

# ALTERNATE FINANCING FACILITY FOR ENERGY ACCESS IN INDIA



## ABOUT

Shakti Sustainable Energy Foundation works to strengthen the energy security of the country by aiding the design and implementation of policies that encourage renewable energy, energy efficiency and the adoption of sustainable transport solutions.

Intellicap is a pioneer in providing innovative business solutions that help build and scale profitable and sustainable enterprises dedicated to social and environmental change.

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# ALTERNATE FINANCING FACILITY FOR ENERGY ACCESS IN INDIA

*Shakti Sustainable Energy Foundation commissioned Intellect Advisory Services to initiate a program to improve access to capital for off-grid enterprises in India. The program is using a multifold approach to improve access to finance for off-grid enterprises in India and comprises- provision of technical assistance services to off-grid enterprises and financial institutions, designing of an alternate financing facility and a framework to monitor and evaluate the financial performance, operating performance and impact achieved by the off-grid enterprises.*

Off-grid enterprises have the potential to bridge the energy gap, but do not have access to adequate and right kind of capital to do so

## BACKGROUND

India presently has close to 97 million households that are either not connected to the national grid or receive less than four hours of power in a day.<sup>1</sup> While the government is channeling its efforts towards building the required infrastructure to bridge the energy gap, there are significant cost implications related to extending the grid to hilly terrains or sparsely populated areas. The central government is already planning to invest upwards of INR 1 lakh crore for the sector.<sup>2</sup> Cost comparisons on NPV (net present value) basis highlight that solar is a cheaper option to electrify villages beyond 3 km from the grid in hilly regions and 7 km in plains.<sup>3</sup> As a result, decentralized and off-grid solutions can be a potential answer to bridge this energy deficit, especially in areas away from the national grid. Off-grid enterprises provide renewable energy based solutions that can operate independently or in conjunction with the grid. These include solutions such as solar home lighting systems, solar lanterns, and smaller grids powered by solar, wind, hydro, biomass among others. A scoping study of the energy landscape in India highlighted that one of the biggest challenges faced by these off-grid enterprises includes limited access to capital, especially from the traditional sources. This resulted in a detailed effort to assess the needs, challenges and alternate solutions to unlock capital for this sector.

A detailed analysis of financing needs of these off-grid enterprises across stages and business models served as the first step to design alternate financing solutions for off-grid enterprises. Off-grid energy access enterprises require various kinds of capital such as grant, soft debt,

<sup>1</sup> The Business case for Off-grid Energy in India, The Climate Group

<sup>2</sup> Government steps up power grid expansion, Nov 2016, available at [http://www.business-standard.com/article/economy-policy/centre-spurs-transformation-of-power-transmission-116110301262\\_1.html](http://www.business-standard.com/article/economy-policy/centre-spurs-transformation-of-power-transmission-116110301262_1.html)

<sup>3</sup> Empowering India Renewable Energy for Rural Electrification, available at <http://www.eria.org/events/3.%20Mr.Rohit%20Kansal%20-%20Lessons%20Learnt%20from%20India's%20Micro-grid%20Development.pdf>

impact equity, commercial equity and affordable debt based on the stage of operation across the enterprise's overall lifecycle. Product or device manufacturers, assemblers and distributors typically require short to medium term operating capital for research & development, sales, marketing and distribution and working capital for inventory procurement, leasing and purchase of assets/ equipment. Decentralized renewable energy (DRE) micro/ mini grid players additionally require long term capital to finance construction, operations and maintenance. These needs of the enterprises were validated through interviews with founders, a workshop at Sankalp and interactions with financiers. Post identification of enterprise needs, detailed discussions were undertaken with financiers such as banks, NBFCs, impact and angel investors to assess their expectations from channeling capital into these enterprises.

**FIGURE 1: FINANCING NEEDS OF OFF-GRID ENTERPRISES**



## NEED FOR ALTERNATE FINANCING FACILITY

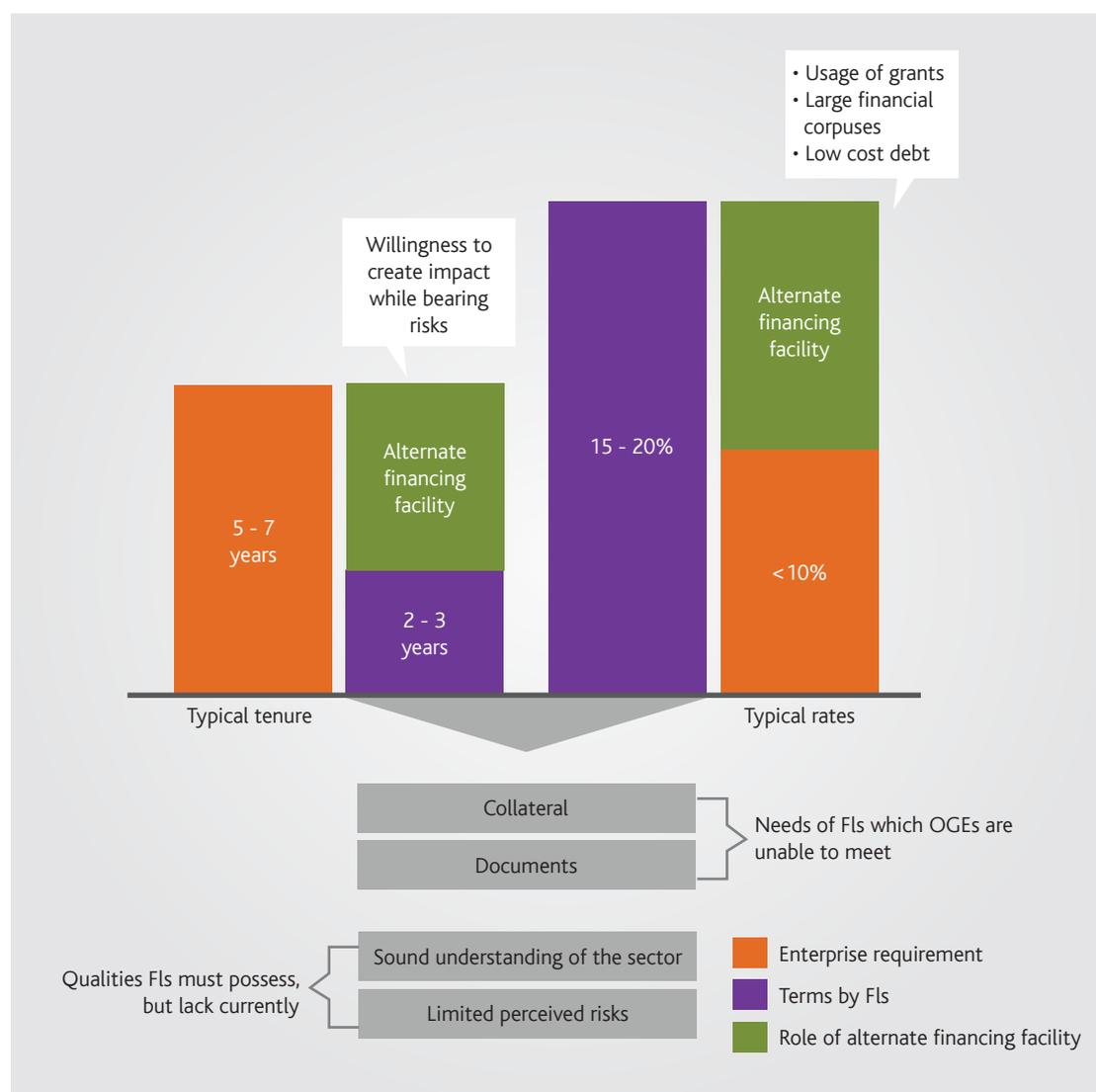
An in-depth comparison of enterprise needs and financiers' return expectations highlighted contrasting requirements resulting in limited flow of capital to the sector. Mismatch in return expectations, perception of risks, tenor of loans offered or period of investment as well as collateral requirements emerged as the major gaps between expectations of financiers and ability of enterprises. Further, the inability of enterprises to provide relevant financial documentation and quantify impact reduces their ability to raise money. Financier's limited past exposure to the sector and limited understanding of the business and its operations also limit capital flow. Inability of enterprises to raise capital from the traditional financial sources points towards the need for alternate financing facilities.

Inability of early stage off-grid enterprises to access affordable debt highlights the need for alternate financing facilities

Alternate financing facilities are critical for the off-grid space due to their ability to provide capital to the enterprises that are unable to raise funds through traditional routes. For instance, even in case of priority sector lending, there are no regulations binding the banks to provide capital to renewable energy enterprises operating in difficult geographies un-served

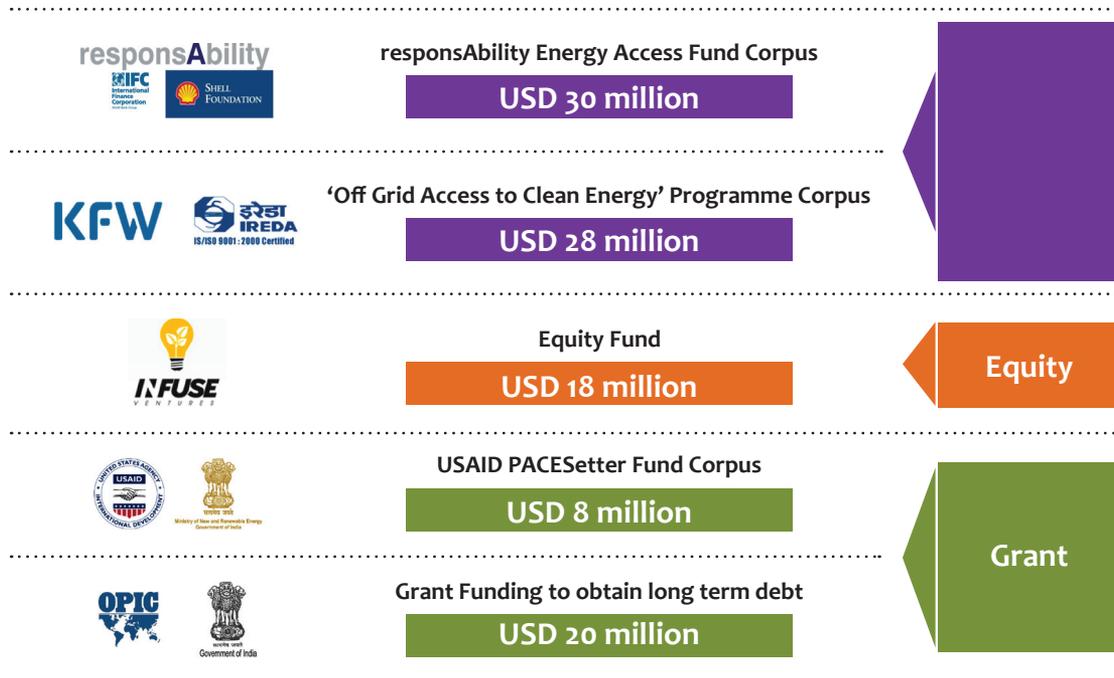
by the central grid. As a result such financing facilities are required and are being supported by multilateral organizations, development financing institutions (DFIs) and foundations. They are designing and supporting alternate financing facilities to provide the low cost patient capital required by off-grid enterprises. Such entities have the ability to provide low cost capital due to access to large corpuses, philanthropic funds for social causes and no compulsory mandates for creating high profits for their entities. Such financing facilities also have the flexibility to design innovative mechanisms and flexible terms to catalyze the sector and stimulate capital flow from commercial financiers.

**FIGURE 2: NEED FOR ALTERNATE FINANCING FACILITY**



Currently organizations such as International Finance Corporation (IFC), Kreditanstalt für Wiederaufbau (KfW), Indian Renewable Energy Development Agency (IREDA), Asian Development Bank (ADB) and United States Agency for International Development (USAID) are supporting such financing initiatives. However, most of these financing facilities provide only one particular type of finance and generally do not focus on different needs of early stage enterprises. Much of this finance is also often concentrated on a few players due to inadequate pipeline of enterprises.

FIGURE 3: EXAMPLES OF ALTERNATE FINANCING FACILITIES



In order to design a relevant financing facility, some of the innovative financing mechanisms prevalent were assessed to identify the key features for the financing facility. Most of the financing mechanisms aim to overcome the existing challenges faced by the enterprises and financing institutions such as need for low cost capital, longer tenures, and guarantees to mitigate the risk of the financiers among others. A detailed market mapping was conducted to identify relevant alternate financing mechanisms for the off-grid and other parallel sectors. These may have been established in either India or any other country. These structures were evaluated across three key dimensions of (i) ease of implementation, (ii) effectiveness for the off-grid sector, and (iii) potential to scale.

- i. Ease of implementation assesses whether the mechanism has been implemented earlier and if it has shown successful proof of concept; has the structure been used in India and in the electrification sector given the existing regulatory limits; and how many number of stakeholders and agencies are involved to operationalize the mechanism.
- ii. Effectiveness for the off-grid sector is assessed by evaluating if the structure can meet the financing needs of off-grid enterprises. It also assesses if it meets lender needs in terms of mitigating their risks of lending in a sector which has a high perceived risk. In addition, the parameter assesses if the structure reduces the transaction costs for the financiers and facilitates impact creation.
- iii. In terms of scalability it assesses how many financing institutions including DFIs are promoting the structure and whether the structure is applicable across stages, business models and products/solutions.

**TABLE 1: SUMMARY AND ASSESSMENT OF FINANCING STRUCTURES EXPLORED AS PART OF THE PROGRAM**

	 Ease of implementation	 Effectiveness for off-grid sector	 Scalability
<p><b>Enhanced Credit Facility</b></p> <p>Capital is provided at enhanced terms- lower rates, flexible repayment</p>	<ul style="list-style-type: none"> <li>• Relevant for the off-grid sector</li> <li>• Requires limited stakeholders- borrower and lender</li> </ul>	<ul style="list-style-type: none"> <li>• Can meet short term and long term financing needs</li> <li>• Can provide capital for up to 10 years at 11-12%</li> <li>• Transaction costs for financing institutions are not lowered in this structure</li> </ul>	<ul style="list-style-type: none"> <li>• Highly scalable and is already witnessing multiple stakeholders experiment with the model including banks and DFIs</li> <li>• Applicable across the spectrum of early and growth stage enterprises and across business models</li> </ul>
<p><b>Blended Debt Fund with Flexible Repayment Terms</b></p> <p>Grant and non-grant (debt) funding is blended and provided as debt with flexible repayment options</p>	<ul style="list-style-type: none"> <li>• DFIs are already implementing it across sectors such as renewable energy, energy efficiency, and transport schemes</li> <li>• It is boosted with additional features like flexible repayment terms</li> <li>• Does not require any significant regulatory changes and involves few stakeholders for operationalizing the structure</li> </ul>	<ul style="list-style-type: none"> <li>• Can meet short term and long term financing needs of off-grid enterprises by providing capital at 12-14% for 5-6 years</li> <li>• Repayment risk for lenders is reduced due to involvement of donor/grants</li> <li>• Transaction cost for lender is transferred to capital pooling fund, generally a special purpose vehicle (SPV)</li> </ul>	<ul style="list-style-type: none"> <li>• Highly scalable due to its ease of implementation and applicability across stages and business models (One of the leading multilateral organization has made three blended investments in South Africa with the clean technology funds)</li> </ul>
<p><b>Decentralized Rural Electrification Bonds</b></p> <p>Bonds are raised through a government backed NBFC and additional partial credit enhancement is provided by banks to improve credit rating of the bond issue</p>	<ul style="list-style-type: none"> <li>• Requires a moderate number of stakeholders including the government, banks, and subscribers</li> <li>• Limited precedent of corporate bonds but project bonds have been facilitated in the past</li> <li>• Already implemented by few government enterprises focusing on for renewable energy</li> </ul>	<ul style="list-style-type: none"> <li>• Restricted to long term requirement of enterprises as it can provide capital at 10-11% for about 10-15 years</li> <li>• Not yet implemented for off-grid/energy access sector due to low credit rating that these bonds are likely to receive unless supported by credit enhancement</li> </ul>	<ul style="list-style-type: none"> <li>• Not very common though some multilateral organizations may be willing to provide guarantee for such bond issuances in impact sectors</li> <li>• Applicable more to DRE players such as mini grid projects with higher investment needs</li> </ul>
<p><b>Social Impact bond</b></p> <p>Issued to achieve a specific impact (e.g. increase in number of households electrified). Collaboration with a government agency to pay for improved social outcomes</p>	<ul style="list-style-type: none"> <li>• Needs modification in policies and will require Government to buy impact created</li> <li>• Fairly complex structure with many stakeholders who may have misalignment of internal objective</li> </ul>	<ul style="list-style-type: none"> <li>• Restricted to long term needs of enterprises</li> <li>• Facilitates and incentivizes direct impact creation and robust measurement</li> </ul>	<ul style="list-style-type: none"> <li>• Holds potential for the DRE segment</li> <li>• Impact bond market has grown over 150 times from 2011 to 2015; investors are recognising the opportunity</li> </ul>

■ HIGH ■ MEDIUM ■ LOW

	 <b>Ease of implementation</b>	 <b>Effectiveness for off-grid sector</b>	 <b>Scalability</b>
<p><b>Guarantee and Asset Backed Securitization</b> Deals with securitizing future cash flows coming from consumer payments in exchange for electricity, valuing these assets as notes, and selling them to investors by listing on an exchange. Structure is backed by guarantees</p>	<ul style="list-style-type: none"> <li>• Already being implemented in India in core infrastructure sector, like in road projects</li> <li>• Can be implemented in the renewable energy sector under the purview of existing regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Limited relevance due to inability of enterprises to provide high yields/ show profits currently</li> <li>• Customer payment data availability for off-grid in India too is currently low barring few enterprises that are using technology enabled solutions</li> <li>• Mechanism offers risk mitigation and lowers transaction cost for lenders</li> </ul>	<ul style="list-style-type: none"> <li>• Primarily applicable to operational and profitable DRE players with strong enforced contracts and a mix of customers including anchor loads, commercial and residential customers</li> <li>• Difficult to scale in India in the present context and applicable to few players and solutions</li> </ul>
<p><b>Asset Lease Financing</b> Owner of the asset (equipment manufacturer or the SPV created for lease financing) provides the right to use the assets to another party against periodic payments</p>	<ul style="list-style-type: none"> <li>• Highly implementable as several infrastructure sectors in India have used lease financing like railways for rolling stock</li> <li>• Indian states have already implemented policies to facilitate leasing models for solar</li> </ul>	<ul style="list-style-type: none"> <li>• Repayment risks are reduced significantly due to assets being on lease</li> <li>• Lender's risk and costs are transferred to SPV which spreads out risks between multiple lessees</li> <li>• Provides a reasonable tenure (3-6 years) and no upfront payment is required</li> </ul>	<ul style="list-style-type: none"> <li>• Not scalable in India since such asset lease financing entities are currently not present in the off-grid sector in India</li> </ul>
<p><b>Peer-to-peer Lending</b> Online platform which involves practice of lending money to businesses through online services that match lenders directly with borrowers</p>	<ul style="list-style-type: none"> <li>• Peer-to-peer lending has been implemented in India and over 30 platforms exist such as Lendbox, LenDen Club, initiative by Loans4SME as part of Green Finance labs promoted by Shakti and others</li> <li>• Sector is currently unregulated</li> </ul>	<ul style="list-style-type: none"> <li>• Can meet varying financing needs due to diverse lender profiles and risk appetites; Can provide loans for 6 month to 5 years and flexible rates</li> <li>• Deal closure may depend on promotion, appeal to lenders and many financiers may not be aware of the evolving business models and technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Applicable across enterprises – including products players, DRE grids and business models</li> </ul>

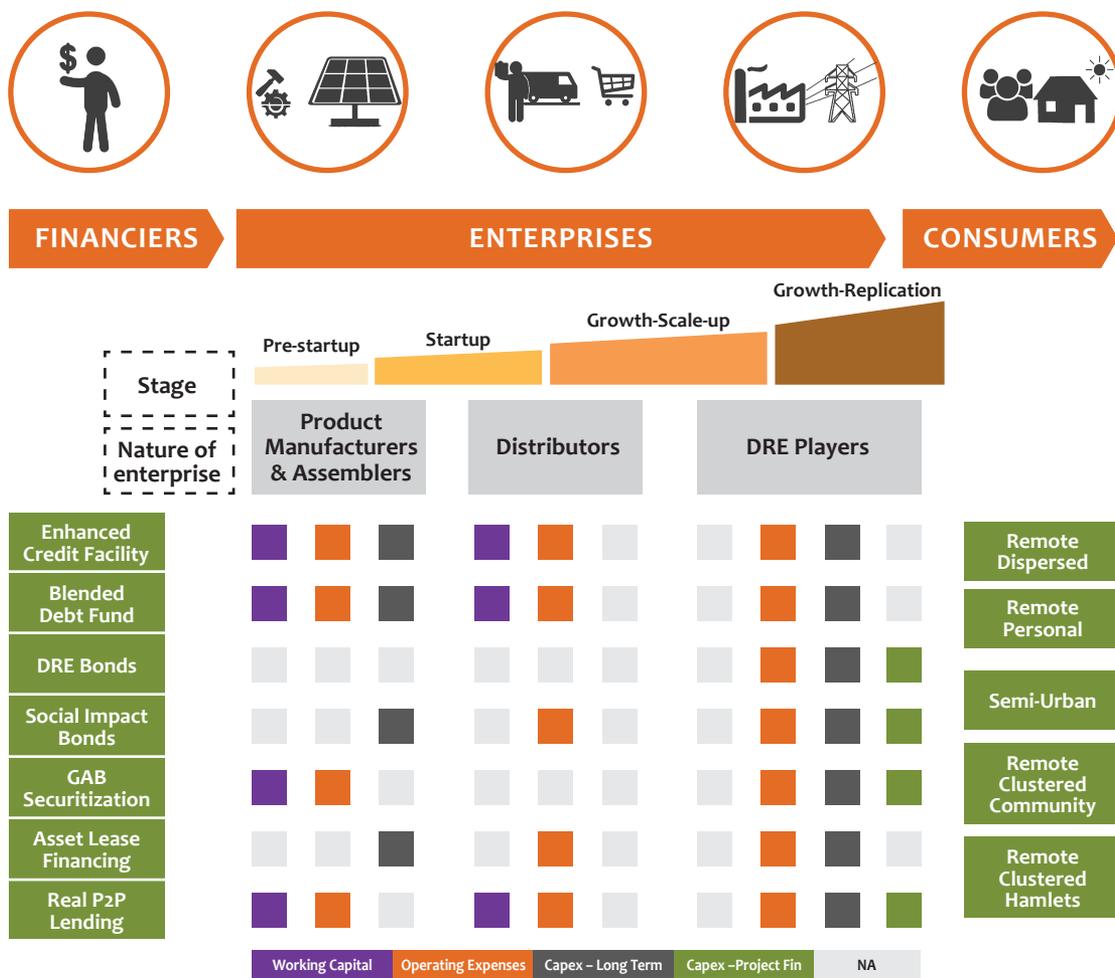
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## POTENTIAL SOLUTION

The inference that emerged through the detailed analysis of industry needs and different financing mechanisms was that none of the mechanisms implemented in-silo can help bridge the diverse financing gaps prevailing in the off-grid sector in India. A broader facility that can cater to different requirements of enterprises by channeling low cost patient capital across stages and business models is the call of the hour. Structures that can attract soft funds and are able to route returnable capital in a sustainable manner through adequate risk mitigation features could see higher traction in India.

Guarantee-backed blended debt structure along with equity to facilitate bespoke financing is proposed as a potential structure to pilot

FIGURE 4: COMPARATIVE ANALYSIS OF EXISTING DEBT FINANCING MECHANISMS



Interviews with enterprises and industry experts validated the need for bespoke financing to off-grid enterprises and to meet very specific need of different enterprises. For this multiple options were designed to source low cost capital from foreign financiers, stimulate domestic

capital through commercial banks and DFIs. Options were also designed to deploy funds. The option of sourcing low cost capital and on-lending at affordable rates, along with provision of a first loss guarantee is being proposed.

Capital for this facility can potentially be sourced through both domestic and foreign sources. However, foreign sources of funds like impact investors and DFIs can reduce the overall cost of capital, especially if donor capital can be used to absorb the currency risk. External commercial borrowing (ECB) and/ or non-convertible debentures (NCD) routes can be leveraged for mobilizing capital. Private foundations are not permitted to use the ECB route allowed for multilateral banks and other lenders. Alternate investment funds (AIF) can be formed to pool capital for equity investments.

#### **NCD is preferred route to channel debt**

- Non-Convertible Debenture (NCD) in this context means a debt instrument issued by a corporate (including NBFCs) with original or initial maturity ranging from three to five year and issued by way of private placement
- An eligible corporate (NBFC) intending to issue NCDs needs to obtain credit rating for issuance of the NCDs from agencies registered with Securities and Exchange Board of India (SEBI)
- Current regulations mandate for a listing of such NCDs however regulatory changes are underway to enable investors to also invest in unlisted NCDs. Other regulatory changes are also underway to allow FPIs (including Foundations registered as FPIs) to subscribe to securitized units of an SPV under RBI Securitization and FPI related regulations

*As per regulations on 31st Dec 2016*

#### **Alternative investment funds are a preferred route to channel equity**

- Alternative Investment Fund may raise funds from any investor whether Indian, foreign or non-resident Indians by way of issue of units. SEBI allows three categories of funds. Category I and II could be relevant for this facility
  - Category I AIF include funds that have a positive spill over on the economy. These include venture funds, social venture funds, and infrastructure funds. It receives various tax exemptions
  - Category II AIF include funds for which no specific incentives or concessions are given by the government. They include Private Equity Funds, Debt Funds, Fund of Funds and such other funds
  - Category III AIF including hedge funds which trade with a view to make short term returns
- It has minimum investment of INR 1 crore per investor and minimum corpus of INR 20 crore; minimum tenure is 3 years

The proposed facility is being designed in line with the latest taxation and regulatory regime and is exploring the right funnel for funds to flow in a sustainable manner for both on-lending

and investing. Risk mitigants such as a first loss guarantee are proposed to be employed to enhance attractiveness for participating agencies. The proposed facility is planned to be housed within a financing institution that brings core expertise in evaluating off-grid enterprises.

Research also suggested that most of the existing financing facilities face challenges related to identification of the pipeline and design of appropriate products to deploy capital. Therefore, an advisory organization is proposed to be set up that can focus on sourcing, product design (merchant cash advance, invoice discounting, inventory financing), and increasing investment-readiness of enterprises through technical assistance.

An expert group comprising multilaterals, DFIs and foundations active in this sector has been set up to provide advisory support and guide the design of the proposed financing facility. Inputs from expert group are being solicited in several areas including-

- Feasibility of the structure
- Potential operational challenges and governance requirements
- Enterprise profiles to be supported and mechanisms for pipeline creation
- Cost and terms of financing off-grid enterprises on a sustainable basis
- Specifics of the features like guarantee fee requirement, level of guarantee
- Willingness to participate in the structure

### **The financing facility is relevant for multiple kinds of participants within the purview of existing regulatory regime**

#### **Foundations, Multilateral/ bilateral organizations, Impact investors and other donors**

- Foundations can invest in both equity and debt, if the mission of the foundation aligns to investing in such deals. Foreign foundations can provide loans in India by subscribing to listed securities as a Foreign Portfolio Investor. As per the FPI regulations they should be legally permitted to invest in securities outside the country of its incorporation or establishment or place of business. They are a part of category III of FPI which includes endowments, charitable societies, charitable trusts, foundations, corporate bodies, trusts, individuals and family offices. For foreign foundations, NCD is also the most preferred route as foreign foundations are not allowed to lend money through the ECB route. Foreign foundations can route equity into alternate investment fund under the FDI route. Foundations can also pool capital in a SPV that is based outside India. Foundations can provide grant to for-profit enterprises under the approval route, where the grant is treated as income by the enterprises and is liable for taxation. In case of not-for-profits, foreign foundations need to follow FCRA regulations.
- Multilateral organizations are allowed to lend as well as invest equity into for-profit enterprise by regulations. Multilateral organizations can lend through ECB or NCD route. For debt multilateral organizations are included as recognized lenders under the ECB route (regulations specify the rate of interest under ECB at all-in-ceiling costs is 6

months LIBOR+350 basis points, with a tenure between 1 to 5 years). Multilateral and bilateral organizations can also be registered as category I foreign portfolio investor to subscribe to NCDs. Multilateral organizations can also lend directly to for-profit enterprises under their clean energy lending programs. However bilateral organizations channel their capital through government organizations. Multilaterals can also invest directly into enterprises. Multilateral organizations can provide guarantees as well. However the guarantee needs to operate outside India, due to regulatory constraints of not having a route for repatriation.

- Impact investors can pool the capital in a SPV based outside India which can then invest in India(off shore) or it can directly pool capital into Alternate investment funds (governed by SEBI) based in India (Onshore). Offshore social venture funds tend to pool capital (and grants) outside India and make investments in India like a typical venture capital fund. Such offshore funds cannot deploy grants as it may require regulatory approval. Onshore social venture funds are required to be registered as Category I AIFs. Social venture funds under the AIF regulations are subject to various restrictions and condition (requirement to have at least 75% of their investible funds invested in unlisted securities or partnership interest of 'social ventures; AIF I are allowed to receive grants and provide grants; Allowed to receive muted returns).

## WAY FORWARD

This phase of the program concluded with identification of a broad structure to facilitate bespoke financing and channel capital- grants, debt and equity for the early stage off-grid enterprises. In the coming year the program will aim to operationalize the facility to provide the required finance to the enterprises while overcoming the supply side challenges.

There are plans to convene the stakeholder advisory group to validate the facility design. The expert group comprises multilaterals, DFIs and foundations active in this sector. This group is also expected to provide advisory support and guide the design of the proposed financing facility. As next steps activities would also include identification of potential participants, calculation of potential investment requirement, defining the measurement mechanism for the finance structure and development of the detailed financial structure. The program will also require additional legal support to identify regulatory and taxation related nuances and build agreements and obligations between related parties. Final structure will be designed and implemented in consultation with Shakti Sustainable Energy Foundation. A fund manager manger would be identified to ensure continuity. Pilot of the financing structure is planned to be conducted to finance 3 to 4 enterprises to validate its applicability. A workshop may also be organized to launch the financial structure.

The program is simultaneously channeling efforts to build a pipeline of enterprises and design specific products and instruments, along with deployment terms. The program also aims to develop case studies to highlight key learning from financing off-grid enterprises for the overall off-grid sector in India.

Program aims to operationalize the financing facility to unlock capital for the early stage off-grid enterprises in India in 2017







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