
Opportunities and Challenges for the Rural Off-grid Lighting Distribution Market in India

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IFC: Part of the World Bank Group

**IBRD**
International Bank for Reconstruction and Development

**IDA**
International Development Association

**IFC**
International Finance Corporation

**MIGA**
Multilateral Investment and Guarantee Agency

**ICSID**
International Center for Settlement of Investment Disputes

- Loans to middle-income and credit-worthy low-income country governments
- Interest-free loans and grants to governments of poorest countries
- Conciliation and arbitration of investment disputes
- Solutions in private sector development
- Guarantees of private sector investment’s non-commercial risks
IFC’s Purpose

- To promote open and competitive markets in developing countries
- To help generate productive jobs and deliver essential services to the underserved
- To support companies and other private sector partners where there is a gap
- To catalyze and mobilize other sources of finance for private sector development
1.6 billion people in the world live without electricity

- Majority of these people live in rural areas and rely on fuels such as kerosene for their lighting needs.
- These fuels create less light compared to modern lighting products, are expensive and have significant negative impacts on both health and the environment.
Kerosene is dangerous

- Burn risk
- Explosions from adulterated kerosene
- Inhalation
- Ingestion causing poisoning

Kerosene is expensive

- USD 4 billion spend
- In India, households spend USD1.8 billion on kerosene and the government an additional 2.2 billion

Kerosene is polluting

- 6.7 billion of liters of kerosene are used on lighting in India producing 18.1 m tons of carbon dioxide emissions

Kerosene is the most commonly used fuel source for lighting by the off-grid population in India
Switch to LED-based off-grid lighting

Portable Solar Lanterns

- **Economic**
  - fast payback for buyers, on a macro scale more cash stays in country
- **Service Quality**
  - better lighting and added non-lighting service (mobile charging, etc.)
- **Health and Safety**
  - reduced fire and fuel ingestion risk
  - reduced exposure to particulate matter (PM)
- **Environmental**
  - Reduced GHG and black carbon emissions
What’s the market?

- 400mn that do not use electricity as primary source of lighting (Census 2011)
- Represents 33% of the Indian population

Can they buy?

- 205mn can afford a basic solar lighting systems of which -
  - 50mn can afford a multi-functional system
  - 10mn can afford a basic SHS

So what’s the penetration rate of appliances then?

Less than 5%
Market has not taken-off owing to challenges

1. Market spoilage by: Poor quality products, Subsidy Programs
2. Lack of awareness on solar solutions, low trust in brands
3. Competition from kerosene subsidy
4. Lack of finance (savings/credit) for up-front payment
5. Lack of finance for SME companies to scale the market
6. Limited viability of last mile market for manufacturers
   - Quality products are not accessible
# Lighting Asia/India Program

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$$$ **Access to Finance:** Support A2F Solutions for working, growth capital and end consumer financing; Work on outreach with financial institutions to unlock financing

**Business Support and Associate Program:** Support qualifying companies with tailored assistance; develop scalable, replicable business plans attractive to investors

**Clients and Partners:** **Mini Grids** (Minda NexGenTech Ltd, SunEdison Energy India Pvt. Ltd); **Solar appliances** (Orb Energy Pvt. Ltd, Barefoot Power India Pvt. Ltd, D.light Design, ECCO Electronics Pvt. Ltd); **Distributors** (Frontier Markets); **Payments Solution** (Simpa Energy India Pvt. Ltd); **Quality Assurance** (The Energy and Resources Institute - TERI)
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