
POWER FOR ALL FACT SHEET

Mini-Grids in India: Mini-Grid Market Highlights and Policy

POWER FOR ALL

900,000

NUMBER OF INDIAN
HOUSEHOLDS RELYING ON
MINI-GRIDS FOR POWER

10,000

INDIAN GOVERNMENT'S
TARGET FOR NUMBER OF MINI-
GRIDS DEPLOYED BY 2022

\$45 million

ESTIMATED LEVEL OF REVENUE
FROM INDIAN MINI-GRID
SECTOR

As one of the world's leading mini-grid markets, India has strong potential for an explosive mini-grid sector to help meet its various energy challenges. In this factsheet, we look at some key figures on the current state of the Indian mini-grid sector and some challenges it faces.

Mini-Grid Market Highlights

India is one of the world's leading mini-grid markets. Many companies are bringing power to unelectrified households and the opportunity is set to grow even more.

- » The Climate Group forecasts that 900,000 households will receive power from mini-grids by 2018, generating \$45 million in revenue.¹
- » The size of the mini-grid market in India is estimated to be US\$150 million and is forecasted to grow 47% to reach 135 MW by 2022.²

Mini-Grid Market Government Policy

While ambitious targets exist, unclear government policies has deterred both businesses and investors.

- » The government of India established a draft mini-grid policy in 2016 that aims to mainstream renewable energy mini-grids, set technical norms and standards, and provide grid interconnectivity guidelines.³
- » The government of India has a goal of deploying 10,000 micro-or mini-grids with a total capacity of at least 500 MW by 2022, as well as an aggressive solar energy target of 100 GW by 2022.⁴
- » However, currently, less than 2% of solar installations are off-grid, with only 1% of solar installations being community mini-grids.⁵

Mini-Grid Finance

High perceived risk limits financing for DRE companies who are in turn forced to rely on public subsidies, grants, and limited equity financing.

- » Currently, most DRE investment has come from impact investors, public sector banks, and multilateral banks, often disbursed through established lines of credit and public capital subsidies via government bodies such as MNRE (Ministry of New and Renewable Energy).⁶ However, these public subsidies often have uncertain timelines for disbursement.⁷
- » Mini-grid enterprises have a large unmet need for low-cost debt financing. The cost of domestic finance is high, and regulations make it difficult for companies to raise foreign debt.⁸
- » Due to the high perceived risk of off-grid electrification, many investors hesitate to invest in the space.⁹ As a result, it is difficult for mini-grid entrepreneurs to receive finance, and they are often forced to rely on a combination of grants and equity.¹⁰

Join the conversation:

powerforall.org

twitter.com/power4all2025

facebook.com/pwr4all

POWER FOR ALL FACT SHEET

Mini-Grids in India: Mini-Grid Market Highlights and Policy

By the Numbers:

900,000

NUMBER OF INDIAN HOUSEHOLDS RELYING ON MINI-GRIDS FOR POWER

10,000

INDIAN GOVERNMENT'S TARGET FOR NUMBER OF MINI-GRIDS DEPLOYED BY 2022

\$45 million

ESTIMATED LEVEL OF REVENUE FROM INDIAN MINI-GRID SECTOR

Grid-Integration

The most common problem for mini-grids in India is uncertainty around grid expansion.

- » The most common problem for mini-grids in India is uncertainty around grid expansion.¹¹ Grid expansion plans are not publicly available and are subject to political forces.¹² As a result, mini-grids are at risk of being undercut by the centralized grid which often provides cheaper, subsidized electricity, and are seen by the finance community as risky investment.¹³
- » However, even though it may be difficult to reduce the risk of single mini-grids being absorbed by the national grid, mini-grids tend to provide higher quality electricity supply than grid, allowing for customer retention.¹⁴ Many operators are therefore generally less concerned with distance from grid because coexistence with an unreliable grid is not seen as a major threat to commercial viability.¹⁵
- » More importantly, most Indian mini- and micro-grids currently do not use technology that could connect to the grid, even when that technology is available.¹⁶
- » Future policies that provide clarity regarding interconnection standards are currently being developed and may result in more mini-grids using grid-compatible equipment.¹⁷

Share the Message

India's mini-grid sector can play a key role in bringing power to unelectrified households as well as offer tremendous new business opportunities, if some critical challenges are met. Join Power for All to share the following messages:

- » India is a global leader in the mini-grid sector which is expected to grow at an explosive rate.
- » Ambitious targets for both electrification and mini-grid sector support are often undercut by unclear government policies and grid expansion targets.
- » A lack of financing and over-reliance on public sector subsidies also hamper sector growth.

Sources:

1.) The Climate Group, 3. 2.) TMicrogrid Investment Accelerator (2017) Microgrid Market Analysis & Investment Opportunities in India, Indonesia and Tanzania, 12. 3.) Dalberg, 12. 4.) Dalberg, 12; 21. 5.) Dalberg, 28. 6.) The Climate Group, 70. 7.) The Climate Group, 39. 8.) The Climate Group, 66. 9.) The Climate Group, 39; Dalberg, 30; Institute for Transformative Technologies (2016) Achieving Universal Electrification in India: A roadmap for solar mini-grids, 1, 31. 10.) The Climate Group, 63. 11.) The Climate Group, 40; Microgrid Investment Accelerator, 18; Dalberg, 30. 12.) Dalberg, 35; Renewable Energy World (2016) "Power in Numbers: Growing India's Minigrad Sector." 13.) The Climate Group, 40; 14.) International Finance Corporation (2017). Operational and Financial Performance of Mini-grid DESCOs: Findings and Insights from Pioneer Benchmarking of this Emerging Sector. 30. 15.) IFC, 30. 16.) The Climate Group, 40.; 17.) The Climate Group, 40. 18.) IFC, 30. 19.) The Climate Group, 40. 20.) The Climate Group, 40.