Business Models for Rural Energy and Environment Projects

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Rural Electrification: The Current Scenario

- High per capita GDP: High Village electrification
- Medium per capita GDP: Moderate Vill electrification
- Exception (Rapidly Changing)
- Low per capita GDP: Poor Vill electrification

Source: Census of India, 2001
National Electricity Policy (NEP) stipulates creation of reliable rural infrastructure

Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) for universal electricity access to rural households.

Remote Village Electrification (RVE) Programme was launched through the MNRE

Jawaharlal Nehru National Solar Mission in November to deploy inter-alia 2000 MW for offgrid applications including 20 million solar lighting systems

All rural electrification programs are subsidized up to 90% in a non-electrified region
<table>
<thead>
<tr>
<th>Model</th>
<th>Pros</th>
<th>Cons</th>
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<tbody>
<tr>
<td>Status quo</td>
<td></td>
<td>• Slow improvement in supply, as improvements are contingent on overall increase in grid supply</td>
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<td>• Does not attract capable franchisees (due to erratic power supply) and therefore reduces prospects for improved service and more efficient distribution.</td>
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<td>Feed-in-tariff (FIT) model</td>
<td>• Can potentially improve supply to the grid</td>
<td>• FIT subsidies are required, adding to the financial deficit of utilities</td>
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<td>• Does not include an obligation to improve service in rural areas</td>
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<td>Rural distributed franchise</td>
<td>• Improves service</td>
<td>• Lack of predictable and demand-responsive supply is a barrier to attracting qualified franchise operators.</td>
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<td>• High potential to reduce losses in rural markets</td>
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<tr>
<td>Distributed generation &amp; supply (DG&amp;S)</td>
<td>• Improves service</td>
<td>• However, needs new financing and business models</td>
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<td>• Reduces market losses</td>
<td>• FIT subsidies are required, adding to the financial deficit of utilities</td>
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<td>• Improves supply</td>
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Enablers to Make Existing Models Even More Attractive

- Extend RGGVY to fund evacuation infrastructure
- Develop transparent and simple interconnection rules and procedures
- Guarantee “take-or-pay“ for DGs for surpluses after service obligations
- Streamline project approvals
- Reach scale through clusters
- The CERC must develop guidelines for differential tariffs
- Create Output-Based Aid (OBA) funds to bridge cost & prevailing tariffs
- Capacity building required at both the planning and implementation stages
Building a Model of Community Engagement

- Equipment Suppliers
- EPC Contractor
- O&M Operator
- SPV
- Land
- FSA

Fuel Supply & Management Company

- Sale Credits / Smart Cards
- Land
- Biomass

Local Community

- Discom Grid
- PPA

Farmers

- Sale Credits / Smart Cards
- Biomass
Extending the Framework to Area Development
GAPS Biomass Power Plant, Aurangabad

- GAPS Power is operating a 13 MW electricity plant

- Power is generated from agri-wastes like cotton stalk, corn cob, Bagasse etc., collected from within a radius of 50 km from the plant

- The `social catchment’ selected consists of 95 Villages with a total population of 140,000

- Comprehensive Baseline study underway to develop an understanding of the farmer community and the overall development challenges of the area
Social Catchment

- Rain-fed area (<600 mm annual rain), mostly marginal cotton farmers (<2 acres) supplying cotton stalk to plant & at the 14 Collection Centers

- Almost 50% houses are mud houses, 1.25% homeless households

- Working population of 12,700 (comprise 53% of the 24,044 total population)

- The average sex ratio is 940 (837 in one village - national ratio is 933:1000)
### Some of the Initial Interventions areas

<table>
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<tr>
<th>Baseline</th>
<th>Intervention Areas</th>
<th>Building partnerships</th>
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<tbody>
<tr>
<td>BASELINE SOCIO-ECONOMIC SURVEY (Ongoing)</td>
<td>Supply Chain management by Farmer Producer Organisations (FPOs)</td>
<td>NABARD, Indian Society for Agribusiness Professionals</td>
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<td>Farming Support Initiatives</td>
<td>Gramin Suvidha Kendras, Indian Post Office - FT/MCX, KVK etc.</td>
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<td>Piloting Drinking Water Vending systems</td>
<td>Eureka Forbes and local Trusts/ Social Entrepreneurs</td>
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<td>Piloting an Off Grid Power supply for livelihoods enhancement</td>
<td>IREL</td>
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From Availability to Area Development

- Ownership by Stakeholders – by Group Company/SPV & Catchment Community
- Resource Mobilisation - Creating Alliances & linkages
- Impact Assessment system - to measure impact of the project and socio-economic interventions
- Long Term Systemic Change Partnerships – over the PPP project life-cycle
- Improved Quality of Life
- Economic & Livelihood Enhancement
- Natural Resource Management & Environment
- Cultural Harmony and Cohesion
- Social Context and Assets Base
- Democratic Governance
- Education & Continued Learning
- Transport & Communication
- Energy
- Health & Sanitation
- Improved Quality of Life

- Banking and Financial Services
Thank you

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