2019. The International Energy Alliance (IEA) estimates the need for an additional USD 1.4 trillion (about USD 70 billion per year until 2040) for clean energy technologies, above the level of investments in Stated Energy Policies Scenario (STEPS), to realise the SDS for India (IEA, 2021a). Table 1 below shows the potential market size of different clean energy sub-sectors in terms of their deployment and investment potential. The majority of the estimates provided are in line with the SDS: Sustainable Development Scenario developed by IEA.

Table 1 : Clean energy market potential by deployment and investment potential of different sub-sectors

Sub-Sector	Deployment Market Size (energy MWh, power MW)	Investment Potential/Financing Needs (USD)
Renewables	• Rooftop solar in residential segment = 5 GW by 2022 • Total RE deployment target for 2030 = 450 GW	• USD 60 billion per year from 2025-2030.
E-mobility	• Total EV sales = 12 million/year from 2025–2030; of which, 2 and 3Ws = 8 million per year.	• USD 6.5 billion by 2025. 2Ws account for 62% and 3Ws for 37% of this market share. • EV charging infrastructure = USD 10 billion per year from 2025-2030.
Storage and Grid	• By 2022 = 70 GW storage market • By 2040 = 140 GW of battery capacity (STEPS), the largest of any country; and close to 200 GW (SDS).	• USD 50 billion per year from 2025-2030.
Energy Efficiency		• USD 60 billion per year from 2025-2030 in industry, efficiency, management, CCUS.
Waste Management	• By 2050 = 3 GW of waste to energy potential	• USD 14 billion by 2025, growing annually at 7%

Sources: (IEA, 2021a), (Swiss Business Hub India, & Swiss Global Enterprise, 2018), (Brar et. al, 2021)

The total annual investment in the energy sector required under the SDS is around USD 200 billion per year by 2030. 90% of these investments, i.e., USD 180 billion per year, must go to the clean energy sector. Of the total USD 180 billion required from 2025 to 2030, 70% would have to come from privately-owned projects which include: corporates, ESCOs, developers and MSMEs (IEA, 2021a).

The investments in these privately-owned projects would contain a mix of equity and debt financing, with the share of each depending on the sub-sector. For example, debt financing is estimated to make up 65% of the investments in the renewables sub-sector and just 30% in the transport sub-sector (IEA, 2021a). Based on these shares of debt financing and the total investment requirements under the SDS, the clean energy debt financing market for privately-owned projects is estimated to be equal to the equity investment market of about USD 63 billion per year from 2025–2030.

1.3. Findings from Cleantech market study-financing a key gap

A market study was conducted by South Pole in 2019 to understand the landscape of cleantech innovation ecosystems in India, a country which has a large potential market for clean energy technologies. There are two key objectives to this market study: a. to analyse the past trends of investments in cleantech ventures; and b. to determine the primary barriers to growth faced by the ventures which consequentially extends to the commercialization of clean energy technologies. One of the key findings of the market study was Indian cleantech innovation ecosystem has several weaknesses: financing, regulations and information gaps. One of the most significant barriers to growth faced by cleantech ventures is the lack of access to growth stage financing.

The growth stage, i.e., the transition from early- to late-stage, is usually when ventures have a market-ready product and need to raise sufficient equity and debt financing for a market roll-out and commercialization. This stage typically occurs between Series A and Series C funding rounds. Without access to sufficient financing during this stage means a venture will fail to grow and commercialize. This stage is also termed as the commercialization valley of death. Figure 1 below indicates the existence of such a financing gap – the valley of death – in the Indian clean energy market. The average size of Series C investment is 25% lower, while Series D is 17% lower than Series B; and in terms of the total investment volume, Series C is 77% lower and Series D is 88% lower than Series B funding. Given that the trend in total and average investment size should increase as ventures transition from early- to late-stage; this drastic drop is a strong indicator of the commercialization valley of death faced by Indian cleantech ventures.

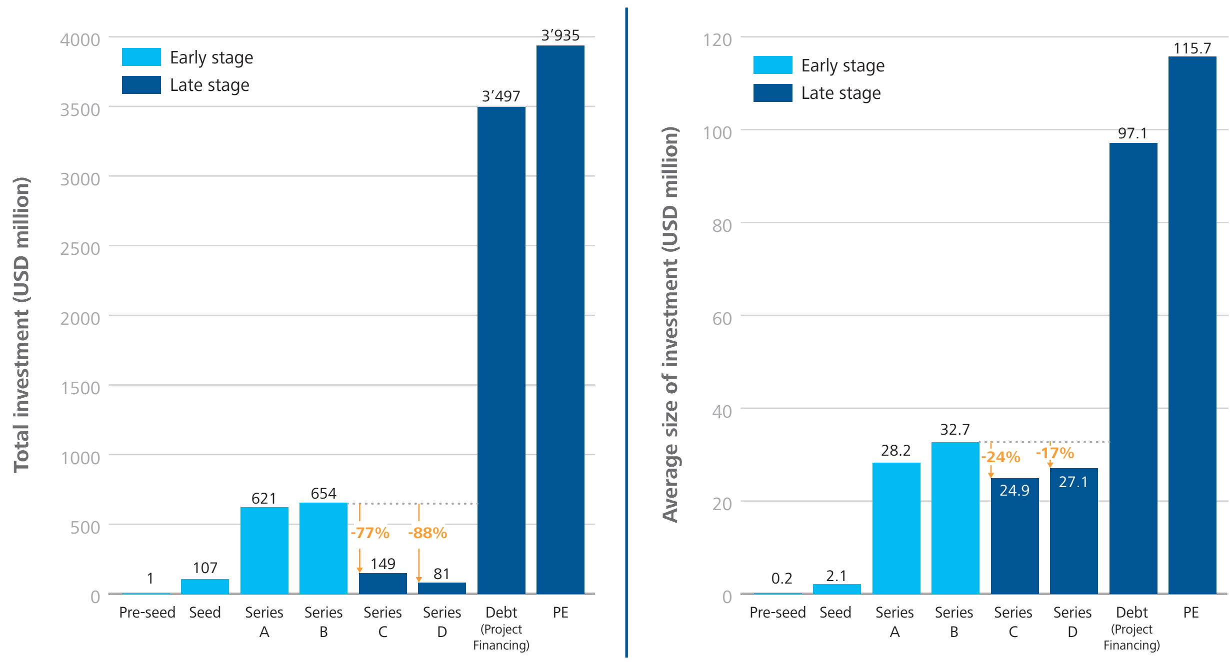

Figure 1:Total investment by type of funding round (left) and average size of investment by funding round (right), indicating an existing commercialization valley of death in Indian clean energy sector

Before one can understand the reason for this gap, it is important to note here that innovation in cleantech is inherently different from other sectors (FinTech, EdTech etc.). Cleantech ventures are perceived as having higher risks (especially if the technology is unproven), have longer development cycles (especially if the venture is hardware focused) and have longer return periods (typically five to eight years), than other high growth sectors. These specific characteristics can lead to the identified financing gap:

- Cleantech ventures do not fit the investment profiles of return-oriented venture capitalists (VCs). And with only a few impact-oriented VCs in India - with a focus on clean energy technologies: there is a lack of growth-stage equity in the market.
- Banks and Non-Banking-Financial-Companies (NBFCs) who provide debt financing to ventures in India are highly risk averse. Furthermore, due to information asymmetry (lack of know-how of clean energy technologies and business models, and lack of experience of lending in the sector), cleantech is perceived as a high-risk sector and therefore, debt is provided only to those ventures which are backed by proven technologies (like solar PV) and business models: there is a dearth of growth-stage debt financing in the market.

1.4. Need of an intervention to support India's cleantech market

Given the importance of the sector and financing a key barrier towards scale up, these is a pressing need to implement an instrument that specifically addresses the lack of access to debt financing for cleantech ventures in India. Most of the public and private sector efforts are concentrated on bridging the equity financing gap. Market analysis reveals that there are no existing instruments that successfully address the debt financing gap faced by cleantech ventures.

1.5. Transfer of learnings from Switzerland to India Credit (loan) guarantees as a de-risking instrument for overcoming the valley of death though promotion of debt financing for cleantech ventures

The inspiration for a solution comes from a highly successful credit guarantee instrument - implemented in Switzerland in 2015, called the Swiss Technology Fund (STF). It works as follows: when lenders (Swiss banks like UBS) give loans (debt financing) to cleantech ventures, they are guaranteed a payback by the STF which is capitalized by the government. These loans (debt financing) are therefore "guaranteed" or are "government-backed loans". In case the venture is unable to repay the lender, the government promises to pay a part or the total amount of the guaranteed loan to the lender. This way, as shown in Figure 2., the government partially shares and reduces the lending risks for the lenders.

The guaranteed loans are also technically assessed by an external expert with relevant know-how of cleantech business models. This prior assessment leads to better risk management, which encourages lender participation in the cleantech debt market and is a key factor in the success of the STF. Overall, the lending conditions in the market are drastically improved. Not only do lenders gain know-how of lending to cleantech ventures, but the ventures are also able to easily access affordable loans to finance their business through the valley of death.

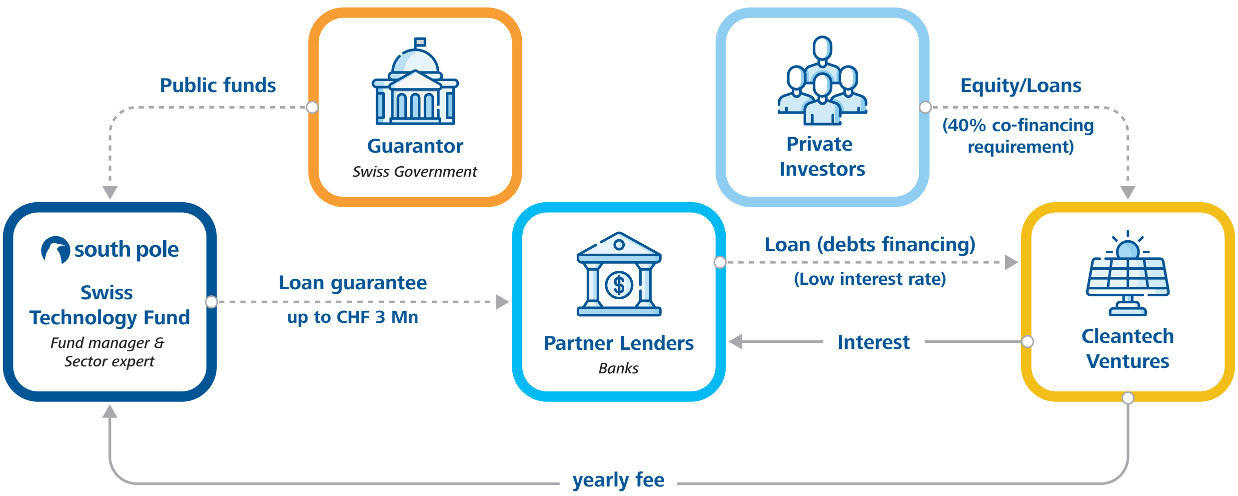

Figure 2: The structure and mechanism of the Swiss Technology Fund

The STF grants guarantees loans of up to CHF3 million to cleantech ventures and receives 80 applications every year (on avg.). Since its inception, this CGS has provided guarantees worth more than CHF100 million and has already exceeded its ambition of generating climate impact by easing finance for cleantech ventures. Furthermore, in recent economic slowdowns due to the COVID-19 pandemic, the demand for guaranteed loans has increased by about 33%. By enabling ventures to easily access loans at such times, the STF also helps to stimulate green economic recovery in the country.

Credit guarantees can be an effective and efficient market instrument for India's cleantech sector. Given the size of the Indian cleantech market, there is a large potential for a similar cleantech-focused credit guarantee instrument to close the identified debt financing gap and:

1. diversify and strengthen the financial support available to cleantech ventures
2. increase know-how and experience of lenders vis-a-vis cleantech ventures
3. build private investor confidence in the market and stimulate financial support for climate action
4. aid in a green economic recovery post COVID-19 and in similar unforeseen future events

2. Findings from Stakeholder Consultations

With an objective to reaffirm the need of an intervention for a credit guarantee instrument and guide the design parameters extensive consultations were held with key stakeholders in the cleantech financing sector i.e. Cleantech SMEs, Banks, NBFCs, Development Finance Institutions (national and international), facility manages among others. .

Key takeaways from the stakeholder consultations are summarised below:

- **Reaffirmed the need for a dedicated instrument for the clean tech sector:** Consultation with cleantech SMEs highlighted several underlying barriers to accessing debt financing:
    - Only a limited number of public sector banks and public sector undertakings (PSUs) are actively lending to the cleantech sector. Public sector lenders are typically highly risk-averse, have stringent lending conditions and lack the in-house expertise for the credit appraisal process.
    - There are only a few commercial banks, NBFCs and private venture debt firms providing debt to the cleantech sector. The demand for debt surpasses the supply. Access to growth-stage debt at favourable terms remains a challenge.
    - Existing de-risking instruments such as guarantee instruments and lines of credit lack a clearly defined framework. Operational inefficiencies and bureaucratic hurdles result in time delays and render the instrument not effective at mobilising lenders and debt in the market.
- **Limited offtake of current guarantees:** The existing guaranteed instruments, particularly sector-specific instruments, have seen limited offtake due to cumbersome processes, limited outreach and longer gestation/processing periods. Such facilities are primarily managed by public sector institutions. During discussions with various banks and NBFCs who have actively been using the limited guarantee instruments available, it was highlighted that the offshore guarantees and private guarantees work better than traditional public guarantees due to their operational ease and broader base. Hence, the design of the new instrument should take ease of access, settlement and flexibility into consideration.
- **Expertise for technical due diligence:** Because of the innovative technologies and business models of cleantech ventures, the technical due diligence for credit appraisal requires specific expertise. During the consultations it was highlighted that, for relatively mature sub sectors in cleantech, like RE and EE, the local FIs have built in-house expertise to undertake the due diligence. Yet, upcoming sub sectors like energy storage and electric mobility, among others, lack in-house expertise. Hence, external technical expertise is required for technical due diligence which is locally available through specialised due diligence agencies and experts. It was also highlighted during the discussion with banks that they often partner with sector-specific NBFCs to build portfolios in emerging sectors. These NBFCs have in-house expertise for technical due diligence in these sectors. Hence, the design of the instrument should also consider these financial intermediaries.
- **Emergence of Commercial Guarantees:** In some of the emerging cleantech subsectors like electric mobility, commercial guarantees have emerged to support individual/micro-SME lending for adoption. These commercial guarantees are operated with the support of the counter reinsurance of international financial institutions. Still, at present the commercial guarantees are limited to standard retail lending with a small transaction ticket size.
- **Potential benefits of a cleantech credit guarantee instrument:** Cleantech SMEs highlight and confirm the following perceived benefits of a cleantech credit guarantee instrument:
    - Mobilisation of larger sums of capital and increased ticket sizes from a broader range of private and public sector investors and lenders in the sector.
    - Increase the know-how of the lenders who do not have in-house credit appraisal expertise specific to the cleantech sector.
    - Improved lending conditions (collateral requirements, interest rate, etc.) and overcome time delays in obtaining debt financing.

3. Potential design and structure of CG Facility

In order to design an effective guarantee instrument that borrows from the learnings of the STF but also fits the Indian context, a comprehensive assessment of the principles behind the design of the instrument, the local legal and regulatory frameworks pertaining to the issuance of credit guarantees in India was undertaken along with review of all existing credit guarantee facilities operational in India.

Based on the assessment six potential structures were identified and in line with the consultation with stakeholders, two best suited potential structures were shortlisted. Each of these possible structures show the functioning of the instruments: that is the relation of the guarantee fund with respect to the fund/ facility manager and the partner lending institutions.

3.1. Feasible structure 01: Trust

Based on the analysis of the existing credit guarantee mechanisms in India, as well as the applicable legal and regulatory framework for the issuance of guarantees in India and based on consultations with stakeholders, the cleantech guarantee instrument could most feasibly be structured in a trust framework. The trust structure is detailed below.

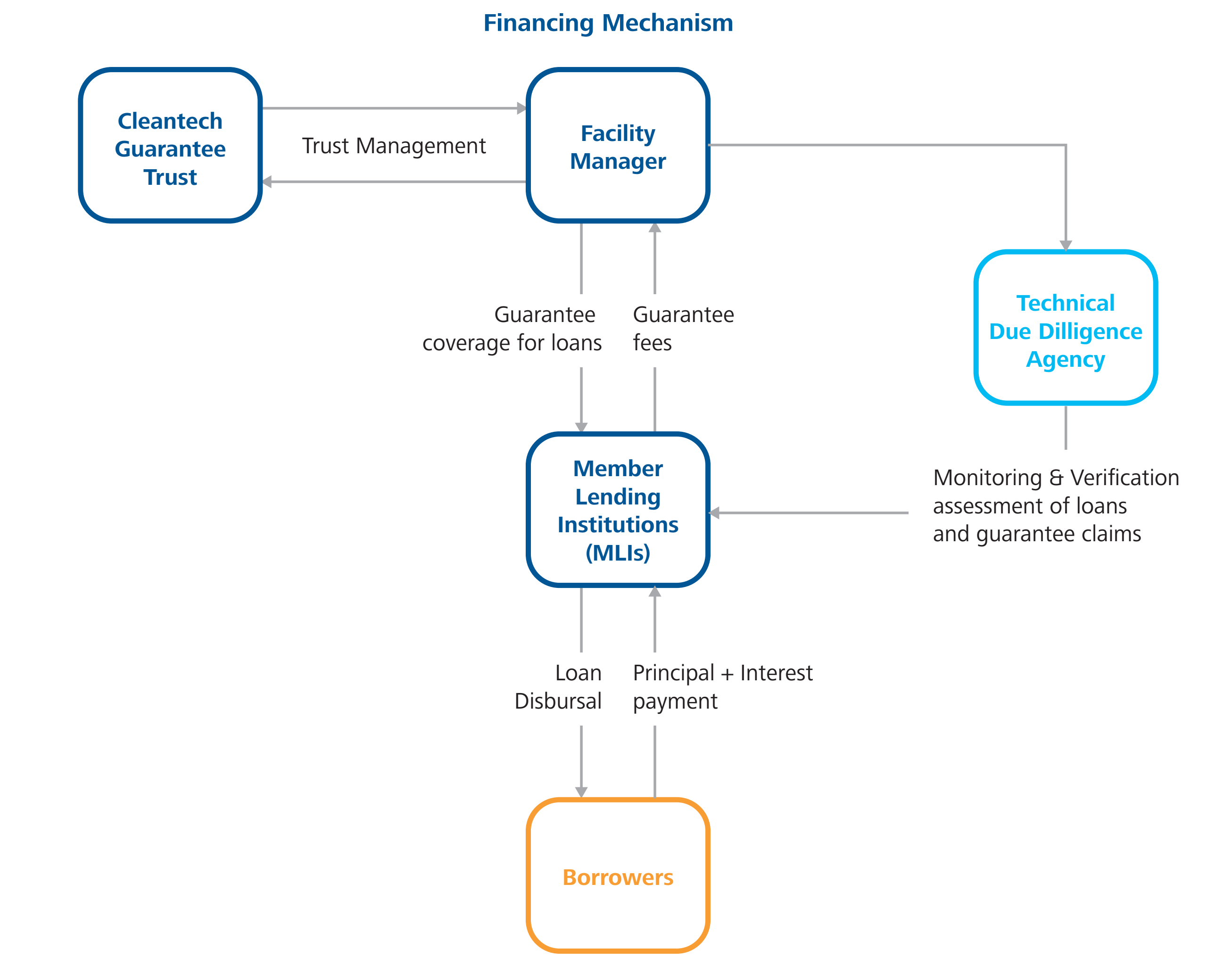

Figure 3: Financing mechanism of the cleantech credit guarantee fund with a trust framework

Key entities of the structure

- **Cleantech Guarantee Trust**, similar to other existing credit guarantee structures, is the entiy that hosts the guarantee fund incorporated under applicable Indian Trust laws. The Trust Fund is governed by a board of trustees.

- **Facility Manager** manages the trust operations and extends guarantees under the trust. The Facility Manager enters into guarantee agreements with the Member Lending Institutions and is responsible for the verification of claims and release of payments.

- **Member Lending Institutions (MLIs)** are the participating lenders who extend loans to the cleantech ventures and avail of the guarantee.

- **Borrowers** are the cleantech ventures who avail debt from MLIs.

- **Technical Due Diligence Agency**, if required, could be a third-party entity which vets the appraisal process of MLIs and certifies the claim validity in order to enable the Facility Manager to process the payment release. The Agency may also be entrusted with the responsibility for screening the applications submitted by MLIs prior to the issuance of guarantee coverage by the Trust. Based on stakeholder inputs and the Swiss experience, the inclusion of such an agency in the structure is highly recommended.

Key roles and responsibilities of the entities

- **Cleantech Guarantee Trust:**
  - o A legal entity incorporated under the applicable Trust Act of India, which houses the Cleantech Guarantee Fund. The Trust is capitalised with the required funding to issue guarantees to MLIs. The operations of the Trust are governed by a Trust Deed.
  - o The Trust, through and on the recommendation of the Facility Manager, enters into guarantee agreements with the MLIs.

- **Facility Manager:**
  - o Empanelment of MLIs and execution of a master agreement with all MLIs.
  - o Designs a common platform for guarantee application and monitor progress.
  - o Due diligence of loan cases for guarantee approval.
  - o Processing of guarantee claims and disbursal of amount for eligible guarantee claims.
  - o To conduct periodic monitoring and evaluation of the guaranteed portfolios of MLIs, through an independent agency, if required.
  - o Define and undertake corrective measures in case of any deviations or breach of guarantee limits.

- **Member Lending Institutions (MLIs)**
  - o To fulfil the eligibility criteria laid down by Facility Manager for empanelment.
  - o Evaluate the borrower’s loan applications and conduct technical and commercial due diligence.
  - o Guarantee application to the facility manager and submit guarantee fee on approval.
  - o In case of any default, file for guarantee claim along with all required documents/evidence.
  - o Submit periodic reports on the portfolio’s performance and other documents, as required by the facility manager.
  - o Facilitate M&E assessment of the guaranteed portfolio.

- **Borrowers:**
  - o Utilisation of funds for the desired cleantech operations.
  - o Comply with all the guidelines as stated by the Facility Manager/MLIs.

- **Technical Due Diligence Agency (if required):**
  - o Assess the eligibility of applications submitted by MLIs for guarantee coverage.
  - o Verification of claims submitted by MLIs and certify the validity of the same to the Facility Manager.
  - o Impact evaluation of the Cleantech Guarantee Fund.

3.1.1. Operational mechanism

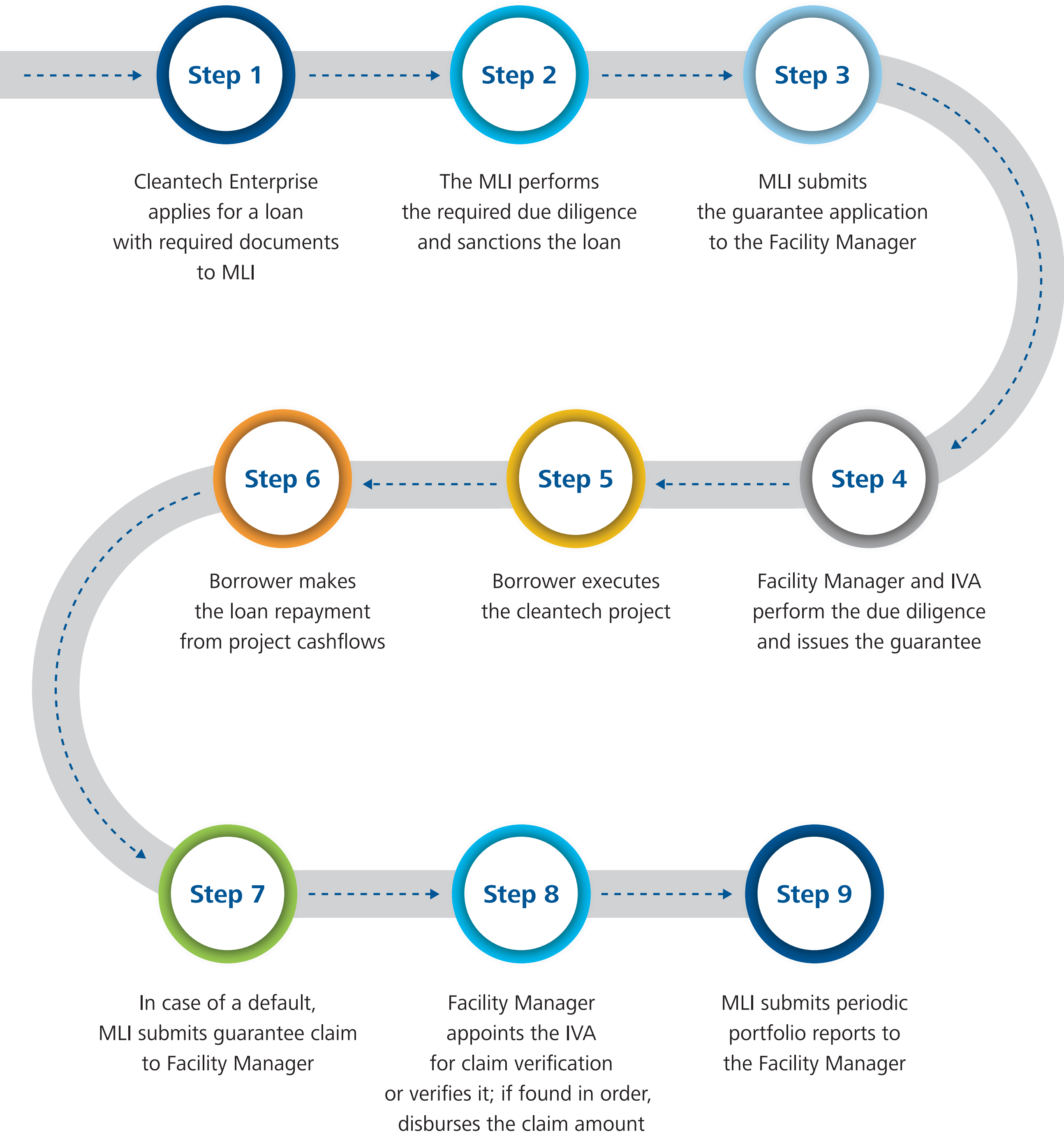

Figure 4: Operational mechanism of the cleantech credit guarantee instrument with a trust framework

Key design elements of the instrument

Based on the detailed stakeholder consultations, the key design elements of the cleantech guarantee fund are as presented below.

Table 2: Details of the design elements of the cleantech credit guarantee instrument using a trust framework

<table>
<tr><th>Parameter</th><th>Assumptions</th></tr>
<tr><td>Guarantee coverage</td><td>50% of the principal component of the loan.
• First loss component of 20% of the coverage (10% of the principal component of the loan)
• Partial credit guarantee (PCG) could be structured at 80% of the coverage (40% of principal component of the loan)
As per the stakeholder consultations, lenders were fine with a 50% coverage, but preferred a higher first loss coverage compared to a PCG. However, in view of the moral hazard of lenders not making an effort or going through the insolvency bankruptcy process as diligently as they would in the absence of guarantee coverage, the first loss coverage has been limited to 10% of the loan and the PCG at 40% of the loan size.</td></tr>
<tr><td>Exposure at default (EAD)</td><td>Year-wise outstanding loan amount</td></tr>
<tr><td>Probability of default (PD)</td><td>Weighted average default rate across the borrowers in the loan mix.</td></tr>
<tr><td>Loss given default (LGD)</td><td>As a conservative estimate, the LGD has been assumed to be 100%, given that the facility would support new technologies or technologies whose equipment does not have an established secondary market. Moreover, given the objective of the facility to enable collateral-free debt financing, the LGD has been assumed to be 100%.</td></tr>
<tr><td>Borrower profile</td><td>To enable access to underserved cleantech ventures, the facility would support cleantech ventures with the following credit ratings/equivalent creditworthiness scores: BBB, BB, B and C.</td></tr>
<tr><td>Facility tenure</td><td>The facility shall operate with a tenure of 15 years, with the issuance of guarantees in the first five years. Loans covered under the guarantees are assumed to have a door-to-door tenure of 10 years.</td></tr>
<tr><td>Loan profile</td><td>Typical loan size: USD 1.5 million to USD 10 million
Repayment amortised over 10 years
Interest rate: 10% p.a
Debt service reserve requirement: 3 months principal + interest</td></tr>
<tr><td>Borrower-mix for loan disbursement</td><td><table>
<tr><td>Borrower Credit Rating</td><td>BBB</td><td>BB</td><td>B</td><td>C</td></tr>
<tr><td>Y1 Loans</td><td>50%</td><td>25%</td><td>25%</td><td>0%</td></tr>
<tr><td>Y2 Loans</td><td>40%</td><td>30%</td><td>30%</td><td>0%</td></tr>
<tr><td>Y3 Loans</td><td>30%</td><td>30%</td><td>30%</td><td>10%</td></tr>
<tr><td>Y4 Loans</td><td>25%</td><td>30%</td><td>30%</td><td>15%</td></tr>
<tr><td>Y5 Loans</td><td>20%</td><td>30%</td><td>30%</td><td>20%</td></tr>
</table>
The Facility would initially focus on BBB to B segments in the first two years of operations. Thereafter, based on performance, the exposure to C rated entities would be increased in years 3 to 5.</td></tr>
<tr><td>Default Rates</td><td>As per the CRISIL CDR study, the average one-year default rates are as follows:
<table>
<tr><td>Borrower Credit Rating</td><td>BBB</td><td>BB</td><td>B</td><td>C</td></tr>
<tr><td>Default Rate</td><td>0.82%</td><td>3.55%</td><td>8.28%</td><td>20.62%</td></tr>
</table></td></tr>
<tr><td>Guarantee fee</td><td>1% p.a</td></tr>
</table>

Impact potential

Based on the design elements and the assumptions mentioned in the table above, the impact potential of the cleantech guarantee fund is as follows.

Table 3: Estimation of the impact potential of the cleantech guarantee instrument with a trust framework

Total estimated losses	51.13	USD million
DSRA usage	2.44	USD million
Losses post-DSRA	48.69	USD million
Coverage under Cleantech Guarantee Fund	**24.34**	USD million
First loss corpus	**4.87**	USD million
PCG corpus	**19.48**	USD million
Uncovered loss	24.34	USD million

Debt mobilisation	200	USD million
Debt leverage	8.22	times

Renewable energy projects		
- Capital cost per MW	0.48	USD million
- Debt	0.34	USD million
Capacity installation enabled by Cleantech Guarantee Fund	595.92	MW
Emission factor	0.92	
PLF	16%	
GHG emissions avoided	768,420.05	tCO2/year

A sample fund size of USD 25 million, with a first loss coverage support of USD 5 million and a partial credit guarantee coverage support of USD 20 million, would be able to mobilise USD 200 million of debt financing, a leverage of more than eight times. In the context of supporting renewable energy projects, the facility would be able to support the capacity installation of about 600 MW with avoided CO2 emissions of more than 750,000 tCO2/year.

Based on the capital available, the Cleantech Guarantee Fund may earmark funds to meet the requirements of various cleantech ventures, including renewable energy, energy efficiency, battery storage, e-mobility, etc

3.2. Feasible structure 02: leveraging USAID DCA's existing guarantee framework

An alternative to the trust structure is the USAID DCA guarantee structure, which is a well-established guarantee framework in India and in other countries. The DCA structure has played a crucial role in enabling domestic debt financing for MSMEs, energy and infrastructure projects. USAID is the US Government agency whose purpose is to provide foreign assistance to support development objectives in underdeveloped and emerging economies. Through its DCA initiative, USAID provides partial credit guarantees to mobilise local financing for projects with a developmental impact on underserved market and sectors.

Under the DCA structure, guarantees of up to 50% of a loan are extended to local financial institutions to encourage them to lend to local entrepreneurs who would otherwise be perceived as too risky to receive credit. DCA partners with financial institutions that use these loan guarantees to provide finance to projects in agriculture, education, energy, the environment, health, infrastructure, small businesses, trade, and water. Guarantees can also be used to support bond issuances for larger infrastructure projects. The DCA is driven by five core principles:

1. Private-sector driven – private banks lending from their own balance sheets based on their own strategies and methodologies.

2. Equal risk sharing – partial guarantees ensure partners make sound lending decisions. Ninety five percent of all DCA guarantees have been issued at 50 percent or less.

3. Development focused – guaranteed lending explicitly linked to USAID development objectives.

4. Additionality – supporting projects that will result in new development outcomes not possible without the use of the guarantee.

5. Leverage – using increasingly limited donor funding to crowd in as much private-sector financing at minimum risk.

Given DCA's successful operational framework and its objective of facilitating financing for sectors including cleantech, the possibility of a dedicated guarantee line may be explored with USAID DCA using a set of four to five financial institutions active in the cleantech lending space. USAID has partnered with Electronica Finance Limited and cKers Finance under the DCA framework to provide guarantees for rooftop solar lending in India. A similar structure may be explored for the cleantech segment as well. The following sections highlight the financial structure and operational mechanism.

3.2.1. Financing Structure

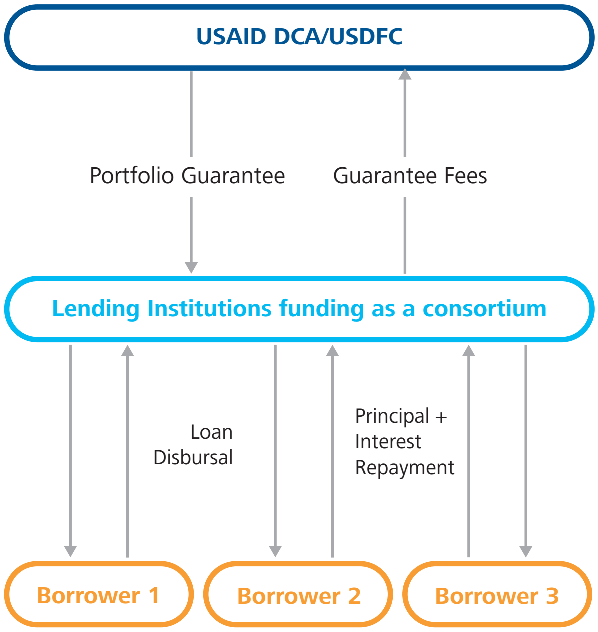

Figure 5: Alternative financing structure of the cleantech credit guarantee instrument

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