Smart Power for Environmentally-sound Economic Development (SPEED)

Access to Sustainable Renewable Energy in Africa
May 24, 2012

Off-grid green power

Decentralized distributed power sources
• The Rockefeller Foundation’s mission to promote the well-being of people throughout the world has remained unchanged since its founding in 1913

• Our vision is that the 21st century will be one in which globalization’s benefits are more widely shared and its challenges are more easily weathered

• To realize this vision, the Foundation seeks to promote growth with equity in which the poor and vulnerable have more access to opportunities that improve their lives.
How We Work

Search → Development → Execution

SPEED
Almost 2 billion people without access to energy services

Traditional grid infrastructure unable to reach the poor in rural locations

Demand broad but shallow – limiting viability of micro utilities

Evolving regulatory environment

Under-developed industry and financing infrastructure to drive growth
Positive impact on the lives of poor and vulnerable populations by providing affordable, reliable clean energy to rural communities, thereby improving the quality of life and enhancing livelihood security.
The Model

Micro Utility

- Optimize Resources
  - Biomass
  - Biofuel
  - Sunlight
  - Wind
  - Fossil Fuel

- Produce Power
  - Candidate Technologies
    - Biomass Gasification
    - Biogas
    - Solar PV
    - Backup Genset
    - Wind Turbine

- Distribute Power
  - Tower Power Management System
  - Community Distribution System
    - Marketing
    - Collections

- Mobile Phone Base Station
  - Steady load
  - 99.9% uptime

- Host Villages
  - Public Use
    - street lighting, schools, clinics
  - Microenterprise
    - battery charging, agri-processing, manufacturing
  - Personal Use
    - lighting, communications

- Varying load
- Cross -subsidized by tower
India

- 409 million w/out electricity
- Political will
  - Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY)
- 18,000 villages will not be connected to the grid.
No Power

But Mobile Phones
The Strategy

Four Prongs

• Demonstrations
• Building an Enabling Environment (Policy and Industry)
• Finance Mobilization
• Networking

Work Plan

• Implement 30 to 50 pilot projects
  – Demonstrate sustainability of the model
  – Verifiable conditions for its scaling up to 1000 villages
• Build an “ecosystem” around the SPEED concept
SPEED Ecosystem

Rural Communities

- Research and Policy Centers
- National Ministries
- State Government
- Civil Society / NGO Partners
- Mobile Network Operators
- Cell Tower Operators
- Energy Service Companies
- Technology Suppliers
- Rockefeller Foundation
- Public Finance and Donors
- Impact Investors
- Commercial Investors
Program Partners

- **TARA**: Programme Coordination
- **cKinetics**: Business Modeling
- **Pradan**: Community Engagement and Micro-enterprise
- **CII – Godrej Green Business Centre**: Industry engagement
- **DESI Power**: Capacity building and demonstrations
- **Sambodhi**: Monitoring, Learning and Evaluation
- **Prayas**: Policy Research
- **School of Advance International Studies (SAIS)**: Global outreach
Would the SPEED model work in Sub-Saharan Africa? (BTS as the anchor load and entry point catalyst)

If so, which countries would this model work best? (alignment between needs, regulatory frameworks, etc.)

How will we reconcile the challenge of needing to work in remote, poor off-grid locations with the difficulty of promoting market-based economic opportunities in those very locations? (what are other sources of demand in rural communities.)

Are there any unintended negative consequences for communities? (e.g. ESCO failure leading to boom and bust cycle in a village economy)