

# PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC848

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| <b>Project Name</b>                           | Prepare:Program toEstablish Pilots for Access through Renewable Energy (P144678) |
| <b>Region</b>                                 | SOUTH ASIA   |
| <b>Country</b>                                | India  |
| <b>Sector(s)</b>                              | Other Renewable Energy (100%)  |
| <b>Theme(s)</b>                               | Rural services and infrastructure (100%)   |
| <b>Lending Instrument</b>                     | Specific Investment Loan   |
| <b>Project ID</b>                             | P144678  |
| <b>GEF Focal Area</b>                         | Multi-focal area   |
| <b>Borrower(s)</b>                            | Department of Economic Affairs   |
| <b>Implementing Agency</b>                    | Ministry of New and Renewable Energy, UPNEDA, BREDA                              |
| <b>Environmental Category</b>                 | B-Partial Assessment   |
| <b>Date PID Prepared/ Updated</b>             | 14-May-2013  |
| <b>Date PID Approved/ Disclosed</b>           | 20-May-2013  |
| <b>Estimated Date of Appraisal Completion</b> | 31-Jan-2014  |
| <b>Estimated Date of Board Approval</b>       | 15-May-2014  |
| <b>Concept Review Decision</b>                | Track I - The review did authorize the preparation to continue                   |

## I. Introduction and Context

### Country Context

India's dynamic economic structure and transformational demographic changes have made the role of electricity critical. India has experienced average annual growth rates of about 8 percent during 2007-8 to 2011-12 accompanied by a reduction in poverty levels of about 1.5 percent annually between 2004-5 and 2009-10. Today, two thirds of India's population is above the poverty line. India is also becoming increasingly urban. The demand for power is only going to increase, in order to support the growing manufacturing sector, meet the rising aspirations of its people and meet the suppressed demand (now managed by load shedding and unreliable supply).

India's power sector faces a number of challenges. Of particular relevance for this proposed project are: (i) a large population without access to modern energy, and (ii) low energy security.

## **Sectoral and Institutional Context**

India has the largest energy access deficit of any single country. The problem is compounded by unreliability of supply and low consumption levels where access is available. Rural consumers, typically the poorest, constitute the bulk of India's 394 million people without electricity (93 percent of India's un-electrified population or roughly 289 million people). More than two-thirds of un-electrified households belong to the lowest 40 percent of the income ladder and are largely concentrated in five states – Uttar Pradesh, Bihar, West Bengal, Rajasthan, and Orissa (NSS, 2010). Where electricity is available, supply is intermittent. Industries and commercial enterprises suffer due to unreliable supply and are forced to invest in expensive back-up generation. Additionally, India faces energy security and environmental concerns around its generation mix. 80 percent of electricity generated and 57 percent of installed power capacity is coal fired. The power sector accounts for about one half of the total CO2 emissions in the country, as against a global average of one-third. . According to a recent World Bank study 'Energy Intensive Sectors on the Indian Economy- Path to Low Carbon Development', even under the lowest emissions scenario, electricity will remain the highest contributor to the growth of carbon emissions until 2031, and coal-based plants will continue to dominate India's energy mix with a 51 percent share in 2031. The primacy of thermal fuels also means that the sector remains vulnerable to endemic coal shortages and price fluctuations

In order to achieve its vision of universal access, India has decided to adopt a two pronged approach, focusing on both grid and off-grid solutions. Progress towards achieving this goal gained momentum with the launch of the flagship Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) in 2005, consolidating all ongoing rural electrification programs at the time. The Government had also promoted decentralized distributed generation (DDG) in 2009 under the auspices of RGGVY to provide substantial capital subsidy (around 90%) and operating incentives to villages without grid electrification for distributed generation initiatives. This was aimed at areas where the grid extension was not possible in the foreseeable future.

The grid and DDG (or off-grid) components of RGGVY have proceeded at a differential pace. About Rs 34,000 crores has been spent on the grid components, and consequently 92 percent of villages are now electrified with 20 million BPL connections having been released (Ministry of Power Website, 2013). Under the DDG component about Rs.1, 937 crores have been sanctioned for around 148 projects. None of these projects have been commissioned to date.

### **Relationship to CAS**

The proposed project supports the first and third pillar of the ongoing India Country Assistance Strategy (2007-2012) – 'achieving rapid inclusive growth' and 'increasing the effectiveness of service delivery'. This project, through its focus on electrification efforts for poor households in lagging states of Uttar Pradesh and Bihar, will enhance the economic potential and bring them within the fold of prosperity as well as promote private sector models that stimulate better service delivery outcomes.

The proposed project also aligns itself with the third pillar of the draft India Country Program Strategy (2013-2017) – 'inclusion': improving living standards for all, especially the poor and marginalized people'. By its inherent design, the project will address the access deficit in the lagging regions in rural UP and Bihar and enable a more economically vibrant rural economy.

## **II. Proposed Global Environmental Objective(s)**

**Key Results (From PCN)**

- No. of households with new electricity connection (No.)
- Increase in household consumption (kWh)
- Increase in number of hours of supply for electrified consumers (No.)

**III. Preliminary Description****Concept Description**

The proposed project aims to improve access to electricity in rural areas of Bihar and Uttar Pradesh – these two lagging states in the electrification space together constitute around 60 percent out of the total population without electricity access in India. The proposed project is envisaged to be located in Ballia, Bareilly, Kannauj and Mahoba districts in Uttar Pradesh and Nalanda district in Bihar.

Component 1: Viability Gap Funding for DDG project in Bihar and UP (US\$ 10 million)

This component will include investments through VGF for setting up of distributed generation and supply projects, including generation plants and mini-grids in the identified un-electrified/semi-electrified villages and hamlets of UP and Bihar. The project will disburse against achievement of results. This component would be executed through PPP approach using financial intermediaries.

Component 2: Technical Assistance (US\$ 2.844 million)

**Capacity Building**

- **Funding of Skill building exercises across the value chain of decentralized generation:** Government of Bihar and UP have expressed interest in introducing the skill building courses and tool kits at state Industrial Training Institute (ITIs) for training people from the local villages who could be used by the project developer as operations and maintenance staff. Further this component would also be used to conduct training for the officials in the state nodal agencies focusing on key technology and financing issues.
- **State level PIU set-up and assistance for staffing:** It is proposed that a PIU would be set up within the state nodal agencies in Bihar and UP. The PIU would be staffed with professionals hired on contract.
- **Independent Verification Consultant (IVC):** The independent verification consultant will be hired for baseline data collection and impact evaluation. This impact evaluation would also be used for release of outcome based VGF to the developer.

**Consulting Services for Market Development**

- **Technical assistance for solar based pump-set scheme:** Market potential exists for solar pump sets replacing diesel pump sets. However, in order to realize this potential, some key policy and design issues must be promoted, including greater co-ordination between GoI and the states, use of FIs for providing better loan terms to individual farmers, effective use of existing technology in monitoring. Additionally, more innovative business solutions need to be developed to overcome technology issues. This TA will delve into these issues in detail and propose an action plan.
- **Technical assistance for telecom towers as anchor customers:** There is a large scope for hybrid solar technology working alongside diesel in running telecom towers in rural locations. It is proposed that a survey be carried out to understand the market potential for this.

**IV. Safeguard Policies that might apply**

| <b>Safeguard Policies Triggered by the Project</b> | <b>Yes</b> | <b>No</b> | <b>TBD</b> |
|--|------------|-----------|------------|
| Environmental Assessment OP/BP 4.01                | x          |           |            |
| Natural Habitats OP/BP 4.04                        |            |           | x          |
| Forests OP/BP 4.36                                 |            |           | x          |
| Pest Management OP 4.09                            |            | x         |            |
| Physical Cultural Resources OP/BP 4.11             |            |           | x          |
| Indigenous Peoples OP/BP 4.10                      |            |           | x          |
| Involuntary Resettlement OP/BP 4.12                |            |           | x          |
| Safety of Dams OP/BP 4.37                          |            | x         |            |
| Projects on International Waterways OP/BP 7.50     |            | x         |            |
| Projects in Disputed Areas OP/BP 7.60              |            | x         |            |

**V. Financing (in USD Million)**

|   |       |                       |      |
|---|-------|-----------------------|------|
| Total Project Cost:                               | 42.00 | Total Bank Financing: | 0.00 |
| Total Cofinancing:                                |       | Financing Gap:        | 0.00 |
| <b>Financing Source</b>                           |       | <b>Amount</b>         |      |
| BORROWER/RECIPIENT                                |       | 14.00                 |      |
| Global Environment Facility (GEF)                 |       | 14.00                 |      |
| Foreign Private Commercial Sources (unidentified) |       | 14.00                 |      |
| Total   |       | 42.00                 |      |

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