STRIDES TO SUCCESS

A profile of successful innovators and active investors in the cleantech space
Project team

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A profile of successful innovators and active investors in the cleantech space
The Earth's natural capital – biodiversity, ecosystems and ecosystem services – is limited. In a growing economy like India, increasing population and rapid urbanization are adding to the pressures on our constrained resources. WWF's 2018 Living Planet Report highlights the urgent need to transition to a net carbon neutral society through clean energy and green finance. The special IPCC report – Global Warming of 1.5°C also reiterated the risks associated with the projected climate change.

In this scenario, it is important to foster a culture of innovation to develop sustainable development pathways to meet our socio-economic development goals and tackle the increasingly evident impacts of climate change. A low carbon development approach with focus on technological innovation with adequate funding opportunities and policy support is key to ensure our long-term energy security and help meet India's climate change commitments.

WWF's Climate Solver initiative has endeavoured to accelerate the development and use of low-carbon technologies in the local market. The platform continues to discover, support and strengthen small and medium sized enterprises to scale their businesses and contribute to addressing India's climate change and energy poverty challenges. In addition to the Climate Solver platform's ongoing ecosystem support activities, this report 'Strides to Success' will help innovators understand the availability of capital at different growth stages. The case studies outlining the capital raising efforts of successful innovators and the repository showcasing the active financiers in the climate innovation ecosystem, will prove to be a credible knowledge resource for aspiring entrepreneurs.

Given the urgency of the impending challenges, it is important for us to collectively work towards empowering our climate cleantech innovation ecosystem. The policymakers, financiers and technology users need to come together to drive the adoption curve of these innovations and drive impact.

Ravi Singh
Secretary General & CEO
WWF - India
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India is committed to contributing to the global low carbon growth agenda. By 2030, India intends to reduce the emissions intensity of its GDP by 33% to 35% from 2005 levels. The focus is on diversifying and growing its energy portfolio to reduce its carbon emissions and support the sustainable growth of the economy. This has encouraged several government and private sector led interventions to accelerate renewable energy, industrial efficiency and clean mobility.

Low-carbon transition requires the development of new innovative products, processes and services, presenting an exciting opportunity for cleantech innovators. The Government of India has taken a lead in enabling entrepreneurship through schemes, such as the Startup India Scheme. The 2017 Country Innovation Profiles released by the Global Cleantech Innovation Program states that South Africa and India lead the trend in emerging cleantech innovations, which can translate into significant commercialized enterprises in the cleantech space.

Despite the market opportunity, the journey of a venture from the stage of ideation to commercialization is demanding and challenging. To ensure that ventures in these emerging sectors scale in line with the demand landscape, access to financing is key.

This report synthesizes the key learnings shared by innovators for gaining traction with the investors; specifically:

- **Understanding the investor and the investment philosophy:** Identifying the right investor(s) who shares a similar vision for the business is key
- **Compelling value proposition with clear and measurable impact:** A well-articulated and compelling positioning statement helps attract attention of the investor
- **Scale of the opportunity and company’s preparedness to tap into it:** A detailed outline of the market opportunity is important to get investors excited
- **Strong leadership and good governance:** Strong leadership is important to inspire and bind the entire team around the enterprises’ unifying vision and in turn inspire the confidence of the investors
- **Focus on business elements and not merely the innovation:** Robust business plan along with proven elements of a scalable business model helps create a strong case for an enterprise to raise capital

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1. [https://www4.unfccc.int/sites/ndestaging/PublishedDocuments/India%20First/INDIA%20INDC%20TO%20UNFCCC.pdf](https://www4.unfccc.int/sites/ndestaging/PublishedDocuments/India%20First/INDIA%20INDC%20TO%20UNFCCC.pdf)
Simultaneously, the views of the investor community reveal the following aspects as critical to the success of an enterprise:

- **Gauging the need and preparedness for raising capital**: Articulating the purpose of the capital being raised and also demonstrating that the enterprise has the building blocks in place is a core prerequisite.
- **Managing the capital raise process without despair**: The capital raise process including due-diligence, negotiations and documentation are time-consuming and many times may not result in the desired outcome. However, the team should be resilient in managing such situations without getting demoralized.
- **Tech-enabled and not tech-dependent**: Technology has become ubiquitous and cheap to develop; hence it is important not to be entirely locked into an underlying technology, losing the focus on the innovation.
- **Passion and perseverance are key virtues**: Passion and perseverance demonstrate the commitment of the innovator and hence are important determinants for an investor.
- **Revenue focus is key (the rest will follow)**: A business model that generates early revenue is important for the business model to gain the confidence of the investor.
- **Chemistry and not valuation alone should guide investor selection**: Engaging with the right investor is critical for the success of any venture.

The report summarizes the learnings of the innovators on one hand, and collates the views of the investors on the other, exploring the complementary nature of the two. Understanding investor interests and needs, along with a clear sense of purpose for the proposed innovation are critical in engaging them.

Innovators with concrete business plans, focused on achieving well laid out targets with clear business elements, backed by strong leadership and governance structures are more likely to gain traction with the investors and in mobilizing funds. Ultimately, the passion, perseverance, resilience and dedication of the innovator, supported by an impactful revenue model and a compelling value proposition, are the key drivers for accessing finance from investors.
India paving its way to a clean energy future

Proliferation of global risks related to energy security and climate change have catalyzed the global trend of energy efficiency and energy conservation. The concerted efforts to transition to a low-carbon economy, have spurred investments in the clean energy ecosystem. As per Bloomberg, global investments in clean energy for the first half of 2018 alone was US$138.2Bn\(^3\). Globally, cleantech sector is gaining traction and there has been an increase in the penetration of low carbon solutions.

The Government of India has made it a national priority to drive development through cleaner growth, with focus on areas, such as renewable energy and energy efficiency. As one of the world’s fastest growing economies, India aims to scale-up its renewable energy capacity to 175 GW by 2022. Market-based mechanisms, such as the Perform Achieve and Trade (PAT) scheme have been introduced with the aim to catalyze energy efficiency in large scale energy-intensive industries. As part of its efforts to modernize India’s mobility sector, the Government of India is looking to have 30% of vehicles in the country as electric vehicles by 2030. There is also an increased emphasis on cleantech driven agriculture to help integrate rural value chains, thereby enhancing food security and local livelihoods.

Thus, India presents an exciting frontier in the space of low-carbon technologies with small, medium as well as large sized enterprises seeking to build and offer solutions to enable this low carbon transition. As the country continues to make important strides in the space of cleantech, technology and business model innovations would be required to help climate solutions achieve scale, contributing significantly to addressing climate change and energy poverty challenges.

Entrepreneurs and the challenge to access capital

The capital-intensive nature combined with long lock-in periods of investment has made access to finance a critical challenge to the cleantech ecosystem. Although, the cleantech space has seen increasing investments and ingress of various strategic investors, access to affordable source of capital for the small and medium enterprises (SMEs) remains a challenge. The lack of consolidated information on the cleantech investor landscape requires these resourced constrained SMEs to spend a lot of time and effort in choosing the right financing opportunities to pursue.

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As entrepreneurs and investors continue to challenge the status quo, we hope this report inspires new players and guides existing ones by bringing attention to key areas pertinent to all stakeholders.

About the report

Climate Solver is WWF’s climate innovation platform to accelerate and scale the development and use of low-carbon technologies to radically reduce CO₂ emissions and provide sustainable energy access for all. The platform promotes low-carbon technology diffusion, awareness, and innovation as an immediate practical solution to climate change. This report is part of an ongoing initiative by the platform to create deeper understanding of the clean energy innovation ecosystem for cleantech entrepreneurs.

From the birth of an idea to achieving maturity, financing plays a critical role in supporting innovation-based entrepreneurship. The objective of this report is to catalyze innovation-centered cleantech technology and business ventures by providing insights from the journey of some peer innovators, particularly on aspects that helped accelerate market uptake and financing.

The report presents an overview on the growth trajectory of a set of SME innovators and shares their learnings from their fund-raising efforts across their development stages. The report aims to present an unbiased and objective description of the events in the lifecycle of the selected cleantech innovators businesses. The insights from their growth path are likely to be a useful tool for emerging players and innovators who are looking to achieve scale.

In addition, the report maps the financing landscape across the clean technology innovation space in India. The detailed investor directory in the annexure lists close to 100 investors/funds that are operating in the clean technology innovation space in India.
JOURNEY OF A SUCCESSFUL INNOVATION
Profile of cleantech innovators in India
Innovation is essential for sustainable economic development. Over the past two years, India has climbed up the Global Innovation Index to achieve a rank of 57 in 2018. The tremendous market potential coupled with government driven initiatives like Make in India, has accelerated the growth of cleantech innovation in India. The ecosystem is slowly maturing and the pre-requisites for success across different stages of enterprise journey are being better understood.

The different growth stages of an innovation’s life-cycle include:

- **Research & development**: Generation of an idea, which is then tested at a lab-scale.
- **Proof of concept**: Designing and testing of the prototype (i.e. pilot testing).
- **Early stage**: At this stage, technical validity has been proven on the field; the focus of the enterprise is on scaling of the product and getting to a sustainable business model.
- **Growth stage/ Commercialize**: At this stage, it is proven that manufacturing can be scaled economically; the viability of product technology at scale has also been proven.
- **Mature stage**: An innovation can be classified as mature when the commercial model is well accepted and several new players start to enter the market.

From the stage of conceptualization of an idea to achieving growth and commercialization, there are various challenges along the way. However, there are several examples of successful innovators who have overcome these challenges to grow their business and achieve the impact potential of their innovation.

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4 https://www.globalinnovationindex.org/gii-2018-report#
Methodology for identifying case studies

Innovations (technology and business model) in the cleantech space were mapped based on the solution type and application area. Mapping of over 90 enterprises offering solutions across energy access, energy efficiency, sustainable mobility, energy management systems etc., was carried out for shortlisting enterprises which have achieved growth/commercialization. Based on the mapping exercise, 29 enterprises were identified for further consideration.

<table>
<thead>
<tr>
<th>Segment</th>
<th>92 Enterprises</th>
<th>29 Enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar home lighting systems/devices</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Smart sensors and IT tools</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Micro-/ mini-grids</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Cold storage, freezers and dryers</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Clean/ improved cookstoves</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Energy efficient appliances</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sustainable mobility</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Solar and wind energy-based power/ energy generation</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Biomass gasifier</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Bio-digester</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Alternate cooling technologies/ techniques</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Industrial process heat applications</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Irrigation</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Waste heat recovery</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

These 29 enterprise profiles were further analyzed, on their GHG impact effectiveness, potential of replicability as also traction on the financing front, to help define the six (6) showcases.
• Scale of GHG impact associated with the category
The reduction potential in GHG emissions by 2032 from business-as-usual scenario through ‘energy’ reduction (MT CO2) for different sectors was used as the basis to estimate the potential scale of impact at a sectoral level for each innovation.

• Level of GHG impact at the unit/business model level associated with the category
To assess the impact on ground at the unit and likely business model level in terms of GHG mitigation, the reduction in fuel consumption/ associated energy savings/ reduction in dependence of fossil fuels was used.

• Uniqueness of innovation
The uniqueness of the innovation was assessed based on whether the venture entailed technology innovation, business innovation or both. Solutions where several companies had similar offerings were deemed lower on the innovation scale.

• Type of capital raised
This was a key parameter of consideration, particularly success in raising institutional capital even as all sources (across debt, equity, subsidies and technical assistance grants) and quantum of capital was mapped.

**The final shortlists**

Based on these scoring criteria, six innovators (listed below) providing solutions in the energy access and GHG reduction space were finally shortlisted for detailed analysis. The case-studies outlining the journey of these innovations till date, challenges encountered, triggers for external investors⁵ and the associated learnings are captured in the following chapter.

![Diagram with 29 enterprises at the top and 6 enterprises at the bottom]

### Scale of GHG impact associated with the category

<table>
<thead>
<tr>
<th>Impact on ground at the unit and business model level</th>
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<tbody>
<tr>
<td>Uniqueness of innovation</td>
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<tr>
<td>Type of capital raised</td>
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<table>
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<th>Atomberg Technologies</th>
<th>Carbon Masters</th>
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<tr>
<td>ecoZen solutions</td>
<td>Simpa Energy</td>
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⁵ Note: All figures provided in brackets in the report are based on the yearly average exchange rate YTD (as on November 15, 2018) as indicated below:
US$ 1 = ₹68.05
€ 1 = US$ 1.19
CASE STUDIES

Picture credit: WWF-India
Established in 2012 by fresh graduates from IIT Bombay, Atomberg Technologies currently sells India’s most energy efficient fans under the brand name of ‘Gorilla Fans’. The fan comes with smart features like remote control, sleep mode and timer, and consumes 65% less power as compared to the conventional fans. The efficiency is primarily the result of a superior Brushless Direct Current (BLDC) motor design and a driving algorithm called atomSENSE, which precisely senses various motor parameters in real time and controls the motor in a closed loop, avoiding all possible losses.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>Established by a group of fresh graduates from IIT Bombay</td>
</tr>
<tr>
<td>2012</td>
<td>Incubated by IIT Bombay’s Society for Innovation and Entrepreneurship (SINE)</td>
</tr>
<tr>
<td>2015</td>
<td>First prototype of BLDC motor designed, which reduced power consumption by 65%</td>
</tr>
<tr>
<td>2015</td>
<td>Seed funding raised from promoters of Arti group; Introduction of Gorilla fans</td>
</tr>
<tr>
<td>2016</td>
<td>Revenue of ₹3 Mn (US$0.04 Mn) per month achieved</td>
</tr>
<tr>
<td>2016</td>
<td>Started as a B2B player, Atomberg expanded into the B2C market</td>
</tr>
<tr>
<td>2016</td>
<td>Next round of capital raised from IDFC-Parampara Capital</td>
</tr>
<tr>
<td>2016</td>
<td>US$1 Mn (₹68 Mn) raised for enhancing manufacturing capacity, plant automation, product development &amp; branding, and marketing for scaling their B2C market presence</td>
</tr>
<tr>
<td>2016</td>
<td>Future plans</td>
</tr>
<tr>
<td>2016</td>
<td>Target to reach an annual revenue of ₹1000 Mn (US$14.70 Mn) by 2019-2020</td>
</tr>
</tbody>
</table>

FINANCING CHALLENGES
Access to investors was relatively easy due to presence of a strong team but convincing investors was a challenge

OVERCOMING FINANCING CHALLENGES
Proving substantive market opportunity through constant revenue growth and wide-range application of the energy efficient motor
Founders
Manoj Meena, Sibabrata Das
Incorporation year
2012
Headquarters
Mumbai, Maharashtra
Investors
Arti Group, IDFC-Parampara Capital
Website
www.atomberg.com

The founding team

Manoj Meena
A dual degree holder in Electrical, Electronics and Communications Engineering from IIT Bombay, Manoj has been recognized as an innovator and been felicitated with awards such as Tech Color of the Institute, Institute Tech Citation Award. He was featured in Forbes India '30 Under 30' list of 2018 along with co-founder Sibabrata.

Sibabrata Das
Even as he pursued a B. Tech degree in Civil Engineering from IIT Bombay, Sibabrata co-founded an E-Commerce company during his last year at engineering school. He later exited the same to co-found Atomberg Technologies.

Overview of the journey

Genesis of the idea
Manoj’s unwavering interest in starting his own enterprise led him to establish Atomberg in 2012. He was later joined in 2013 by Sibabrata, a fellow IIT-Bombay graduate. Initially, for the first three years, Atomberg was involved in creating cutting-edge projects, such as data acquisition systems and vehicle tracking systems. They however realized the limited scalability of these solutions and hence crafted a super-efficient BLDC motor and decided to foray into the segment of energy efficient appliances. In particular, they found the ceiling fans segment appealing.

Drivers to enter the market of energy efficient appliances
Ceiling fans were amongst the most ubiquitous items and yet there hadn’t been any significant design innovation for several years. Given the potential of enhancing efficiency, as well as the market scale in the ceiling fans segment, Atomberg decided to venture into energy efficient appliances.
As Arindam Paul, head of Atomberg’s marketing and strategy team, puts it, “We are in the business of Fast-Moving Electrical Goods. A good comparative for energy efficient ceiling fans is how the market for LEDs was 5 to 7 years back and we expect similar explosion of the market”.

**First big step: Designing the prototype**

Research and development work on creating energy-efficient appliances started in February 2015 in the labs of IIT Bombay’s **Society for Innovation and Entrepreneurship (SINE)**. After months of effort, they successfully crafted the first prototype of BLDC motor for ceiling fan, which reduced power consumption by 65%. This was the turning point - paving the way for entry into the motor-based home appliances market.

**Prototype to commercialization**

**Raising the seed round**

After having successfully designed their first prototype, Atomberg’s next step was to set-up their manufacturing unit and enter the market. At this stage, help came in through their IIT Alumni network. **Promoters of Arti Group** (public-listed chemicals company headquartered in Mumbai) backed them with the seed funding of ₹10 Mn (US$ 0.15 Mn) in 2015. These funds enabled the company to set-up its manufacturing unit with an initial capacity of **10,000 units per month in Mumbai**.

**Expanding the target segments**

Although the B2C segment had significant market potential, it required considerable resources for channel development and marketing. Instead, Atomberg team decided to pursue opportunity in the **industrial sector** focusing on sectors such as the ceramic industry, which used fans for 20 hours per day and were typically prone to voltage fluctuations. They also saw potential in **academic institutions** such as schools and universities, which typically had more than 50 fans which typically runs for over 8 hours a day for most part of the year.

After gaining a foothold in the B2B segment, Atomberg planned its B2C foray. With revenues touching the level of ₹3 Mn (US$ 0.04 Mn) per month, they successfully raised **their next round of funding of US$ 1 Mn (₹ 68 Mn) from IDFC-Parampara capital (Parampara Early Stage Opportunities Fund I)** in June 2016. Funds were raised to primarily enhance the manufacturing capacity, plant automation, product development, branding and marketing to scale their B2C efforts including through online channels.
To bolster the working capital in the business, they have also tapped into funds to the tune of ₹30 Mn (US$0.44 Mn) under the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTSME) scheme.

Despite their initial success, raising this second round of equity infusion proved to be a challenge. A major deterrent faced by the company was the perceived lack of success and rapid scale in the manufacturing centric startups unlike the e-commerce segment. Therefore, most venture capitalists didn’t seem interested.

Recognizing that investor interest would emerge if the significant market opportunity was clearly presented, the team did not position their venture as an energy efficient ceiling fan company but instead pitched their inherent core proposition i.e., their motor. This clearly strengthened their case for market potential as it could be expanded to other appliances such as coolers. This coupled with their constant revenue growth validated the potential and enabled them to successfully raise capital.

Currently, at a revenue of around ₹35 Mn (US$0.51 Mn) per month, with 60% being B2C sales, Atomberg is targeting an annual revenue of ₹1000 Mn (US$14.70 Mn) within 2019-2020. In addition, the company is planning to roll-out newer smart products with their motor being the core differentiator. The company is also planning to go for another round of equity infusion over the next 6 months or so to fuel their growth plans.

**LEARNINGS**

Aspects that enabled access to capital:

- Ready prototype
- Good team
- Market opportunity for solution
- Constant revenue growth
- Strong business plan (with clear outline for the next 12 months)
- Execution discipline

“We are not a cleantech fund; we saw Atomberg Technologies as a super-efficient motors company having multiple use cases and thus a sizeable market”

- Harsha Mundhada
- IDFC-Parampara Capital

“We currently have the most efficient motor in the market but we don’t have an IP. However, things that worked for us and can help any innovator is their conviction, concrete business plan and strong execution roadmap”

- Arindam Paul
- Atomberg Technologies
Incorporated in 2012 in Bengaluru, Carbon Masters converts organic waste from bulk-generators like farms, restaurants, IT parks, etc. into Bio-CNG and organic manure. The firm has a current total installed capacity of around 70 TPD and produces 2.5 TPD of Bio-CNG and 7 TPD of fertilizer.

The three main products being offered by Carbon Masters are:

- **Carbonlites Cylinders**: Bottled Bio-CNG
- **Carbonlites-In-A-Box**: Biogas plant housed inside refurbished shipping containers
- **Carbonlites Organic Manure**: Bio-enriched organic manure produced by combining the biogas slurry with garden waste

### Established

- **By two graduates in Carbon Management from the University of Edinburgh**

### Pilot testing

- **10TPD dysfunctional biogas plant in Dodaballpur, Karnataka used for pilot testing**

### Signed deal with Mahindra & Mahindra

- **Crafted an asset light ‘Revenue Sharing Model’ wherein ₹ 70 Mn (US$ 1.03 Mn) was invested by M&M in a 40TPD plant in Malur, Karnataka and Carbon Masters was responsible for design, development and O&M**

### First round of external capital raised from Indian Angel Network and Sangam Ventures

- **With strong unit economics in place, ₹ 40 Mn (US$ 0.59 Mn) raised**

### Future plans

- **Plan to increase the current capacity of 65-70 TPD to 85 TPD by March 2019 with a vision of processing 2400 TPD in 9 states across India by 2023**

### FINANCING CHALLENGES

- Investors’ lack of understanding of their business model and the associated risks

### OVERCOMING FINANCING CHALLENGES

- Identifying the investors who understood their business and shared similar vision
**Founders**
Kevin Houston, Somanath Narayan

**Incorporation year**
2012

**Headquarters**
Bengaluru, Karnataka

**Investors**
Indian Angel Network, Sangam Ventures

**Website**
www.carbonlites.com

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**The founding team**

**Kevin Houston**
Kevin has over 30+ years of experience in sales, business development and consulting with companies such as Procter & Gamble, PwC Consulting and IBM Global Services. He holds a Master’s degree in Carbon Management from the University of Edinburgh. He provided the initial funding to develop Carbonlites in India.

**Somanath Narayan**
Som is an Environmental Engineer with a Masters in Carbon Management from University of Edinburgh & Postgraduate Diploma in Environmental law from National Law School of India University. He co-founded Carbon Masters in 2010 and has successfully combined his engineering and carbon domain expertise to lead the effort in developing the commercial applications for Carbonlites and taking them to market.

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**Overview of the journey**

**Genesis: The start of India’s first branded bottled Bio-CNG**

Started as a carbon foot-printing and reporting consulting firm in 2009 by Kevin and Som during their time at the University of Edinburgh, the firm’s focus was on reducing exposure of organizations to climate risks by supporting them in measurement, management, reduction and reporting of their carbon emissions. The firm also developed a GHG accounting software platform called ‘Carbon Guru’ for this purpose.

Carbon Masters journey in India began in 2012 when Som returned to India. With a good overseas track record in carbon management consulting assignments, Carbon Masters decided to expand their work in the country, only to realize that there was limited demand for similar work in India. Trained in carbon management, Som started to look at other options like solar power and biomass.
Given the high potential for carbon mitigation through conversion of organic waste into energy, they hit upon the idea to convert **organic waste into Bio-CNG, an energy source for cooking, transportation and back-up power generation**.

**Identifying the market to target**

With the product idea in place, they focused on defining the appropriate target market segments. While segments such as telecom towers and industrial customers seemed lucrative, the team chose to give these a pass as they felt the solution wasn’t ready for these segments, both in terms of price attractiveness and reliability demanded (in case of telecom towers). Instead they zeroed in on the restaurant market in both urban and rural areas, which consume LPG at commercial rates.

**Restoring a dysfunctional unit for pilot testing**

To pilot test the idea, in 2014, the company restored a dysfunctional biogas plant having a capacity of 10TPD in Dodaballpur, Karnataka. Kevin invested the seed amount of ₹ 5 Mn (US$ 0.07 Mn) for the cylinders, trials, and for building and demonstrating the solution. They were able to successfully bottle the produce from the unit and sell it to various clients including Konark Hotel, SLV Adiga Residency, Woodlands Hotel, giving them confidence in the company’s idea. While pilot testing, they also helped run three of Mahindra’s trucks on bio-CNG (incidentally these were the very vehicles which were transporting waste to the unit and also subsequently transporting the bottled bio-CNG). Even as bio-CNG was not deemed yet as a fuel for transportation, it did grab the attention of M&M management.

**The breakthrough: Deal with Poweral Division of Mahindra & Mahindra**

Carbon Masters’ major breakthrough was inking an **eight-year deal with the Poweral division of Mahindra & Mahindra in April 2016**. This deal entailed Carbon Masters being responsible for mobilization of waste, managing the operation, and commercialization of the produce from the 40TPD plant in Malur, Karnataka whereas Mahindra & Mahindra invested ₹ 70 Mn (US$ 1.03 Mn) in the plant setup. A transparent **revenue-sharing model** was adopted enabling Carbon Masters to focus on operations and sales of the produce from the plant.

**Crafting innovative solution for ISKCON temple: Carbonlites-In-A-Box**

In 2016, Carbon Masters also devised a solution for ISKCON temple in Bengaluru. The charitable trust fed one lakh children per day, generating ~1.2 T of organic waste, for which the biogas plant was an ideal solution. However, the space in the temple complex was inadequate for setting up a conventional biogas unit.
To solve this space constraint, Carbon Masters innovated and developed a fully functioning 1TPD biogas plant housed inside refurbished shipping containers, which they call ‘Carbonlites-In-A-Box’. The plant now produces 50 kg of Carbonlites Bio-CNG per day that displaces equivalent amount LPG for ISKCON temple. The solution not only requires much lesser space but is also quicker to build (6 months) as compared to 15 months for other plants. Having successfully implemented the project for ISKCON, Carbon Masters was also awarded two projects by the state government to build Carbonlites-In-A-Box at the University of Agricultural Sciences (Capacity – 300 kg/day) and the Department of Animal Husbandry and Veterinary Sciences (Capacity – 1 TPD) in Bengaluru.

**Tapping into institutional capital**

Kevin and Som spent close to two years reaching out to different investors and scouting for funds. It was finally in June 2017 that the duo met Nagaraja Prakasam (Indian Angel Network) and Karthik Chandrasekar (Sangam Ventures) who invested ₹40 Mn (US$ 0.59 Mn) in Carbon Masters and joined the company’s board.

At the time they met their first investors, the company’s revenue was in the range of ₹5 Mn (US$ 0.07 Mn), which increased to ₹7 Mn (US$ 0.10 Mn) the following year (i.e. FY 2017). Given that the revenue levels were modest in the initial years, they realized that for raising capital, it would be imperative to find an investor who understands the business or shares a similar vision.

Today, the company’s revenue model comprises of four streams: 1) Bio-CNG; 2) Bio-fertilizer, which is sold under the brand name of Carbonlites and contributes to 60% of the revenue; 3) Engineering and services (setting-up of plants- Carbonlites-In-A-Box); and 4) Business services which involves managing the logistics of waste collection from tech-parks and premium hotels.

With a current installed capacity of 65-70 TPD, Carbon Masters was successful in clocking sales of ₹26 Mn (US$ 0.38 Mn) in FY 2018. The plan is to increase the capacity to 85 TPD by March 2019. With the roadmap for next 24 months already laid down, Carbon Masters is all set for a bright future and has also initiated the process for raising next round of capital (combination of debt and equity aggregating to US$ 7~8 Mn) to power this growth and launch Carbonlites across India.

**LEARNINGS**

Aspects that enabled access to capital:
- Solid unit economics and asset light model enabling them to scale prudently
- Team with requisite domain experience and orientation
Setup as an energy management company, Ecolibrium Energy helps commercial and industrial customers achieve energy savings and enhanced asset productivity through predictive maintenance and productivity insights.

**SmartSense:** Flagship IoT platform to improve asset efficiency through predictive analysis

**Established**
With the aim to reduce T&D losses using Information Technology

**Incubated at IIM-A’s Centre For Innovation, Incubation and Entrepreneurship; Raised seed capital**
₹ 2 Mn (US$ 0.03 Mn) raised as a part of incubation support to make product robust and explore market opportunities

**Institutional capital raised from Infuse Ventures and IFC**
₹ 92 Mn (US$ 1.4 Mn) raised for product strengthening and R&D

**Evolution of solution to provide predictive maintenance**
Algorithm (branded PowerGenome) predicting motor failure developed, thus reducing unplanned downtime, maintenance costs and energy consumption

**Next round of capital raised from JLL and Infuse Ventures**
₹ 190 Mn (US$ 2.8) raised to expand to international markets and to deepen customer engagements

**Future plans**
Plans to expand to the market in Europe and the UK

**FINANCING CHALLENGES**
Time taken to close the financing round was more than expected and required significant bandwidth

**OVERCOMING FINANCING CHALLENGES**
Starting the process well in advance and possibly engaging an external advisor well connected to the investor segment
The founding team

**Chintan Soni**
Chintan completed his PGDBM in Telecom Management from Symbiosis Institute of Telecom Management in 1998, which gave him a background in telecom, information technology and wireless communications. After over a 10-year stint in the industry with leading organizations such as Schlumberger and Gemalto, he cofounded Ecolibrium Energy in 2008.

**Harit Soni**
A telecommunications Engineer from Bengaluru Institute of Technology and a Chevening Gurukul Fellow from the London School of Economics, Harit worked with various organizations such as Infosys, AIESEC Canada and KPMG before turning an entrepreneur. He is also the winner of the Swedish Institute Sustainability Fellowship given to leading sustainability practitioners in India.

Overview of the journey

The high transmission and distribution losses in the power sector triggered the idea for an energy data-based company in the minds of the Soni brothers. Back then 'Smart Grid' had started to gain popularity and the duo believed that by tapping into Information Technology, they could potentially reduce the T&D losses. They pitched their idea of creating smart grids for distribution companies in India, which got them incubated at the Indian Institute of Management-Ahmedabad (IIM-A)'s Centre of Incubation.

As part of the incubation support, in 2010, Ecolibrium Energy received a seed funding from CIIE of ₹ 2 Mn (US$ 0.03 Mn). By then, they had demonstrated their concept and benefits of advanced metering and real-time monitoring of data through a pilot project for Torrent Power.
The team spent most of their incubation period in making their product robust and exploring market opportunities. Commercial and industrial sectors became the segments of focus because of the huge opportunity they represented, as the largest consumers of energy. Ecolibrium devised a continuous energy data monitoring platform, branded SmartSense, for monitoring energy consumption. With large volumes of data coming in, to create value and actionable information for the client, the customers were empowered to set an upper and lower limit, and were notified of any breach of the limit, thus enabling corrective actions. The revenue model was primarily the one-time sales of the device (Intelligent Energy Monitoring Unit).

As a next step to ensure effective energy management, the company also evolved its energy analytics capabilities. Algorithms were developed and resultant analysis shared with the clients through daily, weekly and monthly reports. Customized dashboards for the clients with features such as past trends, impact of change of parameters on energy trends etc. enhanced the value addition to the clients.

**Raising first round of institutional capital**

With the intent to add additional features and strengthening their solution through research and development, Ecolibrium Energy raised their first round of capital in 2012. With almost 60 customers onboard, they raised Series A funding of about ₹ 92 Mn (~US$ 1.4 Mn) from Infuse Ventures (~US$ 0.4 Mn) and IFC (~US$ 1.0 Mn).

**From insights to predictive maintenance**

As a company that believed in continuously innovating and transitioning to asset intelligence (as opposed to just asset monitoring), motors of different makes and sizes were studied for a year.

While testing the motors in the lab, they discovered that even before early signs of motor failure like increased noise or enhanced heat are observed, the electrical signals started varying – thus providing a leading indicator on a likely failure. Capitalizing on this, the team developed an algorithm (branded PowerGenome) that detects any change in mechanical behaviour reflected through variation in the earliest possible signal. **Thus, SmartSense motor insights helps reduce unplanned downtime, maintenance costs and energy consumption through predictive maintenance.**
Adopting a new business model

After the launch of the newer version of SmartSense which marked the arrival of predictive intelligence for energy efficiency and asset maintenance, in 2016, Ecolibrium Energy shifted their model to software as a service (SaaS). The two services currently being offered are:

- Energy management
- Predictive maintenance

Under the new model, the cost has two components - a negligible initial one-time amount for hardware installation and an annual charge based on the number of energy points being monitored.

In 2016, Ecolibrium Energy also raised the Series B round of funding of ₹ 190 Mn (US$ 2.8 Mn) from JLL (an investor in real estate technology firms) and Infuse ventures to expand to international markets and to deepen customer engagements. Currently, Ecolibrium Energy is serving around 700 facilities across 500 organizations and has international presence in South East Asia and Dubai, and is also looking to expand to the European and the UK market.

LEARNINGS

- Time taken to close a round of investment is often longer than expected, hence it is critical to start the process well in advance and retain the power to negotiate with the investor
- Choosing the right investment banker with an understanding of the business and industry is key
- Business model, market assessment, pricing strategy, industry trends as well as the investment required to capture the market are critical for attracting attention of the investors and hence should be realistic and well mapped

RAISING VENTURE CAPITAL

1. Huge potential market
2. Opportunity for smart spaces

“Choosing the right investment banker (IB) is pivotal - one needs to ensure that the IB understands the line of business and industry. The company’s involvement and effort in raising funds will increase manifold if the IB is not adequately aware/equipped with market/business knowledge.”

-Namrata Venkatesan
Ecolibrium Energy
Boosting farmer income through reduced wastage of horticulture produce

Ecozen is a technology company enabling Farm-To-Fork value chain for perishables catering to agriculture related markets through its renewable energy products. Company’s three core verticals are:

- **Ecotron**: A smart controller for irrigation pumps
- **Ecofrost**: A solar powered cooling based on thermal energy storage
- **Ecoconnect**: A platform which enables the users to connect with organized buyers

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**Established**

Identified the biggest opportunities in the existing agri value chain and developed means to use technology to enable farmers to grow more, preserve for longer and sell at better prices

**Technology and Sustainable Development Award at Eureka IIT Bombay**

Paved the way for ecoZen to get connected with Villgro

**Incubation support IIT Kharagpur; Initial seed funding from Villgro used for Technical Pilot**

As part of Villgro’s SEED programme, engineering and market research was conducted. Later received an initial round of funding of ₹ 6.0 Mn (US$ 0.1 Mn), which was used to deliver the Cold Room pilots

**Omnivore Partners invests US$ 1 Mn (₹ 68 Mn)**

Enabled Villgro’s successful exit

**Piloting the lease model**

To increase affordability of the product, a leasing model of the Cold Room developed

**Future plans**

Target to achieve cumulative sales of 10,000 units by 2022

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**FINANCING CHALLENGES**

Access to financing has not been a major challenge due to the connect enabled through the SEED incubation platform.

**OVERCOMING FINANCING CHALLENGES**

A ready prototype and aligning with the investment agency’s objectives helped in access to capital
The founding team

Devendra Gupta, Prateek Singhal, Vivek Pandey

The ecoZen founders met up during their IIT Kharagpur days and setup the company as fresh graduates.

While Devendra graduated with a B. Tech degree in Mechanical Engineering, Prateek holds a B. Tech and M. Tech degree in Mechanical Engineering & Thermal Science and Vivek holds an integrated M. Tech in Mechanical Engineering.

Overview of the journey

The trio had worked together on various technical projects during their time at IIT Kharagpur. Given their work dynamics, a desire to pursue a collective entrepreneurial venture was a natural steer. With the market focus on carbon credits being at its peak in 2009-10, the trio got interested in pursuing opportunities in the field of energy. While still on campus, they teamed-up to undertake energy audits and worked on identifying opportunities to improve energy efficiency. These assignments fueled their interest in the segment of energy management and renewable energy, but it was when they undertook field visits to farms, the idea to work in the space of energy access for the agricultural sector got germinated.

Their flagship product Ecotron, was a smart solar pump controller that came with features such as remote monitoring, diagnostics, etc. However, realizing high waste of horticulture produce in India, the trio started to conceptualize an on-farm solar cold room solution.
Realization that 5 Lac MT of pre-cooling capacity is required to prevent the over 30% wastage of perishable produce triggered the idea of creating on-farm Solar cold room.

**RAISING CAPITAL**
1. Social impact
2. Alignment with investor’s focus area
3. Ready prototype

“We focus on small farmers and any Agri-tech that has the potential to improve their livelihood, like in the case of ecoZen, is an area of interest for us.”

- Subhadeep Sanyal
Omnivore Partners

**Genesis of the Solar Cold Room business**

ecoZen solutions has won several awards and recognitions like Dow Sustainability Innovation Challenge at California Institute of Technology, Pasadena; Economic Times-Power of Ideas award from DST, Govt. of India organized by CIIE, IIMA to name a few. However, winning the Technology and Sustainable Development Award at Eureka IIT Bombay in 2011 paved the way for them to get connected to Villgro.

During 2012, they were one of the five companies incubated as part of Villgro’s SEED programme. As part of the incubation support, the team spent around 9 months in engineering and market research on the Solar Cold Room.

**Designing the prototype**

After undergoing the intensive incubation programme, ecoZen solutions managed to secure further support from Villgro for their first round of funding of ₹ 6 Mn (US$ 0.1 Mn) in 2014. ecoZen used the first tranche of around ₹ 2 Mn (US$ 0.03 Mn) to test the prototypes.

Meanwhile, they had also established contact with Omnivore Partners, an investor focused on food, agricultural and rural sectors. After the prototype was launched, Omnivore Partners provided a Series A investment of US$ 1 Mn (₹ 68 Mn) in February 2015 and also enabled Villgro to exit.

Pursuant to the investment leading to a significant minority stake, Omnivore also came onto the ecoZen board. Subsequently, the company raised a second round of US$ 2 Mn (₹ 136 Mn) from Omnivore Partners. They also have setup a working capital line with IFMR and Caspian Impact Investments.

**Creating a unique solution to catalyze market: Lease model + forward integration**

Given that the typical 5 MT solar cold room is not completely utilized year-round by farmers due to a limited harvesting period of 3 to 4 months in a year, ecoZen has launched a quarterly lease model, under which the Ecofrost Cold Room is available on quarterly rentals - thus helping enhance the market penetration for the micro-cold storage in India.
At seed stage, financial numbers are not questioned but passion of the promoter is necessary; at VC/PE stage, investors are quite keen to understand how their exit strategy is ensured and hence concrete business plan and its sustainability and scalability is important. At this stage, financial numbers are questioned and there needs to be a clear market potential and strategy to tap it for the next 3 to 4 years."

- Prateek Singhal
ecoZen solutions

Further, ecoZen has also developed the Ecoconnect platform which connects farmers directly with the buyers. Information related to the produce stored in the cold-storage is available on the server which can be accessed by the buyer, who can then directly procure from the farmer; thus, reducing dependencies on additional middlemen and creating a robust and efficient supply chain.

The ecoZen team is targeting cumulative sales of 10,000 units over the next three years. Considering pre-cooling increases the shelf-life of the produce, reduces wastage and hence increases farmer income, they believe a bright future for the market is in store. To power this next phase of growth, the company is targeting a fund raise of around US$ 8 Mn (combination of debt and equity).

LEARNINGS
Aspects that enabled access to capital are as indicated below:

- Experience and skills of the team
- Ready prototype
- Investors with similar vision
- Well-structured and scalable business model
Incorporated in India in 2011, Simpa is a venture-capital backed company providing Solar Home Systems on a ‘Progressive Purchase’ model to energy-poor households and micro-enterprises in rural India.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>Established By accomplished entrepreneurs with experience in energy access and micro-payments with the aim to solve the problem of energy access and make clean power affordable and accessible to everyone.</td>
</tr>
<tr>
<td>2013</td>
<td>Proving possibility of commercialization of SHS on a PAYG Model Continuous growth even without mobile money was the first major milestone for SIMPA, confirming the market opportunity and robustness of the Pay As You Go (PAYG) model.</td>
</tr>
<tr>
<td>2014</td>
<td>Raising international debt Successful funding of about US$ 4 Mn (₹ 272 Mn) raised from ENGIE Rassembleurs d’Energies and OPIC (one of the first few lending in DRE sector) validated the model and enabled mix of debt and equity.</td>
</tr>
<tr>
<td>2017</td>
<td>Tapping into domestic debt capital Partnering with RBL Bank (US$ 1.5 Mn backed by USAID’s Development Credit Authority guarantee) for providing end-consumer financing to SIMPA’s customers a major breakthrough.</td>
</tr>
<tr>
<td>2018</td>
<td>ENGIE acquires controlling stake Enabling consolidation across the myriad shareholding and paving way for expedited scale-up as also potential diversification into other services.</td>
</tr>
<tr>
<td></td>
<td>Future plans Expand nationally over the next 5 years</td>
</tr>
</tbody>
</table>

**FINANCING CHALLENGES**
Perception on market segment limiting access to equity as also domestic debt; lack of consolidated information on investors interested and investing in the DRE space.

**OVERCOMING FINANCING CHALLENGES**
Concerted efforts at engaging a wide spectrum of investors, including CSR arms of corporates, enabled visibility and traction from other investors.
The leadership team

Paul Needham
An economist, cleantech and fintech entrepreneur with over 19 years of senior leadership experience across industries, including as Director of Network Strategy at Microsoft. He currently chairs the Simpa board.

Piyush Mathur
As a private equity and corporate finance professional with over 15 years experience in investments, cross-border M&A and capital raisings, Piyush has been leading Simpa since 2014. Prior to joining Simpa, he led the Principal Investments and Advisory business as a Director in Kleinwort Benson Bank.

Overview of the journey

The aim behind Simpa was to solve the problem of energy access and make clean power affordable and accessible to everyone. This was however difficult due to the high upfront cost associated with solar home lighting systems. The intent was to build a for-profit business that was scalable, thus the trio decided to mimic the successful pre-paid mobile phones model in India. That model was profitable in India and if applied with similar business rigor, would make the business scalable, solve for the challenge of high upfront capital requirement for the rural consumers and also provide access to energy in the underserved markets.

Hitting the first milestone: Implementing a new business model

Simpa initially entered the Indian market in partnership with a local solar vendor. Back then the potential of the PAYG model was not recognized. The partnership arrangement with the local solar vendor allowed Simpa to focus on the technology – a smart pre-paid meter which could enable a PAYG offering; while its partner was responsible for handling the sales and customer service. Towards end of 2013, Simpa initiated their own direct sales exclusively focused on a PAYG model. The target geography at this stage was Western
We have been able to raise both domestic and international capital. We got US$ 3 Mn equity from impact investors and foundations in the 1st round (Hilti Foundation being the biggest investor); US$ 5 Mn in 2nd round from impact funds and DFIs (ADB being the largest investor); and ~US$ 7 Mn from DFIs and PE funds in the 3rd round (based on minority stakes) with Developing World Markets as the largest investor.”

-Piyush Mathur
Simpa Energy

Uttar Pradesh. The initial traction validated that commercialization of Solar Home Systems through PAYG model was possible in India.

The model adopted

Simpa’s value proposition was simple: high-quality solar products, combined with point-of-sale financing and convenient pay-as-you-go payments for topping up the energy credit. After qualifying on the credit assessment, the customer made a small down payment of around 10 to 20% of the system’s total cost, to enable Simpa to initiate the installation of the Solar Home System. Over a cloud-based interface accessible through the internet or a SMS gateway, the customer pre-pays for energy credits called ‘energy days’. Their patented, metering and payment technology is used to collect these micro payments. The system automatically shuts down once the credits have been exhausted. Once the system investments are fully recovered (typically in two to three years), the system unlocks permanently, producing free, clean energy for the rest of its lifespan.

Financing journey

Based on the market potential and the core product proposition, Simpa was successful in raising US$3 Mn in its first round. Thereafter, in March 2013, Simpa raised its second round of funding incl. a US$2 Mn (₹ 136 Mn) equity infusion from Asian Development Bank (ADB). According to Piyush Mathur, Simpa’s CEO, this was the inflexion point for the company’s growth as they were amongst the first in the DRE space to successfully raise institutional capital – leading to them getting noticed nationally as well as internationally. Soon enough, Simpa also received a USAID grant (under the DIV program) grant to test their model at scale. The grant was designed to rollout the model to around 12,000 households in Uttar Pradesh and to measure the social impact and financial viability of Simpa’s approach in order to attract additional private investment. The offering’s success, even without the presence of mobile money, confirmed the market opportunity and potential for success in the Indian landscape.

Raising international debt

In 2014, the company was able to mobilize their first round of international debt, almost unheard-of in the DRE sector – about US$ 4 Mn (₹ 272 Mn) from ENGIE Rassembleurs d’Energies (US$ 1 Mn) and OPIC (US$ 3 Mn). In 2015, ADB also lent US$ 6 Mn (₹ 408 Mn) debt from the Clean Technology Fund to Simpa.

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6 USAID’s Development Innovation Ventures (DIV) is an open innovation program for creative solutions to any global development challenge
“The founder should have conviction, flexibility and malleability to learn from the feedback received and should not be afraid to experiment.”

-Piyush Mathur
Simpa Energy

**Tapping into domestic debt capital**

Even as Simpa has been able to gain traction from international lenders for close to 3~4 years, barring its relationship with RBL (US$ 1.5 Mn loan backed by USAID's Development Credit Authority guarantee), Simpa, like many others in the space, has struggled to get domestic lenders to support them. The company views this as a significant challenge and believes that this lack of engagement from domestic lenders has a crippling effect on the sector as a whole.

**Leadership transition and future proofing**

Even as a firm at growth stage, Simpa has been successful in transitioning to a professional CEO led structure from a founder-driven venture. The transition was imminent given that all the founders were actually of US and Canada origin and hence needed to be handled in a streamlined fashion. Simpa choose to pick up an internal candidate - a young leader who was already part of the company, understood the business model, was committed to the vision of the company and knew the investors well as CFO of the company.

The founders continue to remain engaged at the board level (with Paul Needham, the Founder CEO engaged as the Chairperson) and their mentorship has been crucial in the institutionalization of the knowledge. This has allowed continuity as also infusion of newer energy and ideas driving Simpa to the next level of growth. Under Piyush Mathur, the present CEO, Simpa Energy plans to expand across the nation over the span of next 5 to 10 years.

In November 2018, ENGIE scaled up its investments in the company and now owns about 90% of the shareholding. This consolidation of shareholding entailed both primary (infusion of capital in the company) and secondary transaction (Engie acquiring stake from other existing shareholders).

**LEARNINGS**

Aspects that enabled access to capital are as indicated below:

- Strong and dedicated founding team
- Robust business plan with elements of the business model proven
- Clarity on the amount of capital required for business to reach profitable scale
Eliminating energy waste through innovations in continuous energy optimization

Smart Joules established in 2014 aims at transforming the manner in which businesses manage energy by making energy savings simple, substantial, cost-effective, risk-free and transparent for the consumer, using a combination of two innovative solutions:

**JoulePAYS**: Pay-As-You-Save energy savings agreement

**DeJoule**: Continuous energy optimization system

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<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>2014</td>
<td>Established</td>
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<tr>
<td></td>
<td>With the aim to reduce energy wastage through optimization in design, operation, equipment selection and behavior</td>
</tr>
<tr>
<td>2015</td>
<td>Introduction of unique business model</td>
</tr>
<tr>
<td></td>
<td>JoulePAYS (Pay-As-You-Save) introduced; guaranteeing a minimum of 10-15% energy savings</td>
</tr>
<tr>
<td>2016</td>
<td>Attracting debt as core to non-dilutive funding strategy</td>
</tr>
<tr>
<td></td>
<td>Success in attracting non-dilutive funding and achieving growth from the profit generated</td>
</tr>
<tr>
<td>2017</td>
<td>Launching DeJoule, an energy optimization building management system</td>
</tr>
<tr>
<td></td>
<td>Core offering by Smart Joules, comprising of IoT hardware, cloud computing and data analytics for building energy optimization</td>
</tr>
<tr>
<td></td>
<td>Future plans</td>
</tr>
<tr>
<td></td>
<td>To become the largest player in the segment in India in the next 5 years</td>
</tr>
</tbody>
</table>

FINANCING CHALLENGES

Accessing debt entailed pledging collaterals; delay in loan sanction and subsequent disbursement impacting business scale

OVERCOMING FINANCING CHALLENGES

Debt was availed by comforting the lenders on the potential risks through creation of a dedicated ESCROW account and personal guarantees enabling a ring-fenced coverage of cash flows to the lender.

Solution to delay in loan disbursement was to plan better and start the process in advance.
The founder

Arjun P. Gupta

Prior to starting Smart Joules, Arjun had been involved in development and execution of various projects related to energy efficiency, waste utilization and renewable energy at Jaypee Group- one of India’s largest industrial conglomerates. Prior to this, he has worked with Harvest Power, Lawrence Berkeley National Laboratory, World Resources Institute and Carbon War Room.

Arjun holds a master degree from the Massachusetts Institute of Technology and graduated from the University of California-Berkeley with highest honors in B.S. Civil Engineering and distinction in B.A. Economics.

Overview of the journey

Almost a decade ago, while researching at Lawrence Berkeley National Laboratory, Gupta realized that India wouldn’t need to install a single new power plant if energy wastage is stopped. The scale of impact that energy savings could create for India fascinated him.

5 years later, after he returned to India, he started to work for the Jaypee Group on developing and executing projects related to energy management. While working for Jaypee Group, he realized that there was substantial energy wastage due to design, operations, equipment selection and behavior. Despite the need and potential for energy conservation, there weren’t any players in the market that would provide a package solution of financing, project execution and risk sharing. The market was saturated with product companies offering solutions in energy audit and management but there still was a huge gap in what was required by the market. Thus, began the journey of Smart Joules with the aim to make substantial energy savings easy for the consumer.
Launch of the unique business model: JoulePAYS

Smart Joules launched a unique business model of guaranteed 10-15% annual reduction in the customers’ total energy consumption as compared to historical levels recorded in their energy bills at no upfront cost. JoulePAYS entails assessment of energy savings potential, development of solutions for energy conservation, execution of the prioritized list of measures and optimization of energy use through a comprehensive retrofit of the clients’ building energy system under a five year pay-as-you-save agreement. Under the agreement, building gets a fixed percentage of the savings on a monthly basis delivered over the five-year agreement (with around 70%-75% of the actual savings delivered retained by Smart Joules), after which the equipment ownership is transferred to the client at no additional cost.

Working on improving operational efficiency

A year into their operations, they realized that though they had focused on energy management in the equipment and design side, there was a much larger opportunity on the operational front. Having gained valuable ground perspective from the successfully completed 5 to 6 projects, Smart Joules developed DeJoule; which leverages an in-house developed hardware, software and data analytics platform for energy optimization of buildings’ air conditioning systems.

Smart Joules understood early on that in order to keep the savings substantial and stable over a period of long time, it was imperative to minimize operator intervention and hence automation needed to be a key lever for the offering. Since there were no intelligent and cost-effective automation options in the market, Smart Joules developed DeJoule- an energy optimizing building management system (BMS) using IoT, cloud computing and artificial intelligence; and this became an instant hit amongst its users. Ever since then, Smart Joules has been growing rapidly leveraging JoulePAYS and DeJoule.

So far, Smart Joules has just raised a friends and family equity round of around ₹ 35 Mn (US$ 0.51 Mn). In addition, the company has won challenge grants and soft support from global catalysts to the tune of ₹ 12.5 Mn (US$ 0.18 Mn). They have also raised debt of around ₹ 100.0 Mn (US$ 1.47 Mn) from TATA Cleantech Capital and YES Bank.

Even as the initial challenges were more around, building a team and customer acquisition, given the market traction, Arjun views timely access to appropriate debt as a key challenge. Smart Joules has typically experienced a 7 to 9-month timeline in
As a start-up it is important for one to stay alert to opportunities and plan things in advance.”

- Arjun P. Gupta

Smart Joules

debt closure hence Arjun feels it is imperative to plan in advance and prepare for all scenarios. So far, raising debt has entailed hypothecation of funded assets, creation of a dedicated ESCROW account and personal guarantees from Smart Joules’ directors.

Currently operating in Delhi, Ludhiana, Noida, Hyderabad, Vishakapatnam, Salem and Coimbatore, Smart Joules wants to expand to Mumbai, Calcutta, Madurai, Ahmedabad, Bengaluru and Chennai and become the largest player in the segment in India in the next 5 years and in the world in the next 10 years. They are in discussions with various funding partners and aim to secure about US$ 2 Mn for funding their next growth milestone.

LEARNINGS
- Comforting the lender is important to raise debt
- Persistence is important to make any business idea work
- Prepare for exigencies
- Have a business plan and outlook for next 2 to 3 years
- Build a strong team culture to support the company in its journey
INNOVATOR’S PATHWAYS TO SUCCESS

The journey from the stage of ideation to commercialization is demanding and challenging. Despite the challenges, these innovators have been able to successfully tap into the demand potential and access finance to help them achieve scale.

Two key success mantras that stand out are:

- Focus on essentials first and scale later
- A problem well stated is a problem half solved

It was highlighted that focus should be on a modest start, ensuring essentials being in place and validation of the market opportunity itself even as the outlook developed is long term.

Equally important is to define the problem being solved and the target audience, to truly design a unique solution and unlock value for the market.

These are invariably seen as the defining elements for building a connect to the investors and financiers. Based on the learnings as reported by innovators showcased in this report, some other key elements for gaining traction with the investors are:

Understanding the investor and the investment philosophy
Identifying the right investor(s) who shares a similar vision for the business is a pre-requisite for shaping success in a venture’s capital raising efforts. Some of the aspects that can help gauge investors’ fit for the venture/innovation include: investor/financier’s process of identifying investment opportunities, reported sectors of focus, segment(s) in which maximum number of investments have been made, time taken for the recent investments.

Compelling value proposition with clear and measurable impact
Many enterprises often slip up on their chances of raising external capital due to lack of well-articulated and compelling value proposition. A positioning statement explaining the target market, problem being solved, benefits of the innovation and uniqueness over other alternate solutions helps attract the attention of the investor.
Scale of the opportunity and company’s preparedness to tap into it
There are various enterprises vying for the same capital. It is thus vital to get investors excited about the huge market opportunity that awaits. Delivering the perfect investor pitch thus entails a detailed outline of this market opportunity.

Strong leadership and good governance
Strong leadership, which is able to inspire the entire team, bind them together around a consistent culture and encourage execution around the enterprises’ unifying vision, is an essential element for success of any enterprise. Senior leadership’s passion and personal behavioral traits are viewed as key ingredients for framing the right culture and guide investor decision-making.

Focus on business elements and not merely the innovation
An innovation wrapped in a disruptive yet robust business model is important for the business to flourish. Investors believe that often innovators get singularly focused on the novelty of their solution and forget to focus and innovate sufficiently around critical aspects such as marketing, customer acquisition, and the business model which hinders scalability of the innovation. Hence, a robust business plan along with proven elements of a business model helps create a strong case for an enterprise to raise capital.
PROFILING ACTIVE INVESTORS IN THE CLEANTECH SPACE

Picture credits: WWF-India
Investors play an important role in the growth of an enterprise. From providing incubation support and technical assistance, to providing growth capital, an investor acts as a backbone to the enterprise. An investor doesn’t merely solve the problem of capital but also assists in developing the go-to-market strategy, business plan and fund allocation planning.

Different types of investors/lenders finance different growth stages in the lifecycle of an enterprise. For example, untested business models and innovative ideas may receive the first round of funding from catalysts, incubators, angel investor, and early stage venture capitalists. Also, the return expectations and conditions of financing varies across different investor types.

The illustration below provides a snapshot of different types of investors active across different stages of growth continuum of an innovator.
Innovators have highlighted that accessing capital is easier if objectives of the enterprise and investors are aligned. At the same time, understanding factors influencing investor decisions is vital to tap into financing opportunities. Different types of investors have different criteria for selection, e.g. Venture Capitalists/ Private Equity players look for IP/differentiation, robustness of business model and market validation, amongst others; while NBFCs active in the cleantech space are growth focused and lend to post-revenue companies that may not be making profit but have a clear cash-flow visibility and proven unit level economics.

To provide a clearer understanding of the cleantech investor ecosystem, some of the key investors/lenders/funds, shortlisted based on three parameters, i.e. number of deals done, capital deployed and experience/vintage of the investor in the market; have been profiled in detail in the following section. The section aims to provide insights on selection criteria and financing outlook of different types of investors/lenders in the space and hopefully help the cleantech innovators to identify investors appropriately aligned to the venture’s needs and expected performance.

A consolidated directory listing of around 100 investors/lenders is available in the annexure at the end of the report.
IDFC Parampara Early Stage Opportunities Fund invests in technology startups across different sectors with innovation/intellectual property (IP) as differentiator.

**FUND SIZE:**
US$ 15 Mn with investment period till 2020

**FOCUS AREA/ SECTOR:** Consumer, financial, healthcare, industrial

**WHAT DEFINES SELECTION**
- Technology IP
- Business model
- Entrepreneur and team experience
- Market/Product Validation (preferably pilot success with end users)
- Stage of firm: Open to funding pre-series A ventures but not pre-revenue companies
- No specific focus on environmental impact

**FINANCING OUTLOOK**
- For ticket sizes less than US$ 200 k, commercial version of the product to be in place (in their words, minimum viable product - MVP)
- For larger ticket sizes, at least 2-year operating track-record with revenue traction of about US$ 200 k expected

It takes about 2-3 weeks for first evaluation and business diligence depending on the promoters’ ability and intent to share information. The deals are finalized within a month and the whole process till disbursement may take up to 3 months.

**EXIT**
Investment horizon of about 5 years and look to exit after that

“Though clean technology is not particularly an investment focus, climate impact can be an element while doing stress testing of the valuation model.”

- Harsha Mundhada
Parampara Capital
Infuse Ventures is an early stage cleantech focused VC fund in India. Fund is managed by CIIE Initiatives and is part of the larger CIIE (India’s largest cleantech incubator) ecosystem.

Even as the initial INFUSE fund is mostly deployed, a second fund, Bharat Innovation fund has been launched. The focus of this particular fund is more broad-based and includes Breakthrough Healthcare, Agriculture, Renewables and Advanced Technology innovations.

As India’s first Academia – Policy- Industry fund, Infuse Ventures has been particularly successful in building off the incubation efforts undertaken by CIIE.

**FUND SIZE:** Infuse fund - US$ 25 Mn; Bharat Fund – US$ 100 Mn

**FOCUS AREA/ SECTOR**
- Infuse Ventures – Cleantech
- Bharat Innovation Fund - Breakthrough Healthcare, Agriculture, Renewables and Advanced Technology innovations.

**WHAT DEFINES SELECTION**
- Technology/model differentiator and extent and nature of IP
- Team qualifications and suitability
  - Scale of the opportunity and company’s preparedness to tap into the same

**FUTURE PLANS**
Bharat Fund made its first close in Jul’18 and has time span of about 5 years to invest

“We do not define any filtering or elimination criteria beforehand, every deal is different but the quality of the promoter, work they have done and their experience always matters.”

- Shyam Menon
*Infuse Ventures*
cKers Finance is a specialist NBFC focused on delivering innovative project finance debt solutions to enterprises in the energy and resource sustainability space. It is backed by marquee investors such as Infuse Ventures, Rockefeller Foundation, California Clean Energy Fund (CalCEF) amongst others.

**FOCUS AREA/ SECTOR:**
Distributed sustainable energy – Rooftop solar, Energy Efficiency, Mini-grid, Energy storage, Waste to Energy; Solar pumps; Cold chain

**FINANCING OUTLOOK**
- Commitment to impact reporting goals
- The company can be loss making but should show a clear pathway to breakeven with clear cash flow visibility
- Debt serviceability is the key: for project, min. 1.25 times
- Company should not be over leveraged
- Promoters commitment and past experience.

After a company is shortlisted, it is taken to the investment committee. It takes about 4-6 weeks for the whole process

**FUTURE PLANS**
Looking to deploy US$ 50 Mn in next 2 years in the sustainable energy and resource efficiency areas

“Our cross functional team has expertise in financing DRE and Energy Efficiency projects with customised frameworks to underwrite loans in these segments.”

- Jayant Prasad
cKers Finance
TATA CLEANTECH
CAPITAL LTD.

TATA Cleantech Capital Ltd. (TCCL) is a specialized Infrastructure Finance Company setup as a JV between Tata Capital Limited and IFC with primary focus on cleantech related funding and advisory solutions. TCCL has the aspiration to become the Green Bank/Investment hub in the country with the backing of TATA Group and IFC.

FUND SIZE:
- Current Loan book is about ₹ 30880 Mn (US $ 454 Mn) as on Mar 31st 2018
- Successfully participated in funding of 5.2 GW renewable energy generation and saving of over 8.4 Mn tonnes of CO₂ emission annually

FOCUS AREA/ SECTOR: Energy Efficiency, Renewable Energy (including rooftop solar), Water Management and other environmentally friendly projects in India.

WHAT DEFINES SELECTION
- Project bankability in terms of quality and assuredness of cash-flows, contract and credit-worthiness of borrower as also any counter-parties/off-takers

FINANCING OUTLOOK
- Standard lending criteria (Debt to Equity, Track Record and Credit Rating);
- Debt Service Coverage Ratio (DSCR) generally above 1.2 times

FUTURE PLANS
- Quite bullish on efficiency and cleantech pertaining to GHG mitigation
- Foresee traction and greater engagement in areas such as water treatment, water management, eco-system of electric vehicles, renewable energy (including rooftop solar)

“We structure our products depending on the business model and the cash flows of the company. We aim to become one stop end to end financing solution provider for Cleantech companies and project in space of Energy Efficiency, Renewable Energy, Water Resource Management, Energy Storage, Electric Vehicles eco-system”

- Sunil Agrawal

TATA Cleantech Company Ltd.
ENGIE RASSEMBLEURS D’ENERGIES S.A.S (RDE)

Type
Corporate Investor

Instruments
Equity; Quasi-Equity

Maturity Stage
Early, Growth

Headquarters
Paris, France

Incorporation Year
2011

Ticket Size
US$ 1 Mn+ with first tranche typically US$ 500k

Investment Horizon
7 Years

Return Expectations
NPV positive and portfolio to reach breakeven with impact as the primary target

Illustrative Deals
BBOXX; HUSK Power Systems, Sistema bio

Website
www.engie.com

ENGIE Rassembleurs d’Energies is ENGIE’s corporate impact investment fund and aims to invest and develop ventures seeking to address energy poverty. It prefers direct investment into the ventures and typically seek a reasonable minority stake.

FUND SIZE: € 50 Mn (US$ 56 Mn)

FOCUS AREA/ SECTOR:
- Clean cooking solutions (micro biogas solution), Off-grid electrification with SHS in Africa, Asia and Latin America, energy efficiency

WHAT DEFINES SELECTION
- Relevance of the solution
- Social performance: No. of beneficiaries, job creation, variation in income, etc.
- Environmental performance: reduction in CO2 emissions, substitution of fossil fuels
- Project financial value and maturity
- Involvement at every stage in company maturity (initiation, startup, development and growth) and financial feasibility
- Synergies with Engie Group

FINANCING OUTLOOK
- Engie steps in at an early stage as a co-investor, even in the first round of funding, with a view to support growth of the venture to a sustainable scale
- Board seat with a view to ensure appropriate influence and governance

EXIT
Through trade sale and/or buyout by Asset Managers, exit scenarios to be included in legal documents if possible

FUTURE PLANS
RDE is looking now to invest in sustainable mobility in addition to continued focus on sustainable energy access.

“Our mission is to achieve universal energy access through direct investment for the still unconnected population, with renewable energy solutions, and to get these 1 billion people or so out of the dark.”

- Loïc de Fontaubert

ENGIE Rassembleurs d’Energies S.A.S
Caspian Advisors

Caspian is one of India’s earliest impact investment fund managers providing both equity and debt capital to financial institutions and corporate SMEs with an aim to generate social and/or environmental impact along with competitive financial returns. They are currently managing 3 funds, 2 of which are actively investing. The 2 active funds Caspian Impact Investments (Debt) and Caspian SME Impact Fund (Equity). The third fund under management - India Financial Inclusion Fund (IFIF) is in an exit mode.

Caspian Impact Investments (CII)
- Launched in 2013, CII provides different type of loans (term, working capital, purchase order finance, bridge and subordinated loans) to early and growth-stage enterprises to support their growth as an alternate to enterprises’ adopting the route of dilutive equity for business growth
- CII also provides wholesale lending to retail FIs.

FOCUS AREA/ SECTOR: Food and Agriculture, financial inclusion, healthcare, clean energy & energy efficiency, education, affordable housing.

Caspian SME Impact Fund (CSIF)
- Caspian’s fourth fund with focus purely on equity investments in viable and innovative SMEs and MSME finance NBFCs.
- First close in 2017

FUND SIZE: SIF – US$ 40 Mn (₹ 2.72 Bn)

FOCUS AREA/ SECTOR: Food and Agriculture, MSME Finance, clean energy.

WHAT DEFINES SELECTION
CII
- Reference from the equity investors or from a trusted source in the ecosystem
- Screened through their exhaustive negative filtering list

Type
Impact Investor

Instruments
Debt; Equity; Quasi-Equity

Maturity Stage
Early and growth

Headquarters
Hyderabad, India

Incorporation Year
2004

Ticket Size
Debt – US$ 147 k – 2.2 Mn
Equity – US$ 147 k - 735 k

Investment Horizon
Debt: 1 - 4 Years (Loan tenure)
Equity: 5 - 7 Years

Return Expectations
Debt: 14% to 17% (Lending rate)
Equity: 20%+

Illustrative Deals
Cygni; Oorja; GPS Renewables; ecoZen

Website
www.caspian.in

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8 ₹ 10 to ₹150mn (Assuming US$ 1=₹ 68.05)
9 ₹ 10 to ₹50mn (Assuming US$ 1=₹ 68.05)
10 First close at US$ 13.5 Mn (₹ 919 Mn)
11 https://docs.wixstatic.com/ugd/326912_832b27ee70aa48449c589e55d21184f2.pdf
Unlike a traditional lender, we evaluate companies using an investment approach. Instead of force fitting a loan product to a company, we provide customized debt products depending on the cashflows, seasonality and financing requirements of the company.

-Avishek Gupta
Caspian Advisors

- Professionally managed companies
- Minimum annual revenue: ₹ 40-50mn (US$ 0.59-0.73 Mn) for services sector, ₹ 80-100 Mn (US$ 1.18-1.47 Mn) for manufacturing sector and ₹ 200-250mn (US$ 2.94-3.67 Mn) for trading sector
- Presence of external equity investors and proven equity raising capability
- Companies targeting lower income households and enabling access to products or services in non-Tier 1/ underserved locations or low-income Indian states
- Venture’s job creation potential as also adoption of sustainable practices

CSIF
- Revenue stage companies (ideally post Series A)
- Business model scale and viability
- SMEs focusing on providing any of the following:
  - access to affordable high-quality essential services for the underserved or un-served
  - access to market for a segment of producers that are else dependent on non-remunerative markets
  - access to suitable financial services for the underserved or un-served households or micro-enterprises

FINANCING TIMELINE
CII - On-site due-diligence to loan sanction may take 2-6 weeks depending on how quickly information is shared. Portfolio is monitored on a monthly basis and on-site visits may also be conducted if required. Timely reporting by companies is considered as an important aspect while considering repeat loans.

EXIT /TENOR
CII: Tenor of loan is 1 to 4 years
CSIF: Expect natural strategic exit or secondary sale in about 5 to 7 years

FUTURE PLANS
- Through five years of operation, CII has disbursed ₹ 727 Mn (US$ 11 Mn) as loans to 12 clean energy and energy efficiency enterprises and continues to have a positive outlook towards the sector. In total, CII has disbursed over ₹10 Bn (US$ 147 Mn) to about 110 companies across multiple sectors.
- Clean energy a priority for SME Impact Fund
C4D PARTNERS

Type
Impact Investor

Instruments
Equity, Debt and Mezzanine

Maturity Stage
Early and growth

Headquarters
Utrecht, Netherlands

Incorporation Year
2013

Ticket Size
Typically, US$ 2-4 Mn (in tranches)

Investment Horizon
~ 5 Years

Return Expectations
Equity - 20% +
Debt - Comparable to NBFC interest rates

Illustrative Deals
Mera Gao Power; Freyr Energy

Website
www.c4dpartners.com

Capital 4 Development Partners (C4D Partners, formerly ICCO Investments) provides risk capital to growing and inclusive SMEs that create social and environmental impact.

Established toward the end of 2013, the fund invested in Asia, Africa and Latin-America through their first fund. The new Asia fund is a mixed fund with ~50% allocations towards equity investments and the rest for debt.

FUND SIZE: First Fund, Capital 4 Development Fund - € 16 Mn (US$ 19.04 Mn); established in 2013
Second Fund, Capital 4 Development Asia Fund – US$ 50-60 Mn; established in 2018

FOCUS AREA/ SECTOR: Agribusiness (production, processing and trade), Health, Energy, Education, Financial Inclusion, Water and Sanitation

WHAT DEFINES SELECTION
• Having a clear and measurable social and/or environmental impact
• Financially viable business model
• Having clear and transparent ownership structure and a strong management team

Companies with a vintage of 2-3 years; either EBITDA positive or with a clear plan to become EBITDA positive within first two years post-investments

CONDITIONS OF FINANCING
• Board seat but not a majority stake
• First tranche never more than US$ 1 Mn

EXIT
Equity – 5-6 years
Debt – 5 years; either quarterly, semi annual or annual payments
Mezzanine - Flexible; based on the business model

FUTURE PLANS
In terms of available capital, they have recently closed the first round for their 2nd Asia investment fund at US$ 30 Mn with focus on deals in Asia (India, Indonesia and Philippines).

“C4D Partners provide both equity and debt, and this provides us a limiting downside for the fund though limiting the potential upside unlike a traditional private equity firm.”

- Arvind Agarwal
C4D Partners
For over 25 years, DOEN Foundation (setup by the Dutch Postcode Lottery) has been a pioneer of early stage investments through subsidies and equity investments. DOEN also provides additional support to its partners through a network of experts. Its venture arm, DOEN Participaties B.V., has invested in over 60 Dutch and international green and socially-inclusive businesses and funds.

DOEN’s commitment often acts catalytic for other funders. Annually DOEN funds/supports over 200 ventures/initiatives through both grants and investments.

**FUND SIZE:** DOEN receives annual funding from the three Charity Lotteries in the Netherlands: Dutch Postcode Lottery, Friends Lottery, BankGiro Lottery.

**FOCUS AREA/ SECTOR:** Green, socially-inclusive and creative

**WHAT DEFINES SELECTION**
- Potential impact,
- Uniqueness
- Scalability
- Team strength
- Additionality DOEN support

**FINANCING OUTLOOK**
- Prefers to co-invest with like-minded partners
- In general, seeks minority stake
- Prefers Board seat with equity investments to be able to add value to the organization and monitor the mission more closely

**EXIT**
Proceeds from successful exits from invested companies are reinvested.

“We always look for high impact opportunities, and support the frontrunners in their respective sectors. Funds that we receive back from an exit will be re-invested again, this way we try to maximize our impact.”

- Michelle de Rijk

**DOEN Foundation**

**Type**
Foundation / Impact Investor

**Instruments**
Grant and Impact Equity; Quasi-Equity

**Maturity Stage**
Early

**Headquarters**
Netherlands

**Incorporation Year**
1991

**Ticket Size**
US$ 50 k ~ US$ 500 k

**Investment Horizon**
Patient capital, no pre-defined investment horizon

**Return Expectations**
Varies

**Illustrative Deals**
SELCO India and Mlinda

**Website**
www.doen.nl

“DOEN Foundation/ DOEN PARTICIPATIES B.V.”
INSITOR IMPACT ASIA

FUND

Insitor invests venture capital funding into startups throughout emerging and frontier Asian markets with the majority focus on India. Their focus is direct livelihood and social benefit to the people in the bottom of the pyramid.

FUND SIZE: US$ 40mn

FOCUS AREA/ SECTOR:
Off-grid energy, Healthcare, Education, Affordable housing, Financial inclusion, Water/sanitation and Agriculture

WHAT DEFINES SELECTION
• Early-stage companies with a clear beneficiary identified and strong social impact; Startups that improve the living standards of the low-income population (income segment of ₹ 10,000 and lower)
• Revenue stage companies but not necessarily EBITDA positive

FINANCING OUTLOOK
• Lead investor with a board seat
Once the company is selected, the process of due-diligence to disbursement of funds takes about 5-6 weeks.

EXIT
• Exit is bound by the fund cycle; start looking for exit from the 4th year onwards so that exit can happen by the 5th or 6th year

FUTURE PLANS
• They are now in the process of launching their 3rd fund.
Open to energy access sector but see limited deal potential; expect more opportunity in non-traditional finance and affordable housing sector

“"We invest in companies whose beneficiaries are lower income communities and have executed a successful pilot with demonstrable revenue generation.”
- Nicholas Lazos
Insitor Impact Asia Fund
Sangam Ventures is a cleantech venture fund and incubator. They focus on enterprises working in underserved markets related to access to clean energy and resource productivity. The firm has established a very structured mentoring and hand-holding framework.

This entails a year-long acceleration programme called ‘Emerging India Accelerator Program’ (EIAP) to support and prepare clean-tech innovators to be market and investment ready.

The team also manages the Sangam Atal Innovation Center launched in partnership with Atal Innovation Mission, Shell Foundation, DOEN Foundation and Social Alpha in 2017.

**FOCUS AREA/ SECTOR:** Decentralized energy generation, storage and distribution; sustainable agriculture technologies; waste to value; circular economy; energy efficiency; human resource productivity.

**WHAT DEFINES SELECTION**
- Social impact
- Additionality- problem being solved and limitations to the success in any prior attempts made at solving it
- Affordability- ability of the underserved consumers to afford the solution
- Accessibility- ease in gaining access to the solution
- Availability- Quality, reliability of the solution
- Team’s willingness to learn and contribute

**FINANCING OUTLOOK**
Sangam Ventures likes to be the first investor and help the company grow and achieve commercialization

**EXIT**
- Sangam Ventures expects a natural (strategic or public market) exit after ~8 years and deem that as sufficient time for scale to be achieved
- Sangam has already invested close to ~US$ 1.2 Mn in its portfolio companies and is looking to deploy US$ 10 Mn over next couple of years.

Going forward, while the focus on venture stage would remain the same, the ticket size is likely to be increased

“We look for shared values of the management team with us in terms of whether the founders want our help or only money! Will they share when things go wrong, or when serious decision needs to be taken?”

- Karthik Chandrasekar
Sangam Ventures
THE ROCKEFELLER FOUNDATION

Type
Donors/Foundations

Instruments
Grants, Subsidized Loan

Maturity Stage
Early and Growth

Headquarters
New York, USA

Incorporation Year
1913

Ticket Size
US$ 1.5 Mn+ (PRI)

Investment Horizon
8 ~ 10 years

Return Expectations
8-10%

Illustrative Deals
OMC; Husk; cKers Finance

Website
www.rockefellerfoundation.org

For more than 100 years, The Rockefeller Foundation’s mission has been to promote the well-being of humanity throughout the world.

In addition to regular grants, the Foundation has sought to leverage Program Related Investments (PRIs) as a powerful tool in reaching its program goals. The Foundation provides capital in the form of loans, equity, and guarantees, which align with the Foundation’s issue areas.

In the energy access space, the foundation has been particularly active on the PRI front in addition to supporting the ecosystem through its Smart Power Initiative which aims to enhance energy access for economic development by extending productive power to those without sufficient access.

FUND SIZE: US$ 75 Mn (Smart Power program allocation)

FOCUS AREA/ SECTOR: Energy access – mini-grids and last mile distribution

WHAT DEFINES SELECTION
• Prefer debt positions
• Revenue stage company only
• Sustainable and scalable model
• Alignment to Smart Power program principles
• Performance based progressive disbursements

FUTURE PLANS
Energy access will remain a key area of focus encompassing both mini-grid models (to the extent they scale) as also innovative energy service franchise models which bring together the expertise of private sector with public utilities to enhance the performance of public utilities.

Note: The data provided is for the Smart Power program
The John D. and Catherine T. MacArthur Foundation is one of the largest independent foundations in the United States. It has offices in India, Mexico and Nigeria, in addition to its headquarters in Chicago. The Foundation supports creative people, effective institutions, and influential networks building a more just, verdant, and peaceful world. It is placing a few big bets that truly significant progress is possible on some of the world’s most pressing social challenges, including over-incarceration, global climate change, nuclear risk, and significantly increasing financial capital for the social sector.12

**FUND SIZE:**
- As a U.S. private foundation, MacArthur does not operate as a fund; however, it does maintain an allocation of US$ 500 Mn from its endowment dedicated specifically to the advancement of its program strategies, and to support the field of impact investing.
- Commitments against this allocation for impact investments total just under US$ 300 Mn, including unfunded guarantees and staged investments not fully disbursed
- Outstanding commitments comprise long-term debt, equity investments and guarantees

**FOCUS AREA:**
- MacArthur makes impact investments to advance established and emerging program goals. These investments in debt, equity, deposits, and guarantees, provided to more than 200 recipients in the U.S. and around the world, directly meet the capital needs of special-purpose funds, for-profit businesses and nonprofit organizations tackling critical environmental and social challenges.

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12 www.macfound.org/about
• MacArthur’s impact investing work takes a “problem first” approach, where program priorities, leverage and impact guide the identification, deployment and management of catalytic capital.

• The Foundation is exploring new impact investing opportunities related to its focus on Climate Solutions and its Chicago Commitment. In addition, its support for the field of impact investing seeks to increase the knowledge, awareness and use of catalytic capital to high impact enterprises and funds.

WHAT DEFINES SELECTION

• MacArthur impact investments must advance a specific program strategy. This includes support for India’s global leadership on climate change, as demonstrated through its policies, actions, and investments that decrease the carbon-intensity of the economy and reduce greenhouse gas emissions.

• MacArthur seeks to invest with “additionality” (to provide capital to funds or enterprises in ways where the investment or the impact would be unavailable otherwise).

FUTURE PLANS

MacArthur will continue its extensive support for India’s global climate leadership, building on programs such as the U.S.-India Clean Energy Finance (ICEF) initiative, India’s first project preparation facility for distributed solar power projects in India.
As the US Govt.'s aid agency, USAID provides various technical assistance grants to support projects in the realm of emission mitigation (like energy efficiency, clean energy and forestry) and energy security (Access to Energy) amongst others.

Typically, the funding is provided in 2 forms:
- Direct funding (grants) through its programs such as DIV and PACEsetter for specific projects proposed by companies operating in targeted sectors aligned with their targets
- Programmatic frameworks such as PACE-D TA Program, which are closely anchored and driven by USAID

Through the DIV program, an open innovation program, ventures are supported across 3 stages:
- Proof of Concept: Up to US$ 200 k across max. of 3 years
- Testing and Positioning for Scale - US$ 200 k to US$ 1.5 Mn across max. of 3 years
- Scale-up - US$ 1.5 Mn to US$ 5 Mn across max. of 5 years

So far, ~US$ 106 Mn has been invested across these 3 stages of financing. PACEsetter Fund (corpus of nearly US$ 8 Mn) aims to accelerate the commercialization of innovative off-grid clean energy access solutions.

In addition, USAID also has a Developmental Credit Authority (DCA) initiative under which it provides Guarantees to Lenders. One such arrangement has been setup with RBL Bank to support energy access as also energy efficiency sector lending.

DCA entails a 50% pari-passu guarantee on loan principal (not fees or interest) and only covers non-sovereign debt capital (usually term loans) with maturities of up to 20 years.

Current global DCA portfolio commitments are about US$ 5 Bn.
India Partnership Program, launched in 2017 seeks to provide matching grants for up to US$ 40 Mn in various areas including large-scale adoption of renewable/variable energy (RE) and electricity distribution sector innovation.

FOCUS AREA
DIV funds innovations across all sectors.

WHAT DEFINES SELECTION
- Rigorous evidence of impact related to underserved individuals and communities in India
- Cost-effectiveness and pathways to scale
- Top quality HR and governance policies being in place
- Requisite technical expertise

“Taking ahead the learnings from PACE-D program, we are now in process of launching specific focus programs with shorter duration.”
- Anurag Mishra
USAID
**VILLGRO INNOVATIONS FOUNDATION**

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</table>

Villgro is India’s oldest and one of the world’s largest social enterprise incubators. Villgro incubates early-stage, innovative, for-profit social enterprises.

Villgro also runs iPITCH- a platform to discover innovative social enterprises for seed funding and INVENT (Innovative Ventures and Technologies for Development), a program supported by the Technology Development Board (TDB), Government of India, in collaboration with the Department for International Development (DFID), UK.

**FOCUS AREA/ SECTOR:** Education, Health, Agriculture and Energy

**WHAT DEFINES SELECTION**

Villgro does not engage at idea stage; instead the venture should be at pilot stage, preferably with early customer traction

- Minimum of 30% of the venture’s clientele should be those at the bottom of the pyramid
- Promoters’ understanding of the market, market sizing and opportunity as also the innovation and/or rationale for the venture

Typically, Villgro incubates 5-6 enterprises per sector at any given time. The duration of engagement is around 12 months. The budget outlay for such an engagement, including both direct funding and in-kind support, would be between US$ 400 – 450 k

**EXIT**

- Company has reached self-sustainability and there is a steady go-to-market strategy

**FUTURE PLANS**

Work in the energy sector is undergoing revival within Villgro and significant thrust emerging in energy sector financing-based incubation support is expected.

---

“**The key to unlock the doors to investor is to show how well you understand the market. Keep away from generic pitch; specific pitch is what makes the cut and finally IP really helps in making quicker decision.**”

- Ananth Aravumudan
  Villgro Innovations Foundations

---
YES Bank is one of the largest private sector banks in India. With corporate finance and Responsible Banking as a key brand pillar for the bank, YES has been a pioneer in several green financing initiatives.

In addition to lending, YES BANK has also been supporting the sustainability ecosystem through green bonds and YES SCALE acceleration programme.

YES Bank has made a public commitment of supporting deployment of 5 GW of renewable capacity, with focus being solar and wind.

Related to SME lending, initiatives include:

- **YES Samriddhi**

- **YES Suyog**

In addition, working capital loans of ₹ 2 - 10 Mn (US$ 0.03 - 0.13 Mn) on non-recourse basis can be availed under ‘Smart Overdraft’ initiative

**FUND SIZE:** Green financing of Up to US$ 5 Bn over next 15 years

**WHAT DEFINES SELECTION**

- **Overall**
  - Only businesses not in the bank’s negative list are considered
  - Typically, Recourse based financing; General financial covenants to be met
  - Loan appraisal process includes evaluation of customer profile, viability of business, past credit history and end use of the fund

- **YES Samriddhi**
  - Minimum ~5 years vintage of promoters in the same line of activity with at least 3 years at the borrowing entity
  - Maximum loan amount: ₹ 40 Mn (US$ 0.54 Mn), No-DP
  - Linked overdraft up to ₹ 20 Mn (US$ 0.27 Mn)
• YES Suyog (SME loan product) – only available for new YES Bank customers with annual turnover of ₹ 250 Mn (US$ 3.37 Mn) or less
  o Based on a scorecard-based appraisal model
  o Maximum loan amount is ₹ 20 Mn (US$ 0.27 Mn)
  o Limited recourse basis; A fixed deposit can be considered as a collateral under the programme

FINANCING OUTLOOK (SME lending)
• No processing fee is charged irrespective of loan being sanctioned or not for up to ₹ 0.5 Mn (US$ 0.01 Mn)
• For loans of up to ₹ 0.2 Mn, the interest rate can’t exceed Benchmark Prime Lending Rate (BPLR)

Timeline for credit decision from day of receipt depends on completion of application and sharing of required documents: (a) up to ₹ 0.5 Mn: within 2 weeks; (b) ₹ 0.5 Mn to ₹ 2.5 Mn: within 3 weeks; (c) Above ₹ 2.5 Mn: within 6 weeks

FUTURE PLANS
YES Bank has an MOU signed up with NSIC and intends to work closely with the organization to enable working capital for Micro & Small Enterprises and support business needs of MSEs.
RBL Bank is one of India’s fastest growing private sector banks with an expanding presence across the country. Building off its original agriculture focus, the bank has been supporting various DRE enterprises providing energy access solutions. The bank has particularly been able to pursue this due to the loan portfolio guarantee arrangement (DCA) that it has setup with USAID. Under this arrangement, RBL is seeking to build up to a US$75 Mn portfolio covering small and medium enterprises (SMEs) operating in off-grid, solar rooftops and energy efficiency sectors. RBL does not undertake pure play project financing; instead they finance companies who have a track record of executing projects in the concerned space.

They offer the following two products to micro and small businesses:
- Unsecured small business loan
- Secured small business loan

**FOCUS AREA/ SECTOR:** Broad based

**WHAT DEFINES SELECTION**
- Co-applicant is mandatory for any loan
- Tie-ups/ relations with large corporates provides extra comfort and is hence an enabler in availing debt
- Acceptable internal or external ratings
- Promoters’ experience, Management professionalism, track record, integrity, corporate governance
- Sustainability of the business model and Financial performance

**FINANCING OUTLOOK**
- RBL Bank Business loans of Up to ₹ 3.5 Mn (US$ 0.05 Mn) can be accessed by individuals, proprietorship, partnership and private limited firms subject to:
  - Minimum business turnover required is ₹ 10 Mn and for Professional / Service Sector, applicant’s gross receipts should be at least ₹ 6 Mn
  - Profitable business for the past 3 years
- Guarantee such as DCA helps alleviate risks for the bank but the appraisal process followed is as rigorous as any other loan.
GAINING TRACTION WITH THE INVESTORS

Picture credits: WWF-India
GAINING TRACTION WITH THE INVESTORS

A famous Chinese proverb states ‘Even the journey of a thousand miles begins with a single step’. The journey of the innovators profiled in this report and the insights from the variety of investors and financiers reveal a few lessons:

1: Gauging the need and preparedness for raising capital

- Raising funding for a startup is hard and it is important to comprehend the process and expectations on pre-requisites; else this can be a distraction and even delay the very demonstration that is viewed as critical.
- In case of early stage ventures, engagement with an incubator can help define a clear path, particularly on aspects such as:
  - Quantum of capital
  - Extent of shareholding dilution (if equity being raised) as also control dilution (board composition, special rights)

_Important to understand that while equity is needed, ventures can scale in a non-dilutive manner as well through debt, just as Smart Joules has opted so far. This would be specific to the case of each venture._

2: Managing capital raising process without despair

- Signing a term sheet (or Sanction Letter in case of a bank loan) is only the first step. The terms at this stage are indicative, i.e., this is more of a letter of intent and not a binding contract yet.
- Due diligence entails time and effort in ensuring requisite documentation
- Many aspects of the negotiation and documentation deal with negative outcome situations and hence may seem demoralizing and cause frustration

3: Tech-enabled and not Tech-dependent

Technology has become ubiquitous and cheap to develop; hence it is important not to be entirely locked into an underlying technology, losing the focus on the innovation.

4: Passion and Perseverance are key virtues

If an idea isn’t immediately yielding results, entrepreneurs tend to pivot and move on to something else. While flexibility is important, this may demonstrate lack of passion and be viewed as a lack of commitment by prospective investors and financiers.

5: Revenue focus is key (the rest will follow)

Develop a business model that generates early revenue sufficient to finance growth else dependence on external capital may entail distraction and impact the venture’s progress.
6: Chemistry and not valuation alone should guide investor selection
Having the right investor on-board who understands the business and shares a similar vision is critical to future of a venture. This will ensure growth targets are realistic and the journey is as interesting as the destination.

The measurable benefits of an innovation and its uniqueness over alternate solutions, backed with a robust business plan, helps attract investor attention. The innovator, while focusing on the novelty of their technology, should also give sufficient focus to marketing, scalability, revenue and growth models for the innovation. These should be based on in depth analysis of market potential in order to develop the business case for raising capital. This creates a symbiotic relationship between the innovator and the investor and meets their mutual interests. ‘Innovation makes business sense’ when a well-articulated impactful value proposition is developed for achieving holistic impact, based on innovator-investor shared vision and synergies.
This section maps Catalyst/ Incubators (10); Commercial Banks (8); Corporate Investors (9); Donors/Foundations (14); Impact Investors (11); International and Regional DFIs /Govt. donors (7); Venture Capital/Private Equity (39) active in the cleantech space. The information was collected from secondary sources and primary conversations and was last updated in September 2018.

### Venture Capital/Private Equity

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<th>Investor Name</th>
<th>Relevant Investment Stage</th>
<th>Return expected/ Rate of Interest</th>
<th>Tenure / Duration of investment</th>
<th>Ticket Size</th>
<th>Illustrative Deals</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aloe Private Equity - Aloe Environment Fund iii</td>
<td>Growth ✓</td>
<td>20%+</td>
<td>8 Years</td>
<td>Greenko Group Plc.</td>
<td>Location: Paris Address: 23 rue Galilee, 75116, Email: <a href="mailto:contact@aloe-group.com">contact@aloe-group.com</a></td>
<td></td>
</tr>
<tr>
<td>Ankur Capital</td>
<td>Early ✓</td>
<td>20%+</td>
<td>5 Years</td>
<td>TESSOL</td>
<td>Location: Mumbai Address: Unit 5 Jetha Compound, Byculla (E), Mumbai-400027 Email: <a href="mailto:info@ankurcapital.com">info@ankurcapital.com</a></td>
<td></td>
</tr>
<tr>
<td>Berkley Energy - Berkley Partners LLP - Renewable Energy Asia Fund - Renewable Energy Asia Fund II</td>
<td>Early ✓</td>
<td>20%+</td>
<td></td>
<td>Panama</td>
<td>Location: New Delhi Address: KLJ Tower North B-5, District Centre, NSP, Wazirpur Phone: (+91)-11-6648 1016 Email: <a href="mailto:Investors@berkeleypartners.com">Investors@berkeleypartners.com</a></td>
<td></td>
</tr>
<tr>
<td>Bessemer Venture Partners</td>
<td>Early ✓</td>
<td>20%+</td>
<td>5 ~8 years</td>
<td>US$ 5 Mn - US$ 40 Mn</td>
<td>Applied Solar Technologies; Orient Green Power; Kiran Energy</td>
<td>Location: Bengaluru Address: 40 Vittal Mallya Road, 2nd Floor, Bengaluru-560 001 Phone: (+91)-80-3082-9000</td>
</tr>
<tr>
<td>Investor Name</td>
<td>Relevant Investment Stage</td>
<td>Return expected/ Rate of Interest</td>
<td>Tenure / Duration of investment</td>
<td>Ticket Size</td>
<td>Illustrative Deals</td>
<td>Contact Details</td>
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</tr>
<tr>
<td>Blume Ventures</td>
<td>Early</td>
<td>✓ 20%+</td>
<td>7–8 years</td>
<td>US$ 500 k - US$ 1.5 Mn</td>
<td>Zenatis; Carbon Clean Solutions</td>
<td>Location: Mumbai  Address: Unit No 1, Jetha Compound, Opp Nirmal Park, Byculla East, Mumbai-400027</td>
</tr>
<tr>
<td>Endiya Partners</td>
<td>Early Growth</td>
<td>✓ ✓ 20%+</td>
<td>5 Years</td>
<td>US$ 300 k - US$ 1.5 Mn</td>
<td>Cygni Energy</td>
<td>Location: Hyderabad Address: Endiya Partners, Plot No. 40 &amp; 41, 1st Floor, Road No. 2, Nanakramguda, Hyderabad-500032 Phone: (+91)-40-2970 5071 Email: <a href="mailto:Contact@endiya.com">Contact@endiya.com</a></td>
</tr>
<tr>
<td>Gray Ghost Ventures - GrayGhost Emerging Markets Fund</td>
<td>PoC Early</td>
<td>✓ ✓ 20%+</td>
<td>5 ~8 years</td>
<td>US$ 6 Mn</td>
<td>d.light designs</td>
<td>Location: Chennai Address: Surya, 8/16, Seethammal Extension 2nd Cross Street, Alwarpet, Chennai-600018 Email: <a href="mailto:sawasthi@grayghostventures.com">sawasthi@grayghostventures.com</a></td>
</tr>
<tr>
<td>IDFC Private Equity</td>
<td>Early</td>
<td>✓ 20%+</td>
<td>8 years</td>
<td></td>
<td>Sembcorp Green Infra Ltd.</td>
<td>Location: Mumbai Address: IDFC Alternatives, 7th Floor, 1 India Bulls Centre, Jupiter Mills Compound, Elphinstone, Mumbai-400013 Phone: (+91)-22-4222 2155</td>
</tr>
<tr>
<td>IFCI Venture Capital - Green India Venture Fund - II</td>
<td>Early Growth</td>
<td>✓ ✓ ~20%</td>
<td>8 Years</td>
<td>US$ 7.5 Mn</td>
<td>Ganesh Ecosphere Limited</td>
<td>Location: New Delhi Address: IFCI Tower, 16th Floor, 61 Nehru Place Phone: (+91)-11-26453343/46 Email: <a href="mailto:funds@ifciventure.com">funds@ifciventure.com</a>, <a href="mailto:deals@ifciventure.com">deals@ifciventure.com</a></td>
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<tr>
<th>Investor Name</th>
<th>Relevant Investment Stage</th>
<th>Return expected/ Rate of Interest</th>
<th>Tenure / Duration of investment</th>
<th>Ticket Size</th>
<th>Illustrative Deals</th>
<th>Contact Details</th>
</tr>
</thead>
</table>
| Infuse Ventures               | R & D PoC Early           | ✓ 20%+                            | 5 years                         | US$ 150 k - US$ 1.5 Mn | TESSOL; Gold Farm; GIBSS; Prolean (Proviera); Fourth Partner Energy | Location: Ahmedabad  
Address: c/o CIIE, Indian Institute of Management  
Ahmedabad-380015  
Phone: (+91)-79-6632-4201, - 4234  
Email: apply@infuseventures.in |
| Indian Angel Network          | Early                     | ✓ 20%+                            | 3 - 5 years                     | US$ 400 k - US$ 600 k$^1$ | Ecosense | Location: New Delhi  
Address: 104, First floor, Delhi Blue Apartments, Main Ring Road, Ansari Nagar, New Delhi-110029  
Phone: (+91)-11-4075 5713  
Email: info@indianangelnetwork.com |
| I Squared Capital             | Growth                    | ✓ 20%+                            | 10 years+                       | US$ 50 Mn+ | Amplus Energy      | Location: New Delhi  
Address: The Grand, Vasant Vihar, New Delhi-110070  
Email: info@isquaredcapital.com |
| SBICAP Ventures Ltd. - Neev Fund Trust Account | Early Growth               | ✓ 20%+                            | ~ 8 years                       | US$ 10 Mn+ | SunSource Energy; United Sustainable Energy India Pvt. Ltd. | Location: Mumbai  
Address: 1501, Tower 1C, One India Bulls Centre, Senapati Bapat Marg, Elphinstone Road (W), Mumbai-400013  
Phone: (+91)-22-4921 2800  
Email: contactsvl@sbicaps.com |
| Nereus Capital - Alternative Energy Fund | Growth                  | ✓ 20%+                            | 8 Years                         | US$ 15 - US$ 35 Mn |                   | Location: Mumbai  
Address: Suite 1806, 114 Dr. E. Moses Road, Worli, Mumbai, 400018  
Email: info@nereuscapital.com |

$^1$ may also invest up - US$ 1 Mn
<table>
<thead>
<tr>
<th>Investor Name</th>
<th>Relevant Investment Stage</th>
<th>Return expected/ Rate of Interest</th>
<th>Tenure / Duration of investment</th>
<th>Ticket Size</th>
<th>Illustrative Deals</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olympus Capital Asia</td>
<td>Growth ✓</td>
<td>6 - 12%</td>
<td>~ US$ 35 Mn</td>
<td>Skeiron Renewable Energy Pvt Ltd</td>
<td>Location: Gurugram Address: Unit # 407, 4th Floor tower, B Signature Towers, South City - I, Gurugram-122002 Ph: (+91)-124-451-7000</td>
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</tr>
<tr>
<td>Omnivore Partners</td>
<td>Early ✓</td>
<td>20%+</td>
<td>8 Years</td>
<td>Ecozen Solutions</td>
<td>Location: New Delhi Address: 222-B, 2nd Floor, Hemkunt Chambers, 89, Nehru Place, New Delhi-110 019 Ph: (+91)-11-41-03-53-40 Email: <a href="mailto:Info@omnivore.vc">Info@omnivore.vc</a></td>
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</tr>
<tr>
<td>IDFC-Parampara Capital</td>
<td>Early Growth ✓</td>
<td>Depends on risk profile; ~ 25%+</td>
<td>3-5 Years</td>
<td>US$ 100 k - US$ 1 Mn Atomberg Technologies; Chakr Innovation</td>
<td>Location: Mumbai/ Hyderabad Email: <a href="mailto:ideas@paramparas.com">ideas@paramparas.com</a></td>
<td></td>
</tr>
<tr>
<td>pi Ventures</td>
<td>PoC Early ✓</td>
<td>20%+</td>
<td>US$ 100 k - US$ 200 k</td>
<td>Zenatix</td>
<td>Location: Bengaluru Address: #757, 17th H Main, 3 rd A Cross, 6th Block, Koramangala, Bengaluru-560095 Email: <a href="mailto:manish@piventures.in">manish@piventures.in</a></td>
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<tr>
<td>SIDBI Venture Capital - India Opportunities Fund - Samridhi Fund - Maharashtra State Social Venture Fund (MS Fund)</td>
<td>Early Growth ✓</td>
<td>20%+</td>
<td>~ 5 Years</td>
<td>US$ 3.5 Mn Oriano Clean Energy</td>
<td>Location: Mumbai Address: 31, 1001, 10th floor, Naman Centre, C, G Block, Bandra Kurla Complex, Bandra East, Mumbai-400051 Email: <a href="mailto:msfund@sidbiventure.co.in">msfund@sidbiventure.co.in</a></td>
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<tr>
<td>Investor Name</td>
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<td>Return expected/Rate of Interest</td>
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<td>Ticket Size</td>
<td>Illustrative Deals</td>
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<tr>
<td>Texas TPG</td>
<td>Growth</td>
<td>✓</td>
<td>20%+</td>
<td>~ 10 years</td>
<td>~ 25 Mn+</td>
<td>Fourth Partner Energy</td>
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<td></td>
<td></td>
<td></td>
<td>Location: Mumbai Address: 1004, The Capital, Plot No. C-70, G-Block, Bandra Kurla Complex, Bandra (E), Mumbai-400051 Phone: +(91)-22-6136-1900 Email: <a href="mailto:inquiries@tpg.com">inquiries@tpg.com</a></td>
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<tr>
<td>SRI capital</td>
<td>Early</td>
<td>✓</td>
<td>20%+</td>
<td>5 Years</td>
<td></td>
<td>GIBSS</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Location: Hyderabad Address: Plot No. 564-A-26-III Road No. 92, Opposite Lotus Pond, Jubilee Hills, Hyderabad-500 033 Email: <a href="mailto:funding@sricapital.com">funding@sricapital.com</a></td>
</tr>
<tr>
<td>Tiger Global</td>
<td>Early Growth</td>
<td>✓</td>
<td>20%+</td>
<td></td>
<td></td>
<td>Ather Energy</td>
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<tr>
<td></td>
<td>Mature</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>Location: New York Address: 9 West 57th Street, 35th Floor, New York Phone: (212)-984-8800</td>
</tr>
<tr>
<td>The Chennai Angels (angel investment group)</td>
<td>Early</td>
<td>✓</td>
<td>20%+</td>
<td>3 - 5 Years</td>
<td>US$ 70 k - US$ 420 k</td>
<td>Fourth Partner Energy</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>Location: Chennai Phone: +9884824900 Email: <a href="mailto:connect@thechennaiangels.com">connect@thechennaiangels.com</a></td>
</tr>
<tr>
<td>Ventureast Fund Advisors India Limited</td>
<td>Early Growth</td>
<td>✓</td>
<td>20%+</td>
<td>5 - 7 years</td>
<td></td>
<td>Bharat Light Power; InteliZon Energy</td>
</tr>
<tr>
<td></td>
<td>Mature</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>Location: BENGALURU Address: 9/2-1 Museum Road, Bengaluru-560025 Phone: (+91)-80-2558 0045</td>
</tr>
<tr>
<td>Warburg Pincus</td>
<td>Growth</td>
<td>✓</td>
<td>20%+</td>
<td>8-10</td>
<td>~ US$ 100 Mn</td>
<td>CleanMax Solar</td>
</tr>
<tr>
<td></td>
<td>Mature</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>Location: Mumbai Address: 7th Floor, Express Towers, Nariman Point, Mumbai-400021</td>
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</table>
## NBFC/ Debt Funds

<table>
<thead>
<tr>
<th>Investor Name</th>
<th>Relevant Investment Stage</th>
<th>Return expected/ Rate of Interest</th>
<th>Tenure / Duration of investment</th>
<th>Ticket Size</th>
<th>Illustrative Deals</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>IREDA<strong>4</strong>&lt;br&gt;- KfW Access to Clean Energy Programme&lt;br&gt;- AFD Line&lt;br&gt;- ADB Line (Clean Energy Finance Investment Program)</td>
<td>Mature ✓</td>
<td>10-11% ✓</td>
<td>8 - 10 Years</td>
<td>US$ 75 k+</td>
<td>Cambridge Clean Energy</td>
<td>Location: New Delhi&lt;brAddress: 3rd Floor, August Kranti Bhawan, Bhikaiji Cama Place, New Delhi – 110 066&lt;brPhone: (+91)-11-26717400 - 26717412&lt;brEmail: <a href="mailto:cmd@ireda.in">cmd@ireda.in</a></td>
</tr>
<tr>
<td>cKers Finance</td>
<td>Early Growth ✓ ✓</td>
<td>• ~ 10% (for mini-grids)&lt;br• 12 - 14% (other segments)&lt;br• Up to 8 years (for mini-grids)&lt;br• 5 – 10 years (other segments)</td>
<td>7 years</td>
<td>US$ 100 k – 2 Mn</td>
<td>Claro; Promethean Energy</td>
<td>Location: New Delhi&lt;brAddress: 708 Hemkunt Chambers, 89 Nehru Place, New Delhi-110019&lt;brPhone: (+91)-11-41070629&lt;brEmail: <a href="mailto:contact@cKersFinance.in">contact@cKersFinance.in</a></td>
</tr>
<tr>
<td>Electronica Finance&lt;br- Solar Loans</td>
<td>Growth Mature ✓ ✓</td>
<td>~15 -18% ✓</td>
<td>7 years</td>
<td></td>
<td></td>
<td>Location: Pune&lt;brAddress: 128/A, Kailashchandra, Paud Road, Kothrud, Pune-411038&lt;brPhone: (+91)-20-67290700&lt;brEmail: <a href="mailto:contact@efl.co.in">contact@efl.co.in</a></td>
</tr>
<tr>
<td>InnoVen Capital</td>
<td>Early Growth ✓ ✓</td>
<td>~15% ✓</td>
<td></td>
<td>US$ 2 Mn</td>
<td>Kiran Energy</td>
<td>Location: Mumbai&lt;brAddress: 805-A, 8th Floor, 'The Capital' G-Block, BKC, Bandra (East), Mumbai – 400051&lt;brPhone: (+91)-2-67446500&lt;brEmail: <a href="mailto:contact@innovencapital.com">contact@innovencapital.com</a></td>
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**4** Only lines for Decentralized Renewables considered
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<tr>
<th>Investor Name</th>
<th>Relevant Investment Stage</th>
<th>Return expected/ Rate of Interest</th>
<th>Tenure / Duration of investment</th>
<th>Ticket Size</th>
<th>Illustrative Deals</th>
<th>Contact Details</th>
</tr>
</thead>
</table>
| IntelleGrow                              | Early Growth ✓            | ~15%                              | 2 - 4 Years                     | US$ 115 k - US$ 1.5 Mn | Orb Energy; Mera Gao Power; Husk Power System; d.light designs; Simpa Energy        | Location: Mumbai  
Address: 12B, 3rd Floor, Techniplex-II IT Park, Goregaon (West), Mumbai – 400062  
Phone: (+91)-22-62492700  
Email: info@intellegrow.com |
| L&T finance                              | Growth Mature ✓ ✓         | 12 -15%                           | Up to 10+ years                 | US$ 2 - 5 Mn | Refex Energy; Applied Solar Technologies                                             | Location: New Delhi  
Address: 5th Floor and 6th Floor DCM Building, Barakhamba Rd, Connaught New Delhi-110001  
Phone: (+91)-11-61656000 |
| Maanaveeya Development & Finance Private Limited | Growth Mature ✓ ✓         | 14%+                              | ~3 Years                        | <US$ 1 Mn   | OnergY Solar; Simpa Networks                                                         | Location: Hyderabad  
Address: Door No. 8-2-293/82/2/208/A and 208/A/1, M.L.A’s Colony, Banjara Hills, Road No. 12, Hyderabad-500034  
Phone: (+91)- 40-23554729  
E-mail: office.in@oikocredit.org |
| Mahindra & Mahindra Financial Services Limited | Growth Mature ✓ ✓         | 12 - 20%                          |                                 |              |                                                                                     | Location: Mumbai  
Address: 4th Floor, Mahindra Towers, Dr. G.M. Bhosale Marg, P.K. Worli, Mumbai – 400018  
Phone: (+91)-22-6652 6000  
Email: share.mmfsl@mahindra.com |
| Northern Arc (old name IFMR Capital)     | Growth Mature ✓ ✓         | 12 – 15%                          | 3 - 5 Years                     | US$ 2.5 Mn  |                                                                                     | Location: Gurgaon  
Address: IFMR Capital, 803, 8th Floor, JMD Megapolis, Sector – 47, Sohna Road, Gurgaon – 122 002  
Phone: (+91)-124-4587830 |
| ResponsAbility Investments               | Growth Mature ✓ ✓         | ~ 15%                             | 0.5 - 3 Years                   | US$ 500 k - US$ 10 Mn | d.light design; Cleantech Solar; Fourth Partner Energy                               | Location: Zurich  
Address: Josefstasse 59, 8005 Zurich  
Phone: (+41)-44 403 05 00 |
<table>
<thead>
<tr>
<th>Investor Name</th>
<th>Relevant Investment Stage</th>
<th>Return expected/ Rate of Interest</th>
<th>Tenure / Duration of investment</th>
<th>Ticket Size</th>
<th>Illustrative Deals</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>SunFunder</td>
<td>Growth</td>
<td>✓</td>
<td>9-13%+</td>
<td>1-5 years</td>
<td>US$ 250 k+ - US$ 5 Mn+</td>
<td>SolarNow; Greenlight Planet; InspiraFarm; QuestWorks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Location: Nairobi Address: SunFunder, iHub Offices - 5th floor, Senteu Plaza, Nairobi Email: <a href="mailto:borrow@sunfunder.com">borrow@sunfunder.com</a></td>
</tr>
<tr>
<td>Symbiotics - SME Debt Pool Program</td>
<td>Mature</td>
<td>✓</td>
<td>15%+</td>
<td>1 - 8 Years</td>
<td></td>
<td>Location: Geneva Address: Geneva (HQ), Rue de la Synagogue 31, 1204 Geneva Phone: (+41)-22-328 15 40</td>
</tr>
<tr>
<td>Tata Cleantech Capital</td>
<td>Growth</td>
<td>✓</td>
<td>Confidentia l</td>
<td>15-20 Years</td>
<td>Above US$ 0.15 Mn (Above ₹ 10.0 Mn)</td>
<td>Smart Joules</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Location: Mumbai Address: Tata Capital Limited, Tower A, Peninsula Business Park, Lower Parel (W), Mumbai - 400 013 Phone: (+91)-22-6666 9000</td>
</tr>
</tbody>
</table>

**Corporate Investors**

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<thead>
<tr>
<th>Investor Name</th>
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<th>Illustrative Deals</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enel Green Power</td>
<td>Early Growth</td>
<td>✓</td>
<td>20%+</td>
<td>Long term</td>
<td>US$ 10 Mn+</td>
<td>Location: Gurgaon Address: 14th floor tower B, Vatika towers, DLF Golf course road Suncity, Sector 54 Email: <a href="mailto:blpenergy@enel.com">blpenergy@enel.com</a></td>
</tr>
<tr>
<td>Energy Investment Tech Pte Ltd</td>
<td>Growth</td>
<td>✓</td>
<td>20%+</td>
<td>5-8 years</td>
<td>US$ 5 Mn+</td>
<td>OMC Power</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Location: Singapore Address: 22B DUXTON HILL, Singapore-089605</td>
</tr>
<tr>
<td>Environmental Resources Management (ERM)</td>
<td>Growth</td>
<td>✓</td>
<td>20%+</td>
<td></td>
<td>SustainTech</td>
<td>Location: Gujarat Address: 201, “637” Building Opposite Sears Tower, Gulbai Tekra Ambawadi, Ahmedabad Phone: (+91)-7949002300</td>
</tr>
<tr>
<td>Investor Name</td>
<td>Relevant Investment Stage</td>
<td>Return expected/ Rate of Interest</td>
<td>Tenure / Duration of Investment</td>
<td>Ticket Size</td>
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</tr>
<tr>
<td>ENGIE Rassembleurs d’Energies S.A.S</td>
<td>Early Growth</td>
<td>✓  ✓</td>
<td>NPV positive and portfolio to reach breakeven with impact as the primary target</td>
<td>7 Years</td>
<td>US$ 1 Mn+ with first tranche typically US$ 500k</td>
<td>BBOXX; HUSK Power Systems; Sistema bio Location: Paris Address: ENGIE, 1, Place Samuel de Champlain, Faubourg de l’Arche-92930 Paris la Défense</td>
</tr>
<tr>
<td>Hero Electronix</td>
<td>Growth</td>
<td>✓</td>
<td>20%+</td>
<td></td>
<td>Zenatix</td>
<td>Location: New Delhi Address: 503, 5th Floor Rectangle 1, D4, Saket District Center, New Delhi-110017 Email: <a href="mailto:enquiry@heroelectronix.com">enquiry@heroelectronix.com</a> Phone: (+91)-11-4327070105</td>
</tr>
<tr>
<td>Mahindra &amp; Mahindra</td>
<td>Growth</td>
<td>✓</td>
<td>20%+</td>
<td></td>
<td>Goldfarm</td>
<td>Location: Tokyo, Address: Mitsui &amp; Co. Global Investment, Inc. Tokyo Branch, Nippon Life Marunouchi Garden Tower 11F, 1-3, Marunouchi 1-Chome, Chiyoda-ku, Tokyo 100-8631 Phone: (+81)-3-3285-3166 Email: <a href="mailto:MGIcontractSJFVZ@mitsui.com">MGIcontractSJFVZ@mitsui.com</a></td>
</tr>
<tr>
<td>Mitsui Global Investments</td>
<td>Early Growth</td>
<td>✓  ✓</td>
<td>20%+</td>
<td>Long term</td>
<td>OMC Power</td>
<td>Location: Tokyo, Address: Mitsui &amp; Co. Global Investment, Inc. Tokyo Branch, Nippon Life Marunouchi Garden Tower 11F, 1-3, Marunouchi 1-Chome, Chiyoda-ku, Tokyo 100-8631 Phone: (+81)-3-3285-3166 Email: <a href="mailto:MGIcontractSJFVZ@mitsui.com">MGIcontractSJFVZ@mitsui.com</a></td>
</tr>
<tr>
<td>Schneider Electric - Schneider Electric Energy Access Fund</td>
<td>Early Growth</td>
<td>✓  ✓</td>
<td>20%+</td>
<td></td>
<td>Simpa Energy</td>
<td>Location: Tokyo, Address: Mitsui &amp; Co. Global Investment, Inc. Tokyo Branch, Nippon Life Marunouchi Garden Tower 11F, 1-3, Marunouchi 1-Chome, Chiyoda-ku, Tokyo 100-8631 Phone: (+81)-3-3285-3166 Email: <a href="mailto:MGIcontractSJFVZ@mitsui.com">MGIcontractSJFVZ@mitsui.com</a></td>
</tr>
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</tbody>
</table>
| Aavishkar           | Early Growth Mature       | ✓ 15-20%+ ✓15-20%+ ✓15-20%+       | 5-8 years                       | US$ 275 k - US$ 1.5 Mn               | Vana Vidyut Pvt. Ltd.                                                       | Location: Mumbai  
Address: 13B, 6th Floor, Techniplex II, IT Park Off Veer Sarvarkar Fly Over Goregaon  
Phone: (+91)-22-61248900  
Email: funds@aavishkaar.org |
| Acumen              | Early                      | ✓ ~15%+                           | ~8 years                        | US$ 250 - 500 K+                     | Frontier Market; Greenway Grameen Infra; Husk Power System; Orb Energy       | Location: Mumbai  
Address: 203 Dheeraj Plaza Hill Road, Bandra West  
Phone: (+91)-22-6740-1500 |
| Bamboo Finance      | Early                      | ✓ 20%+                            |                                | US$ 1 Mn - US$ 5 Mn                  | Greenlight planet; Husk Power System; Orb Energy                            | Location: Genève  
Address: 7, Rue de la Fontaine, 1204  
Phone: (+ 41)-22-544 2070 |
| Caspian Advisors    | Early Growth               | ✓ Debt: 14% to 17% (Lending rate) | Debt: 1 - 4 Years (Loan tenure) | Debt – US$ 147 k – 2.2 Mn  
Equity: 20%+ Equity – US$ 147 k - 735 k | Cygni; Oorja; GPS Renewables; ecoZen | Location: Hyderabad  
Address: 2nd Floor, 8-2-596/5/B/1, Road No. 10, Banjara Hills, 500034  
Phone: (+91)-40-6629 7100  
Email: info@caspian.in |
| Ceniarth LLC        | PoC Early                  | ✓ 20%                             | ~ 5 years                       | US$ 500 k - US$ 2 Mn                 | Sun Funder; Frontier Markets; Greenway Grameen Infra                        | Location: London/ New York/ San Francisco  
Email: energyaccess@cieniarthllc.com |
| Grassroots Business | Growth                     | ✓ 20%+                            | 5 - 7 Years                     | US$ 750 k - US$ 2500 k               |                                                                                  | Location: New Delhi  
Address: DE-153, Tagore Garden, New Delhi-110027  
Email: communications@gbfund.org |
| C4D Partners        | Early Growth               | ✓ Equity - 20% + Debt - Comparable to NBFC interest rates | ~ 5 Years                       | Typically, US$ 2-4 Mn (in tranches) | Mera Gao Power; Freyr Energy                                               | Location: Netherlands  
Address: Arthur van Schendelstraat-752, 3511  
Phone: (030)-3074462  
Email: info@c4dpartners.com |
<table>
<thead>
<tr>
<th>Investor Name</th>
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</tr>
</thead>
</table>
| Insitor Impact Asia Fund    | Early                      | ✓                                | 20%+                            | 4-6 Years   | Mera Gao Power; Sustain Tech; Micro energy credit | Location: Singapore
Address: 6 Temasek Boulevard #09-05 Suntec Tower Four
Email: info@insitorimpactasiafund.com |
| Kohli Ventures              | Early                      | ✓                                | 12%+                            | 5 – 10 years| Boond; E-Hands Energy; SustainTech | Location: United Kingdom
Phone: (+44)-2034344777
Email: investments@kohliventures.com |
| Opes Impact Fund            | Early                      | ✓                                | 25% +                            | 8 Years     | Inficold; Promethean Energy; Carbon Masters; etc. | Location: London
Address: Devonshire House, 1 Devonshire Street, London
Email: info@opesfund.eu |
| Sangam Ventures             | Seed Early                 | ✓                                | 25% +                            | 8 Years     | Insficold; Promethean Energy; Carbon Masters; etc. | Location: New Delhi
Address: The Collab 1st floor, D-66, 60 feet road, Chattarpur, New Delhi-110074
Email: prospect@sangam.vc |

**Donors/Foundations**

<table>
<thead>
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<th>Investor Name</th>
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</tr>
</thead>
</table>
| Cairn Foundation                  | PoC Early                 | ✓                                | Grants                          | US$ 1mn     | Grants for Microgrids/SHS/Solar Lanterns | Location: Gurgaon
Address: Cairn Oil & Gas
Vedanta Limited, DLF Atria, phase 2, Jacaranda Marg, DLF City, Gurgaon- 122002
Phone: (+91)-124 4764539 |
| Canopus Foundation                | R &D PoC                  | ✓                                | Grants (Prize Money)            | US$ 250k    | Boond; Mera Gao Power | Location: Freiburg
Address: Günterstalstraße 9a 79102
Phone: (+49)-761 20 20 172
Email: info@canopusfund.org |
<table>
<thead>
<tr>
<th>Investor Name</th>
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</tr>
</thead>
</table>
| DOEN Foundation / DOEN Participaties B.V. | Early                     | ✔                                | Patient capital, no pre-defined investment horizon | US$ 50 k – US$ 500 k | SELCO India and Mlinda | Location: Amsterdam  
Address: P.O. Box 75621, 1070 AP Amsterdam  
Phone: (+31)-20 57 37 333  
Email: doen@doen.nl |
| Good Energies | Early | ✔ | Grants | SELCO India; d.light designs; Mlinda | Location: Switzerland  
Address: Good Energies Foundation, Grafenauweg 10  
CH-6301 Zug  
Phone: (+41)- 41-729 69 02  
Email: mail@goodenergies.org |
| HILTI Foundation R &D PoC Early | ✔ ✔ ✔ | Grant; Impact capital @<2% (US$ terms) | US$ 150 k+ | Simpa Energy | Location: Switzerland  
Address: PO Box 550 Feldkircherstrasse 100  
9494 SchaanLiechtenstein  
Phone: (+423)-294 22 82  
Email: info@hiltifoundation.org |
| Ikea Foundation | | Grants | SELCO Foundation; Mlinda Foundation | | Location: Netherland  
Address: Stichting IKEA Foundation (IKEA Foundation) P.O. Box 11134 2301 EC Leiden |
• Impact Investments – Under development | | Location: United States  
Address: 140 S. Dearborn Street, Chicago, IL 60603-5285 |
| Lemelson Foundation R &D PoC Early | ✔ ✔ ✔ | Grants | Prometheus Power System | | Location: Orlando  
Address: 1455 NW Overton Street, Suite 500 Portland, OR-97209  
Phone: (503)-827-891 |
| Packard Foundation Growth | ✔ | Grants | US$ 250 k+ | Orb Energy | Location: California  
Address: The David and Lucile Packard Foundation  
343 Second Street Los Altos, CA-94022  
Phone: (+1)-650-948-7658 |
<table>
<thead>
<tr>
<th>Investor Name</th>
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<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rianta Capital - Artha Venture Challenge</td>
<td>Early ✓</td>
<td>Grant and Convertibles (&lt; 5% in US$)</td>
<td>5 ~ 8 Years</td>
<td>Up to US$ 250 k</td>
<td>Avani Bioenergy; Boond; Frontier Markets; ONergy; SustainTech</td>
<td>Location: Zürich, Switzerland Address: Rianta Capital Zurich, Raemistrasse 6, CH-8001 Email: <a href="mailto:info@arthaventurechallenge.com">info@arthaventurechallenge.com</a></td>
</tr>
<tr>
<td>The Rockefeller Foundation</td>
<td>Early Growth ✓ ✓</td>
<td>8-10%</td>
<td>8 ~ 10 Years</td>
<td>US$ 1.5 Mn+</td>
<td>OMC; Husk; eKers Finance</td>
<td>Location: New York Address: 420 Fifth Avenue New York, NY 10018 Phone: (212) 869-8500</td>
</tr>
<tr>
<td>Shell Foundation</td>
<td>R&amp;D PoC ✓ ✓ ✓ ✓</td>
<td>Grant and Equity</td>
<td>8 years +</td>
<td>US$ 200 k - US$ 2 Mn</td>
<td>Envirofit; d.light designs; Husk Power System</td>
<td>Location: London Address: Shell Foundation 40 Bank Street London E14 5NR</td>
</tr>
<tr>
<td>Tata Trust</td>
<td>PoC Early ✓ ✓</td>
<td>Grants</td>
<td>US$ 100 ~ 500 k</td>
<td></td>
<td></td>
<td>Location: Mumbai Address: World Trade Center-1, 26th floor, Cuffe Parade, Mumbai-400 005 Email: <a href="mailto:talktous@tatatrusts.org">talktous@tatatrusts.org</a></td>
</tr>
<tr>
<td>Nand and Jeet Khemka Foundation</td>
<td>PoC Early ✓ ✓</td>
<td>Grants</td>
<td></td>
<td></td>
<td></td>
<td>Location: New Delhi Address: 1st Floor, Khemka House, 11 Community Centre, Saket Phone: (+91)-11-46034800 Email: <a href="mailto:info@khemkafoundation.net">info@khemkafoundation.net</a></td>
</tr>
<tr>
<td>USAID (Pacesetter, DIV)</td>
<td>Early Growth ✓ ✓</td>
<td>Only Impact is measured</td>
<td>Typically, 2-3 Years</td>
<td>Up to US$ 5 Mn - DIV &lt; US$ 250k - Pacesetter</td>
<td>• PACEsetter – eKers Finance, Mera Gao Power, Greenway • DIV – Mera Gao Power, Simpa Energy • DCA – RBL (US$ 75 Mn); Orb Energy (US$ 1 Mn from Deutsche Bank)</td>
<td>Location: New Delhi Address: USAID/India, American Embassy Shantipath, Chanakyapuri Phone: (+91)-11-24198000 Email: <a href="mailto:indiaprogramsupport@usaid.gov">indiaprogramsupport@usaid.gov</a></td>
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<tr>
<td>Investor Name</td>
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<td>Tenure / Duration of investment</td>
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</table>
| CIIE          | R & D PoC Early           | ✓ Grant Equity: 20%+              | 1 - 3 years                   | Up to US$ 150 k | Gram Urja; Boond; OEnergy; Gram Power; Greenway; Grameen Infra; Fourth Partner Energy | Location: Ahmedabad
                              |                            |                                 |                 |                         | Address: Sargam Marg, Vastrapur, New Campus IIMA, Gujarat 380015
                              |                            |                                 |                 |                         | Phone: (+91)-79-6632 4201
                              |                            |                                 |                 |                         | Email: ciie@iima.ac.in |
| Echoing Green | Early                     | ✓ Grant (fellowship)              | 2 Years                       | US$ 75 - 100 k | Boond; Oorja; GRID; Smart Joules; Greenway; Grameen Infra; Frontier Markets | Location: New York
                              |                            |                                 |                 |                         | Address: 462 Seventh Avenue, 13th Floor
                              |                            |                                 |                 |                         | Phone: (+1) 212-689-1165 |
| Global Alliance for Clean Cookstoves (Women’s Empowerment Fund) | Early | ✓ Grants | US$ 75 k - US$ 150 k | Dharma Life |                         | Location: Washington D.C
                              |                            |                                 |                 |                         | Address: 1750 Pennsylvania Ave NW, Suite 300, 20006
                              |                            |                                 |                 |                         | Email: info@cleancookstoves.org |
| National Geographic Society (Terra Watt Prize) | PoC Early | ✓ Grants | US$ 125 k | Mera Gao Power; Frontier Markets |                         | Email: CLipton@ngs.org |
| SELCO Foundation | PoC Early                | ✓ Grants /TA support            | US$ 7 k - US$ 420 k           | OEnergy; Pioneer power; Boond; Mangaal; Mukti Solar |                         | Location: Bengaluru
                              |                            |                                 |                 |                         | Address: # 690, 15th Cross, 2nd Phase J P Nagar, -560078, Karnataka, India
                              |                            |                                 |                 |                         | Phone: (+91)-80-2649 3145
                              |                            |                                 |                 |                         | Email: info@selcofoundation.org |
| Social Alpha  | R & D PoC Early           | ✓ Grants                         | Up to US$ 75 k                |                         |                         | Location: Bengaluru
                              |                            |                                 |                 |                         | Address: # 3, 14th Main, HSR Layout Sector 5, Bengaluru 560102
<pre><code>                          |                            |                                 |                 |                         | Email: energy@socialalpha.in |
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<tr>
<th>Investor Name</th>
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<th>Illustrative Deals</th>
<th>Contact Details</th>
</tr>
</thead>
</table>
| Village Capital | Early Growth ✓ ✓ | Incubation support | 1 - 3 years | US$ 50 k - US$ 100 k | Simpa Energy; Rural Spark | Location: Washington, D.C.  
Address: Village Capital, 1101 K Street Suite 920,  
Washington, D.C. 20001  
Email: info@vileap.com |
| Villgro Innovations Foundation (IPITCH) | PoC Early ✓ ✓ | Expect program level investment recovery | 3-5 Years | US$ 35 k - US$ 70 k | SustainEarth; ecoZen solutions; Simpa Energy | Location: Chennai  
Address: 3rd Floor, IIT Madras Research Park,  
Kanagam Road, Taramani, Chennai-600113.  
Phone: (+91)-44-66630400  
Email: info@villgro.org |
| Venture Center | R &D ✓ ✓ | 20%+ | - | <US$ 40 k | Gram Oorja | Location: Pune  
Address: Venture Center, 100, NCL Innovation Park, Pune - 411008  
Phone: (+91)-20-2586-5878,  
(+91)-20-2585877/78/76  
E-mail: shruti@venturecenter.co.in  
E-mail: managertechrx@venturecenter.co.in |

1. Sustainable Entrepreneurship and Enterprise Development Fund (SEED Fund)  
2. NIDHI-Seed Support System (NIDHI-SSS)  
3. Proof-of-Concept Fund
<table>
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</thead>
<tbody>
<tr>
<td>Asian Development Bank (ADB) – Private Sector group</td>
<td>Growth Mature ✓ ✓</td>
<td>Equity – 20%+ Debt - &lt;5%</td>
<td>6 – 10 Years</td>
<td>~US$ 2 Mn</td>
<td>Simpa Energy</td>
<td>Location: New Delhi Address: 4 San Martin Marg, Chanakyapuri, New Delhi-110021 Phone: (+91)- 11-24107200</td>
</tr>
<tr>
<td>Electrification Financing Initiative (ElectriFI) / FMO</td>
<td>Early Growth ✓ ✓</td>
<td>4–5%+ (US$ terms) with balloon structures</td>
<td>7 Years+</td>
<td>US$ 650 k - US$ 15Mn</td>
<td>Mera Gaon Power; OMC</td>
<td>Location: Brussels Address: Rue du Trône, 4 B-1000 – Brussels Phone: (+91)-124.4764539</td>
</tr>
<tr>
<td>NABARD • Access to Clean Energy Facility • MNRE Solar Water Pumping Programme Rural Innovation Fund</td>
<td>Early Growth ✓ ✓</td>
<td>~ 10%</td>
<td>3 - 10 years</td>
<td>Mlinda</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPIC</td>
<td>Early Growth Mature ✓ ✓ ✓</td>
<td>4 - 5% (US$ terms)</td>
<td>5-20 years</td>
<td>US$ 2 Mn - US$ 350 Mn</td>
<td>ReNew Power; Orb Energy; Mytrag; Simpa Energy; Greenlight Planet; Husk Power</td>
<td>Location: New York Address: 1100 New York Avenue, NW Washington, D.C. 20527 Phone: (202)-336-8400 Email: <a href="mailto:info@opic.gov">info@opic.gov</a></td>
</tr>
<tr>
<td>Proparco</td>
<td>Growth ✓</td>
<td>Equity: 13-15% EUR Debt: 4 - 5% (Euro terms)</td>
<td>Debt: 5 to 20 years Equity: 5 to 7 years</td>
<td>Debt: US$ 10-100 Mn Equity: US$ 5-25 Mn</td>
<td>Simpa Energy; Azure Power; NRFPPL; Bhoruka Power</td>
<td>Location: New Delhi Address: 19 A Rajdoot Marg, Chanakya Puri New Delhi – 11021 Email: <a href="mailto:afdnewdelhi@afd.fr">afdnewdelhi@afd.fr</a></td>
</tr>
<tr>
<td>Investor Name</td>
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<td>Return expected/ Rate of Interest</td>
<td>Tenure / Duration of investment</td>
<td>Ticket Size</td>
<td>Illustrative Deals</td>
<td>Contact Details</td>
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</tr>
<tr>
<td>SIDBI</td>
<td>Early Growth</td>
<td>✓✓</td>
<td>Debit: 11-12% Equity: 15%+</td>
<td>Debt: 5-7 Years Equity: 2-3 Years</td>
<td>US$ 13 k - US$ 200 k</td>
<td>Location: Sonipat Address: SCO - 30, First Floor, HSIIDC Commercial Complex, Indl Area, Phase - 1, Kundli, Sonipat - 131028 Phone: (+91)-130-2219924 Email: <a href="mailto:Kundli@sidbi.in">Kundli@sidbi.in</a></td>
</tr>
</tbody>
</table>

**Commercial Banks**

<table>
<thead>
<tr>
<th>Investor Name</th>
<th>Relevant Investment Stage</th>
<th>Return expected/ Rate of Interest</th>
<th>Tenure / Duration of investment</th>
<th>Ticket Size</th>
<th>Illustrative Deals</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bandhan Bank</td>
<td>Growth Mature</td>
<td>✓✓ 10 ~12% (earlier MFI loans only)</td>
<td>&lt; 7 Years</td>
<td>TBD</td>
<td></td>
<td>Location: Kolkata Address: DN32, Sector V, Salt Lake City, Kolkata</td>
</tr>
<tr>
<td>Bank of Baroda</td>
<td>Growth Mature</td>
<td>✓✓ ~ 12%</td>
<td>5 - 7 Years</td>
<td></td>
<td></td>
<td>Location: Vadodra Address: Bank of Baroda, Baroda Bhavan, 7th Floor, R.C. Dutt Road, Vadodara-390 007 Phone: (+91)-265-2316792 Email: <a href="mailto:gm.ops.ho@bankofbaroda.com">gm.ops.ho@bankofbaroda.com</a></td>
</tr>
<tr>
<td>Central Bank of India</td>
<td>Growth Mature</td>
<td>✓✓ Up to 13-14%</td>
<td>Pumps: up to 10 years; SHS: up to 5 years</td>
<td></td>
<td></td>
<td>Location: Mumbai Address: Central Bank of India, Chander Mukhi, Nariman Point, Mumbai – 400 021 Phone: (+91)-22 – 6638 7777</td>
</tr>
<tr>
<td>Deutsche Bank</td>
<td>Growth Mature</td>
<td>✓✓ 3 - 5 Years</td>
<td>US$ 4 Mn</td>
<td>Envirofit; BioLite</td>
<td></td>
<td>Location: Mumbai Address: Deutsche Bank House, Hazarimal Somani Marg, Fort, Mumbai 400 001 Phone: (+91)-22 7180 4999</td>
</tr>
<tr>
<td>Investor Name</td>
<td>Relevant Investment Stage</td>
<td>Return expected/Rate of Interest</td>
<td>Tenure / Duration of investment</td>
<td>Ticket Size</td>
<td>Illustrative Deals</td>
<td>Contact Details</td>
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</tr>
<tr>
<td>Indusind Bank</td>
<td>Growth Mature ✓ ✓</td>
<td>~ 13-14%</td>
<td>Up to 5 years</td>
<td>US$ 500 k+</td>
<td>Cygni Energy</td>
<td>Location: Mumbai Address: 8th Floor, Tower 1, One India Bulls Centre, 841 S B Marg, Elphinstone Road, Mumbai – 400013. Phone: (+91)-22-24231999 Email: <a href="mailto:reachus@indusind.com">reachus@indusind.com</a></td>
</tr>
<tr>
<td>RBL Bank</td>
<td>Growth Mature ✓ ✓</td>
<td>11 - 13%</td>
<td>3-5 years typically; 8-10 years under USAID Guarantee</td>
<td>Deal specific</td>
<td>OMC Power; Claro; Simpa Energy</td>
<td>Location: Mumbai Address: One Indiabulls Centre, Tower 2B, 6th Floor, 841, Senapati Bapat Marg, Lower Parel (W), Mumbai-400013 Phone: (+91)-22-43020600</td>
</tr>
<tr>
<td>State Bank of India</td>
<td>Growth Mature ✓ ✓</td>
<td>12 - 20%</td>
<td></td>
<td></td>
<td></td>
<td>Location: Mumbai Address: State Bank Bhavan, Madame Cama Marg, Mumbai, 400021 Phone: (+91)-22-2274 0841</td>
</tr>
<tr>
<td>Yes Bank</td>
<td>Growth Mature ✓ ✓</td>
<td>Market-driven competitive rates</td>
<td>1-10 years</td>
<td>Deal specific</td>
<td>Smart Joules</td>
<td>Location: Mumbai Address: YES BANK Limited, Nehru Center, 9th floor, Dr. A.b. Road, Worli, Mumbai - 400 018 Phone: (+91)-22-6121 9000 Email: <a href="mailto:yestouch@yesbank.in">yestouch@yesbank.in</a></td>
</tr>
</tbody>
</table>
ABOUT

WWF-INDIA

WWF-India is one of the leading conservation organizations in the country. It is a science-based organization which addresses issues such as the conservation of species and its habitats, climate change, water and environmental education, among many others. Over the years, its perspective has broadened to reflect a more holistic understanding of the various conservation issues facing the country and seeks to proactively encourage environmental conservation by working with different stakeholders.

The Climate Change and Energy Programme of WWF-India is working towards climate resilient future for people, places and species that support pathways for sustainable and equitable economic growth. WWF-India is actively engaged in promoting renewable energy uptake, enabling clean energy access, demonstrating renewable energy projects in critical landscapes, and overall promoting sustainable clean energy solutions. Climate innovations, low carbon development and renewable energy at scale are the thrust areas of the programme.

To know more, log on to: www.wwfindia.org

ABOUT

CKINETICS

cKinetics is a mission driven sustainability insight, innovation & capital advisory firm, working with businesses, investors, industry groups as well as thought leaders to continually generate market insight and catalyze change.

To know more, log on to: www.ckinetics.com
Why we are here
To stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature.

http://www.wwfindia.org