**Context**

While DRE[[1]](#footnote-1) based interventions for enabling energy access as also energy sufficiency are gaining ground, **a key conundrum exists regressing the upscaling of the segment: companies operating in the sector are hampered by the lack of debt in their ability to scale**.

This emanates from lack of scale and debt-servicing track record making conventional debt providers wary of entering the sector and /or unable to meet the requirements of the segments.

C*apital needed, even debt, needs to be at a low cost, while being able to absorb high risk* - infact despite the priority sector lending norms now being applicable to DRE, banks’ willingness to lend hasn’t significantly altered. The primary bottlenecks include: (i) nature and cost of debt, (ii) stringent conditions that preclude early stage businesses and (iii) lack of precedence and benchmarks leading to high risk perception and fear of creation of non – performing assets.

Even as these challenges are being encountered on ground, Decentralized Renewable Energy (DRE) is being viewed as central to India’s Intended Nationally Determined Contribution[[2]](#footnote-2) (INDC) pathway – a significant component of India’s 40 GW decentralized solar target entails small power plants, solar pumping programs and other systems targeted at energy access.

However this is unlikely to be achieved where capital supply, both in quantum and nature, continues to be strained. Thus, an opportunity exists to align the Indian domestic financial sector & create interventions that will encourage & support lenders to lend to the space.

**Risk Guarantees have often been deliberated upon as a potential instrument needed to unlock capital in the DRE energy access space, particularly from mainstream lenders**. While some attempts have been made to offer these products, they haven’t necessarily inspired engagement from the market participants.

As part of Climate and Development Knowledge Network’s (CDKN) business partnership program, in late 2015 and early 2016, cKinetics undertook a sector wide assessment on the role and likely impact of guarantees in decentralized renewable energy (DRE) led energy access domain. The study included review of design and operational characteristics of existing guarantee products in India as available for various sectors, tabling their functionality etc. in order to leverage learnings from them for the DRE segments.

*Our engagement concentrated on understanding the challenges as also identifying the specific policy engagement that can help unravel the potential in an effective manner*.

**Catalyzing supply of capital: Role and Need for Risk Guarantees**

There are 4 primary business segments covering the electricity oriented energy access landscape: Lighting Only Pico and Micro-Grids, Community and Telecom Loads Oriented Mini-grids, Solar Home Lighting Systems and Solar Pumping.

Assessment of the business segments reveals that capital is needed for the following 3 types of uses:

1. Long (infrastructure) term venture/ project debt to finance assets
2. Medium term venture / project debt to finance medium to long term assets
3. Construction financing for companies operating as an EPC or in a Build Operate Transfer Model

An overview of the risks associated with these sub-segments is mapped out in the Table overleaf.

**Key risks faced by the different business segments in the energy access space**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Risk Areas | Applicability | | | | |
|  | Pico and Micro Grids | Mini Grids | Solar Home Lighting Systems | | Solar Pumping |
| Risk of grid expansion | Most of these installations are coming up in un-electrified hamlets of 30 – 50 HHs each, which can be on the periphery of electrified villages or be in rural remote areas. Therefore, it is unlikely that grid will be extended to these hamlets, considering the cost involved with the same. Moreover, the assets have a relatively shorter payback period and are easier to repossess and re-deploy (as compared to mini-grids)  **Risk: Medium** | The risk of grid expansion is most prevalent in this business segment.  The only way to mitigate the risk in the current scenario is to operate under policy compliant models / villages.  **Risk: High** | Not applicable as the systems are sold as a product and not a service.  N.A.  **Risk: Low** | | |
| Financial Risk | These are non-subsidy based with relatively short payback of under 3 years. The key challenge is potential disruption from Grid supply. Given that most of the investment is in movable asset (since distribution is extremely simply undertaken), assets have the ability to be redeployed. .  **Risk: Medium** | These projects are also dependent on Government subsidy component hence it is imperative that such funds are timely accessed. Projects have long pay back periods due to high initial investment and lack to ability to earn very high returns.  In case of Grid based disruption, almost upto 20% of the investment is not recoverable.  **Risk: High** | These have a significant subsidy component and hence Government allocations can alter the extent of credit that the company needs to provide or provision for.  **Risk: Medium** | Have by and large been deployed under Government Tendering schemes and private sector initiatives necessitate risk coverage on bankability of farmers.  **Risk: Medium** | |
| Bankability of Cash Flows / End Consumers | Although the end consumer is the least bankable in this business segment, it is potentially possible to repossess and redeploy this asset. Bankability of end customers /rural users makes these investments more challenging for FIs.  Last mile collection systems need to be robust to ensure high payments  **Risk: Medium** | Bankability of the rural end consumer is a challenge – therefore, the most business models that are emerging have a certain percentage of institutional revenue coming from bankable entities such as telcos, gas stations, banks etc.  **Risk: Medium** | Although the equipment is sold as an upfront sale, most ESCOs provide payment options– although there is a risk of default, current data indicates that the defaults are relatively low. the balance principle is typically financed through a MFI. Repayment rates are a function of effectiveness of the MFI on-ground operations.  **Risk: Medium** | | |
| Risk of business continuation | As discussed above, the major risk in the business segment, given the nascence of the companies is the continuation of business and its management. This risk is high across business segments, unless companies reach a certain number of installations and years of operations  **Risk : High** | | | | |

**As is evident from the aforementioned table:**

* the major risk faced by lenders in these business segments pertain to business disruption with a high likelihood of low to medium recovery, post default.
* the second risk to be fenced involves variations in cash-flows which are linked to risky “end consumers”, which may result in lumpy cash-flows for the business and resultantly delays in loan repayments sporadically

To address these risks, loan guarantees and risk insurances can be an important solution to increase lenders participation in the DRE segment however they need to be structured flexibly, specifically:

* *given the small to modest loan sizes, the guarantee product should be aimed as a portfolio guarantee towards banks and other financial institutions, which are willing and able to provide debt at the terms needed.*
* *ability to bear the first loss as in most cases, the first loss will either pertain to a few delayed payments vs. complete disruption in business operations leading to scenarios of no visibility on recoveries*
* *ability / right to call in the guarantee before the loan book is written off as an NPAs[[3]](#footnote-3): incase of delayed payments, writing the loan book off as NPA will limit the lenders’ ability to restructure the repayments and recoup the loan.*

# Outlook on Guarantee Structures

* Though Guarantee structure needs to be flexible, it needs to be designed such that it doesn’t end up putting the project in jeopardy in the quest of protecting the lender’s interest. A distinction is to be made between project being temporarily slow vs. a permanent failure. In case the project has visible cash flows, albeit slower/lesser than anticipated, then efforts must be made to restructure the loan before invoking the Guarantee.
* A potential flexible guarantee mechanism could include using a part of the guarantee as payment for the loan instalment such that it provides a cushion to the borrower as also more time to the lender to assess the true status of the project (in case there is a possibility to restructure the loan and not declare it as NPA).
* Portfolio guarantees are likely to be more suitable for the DRE energy access domain since there is an inherent risk diversification if multiple projects are pooled. Lenders are likely to prefer atleast some portion of loss being covered under a First Loss
* The Guarantee structure needs to take care of lenders’ concerns around factors such as loan recovery, appropriation of losses and triggers for invoking guarantees.
* To enable appropriate implementation of a guarantee product, following are seen as pre-requisites:
* **Capacity building of lenders**: Lenders need to be made aware of the workings of the various business models across multiple segments of the DRE energy access domain. There is also a need to handhold the lenders regarding avenues for de-risking across multiple elements of the ecosystem including policy, consumer level, grass root community development organizations, distribution channels (where applicable) etc.
* **Regular monitoring and verification**: There should be a mechanism for continuous monitoring and verification of the guaranteed project as per a process agreed to by guarantor, lender as well as borrower.

# Potential approaches and pre-requisites

Through the engagement with industry players and catalysts, it is clear that there is a need to establish risk guarantee constructs in order to determine efficacy in improving access to debt capital for the space.The following table outlines a comparative assessment of two potential approaches as well as their potential impact. Based on this assessment, Structure 1 is seemingly more advantageous, provided that appropriate market tie ups are in place.

|  |  |  |
| --- | --- | --- |
|  | Structure 1  (Layered Guarantee) | Structure 2  (Standard Pari-passu structure) |
| Design Principles (Ability to meet needs on ground) | | |
| Portfolio guarantee to banks to deploy appropriate products for the sector | Yes | Yes |
| Ability to bear the first loss / Invoke guarantee before the loan book is written off as an NPAs | Yes | Limited willingness from current providers |
| Outcomes | | |
| Leverage created | Greater leverage created for each party by layering of guarantees | Limited leverage |
| Capital mobilized | The amount of capital mobilized by both the structure is dependent on the uptake of the different products. Based on consultations, lenders have evinced a greater comfort with the first structure, as it seemingly allows for greater flexibility and cover. As banks become more comfortable with the sector, the credit enhancement pool / first loss pool can be used to cover a larger loan portfolio, while the second loss default guarantee can kick in with 50% risk cover. | |
| Cost of guarantee | The overall cost to structure the first loss pool (assuming the 2nd loss pool can emerge from the existing market) would be much lower as it will need to cover a smaller portion of the loan | Higher cost of structuring the entire pool |

**Policy Recommendations**

Given the critical need for credit enhancement to upscale the DRE sector, key policy interventions are pre-requisites to enabling India’s trajectory on its INDC. A key step in this direction would be to establish a guarantee fund utilizing monies from the National Clean Energy Fund (NCEF) or similar public funds.

A sector specific approach would allow for tailoring the solutions to the needs of this evolving segment. This could be implemented by parking the funds, earmarked as guarantee pool, within a central financial institution, which in turn will offer collateral to banks lending to last mile delivery energy enterprises.

To maximize the impact and evidence created, the guarantee should be structured in a way that it aligns to and supports ESCOs which are not geared to seek market debt (instead of the guarantee supporting the 2-3 ESCOs, which can anyway qualify for funding)

Given the overall objective of the guarantee product, which is to ensure that loans are made available at

the rates required, it is essential that the guarantee only ties ups with and supports financial institutions and portfolio companies, which are in alignment with the goals of the guarantee as also the exact business segment that is expected to be supported.

Several DRE energy enterprises have established innovative and sustainable business models. With adequate support and funding, a large part of the energy needs of those that are un-served or under-served currently can be directly switched to clean energy options, thereby contributing to India’s green growth goals. It is estimated that decentralized renewable energy solutions to households and small businesses can impact close to 30 million by 2021. (CLEAN 2015).

**Contours of Potential Pilots**

As discussed above, the Layered guarantee structure seems to hold promise for engaging the market. Based on this indication from the market, cKinetics recommends the development of a pilot guarantee program as outlined below.

#### To get engaged or to learn more about the on-going work related to financing decentralized renewable energy (DRE) please email Aparna Khandelwal at [akhandelwal@ckinetics.com](mailto:akhandelwal@ckinetics.com)

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1. Decentralized renewable energy [↑](#footnote-ref-1)
2. http://pib.nic.in/newsite/PrintRelease.aspx?relid=128403 [↑](#footnote-ref-2)
3. It should be noted here that a loan is recognized as a NPA if the one of loan repayment is delayed between 90 and 120 days, as per the Reserve Bank of India [↑](#footnote-ref-3)