



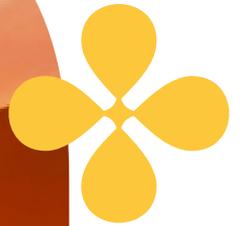
**CLEAN**  
Create. Connect. Collaborate.

**MILINDA**  
PRODUCE WELL · CONSUME WISELY



# WATT MATTERS 2025

## WEEKLY MEMBER SPOTLIGHTS





# MLINDA

📍 WEST BENGAL

📅 EST. 2014

⚙️ SOLAR GRIDS

## ABOUT

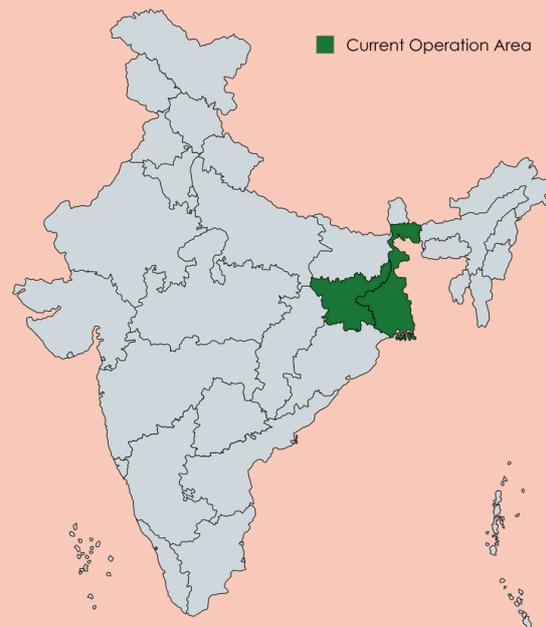


India faces a major energy access gap, with millions of people having no reliable access to electricity – the vast majority of whom live in rural areas. These communities rely on unreliable grids and diesel-based machinery, which contributes to India’s high CO<sub>2</sub> emissions as the world’s third-largest emitter. Fossil fuel-based electrification is also economically unsustainable due to poor metering, high distribution losses, and frequent outages.

Mlinda is a social enterprise serving remote villages where grid access is absent or unreliable. Livelihoods here depend on manual labor, low productivity, and diesel machinery. Mlinda addresses these challenges by deploying decentralized renewable energy (DRE) solutions, specifically solar-powered mini-grids. These provide reliable, affordable, and clean electricity for households and productive uses such as irrigation, agro-processing, and small enterprises—helping communities reduce emissions, improve incomes, and build sustainable livelihoods.

### Current Operation Area

Jharkhand, West Bengal



Map. Current and Potential Markets

# SOLUTION & APPROACH

Mlinda has implemented a replicable and scalable model of solar mini-grids that power household and income-generating activities. Each mini-grid is modular, offers single- and three-phase electricity, and integrates diesel only for peak backup. The systems are metered and operate on a pay-as-you-use model, fostering trust and financial sustainability among users.

## \* Implementation Approach

### 1. Community Engagement and Village Selection

Mlinda uses a structured framework to identify suitable villages, evaluating factors like population size, existing grid access, water availability, land, and the community's ability and willingness to pay. In parallel, they engage directly with local residents to build trust and ensure the energy solution meets actual needs.

### 2. Load Analysis and Grid Design

The organization designs modular solar mini-grids with diesel backup for peak demand. These grids support both single-phase (domestic) and three-phase (productive-use) appliances. Productive loads typically operate during daylight hours, minimizing battery use and improving efficiency.

### 3. Installation, Maintenance, and Monitoring

Dedicated field staff—including engineers, operators, and community link workers—oversee the installation and upkeep of mini-grids. They manage routine maintenance, resolve technical issues promptly, and handle meter top-ups and new connections.

### 4. Support to Agricultural Businesses

A regional business development team assists farmers in replacing diesel-powered machinery with electric alternatives. They also help identify and grow new enterprise opportunities such as oil expelling, grain milling, and food processing, backed by marketing and technical support.



## Timeline of Milestones

### 2012–2016: Pilot Phase

- Installed 300 pico- and micro-grids, delivering 300 kWp across two states, covering 2,200 homes and 3 schools, reducing 450 tonnes of GHG annually.

### 2017: Mini-Grid Launch

- 8 mini-grids deployed across 9 villages, powering 1,000 families and enabling 273 agricultural businesses.

### 2018–2020: Expansion

- 39 mini-grids installed in 40 villages, supporting over 1,250 entrepreneurs using solar-powered machines.

### 2021–2030: Scaling & Replication

- Targeting 750 villages, 1,50,000+ families, and saving 50+ tonnes of CO<sub>2</sub> per village annually. The model is positioned for replication with partners to expand clean energy access and rural income.

# IMPACT

According to an independent study conducted by Mlinda in 2018, the impact of its first 24 solar mini-grids across 25 villages was rigorously evaluated.

## Economic Impact

- Micro-enterprise revenues increased by 28%
- Household incomes rose by an average of 23%
- GDP per capita saw a growth of 7.3%
- 155+ new local jobs were created

## Environmental Benefits

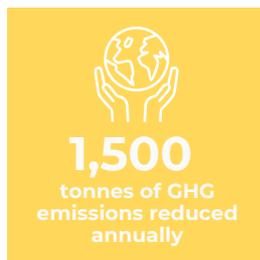
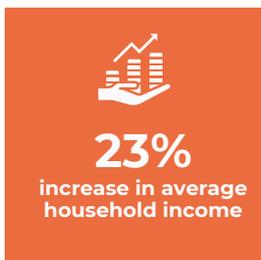
- Annual greenhouse gas emissions were reduced by 1,500 tonnes

## Energy Access and Usage

- Over 1,500 farm, non-farm, and institutional loads are currently powered by Mlinda's mini-grids

## Social Impact

- Women spent less time on domestic chores and more on productive activities
- Children were able to study longer under safer, cleaner lighting conditions



## Way Forward

Mlinda's journey has demonstrated that clean energy solutions can be both commercially viable and socially transformative. Initially direct implementers, Mlinda now plays a facilitative role, enabling communities and local entrepreneurs to own and replicate mini-grids. The model has evolved beyond the organization itself, growing alongside the communities it serves. This approach exemplifies how clean energy, when combined with community-driven enterprise, can build resilient and sustainable futures. Ultimately, clean energy is not just about providing electricity—it's about empowering people.



## Alignment with SDG Goals



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