



# Smart Power for Rural Development

Transforming Lives Through Energy Access



## Who We Are

Smart Power for Rural Development (Smart Power) is an initiative of The Rockefeller Foundation, which aims to accelerate access to energy in rural areas through innovative partnerships that will empower populations and drive economic development.

## Why Energy Access

Today, more than one billion people around the world lack access to reliable electricity. More than 95% are located in sub-Saharan Africa and developing Asia, and around 80% live in rural areas.

Energy powers so much of what we do every day. It is indispensable for health, food security, access to clean water, education, job creation, gender equality and so much more. It is key for economic growth by giving villagers, communities and businesses access to the modern economy. With reliable electricity, tailors can use sewing machines, carpenters electric saws, farmers irrigation pumps and restaurants access to refrigerators. Students can study at night, and shops can stay open later.

Electricity creates opportunities for entire villages to lift themselves out of poverty. Real global development cannot happen without energy, including in rural areas.

Delivering electricity to the world's energy poor could create **1.5 trillion** additional productive hours, save **\$38 billion** in energy expenditures and enable nearly **300 million** school-age children to study longer, under better conditions.

Source: The World Bank

## What We Enable

Smart Power addresses the “last-mile” energy gap by bringing together energy service companies (ESCOs), technology experts, local businesses, national and local governments, as well as the private sector to build viable partnerships around decentralized renewable energy (DRE) solutions.

DRE solutions, including mini-grids, are fast to build and produce sufficient capacity to power entire villages, including enterprises. They are also based on solar power or biomass, providing clean energy.

We help ensure the right incentives and policies are created for energy providers and users. Smart Power goes beyond electricity for households. Our focus is to ensure the provision of high quality, reliable energy to drive income generation and productivity for villagers, communities and businesses.

### Creating the Right Incentives

To enter rural markets and become viable over the long-run, energy providers need sufficient local demand and an effective business case.

We encourage the growth of rural energy markets by assessing where there are market needs and opportunities. This includes negotiating with large businesses that already have major needs for electricity (such as telecom towers or institutional loads, including banks, petrol pumps and training centers) to secure an established level of demand.

Over time, as reliable energy is provided, the electricity needs of households and small businesses will expand along with income generation (through more appliances, sustained use of electricity, etc.), further stimulating development of the local energy market.

### Stimulating Local Economies

High quality, reliable power can accelerate commercial rural development and entrepreneurship by giving small shop owners, farmers, trainers,



entrepreneurs and established businesses the confidence and means to set up operations, or expand and modernize their existing trades.

Smart Power assesses untapped local skills that could be leveraged with access to reliable electricity and helps villagers utilize energy in productive ways. We provide support services to help draft business plans and access loans to buy equipment. We also facilitate access to energy-efficient (EE) technologies such as LED bulbs and EE appliances that are not normally available — or affordable — in rural markets.

### Encouraging Innovations in Technology and Policy

Smart Power partners with technology companies and investors to develop innovations that will leapfrog growth in the decentralized renewable energy sector. These include “Utility-in-a-box” kits that drive down CAPEX costs and speed up the construction of operational mini-grids from months to a matter of days, batteries with expanded capacity and simplified energy metering technology.

We also coordinate with national and local governments to facilitate the development of a more open policy environment for DREs, including mini-grid systems, and ensure there is a good understanding of grid interactivity.

## The Impact

### Incubating Smart Power in India

Smart Power India was established by The Rockefeller Foundation to implement the Smart Power program as part of a broader \$75 million commitment. The program launched in 2015, focusing on the states of Jharkhand, Bihar and Uttar Pradesh, where less than 10% of rural households are connected to the national grid. With more than 100 villages now powered by Smart Power, India's largest cluster of renewable energy mini-grids is already transforming the lives of more than 40,000 people.

In village after village, the results are promising. With tools and machines powered by reliable electricity, carpenters and tailors have more than doubled their productivity. Dairy farmers have built cold storage facilities to keep fresh farm produce from spoiling overnight, allowing them to sell more at the market. Entrepreneurs have opened car washes, water purification and delivery systems, and even computer training centers.



Enterprising rural consumers raised their local economy by **\$18.50** per capita—accounting for an increase in economic productivity and the value of benefits to health, environment and social well-being.

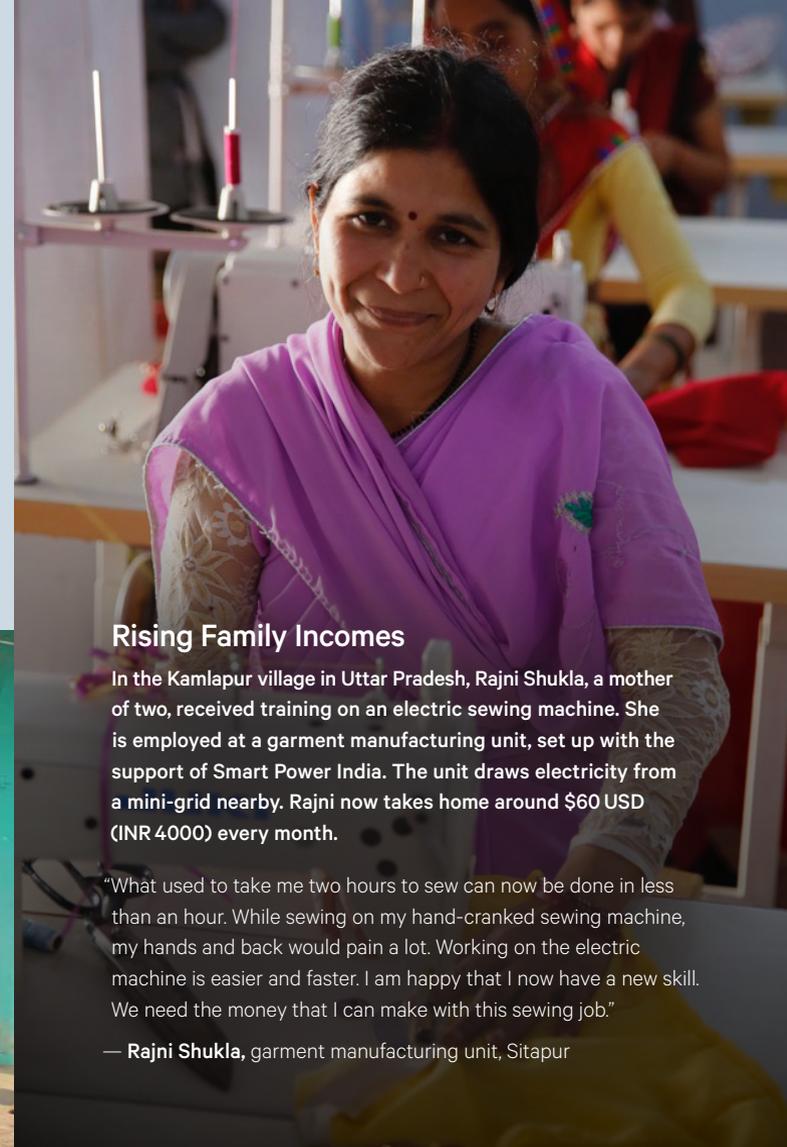
Shops and micro-enterprises connected to Smart Power enabled mini-grids saw a **13%** average increase in monthly revenues. **11%** of these shops and micro-enterprises expanded their business by purchasing newer appliances, and **7%** were newly created as a direct result of energy access.

### Rising Family Incomes

In the Kamlapur village in Uttar Pradesh, Rajni Shukla, a mother of two, received training on an electric sewing machine. She is employed at a garment manufacturing unit, set up with the support of Smart Power India. The unit draws electricity from a mini-grid nearby. Rajni now takes home around \$60 USD (INR 4000) every month.

“What used to take me two hours to sew can now be done in less than an hour. While sewing on my hand-cranked sewing machine, my hands and back would pain a lot. Working on the electric machine is easier and faster. I am happy that I now have a new skill. We need the money that I can make with this sewing job.”

— **Rajni Shukla**, garment manufacturing unit, Sitapur

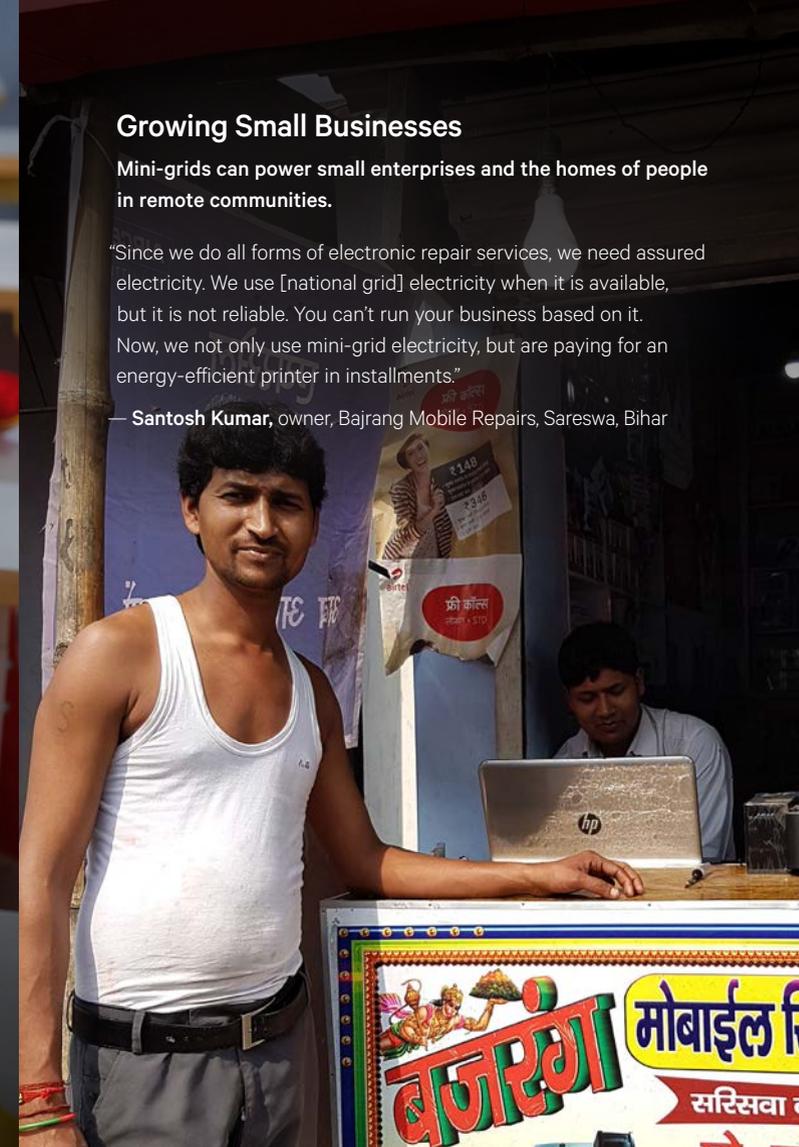


### Growing Small Businesses

Mini-grids can power small enterprises and the homes of people in remote communities.

“Since we do all forms of electronic repair services, we need assured electricity. We use [national grid] electricity when it is available, but it is not reliable. You can't run your business based on it. Now, we not only use mini-grid electricity, but are paying for an energy-efficient printer in installments.”

— **Santosh Kumar**, owner, Bajrang Mobile Repairs, Sareswa, Bihar





UN Sustainable Development Goal (SDG) 7 calls for access to affordable, reliable, sustainable and modern energy for everyone by 2030. Yet progress is already behind schedule, according to the latest UN report on SDGs.

While governments around the world are making laudable strides in expanding electrification for their citizens, traditional modes of grid expansion can take 10 to 20 years before achieving universal electrification. **Continued action and innovations in how we approach, deliver and manage energy access will be a key component in achieving this important milestone.**

**About The Rockefeller Foundation**

For more than 100 years, The Rockefeller Foundation's mission has been to promote the well-being of humanity throughout the world. Together with partners and grantees, The Rockefeller Foundation strives to catalyze and scale transformative innovations, create unlikely partnerships that span sectors, and take risks others cannot — or will not.

To learn more, please visit [www.rockefellerfoundation.org](http://www.rockefellerfoundation.org).

**Building Capacity in Africa**

In sub-Saharan Africa, as part of the Smart Power initiative, The Rockefeller Foundation is partnering with the Virgin Unite Foundation and Rocky Mountain Institute to help governments create a self-sustaining program to accelerate on and off-grid development through SEED (Sustainable Energy for Economic Development).

This partnership provides technical, policy and financial advice on energy sector development to governments and development partners. SEED also works hand-in-hand with the private sector and governmental authorities to ensure that decentralized renewable energy solutions are successfully implemented.

In Rwanda, SEED helped the government design a plan to electrify 70% of the country in 2 years, initiate the roll-out of the plan and identify more than \$1 billion in savings through optimization of the current utilities system.

**Scaling Smart Power**

Smart Power is continuously working with local and international partners, as well as key energy players, to ensure the model can be tailored for different markets and local contexts, while actively engaging in the global dialogue on advancing rural electrification.

**For more information on Smart Power for Rural Development, please contact Deepali Khanna, Director, Smart Power for Rural Development, at [dkhanna@rockfound.org](mailto:dkhanna@rockfound.org).**



