

emPOWERING PEOPLE

CHANGING LIVES



“Every human being has the right to a decent life. Electricity is a human right and its provision does not need to rely on economic or social justifications. It is obvious that it is a huge multiplier in terms of education or business opportunities; and has a huge impact on safety and drudgery, particularly for women. Electricity lights up homes, enabling children to learn in the evening and meals to be cooked without fumes from kerosene lamps. It also powers the water pump, which means you don't have to walk miles for water.”

~ Dr Ashok Khosla
Chairman, Development Alternatives

“Village economies need new energy - literally, in the form of reliable access to electricity that fuels the production of goods and services; and figuratively, in terms of hope for budding entrepreneurs who dream of doing things their parents could never have dreamt of. TARA's community engagement, load acquisition and micro-enterprise development services help combine social capital with investments made by decentralized renewable energy companies to create transformative opportunities for environmentally-sound economic development.”

~ Shrashtant Patara
CEO, Technology and Action for Rural Advancement (TARA)



SOCIETY FOR TECHNOLOGY AND ACTION FOR RURAL ADVANCEMENT (TARA)

Established in 1985, Society for Technology and Action for Rural Advancement (TARA) is a social enterprise of the Development Alternatives Group (DAG). Over the years, TARA has built a global presence as an incubator of technologies and delivery systems for sustainable livelihoods.

To create impact at scale, DAG follows an innovation-to-incubation-to-commercialisation approach. Special Purposes Vehicles (SPV) are created to deliver products and services that have been validated in the market. TARA has successfully incubated several for-profit companies, e.g. TARA Machines and Tech Services (for green business technologies), TARALife (for access to basic needs) and TARA Livelihood Academy (for skill development). TARAurja (an Energy Service Company for rural electrification) is currently an incubatee business unit.



शिवपुरा

SOME KEY ACHIEVEMENTS OF THE DEVELOPMENT ALTERNATIVES GROUP OVER THE LAST 30 YEARS

Consistently ranked as one of the top think tanks of the world

Nodal Agency for Ministry of Micro, Small and Medium Enterprises

3 million+

sustainable livelihoods created with
50+ green technologies,
empowering over **12 million households**

50,000+

direct jobs created

10,000+

youth trained for business and livelihood
development on an annual basis, through
various activities of the organisation

800 MILLION

litres of water conserved

8 MILLION TONNES

of waste utilised

5 MILLION TONNES

of CO₂ saved

320,000

people accessed basic needs

INR 440 MILLION

transactions facilitated

emPOWERING PEOPLE FOR THE LAST 20 YEARS

TARA has rich experience in demonstrating energy as a catalyst for socio-economic change in communities. Our work, till date, can broadly be divided in three distinct timeframes.

1996-2005

Involved in setting up biomass based power generation in collaboration with DESI Power, the flagship project of which was the establishment of a biomass-based gasifier unit at TARAGram, Orchha - a DA Group sustainability resource centre in central India.

2005-2011

Completed pilot projects such as the 'Methane to Markets' initiative in which we set up three biogas-based power plants at Gaushalas (cow shelters), and the Rural Entrepreneurship Zone (REZ) project involving two biomass-based plants for productive use with assistance from USAID and the US Department of State and one solar power plant (for lighting of 46 homes) with support from Scatec Solar, a Norwegian company.

2012-2018

Coordinated the Rockefeller Foundation supported Smart Power for Environmentally-sound Economic Development (SPEED) project in India. It began with an intense phase of research, analysis and business modelling that led to the creation of TARAurja, a micro-utility business operating in 19 locations, and over 60 other micro-grids set up by partner Energy Service Companies (ESCOs) under the more recent Smart Power for Rural Development (SPRD) programme. TARA undertook intensive demand generation work at over 50 micro-grid sites, with ESCOs, focussing on the provision of support services to micro enterprises.

SMART POWER FOR RURAL DEVELOPMENT

FOOTPRINT

The Smart Power for Rural Development (SPRD) programme, funded by The Rockefeller Foundation, seeks to test the potential of business models that deliver electricity through decentralised micro grids in energy deficient regions.

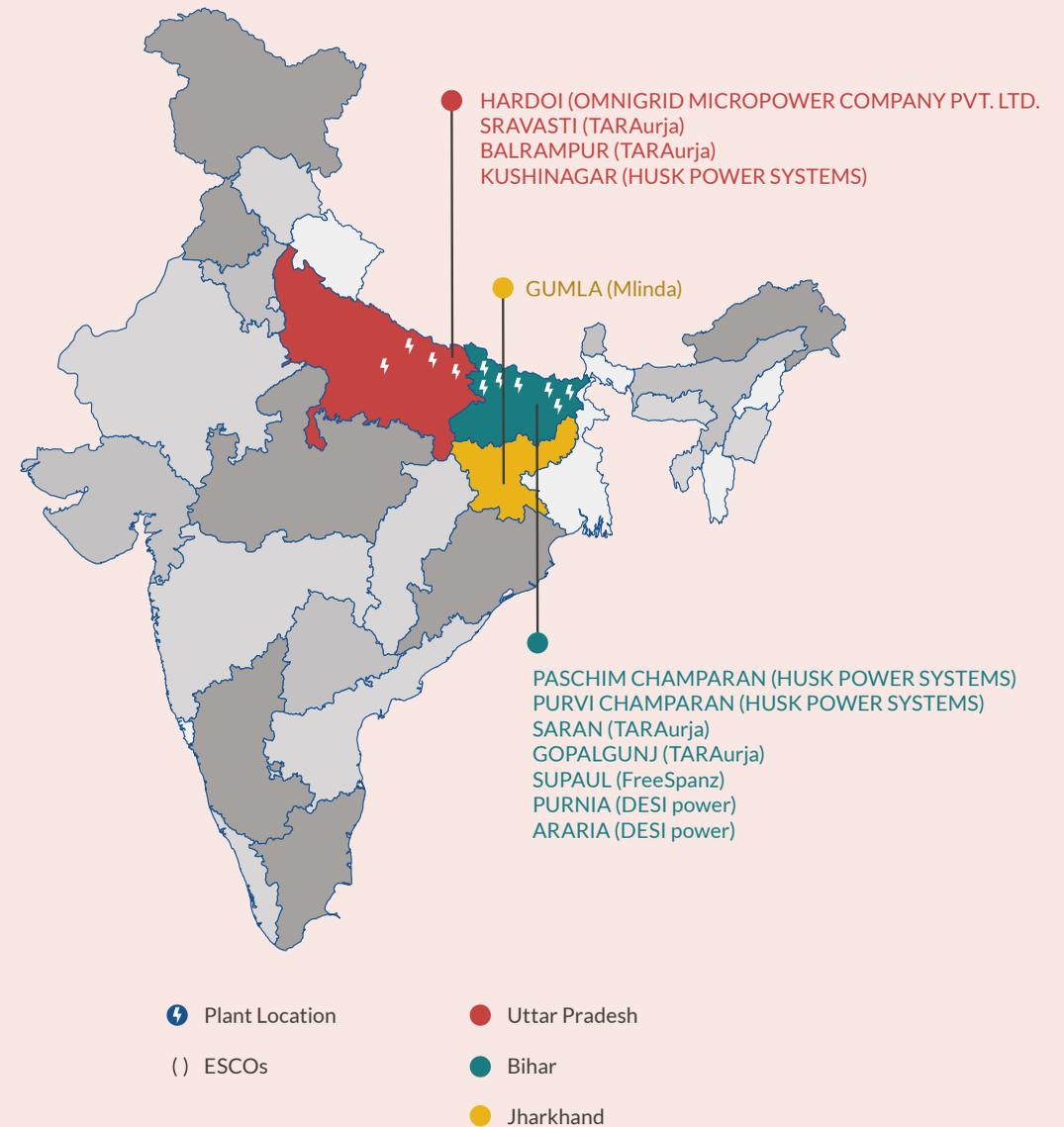
The potential of energy as an accelerator for economic growth model developed by TARA is unique in that it recognises the dual role of people in village communities - that of "producers" as well as "consumers". It prioritises the use of electricity to put money "into people's pocket", cash that can be used to pay for not just lighting but improved nutrition, entertainment, healthcare and other needs.

TARA's current focus on local economic development, social inclusion, basic need fulfilment and agri-resource centres has led to greater incomes, the creation of new jobs, new enterprises run by women and pure water being made available, in addition to thousands of homes being lit up through "Smart Power".

Meaningful and endowing impact on people's lives will need a blend of concurrent initiatives. Through a mix of projects, TARA's approach to "emPowerment" has included components as diverse as the provision of energy efficient LED bulbs with support from the Philips Foundation and the more systemic, foundational work, in partnership with ICRW (International Center for Research on Women), for gender sensitisation among Energy Service Company (ESCO) staff to make their business models more inclusive.

Today, there are over 10,000 rural households and small businesses across more than 75 villages in Uttar Pradesh and Bihar that are benefiting from reliable access to utility grade electricity under the SPRD programme.

In the years to come, it is envisaged that supply of electricity through thousands of such micro-grids, coupled with demand creation by load development partners such as TARA, will have a transformative effect on the rural economy.



CELAMeD PROCESS - AN INTRODUCTION

TARA developed an approach to load development for decentralised renewable energy based micro-grids, called 'CELAMeD' (Community Engagement, Load Acquisition, and Micro enterprise Development).

CELAMeD work is part of the larger Smart Power for Rural Development programme design, in which it is envisaged that Energy Service Companies (ESCOs) will make investments to set up and operate power plants, while partner agencies - those that specialises in rural market development - shall take the lead in load development, this being critical to the viability of an ESCO's business.

Community Engagement (CE) activities begin with an ESCO finalising its target villages. As part of the process, awareness generation around the benefits of renewable energy based electricity is initiated. Tools such as community meetings, focus group discussions, door-to-door interaction, street plays, etc. are used. Load Acquisition (LA) takes place immediately after the power plant goes live, and commences electricity supply. In the first 4 to 6 weeks, the CELAMeD team and the ESCO work in parallel to enrol customers; a large majority of the early adopters being households and shopkeepers, who opt for single or two bulb connections with a socket to charge their cell phones. Soon thereafter, attention shifts to local businesses who wish to shift from diesel as their current source of power or want to expand their enterprises with the addition of new equipment.

In recognition of the transformative role electricity and entrepreneurship, when brought together, play in local value addition, inclusive economic growth and employment, TARA then rolls out a bouquet of catalytic activities that encourage rapid growth in the productive use of energy. Its Micro enterprise Development (MeD) strategy not only enables accelerated load ramp-up for the ESCO, but also helps local businesses to grow, contributing to local economic development.

WHAT IS THE CELAMeD SERIES?

The 'CELAMeD' series is an attempt to package the Community Engagement, Load Acquisition, and Micro enterprise Development approach undertaken as part of the SPRD programme.

TARA is doing this with support from Rockefeller Foundation as a service for the larger decentralized renewable energy community. This series aims to deliver multiple benefits.

It will enable effective transfer of knowledge and capacity building with ready-made tools, serve to validate the tariff packages that are financially viable for the ESCO and local entrepreneurs, and more importantly, reduce risks associated with delays in load acquisition and other factors related to the uncertainties of working in village markets.

This series includes the following set of modules:

1. Project Development
2. Community Engagement
3. Micro enterprise Development Processes and Support Services
4. Customer Acquisition and Demand Management
5. Social Marketing
6. Social Inclusion
7. Micro enterprise Management

PROJECT DEVELOPMENT
PLANNING A MICRO GRID SETUP

COMMUNITY ENGAGEMENT
MOBILISING COMMUNITY
STAKEHOLDERS

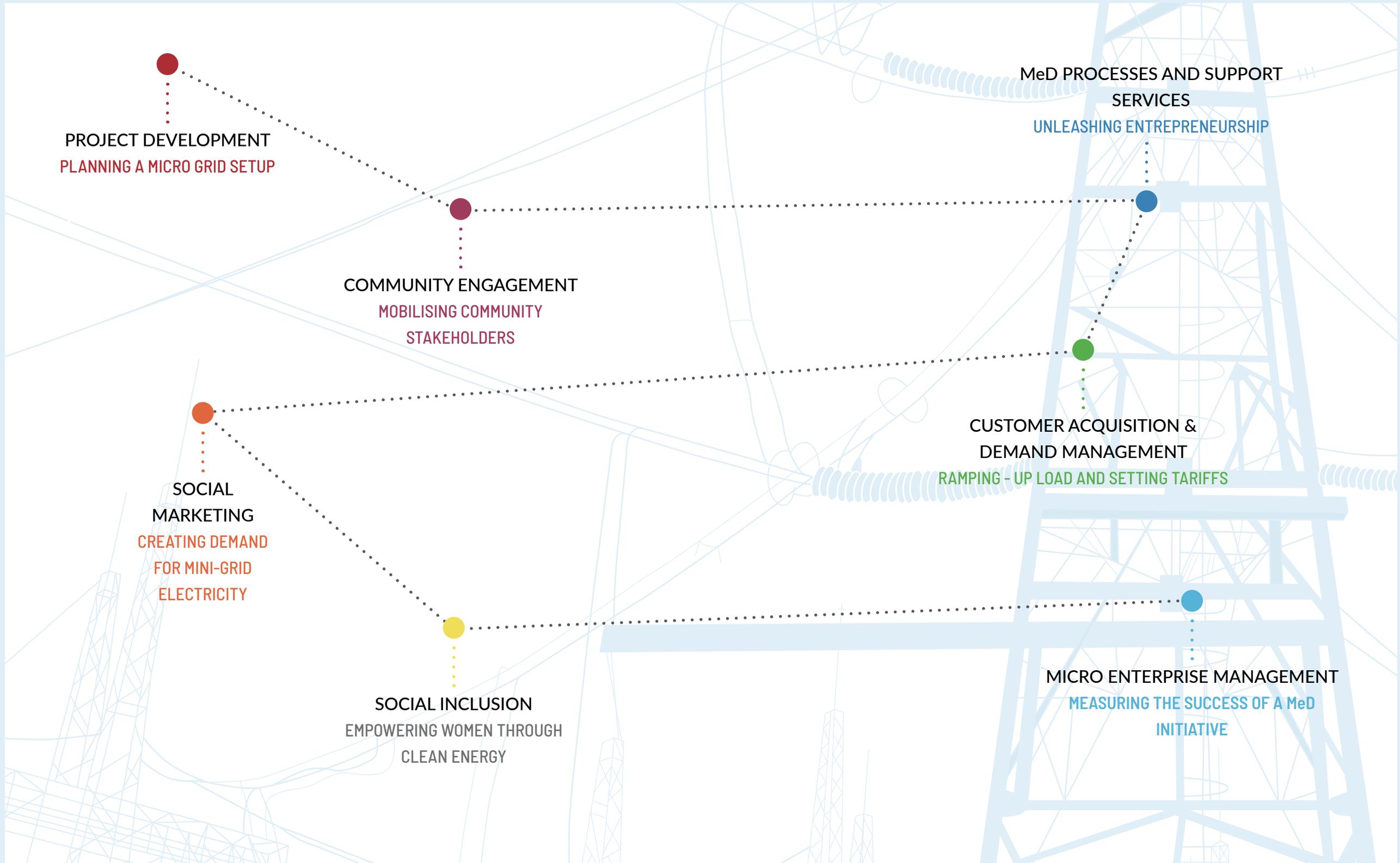
**SOCIAL
MARKETING**
CREATING DEMAND
FOR MINI-GRID
ELECTRICITY

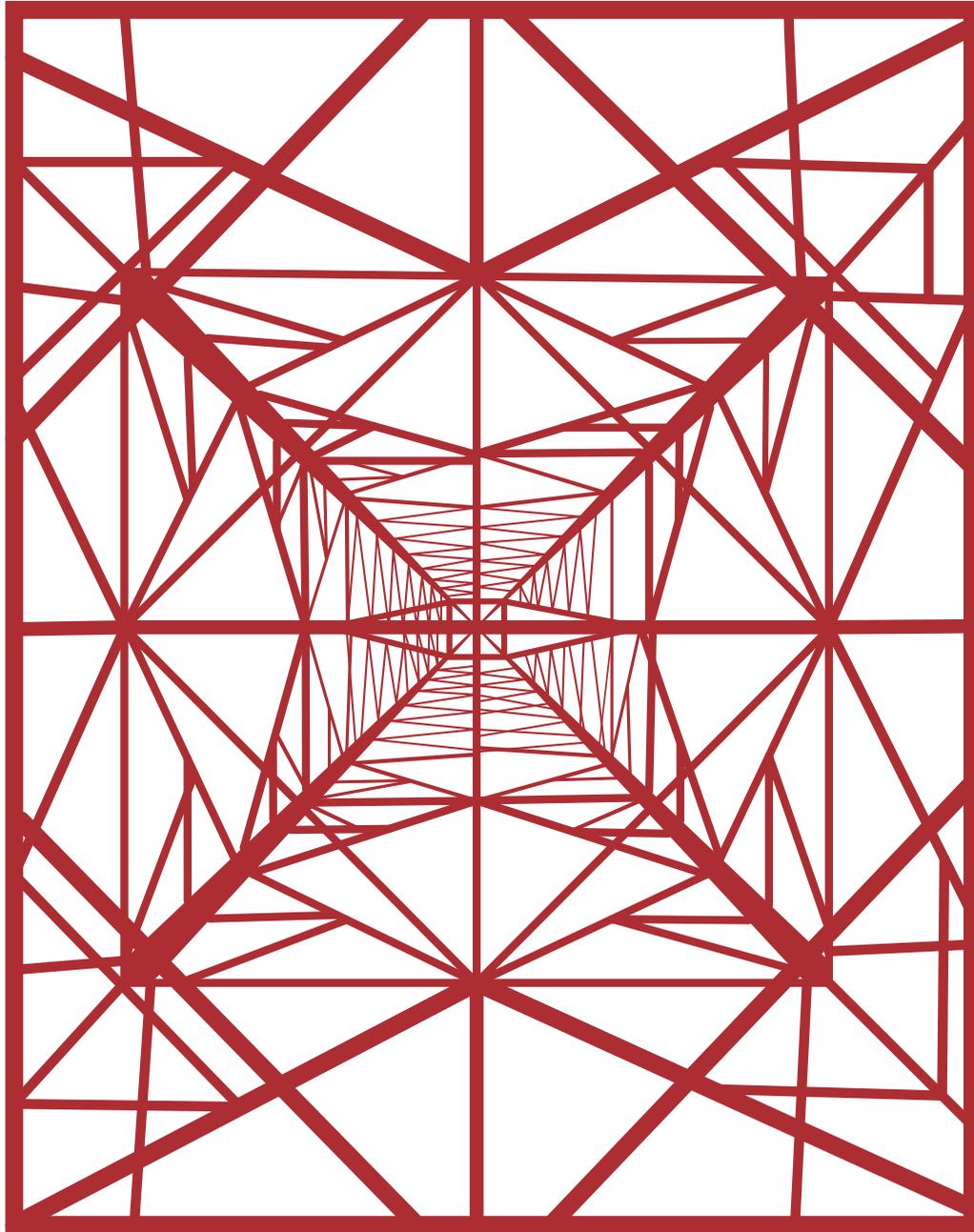
SOCIAL INCLUSION
EMPOWERING WOMEN THROUGH
CLEAN ENERGY

**MeD PROCESSES AND SUPPORT
SERVICES**
UNLEASHING ENTREPRENEURSHIP

**CUSTOMER ACQUISITION &
DEMAND MANAGEMENT**
RAMPING - UP LOAD AND SETTING TARIFFS

MICRO ENTERPRISE MANAGEMENT
MEASURING THE SUCCESS OF A MeD
INITIATIVE





PROJECT DEVELOPMENT

PLANNING A MICRO GRID SETUP



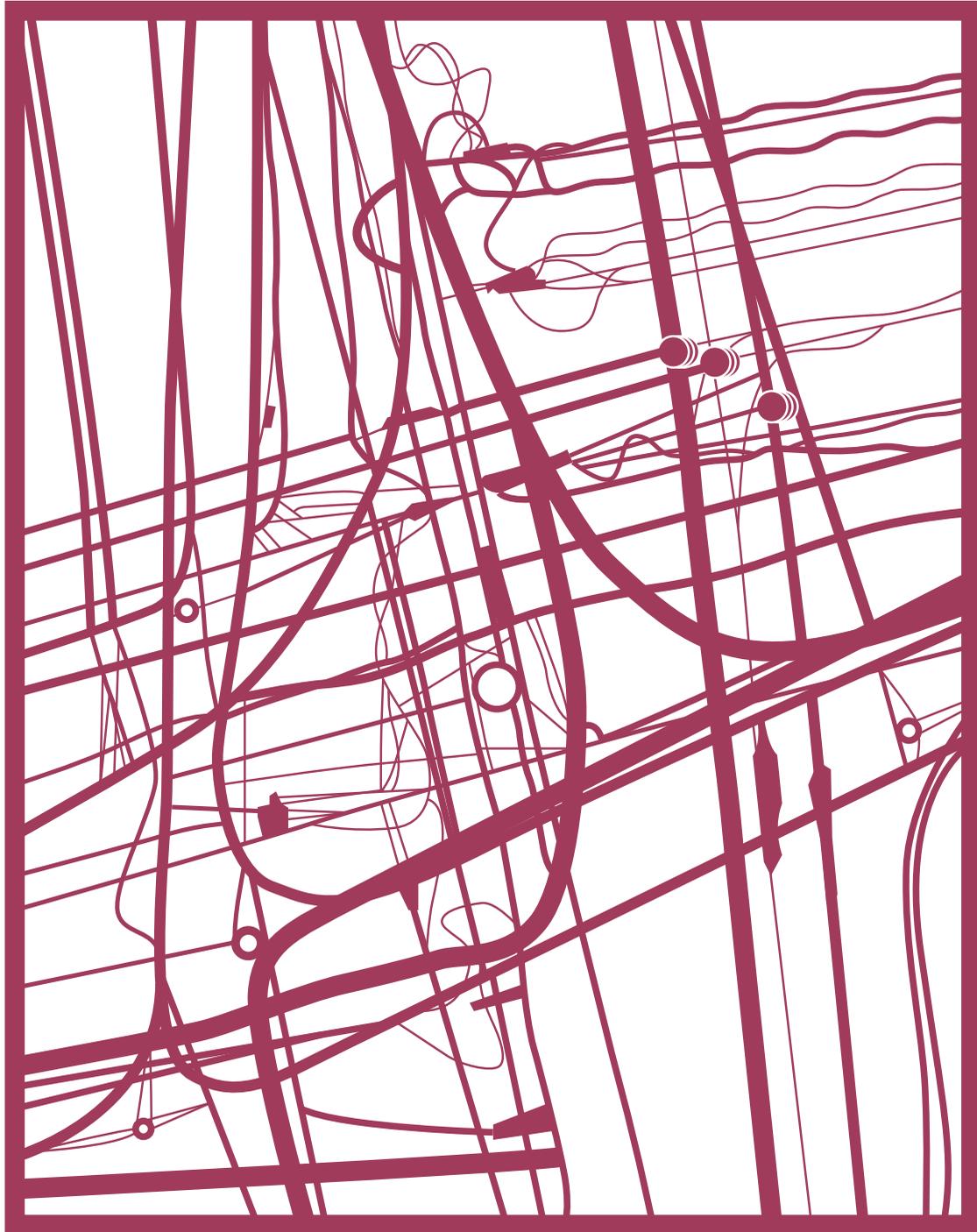
Energy is crucial for achieving almost all of the Sustainable Development Goals, from its role in the eradication of poverty through advancements in health, education, water supply and industrialization, to combating climate change. With access to energy, people can study, get a job and start a business - and reach their full potential.

Inadequate access to energy holds rural families back from leading better lives. In India, even with Government's emphasis on rural electrification, the mainstream electrical grid has not been able to reach remote villages. **In states like Uttar Pradesh and Bihar, only 30% households are connected to the grid that too in an erratic and unreliable manner.** Farmers and local entrepreneurs are forced to rely on diesel to irrigate fields and run small businesses at a cost that is over three times that of commercial electricity. Decentralized energy system, therefore, holds great importance to bridge this gap.

Looking at this situation, in order to have greater outreach and ensure success it is imperative to plan decentralised renewable energy effectively and efficiently.

The success of any project depends on how well it has been planned. In setting up a decentralised renewable energy generation and distribution system in rural districts, it is key to identify sites with maximum potential for setting up the micro-grids on ground. The overall process requires multiple stakeholders to come together to effectively plan for micro-grid set-up.

Thus, Project Development looks at the essential steps that are to be undertaken while identifying and selecting sites, on the basis of which recommendations are made to the ESCO. The recommendations based on analysis of the primary and secondary data enable the ESCO to make business projections.



COMMUNITY ENGAGEMENT

MOBILISING COMMUNITY STAKEHOLDERS

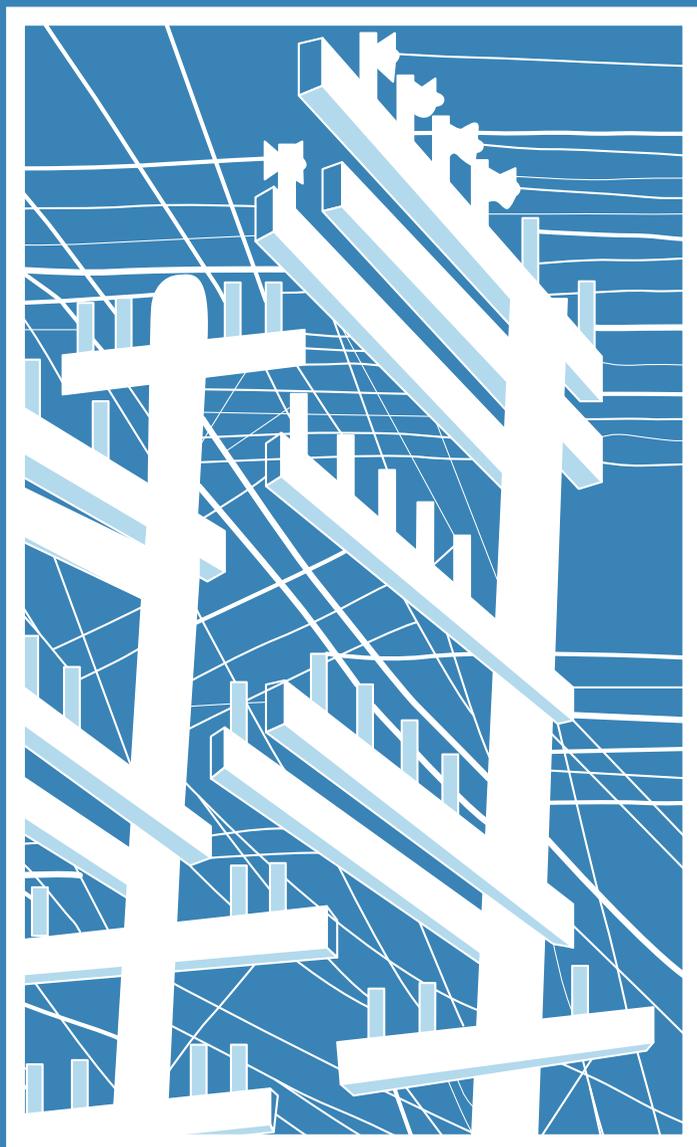


Community is the focus of any intervention, especially in rural India. A successful intervention is a collaborative affair with widespread support and involvement from the local community, since it is the community that is most directly affected by changes to the environment. In the current context, communities play a very central and unique role in ensuring sustainability of the initiative.

The core principles of Community Engagement include: **Inform, Consult, Empower and Collaborate**. The main objectives are to identify community needs, co-create solutions, plan new initiatives, better existing interventions and ensure effective service delivery. Potential and existing entrepreneurs within communities, ESCOs and the CELAMeD team are the key stakeholders in this participatory process.

In context of the SPRD programme, the impact of community engagement was measured based upon the number of pre-registrations made. Community Engagement is a continuous process. However, its intensity, functions and objectives vary across the different phases. The process is initiated with the Project Development phase, wherein the objective is to understand community dynamics. This is followed by the Build phase, essentially comprising of awareness creation within the community. The Operate phase looks at reporting and following up with the community.

Community Engagement provides guidance on engaging with communities and focusing on points to consider when planning and designing community engagement processes. It emphasizes the components, processes and tools for effective engagement.



MeD PROCESSES & SUPPORT SERVICES

UNLEASHING ENTREPRENEURSHIP



Micro enterprises can drive transformative change at scale for widespread and enduring rural development. Considered as the backbone of the economy, in both developed and emerging economies alike, these are engines that fuel sustainable economic development. Despite the crucial role of micro enterprises in promoting job creation and sustainable development, the growth of these enterprises in rural areas of Uttar Pradesh and Bihar is limited owing to the lack of a positive ecosystem that nurtures their development. Constraints like access to technical knowledge, finance, market, and poor entrepreneurship capacities inhibit the development.

Under the SPRD programme, TARA has been successfully able to demonstrate Micro enterprise Development (MeD) as an approach to enhance load for Energy Service Companies (ESCOs), essentially comprising facilitating and supporting set up of new enterprises or expanding existing enterprises that can foster rural economic development, using electricity generated by mini-grid plants. **A two-pronged approach was undertaken - introducing micro enterprises or integrated value chain livelihood development programmes within a community and facilitating rural entrepreneurs to start or expand enterprises.**

To be able to design and implement a MeD initiative, effective planning is key. The initiative should make use of the locally available resources and contribute to local economic development.

Micro enterprise Development, therefore, consists of key MeD processes and support services to enable and support local businesses, create gender inclusive and basic need fulfilling models, and enhance local agri and allied enterprises, thereby promoting entrepreneurial activities and contributing to the overall objective of local economic development.



CUSTOMER ACQUISITION & DEMAND MANAGEMENT

RAMPING - UP LOAD AND SETTING TARIFFS



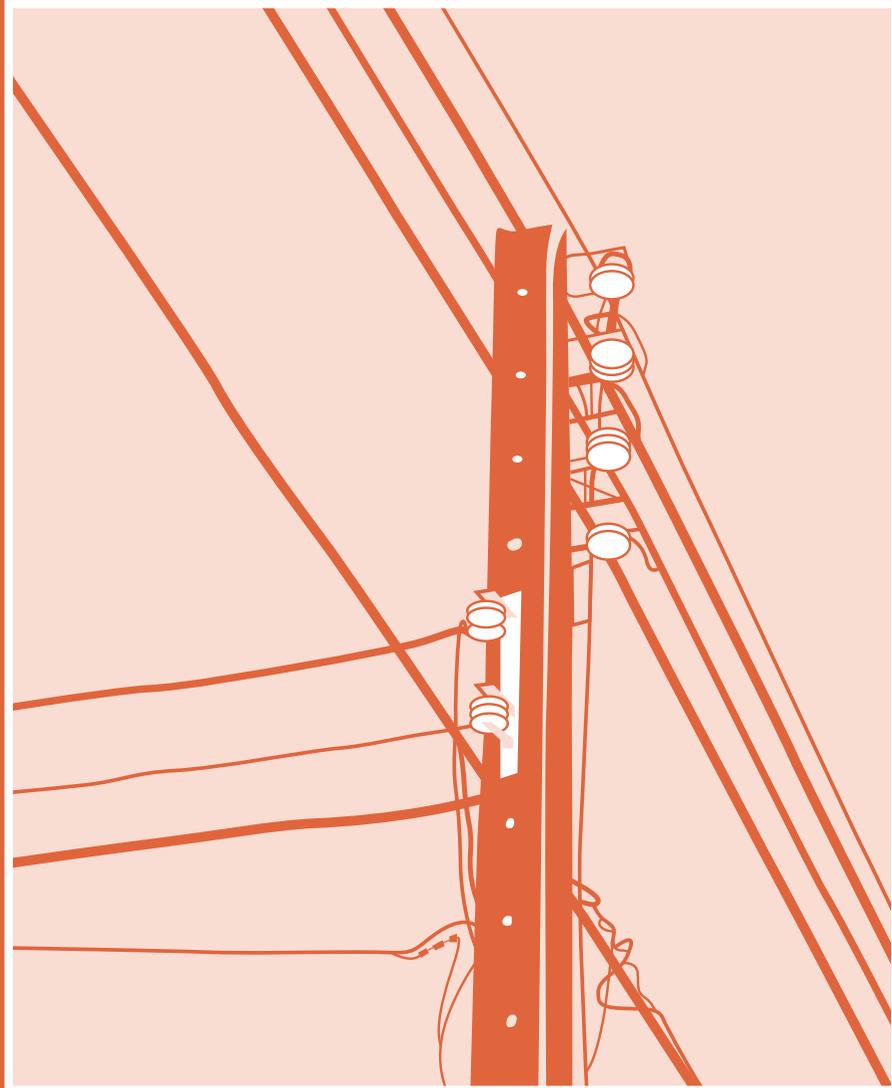
Customer Acquisition refers to getting new consumers on board. The process involves consumer persuasion to purchase a company's products and/or services (here, electricity). Demand Management, on the other hand, refers to a set of methodologies and systems applied for responding to customer needs.

Under the SPRD programme, TARA carried out activities for customer acquisition and demand management for 5 ESCOs across **57 sites, spread across 11 districts in Uttar Pradesh and Bihar**. Having worked in this for more than five years, TARA gained extensive experience in customer acquisition strategies, specifically in a businesslike approach.

The quantitative aspect of the planning phase consists of detailed site profiling and classification of the customers based on varied parameters. The qualitative aspect includes understanding customer demand, characterisation of these demands based on consumer behaviour and specific guidelines for ESCOs to design tariff packages.

The execution phase details out the process of customer acquisition, including registrations, pre-plant and post-plant launch, tools used and load ramp-up process for the consumers. It also showcases different types of tariff packages, essentially for household and lighting customers.

This evidence-based module details out the planning and execution phase for 'Customer Acquisition and Demand Management', particularly for the 'early adopter' customers.



SOCIAL MARKETING

CREATING DEMAND FOR MINI-GRID ELECTRICITY



Lack of control over resources (that are fast depleting) and an inability to tap alternatives sources of energy have led to unmet basic needs and unfulfilled aspirations of people living in rural India. The problem is further compounded by failure to understand the importance of reliable electricity due to significant knowledge gap.

Social marketing based on emotionally charged arguments around the importance of energy and its contribution to socio-economic development is an effective means of bringing about a behaviour change. It compels people to realize their needs and take relevant steps to fulfill them.

Social marketing has been integral part of the SPRD programme. As part of this, extensive social marketing was carried out across Uttar Pradesh & Bihar. **Activities carried out across the sites consisted of a mix of audio campaigns, putting up banners and hoardings across major locations, wall paintings, distribution of flyers, focus group discussions, school-level competitions, and discount offerings during festivals.** Expansion melas were conducted across TARAurja sites at Uttar Pradesh and Bihar, to catalyze the process of expansion of local businesses, thereby supporting the process of load development.

For social marketing to be effective, it is important that all stakeholders involved have a clear and consistent vision in terms of their roles, responsibilities and expectations from such an activity.

Social Marketing focuses on a set of tools and guiding material that aids the overall vision and definition of social marketing to create demand for mini-grid electricity.



SOCIAL INCLUSION

EMPOWERING WOMEN THROUGH
CLEAN ENERGY

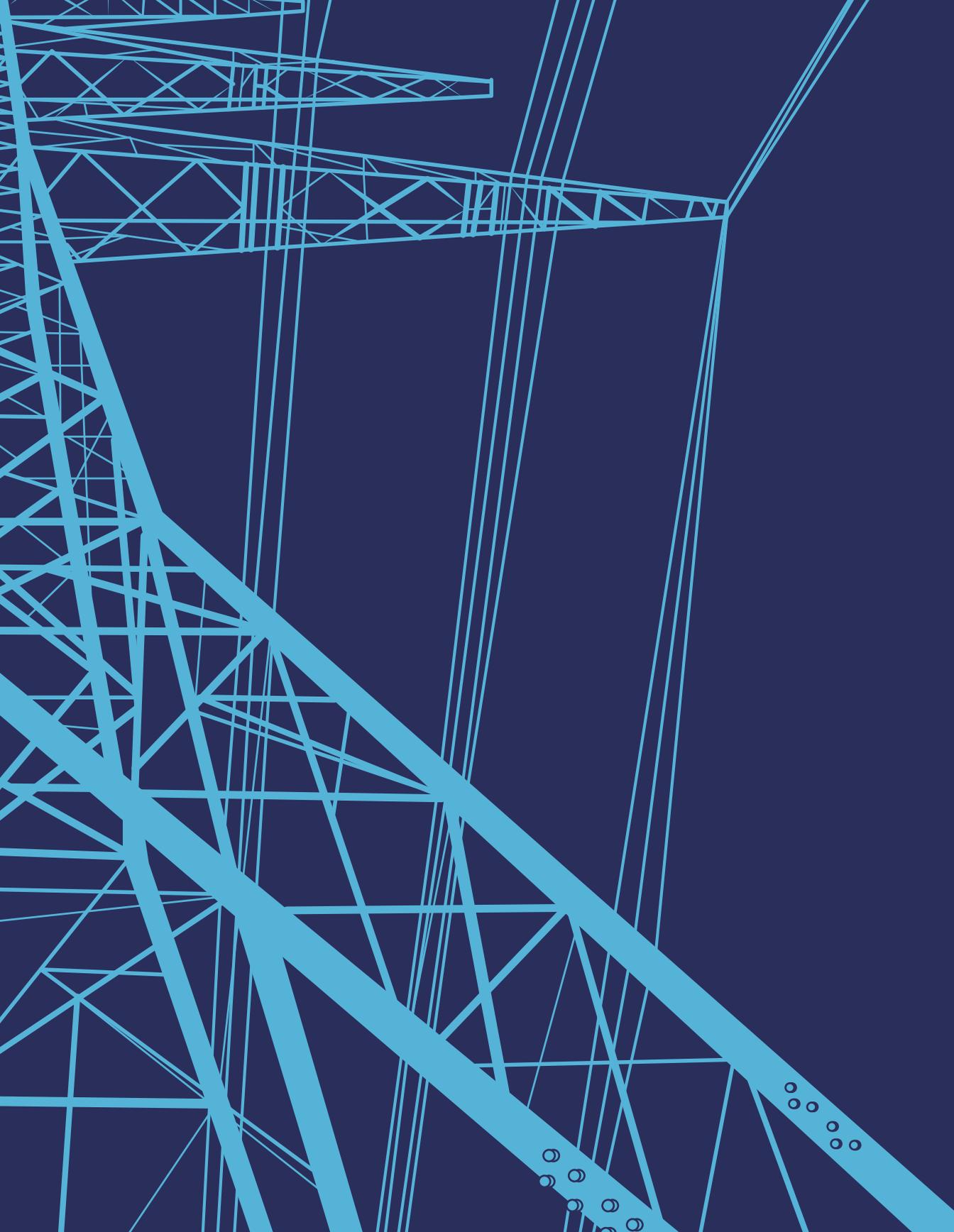


Women in rural India have been “dis-empowered”, be it socially or economically. Deprived of the benefits, their basic needs remain unmet and they carry the burden of poverty of choice and opportunities. Moreover, with women losing control over locally available energy resources, energy has become a significant part of the development agenda. **Apart from being exposed to health impacts like chronic diseases from dirty energy use & burns to their children, women are subjected to increased violence because of lack of lighting (ESMAP 2007).**

While more attention is being paid to the imperative role of women in the energy sector, there is still a significant lack of recognition of women as more than passive users of energy. Across developing countries, women are typically the primary household energy managers. And as entrepreneurs have the potential to lower customer acquisition and servicing costs and drive these new decentralized solutions. However, they remain under-represented in the industry.

As part of the SPRD programme, it was learnt that engaging with women at all levels in the energy value chain leads to a more effective clean energy initiative. Impetus was, thus laid on active participation of women at the demand as well as supply side of the energy value chain.

“Empowering Women through Access to Clean Energy” therefore looks at leading women to the forefront in the energy value chain and unleashing their ability to make informed choices, drives greater triple bottom line impact.



MICRO ENTERPRISE MANAGEMENT

MEASURING THE SUCCESS OF A MeD INITIATIVE



The success of a Micro enterprise Development initiative depends on effective management and relevant monitoring. As part of the SPRD programme, special focus was laid on capturing real time data to give insights into the work done on ground - both success and failure.

The enterprises set up were tracked on a monthly basis to create a pool of comparable data. Thereafter, this data was compared with assumptions made in the initial phase of the project while developing the enterprise packages. Live data tracking for all enterprises was done in case of TARAurja UP and Bihar sites because of assured access to server data.

The analysis templates and parameters shared will specifically help ESCOs and load development partners to understand frame of analysis, parameters to assess, types of packages that worked, and how these can be replicated going forward.

This module, therefore, shares the effectiveness of the 'CELAMeD' approach across sites where direct implementation for micro enterprise development was undertaken. It captures the findings derived from real time data from enterprises and draws lessons for ESCOs and potential load development partner, with respect to load development process and performance of the microenterprises on ground.

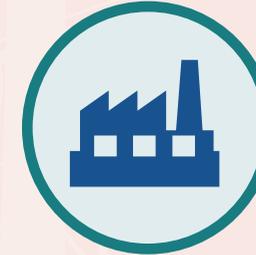


ACHIEVED

21,000+
INDIVIDUALS REACHED OUT



480+
ENTERPRISES SET UP



10,000+
HOUSEHOLDS PROVIDED
ACCESS TO CLEAN ENERGY



CAPACITIES OF 1500+
INDIVIDUALS DEVELOPED

● 75 SITES

○ 12 DISTRICTS

○ 3 STATES

AND STILL COUNTING...

TECHNOLOGY FOR CLEAN ENERGY

Established in 2013, TARAurja is an operational business unit incubated under TARA for the deployment and management of renewable energy based mini grids. It enables communities to adopt solar and biomass energy solutions in off grid villages. TARAurja is currently operating 17 solar power micro grids, serving up to 1600 customers across Bihar and Uttar Pradesh. They are doing this using an innovative distribution and revenue management system (TERMS) to spark local economic development while also influencing social change.

The TARA Energy and Revenue Management System (TERMS) supplies high quality electricity with smart 'cloud enabled' load limiters that reduce power thefts and manpower costs. It consists of a centralised dashboard that provides real time data to monitor business performance, and a consumer management mobile application as well.



“Close your eyes. That is how dark my village was till last April. I have spent most of my life in a night like this. Electricity has been the most amazing experience for us, especially for me. After 6 p.m., the happiness of being under bright LED light reflects in my cooking and my children’s homework. Now, with my Namkeen unit operational, I will become the first female entrepreneur in my village. We are thankful to TARA for bringing about this change in our lives and wish to have enhanced electricity supply in future.”

*~ Kismet Jehan, Entrepreneur (Namkeen making)
Village Kataliya, Uttar Pradesh*

“Learning by self is not impossible, if we keep doing and learning from our mistakes. I learnt mechanical repairing from my father, a watch maker. But electrical repairing was something I took up after an accident, that made me realise it’s importance. Demand for fan and generator winding has been increasing in my village. With support from TARA, I have now transitioned from manual to electric winding, helping me increase productivity and save time.”

*~ Mahesh Kumar, Entrepreneur (Fan winding)
Village Maharajganj Tarai, Uttar Pradesh*

“People in rural India have been “disemPowered”. They have lost control over depleting resources and are unable to tap alternative sources of energy. Their basic needs remain unmet and growing aspirations unfulfilled. Women and children carry the burden of this poverty of choice. The decentralized renewable energy based model by TARA aims to drive social wellbeing and enable local businesses to transform village economies.”

*~ Kanika Verma
Programme Director, Sustainable Business Solutions, TARA*

emPOWERING PEOPLE CHANGING LIVES

*Contributing Authors: Ankita Pant, Leon Sra, Ayesha Bhatnagar, Priyali Bhardwaj and Tapas Raj
Conceptualisation and Substantive Lead: Kanika Verma
Advice and Editorial Inputs: Shrashtant Patara
Book Design: Aparajita Tiwari*

Published by Society for Technology Action and Rural Advancement (TARA), New Delhi



Technology in Action for Rural Advancement (TARA)

A Social Enterprise of the Development Alternatives Group

B-32, Tara Crescent, Qutub Institutional Area, New Delhi - 110016, India

Tel: +91 11 2654 4100, 2654 4200, Fax: +91 11 2685 1158

Email: tara@devalt.org, Website: www.tara.in